Jurnal Pengurusan 78 (2026)
https://doi.org/10.17576/pengurusan-2026-78-7

Investigating AI-Powered Personalisation and Interactivity on Platform Stickiness: A Dual Mediation Model of E-Satisfaction and Customer Engagement in E-Commerce

(Meneliti Pemperibadian Berkuasa AI dan Interaktiviti terhadap Kelekatan Platform: Model Pengantaraan Ganda bagi Kepuasan Elektronik dan Penglibatan Pelanggan dalam Perdagangan Elektronik)

Nam Trung Tran
Alireza Mohammadi
Jing Wan
Ooi Kok Loang
(City Graduate School, City University Malaysia)

ABSTRACT

This study examines the role of AI-Powered Personalisation and Interactivity in Platform Stickiness in E-Commerce, through the two mediating relationships of E-Satisfaction and Customer Engagement. Grounded in the Stimulus-Organism-Response (S-O-R) framework, with Expectation-Confirmation Theory informing the e-satisfaction pathway and Customer Engagement Theory informing the engagement pathway, the study adopted a quantitative approach using survey data from 518 E-Commerce users in Ho Chi Minh City, Vietnam. The data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). Results revealed that both AI-Powered Personalisation and Interactivity play an important role in improving Platform Stickiness directly and indirectly through E-Satisfaction and Customer Engagement. The results provide confirmatory evidence that received technology affordances induce behavioural attachment in the long term by increasing satisfaction and engagement levels as complementary partial mediating effects. This research adds to the growing body of literature by integrating technological and psychological mechanisms in a dual mediation model and provides a cultural understanding of user loyalty to AI in emerging digital markets. The study even offers real-world insights for E-commerce managers for creating interactive and personalised AI systems to maintain user retention and loyalty.

Keywords: Platform stickiness in E-commerce; AI-powered personalisation; Interactivity;E-Satisfaction; customer engagement

ABSTRAK

Kajian ini meneliti peranan Pemperibadian Berkuasa AI dan Interaktiviti terhadap Kelekatan Platform dalam Perdagangan Elektronik melalui dua hubungan pengantaraan iaitu Kepuasan Elektronik (E-Satisfaction) dan Penglibatan Pelanggan (Customer Engagement). Kajian ini berasaskan rangka kerja Rangsangan-Organisma-Tindak Balas (Stimulus-Organism-Response, S-O-R), dengan Teori Pengesahan Jangkaan (Expectation-Confirmation Theory) menerangkan laluan kepuasan elektronik dan Teori Penglibatan Pelanggan (Customer Engagement Theory) menerangkan laluan penglibatan pelanggan. Pendekatan kuantitatif telah digunakan melalui tinjauan terhadap 518 pengguna Perdagangan Elektronik di Bandar Ho Chi Minh, Vietnam. Data dianalisis menggunakan Pemodelan Persamaan Struktur Kuasa Terkecil Separa (Partial Least Squares Structural Equation Modelling, PLS-SEM). Hasil kajian menunjukkan bahawa kedua-dua Pemperibadian Berkuasa AI dan Interaktiviti memainkan peranan penting dalam meningkatkan Kelekatan Platform secara langsung dan tidak langsung melalui Kepuasan Elektronik dan Penglibatan Pelanggan. Dapatan ini memberikan bukti pengesahan bahawa keupayaan teknologi yang diterima mendorong keterikatan tingkah laku jangka panjang dengan meningkatkan tahap kepuasan dan penglibatan sebagai kesan pengantaraan separa pelengkap. Kajian ini menyumbang kepada perkembangan literatur sedia ada dengan mengintegrasikan mekanisme teknologi dan psikologi dalam model pengantaraan berganda serta memberikan pemahaman budaya tentang kesetiaan pengguna terhadap AI dalam pasaran digital yang sedang pesat berkembang. Kajian ini juga menawarkan pandangan praktikal kepada pengurus Perdagangan Elektronik dalam mereka bentuk sistem AI yang interaktif dan diperibadikan bagi mengekalkan pengekalan serta kesetiaan pengguna.

Kata kunci: Kelekatan platform dalam perdagangan elektronik; pemperibadian berkuasa ai; interaktiviti; kepuasan elektronik; penglibatan pelanggan.

INTRODUCTION

Artificial intelligence (AI) is fundamentally changing the way consumers search for, evaluate and buy products online, and personalised and interactive experiences have become a key source of competitive advantage in e-commerce. In fast-growing markets like Vietnam, where mobile internet penetration and online shopping adoption are developing very rapidly (VECOM 2026), platforms are no longer competing for transactions but are striving to achieve long-term user attachment, often called platform stickiness. Platform stickiness reflects users' repeated visits, habitual engagement, and emotional attachment to a specific platform, which is a transition from short-term satisfaction towards long-term cognitive and affective dependence (Lin 2007).

Recent studies have highlighted the role of AI-enabled features, particularly personalised recommendations and chatbots, in shaping customer engagement and continued platform use (Ding et al. 2025; Pang et al. 2025). For example, Pang et al. (2025) found that favourable attitudes towards AI-powered chatbots were associated with user stickiness. Similarly, Ariffin and Tran (2026) proposed an S-O-R-based framework explaining how chatbot attributes may influence purchase intentions through customer trust (Ariffin & Tran 2026). Within the S-O-R framework, Artificial-Intelligence-based personalisation and interactivity function as technological stimuli that produce cognitive and emotional responses, which in turn flow into behavioural persistence. However, empirical evidence remains inconclusive. Teepapal (2025) found that AI-driven personalisation increased trust, perceived usefulness, and privacy concerns, but had no significant direct effect on customer engagement. Similarly, Ratnawati & Afni Eliana Saragih (2025) reported that certain AI-driven personalisation features did not significantly influence customer engagement. These divergent findings call for a clearer account of how AI-powered personalisation and interactivity relate to platform stickiness, and whether e-satisfaction and customer engagement help explain these relationships.

Despite growing research on AI-enabled e-commerce, limited attention has been given to how personalisation and interactivity jointly contribute to platform stickiness through e-satisfaction and customer engagement. Considering them within the same model is useful because relevant recommendations and opportunities to interact address different aspects of the shopping experience: the former concerns what users are shown, while the latter concerns how they engage with the platform. Examining both allows the study to assess their respective associations with platform stickiness, including the pathways through e-satisfaction and customer engagement. Moreover, previous research has established e-satisfaction as a mediator between e-fulfilment and e-loyalty (Mohd Dali et al. 2025). However, limited attention has been given to the parallel mediating roles of e-satisfaction and customer engagement in the relationships between AI-powered personalisation, interactivity, and platform stickiness. For example, recent research conducted in Indonesian e-commerce has proven that the use of personalisation increases the level of satisfaction and engagement, which can serve as an independent predictor of loyalty, but without examining their mediation effect (Maduwinarti et al. 2025). Similarly, there were some studies on the quality of e-service that showed e-satisfaction mediated the relationship with e-loyalty, but customer engagement was not considered as a parallel route (Florence & Aprillia 2025). A recent framework for Vietnamese e-commerce also considers e-satisfaction and eWOM in relation to platform loyalty (Trung et al. 2026). Building on this discussion, the present study examines the distinct outcome of platform stickiness and assesses e-satisfaction alongside customer engagement as parallel pathways. Scholars thus advocate for greater integrative models that account for both cognitive (satisfaction) and affective - behavioural (engagement) models when trying to explain digital loyalty over time (Kim & Yum 2024). Second, from a geographical perspective, previous empirical studies have examined AI-powered personalisation in Asian consumer markets, including China and South Korea (Yin et al. 2025; Yoon & Lee 2021). Related research in Malaysia has also demonstrated the importance of trust in explaining consumer stickiness on online-to-offline (O2O) commerce platforms (Muharram & Omar 2025). However, these studies have examined different technological and relational mechanisms, leaving scope for further investigation into how AI-powered personalisation and interactivity jointly relate to platform stickiness through e-satisfaction and customer engagement in Vietnam's e-commerce context. This need for context-specific investigation is further reinforced by research highlighting the influence of sociocultural factors on digital consumer behaviour in emerging economies (Farinloye et al. 2024). Previous research has also established the mediating role of e-satisfaction in e-commerce loyalty (Mohd Dali et al. 2025). However, the combined roles of e-satisfaction and customer engagement in explaining AI-driven platform stickiness warrant further investigation. Furthermore, recent research on cross-border e-commerce highlights how cultural and regulatory differences shape consumer trust and privacy concerns, underscoring the need for further investigation across diverse geographical contexts (Dong, 2026). Vietnam offers a relevant context for this study, with its e-commerce market reaching USD 38.5 billion in 2025, reflecting 21% annual growth (VECOM 2026). The evolving regulatory environment, particularly the Personal Data Protection Law (National Assembly of Vietnam, 2025), further highlights the importance of examining AI-powered personalisation and platform stickiness.

Although previous studies have examined AI-powered personalisation, interactivity, and continued platform use, it remains unclear how personalisation and interactivity each relate to platform stickiness when considered in the same model. It is also unclear whether e-satisfaction and customer engagement provide distinct pathways for these relationships, particularly among e-commerce users in Vietnam. This study therefore pursues the following specific objectives: (1) To examine the relationships between AI-powered personalisation, interactivity and platform stickiness among e-commerce users in Ho Chi Minh City, Vietnam; (2) To examine the relationships between e-satisfaction, customer engagement and

platform stickiness among e-commerce users in Ho Chi Minh City, Vietnam; (3) To determine the mediating role of e-satisfaction in the relationships between AI-powered personalisation, interactivity and platform stickiness; (4) To determine the mediating role of customer engagement in the relationships between AI-powered personalisation, interactivity and platform stickiness. The study adopts the S-O-R framework to examine these relationships, with e-satisfaction and customer engagement specified as parallel mediators.

LITERATURE REVIEW

PLATFORM STICKINESS IN E-COMMERCE

Platform stickiness refers to users' tendency to remain with and return to a particular e-commerce platform. In this study, it encompasses intention to continue using the platform, repeated visits, time spent on it, reluctance to switch, and preference for it over competing platforms. Although stickiness is related to satisfaction and loyalty, these concepts are not interchangeable. E-satisfaction concerns users' evaluation of their shopping experience, whereas stickiness concerns their continued use of a specific platform.

Recent studies show that stickiness develops through users' responses to platform experiences. Using the S-O-R framework, Tan et al. (2025) found that perceived value and flow experience were associated with user stickiness in e-commerce live streaming. In social commerce, Catacutan & Perlado (2026) examined how AI deployment and customer value co-creation relate to customer stickiness. These studies provide a contemporary basis for considering both platform features and the responses they evoke. Building on this reasoning, the present study examines whether AI-powered personalisation and interactivity are associated with platform stickiness directly and through e-satisfaction and customer engagement.

AI-POWERED PERSONALISATION

AI-powered personalisation refers to the use of AI to tailor product recommendations and platform content to users' interests and needs. In the present study, it is treated as a technological stimulus that may influence platform stickiness directly and through users' e-satisfaction and customer engagement. Relevant recommendations can make product discovery easier and create a more useful shopping experience. Prior research has linked personalisation to satisfaction, engagement and loyalty in e-commerce (Hassan et al. 2025; Maduwinarti et al. 2025). Applying the S-O-R framework in second-hand fashion e-commerce, Deng et al. (2026) examined perceived personalisation as a stimulus and continuous use intention as an outcome of users' psychological responses. This recent application supports examining how users respond to AI-related features, while the present study tests e-satisfaction and customer engagement as two specific pathways to platform stickiness.

The effects of personalisation may nevertheless depend on how recommendations are experienced. Yin et al. (2025) found that perceived privacy infringement weakened relationships involved in consumers' responses to AI-personalised recommendations and their clicking intentions. In a qualitative study of Douyin users, Ding et al. (2025) reported negative reactions when recommendations were perceived as intrusive. These findings suggest that relevance alone may not ensure a favourable response. Accordingly, examining personalisation alongside e-satisfaction and customer engagement can clarify how it relates to continued platform use in the Vietnamese e-commerce context.

H_1 AI-Powered Personalisation has a significant effect on Platform Stickiness.

INTERACTIVITY

Interactivity is the level of two-way interaction, control, and responsiveness between users and digital systems, which enables real-time interaction, making it possible for users to connect with the digital system emotionally. Within the scope of e-commerce, interactivity serves as a key technological affordance within the S-O-R framework (Mehrabian & Russell 1974), stimulating the cognitive and affective involvement of the users within the e-commerce site that promotes satisfaction, engagement and behavioural commitment over the long run. Recent findings validate interactivity as an excellent predictor of engagement and satisfaction that then leads to platform loyalty and stickiness. For instance, Wu et al. (2024) report that interactivity has a significant impact on consumers' flow experience and purchase intention in live streaming e-commerce, indicating its capability to convey immersive and sticky consumer shopping experiences. In more generalised settings of online presence, Maican et al. (2024) emphasised the positive role of perceived interactivity within e-learning platforms for the enhancement of satisfaction levels and continuance usage, implying that interactive digital affordances are constant in sustaining web user engagement in domains of usage. In addition, according to Gao et al. (2022), interaction helps to increase social presence and community attachment, which mediate user stickiness in social commerce. Together, these findings support the thesis that both interactive mechanisms of usefulness and control and enjoyment and immersion lead to behavioural persistence on the digital platform. However, some latest research found there are contextual variabilities that have been found that while interactivity creates greater engagement, too many system

prompts or algorithmic interruptions can limit the perceived control and result in fatigue in AI-mediated interactions (J. Wu 2024). These mixed results suggest that the effects of interactivity on platform stickiness may be contextual and cultural, including users' digital literacy and trust in AI technologies - both topics which are understudied in the emerging e-commerce markets such as Vietnam.

H_2 Interactivity has a significant effect on Platform Stickiness.

E-SATISFACTION AND CUSTOMER ENGAGEMENT AS MEDIATORS

Drawing on Expectation-Confirmation Theory (Oliver 1980), e-satisfaction reflects consumers' favourable evaluations of their online shopping experiences, encouraging continued platform use. Previous research has linked satisfaction to user stickiness (Shen et al. 2022) and e-loyalty (Mohd Dali et al. 2025). Similarly, Customer Engagement Theory suggests that consumers' cognitive, emotional, and behavioural involvement may strengthen platform attachment and continued participation (Brodie et al. 2011; Roy et al. 2023). Accordingly, the following hypotheses are proposed:

H_3 E-Satisfaction has a significant effect on Platform Stickiness.
H_4 Customer Engagement has a significant effect on Platform Stickiness.

Grounded in Expectation-Confirmation Theory (Oliver 1980), AI-powered personalisation may enhance e-satisfaction by delivering recommendations aligned with consumers' preferences and expectations, thereby encouraging continued platform use. Previous research has linked personalisation to customer satisfaction and loyalty (Maduwinarti et al. 2025), while Mohd Dali et al. (2025) demonstrated the mediating role of e-satisfaction between e-fulfilment and e-loyalty in e-commerce. Building on these findings, the following hypothesis is proposed:

H_5 E-Satisfaction mediates the relationship between AI-Powered Personalisation and Platform Stickiness.

Drawing on the Stimulus-Organism-Response (S-O-R) framework, interactivity may enhance e-satisfaction by facilitating responsive communication, real-time feedback, and greater user control during online shopping. These positive experiences may subsequently encourage consumers to revisit and continue using the platform. Previous research has linked interactivity to satisfaction in digital environments (Maican et al. 2024), while Shen et al. (2022) highlighted the importance of satisfaction in explaining user stickiness in livestream e-commerce. Building on these findings, the following hypothesis is proposed:

H_6 E-Satisfaction mediates the relationship between Interactivity and Platform Stickiness.

From the perspective of Customer Engagement Theory, AI-powered personalisation may enhance customer engagement by delivering relevant recommendations and tailored content that stimulate consumers' cognitive, emotional, and behavioural involvement with the platform (Brodie et al. 2011). Greater engagement may subsequently encourage repeated interactions and continued platform use. Previous research has linked AI-powered personalised recommendations to customer engagement (Ding et al. 2025), while Maduwinarti et al. (2025) examined the relationship between personalisation and engagement in e-commerce. Accordingly, the following hypothesis is proposed:

H_7 Customer Engagement mediates the relationship between AI-Powered Personalisation and Platform Stickiness.

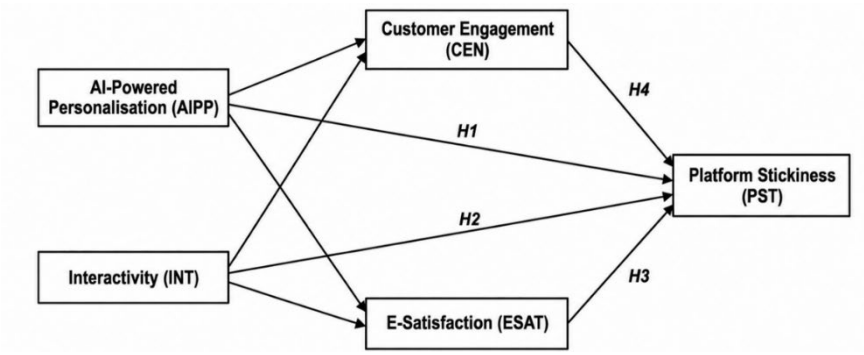
Interactivity allows for two-way communication, real-time feedback, and active participation, which can enhance the cognitive, emotional, and behavioral interaction between consumers and e-commerce platforms. More engagement could then lead to further interactions and a greater amount of platform usage. Interactive features are important for social presence and the stickiness of users in social commerce in the past (Gao et al. 2022). Based on the concept of customer engagement developed by Brodie et al. (2011), interactivity can help to create customer engagement by maintaining interaction and participation. This engagement in turn may increase their usage of the platform and boost platform stickiness, indicating a mediating role of customer engagement. Accordingly, the following hypothesis is proposed:

H_8 Customer Engagement mediates the relationship between Interactivity and Platform Stickiness.

RESEARCH FRAMEWORK

The S-O-R framework provides the overall structure of this study. AI-powered personalisation and interactivity represent platform-related stimuli; e-satisfaction and customer engagement represent users' responses; and platform stickiness is the behavioural outcome. The framework remains applicable to contemporary digital settings, as recent research has used it to examine AI-related features and continued use in e-commerce (Deng et al. 2026), as well as user stickiness in e-commerce

live streaming (Tan et al. 2025). Expectation-Confirmation Theory helps explain the e-satisfaction pathway, while customer engagement research informs the engagement pathway. These perspectives address different parts of the proposed model.



H_5: AIPP → ESAT → PST H_6: INT → ESAT → PST

H_7: AIPP → CEN → PST H: INT → CEN → PST
Note: AIPP: AI-Powered Personalisation; INT: Interactivity; ESAT: E-Satisfaction; CEN: Customer Engagement; PST: Platform Stickiness.

FIGURE 1. Research framework.

METHODOLOGY

RESEARCH DESIGN

This study adopted a quantitative, cross-sectional design to examine the hypothesised relationships among AI-powered personalisation, interactivity, e-satisfaction, customer engagement and platform stickiness. Data were collected through a structured, self-administered online questionnaire using measures adapted for the e-commerce context. The questionnaire was piloted with 30 participants, and their feedback was used to improve the clarity of the wording before the main survey. As the data were collected at one point in time, the estimated relationships should be interpreted as associations rather than evidence of causation.

Vietnam provided the broader context for the study, while the empirical investigation was delimited to Ho Chi Minh City (HCMC), a major urban e-commerce market (VECOM 2026). Defining this geographical setting allowed the study to examine the proposed relationships among consumers residing in the same city. Accordingly, current residence in HCMC was an eligibility criterion; the findings are not presented as representative of e-commerce users throughout Vietnam.

Eligible respondents were required to have used at least one e-commerce platform and completed at least one online purchase during the six months preceding the survey. These requirements provided a basis for evaluating platform features and reporting recent shopping experiences. Respondents were also required to use at least one social-media platform because the survey invitations were distributed through social-media and e-commerce-related online communities. Social-media use was an operational eligibility criterion associated with recruitment; it was not a construct in the research model. Participation was voluntary and subject to informed consent.

Participants were recruited through non-probability convenience sampling and voluntary self-selection. This approach was adopted because the study aimed to examine relationships among e-commerce users with relevant platform experience, and a complete sampling frame of eligible users in Ho Chi Minh City was unavailable. Online recruitment facilitated access to potential respondents, while eligibility questions were used to screen participants before they completed the main questionnaire. A comparable approach involving online recruitment, convenience sampling, and eligibility screening has been employed in previous e-commerce research (Mohd Dali et al. 2025). Nevertheless, because respondents' selection probabilities were unknown, the sample cannot be considered statistically representative of all e-commerce users in Ho Chi Minh City (Andrade 2021). The sample-size benchmark of 384 derived from Krejcie & Morgan (1970) was used only to guide recruitment; its conventional confidence level and margin of error do not apply to this non-probability sample. The final analytical sample comprised 518 valid responses.

MEASUREMENT

This study used a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) to measure all constructs as summarised below.

TABLE 1. Measurement items of study constructs

Construct	Items	Measurement Item	Source
AI-Powered Personalisation (AIPP)	AIPP1	The platform provides product recommendations that match my interests.	(Sipos 2025)
	AIPP2	The recommendations I receive feel personalised to my needs.	
	AIPP3	The personalised content provided by the platform makes me feel understood.	
	AIPP4	AI-based personalisation enhances my experience with the platform.	
	AIPP5	AI-based personalisation helps me find suitable products more efficiently on this platform.	
	AIPP6	The platform uses AI features that make my experience enjoyable.	
Interactivity (INT)	INT1	The platform allows me to interact in real time with the system.	(Liu 2003; McMillan & Hwang 2002)
	INT2	The platform responds quickly to my interactions.	
	INT3	I feel in control when I interact with the platform.	
	INT4	The platform enables two-way communication between me and the system.	
	INT5	The platform provides interactive features that allow me to actively engage with it.	
E-Satisfaction (ESAT)	ESAT1	I am satisfied with the online shopping I have on this platform.	(Oliver 1980)
	ESAT2	Using this e-commerce platform was a wise decision for me.	
	ESAT3	I do not regret choosing this platform for online shopping.	
	ESAT4	I feel positive about my overall experience on this platform.	
	ESAT5	If I could choose again, I would still use this platform.	
	ESAT6	I am satisfied with how this platform performs.	
Customer Engagement (CEN)	CEN1	Using this e-commerce platform makes me think carefully about the products it recommends to me.	(Hollebeek et al. 2014)
	CEN2	I often reflect on my shopping experiences with this e-commerce platform.	
	CEN3	I feel excited when I use this e-commerce platform.	
	CEN4	I feel pleased when I interact with this e-commerce platform.	
	CEN5	I spend a lot of time browsing this e-commerce platform.	
	CEN6	I am willing to put effort into using this e-commerce platform.	
	CEN7	I frequently interact with features on this e-commerce platform, such as product reviews.	
Platform Stickiness (PST)	PST1	I intend to continue using this e-commerce platform in the future.	(Lin 2007)
	PST2	I often return to this e-commerce platform whenever I need to shop online.	
	PST3	I usually stay on this e-commerce platform for a long time when I visit it.	
	PST4	It would be difficult for me to switch to another e-commerce platform.	
	PST5	Among the e-commerce platforms I know, this one is my first choice.	

FINDINGS

DEMOGRAPHIC PROFILE OF RESPONDENTS

A total of 518 valid responses were analysed from the collected 552 questionnaires. Gender was fairly even with 52.5% of the sample being female, 45.6% male and 1.9% preferring not to mark their gender. Respondents were mostly between the ages of 18 and 34 (66.2%), and a large majority were college-educated (71.6%). In terms of income, most of them had an income of 10-20 million VND per month (39.6%), while 25.7 earned 5-10 million. Regarding online shopping habits, it was seen that 44.6 and 30.1 of the people made weekly and monthly shopping respectively, showing an active level of online shopping participation. Shopee (77.8%), TikTok Shop (47.1%) and Lazada (38.8%) were the most used platforms. Key reasons for platform preference were better prices at 78.8%, fast delivery at 65.4% and quality of products at 55.2%. Social media was a prominent element in the e-commerce activities of the users as Facebook 85.3% and Zalo 60.6% appeared to be the leading social media platforms used, followed by TikTok 57.3% and YouTube 37.1%. These numbers serve to highlight the digitally active and well-educated consumer demographic, interacting heavily with mobile-based e-commerce as well as social media ecosystems in Ho Chi Minh City, Vietnam.

TABLE 2. Demographic statistics

Single response	*n*	(%)	Multiple response	*n*	(%)
Gender			*Most-used e-commerce platforms*		
Male	236	45.6	Amazon	25	4.8
Female	272	52.5	Lazada	201	38.8
Prefer not to say	10	1.9	Sendo	50	9.7
Age			Shopee	403	77.8
13-17	8	1.5	Tiki	131	25.3
18-24	154	29.7	TikTok Shop	244	47.1
25-34	189	36.5	Other	21	4.1
35-44	97	18.7	*Top reasons for choosing platform*		
45-54	51	9.9	Better prices	408	78.8
55 and above	19	3.7	Fast delivery	339	65.4
Education			Product quality	286	55.2
High school or below	27	5.2	Easy to use	232	44.8
Vocational college/Diploma	104	20.1	Friends' recommendation	162	31.3
Bachelor's degree	258	49.8	Online reviews and ratings	94	18.1
Postgraduate degree	113	21.8	Other reason	25	4.8
Other	16	3.1	*Social media for e-commerce*		
Monthly income (VND)			Facebook	442	85.3
Below 5M	51	9.8	Zalo	314	60.6
5 to 10 M	133	25.7	TikTok	297	57.3
10 to 20 M	205	39.6	YouTube	192	37.1
20 to 50 M	101	19.5	Instagram	109	21.0
Above 50M	28	5.4	Other	27	5.2

Online shopping frequency		
Daily	77	14.9
Weekly	231	44.6
Monthly	156	30.1
Quarterly	54	10.4
Total	518	100.0

Note: Respondents could select multiple options; percentages do not sum to 100%

MEASUREMENT MODEL ASSESSMENT

The reflective measurement model was assessed using indicator loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). According to Hair et al. (2022), indicators with outer loadings between 0.40 and 0.708 may be removed if doing so improves CR or AVE without compromising content validity. Accordingly, AIPP4 was removed due to its low loading (0.642), resulting in improved CR and AVE. The remaining 28 indicators were retained for further analysis. As shown in Table 3, Cronbach's alpha ranged from 0.870 to 0.909, and all CR values exceeded the recommended threshold of 0.70, indicating satisfactory internal consistency (Hair et al. 2022). All indicator loadings exceeded 0.78. The AVE values ranged from 0.644 to 0.685 and were above the 0.50 criterion, supporting convergent validity (Fornell & Larcker 1981; Hair et al. 2022)

TABLE 3. Reliability and convergent validity assessment of the measurement model

Construct	Cronbach's Alpha	CR	AVE	Item Loadings (Min-Max)
AI-Powered Personalisation	0.880	0.912	0.675	0.798 - 0.837
Interactivity	0.885	0.916	0.685	0.810 - 0.844
E-Satisfaction	0.890	0.916	0.644	0.791 - 0.812
Customer Engagement	0.909	0.928	0.646	0.784 - 0.820
Platform Stickiness	0.870	0.906	0.657	0.800 - 0.815

Discriminant validity was investigated in terms of the Heterotrait-Monotrait (HTMT) ratio, which is shown in Table 4. All HTMT values were below the conservative threshold of 0.85 proposed by Henseler et al. (2015), with the highest value being 0.617 between customer engagement and e-satisfaction. Taken as a whole, these results show strong evidence indicating satisfactory reliability, convergent validity, and discriminant validity of the measurement model, which led to the conclusion that the measure can be used in further structural model analysis appropriately.

TABLE 4. Discriminant validity assessment using the HTMT criterion

	AI-Powered Personalisation	Customer Engagement	E-Satisfaction	Interactivity	Platform Stickiness
AI-Powered Personalisation					
Customer Engagement	0.422				
E-Satisfaction	0.422	0.617			
Interactivity	0.061	0.430	0.426		
Platform Stickiness	0.355	0.495	0.489	0.302	

COMMON METHOD BIAS ASSESSMENT

Because all constructs were measured using the same self-report questionnaire, potential common method bias was assessed using two diagnostic checks. An unrotated principal components analysis of the 28 measurement items (N = 518) showed that the first component explained 33.68% of the total variance. Full-collinearity variance inflation factors (VIFs) were also calculated from the five latent-variable scores exported from SmartPLS by regressing each score on the other four. The VIFs ranged from 1.286 to 1.712, below the diagnostic threshold of 3.3 proposed by Kock (2015). These results did not indicate a dominant single component or severe full collinearity. Nevertheless, these diagnostics cannot rule out all common method bias in cross-sectional self-report data.

STRUCTURAL MODEL ASSESSMENT

The structural model assessment first checked for possible multicollinearity between the predictor constructs. As presented in Table 5, all variance inflation factor (VIF) values were near 1 and well below the conservative cut-off of 3.3 that is often recommended for PLS-SEM applications, showing that multicollinearity was not an issue and that the estimated path coefficients were unlikely to be biased by redundant explanatory information (Hair et al. 2022). The highest VIFs were found for Customer Engagement (1.636) and E-Satisfaction (1.619) to predict Platform Stickiness, while all other values varied between 1.001 and 1.275. These results also confirm the stability and reliability of the structural estimates.

TABLE 5. Collinearity assessment of the structural model (VIF Values)

	Customer Engagement	E-Satisfaction	Platform Stickiness
AI-Powered Personalisation	1.001	1.001	1.269
Customer Engagement			1.636
E-Satisfaction			1.619
Interactivity	1.001	1.001	1.275
Platform Stickiness			

The explanatory power of the model was then evaluated using the coefficients of determination of the three endogenous constructs (Table 6). The model explained 28.3% of the variance in Customer Engagement, 27.6% in E-Satisfaction, and 26.4% of Platform Stickiness, with the adjusted R^2 values of 0.281, 0.273, and 0.259 respectively. Following benchmarks suggested by (Hair et al. 2022; Henseler et al. 2009), these coefficients reflect weak to moderate explained power, which is characteristic of marketing and e-commerce research where behavioural outcomes are affected by a range of unobserved variables. The close correspondence between R^2 and adjusted R^2 values suggests that the model is parsimonious and not overfitted and therefore provides a robust basis for subsequent interpretation of structural relationships.

TABLE 6. Coefficient of determination (R-square and Adjusted R-square)

	R-square	R-square adjusted
Customer Engagement	0.283	0.281
E-Satisfaction	0.276	0.273
Platform Stickiness	0.264	0.259

The standardised root mean square residual (SRMR) was 0.040 for the saturated model and 0.071 for the estimated model. These values are reported as supplementary indicators of model fit. The structural model was first tested through examination of the hypothesised direct relationships among the constructs. As reported in Table 7, all the proposed direct effects are statistically significant and therefore supported. AI-Powered Personalisation (AIPP) has a positive and significant impact on Platform Stickiness (PST) ($\beta = 0.140$, SD = 0.043, t = 3.244, p = 0.001), so it supports H_1. Similarly, Interactivity (INT) has a positive effect on PST ($\beta = 0.088$, SD = 0.045, t = 1.972, p = 0.049) supporting H_2. Regarding the attitudinal constructs, E-Satisfaction (ESAT) is found to be positively related to PST ($\beta = 0.213$, SD = 0.050, t = 4.299, $p < 0.001$); this confirms H_3. In addition, Customer Engagement (CEN) shows the most direct effect on PST ($\beta = 0.237$, SD = 0.048, t = 4.940, $p < 0.001$), supporting this H_4. Taken together, these results suggest that both technological features (AIPP and INT) and user-level attitudinal states (ESAT and CEN) are important contributors to Platform Stickiness.

The effect sizes for the direct predictors of platform stickiness were small: $f^2 = 0.021$ for AI-powered personalisation, 0.008 for interactivity, 0.038 for e-satisfaction and 0.047 for customer engagement. Interactivity therefore had the smallest incremental contribution. Although its direct path was statistically significant ($\beta = 0.088$, p = 0.049), the magnitude of this association was limited.

TABLE 7. Hypothesis testing results (direct effects)

Hypothesis		β	f^2	SD	t-value	p-value	Decision
H_1:	AIPP → PST	0.140	0.021	0.043	3.244	0.001	Supported
H_2:	INT → PST	0.088	0.008	0.045	1.972	0.049	Supported
H_3:	ESAT → PST	0.213	0.038	0.050	4.299	< 0.001	Supported
H_4:	CEN → PST	0.237	0.047	0.048	4.940	< 0.001	Supported

Note: AIPP: AI-Powered Personalisation; INT: Interactivity; ESAT: E-Satisfaction; CEN: Customer Engagement; PST: Platform Stickiness.

Following the confirmation of the direct effects (H_1-H_4), mediating roles that were proposed in H_5-H_8 were examined. Mediation analysis was performed with a bias-corrected bootstrapping procedure with 10,000 resamples. As shown in Table 8, both E-Satisfaction and Customer Engagement act as significant mediators between AI-Powered Personalisation and Interactivity and Platform Stickiness. Consistent with H_5, ESAT mediates the relationship between AIPP and PST ($\beta = 0.078$, SD = 0.020, t = 3.814, $p < 0.001$, 95% CI [0.040, 0.121]). Likewise, in support of H_6, ESAT also mediates the effect of INT on PST ($\beta = 0.078$, SD = 0.020, t = 3.848, $p < 0.001$, 95% CI [0.041, 0.120]). With respect to customer engagement, H_7 is supported, as CEN significantly transmits the effect of AIPP on PST ($\beta = 0.087$, SD = 0.020, t = 4.435, $p < 0.001$, 95% CI [0.050, 0.126]). Similarly, H_8 is confirmed, and CEN is a mediator between INT and PST ($\beta = 0.088$, SD = 0.020, t = 4.466, $p < 0.001$, 95% CI [0.050, 0.128]). In all cases, the bias-corrected 95% confidence intervals do not include zero, and thus statistically significant specific indirect effects are apparent. Importantly, the corresponding direct effects from AIPP to PST ($\beta = 0.140$, p = 0.001) and from INT to PST ($\beta = 0.088$, p = 0.049) continue to be significant after the inclusion of ESAT and CEN as mediators (see Table 7). According to the mediation decision rules proposed by (Hair et al. 2022), this pattern is evidence of complementary partial mediation, as both the direct and indirect effects are positive and statistically significant.

From a theoretical perspective, these results indicate that AI-Powered Personalisation and Interactivity improve Platform Stickiness via two pathways. Beyond their direct role in shaping the continued use intentions of users, these technological characteristics indirectly promote stickiness by contributing to higher levels of E-Satisfaction and Customer Engagement, which promote users' psychological attachment and continuity of behaviour. Overall, all hypothesised direct (H_1-H_4) and mediating (H_5-H_8) relationships are supported, and suggest the combined importance of the role of technological affordances and user-level psychological mechanisms in maintaining long-term platform stickiness in e-commerce contexts.

TABLE 8. Mediation analysis results (specific indirect effects)

Hypothesis	β	SD	t-value	95% CI (Lower)	95% CI (Upper)	p-value	Decision
H_5: AIPP → ESAT → PST	0.078	0.020	3.814	0.040	0.121	< 0.001	Supported
H_6: INT → ESAT → PST	0.078	0.020	3.848	0.041	0.120	< 0.001	Supported
H_7: AIPP → CEN → PST	0.087	0.020	4.435	0.050	0.126	< 0.001	Supported
H_8: INT → CEN → PST	0.088	0.020	4.466	0.050	0.128	< 0.001	Supported

Note: 95% CI = 95% bias-corrected bootstrap confidence interval; AIPP: AI-Powered Personalisation; INT: Interactivity; ESAT: E-Satisfaction; CEN: Customer Engagement; PST: Platform Stickiness.

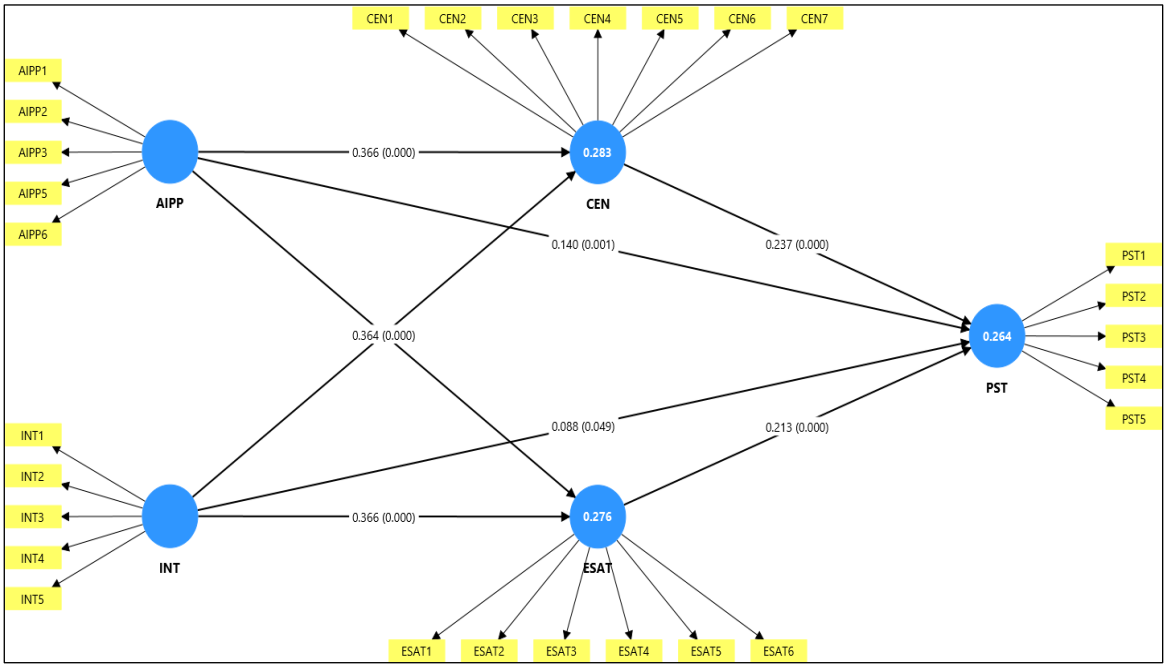


FIGURE 2. Structural model results

Out-of-sample predictive performance was assessed using PLSpredict. Table 9 reports Q^2predict and compares the PLS-SEM root mean square error (RMSE) with the linear model (LM) benchmark for each endogenous indicator. All 18 indicators had positive Q^2predict values. The PLS-SEM RMSE was lower than the LM RMSE for every indicator, indicating better predictive performance than the LM benchmark for the indicators examined. The differences were small for some indicators, so the results should be interpreted as evidence of comparative predictive performance rather than uniformly large predictive gains.

TABLE 9. Indicator-level PLSpredict results and linear model benchmark

Indicator	Q^2predict	PLS-SEM RMSE	LM RMSE
CEN1	0.197	1.016	1.026
CEN2	0.196	1.044	1.055
CEN3	0.162	1.024	1.038
CEN4	0.177	1.029	1.037
CEN5	0.144	1.048	1.062
CEN6	0.166	1.067	1.082
CEN7	0.206	1.010	1.023
ESAT1	0.161	1.036	1.048
ESAT2	0.183	1.013	1.019
ESAT3	0.184	1.068	1.075
ESAT4	0.186	1.016	1.017
ESAT5	0.170	1.017	1.018
ESAT6	0.154	1.060	1.070
PST1	0.096	1.041	1.048
PST2	0.114	1.019	1.030
PST3	0.096	1.038	1.047
PST4	0.099	1.037	1.045
PST5	0.108	1.077	1.089

Note: LM = linear model; RMSE = root mean square error. CEN = Customer Engagement; ESAT = E-Satisfaction; PST = Platform Stickiness.

DISCUSSION

This study found positive direct and indirect associations between AI-powered personalisation, interactivity and platform stickiness through e-satisfaction and customer engagement. The findings expand on theoretical and contextual knowledge of the reciprocal role of technological and psychological affordances in supporting long-term attachment of users in a new digital market like Vietnam. First, the positive direct association of AI-powered personalisation on Platform Stickiness confirms H_1 and underscores the role of relevant recommendations, customised content and the perceived understanding of users in encouraging the repeated use of the platform. These results are consistent with previous research that shows the use of AI personalisation can increase customer trust, satisfaction, and loyalty (Hassan et al. 2025; Maduwinarti et al. 2025; Sipos 2025). The Ho Chi Minh City setting provides evidence from a rapidly developing e-commerce market; however, privacy preferences and cultural differences were not directly measured, so they cannot explain the observed relationships on the basis of these data. Second, interactivity was positively associated with platform stickiness (H_2), but its direct effect was small ($\beta = 0.088$; $f^2 = 0.008$), with a p-value close to 0.05 ($p = 0.049$). This finding should therefore be interpreted cautiously. The significant indirect effects through e-satisfaction and customer engagement suggest that interactivity may be more consequential when it contributes to these positive user responses than through its direct association with stickiness. Third, the e-satisfaction and customer engagement both have strong direct impacts on platform stickiness (supporting H_3 and H_4). According to Expectation-Confirmation Theory, e-satisfaction is a positive evaluation of the user when the perceived performance meets the expectations (Luo et al. 2024; Oliver 1980; Shen et al. 2022). Contrary, engagement includes the cognitive, emotional and behavioural aspects of user involvement (Brodie et al. 2011; Hollebeek et al. 2014; Roy et al. 2023). E-satisfaction reflects an evaluation of the platform experience, whereas engagement captures broader user involvement. Although the coefficient for engagement was numerically larger, this study did not test whether the two coefficients differed significantly. Importantly, the fact that the indirect paths H_5-H_8 all have significant effects at the same time supports a dual mediation model, whereby both e-satisfaction and engagement mediate the effect of personalisation and interactivity on stickiness, to some extent. This suggests that AI affordances (activated both cognitive (satisfaction) as well as affective - behavioural (engagement) pathways) lead to sustained user behaviour, consistent with recent integrative digital loyalty frameworks (Kim & Yum 2024). The moderate levels of explanatory power of the model ($R^2 = 0.264$, 0.283, and 0.276 for the conceptual variables stickiness, engagement, and satisfaction, respectively) are consistent with consumer behaviour research where unobserved constructs accounted for residual variance, such as trust, habit, and privacy sensitivity (Hair et al. 2022).

IMPLICATIONS

THEORETICAL IMPLICATIONS

The primary contribution of this study is to examine e-satisfaction and customer engagement as separate, parallel pathways linking AI-powered personalisation and interactivity to platform stickiness within a single stimulus–organism–response (S–O–R) model. Personalisation and interactivity represent platform-related stimuli, while e-satisfaction and customer engagement represent distinct user responses. Examining these pathways together allows their respective associations with platform stickiness to be assessed in the same sample.

The findings provide empirical support for the proposed direct and indirect relationships among surveyed e-commerce users in Ho Chi Minh City. This setting adds contextual evidence to research on AI-enabled platform experiences, but the non-probability sample does not establish that the findings apply across Vietnam or other markets. The study's contribution is therefore the specification and empirical examination of the parallel pathways in this setting, rather than the development of a new analytical method or a new theory.

Expectation-Confirmation Theory informs the interpretation of the e-satisfaction pathway, but expectations and confirmation were not measured. Accordingly, the study does not claim to test or extend ECT. Customer engagement research informs the engagement pathway. Future research could measure the full ECT process and collect longitudinal data to examine how these user responses and platform stickiness develop over time.

PRACTICAL IMPLICATIONS

This study provides practical information for e-commerce practitioners who are interested in creating sustainable user loyalty in an AI-driven environment. To ensure that AI systems are developed appropriately, firms should design systems with an emphasis on relevance, transparency, and ensuring autonomy for the user, which may involve enabling them to control the amount of personalisation and understand how recommendations are made. Such transparency increases perceived control, trust, and commitment for the long term. Interactivity should be used deliberately in order to facilitate immersion and emotional connection. Features such as live chat, virtual support, gamification and real-time feedback may shift functional interaction to participatory experience, creating a sense of co-creation and flow. Effective experience management demands a balance between the functional efficiency of the experience and its emotional value. Reliability, speed of delivery and accuracy of information should be accompanied by loyalty programs, community interaction and socially engaging content to build attachment and repeat usage. Research on smartphone brand loyalty in Malaysia also

found that loyalty reward programmes mediated the relationships between social network advertising, social media brand communities and brand loyalty (Mohammadi 2019). Finally, consistency in digital touchpoints is critical. Integrating user data in a way that is ethical across websites, apps, and social media can help build seamless and unified experiences, as well as help to reinforce trust in AI systems. These recommendations also involve trade-offs. Developing and maintaining personalised recommendations and interactive features requires investment in data governance, technical support and ongoing evaluation. Excessive or poorly timed recommendations may frustrate users, while extensive use of personal data may raise privacy concerns. Managers could therefore begin with limited trials, monitor user feedback and engagement, and give users clear options to adjust the frequency of recommendations and the information they share. Different users may prefer different levels of personalisation and interaction, so platforms could offer adjustable settings rather than a single experience for everyone. These are managerial recommendations arising from the findings; the present study did not test their costs or compare user segments. Overall, it would be good for managers to see AI not only as a technological tool but as a strategic catalyst for relationship building, in which responsible, user-centered design involves transforming short-term engagement into long-term platform loyalty and competitive advantage.

CONCLUSION

This study investigated the effect of AI-powered personalisation and interactivity on platform stickiness via dual mediating variables of e-satisfaction and customer engagement. Based on survey data collected from 518 respondents in Vietnam, who are engaged in e-Commerce and analysed using PLS-SEM, the results showed that the impact of technological affordances directly and indirectly complements each other and influences the persistence of behaviour. Theoretically, this research is a contribution that combines the cognitive and emotional-behavioural pathways in a cohesive dual mediation framework that advances the understanding of digital loyalty formation. Empirically, the findings support the mediating roles of e-satisfaction and customer engagement in the relationships between AI-powered personalisation, interactivity and platform stickiness among surveyed e-commerce users in Ho Chi Minh City, Vietnam. The results highlight the importance of AI-enabled personalisation and interactivity as technological stimuli driving long-term user attachment using psychological and experiential mechanisms. However, there remain some limitations that offer possibilities for future research. The use of cross-sectional data limits causal inference and the focus on an urban population limits generalisability to situations that involve rural or less digitally mature populations. Future studies should employ longitudinal approaches to track change in satisfaction, engagement and loyalty over time, in order to capture the dynamic development of user attachment within AI-mediated environments. In addition, cross-national or multi-group analyses (MGA) could be used to examine the possibility that cultural, regulatory or technological differences moderate the relationships found in this study. Such comparative research would highlight how elements such as privacy orientation, digital literacy and trust in AI systems differ across societies and shape the creation of platform stickiness.

Over and above replication, future research should focus on expanding the model by simultaneously incorporating mediating and moderating mechanisms, such as the role of trust, perceived fairness, algorithmic transparency or perceived risk, in shaping loyalty behaviours in combination with satisfaction and engagement. By investigating these conditional pathways, it may be possible to understand when and for whom AI-driven personalisation is effective or counterproductive.

Moreover, future research could be carried out which uses mixed-method or an experimental approach to reveal the cognitive-emotional processes underlying user interaction with intelligent systems. Advanced analytics such as multi-level modelling or latent growth curve analysis could also be used to examine user behaviour trajectories as well as identify nonlinear patterns of engagement over time. These methodological improvements would advance the field toward establishing causal validity and theoretical generalisation.

Finally, ethical dimensions, such as data transparency, user autonomy, and algorithmic accountability, should be considered as AI technologies continue to evolve and should become a part of models of digital loyalty. Addressing these complex, cross-disciplinary challenges will not only help refine the theoretical precision of AI research, but will also help support managers in designing responsible, human-centred AI ecosystems that will keep the trust, engagement, and sustainability of a platform going in the long term.

ACKNOWLEDGEMENT

We would like to thank the Jurnal Pengurusan (UKM Journal of Management), the editors and reviewers for their helpful comments and suggestions that improved this paper.

REFERENCES

Andrade, C. 2021. The inconvenient truth about convenience and purposive samples. *Indian Journal of Psychological Medicine* 43(1): 86–88.

Ariffin, A. & Tran, N.T. 2026. The influence of AI chatbot attributes on purchase intention: The mediating role of customer trust in the AI era. *Lecture Notes in Networks and Systems*: 1–11.

Brodie, R.J., Hollebeek, L.D., Jurić, B. & Ilić, A. 2011. Customer engagement: Conceptual domain, fundamental propositions, and implications for research. *Journal of Service Research* 14(3): 252–271.

Catacutan, Z.M. & Perlado, C.E.M. 2026. Unveiling AI deployment and social support on customer value co-creation and stickiness in social commerce: A PLS-SEM and NCA approach. *The South East Asian Journal of Management* 20(1): 97–124.

Deng, K., Zhang, C., Song, M. & Hu, X. 2026. Exploring key factors influencing Generation Z users' continuous use intention on human-AI collaboration in secondhand fashion e-commerce platforms. *Sustainability* 18(2).

Ding, L., Antonucci, G. & Venditti, M. 2025. Unveiling user responses to AI-powered personalised recommendations: A qualitative study of consumer engagement dynamics on Douyin. *Qualitative Market Research: An International Journal* 28(2): 234–255.

Dong, Y. 2026. Navigating trust in cross-border e-commerce: A systematic review of cultural and consumer dynamics. *Humanities and Social Sciences Communications* 13(1).

Farinloye, T., Omotoye, O., Oginni, A., Moharrak, M. & Mogaji, E. 2024. Bridging the digital divide: Consumer engagement with transportation payment apps in emerging economies. *Journal of Consumer Behaviour* 23(6): 3011–3029.

Florence, J. & Aprillia, A. 2025. E-satisfaction as a mediator between e-service quality, e-trust, and e-loyalty. *APTISI Transactions on Management* 9(2): 115–128.

Fornell, C. & Larcker, D.F. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18(1): 39-50.

Gao, X., Yee, C.L. & Choo, W.C. 2022. How attachment and community identification affect user stickiness in social commerce: A consumer engagement experience perspective. *Sustainability* 14(20): 1-16.

Hair, J.F., Hult, G.T.M., Ringle, C.M. & Sarstedt, M. 2022. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. 3rd edition. Sage Publications.

Hassan, N., Abdelraouf, M. & El-Shihy, D. 2025. The moderating role of personalized recommendations in the trust–satisfaction–loyalty relationship: An empirical study of AI-driven e-commerce. *Future Business Journal* 11(1): 1–15.

Henseler, J., Ringle, C.M., & Sarstedt, M. 2015. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science* 43(1): 115–135.

Henseler, J., Ringle, C.M., & Sinkovics, R.R. 2009. The use of partial least squares path modeling in international marketing. *Advances in International Marketing* 20: 277–319.

Hollebeek, L.D., Glynn, M.S. & Brodie, R.J. 2014. Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing* 28(2): 149–165.

Kim, J. & Yum, K. 2024. Enhancing continuous usage intention in e-commerce marketplace platforms: The effects of service quality, customer satisfaction, and trust. *Applied Sciences* 14(17): 1-15.

Kock, N. 2015. Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of E-Collaboration* 11(4): 1–10.

Krejcie, R.V. & Morgan, D.W. 1970. Determining sample size for research activities. *Educational and Psychological Measurement* 30: 607–610.

Lin, J.C.C. 2007. Online stickiness: Its antecedents and effect on purchasing intention. *Behaviour & Information Technology* 26(6): 507–516.

Liu, Y. 2003. Developing a scale to measure the interactivity of websites. *Journal of Advertising Research* 43(2): 207–216.

Luo, C., Hasan, N.A.M. & Zamri bin Ahmad, A.M. 2024. Exploring satisfaction and trust as key drivers of e-government continuance intention: Evidence from China for sustainable digital governance. *Sustainability* 16(24): 1-26.

Maduwinarti, A., Kusbianto, N. & Mahendra, I.G.N.A. 2025. The influence of customer personalization on customer satisfaction, engagement, and loyalty Indonesian e-commerce in the digital age. *International Journal of Innovative Research and Scientific Studies* 8(3): 1904–1914.

Maican, C.I., Cazan, A.M., Cocoradă, E., Dovleac, L., Lixăndroiu, R.C., Maican, M.A. & Cocoradă, S.A. 2025. The role of contextual and individual factors in successful e-learning experiences during and after the pandemic – A two-year study. *Journal of Computers in Education* 12(2): 589–624.

McMillan, S.J. & Hwang, J.S. 2002. Measures of perceived interactivity: An exploration of the role of direction of communication, user control, and time in shaping perceptions of interactivity. *Journal of Advertising* 31(3): 29–42.

Mehrabian, A. & Russell, J.A. 1974. *An Approach To Environmental Psychology*. Cambridge, MA: MIT Press.

Mohammadi, A. 2019. *Intervening Role of Loyalty Reward Programs and E-Word-Of-Mouth on Smartphone Brand Loyalty in Malaysia*. ProQuest Dissertations Publishing.

Mohd Dali, N.R.S., Wan Nawang, W.R., Hamid, H.A. & Mohd Soffian Lee, U.H. 2025. E-fulfilment affecting e-loyalty mediated by e-satisfaction and e-trust in digital landscape. *Jurnal Pengurusan* 75: 1–16.

Muharram, W.M. & Omar, N.A. 2025. Consumer behavioural stickiness in Malaysian O2O commerce from a relationship perspective: Trust transfer theory and trust-commitment theory. *Jurnal Pengurusan* 74: 1–13.

National Assembly of Vietnam. 2025. *Law on Personal Data Protection (Law No. 91/2025/QH15)*.

Oliver, R.L. 1980. A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research* 17(4): 460–469.
Pang, H., Hu, Z. & Wang, L. 2025. How perceived motivations influence user stickiness and sustainable engagement with AI-powered chatbots – Unveiling the pivotal function of user attitude. *Journal of Theoretical and Applied Electronic Commerce Research* 20(3): 1-22.
Ratnawati & Afni Eliana Saragih. 2025. AI-driven personalization in e-commerce: Impact on customer engagement and the role of privacy concerns. *Jurnal Pendidikan Ekonomi dan Kewirausahaan* 9(2): 564-574.
Roy, S.K., Singh, G., Sadeque, S., Harrigan, P. & Coussement, K. 2023. Customer engagement with digitalized interactive platforms in retailing. *Journal of Business Research* 164: 1-15.
Shen, L., Zhang, Y., Fan, Y., Chen, Y. & Zhao, Y. 2022. Improving consumer stickiness in livestream e-commerce: A mixed-methods study. *Frontiers in Psychology* 13.
Sipos, D. 2025. The effects of AI-powered personalization on consumer trust, satisfaction, and purchase intent. *European Journal of Applied Science, Engineering and Technology* 3(2): 14–24.
Tan, J., Dong, Y., Zhao, W., Tan, Q. & Liu, R. 2025. Can they keep you hooked? Impact of streamers' social capital on user stickiness in e-commerce live streaming. *Journal of Theoretical and Applied Electronic Commerce Research* 20(3): 1-24.
Teepapal, T. 2025. AI-driven personalization: Unraveling consumer perceptions in social media engagement. *Computers in Human Behavior* 165.
Trung, T.N., Mohammadi, A., Goyal, S.B. & Sabermajidi, N. 2026. Exploring the intervening roles of e-satisfaction and EWOM on e-commerce platform loyalty. *Lecture Notes in Networks and Systems* 1497: 165–177.
VECOM. 2026. *E-commerce Business Index Report 2026*.
Wu, J. 2024. Social and ethical impact of emotional AI advancement: The rise of pseudo-intimacy relationships and challenges in human interactions. *Frontiers in Psychology* 15.
Wu, Y.Y., Batool, H. & Yang, Y.J. 2024. Relationship between the characteristics of e-commerce live streaming and purchase intentions: Moderating effect of hedonistic shopping value. *Emerging Science Journal* 8(3): 1097–1117.
Yin, J., Qiu, X. & Wang, Y. 2025. The impact of AI-personalized recommendations on clicking intentions: Evidence from Chinese e-commerce. *Journal of Theoretical and Applied Electronic Commerce Research* 20(1): 1-40.
Yoon, N. & Lee, H.K. 2021. AI recommendation service acceptance: Assessing the effects of perceived empathy and need for cognition. *Journal of Theoretical and Applied Electronic Commerce Research* 16(5): 1912–1928.

Nam Trung Tran (corresponding author)
City Graduate School
City University Malaysia
46100 Petaling Jaya, Selangor, MALAYSIA.
E-Mail: tn.trung@hutech.edu.vn

Alireza Mohammadi
City Graduate School
City University Malaysia
46100 Petaling Jaya, Selangor, MALAYSIA.
E-Mail: alireza.mohammadi@city.edu.my

Jing Wan
City Graduate School
City University Malaysia
46100 Petaling Jaya, Selangor, MALAYSIA.
E-Mail: 541807303@qq.com

Ooi Kok Loang
City Graduate School
City University Malaysia
46100 Petaling Jaya, Selangor, MALAYSIA.
E-Mail: kok.loang@city.edu.my