



Article

How Does Anxiety Affect the Relationship between the Customer and the Omnichannel Systems?

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Abstract: Omnichannel is not just a marketing, e-commerce, or customer support buzzword. This future customer engagement platform helps businesses communicate with customers through centralized channels on a smart interface. It is difficult to achieve customer loyalty when the risk in online transactions, which creates anxiety, exists in all transaction processes in an omnichannel system. Hence, the purpose of this research was to analyze the influence of anxiety on relationships when clients purchase from an omnichannel platform using the stimulus–organism–response (SOR) paradigm. To fulfill study aims, qualitative and quantitative research approaches were used. In-depth interviews and focus group discussions were used to acquire qualitative data, while survey responses from 485 participants were used to collect quantitative data. This study’s results revealed relationships between consumer psychology factors such as perceived mental benefits, hedonic value, and anxiety. Moreover, customer anxiety in omnichannel can be measured as a novel and exact concept in marketing science and have a moderating role in the effect of perceived mental benefits on electronic loyalty and perceived mental benefits on hedonic value in omnichannel systems. As a result, enterprises were also offered various managerial implications to develop their omnichannel system.

Keywords: perceived mental benefits; hedonic value; electronic loyalty; anxiety; omnichannel system



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1. Introduction

The fast change in consumer lives and their interactions with brands and retailers through these digital technologies have increased the complexity of the market environment that businesses must navigate in recent years. Keeping brand values, attributes, and overall image consistent across services, experiences, and channels [1], and developing seamless customer experiences are two of the many challenges that have prompted many businesses to begin developing omnichannel strategies. This process requires the integration and adaptation of resources [2]. The notion of omnichannel retailing reflects the development of retail tactics, which have shifted from a singular focus on one channel to a more holistic use of several channels and places of customer interaction. The evolution of the concept of “Omnichannel” from its precursors “Multichannel” and “Cross-channel” is reflected in the name itself. Galipoglu et al. [3] say that these phrases are interchangeable in the literature. Omnichannel retailing, as defined by Levy et al. [4], “offers a unified shopping experience across all of a retailer’s sales channels.” Some writers have proposed theoretical distinctions to help make clearer the differences between these methods. Omnichannel is viewed as an extension of multichannel retailing [5], although with the latter, “clients travel freely across channels, all inside a single transaction process”. In the following section, Beck and Rygl [6] suggested a conceptualization that adopts two variables—the degree of channel integration and the degree of channel interaction—to include the viewpoints of both retailers and customers. The term “omnichannel” refers to a scenario in which

consumers initiate multichannel interactions with a business or brand via any supported channels, and merchants exercise some authority over the channels' integration.

Risk, a crucial basis of consumer concern in conventional commerce and e-commerce, is always present in transactions between sellers and buyers, particularly in online marketplaces. Customers who feel vulnerable or unsure are more likely to transfer between online and offline channels, as suggested by theories of uncertainty reduction [7]. Some of the factors that contribute to shoppers' unease while browsing in a physical store or online store are the following: too much information, which leads to confusion and anxiety; limited opportunities to engage with the products or other shoppers; and the potential for a breach of their personal information's privacy [8,9]. Customers in the age of omnichannel retailing tend to be more tech-savvy and well-informed, making it even more crucial to study how they experience uncertainty in this setting. Consumers' channel preferences have also been heavily impacted by customers' anticipation of regret [10]. Customers may get around this by gathering more data, which can be used in online and offline investigations [11]. Buyers' worry becomes a negative incentive for restricting or not purchasing online, even though sellers provide several advantages and value. Furthermore, anxiety causes a consumer's purchase on an omnichannel system to be abandoned and diminishes their loyalty to a firm if it continues across several channels. Negative emotions hinder long-term business-consumer connections [12,13]. Researchers have viewed anxiety as a negative emotional construct [14,15]. However, previous anxiety studies focused on system anxiety [16]; or technical risk anxiety, such as computer anxiety [17,18] or Internet anxiety [19,20]; but did not pay much attention to anxiety as the psychological symptom construct to the omnichannel system [21]. At the same time, studies on the role of anxiety primarily focused on the role of independent variables or moderators are common [22]; several studies focused on the regulatory effect of anxiety on purchasing factors and intentions [23], and electronic satisfaction [24]. This limitation creates a gap for research in assessing the effect of anxiety on customer relationship management in all stages of the customer journey in omnichannel systems (pre-purchase, purchase, post-purchase).

In developed countries, omnichannel systems have been developed long before, and the legal related to transactions were established and controlled strictly [25,26]. However, in contrast to the investment and development of omnichannel in developed countries, consumers in developing countries have been limited in online shopping via websites or mobile devices [27–29]. Consumers' habits of buying brick-and-mortar shops cannot be changed quickly. The perceived risk describes an individual's subjective evaluation of his or her risk of an illness or an adverse outcome, often about performing a certain risky behavior [30]. However, when we say anxiety, we mean experiencing negative feelings or emotions while engaging in a certain activity. People may wish to stay away from electronics depending on how anxious they are [31]. Anxiety develops when people attempt to carry out activities in which they lack confidence [32]. If consumers do not feel comfortable using omnichannel services, they may experience anxiety while making purchases across channels [33]. Lessening the burden on the consumer is an important part of providing a satisfying experience. Customers want to be able to communicate with a company via their chosen methods on the devices they want to provide the best possible experience. Customers feel pushed out of their comfort zones, which may lead to anxiety, irritation, and an unpleasant experience if they comply with preset support and communication channels. In addition, it may be challenging to concentrate on the correct media for the right clients since a customer's favorite channels may change based on time, location, and urgency. The fear of buying counterfeit, fake, inferior products is online consumers' collective psychology [34]. In addition to product quality, many stores launch deceptive promotions to attract users [35]. Furthermore, personal information is the customer's biggest privacy issue when used legally for selling and advertising. The above risks increase customers' anxiety when making transactions in omnichannel systems, resulting in no intention to buy online or discontinue trading with an omnichannel system

after the first transaction, although they received many benefits and values from online transactions, including utilitarian and hedonic benefits/values.

Retail is required to take continuous action to respond to changes in consumer behavior and new government-supported business models related to mass media restrictions. The pandemic has prompted the emergence of a new multichannel and mixed-store model called omnichannel [36]. This model continues to grow with the restructuring of operations from physical stores and warehouses to back-office headquarters. In Vietnam, survey results from Deloitte [37] show that nearly 52% of customers will shop online as often as during the pandemic, and more than 45% of customers think they will shop online less than during the pandemic but more often than before the pandemic. In addition, the top 4/6 factors driving customers to multichannel shopping are related to logistics, including door-to-door delivery and delivery speed (89.22%); products are diversified and abundant (52.94%); easy ordering method (50.98%); save shopping time (49.02%); many promotions (49.02%); do not have to wait in crowded queues and contact many customers (34.31%). Thus, creating a more responsive network is important for retailers to build to stay competitive in omnichannel. The report confirmed that pure e-commerce would not be able to replace physical stores in Vietnam [38]. However, stores are no longer merely a place to display items but have a role in integrating into the online purchasing process as the online–merge–offline model trend. The headquarters office supporting shops and supermarkets will also be majorly reformed. As remote working becomes more common, retail businesses need to radically improve operational efficiency and shift towards digital working styles.

The stimulus–organism–response (hereafter SOR) model, which Mehrabian and Russell [39] proposed, is a well-known model for reflecting the buyer–seller interaction and may be used in consumer behavior research [40]. Furthermore, the SOR model has been used to examine user behavior in information technology, media, and online services such as mobile user auctions [41]. The SOR model describes the relationship between inputs (stimulus), processes (organism), and outputs (response) and assumes an individual's perception of the environment (context) [39]. The SOR framework has concretized the idea of the “create value and capture value” process presented by Kotler et al. [42]; however, this study considers SOR in the customer journey of transactions in omnichannel systems. The omnichannel systems bring many benefits to customers who buy the product or service; hence, they can value their advantages. Finally, customers anticipate long-term connections such as customer loyalty or repurchase behavior from their transactions in omnichannel systems [43,44]. Because this study focuses on the links between perceived mental benefits, hedonic value, and e-loyalty in omnichannel systems, the SOR model is used as the overarching framework. The following research questions led the systematic literature review:

RQ1. How are the relationships between perceived mental benefits, hedonic value, and e-loyalty in omnichannel systems?

RQ2. How does anxiety negatively moderate the relationship between buyers and sellers in business omnichannel?

This research sought to overcome the theoretical gap by examining two key interactions. To begin, this study was founded on the SOR model, which includes three constructs in the omnichannel systems: perceived mental benefit, hedonic value, and electronic loyalty, in which the “stimulus” in the context studied here is perceived mental benefits, hedonic value in online transactions represents the “organism,” and electronic loyalty is the “response.” Second, the influence of anxiety as a moderating variable on correlations between research components in the SOR model for the omnichannel systems was investigated. The research findings provided a strong framework for scholarly contributions and a platform for providing managerial implications for firms in the context of risky transactions over omnichannel systems.

The remainder of the paper is structured as follows: First, the literature review and the goals of this study are summarized in two research questions. The search and selection

procedures used in the technique are then outlined. The study's conclusions, as well as their implications and caveats, are discussed in the last part.

2. Literature Review

2.1. Stimulus–Organism–Response (SOR) Model

Many studies have shown that the retail environment influences customer behavior. The most widely used hypothesis is the SOR model (stimulus–organism–response), which was created by Mehrabian and Russell [39] and confirmed in the retail shop environment [45]. This model indicates that human responses exhibit emotion and behavior for stimuli in the external environment [39].

The term “marketing stimulus” refers to the influence of a product, price, location, promotion, people, procedure, physical evidence, and the “external environment” (economic, technological, social, and cultural). They are all determined by the SOR model's stimulus [46]. The organism's state of the customer, such as the buyer's characteristics and the buyer's decision process in the SOR model, represents the customer's emotional response to exposure to the stimulus from the seller [46]. These factors comprise three primary emotional states, PAD (pleasure, arousal, and dominance), each independent of the other [39]. In most studies, the “reaction” from the SOR model relates to consumer behavior, such as spending longer time in the shop and more money; if the ambiance at the business is pleasant, the customer plans to return and promote others to the store [47]. Many researchers have proposed and appreciated the SOR model to design online consumer behavioral models [48–50]. Based on the SOR model, Vergura et al. [51] show that emotional reactions are critical in the link between stimulus and behavior. Empirical research has also established the relevance of emotion-based attitudes in mediating the impacts of stimuli on consumption behavior [52].

Wu et al. [53] pointed out that the hedonic-related website is a stimulus factor and impacts customers' emotions in online shopping. In online shopping, customers can look for practical and mental benefits. Utilitarian benefits relate to pricing, convenience, and product quality, while mental benefits relate to the enjoyment of design, psychology, and shopping experience [54]. Khoa and Nguyen [55] measured perceived mental benefits in the online Vietnamese market, including shopping enjoyment, social engagement, personal buying, and perceived control. Duong and Liaw [56] predicted that technological advantages in e-commerce would serve as a stimulus. Moreover, perceived benefits describe the advantages customers believe they will receive from making purchases on a certain e-commerce site or the advantages users anticipate receiving; hence, perceived benefits were used as a stimulus in the SOR model in the research of Zhou et al. [57]. Furthermore, omnichannel systems are meant to improve communication between consumers, customers, and the company and provide quick assistance and information resources about goods of interest. These benefits provide rapid pleasure or respite from bad sensations, which greatly impact customers' views about online purchasing [58] and online shopping behavior [59]. Consumers are becoming more concerned with perceived mental advantages [60]. Therefore, the perceived mental benefit can be considered the SOR model's stimulus. The SOR model of omnichannel systems is shown in Figure 1.

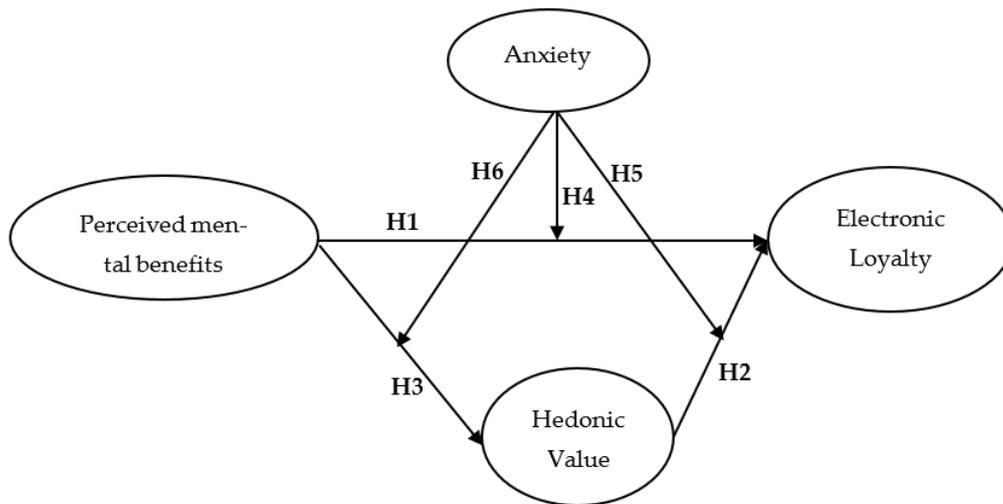


Figure 1. The conceptual model.

2.2. Research Hypotheses

The customer’s return to the shop, or the offer of incentives, is a behavior that shows engagement with the online seller [61]. Customers’ favorable attitude and dedication to the omnichannel systems result in repurchase behavior and do not transfer to other buyers. Loyal clients promote omnichannel systems and urge others to do the same [62,63]. Electronic customer loyalty is considered the best response that businesses expect. The customer’s values mediate between the business’s stimulus or marketing program and customer loyalty response through the transaction. Kotler, Keller, Goodman, Brady, and Hansen [46] proposed creating consumer-driven marketing programs to create superior value and capture customers’ value. Hedonic value relates to senses, pleasures, feelings, and emotions [64]. The customer can obtain the hedonic value via the fun and playfulness of the subject’s experience [65]. Therefore, the researchers confirm hedonic value as the SOR model organism within this study’s scope.

Electronic loyalty transfers brand loyalty from conventional to online commerce [66]. Electronic loyalty is a positive attitude toward an online company, leading to frequent purchases on that enterprise’s sales page [67,68]. Online loyalty improves the profitability of online companies by establishing long-term connections with consumers and lowering the cost of acquiring new clients in an online environment [69]. Online corporate profits increase by encouraging customers to repeat buying behavior [70]. In the growth of social networking sites, consumers’ loyalty behavior is also reflected in their interactions with corporate social media sites, such as liking, sharing, or following pages. When firms’ competitive strategies depend on the amount of information customers provide to the business, exposure to personal information is also considered an indicator of electronic loyalty with online businesses.

Traditional procurement may be influenced by functional and non-functional factors [71]. Non-functional incentives include social and emotional requirements to have interesting shopping experiences, whereas functional motivations include convenience, product variety, quality of items, and costs [72]. All of these motivations are also beneficial factors for consumers to shop online. Most people seek consumption that affords them feelings, fantasies, and joys, including playful recreational activities, sensory pleasure, daydreaming, enjoyment, and emotional response [73]. Consequently, the consumer’s perceived mental benefit is tied to entertainment, peace of mind, ease, personal fit, or interaction with other individuals online. Perceived benefit has been identified as an essential premise of consumer loyalty. Trust and social interests are significantly associated with loyalty [74]. Customers are loyal to the omnichannel systems when they feel special treatment or have a social benefit [75]. In addition, entertainment benefits are essential for customers to continue using the service, followed by loyalty to the omnichannel systems.

Additionally, a loyalty program motivates customers to participate in loyalty programs on e-commerce sites [76]. Omnichannel clients utilizing at least two channels throughout their encounter with the company build their opinion of quality across all channels, not just one, influencing their total happiness. Furthermore, in the case of omnichannel retail, the benefit felt via the usage of various service channels was shown to be a decisive element in the formulation of total customer satisfaction. Otherwise, because it has been established that customer satisfaction in an omnichannel context is higher when the perceived benefit of channel integration is high [77,78], this study proposes to test this link for benefits and loyalty as customers transact via omnichannel systems. Therefore, the proposed hypothesis H1 is as follows:

H1: Perceived mental benefit has a positive impact on electronic loyalty in omnichannel systems.

Hedonic value is one of the values related to consumers' entertainment and emotional needs [79]. Hedonic value is a behavioral component of multicultural, imaginative, and emotional consumption processes. During the consumption process, customers appreciate the interesting, inventive, fun, and stimulating experience provided by acquired items or services [80]. Perceived value influences customer loyalty positively [81]. Brand penetration is also derived from a customer's positive perception of the brand after using its products or services. In Sirdeshmukh et al. (2018)'s study, the perceived value was instrumental in creating consumer loyalty. Customers tend to switch to another online provider [67]. In addition to physical perceived values, hedonic perceived value is increasingly important in building online shoppers' intent to continue shopping. Hedonic value positively affects engagement with Groupon sites [82]. Lewis and Soureli [83] corroborated this finding in the banking industry, demonstrating that the perceived value clients get from their primary bank is positively associated with customer loyalty. However, Carlson et al. [84], Swaid and Wigand [85] have proven this conclusion in the multi-channel environment, finding that a firm's usage of several channels increases customer loyalty. An omnichannel that consumers appreciate also boosts loyalty in the omnichannel environment [86]. Thus, in the instance of omnichannel retail, this study proposes hypothesis H2:

H2: Hedonic value has a positive impact on electronic loyalty in omnichannel systems.

The customer purchases the product or service to achieve the lower-order values of consumer benefit and sets the stage for the value of life [87]. Mental benefits are instrumental in the developed social context, while hedonic value is the terminal value in consumer behavior science. The empirical study of Chen and Hu [88] showed that perceived benefits directly affect perceived value. Additionally, consumers are willing to make trade-offs when they perceive the benefits of a service. In e-commerce, receiving benefits such as entertainment or anonymity creates positive psychology for customers when trading, which is the entertainment price. More specifically, a high level of multi-channel integration that demonstrates a high level of channel synergy and a smooth customer experience raises the perceived value of a consumer multichannel system [89]. This finding has received much attention in the context of omnichannel systems [90]. As a result, this study proposed testing this relationship in the context of omnichannel systems, particularly because, with the omnichannel system, firms tend to improve the benefits of integrating their channels through more personalization of the shopping experience and a large offering of mobile value-added services [91]. From there, this study proposes hypothesis H3:

H3: Perceived mental benefit has a positive impact on Hedonic value in omnichannel systems.

The business tries its best to create and bring benefit or value to the customer through omnichannel systems. The social cognitive theory offers a framework for understanding the psychology of human cognition, emotions, and behavior [92]. Personal and environmental variables interact in the model and serve as determinants of one another [93]. Human behavior is governed by a system of behavioral variables, self-efficacy, and anticipated

consequences (the personal factors), and evaluation of one's behavior concerning external conditions (environmental factors). According to social cognitive theory, anxiety is an emotional response that reduces an individual's determination to take a specific action by limiting personal abilities and judgments to generate performance through emotional stimulation and lowering an individual's expectations of the desired performance result [94]. Kim and Forsythe [95] have shown that the intangibility of online purchasing increases uncertainty and perceived risk, contributing to online shopping anxiety. Anxiety is a succession of unpleasant thoughts about similar or dissimilar themes that lead to potential bad effects [96]. The current laws and regulations relating to electronic sales are insufficient to protect customers from the risks associated with virtual suppliers worldwide. There is considerable fear associated with internet buying, which diminishes their enthusiasm for utilizing this approach [97]. When customers are anxious, online shopping frequency decreases, reducing the patronage of electronic shops [98]. Therefore, this study can consider the moderating role of anxiety based on the hypotheses below:

H4: Anxiety negatively moderates the relationship between perceived mental benefits and electronic loyalty with omnichannel systems.

H5: Anxiety negatively modifies the relationship between hedonic value and electronic loyalty in omnichannel systems.

H6: Anxiety negatively influences the relationship between perceived mental benefits and the hedonic value of omnichannel systems.

3. Research Method

To design and evaluate the conceptual model, this study used a mixed technique, primarily deductive methods (deducing from theory and empirical investigations) and the inductive method (building different scales of research construct). Field research techniques were employed to acquire information, while expert interviews and group discussions were used to collect data for qualitative methodologies [99]. Two categories were specifically discussed: Group 1 consists of eight omnichannel specialists, and Group 2 consists of sixteen MBA students who often purchase omnichannel systems in Vietnam. The goal of the group discussion is to standardize vocabulary and alter and augment the scale to fit the Vietnamese context and conditions and, concurrently, clarify the meaning and comprehensiveness of the questionnaire survey questions [100].

The buyers (including students, white-collar professionals, company owners, lecturers, laborers, housewives, and government officials) were surveyed using a premade questionnaire to obtain data for quantitative analysis. The participants have occupations with high exposure to omnichannel purchasing and are early adopters of technology; therefore, they boldly order from omnichannel operations. However, it is precisely because pioneering shopping in a new way leads to unexpected results from their purchases, which makes them anxious, and some respondents consider continuing to buy from omnichannel systems. The survey respondents were chosen using a sampling technique known as convenience sampling. The survey was created online using Google Forms, and its URL was shared across several social media platforms. Friends on the author list sent this survey URL to pool their responses. This study focuses on popular purchasing occupations in Vietnamese omnichannel, such as students, office workers, lecturers, entrepreneurs, housewives, and government officials [101]. In addition, to ensure the reliability and validity of the survey results, the study also uses the number of times shopping through the omnichannel in a month as the control variable. Moreover, the researchers explained the "omnichannel" in the survey, and the participant must have experience in using omnichannel. Omnichannel systems have been popular in Vietnam recently; hence, the participants could understand them. Table 1 provides a breakdown of the study's sample size of 485 and some descriptive statistics.

Table 1. Sample descriptive statistic.

		N	%
Gender	Male	246	50.7
	Female	239	49.3
Occupation	Student	71	14.6
	White-collar employee	69	14.2
	Business owner	65	13.4
	Lecturer	71	14.6
	Worker	72	14.8
	Housewife	66	13.6
Times of online shopping/month	Government official	71	14.6
	2–4 times	116	23.9
	5–6 times	116	23.9
	7–10 times	122	25.2
	>10 times	131	27.0

The scale of all constructs is adapted from the previous research and adjusted in the qualitative research. Quantitative data collected was processed using SmartPLS software, version 3.7. All scales of this study were based on prior studies and modified for omnichannel background. The scale of perceived mental benefits (hereafter PMB) includes four items [102]. The scale of electronic loyalty (hereafter ELOY) includes three items [103]. The hedonic value scale (hereafter HV) includes four items [104]. PMB, ELOY, and HV scales were measured using a five-point Likert scale (1 is totally disagree, 5 is totally agree). This research employed a five-point Likert scale instead of a seven-point one for two reasons. The first was an online poll, which people could fill out in a few minutes while waiting for the bus or at their desks. The second factor is that the five-point Likert scale is quite common in Vietnam. The scale of anxiety (hereafter ANX) included six items, such as worry, stress, fear, difficulty, distraction, and disinterest [105], which were measured by the five-point scale (0—none; 1—low; 2—moderate; 3—high; 4—very high). The anxiety measurement scales (Appendix A), which were adapted from Khoa and Nguyen [55], are the psychological symptom; hence, they begin with “0” (zero value).

4. Results

Using Cronbach’s alpha (hereafter CA), this study determines whether the scale is credible; a CA of 0.7 or above indicates a credible scale. Table 2 shows that on the scale of ELOY, the lowest possible CA is 0.792, and the lowest possible composite reliability (hereafter CR) is 0.882 (scale of PMB). This means that the study scales may be relied upon to accurately measure the constructions of interest.

Table 2. Reliability and validity test result.

Construct	CA	CR	AVE	Outer Loading	VIF Value		HTMT Value		
					HV	ELOY	ANX	ELOY	HV
ANX	0.933	0.946	0.746	0.773–0.958					
ELOY	0.792	0.878	0.71	0.786–0.876			0.224		
HV	0.893	0.922	0.75	0.775–0.910		1.416	0.140	0.456	
PMB	0.83	0.882	0.65	0.730–0.891	1.213	1.492	0.507	0.643	0.428

When the CR of a scale is at least 0.7, the average variance extracted (hereafter AVE) value is at least 0.5, and outer loadings of the items in the construct are at least 0.708, then the scale may be said to have convergent validity. Outer loadings for four items ranged from 0.775 to 0.910; CR for PMB was 0.882; CR for ANX was 0.946; CR for AVE for ANX was 0.746; CR for CR for ANX was 0.882; CR for AVE for CR for ANX was 0.746; and CR

for CR for AVE for CR for ANX was 0.882 (Table 2). Thus, all study constructs attained convergent validity.

To evaluate the discriminant validity of two constructs, researchers have begun to use the Heterotrait–Monotrait correlation ratio (henceforth HTMT). HTMT has a cutoff of 0.850. Because the highest HTMT value in Table 2 is 0.643, which is lower than the cutoff value of 0.850, it is easy to say that all of the constructs in this research have discriminant validity.

This is known as collinearity when two or more seemingly unrelated factors are shown to be highly correlated. Due to the regression model’s skewness brought on by the collinearity phenomena, quantitative analysis will no longer provide any insight. When evaluating collinearity, the variance inflation factor (VIF) is used. No collinearity exists if the VIF value is less than three. No collinearity was found since the greatest VIF was 1.492, as shown in Table 2.

According to F. Hair et al. [106], partial least squares structural equation modeling (PLS-SEM) research publications have expanded substantially in recent years. Because PLS-SEM outperforms CB-SEM (covariance-based structural equation modeling) in several important ways, it is increasingly being used in fields including organizational behavior, information system management, strategic management, and marketing research. Using complex research models with many moderators, mediators, latent and observed variables, in particular, structural equation models; analyzing reflective measurement models and formative measurement models simultaneously; being fit for predisposition-oriented studies; accepting small sample size and nonnormal distribution. The PLS-SEM model was assessed using the bootstrapping technique, with an initial sample size of 485 and 5000 random subsamples. The results indicated that hypotheses 1, 2, and 3 (H1, H2, and H3) were supported with a 99 percent confidence level (p -value = 0.000 < 0.001).

R^2 is an essential indicator in evaluating the degree of interpretation of the independent variable to the dependent variable and is called the determination coefficient. An R^2 value of 0.2 is considered high [107]. Accordingly, the result pointed out that the R^2 value of HV was 0.231, reflecting the low level of interpretation of PMB to HV, but it could be acceptable. PMB and HV explained a moderate ELOY change. The effect size f^2 is used to consider the effect of exogenous variables on endogenous variables. The impact level is weak, moderate, and strong when f^2 is at 0.02, 0.15, and 0.35, respectively. Table 3 shows that the effect size of the relationship between PMB and HV was moderate ($f^2 = 0.222$). In addition, PMB had a strong effect on ELOY ($f^2 = 0.395$), and HV was affected weakly on ELOY ($f^2 = 0.026$). Q^2 denotes the prediction level through the blindfolding technique, and Q^2 indicates the explanatory power and predictability of the endogenous latent variable. If the value of Q^2 is higher than 0, a model has predictive relevance. In Table 3, the values of Q^2 confirmed the predictive relevance when all Q^2 is greater than 0 ($Q^2_{HV} = 0.134$, and $Q^2_{ELOY} = 0.308$).

Table 3. PLS-SEM result.

Relationship	β	STDEV	p Values	Result
PMB -> ELOY	0.554	0.040	0.000	Supported
HV -> ELOY	0.138	0.033	0.000	Supported
PMB -> HV	0.455	0.042	0.000	Supported
PMB -> HV -> ELOY	0.063	0.016	0.000	

$R^2_{HV} = 0.231, R^2_{ELOY} = 0.479$
 $f^2_{PMB \rightarrow HV} = 0.222; f^2_{HV \rightarrow ELOY} = 0.026; f^2_{PMB \rightarrow ELOY} = 0.395$
 $Q^2_{HV} = 0.134, Q^2_{ELOY} = 0.308$

Note: STDEV: standard deviation.

Hedonic value was also confirmed to play a partial moderator between perceived mental benefit and electronic loyalty when satisfying the criteria, including (1) PMB had a significant impact on HV ($\beta = 0.455, p$ -value = 0.000), (2) HV had a significant impact on ELOY ($\beta = 0.138, p$ -value = 0.000), (3) PMB impact significantly on ELOY ($\beta = 0.554,$

p -value = 0.000), and (4) the level of PMB’s impact on ELOY through HV was less the direct impact PMB on ELOY ($\beta = 0.063$, p -value = 0.000).

This study chose the two-stage approach to assess anxiety’s moderating because it is the most versatile [107]. Table 4 illustrates the moderating effect of anxiety on the relationship between perceived mental benefits, hedonic value, and electronic loyalty in e-commerce.

Table 4. The impact of anxiety on the relationship between perceived mental benefits, hedonic value, and electronic loyalty.

Relationship	Hypothesis	β	STDEV	p Values	Result
PMB*ELOY-> ELOY	H4	-0.303	0.043	0.000	Supported
HV*ELOY-> ELOY	H5	0.030	0.027	0.242	Reject
PMB*HV-> HV	H6	-0.176	0.057	0.002	Supported

Note: STDEV: standard deviation.

Table 4 pointed that the interaction term (PMB*ELOY) has the negative impact on ELOY (-0.303), whereas the simple effect of PMB on ELOY was 0.554, which is an average ANX effect. For higher ANX levels, by increasing by one standard deviation unit, the relationship between PMB and ELOY decreased to 0.268 (i.e., $0.554 - 0.303 = 0.251$). On the other hand, with lower ANX levels by decreased one standard deviation point, PMB and ELOY’s relationship became $0.554 + 0.303 = 0.857$. Moreover, the p -value of the path linking the interaction term and ELOY was 0.000, and H4 was supported with a confidence level of 99% (Table 4). Consequently, ANX was a moderator that negatively impacted the relationship between perceived mental benefits and electronic loyalty, as shown in Figure 2.

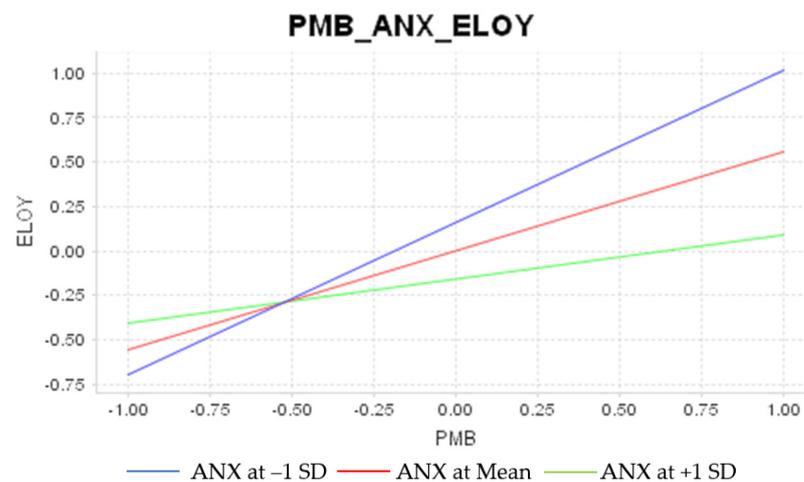


Figure 2. The moderator of anxiety in the relationship between perceived mental benefits and electronic loyalty.

The interaction term (HV*ELOY) positively impacts ELOY (+0.03) in Table 4, whereas the simple effect of HV on ELOY is 0.138, which is an average ANX effect. For higher ANX levels, by increasing by one standard deviation unit, the relationship between HV and ELOY decreased to 0.135 (i.e., $0.138 - 0.03$). Conversely, the relationship between HV and ELOY was 0.135 ($0.138 - 0.003$) for lower ANX levels by decreasing one standard deviation point. Following the result in Table 4, the p -value of the path linking the interaction term and HV was 0.242, which means H5 was rejected. Therefore, ANX was not a moderator in the relationship between hedonic value and electronic loyalty, as shown in Figure 3.

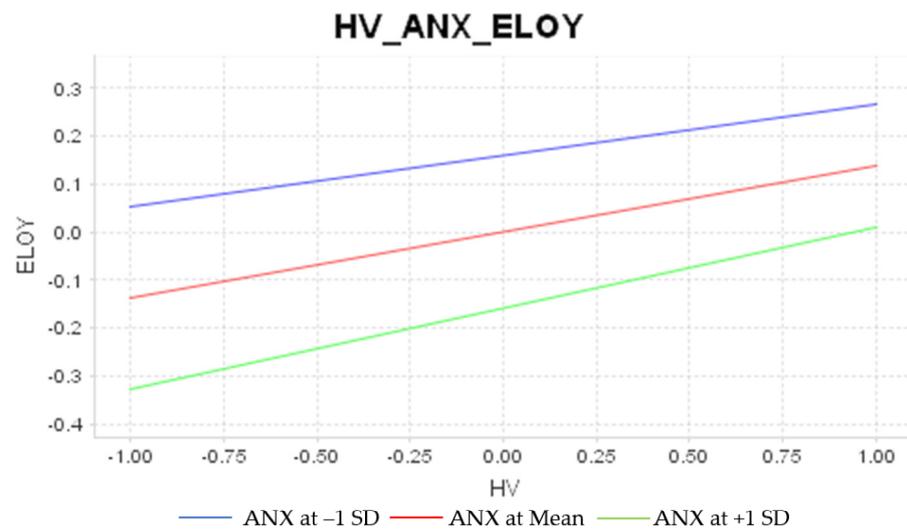


Figure 3. The moderator of anxiety in the relationship between hedonic value and electronic loyalty.

Table 4 pointed that the interaction term (PMB*HV) hurts HV (-0.176), whereas the simple effect of PMB on HV is 0.445 , which is an average level of the ANX effect. For higher levels of ANX, by increasing by one standard deviation unit, the relationship between PMB and HV decreased to 0.268 (i.e., $0.445 - 0.176 = 0.269$). On the other hand, by decreasing one standard deviation point for lower levels of ANX, the relationship between PMB and HV becomes $0.445 + 0.176 = 0.621$. The p-value of the path linking the interaction term and HV was 0.002 , and H6 was supported with a confidence level of 95% in Table 4. Hence, as a moderator, ANX negatively impacted the relationship between perceived mental benefits and hedonic value, as shown in Figure 4.

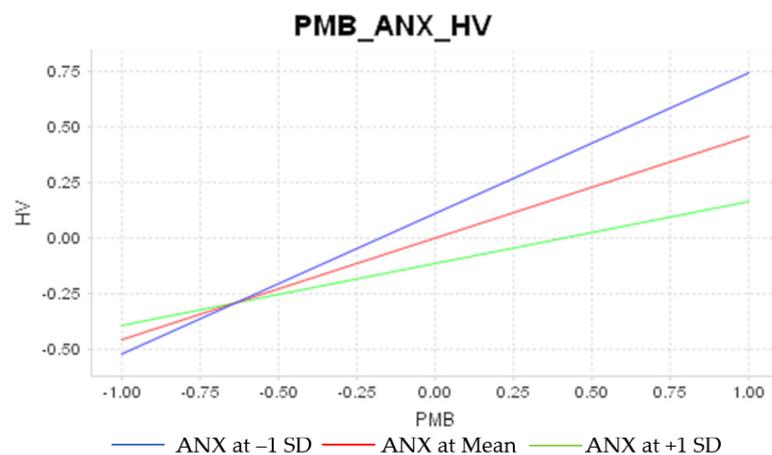


Figure 4. The moderator of anxiety in the relationship between perceived mental benefits and hedonic value.

5. Discussion

The research tested the relationship of variables in the study based on the SOR model of Mehrabian and Russell [39]. The research results confirm the SOR theory with perceived mental benefit, hedonic value, and electronic loyalty in the omnichannel platform context. This research was carried out in Vietnam, where the economy and consumer life will continue to thrive over the coming decade. Economic growth and consumer vitality will accelerate, setting a new benchmark for fast-growing economies and opening up incredible possibilities for business owners and investors. Before discussing the research results, this study summarized some contexts of Vietnam.

A large percentage of Vietnam's young population accounts for half of the country's population. Since economic reforms were implemented in 1986, Vietnam has gone from one of the world's poorest countries to a lower middle-income economy with rapid GDP growth per capita [108]. Due to this, more people can try out cutting-edge forms of shopping [109]. Forty percent of Vietnamese people use social media regularly, placing them eighth on a list of countries with the most Facebook users [110]. Of the total population, 70% now has access to the internet [111]. Little is known about omnichannels as a recreational activity in the nation yet [38], despite its globalization and the fact that individuals of all socioeconomic backgrounds participate in it. Most Vietnamese individuals have doubts about the authenticity of goods bought online, which makes them reluctant to make payments or shop from a new method such as an omnichannel in this manner.

Meanwhile, many companies have failed to earn consumers' confidence at a level that would prompt them to alter their buying patterns. However, after the COVID-19 pandemic, online shopping in Vietnam is to grow by 54% in 2020, thanks to the success of online shopping platforms that have increased their market share, transaction volume, and average order value [112]. Thus, with the aid of COVID, the channel has gained in popularity, trustworthiness, and current dependence among its target audience. Ninja Van Group and DPD Group conducted research in 2022 on cross-border e-commerce in six ASEAN nations and found that Vietnamese customers place an average of 104 annual online purchases, much more than their counterparts in Thailand (75 orders), Singapore, or the Philippines (58 orders each) [113]. There are typically only around 66 annual orders in other southeast Asian nations. However, there are some negative effects on the Vietnamese due to the uncertainty avoidance aspect; the mental health issues of sadness, anxiety, and personality disorders have all been linked to compulsive shopping, according to much research [114]. Hence, Vietnamese customers are easily persuaded by the benefit or value of omnichannel systems, which can make them loyal to a business. However, they also experience stress and anxiety from innovative technology as shopping.

Hypothesis H1 was accepted, meaning that the perceived mental benefit positively affects electronic loyalty ($\beta_1 = 0.554$, p -value = 0.000). Previous studies have also shown a relationship between benefits and customer loyalty. The benefits that business brings to customers are proven to be the premise of loyalty intention, word of mouth, and commitment to the organization. Adamson et al. [115], Friman et al. [116] demonstrated that benefits can increase commitment and customer loyalty. Customer loyalty and the commitment to purchase increases as it provides additional exclusive benefits to its customers [117,118]. Social and unique treatment benefits are essential in increasing customer commitment to the business [74,119]. As technology develops, the ability to customize products and services is a benefit that positively affects electronic customer loyalty. Ju Rebecca Yen and Gwinner [120] pointed out that loyalty increases when customers positively perceive a business's benefit. Customers shopping online in developing countries often appreciate the benefits that business brings. Therefore, the perceived mental benefits are essential in building electronic loyalty on an omnichannel platform. Recent studies have pointed out that the benefit of omnichannel platforms makes the customer disclose their personal information to improve the quality of the relationship [36].

This study showed that hedonic value positively affected electronic loyalty with a confidence level of 99%; hence, hypothesis H2 was accepted with $\beta_2 = 0.138$. These findings support Carpenter et al. [121], suggesting that hedonic shopping value significantly contributes to customer loyalty and word-of-mouth. The product value positively impacts satisfaction by increasing customer loyalty [122]. Customer loyalty is created by product value [123]. The utilitarian value affects customer satisfaction, but the hedonic value directly impacts loyalty to Airbnb's service [124]. Thus, in addition to utilitarian values, a business should provide customers with entertainment and enjoyment values when shopping on an omnichannel platform. The customer's best hedonic values were games or news on omnichannel systems, especially from the social media marketing activities of businesses [125–127].

Moreover, hypothesis H3 was also accepted ($\beta_3 = 0.455$, p -value = 0.000). Thereby, the perceived mental benefit positively affects hedonic value. The trade-off theory has shown that benefit and cost are two prerequisites of perceived value [118,128]. Hann et al. [129] also provide evidence that money is a financial benefit the business brings to its customers, leading to positive behavior. Sweeney and Soutar [130] defined value as a positive assessment of the benefits customers receive from the business. The hedonic value begins with mental benefits such as fun and enjoyment of transactions from the omnichannel platform; consequently, the more mental benefits are created, the more hedonic value is received.

Hypotheses H4 and H6 are supported, respectively, $\beta_4 = -0.303$, p -value = 0.000, and $\beta_6 = -0.176$, p -value = 0.002. Anxiety negatively moderates the perceived mental benefit of electronic loyalty and the impact on hedonic value [55]. The moderating effect on the relationship between PMB and ELOY is greater, meaning that the anxiety change leads to a large negative change in this relationship. Increased anxiety about an omnichannel platform reduces customers shopping on the site even though it benefits the customer. Vietnam is accustomed to media shopping with a “touch-and-see” mentality. Additionally, anxiety is also a factor that reduces online shopping value, although it has many benefits. Feeling enjoyment, social interaction, discreetness, and control cannot fill the risks when dealing online.

6. Conclusions

The omnichannel platform has received consumers’ attention due to the benefits surpassing traditional commerce. Purchasing omnichannel platform products or services brings enjoyment, social interaction, discreetness, and control; hence, the omnichannel system creates a hedonic value for consumers as they shop on an omnichannel platform. Simultaneously, these benefits and values create customers’ electronic loyalty to an omnichannel system. However, this study’s results also point out the adverse effects of anxiety on the relationship between benefits, loyalty, and hedonic value. Therefore, businesses need solutions to reduce customer anxiety to maintain customer preference, patronage, and premium for an omnichannel system. This research’s results have theoretical contributions and managerial implications for businesses.

6.1. Theoretical Contributions

This research’s results bring many theoretical contributions to consumer behavior or electronic commerce.

Firstly, instead of studying the general perceived benefits and the perceived value of consumers like previous studies [88,131,132], this study focused on building relationships between consumer psychology factors such as perceived mental benefits, hedonic value, and anxiety. The perceived mental benefits of online shopping included perceived enjoyment, perceived social interaction, perceived discreet shopping, and perceived control. The positive relationship between the research constructs in the omnichannel system context will contribute to further research in the same or different context as mobile commerce or social commerce.

Secondly, consumer anxiety symptoms are prevalent and are interested in psychological research; however, it has limited online consumer behavior science. Most studies have measured anxiety via technology anxiety (computer anxiety [18,133,134] or internet anxiety [19,20]), reflecting a part of anxiety. This research expanded anxiety as the psychological factor with six states of feeling based on Hamilton’s study: worry, stress, fear, difficulty, distraction, and disinterest. From this study’s result, customer anxiety in omnichannel systems can be measured as a novel and exact concept in marketing science.

Finally, the moderating role of anxiety symptoms in the relationship between research constructs is also an academic contribution. Very few studies evaluate anxiety as a moderator; for example, Yang and Forney [23] showed that technological anxiety moderates the impact of facilitating conditions on utilitarian and hedonic performance expectancy and the relationship between social influences and behavioral intention. In contrast, most previous

studies looked at the effects of anxiety as an independent variable, which harms some other concepts: perceived cognitive effort [135], perceived ease of use [136,137], patronage intentions [21], and behavioral intentions. This study demonstrated the moderating role of anxiety in the effect of perceived mental benefits on electronic loyalty and perceived mental benefits on hedonic value in omnichannel systems.

6.2. Managerial Implications

The positive impact of perceived mental benefits on hedonic value and electronic loyalty showed its importance; therefore, businesses need to focus on providing appropriate solutions to generate benefits related to mental benefits in the four aspects outlined in the research: enjoyment, social interaction, discreet shopping, and perceived control. Firstly, the omnichannel system should concentrate on image quality and instruction posts to make valuable information for customers' evaluation in the search stage. The gamification in mobile applications for special events needs to hold to create the customer's relaxation. Secondly, online businesses can increase customer social interaction through the customer forum or the customer feedback system. The omnichannel system should be added to the rating function of each product or service for customers. Privacy policies, as well as careful packaging, increase perceived discreet shopping. The information in the package is enough to ship the product or service. Finally, businesses can use cookies to collect online users' habits or establish retarget marketing strategies to enhance customers' perceived control.

Anxiety negatively affects the relationship between perceived mental benefits and electronic loyalty and between perceived mental benefits and hedonic value. Hence, the business should try to reduce the anxiety of buyers as some solutions below.

- (a) This study's first implication concerns customers' digital literacy, which, if inadequate, might stymie businesses' attempts to implement omnichannel strategies. Managers can educate consumers to increase their digital literacy, or they may make omnichannel experiences as straightforward as possible.
- (b) The features of the product are the subject of the second managerial implication. According to our findings, online shoppers may feel uneasy about purchasing perishable or delicate goods from a distant vendor. Thus, managers working with such products should aim to (1) provide the infrastructure to prevent the product from spoiling or breaking and (2) alleviate customers' anxiety related to such infrastructure by providing a transparent and comprehensive communication policy on delivery modes and return options. The refund and product/service return policies should be clear and published on the channels.
- (c) The tracking system should establish customers to check the transaction process; therefore, they will not worry about its goods/services. There is a strict collaboration between businesses and logistics companies to ensure on-time shipping. Furthermore, it is ideal for the shop to charge shipping when they promise a quicker delivery time, which may lessen customers' perceived uncertainty and boost satisfaction. This means that free delivery is not always preferable. Online stores that cannot send items quickly may choose to provide free delivery instead, which means they include the shipping cost in the item's price. This practice is thought to boost customer satisfaction and subsequent purchases.
- (d) The significance of a purchase affects online shopping hedonic value. When making a significant purchase, shoppers are more appreciative of expedited shipping. Customers may decide not to buy anything online because they feel it is too important to risk losing money. They are more inclined to buy key items in-store with visual and tactile contact. The door is now open for omnichannel merchants to provide "You may place an order and pick it up in store today" services. Customers may still buy the goods online; however, in certain cases, urgent orders can be fulfilled the same day or within a few days. This guarantees on-time delivery of essential goods to clients.

6.3. Limitations and Further Research

Despite great research efforts, some limitations still need to be improved in further studies. First, the conceptual model is tested in the field of omnichannel systems. It is more beneficial to replicate this study in another specific online area, such as mobile commerce and social commerce. Second, this study assessed the relationship between perceived mental benefit, hedonic value, and electronic loyalty. The following studies can increase research construct by adding utilitarian benefits and value. Finally, this study only examines the general effect of anxiety on the relationship in the model; however, there are different anxiety levels, so examining the moderating effects of anxiety levels is a concern.

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Appendix A Measurement Scales

Perceived Mental Benefits (PMB)

- I have had the pleasure of making my purchase using an omnichannel platform.
- When I purchase anything via an omnichannel system, it seems like I am engaging in some social engagement.
- I may purchase the goods or service in private with an omnichannel system.
- I feel in charge when I make a purchase using an omnichannel platform.

Hedonic value (HV)

- Concerning my budget, omnichannel shopping is a source of immense joy.
- I cannot complain about the price of what I get out of omnichannel shopping.
- When compared to traditional malls, omnichannel shopping provides me with more fun for my money.
- I find that omnichannel shopping is more convenient than traditional buying methods.

Electronic Loyalty (ELOY)

- My preference was communicated through an omnichannel platform, which was my top choice.
- I found engaging with others by enjoying and spreading the word about an omnichannel system exciting.
- Because of its superiority, however, my investment in an omnichannel platform has not been wasted.

Customer anxiety (ANX)

- I'm worry that the goods will not match the description on the omnichannel systems.
- When I order new things from the omnichannel systems, I am stressed.
- I fear that the omnichannel systems may misuse my data.
- Waiting for the stuff to come from omnichannel systems is preventing me from getting any rest.
- When I was waiting for the merchandise from omnichannel systems, I could not focus on my job.
- After receiving the incorrect item or waiting too long for its delivery, I stopped caring about omnichannel systems.

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