Journal of Posthumanism
2025
Volume: 5, No: 2, pp. 1183–1197
ISSN: 2634-3576 (Print) | ISSN 2634-3584 (Online)
posthumanism.co.uk

DOI: https://doi.org/10.63332/joph.v5i2.494

Perceived Social Presence and Online Purchase Intentions: Mediating Role of Perceived Safety, Perceived Risk, Trust

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Abstract

This study investigates the impact of perceived social presence on online purchase intention, focusing on the mediating roles of perceived safety, perceived risk, and trust. The theoretical foundation integrates the social presence theory, the theory of cognition, the rational action theory, and the technology acceptance model. A mixed-method approach was adopted, with qualitative research refining measurement scales and quantitative research validating the model through linear structural analysis of survey data from 239 online shoppers. The findings reveal that perceived social presence significantly influences purchase intention, with safety, risk, and trust playing confirmed mediating roles. The results underscore the importance of enhancing perceived social presence, safety, and risk management in online stores to foster trust and drive purchase intentions.

Keywords: *Perceived social presence; Perceived safety; Perceived risk; Purchase Intention; Trust.*

JEL: O33, M15, D85

Introduction

With the continuous advancement of technology, online stores are expected to continue to thrive in the future. Retailers are increasingly developing pure online stores, such as pure play or hybrid offline online stores, for example, click-and-mortar websites (Wright, 2015). Online stores offer customers the convenience of browsing and purchasing products from multiple retailers in one digital space, creating unique and engaging shopping experiences that are likely to shape future trends (Hendershott et al., 2001).

In Vietnam, the e-commerce sector has grown significantly. According to Kirin Capital's April 2024 report, "E-commerce Market - The Age of Shopping and Entertainment," 50% of Vietnamese shoppers preferred online shopping. Among these, 61% opted for e-commerce platforms, 55% used social networks like Facebook, Instagram, and Zalo, and 34% visited e-commerce websites. However, transactions in online stores often involve a higher level of uncertainty due to the lack of physical presence. This limited human interaction can lead to customer anxiety and reduced trust in virtual transactions, ultimately lowering purchase intentions (Shin, 2011).

This issue has attracted significant attention from researchers. Accordingly, many studies have found a connection between perceived social presence and trust in different circumstances, such as virtual collaboration groups (Lowry et al., 2007), through the intermediary of online avatars

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(Bente et al., 2008). However, there has been limited research on pure and diversified online stores in the context of a newly developed online retail market in Vietnam (Khan et al., 2012).

To address this gap, the study investigates the impacts of perceived social presence on purchase intention in online stores and the mediating roles of safety perceptions, perceived risk, and trust. The research findings provide practical insights for online stores to enhance customers' perceptions of social presence, safety, and risk, thereby establishing, strengthening, and developing trust and online purchase intentions (Jamil et al., 2024).

Theoretical Framework

This research was conducted based on the social presence theory, which refers to users' subjective experiences of presence when interacting through technical means. This also means creating a "feeling of being with the others" through intermediary communication. Biocca et al. (2003) claimed that social presence consists of three parts: (i) co-presence, (ii) psychological participation, and (iii) behavioral sharing. These elements are pivotal in understanding users' perceptions of presence when engaging with online shopping platforms. Cognitive theory is another crucial framework of this research. Cognitive theory argues that perceived risk refers to the subjective human Evaluation and perception of external objective risk. Situational responses to perceived risk are subjective psychological behaviors when perceiving risk. In decision-making, people are influenced by many factors, especially the perception of potential risks (Caserotti et al., 2021). This research deals with customers' behavior when shopping online, so rational action theory and technology acceptance model are also used as theoretical frameworks. Accordingly, rational action theory explains the relationship between human attitudes and behavior. An individual's decision about performing a particular behavior is based on the results that the person expects to achieve by performing the behavior (Ajzen & Fishbein, 1988). The technology acceptance model further extends this understanding by suggesting that individuals' decisions to adopt new technology are influenced by perceived usefulness and ease of use factors. Attitude toward an online store will affect their overall trust and affection for it when we apply this principle to the invisible world (Davis, 1989, citing Chuttur, 2009).

Literature Review and Hypotheses

Perceived Social Presence and Perceived Safety, Perceived Risk

Perceived social presence is conceptualized by Fulk et al. (1987) as the ability of a tool to allow consumers to interact with others psychologically and behaviorally, thereby helping users to perceive their perceptibility to others. To increase the perception of presence, companies often use real-time audio or visual channels for communication. A heightened social presence creates a feeling of closeness and psychological comfort, cultivating trust and security (Gefen & Straub, 2004).

Kietzmann et al. (2012) highlighted the positive relationship between social presence and cohesion. Thus, clients who experience social presence are more likely to have a positive perception of safety, which enhances emotional connection and trust (Hassanein & Head, 2005). Lee & Moon (2023) also believe that online shopping platforms adopting Voice Assistants can improve customers' perceived social presence while reducing their perceived risk.

Trust, in turn, tends to have the opposite effect on perceived risk. Accordingly, when social media is stimulated, customers will likely trust the service and feel less uncertain about purchase outcomes (Wright, 2015). Therefore, as online stores surge their ability to transmit personal

presence through the key features of the interactive edge, this will create a sense of friendliness and psychological warmness, thereby boosting trust and minimizing risk. Based on these perspectives, the following hypotheses are proposed:

H1: Perceived social presence when interacting with an online store has a favorable impact on safety perceptions.

H2: Perceived social presence when interacting with an online store has a negative impact on perceived risk.

Perceived Social Presence and Purchase Intention

The concept of perceived social presence refers to the sense of "being with others ."It reflects how much attention is drawn to a person's presence. Perceived social presence can arise from conversing with others or from interacting through online technology (Heeter, 1992). Perceived social presence conveys human warmth, forms trust, and encourages emotionalism purchasing motive rather than pragmatism. In other words, conveying a social presence through an online interface stimulates a more pleasant shopping experience (Hassanein & Head, 2005; Lee & Moon, 2023). Based on these arguments, the following hypothesis is proposed:

H3: Perceived social presence when interacting with an online store positively impacts customer purchase intention.

Perceived Safety and Trust

Perceived safety is defined as the user's perception of the security of services when conducting transactions and maintaining user privacy (Kapoor et al., 2020). It is shaped by the user's knowledge of information technology applications and the perception of the customer's ability to control the situation (Huang et al., 2011). Once customers have a strong knowledge of information technology and controlled perception, their perceived safety will also be firm. Furthermore, perceived safety is also thought to be a result of the cognitive process when users complete an assessment of the security process of the service (Lim et al., 2019). This cognitive process leads to the users' trust that the service provides a secure system (Gupta et al., 2020). When customers believe in services, their uncertainty about purchase outcomes diminishes (Jarvenpaa et al., 2000; Wright, 2015). This sense of certainty and positive trust will influence the customers' emotional response and purchase intention to the service (Chellappa & Pavlou, 2002; Lim et al., 2019). On the other hand, perceived risks in online shopping, such as financial risk, time risk, social risk (retailer reputation), etc, negatively impact customers' purchase intentions (Pentz et al., 2020). Based on these arguments, the following hypothesis is proposed:

H4: Perceived safety when interacting with an online store positively impacts customers' trust.

Perceived Risk and Purchase Intention

The concept of perceived risk was originally theorized by Bauer (1960), which actually means a sense of uncertainty about an unexpected purchase result. Additionally, Bauer (1967) argues that perceived risk is an undesirable upshot a consumer anticipates based on the current action. During the purchase process, patrons will face many different risks; some may be perceived by themselves, some may not, some may be exaggerated, and some may be understated (Bettman, 1973). Perceived risk consists of uncertainty about the consequences of a wrong choice and uncertainty about the result (Mitchell, 1999). Some studies have examined perceived risks and how they affect customer behavior. Miyazaki and Fernandez (2001) assume that the online

purchase rate is negatively connected with the perceived risk of online purchases. Many quantitative studies based on the technology acceptance model (TAM) have shown that the perception of usefulness, the perceived ease of use, and perceived risk all have a significant relationship with consumer attitudes, which have a major effect on the intention to use (Lim, 2014).

According to Pillai et al. (2022), three factors influence consumer attitudes and purchase intentions: perceived benefits, perceived risks, and persuasive elements of the online store. Perceived benefits include convenience, trust, order accuracy, and various possibilities. Perceived risks include psychological risk, financial risk, and merchandise risk. Also, the persuasion of the online store entails visual attraction, social media presence, and connection.

Normally, consumers prefer to review the risks of shopping online first, before proceeding to build trust in online shopping platforms. If this trust is verified, it will create a halo effect that directly influences customers' purchase intention (Martínez-López et al., 2021). In short, perceived risk is an essential issue influencing consumers' online shopping decisions. Therefore, perceived risk is believed to have a negative effect on confidence and purchase intention. Nevertheless, the effect range may vary depending on the online store's level of shopping. When consumers frequently shop online, perceived risk will not distress their trust and purchase intention as much as when they shop less online (Wright, 2015). According to previous studies, this research hypothesizes that perceived risk has a negative impact on customers' trust and purchase intention. Based on these arguments, the following hypothesis is proposed:

H5: Perceived risk when interacting with an online store has a conflicting impact on customers' purchase intention.

Trust and Purchase Intention

Trust is an important factor for customers who shop online (Keen et al., 1999). It diminishes the feeling of uncertainty that grows when the shoppers are unfamiliar with the store, the owner, and the quality of the product or other sales packages. Trust leads to a willingness to take risks and a stronger impulse for purchase intention (Jarvenpaa et al., 2000). The Technology Acceptance Model (TAM) assumes that the user's attitude toward engaging with the technology determines the intention to use a new technology item. Applying this principle to online shopping, trust in online shopping affects the overall customers' feeling towards that online store (Koufaris, 2002; Papadopoulou, 2007). Significantly, images of online stores will influence customers' perceived risks, such as financial risks, merchandise quality, privacy, etc. Building a professional, modern online store image can help mitigate customers' perceived risk, ultimately encouraging positive purchasing behaviors (Hong et al., 2020). Based on these insights, the following hypothesis is proposed:

H6: Trust when interacting with an online store has a favorable impact on customers' purchase intention.

The Role Mediating Effects of Perceived Safety, Perceived Risk, and Trust

Perceived social presence plays a crucial role in shaping online purchase intentions, mainly through its mediating influence on perceived safety and trust. According to Kim and Song (2020), when consumers feel a more substantial social presence in an online shopping environment—such as through interactive elements like live chats, customer reviews, or personalized recommendations—they experience a greater sense of social connection and

comfort. This feeling of presence reduces uncertainty and increases their perception of safety, as they are more likely to trust the platform's reliability and transparency (Gefen, 2000). As trust in the platform grows, so does the perception of security, which directly influences the intention to purchase. Jarvenpaa et.al (2000) emphasize that consumers' trust in e-commerce sites is critical for their willingness to engage in transactions, as trust acts as a foundational element of their decision-making process. This interaction between social presence, security, and trust demonstrates how a well-designed online shopping environment can enhance purchase intentions by fostering a sense of safety and reliability. Thus, e-commerce platforms that actively cultivate social presence can significantly influence consumer behavior, increasing the likelihood of successful transactions. Based on these arguments, the following hypothesis is proposed:

H7a: Perceived social presence when interacting with an online store positively impacts customers' purchase intention through the mediation of perceived safety and trust.

H7b: Perceived safety when interacting with an online store positively impacts customers' purchase intention through the mediation of trust.

H7c: Perceived social presence when interacting with an online store positively impacts trust through the mediation of perceived safety

Perceived social presence significantly affects online purchase intention, mainly through its mediating role in perceived risk. Social presence refers to the degree to which a website or online platform makes consumers feel that they are interacting with real people rather than just a machine (Wang & Benbasat, 2007). This can be achieved through elements such as customer reviews, live chats, and personalized recommendations, all of which enhance the user's sense of engagement and connection with the platform (Kim & Song, 2020). Such interactions can reduce the uncertainty and anxiety often associated with online shopping, thus lowering perceived risk. According to Jarvenpaa et al. (2000), consumers are more likely to trust online stores that exhibit signs of social presence, as these cues offer reassurance about the store's reliability and credibility. As perceived risk diminishes, consumers are more confident in their purchase decisions (Pavlou, 2003). Moreover, perceived social presence can increase the sense of safety, further strengthening trust and lowering perceived risk (Gefen, 2000). Consequently, perceived social presence not only directly influences purchase intentions but also indirectly does so by reducing the perceived risk involved in online transactions. Based on these arguments, the following hypothesis is proposed:

H8: Perceived social presence when interacting with an online store positively impacts customers' purchase intention through the mediation of perceived risk.

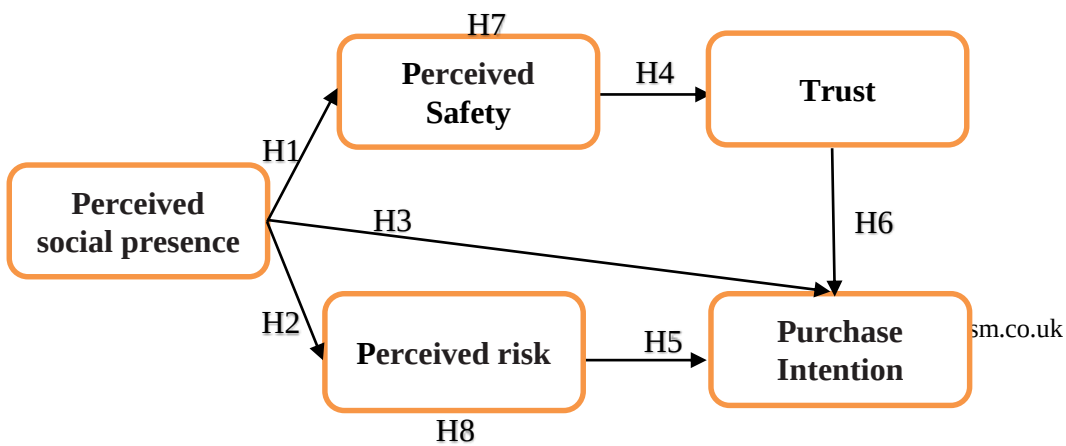

Figure 1: Research Model

Methodology

This research was conducted using a combination of preliminary qualitative and quantitative research methods. Although most of the scales are already available, a preliminary qualitative research step is believed essential to adjust the scale to research in Vietnam. This preliminary qualitative research is conducted using one-on-one interviews and group discussions to refine, complete, and finalize the elements of the research conceptual scale.

The process of revising previous studies helps to form a scale of research modules. Respectively, the scale of perceived social presence (PSP) is shaped from the scale of Gefen and Straub (2004), Yeh et al. (2011), and Dash & Saji (2007) with 7 observational variables. The perceived safety scale (PS) is inherited from the study of Yenisey et al. (2005), Pavlou et al. (2002), and Dash & Saji (2007) with five observational variables. The perceived risk scale (PR) consists of 4 observational variables inherited from the scale in the research of Swaminathan et al. (1999) and Pavlou et al. (2002). The trust scale is stated through 3 modules: the research of Cyr et al. (2007), Dash & Saji (2007), and Shin & Shin (2011). Lastly, the purchase intention scale, with 3 observational variables, is inherited from Zhang et al. (2012)' research. After being designed, the draft scale will be used for the expert discussion process in the one-on-one interviews and group discussions to add or adjust the scales when necessary. Experts in the online business field are invited to participate in the discussion.

Based on the preliminary qualitative research results, a scale is shaped for quantitative purposes. The sample size in quantitative research was defined according to the research of Bolen (1989), with a minimum ratio of 5 observations per estimated parameter (5:1 ratio). Non-statistical sampling is carried out through random selection of potential customer development. In addition, online and offline surveys are applied to gather reviews from customers. Moreover, the collected data is cleaned in order to measure model evaluation through internal essential consistency reliability review (Cronbach Alpha coefficient, Composite Reliability), convergence value (load factor, AVE), and differential value (HTMT coefficient) (Hair et al., 2017). After being evaluated, the scales would be the foundation for further structural model analysis. The structural model is considered appropriate if there is no correlation between the independent variables. Therefore, multicollinearity analysis is applied at this stage. Simultaneously, the hypothesized relationships in the research model are examined to assess their significance levels. Specifically, the model fit is evaluated based on the R^2 and adjusted R^2 indices. Additionally, the effect size coefficient f^2 is calculated to analyze the impact of each independent variable on the dependent variable. At the same time, the predictive relevance of a dependent construct is assessed through the examination of the Q2 predictive coefficient.

Results and Discussion

Qualitative Research Results

The results of the expert interviews conducted to refine the measurement scales for the research concepts indicate that the observational variables were adjusted to align semantically with the current research context. The perceived social presence scale (PSP) with 7 observational variables, which was inherited from the research of Gefen & Straub (2004), Yeh et al. (2011),

and Dash & Saji (2007), remains unchanged. The observational variables describe social presence, including perceptions of interpersonal connections, perceived social comfort, personalization, sensitivity, friendliness, and familiarity. For the perceived safety scale (PS), in addition to the five observational variables that encompass components of perceived safety, such as feelings of reassurance when accessing online platforms, perceived safety in transactions, perceptions of the ability to avoid security concerns, perceived safety in providing personal information during shopping, and perceived safety in transactions against potential intruders. Two new items have been added: perceived safety due to the application of advanced technology and security in payments.

The perceived risk scale (PR) was adapted from Swaminathan et al. (1999) and Pavlou et al. (2002), which includes four observational variables such as perceptions of risks in online shopping, uncertainty, danger, and barriers related to sensitive information safety, with the phrasing adjusted for clarity. Regarding the trust scale (TR), in addition to the 3 components proposed by Dash & Saji (2007) and Shin & Shin (2011), four observational variables have been added: trust in error-free transactions, trust in transparency, trust in the online store safety efforts and trust in the commitment fulfillment of online stores. Finally, the purchase intention scale (PI), based on the research of Zhang et al. (2012) with its 3 primary components - intention to use the online store, intention to use it more, and intention to recommend it to others, which then will be accompanied with one new observational variable to assess the intention to use the online store primarily for shopping. The results of the qualitative research, with five scales and 29 observational variables, will be incorporated into the quantitative research.

Quantitative Research Results

Respondent Information

With 29 observational variables, the sample size for the quantitative research, as determined by Bolen (1989), should be at least 145. According to the experience of Hair et al. (2021), a sample size of 250 or more provides relatively good results for PLS-SEM analysis. Based on this, the study selected a sample size of 250. The survey participants were a group of customers who had engaged in online shopping transactions in Ho Chi Minh City. The communication channels with the participants included email, in-person, and online methods. The survey results yielded 239 valid responses. The sample was relatively balanced in terms of gender, with 52.7% female and 47.3% male respondents. In terms of employment, the respondents included office workers (35.1%), business and sales professionals (27.6%), homemakers (10.9%), and students (13.8%), respectively, with the remaining respondents employed in other professions. In terms of online shopping methods, the majority of customers predominantly used purely online stores (51%), while a significant portion engaged with hybrid online-offline stores (49%).

Evaluation of the measurement model

To evaluate the reliability of the indicators, the outer loadings must be greater than or equal to 0.78 (Hair et al., 2017). Accordingly, two observational variables, PSP3 and PS4, with outer loadings of 0.455 and 0.449 respectively, were excluded from the scale. In terms of the reliability of the measurement scale, Cronbach's Alpha and Composite Reliability (CR) values for all scales were above 0.7, indicating good reliability. Additionally, all scales' Average Variance Extracted (AVE) values exceeded 0.5, demonstrating adequate convergent validity (Table 1). To evaluate the scales' discriminant validity, the AVE's square root was examined. The results indicated that this value was more significant than the correlations between the latent variables, and all HTMT

values were below the 0.9 threshold, satisfying the requirement for good discriminant validity and confirming that the constructs are distinct. The results of the measurement model testing indicate that the instrument achieved satisfactory reliability and construct validity levels. Consequently, the structural model analysis will use 27 observational variables that met the established criteria.

Table 1: *Reliability and Convergence Validity*

Constructs	**Items**	**Outer Loadings**	**Cronbach's Alpha**	**CR**	**AVE**
		>0,7	0,6-0,9	>0,7	>0,5
PSP	PSP1	0.828	0.883	0.884	0.631
	PSP2	0.779			
	PSP4	0.819			
	PSP5	0.763			
	PSP6	0.763			
	PSP7	0.81			
PS	PS1	0.819	0.898	0.899	0.662
	PS2	0.795			
	PS3	0.794			
	PS5	0.85			
	PS6	0.848			
	PS7	0.774			
PR	PR1	0.835	0.839	0.844	0.675
	PR2	0.867			
	PR3	0.76			
	PR4	0.821			
TR	TR1	0.827	0.894	0.895	0.612
	TR2	0.808			
	TR3	0.734			
	TR4	0.784			
	TR5	0.789			
	TR6	0.815			
	TR7	0.713			
PI	PI1	0.857	0.868	0.871	0.716
	PI2	0.861			
	PI3	0.844			
	PI4	0.823			

Source: Authors' calculations

Evaluation of the structural model

The structural model is considered acceptable if there is no occurrence of multicollinearity. Therefore, the Variance Inflation Factor (VIF) was examined. With VIF values ranging from 1 to 2.883, all being less than 5, there is no evidence of multicollinearity in the model (Hair et al., 2011). Bootstrap with 5000 samples was used to assess the effects within the model. The results

indicate that all effects are significant, as the p-values for the t-tests are all below 0.05 (Table 2).

Table 2: *Hypotheses Testing Results*

Hypotheses	**relationships**	**Path Coefficients**	**P-value**	**Results**
H1	PSP -> PS	0.659	0.000	Supported
H2	PSP -> PR	-0.69	0.000	Supported
H3	PSP -> PI	0.639	0.000	Supported
H4	PS -> TR	0.729	0.000	Supported
H6	PR -> PI	-0.309	0.000	Supported
H6	TR -> PI	0.316	0.000	Supported
H7a	PSP -> PS -> TR -> PI	0.152	0.000	Supported
H7b	PS -> TR -> PI	0.23	0.000	Supported
H7c	PSP -> PS -> TR	0.48	0.000	Supported
H8	PSP -> PR -> PI	0.213	0.000	Supported

Source: Authors' calculations

The model's fit was assessed using the adjusted R^2 value. Table 3 presents the R-square (R^2) and adjusted R-square (R^2 adjusted) values for four constructs in the model, providing insight into how well the independent variables explain the variance in the dependent variables. For the Purchase intention (PI), the R^2 value of 0.656 indicates that approximately 65.6% of the variance in purchase intention is explained by the independent variables in the model, with an adjusted R^2 of 0.651 suggesting that the model remains robust after accounting for the number of predictors. This suggests a strong explanatory power for PI. For Perceived Risk (PR), the R^2 value of 0.476 means that the model explains 47.6% of the variance in perceived risk. At the same time, the adjusted R^2 of 0.473 reflects a modest fit, showing that the model is still reasonable despite the lower explanatory power compared to PI. Similarly, Perceived Safety (PS), with an R^2 of 0.434 and an adjusted R^2 of 0.432, indicates that the model explains about 43.4% of the variance in perceived safety, again with a moderate fit. Finally, Trust (TR), with an R^2 value of 0.531 and an adjusted R^2 of 0.529, shows a moderate explanatory power, meaning that the independent variables moderately explain trust. Overall, the small differences between R^2 and adjusted R^2 values across the constructs suggest that the model is well-specified, and the predictors are appropriate in explaining the variance in each dependent variable.

Table 3: *The R-square and adjusted R-square*

	R-square	R-square adjusted
PI	0.656	0.651
PR	0.476	0.473
PS	0.434	0.432

TR	0.531	0.529

Source: Authors' calculations

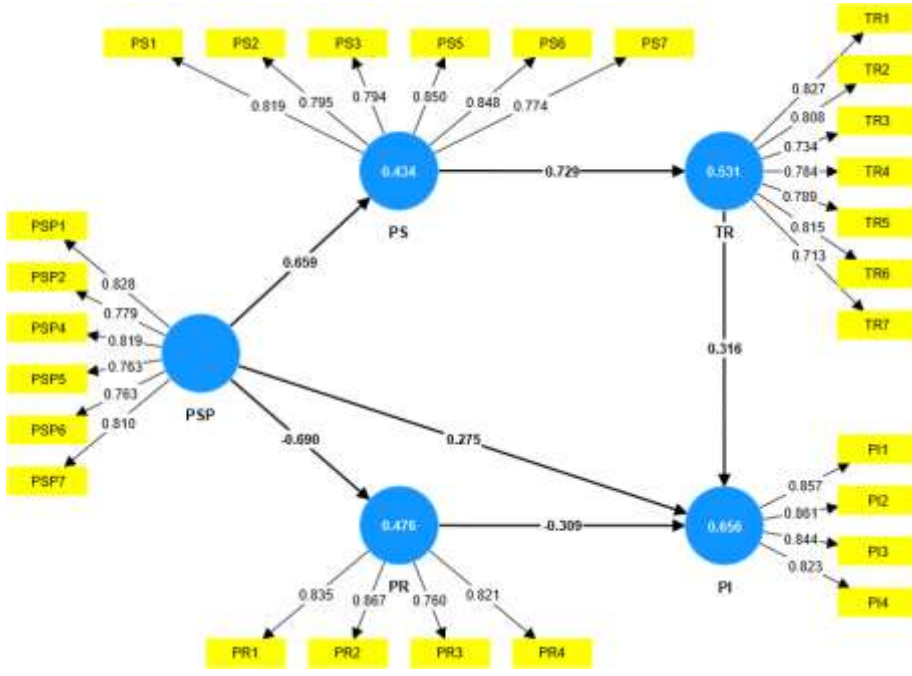

Figure 2: Path Model Result

Source: Authors' Calculations

The f^2 coefficient was used in this research to assess the effect size of each independent variable on the dependent variables. The results in Table 4 indicate that PSP is strongly influenced by both PR and PS ($f^2 > 0.35$), suggesting that higher levels of perceived risk and safety enhance the perception of social presence in online shopping environments. PI is positively influenced by PSP (0.085) and PR (0.122), though these effects are relatively weak. Additionally, TR has a small positive effect on PI (0.107), indicating that trust plays a role in influencing purchase intention but with a lesser impact compared to other factors. The table shows that perceived social presence plays a central role in the model, primarily shaped by perceived risk and safety.

Table 4: *The f^2 Coefficients*

	PI	PR	PS	PSP	TR
PI					
PR	0.122				
PS					0.131
PSP	0.085	0.907	0.767		
TR	0.107				

Source: Authors' Calculations

Stone (1974) and Geisser (1974) proposed the Q^2 statistic to measure the model's predictive ability. This statistic assesses the out-of-sample predictive power. According to this measurement, the predictive power of the independent variables on each dependent variable—PI, PR, PS, and TR—is in the range of 0.25 to 0.5. This indicates that the model's predictive accuracy is at a moderate level.

Table 5: *The Q^2 Coefficients*

	SSO	SSE	Q^2 (=1-SSE/SSO)
PI	956	517.151	0.459
PR	956	653.438	0.316
PS	1434	1029.545	0.282
PSP	1434	1434	0
TR	1673	1140.322	0.318

Source: Authors' calculations

Discussions

The structural model analysis reveals that the perceived social presence when interacting with online stores has a favorable impact on perceived safety, trust, and customers' purchase intention. An online store with various modes and communication channels, capable of conveying a sense of not being alone to customers, will increase perceived social presence. Therefore, customers are expected to have a favorable perceived safety and strengthen trust in the online store. This finding relates to previous research by Hassanein and Head (2005) and Kietzmann et al. (2012). Additionally, the social presence perceived when interacting with online stores is shown to have a conflicting impact on perceived risk, which aligns with the results of Wright (2015) and Lee and Moon (2023).

Customers frequently depend on the information provided by retailers on their websites to make purchasing decisions. When this information is perceived as valuable, it helps alleviate personal uncertainty and anxiety, thereby fostering trust in the online stores. Consequently, customers are more likely to place their trust in the sellers.

Moreover, the structural model analysis indicates that when customers perceive safety during interactions with online stores, their anxiety about risks decreases, thereby enhancing trust and purchase intention. This finding supports the studies of Wright (2015), Gupta et al. (2020), and Pentz et al. (2020), among others. On the contrary, when customers perceive risk in their interactions with online stores, their trust and purchase intention significantly decline. This finding is similar to Miyazaki and Fernandez's (2001) and Lim's (2014) research.

Finally, customer trust in online stores is identified as a crucial factor in driving purchase intention. Once online stores are equipped with professional images and adopt voice assistants, customers will trust these stores. This result aligns with earlier studies by Koufaris (2002), Papadopoulou (2007), and Hong et al. (2020).

The research findings also reveal the mediating roles of perceived safety, perceived risk, and trust in the relationship between perceived social presence and online purchase intention. These results also support several previous studies. Gefen (2000) and Kim and Song (2020) emphasized that social presence elements, such as interactive features and human-like

communication, enhance trust by fostering a sense of safety and reliability. Similarly, Gefen et al. (2003) highlighted trust as a critical mediator in reducing uncertainty and encouraging online purchase intention. Additionally, the impact of perceived social presence on purchase intention through perceived risk has been supported by Pavlou (2003), who identified perceived risk as a significant barrier to online transactions and demonstrated that reducing perceived risk positively influences purchase behaviors. These consistencies underscore the robustness of the model, confirming that perceived safety, trust, and reduced risk are crucial mechanisms through which social presence influences online shopping intentions.

Conclusion and Managerial Implications

This research indicates that when customers clearly perceive social presence during interactions with any type of online store, it enhances their perceived safety in online transactions, as well as their trust and purchase intention. Conversely, the impact of perceived social presence on interactions with online stores has been shown to have a conflicting impact on perceived risk. This suggests that sellers must invest in developing and sustaining strategies that will enhance their customers' purchase intention.

Online stores should focus on increasing customers' perception of social presence during interactions. Implementing personalized shopping experiences, such as personalized product recommendations and tailored communication, can further strengthen this sense of social presence. This personalized approach helps customers feel more connected to the online store, fostering security and trust. Interfaces and interaction methods in online shopping should be designed to convey a sense of warmth and connection among people. In particular, the online interaction process needs to be personalized to provide a sense of attentiveness, friendliness, and familiarity; develop personalized interaction features such as live chat, personalized recommendations, and customer support that foster a sense of connection and attentiveness. Moreover, online stores should design website interfaces and communication methods to create a warm, engaging, and socially interactive environment. This can include virtual assistants, customer forums, and interactive product displays. Furthermore, online stores should implement virtual and augmented reality technologies to simulate real-life interactions, offering a more immersive and engaging shopping experience.

Once strengthened by the perception of social presence, perceived safety will be reinforced. This helps reduce concerns and anxieties about risks in online transactions and promotes trust and purchase intention. Consequently, online stores should emphasize the use of technology and develop, implement, and strictly control transaction processes to ensure protection against risks such as account breaches, unauthorized use, data theft, and privacy violations. Online stores should invest in advanced security technologies and practices to protect customer data and transactions. This includes encryption, secure payment gateways, and regular security audits, ensuring that privacy policies and terms of service are easily accessible and understandable.

Limitations and Further Research

This study has made a valuable contribution to the literature on online shopping behaviors; however, it also has several limitations that highlight opportunities for future research. First, the sample consisted of customers who shop both online and in-store within the general retail environment of Ho Chi Minh City. The use of convenience sampling and the relatively small sample size may limit the generalizability of the findings, particularly in contexts outside of emerging retail markets. Future research should examine customer behaviors in more established

retail environments across different countries and cultures to provide broader insights and validate the findings on customer buying behaviors. Furthermore, the study's cross-sectional design limits the ability to establish causal relationships. Therefore, future studies should consider employing a longitudinal design and mixed-method approaches to explore the effects of social presence on various behavioral variables, with a particular focus on mediating factors such as commitment and trust. Additionally, future research could compare hedonic and utilitarian purchase intentions across different types of online stores.

Funding: This research is partly funded by University of Finance - Marketing

Institutional Review Board Statement: The Ethical Committee of University of Finance - Marketing, Ho Chi Minh City, Vietnam has approved this study on 06 March 2025 (Ref. No. 473/QĐ-ĐHTCM-QLKHHTQT).

Transparency: The authors state that the manuscript is honest, truthful, and transparent. No critical aspects of the investigation have been omitted, and any differences from the study as planned have been clarified. This study followed all writing ethics. Informed consent was obtained from all subjects involved in the study.

The data presented in this study are available on request from the corresponding author.

The authors reported no potential conflict of interest.

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