Research Paper   **Open Access**

Analyzing of consumers' onlineshopping behavior in social commerce: Vietnam perspectives

Nguyen Hoang Long
[1]*Faculty of Business Administration, Ho Chi Minh City University of Foreign Languages-Information Technology, HUFLIT, Vietnam*

ABSTRACT : *The purpose of this study is to investigate the internal and external influences affecting online shopping trends on social commerce today. Analysing those factors through the following 4 variables, which are "hedonic shopping motivation", "utilitarian shopping motivation", "ethical shopping motivation" and "social media". PLS-SEM method was used to analyse data collected from online surveys in Ho Chi Minh City to evaluate research hypotheses. An online questionnaire was distributed to people between the ages of 18 and 30, of which 304 were valid responses. The results of this study show that the issue of intrinsic and extrinsic motivation has a positive relationship affecting customer actual intention. The findings also reveal that e-satisfaction is a sufficient mediator between online purchase behaviour and actual intention. This research also sheds light on current customers' online purchasing factors that interest them and provides value management recommendations for customers and e-businesses. The findings in this study will help e-businesses think more realistically about the values that online shopping consumers care about through the above-mentioned attributes. The results show that the combination of the above factors makes customers ready to actual.*

Keywords –*ethical shopping motivation, hedonic shopping motivation, social commerce, PLS-SEM, Vietnam*

I. INTRODUCTION

Online shopping is booming quickly as a result of the Internet's continued development. In recent decades, online buying has been a popular trend all around the world [1]. E-businesses have seized this chance and encouraged commercial operations on social commerce after realizing that e-commerce is a wonderful way to support businesses in connecting and maintaining engagement with clients. Simply put, social commerce is a type of commerce that blends social media with e-commerce shopping; it involves using social networking sites like Facebook, Instagram, and others to advertise and directly sell goods and services [2]. Business rivalry on social commerce is now getting more and more intense. Realizing that is a crucial competitive advantage for them that increases profits and a strong brand for them, keeping clients to continue shopping at your business is your top worry. As demonstrated by a number of earlier research, customer retention is directly correlated with a company's revenue [3]. Businesses must thus focus on and pinpoint the factors that affect customers' purchasing decisions in order to satisfy them and raise the likelihood of future actual intentions.

A prospective market that is receiving a lot of attention right now is social commerce in Asian nations, where internet usage and online buying are both growing rapidly [4]. Including Vietnam, a rising nation and one of Asia's prospective marketplaces, that had 72.1 million Internet users as of September 2022, which represented 73.2% of the country's total population[5]. With this figure, Vietnam has the 12th-highest percentage of Internet users worldwide. In 2022, more than 51 million Vietnamese made online purchases, an increase of 13.5% from the previous year, with a total value of 12.42 billion USD spent. In Vietnam's retail sector, social commerce business-to-consumer (B2C) is anticipated to expand at a rapid rate. The social commerce market in Vietnam has great potential for further growth. Businesses must comprehend consumer behavior in order to take advantage of Vietnam's growing internet marketplace. In light of buying experiences of consumers in Ho Chi Minh City, Vietnam, this study will examine the link between the influence of social media on online shopping behavior and customer intention to make a repeat purchase.

People's fundamental requirements alter as society modernizes, and internet purchasing is becoming more popular. The way that a customer perceives a certain company will have a big impact on how they respond while making purchases. There have previously been a few study studies that focus on identifying and evaluating consumers' perceived attitudes about an e-commerce platform through a variety of factors that influence online shopping behavior, including as: visual aesthetic of Web pages [6], credible and useful reviews [7], virtual try-on technology [8], privacy concerns [9], etc. However, there aren't many studies on consumers' fundamental personal needs which relate to their online purchasing habit as of 2022. There are very few study

articles exploring consumers' internal buying attitudes (hedonism, utilitarianism, ethics) concerning their perceived attitudes towards the product; recent studies virtually all highlight more extrinsic elements affecting online shopping motivation. In this study, we will investigate the combination of both extrinsic and intrinsic motivations to gain insight into customer satisfaction andactual intentions based on self-determination theory and social cognitive theory (SCT).

The study also supports firms in better comprehending and paying attention to how marketing influences consumers' purchasing decisions. Since then, they are going to create ways of constructing clever marketing schemes for consumers on social commerce that encourage them to prioritize selecting their company first.

II. LITERATURE REVIEW

2.1 Theoretical Background

2.1.1 Social Cognitive Theory (SCT)

SCT (Social Cognitive Theory) is the foundation of our research model. Albert Bandura created the Social Cognitive Theory, which is centered on explaining SCT examines and identifies multiple dimensions or offers unique ways in which individuals perpetuate behaviors, as well as examines the social contexts in which individuals best perform that behavior. SCT theory looks at a person's previous experience, which influences whether a person's action behavior will happen in the future. Previous experiences have an impact on perceptions and expectations. They all explain whether a person does a particular behavior and why a person does it [7].

Social cognitive theory and processes are derived from cognitive, cognitive, behavioral, and emotional behavioral change models. As a result, it is easy to apply interventions on the buying behavior of Ho Chi Minh City customers on social media are straightforward. The study of sct theory seeks to better understand the relationship between psychological characteristics and online purchasing behavior among customers in the setting of social commerce. Online communities that enable user engagement, user-generated content, and online transactions are examples of social commerce. Nearly 4.8 billion internet users globally, or around 4.5 billion individuals, utilize social networks [10]. That indicates that half of the world's population is utilizing social media and making similar online transactions. The constantly changing setting of social commerce has clearly focused research and attention on customers' views, attitudes, and actions [11].

Almost all young people nowadays utilize and rely on social media as their primary source of buying. SCT will assist us in researching and analyzing current consumers' purchase reasons as well as their intention or purchasing activity on the Facebook network. As a result, this study is anticipated to present consumers with fresh insights.

2.1.2 Self-determination theory: Autonomy and competence through the Internet

Self-determination theory (SDT) was studied by Deci and Ryan (1985) to distinguish types of motivation based on one's self-determination. SCT asserts that understanding people's motivations requires examining their innate needs for autonomy, competence, and relatedness[12]. Deci and Ryan contend that these three requirements must be met for intrinsic motivation. Intrinsic motivation involves people freely participating in activities they find interesting, bringing novel challenges [13]. Deci and Ryan (2000)'s study demonstrates how social circumstances foster autonomy, competence, and relatedness, which results in higher-quality performance[13]. In reality, customers have to assert autonomy in uncertain circumstances and execute their demands on their own. Self-determination allows people to feel they have control over their choices and management of their lives.

The Internet has become a crucial component of modern life. The Internet is viewed as a tool and a setting that may foster consumer interactions to enhance their capacity to share and gather information [14]. More people are turning to the internet to obtain useful details about items both before and after buying them (Nguyen et al., 2022). It's useful to transition customers from physical stores to an online environment by understanding consumer behavior and social interactions (Dang et al., 2023). The rising social utility of the Internet as a tool for connecting consumers with one another and exchanging information should be prioritized in order to contextualize Internet use (Nguyen & Nguyen, 2021).

By extending this theory, we can see how the Internet develops into a responsive instrument for individuals to meet their need for competence and self-determination under the SDT. According to this research, hedonic, utilitarian, and ethical values are intrinsic motivations.

2.2 Hedonic, utilitarian and ethical motives and online shopping

Motivation may be split into intrinsic and extrinsic motivation based on the degree of self-control based on the perspective of self-determination theory (SDT). SDT asserts that gratifying people's wants is essential for fostering intrinsic drive. Hedonic, utilitarian, and ethical values are all taken into account as intrinsic motivation in this study.

Intrinsic motivation has been linked to willpower, personality traits, and prior research has demonstrated this. Hedonic value and utilitarian value were once the sole categories used in earlier studies to

categorize consumption value (Nguyen et al., 2022). But in this research paper will give more ethical value to research. Utilitarian value is often thought of as task-oriented and rational, referring to a purchase made because of a given consumer need. In other words, consumers effectively buy the product after careful consideration. Social commerce offers consumers practical advantages including convenience, a variety of product options, in-depth product knowledge, and cost savings (Nguyen, et al., 2022). Efficiency and utilitarian value go hand in hand. Previous studies have demonstrated that utilitarian values are choices that consumers make that need to be carefully quantified and assessed in terms of the benefit functions of the product [19]. In terms of the hedonic worth, that comes with making purchases for amusement and pleasure seeking. Hedonistic value is derived from the individual emotions of each consumer. Customers in current day and age are becoming increasingly interested in eco-friendly items and environmental protection. In order to make customers satisfied with the product and promote customers to return, this research will examine how to balance the three intrinsic incentives mentioned above.

2.3 Social Commerce in Vietnam

Social Commerce is the process by which businesses communicate and sell products to potential customers of the brand on social networking platforms such as Facebook, Zalo and Instagram, etc. In other words, this is a combination of Social Media (Social Network) and E-Commerce. Some forms of commerce on social commerce are easy to see: ordering right on the post, through the fan page or on the livestream.

According to Vietcetera, only in the fourth quarter of 2021, 27% of consumers in Vietnam used social networks to make online purchases[20]. At the same time, according to Cekindo the e-commerce market in Vietnam's e-commerce market is predicted to reach the fastest growth rate in Southeast Asia by 2026, with the total value of e-commerce goods reaching $56 billion, 4.5 times the forecast value in 2021. Facebook's social commerce capabilities include customer ratings and reviews, recommendations, and referrals. These characteristics create a trustworthy environment in which friends, family, and acquaintances offer material for referrals and sell items or services in exchange for comments, reviews, ratings, or testimonials about their experiences. As a result, research and the shorter purchase cycle are propelled by the collective strength of many. In a nutshell, social commerce is a trusted environment in which potential customers make purchase decisions based on the advice of friends and family.

The reason for this prominence is thanks to the chatbot system (online chat feature with customers) on the fan page, giving customers a quick and personalized buying experience[7]. Just pre-entering a few frequently asked questions and answers, the brand quickly answered the questions of a large number of customers, thereby improving the order conversion rate. Social commerce in Vietnam is growing strongly thanks to improvements in technology as well as changes in user habits: more online, more online shopping and less cash transactions. Therefore, sellers and businesses need to have the right and appropriate strategies to take advantage of the development of trends and reach more customers

2.4 Social Media and online shopping

Social media is easily used through mobile devices that can be accessed by anyone from anywhere. Not only increasing the accessibility of product information, but also allowing customers to express their opinions after using the [7]. Customers have been greatly influenced by online ads (Dang et al., 2023)or other positive client testimonials [6]on social commerce. Each of those external factors has a significant influence on how consumers choose what to do with their money. People may see the goods they want on a visual level through advertising (Yang et al., 2017b). Businesses take advantage of the chance that consumers' faith in celebrity endorsements to market their goods and raise consumer buy rates (Rocha et al., 2020). Through a recommendation system that has been rated by previous customers, social media platforms also help buyers feel safer while making purchases at an online store (Wu et al., 2013). Online shopping enjoys widespread acceptance and motivates people to test the buy for the first time by way of positive evaluations of that goods on social commerce. The three characteristics mentioned above may generally increase consumer trust, which helps to enhance the experience of potential customers. With to the growth of social media, firms may cut back on extra expenses. However, it's possible that Vietnam hasn't truly seized these chances to expand its industries.
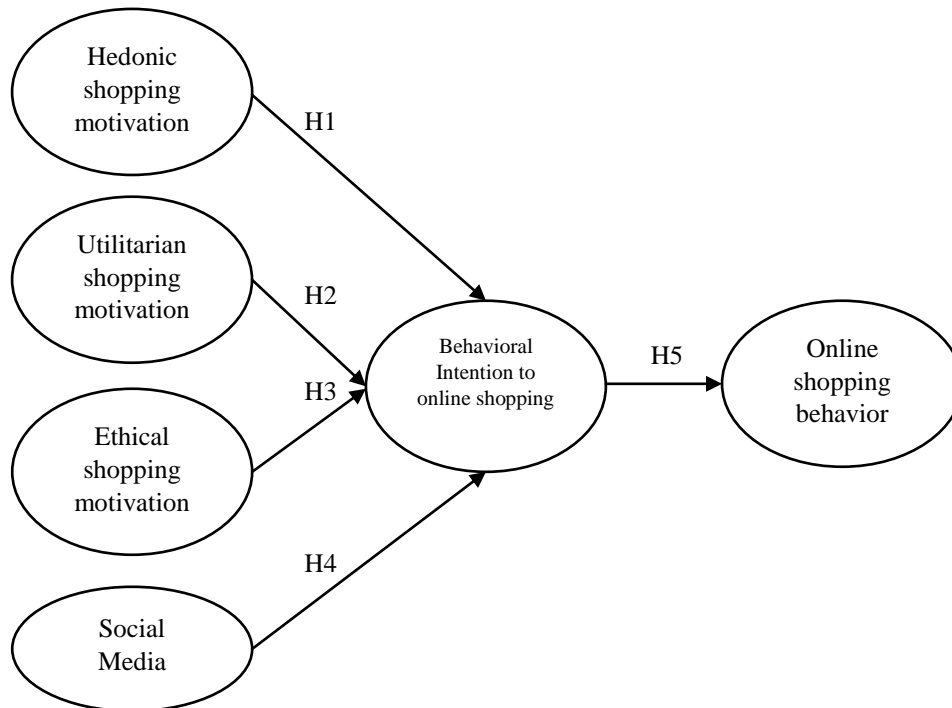
Figure 1: Proposed research model

III.   HYPOTHESES DEVELOPMENT

3.1 Hedonic shopping motivation

Hedonic shopping motives are motives for shopping that are "entertaining, providing pleasure, driven by intrinsic, stimulus-seeking impulses" [18]. Hedonic motivation illustrates the process of buying for pleasure, comfort and is intrinsically based on self-interest, curiosity, entertainment, self-expression, etc. Consumers are willing to shop online for hedonistic reasons. The development of information technology along with the number of users has led to the exciting feeling of shopping. In fact, consumers say they shop online because it improves their mood after the pressures of every day [21]. Therefore, the following hypothesis is formed:

H1: Hedonic shopping motivation positively impacts the behavioral intention to online shopping

3.2 Utilitarian shopping motivation

In the context of online shopping, utilitarian motives involve buying an object for its value and function [7]. Everyday shopping is driven by necessity, related in terms of savings and tied to pragmatic value. When shoppers tend to be utilitarian, they consider every product to be optimal in terms of cost and quality. They consider each strategy to reduce the risk of buying and achieve the goal of finding information in the most convenient way. Thanks to the development of the Internet, customers can now find more information about the product with just one click, which encourages customers to participate in online shopping more [6]. Therefore, the second hypothesis is formed as follows:

H2: Utilitarian shopping motivation positively impacts the behavioral intention to online shopping

3.3 Ethical shopping motivation

Ethical shopping behavior is a topic that is getting more attention today. Ethical consumption in business is defined as "conscientious consumption that takes into account health, society and the natural environment based on personal and ethical beliefs [15]. Ethical purchasing must combine human and environmental benefits. Ethical products are in greater demand in many countries. With the widespread development of information technology, customers can see the ethical values that a business will bring when consumers buy their products, promoting positive emotions when they can. make some contribution to the protection of society. Today customers are willing to pay more for green products. Thus, the third hypothesis is formed:

H3: Ethical shopping motivation positively impacts the behavioral intention to online shopping

3.4 Social Media

With a wide range of social networking platforms in use today, customers' understanding of product information is expanding. Currently, many users tend to research information and research online before making a purchase. Among them, social media channels are often used to conduct such studies. Consumers in the 4.0

era became excited with the trend of online shopping. Advertising used on social media reaches customers easier and more friendly. Technology has changed consumer behavior, gradually switching to online shopping to save time as well as bring convenience in buying and selling in the form of social commerce [16]. Not only that, through social media, customers can also see more objective reviews of other customers as well as KOL and KOC influencers about products that consumers intend to buy, promoting safety. make customers trust to buy that product. From there, the fourth hypothesis was formed:

H4: Social Media positively impacts the behavioral intention to online shopping

3.5 Intention to participate

Before a consumer makes a purchase decision, the purchase intention is formed after careful and meticulous consideration of the information about the product or service to buy, the intention to buy has an important influence on the decision of consumer purchase intention. In this study, the authors support the view of Nguyen et al. (2022) [18] defines online purchase intention as the likelihood that a consumer will decide to purchase over the Internet.

H5: Behavioral intention to participate positively impactsonline shopping behavior

The proposed framework is presented in Fig 1.

IV.   RESEARCH METHOD AND RESULTS

4.1 Sample and Data Collection

We tested the research model with data collected through a survey in the form of an online grid. Table of multiple choice questions sent through social media channels thanks to everyone's cooperation to complete. Based on stratified random sampling technique, the researcher submitted more than 400 questionnaires of which 303 were returned, giving the survey a rather high response rate. In total, women accounted for 63.5% of the respondents. In which, 75% of the respondents are under the age of 18 to 25 years old, accounting for 9.6% from the age of 26 to 35 years old. Men accounted for 36.5% of the respondents and 9.6% appeared from the age of over 35 years old and the lowest remaining under the age of 18.

4.2 Measurements

The questionnaire consists of two parts, the first part focuses on demographics, the other part includes important questions related to shopping on social networks, shopping motives such as hedonic, utilitarian, ethical or satisfaction when shopping, and intention to re-purchase. Vietnamese translations were provided throughout the survey to ensure respondents could understand the questions. The researcher's survey incorporates references from previous successful research sources. Each question is scored on a seven-point Likert scale, with a score (1) = strongly disagree; (2) = mostly disagree; (3) = partially disagree; (4) = neutral; (5) = partially agree; (6) = mostly agree; (7) = strongly agree. Participants are discouraged from answering too much about themselves in the survey because that would undermine the promise of confidentiality. Therefore, filling in personal information such as email is not required.

5.1 Assessing the outer measurement model

The reliability of the survey was assessed through Cronbach's alpha, and the results listed in Table 1 show that all structured Cronbach's alpha values are higher than 0.7. It shows that this study has good reliability and the desired effect [24]. Convergent validity was measured using outer loading, composite reliability (CR), and average variance extracted (AVE). As shown in Table 2, a good convergence value exists, appropriate when the load factor of each item is greater than 0.7 and the CR and AVE values are greater than 0.8 and 0.5, respectively (Phan et al., 2023). The reliability, convergent validity, and discriminant validity of the constructs were assessed using the measurement model.

Table 1: Reliability Coefficients for Constructs.

Constructs	Items	Outer Loadings	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
ESM	ESM1	0,842	0,780	0,800	0,858	0,604
	ESM2	0,840				
	ESM3	0,695				
	ESM4	0,719				
HSM	HSM1	0,929	0,891	0,892	0,933	0,822
	HSM2	0,893				
	HSM3	0,897				
USM	USM1	0,808	0,820	0,828	0,893	0,736
	USM2	0,883				
	USM3	0,881				

SOM	SOM1	0,891	0,862	0,863	0,916	0,783
	SOM2	0,900				
	SOM3	0,865				
OSB	OSB1	0,843	0,830	0,830	0,898	0,747
	OSB2	0,895				
	OSB3	0,854				
BIO	BIO1	0,870	0,827	0,830	0,897	0,744
	BIO2	0,900				
	BIO3	0,815				

The results in Table 1 show good internal consistency and reliability of the categories, with the figures given for the categories greater than 0.7. The load of items belonging to Cronbach's alpha exceeds 0.7 and the combined reliability also exceeds 0.7 measures. The payload of all items is assumed to be substantial and it is guaranteed that no items will be dropped. According to Hair et al. (2017) [25] critical factor loads and high CR yield convergent values, specifically, AVE should be above 0.5 but lower than CR value [25], which is true in this case (Table 1). To have discriminant validity, the square root of AVE must be greater than the correlation coefficient with other constructs [26]this can be confirmed from Tables 2 and 3. Figures are drawn from Table 2, Fornell-Larcker values, the correlation along the diagonal between the latent variables is comparable higher than the correlation between the different latent variables [27]. The external loads of all indicators are greater than their cross-loads, as assessed through the cross-load rating [27]. The results of the cross-load analysis are presented in Table 3, providing evidence of discriminant validity in these two trials. Once validity and reliability have been established through measurement model evaluation, structural model evaluation can be conducted.

Table 2: Fornell Larker Criterion

	ESM	HSM	USM	SOM	OSB	BIO
ESM	0,777					
HSM	0,633	0,906				
USM	0,405	0,442	0,858			
SOM	0,526	0,660	0,483	0,885		
OSB	0,661	0,628	0,439	0,530	0,864	
BIO	0,678	0,707	0,402	0,525	0,699	0,862

Table 3: Cross loadings

	ESM	HSM	USM	SOM	OSB	BIO
ESM1	0,842	0,614	0,397	0,596	0,602	0,582
ESM2	0,840	0,582	0,304	0,431	0,572	0,589
ESM3	0,695	0,339	0,294	0,301	0,436	0,424
ESM4	0,719	0,381	0,254	0,254	0,415	0,494
HSM1	0,582	0,929	0,402	0,615	0,587	0,633
HSM2	0,531	0,893	0,365	0,590	0,486	0,619
HSM3	0,608	0,897	0,436	0,591	0,634	0,670
USM1	0,387	0,343	0,808	0,373	0,402	0,373
USM2	0,357	0,410	0,883	0,443	0,387	0,358
USM3	0,306	0,381	0,881	0,423	0,346	0,309
SOM1	0,477	0,626	0,430	0,891	0,478	0,475
SOM2	0,444	0,572	0,419	0,900	0,429	0,451
SOM3	0,474	0,553	0,434	0,865	0,500	0,467
OSB1	0,542	0,592	0,364	0,500	0,843	0,592
OSB2	0,590	0,517	0,388	0,425	0,895	0,630
OSB3	0,580	0,518	0,385	0,449	0,854	0,588
BIO1	0,547	0,622	0,343	0,463	0,652	0,870
BIO2	0,622	0,678	0,366	0,535	0,659	0,900
BIO3	0,580	0,523	0,329	0,355	0,495	0,815
UT5	0,629	0,664	0,447	0,429	0,665	0,574

5.2 Assessing the structural model

To test the robustness of structural models, we assessed their linkages and explanatory power. To establish the statistical significance of the parameters and generate standard errors or valid t-values, we apply the bootstrapping approach [18]. We evaluated the structural model after analyzing the measurement model. Fig. 2 shows the path coefficients and their significance, as well as the values for each dependence structure.The findings of hypothesis testing demonstrate that attitude has a considerable influence on intention to share information, as shown in Fig. 2 and Table 4. Furthermore, the results show that H1, ESM are positively correlated with BIO through (β = 0,678, p < 0,01), so that H1 is supported. In addition, the results of data validation H2, H3 and H4, prove that HSM, USM and SOM have a positive correlation with BIO(β = 0,578, p < 0,01; β = 0,230, p < 0,01; β = 0,530, p < 0,01), so that H2, H3 and H4 are supported. Furthermore, H5 which BIO is also positively correlated with OSB with the given data (β = 0,661, p < 0,01), which means that H5 is supported.

Table 4: Path coefficient results

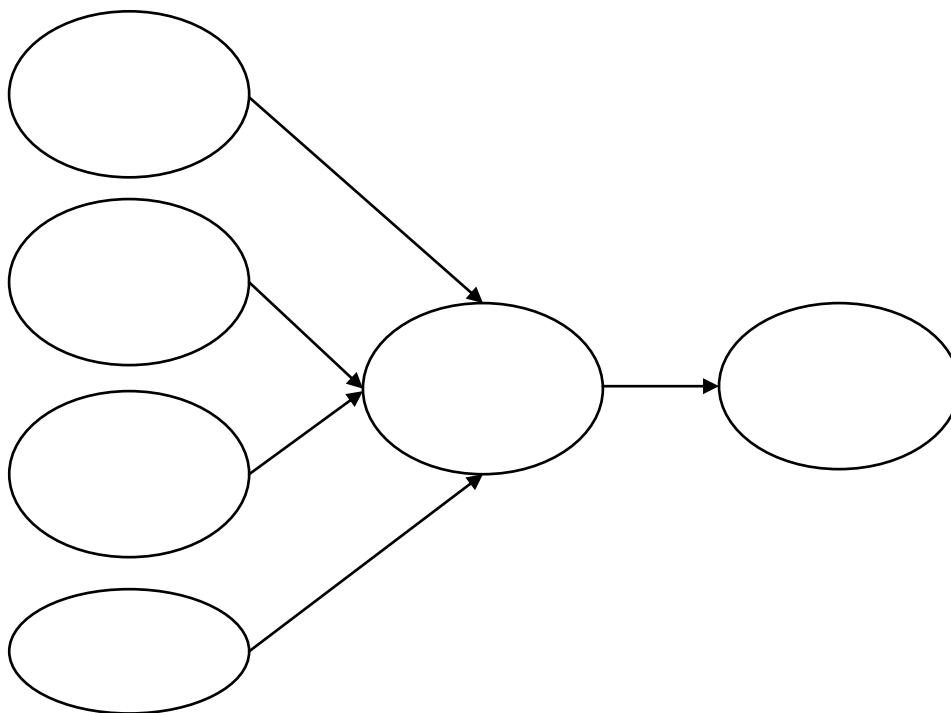| Hypotheses	Original sample (O)	Sample mean (M)	T statistics (|O/STDEV|)	Original sample (O)	P values	Results
H1	ESM ->BIO	0,678	0,682	18,813	0,000	Supported
H2	HSM ->BIO	0,578	0,572	5,573	0,000	Supported
H3	USM ->BIO	0,230	0,233	3,988	0,000	Supported
H4	SOM ->BIO	0,530	0,532	10,452	0,000	Supported
H5	BIO -> OSB	0,661	0,664	17,668	0,000	Supported

Figure 2: The structural mode results

V.   CONCLUSION

The above research model, which analyzes the actual intentions of consumers in the context of social commerce, reveals the multifaceted nature of online shopping influenced by various drivers and product-related factors. Through an exhaustive research and analysis process, our study surveyed active online shoppers in Vietnam who prefer using online applications for their purchases. Among the plethora of factors influencing online shopping behavior, such as hedonic and utilitarian motivations, purchase intent, shopping behavior, ethical considerations, and post-purchase e-satisfaction, ethical shopping motivations emerged as a central focus. This underscores the importance of consumers' desire to make socially responsible purchases. Consequently, we offer several recommendations to promote online shopping in Vietnam: the provision of comprehensive product information, transparent business practices, robust customer service, regular marketing

initiatives, and the use of SEM for sales promotion. Notably, the research underscores that consumers' paramount concern when shopping online is the reliability and security of e-commerce transactions, highlighting the necessity for businesses to safeguard consumer interests and personal information. These implications offer valuable insights for both online retailers and policymakers as they strive to create a thriving and secure social commerce ecosystem in Vietnam.

The escalating trend of online shopping is experiencing rapid proliferation within developing nations, and this survey has cast its spotlight predominantly upon the intricacies of user shopping behavior in the Vietnamese e-commerce landscape, with a paramount emphasis on ensuring the utmost security and reliability of online trading systems. Notably, Vietnam, in the preceding three years, has witnessed a substantial leap in its status as an online shopping hub. This progression is reflected in the burgeoning populace of internet users partaking in online purchases, signaling auspicious prospects for online enterprises. However, to catalyze the expansion of the online shopping demographic, Vietnamese online businesses must enact more substantial investments in sales policies, customer care services, and bespoke business strategies. The objective is to elevate customer satisfaction levels, thereby fostering a positive customer impression and stimulating recurrent purchases. This ripple effect extends to customers championing products through word-of-mouth referrals, acquaintances, and judicious product evaluations.

Furthermore, the research's transition from its original model to an adapted model tailored to the nuances of the Vietnamese consumer landscape has yielded compelling results. These findings underscore that the determinants significantly influencing the purchasing intentions of Vietnamese consumers are intricately tied to their perception of consumer benefits and adherence to subjective standards. Despite certain inherent limitations, these research outcomes are poised to be instrumental in aiding decision-makers within the realm of online businesses. By affording online merchants a more nuanced comprehension of Vietnamese consumers' online shopping behaviors, these findings empower them to make judicious and well-informed strategic choices within a market brimming with latent potential.

VI.   ACKNOWLEDGEMENTS

REFERENCES

[1]   A. Nigam, P. Dewani, A. Behl, and V. Pereira, "Consumer's response to conditional promotions in retailing: An empirical inquiry," *J. Bus. Res.*, vol. 144, no. February, pp. 751–763, 2022, doi: 10.1016/j.jbusres.2022.02.051.

[2]   Y. Qu, A. Cieślik, S. Fang, and Y. Qing, "The role of online interaction in user stickiness of social commerce: The shopping value perspective," *Digit. Bus.*, vol. 3, no. 2, 2023, doi: 10.1016/j.digbus.2023.100061.

[3]   J. Fang, H. Liu, Y. Li, and Z. Cai, "Retaining customers with in-store mobile usage experience in omni-channel retailing: The moderating effects of product information overload and alternative attractiveness," *Electron. Commer. Res. Appl.*, vol. 46, no. December 2019, p. 101028, 2021, doi: 10.1016/j.elerap.2020.101028.

[4]   J. J. Hew, V. H. Lee, K. B. Ooi, and B. Lin, "Mobile social commerce: The booster for brand loyalty?," *Comput. Human Behav.*, vol. 59, pp. 142–154, 2016, doi: 10.1016/j.chb.2016.01.027.

[5]   M. N. Nguyen, "E-wallets in Vietnam - statistics & facts | Statista," *Statista*, 2021. https://www.statista.com/topics/8647/e-wallets-in-vietnam/ (accessed Apr. 17, 2022).

[6]   B. Hai, T. Nguyen, T. H. Le, T. Q. Dang, and L. T. Nguyen, "What Role Does AI Chatbot Perform in the F&B Industry? Perspective from Loyalty and Value Co-Creation: Integrated PLS-SEM and ANN Techniques," *J. Law Sustain. Dev.*, vol. 44, no. 4, pp. 1–39, 2023.

[7]   P. C. T. Tien, D. Q. Tri, and N. T. Luan, "Belief of Customers in Social Commerce Performed via Social Networking Sites : An Empirical Study from Hồ Chí Minh City," *Vietnam Soc. Sci.*, vol. 2, no. 214, pp. 61–80, 2023, doi: 10.56794/VSSR.2(214).61-80.

[8]   T. Q. Dang, L.-T. Nguyen, and T. N. T. Thuy, "The capability of E-reviews in online shopping. Integration of the PLS-SEM and ANN method.," *Int. J. Prof. Bus. Rev.*, vol. 8, no. 7, pp. 1–29, 2023, doi: https://doi.org/10.26668/businessreview/2023.v8i7.2638.

[9]   M. Tajvidi, M. O. Richard, Y. C. Wang, and N. Hajli, "Brand co-creation through social commerce information sharing: The role of social media," *J. Bus. Res.*, vol. 121, no. January 2018, pp. 476–486, 2020, doi: 10.1016/j.jbusres.2018.06.008.

[10]   C. Brunelle and H. Grossman, "Predictors of online compulsive buying: The role of personality and mindfulness," *Pers. Individ. Dif.*, vol. 185, no. September 2021, p. 111237, 2022, doi: 10.1016/j.paid.2021.111237.

[11]   A. Redine, S. Deshpande, C. Jebarajakirthy, and J. Surachartkumtonkun, "Impulse buying: A systematic literature review and future research directions," *Int. J. Consum. Stud.*, vol. 47, no. 1, pp. 3–

41, 2023, doi: 10.1111/ijcs.12862.

[12] E. L. Deci, R. M. Ryan, E. L. Deci, and R. M. Ryan, "Conceptualizations of Intrinsic Motivation and Self-Determination," in *Intrinsic Motivation and Self-Determination in Human Behavior*, 1985.

[13] E. L. Deci and R. M. Ryan, "The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior," *Psychol. Inq.*, 2000, doi: 10.1207/S15327965PLI1104_01.

[14] R. Roy Dholakia and M. Zhao, "Retail web site interactivity: How does it influence customer satisfaction and behavioral intentions?," *Int. J. Retail Distrib. Manag.*, vol. 37, no. 10, pp. 821–838, 2009, doi: 10.1108/09590550910988011.

[15] L. T. Nguyen, V. P. Nguyen, and D. T. V. Duc, "Critical Factors Affecting the Adoption of Artificial Intelligence: An Empirical Study in Vietnam," *J. Asian Financ. Econ. Bus.*, vol. 9, no. 5, pp. 225–237, 2022, doi: 10.13106/jafeb.2022.vol9.no5.225.

[16] T. Q. Dang, G. W. H. Tan, E. C. X. Aw, K. B. Ooi, B. Metri, and Y. K. Dwivedi, "How to generate loyalty in mobile payment services? An integrative dual SEM-ANN analysis," *Int. J. Bank Mark.*, 2023, doi: 10.1108/IJBM-05-2022-0202.

[17] Phuoc Nguyen Van and Luan Nguyen Thanh, "Aggregate planning in manufacturing industry: Planning and firm performance of Vietnam manufacturing firms," *Int. J. Inf. Syst. Supply Chain Manag.*, vol. 14, no. 1-2 SE-Articles, Feb. 2021, doi: 10.53384/ijisscm.14.2021.390679127.

[18] L. T. Nguyen, Y. K. Dwivedi, G. W. H. Tan, E. C. X. Aw, P. S. Lo, and K. B. Ooi, "Unlocking Pathways to Mobile Payment Satisfaction and Commitment," *J. Comput. Inf. Syst.*, vol. 00, no. 00, pp. 1–18, 2022, doi: 10.1080/08874417.2022.2119444.

[19] N.-Y. Dao, L.-T. Nguyen, and V.-H. Dinh, "Factors Driving Vietnamese University Students' Adoption in a Smart Learning Environment: The Application of Self-determination Theory and Technology Acceptance Model BT - Smart Learning for A Sustainable Society," 2023, pp. 185–190.

[20] N. M. Tuan, "Customer readiness–customer participation link in e-services," *Serv. Ind. J.*, vol. 42, no. 9–10, pp. 738–769, 2022, doi: 10.1080/02642069.2021.1946517.

[21] M. Arshad, M. Farooq, S. Afzal, and O. Farooq, "Adoption of information systems in organizations: Understanding the role of institutional pressures in a collectivist culture," *J. Enterp. Inf. Manag.*, vol. 33, no. 2, pp. 265–284, Nov. 2019, doi: 10.1108/JEIM-05-2019-0130.

[22] D. T. V. Dang, L. Nguyen, and A. H. D. Nguyen, "Extending UTAUT2 in Mobile money adoption and actual use behavior: An empirical research in Vietnam during the Covid-19," *Ind. Beziehungen. Zeitschrift für Arbeit, Organ. und Manag.*, vol. 10, no. 4, 2022, doi: 10.53384/inbe.101390943.2779.1862003510.

[23] H.-B. Nguyen and L.-T. Nguyen, "Factors Influence Blockchain Adoption in Supply Chain Management Among Companies Based in Ho Chi Minh City BT - Proceedings of the Conference Towards ASEAN Chairmanship 2023 (T-A-C 23 2021)," in *Conference Towards ASEAN Chairmanship 2023 (TAC 23 2021)*, 2021, pp. 1–13, doi: 10.2991/aebmr.k.211207.001.

[24] C. Fornell and D. Larker, "Evaluating Structural Equation Models With Unobservable Variable Sand Measurement Error," *J. Mark. Res.*, vol. 18, pp. 39–50, Feb. 1981, doi: 10.2307/3151312.

[25] J. Hair, C. L. Hollingsworth, A. B. Randolph, and A. Y. L. Chong, "An updated and expanded assessment of PLS-SEM in information systems research," vol. 117, no. 3, pp. 442–458, 2017, doi: 10.1108/IMDS-04-2016-0130.

[26] D. F. Fornell, C., & Larcker, "Evaluating structural equation models with unobservable variables and measurement error.," *J. Mark. Res. This*, vol. 18, no. 1, pp. 39–50, 2016.

[27] Luan-Thanh Nguyen, Dang Thi Viet Duc, Tri-Quan Dang, Dang Phong Nguyen, "Metaverse Banking Service: Are We Ready to Adopt? A Deep Learning-Based Dual-Stage SEM-ANN Analysis", *Human Behavior and Emerging Technologies*, vol. 2023, Article ID 6617371, 23 pages, 2023. https://doi.org/10.1155/2023/6617371