

Investigating the Impact of Privacy, Trust, and Security Perceptions on Gen Z Webrooming Behaviour in Luxury E-Commerce: An Integrated TAM-TPB Approach

Teslin Sabu^{1*}, Dr.R. Parameswaran², Dr. Elizabeth Paul Chakkachampambil³,
Limna Poulose⁴, Nimi Varghese⁵, and Leena Louis⁶

^{1*}Research Scholar, Karpagam Academy of Higher Education, Coimbatore, Tamil Nadu, India.
teslinsabu2012@gmail.com, <https://orcid.org/0009-0008-3163-5363>

²Professor, Department of Commerce, Karpagam Academy of Higher Education, Coimbatore,
Tamil Nadu, India. parameswran.ramaswami@kahedu.edu.in,
<https://orcid.org/0009-0003-1912-7212>

³Associate Professor in Commerce, Research Department of Commerce, St. Joseph's College
(Autonomous), Irinjalakuda, Kerala, India. elizabethrini@yahoo.com,
<https://orcid.org/0009-0004-0246-499X>

⁴Assistant Professor, Department of Commerce (UNAIDED), St. Joseph's College (Autonomous),
Irinjalakuda, Kerala, India. limnapoulose92@gmail.com, <https://orcid.org/0009-0000-9394-3494>

⁵Assistant Professor, Department of Business Administration, St. Joseph's College (Autonomous),
Irinjalakuda, Kerala, India. nimishaji16@gmail.com, <https://orcid.org/0000-0003-4588-4017>

⁶Assistant Professor, Department of Business Administration, St. Joseph's College, (Autonomous),
Irinjalakuda, Kerala, India. leenaanukpg@gmail.com, <https://orcid.org/0009-0006-9124-8387>

Received: January 27, 2026; Revised: March 11, 2026; Accepted: April 17, 2026; Published: May 29, 2026

Abstract

The paper aims to explore the effect of privacy, trust, and security perception on webrooming behavior of Generation Z in luxury e-commerce settings with the help of combined TAM and TPB. The luxury e-commerce websites involve high levels of perceived risks due to financial value, authenticity issues, and sharing of sensitive information. This makes trust-related constructs particularly important for the decision-making of the customers. In the study, a quantitative approach was used, and the data were gathered from 364 valid responses, which were collected using a purposive sampling technique involving Gen Z customers who had experience in luxury shopping. The Structural Equation Modeling (SEM) approach was used to test the relationship between different constructs proposed in the study. The results found that the model had strong explanatory power with a coefficient of determination of $R^2 = 0.62$, showing that 62% of the variance of webrooming behavior can be explained by the model. It was found that the attitude towards webrooming is significantly affected by perceived usefulness ($\beta = 0.558$, $p < 0.001$) and perceived ease of use ($\beta = 0.229$, $p < 0.001$). Subjective norm ($\beta = 0.303$, $p < 0.001$) and perceived behavioral control ($\beta = 0.564$, $p < 0.001$) significantly influence behavioral intention, and perceived behavioral control proves to be a more robust determinant of the behavioral intention variable. In addition, behavioral intention significantly influences webrooming behavior ($\beta = 0.652$, $p < 0.001$), thus

Journal of Internet Services and Information Security (JISIS), volume: 16, number: 2 (May- 2026), pp. 557-573.
DOI: 10.58346/JISIS.2026.12.035

*Corresponding author: Research Scholar, Karpagam Academy of Higher Education, Coimbatore, India.

substantiating the relationship between the intention-behavior construct. The proposed model shows considerable predictive validity with regard to hybrid shopping behavior in a luxurious setting. This research advances the existing framework (TAM-TPB) through adding elements of privacy, trust, and security and providing further insight into digital consumption behavior patterns of Generation Z customers.

Keywords: Privacy Perception, Trust, Security Perception, Webrooming Behaviour, Luxury E-Commerce, TAM-TPB Model.

1 Introduction

1.1 Background and Motivation

Furthermore, the rapid development of digital commerce has changed customers' purchasing behaviors; currently, online and offline retail channels are beginning to integrate within the luxury retail sector. Currently, customers do not experience a linear purchasing process; instead, engage in hybrid purchasing behaviors, such as webrooming, where use online channels to research products before purchasing them offline. Such purchasing behaviors are especially common among Gen Z consumers, who are interested in the application of digital technologies but who are afraid to buy the products online due to the risks that are associated with online luxury retailing (Pasaribu et al., 2025; Bharath et al., 2024). Despite the convenience and accessibility provided by the luxury online retail platforms, face difficulties with consumer trust because of the issues with privacy exposure, transaction security, and authenticity of valuable products (Urbonavičius & Degutis, 2023; Akram & Lavuri, 2024). The development of digital ecosystems requires understanding of the psychological and technological aspects influencing the behavior of Gen Z consumers.

1.2 Problem Statement and Research Gap

Although the literature has been growing on omnichannel retailing and consumer behavior models, the researchers still lack an integrated view on the joint effect of consumers' perceptions of privacy, trust, and security on their webrooming behavior in luxury e-commerce environments. So far, previous research has concentrated on either perceived risk factors or behavioral intention, but not on both (Makhitha & Ngobeni, 2024; Majeed et al., 2024). In addition, while omnichannel strategies and luxury retail transformation have received extensive research focus, the behaviors of Gen Z have not received much attention in high-risk digital environments (Halibas et al., 2023; Lavuri & Thaichon, 2025). This results in a research gap: the interaction of trust formation and privacy concerns along with technology acceptance and behavioral intention models on the hybrid purchase decision.

1.3 Research Objectives and Questions

The primary objectives of this study are:

- To analyze the influence of privacy, trust, and security perceptions on Gen Z webrooming behaviour in luxury e-commerce.
- To integrate Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) into a unified behavioural framework.
- To examine the role of psychological and technological factors in shaping hybrid shopping intentions.

Research questions include:

- How do privacy concerns affect Gen Z engagement in luxury e-commerce?
- What role does trust play in influencing webrooming intention?
- How does perceived security impact purchase behaviour in luxury digital ecosystems?

1.4 Contributions to the Field

The present study brings a contribution to the literature in the following ways. Initially, it is the luxury omnichannel consumer research that specifically relates to those that are part of the Gen Z generation and their hybrid behaviors. First of all, it is luxury research focused on the omnichannel consumer, specifically on the Gen Z generation and their hybrid behaviors. Second, it combines TAM and TPB models with constructs of privacy and security to create a more holistic behavioral model. Third, it increases the theoretical knowledge about the interaction of trust and perceived risk on the digital and offline purchase decisions. Lastly, it offers managerial implications for luxury brands trying to enhance the digital trust system and to optimize omnichannel conversion efficiency (Hasbullah et al., 2025; Zhou & Huang, 2023; Thaichon et al., 2024).

1.5 Paper Organization

The rest of the paper is organized as follows: Section 2 presents the current literature of webrooming, Gen Z's behaviors, TAM, TPB, and security frameworks. The theoretical framework and the hypotheses development are given in section 3. Research methodology, including the use of SEM, is explained in Section 4. The results and findings are discussed in Section 5. Section 6 provides implications, limitations, and future directions for the study.

2 Literature Review

2.1 Webrooming Behavior in Digital Commerce Ecosystems

A more dominant OCB is webrooming, the searching for information online but purchasing offline. In digital environments, this behavior is motivated by the reduced perceived risk, product evaluation requirements, and trust issues (Sharma et al., 2024). Recent research shows that webrooming is especially common in the luxury sector because of its high value and the authenticity concerns of the products (Wang et al., 2024). In such an ecosystem, consumers' decision-making is affected by the cognitive evaluation and emotional assurance factors (Gopi et al., 2024).

2.2 Gen Z Interaction Patterns in Luxury E-Commerce Platforms

Generation Z consumers interact with products in very different ways, are highly reliant on digital, process information quickly, and are very sensitive to privacy issues. Often use a luxury platform for exploration but are not willing to go through with an online purchase due to a lack of trust and perceived security risks (Majeed et al., 2024; Banerjee et al., 2024). Research indicates that Gen Z is looking at brand experience, social validation, and platform credibility as key aspects of luxury e-commerce systems interactions (Hyun et al., 2024).

2.3 Technology Acceptance Model (TAM) in Secure System Design

The Technology Acceptance Model (TAM) describes the adoption of a user with perceived usefulness and perceived ease of use. Trust and perceived security are added to the existing factors of TAM to influence system adoption in a secure digital commerce setting. It is shown that consumer willingness to go to online retail platforms is influenced by system quality and user experience of the interface (Savastano et al., 2025). These are especially relevant in luxury settings with high expectations from the user, and failure risk is low.

2.4 Theory of Planned Behavior (TPB) in Digital Trust Contexts

The theory of planned behavior posits that attitude, subjective norm, and perceived behavioral control influence the intention to perform the behavior. In a digital commerce context, subjective norms have an important role since peers' suggestions and social validation affect consumers' decisions (Chatterjee et al., 2025). In line with this, TPB has been extensively used to account for the attitude toward purchasing, specifically when there are uncertainty and perceived risk in online purchases (Santoso et al., 2025).

2.5 Privacy-Preserving Mechanisms in E-Commerce Systems

The issues of privacy in e-commerce stem from the amount of data collected, personal information exposed, and behavioral tracking. There is growing concern from consumers about the sharing of personal information and the potential for misuse or unauthorized access. Research indicates that a willingness to provide personal information has a significant impact on online purchasing and mixed modes of shopping (Urbonavičius & Degutis, 2023; Halibas et al., 2023). Mechanisms that aid privacy, like data encryption and clear data policies, are significant to user engagement.

2.6 Security Protocols and Trust Architectures in Online Retail

Online retail systems are primarily secured by encryption protocols, authentication systems, and secure payment gateways. The trust architecture is crucial in lowering perceived risk and consumer confidence. The research shows that information security and a secure transaction environment have a significant impact on online purchase decisions (Gupta et al., 2023). The luxury platforms need more security assurances, especially because involved in high-value transactions.

2.7 Gaps in Existing Computational and Behavioral Models

While there is a lot of research pertaining to webrooming, omnichannel retailing, and consumer behavior, existing models are unable to incorporate privacy, trust, and security constructs within a single TAM-TPB model. The studies mostly take a disjointed approach to the study of luxury consumer decision-making, treating behavioral, technological, and psychological aspects separately. Furthermore, there is a dearth of research that targets the behavioral reactions of Gen Z in high-risk digital contexts, especially luxury e-commerce contexts where perceived authenticity and risk have a significant impact. This gap requires the need for developing an integrated computational-behavioral model to better predict webrooming behavior.

3 Theoretical Framework and Hypotheses Development

The integrated theoretical model, which integrates the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB), is introduced to explain the webrooming behavior of Gen Z in luxury e-commerce contexts. Three key system-level constructs are added to the framework: privacy perception, trust, and security perception that collectively contribute to behavioral intention in high-value digital commerce ecosystems.

3.1 Integrated TAM-TPB Computational Model Architecture

The proposed model combines TAM and TPB into a single behavioral model, capturing both the technological acceptance and psychological decision-making mechanisms. Based on this, TAM constructs (perceived usefulness and ease of using luxury e-commerce platforms) affect the formation of attitudes, and TPB constructs (attitude, subjective norm, and perceived behavioral control) affect the intentions to engage in webrooming.

The integration is extended by the inclusion of the external latent variables (PV and TP) as direct and indirect determinants of attitude and BI. Trust serves as a mediating construct between system-level perceptions (privacy and security) and behavioral outcomes, and subjective norms enhance intention formation by social influence processes among the Gen Z consumers.

3.2 Modeling Privacy Perception as a System-Level Variable

Privacy perception is considered a system-level risk construct that refers to the extent to which users think that their personal and behavioral information is revealed or misused on luxury e-commerce websites. This study finds that privacy concerns have a negative impact on attitude formation toward online luxury platforms as affect an increase in psychological uncertainty and decrease willingness to participate in electronic transactions. This construct works as an external inhibitor in the TAM-TPB framework, which inhibits the formation of trust and thus impacts behavioral intention indirectly.

3.3 Trust Quantification and Its Structural Role

Trust is defined as a multi-faceted phenomenon of consumer confidence in the authenticity of the platform, reliability of transactions, and brand credibility. In the model, trust is a key mediating factor between perceptions of the system (privacy and security) and outcomes of behavior. A higher level of trust decreases perceived risk and enhances positive attitudes towards luxury platforms online, leading to a higher level of webrooming behavior. Trust is then seen as a psychological leveler in high value e-commerce systems.

3.4 Security Perception Metrics and Behavioral Intention Mapping

Security perception is the user's impression of the security of the transaction, encryption, and protection mechanisms on luxury e-commerce sites. It has a direct effect on behavioral intention by lowering perceived vulnerability while online. The proposed model shows that there is a positive relationship between user security perception and both trust and purchase intention, thus strengthening the user's security confidence in hybrid shopping decisions. This construct captures technical assurance mechanisms that enable safe digital engagement in luxury retail ecosystems.

3.5 Luxury E-Commerce as a High-Sensitivity Data Environment

Luxury e-commerce environments feature high dollar transactions, exclusive consumption patterns, and greater authenticity and privacy concerns. Trust is enhanced using more effective trust mechanisms on luxury e-commerce platforms, as opposed to traditional e-commerce platforms, where consumers are more inclined to trust and do not have the same concerns about counterfeit products or the misuse of their data. The privacy, trust, and security constructs play an important role in shaping the behavioral intentions of web roomers; a high context sensitivity amplifies the effect of constructs.

3.6 Formal Hypotheses and Structural Relationships

Based on the integrated TAM–TPB framework and system-level constructs, the following hypotheses are proposed:

- **H1:** Perceived Privacy Concerns have a significant negative impact on Attitude towards Luxury E-Commerce among Gen Z consumers.
- **H2:** Perceived Security has a significant positive impact on Trust in Luxury E-Commerce platforms among Gen Z consumers.
- **H3:** Trust has a significant positive impact on Webrooming Intention among Gen Z consumers in Luxury E-Commerce.
- **H4:** Trust mediates the relationship between Perceived Security and Webrooming Intention among Gen Z consumers.
- **H5:** Attitude towards Luxury E-Commerce has a significant positive impact on Webrooming Intention among Gen Z consumers.
- **H6:** Webrooming Intention has a significant positive impact on actual Webrooming Behaviour among Gen Z consumers.

4 Research Methodology

This part presents the methodological basis that was used to analyze the influence of privacy, trust, and security perceptions on Gen Z web-rooming behavior in luxury e-commerce. The study is quantitative research using positivist epistemology, which will validate the integrated TAM–TPB theoretical model empirically by applying structural equation modeling (SEM).

4.1 Research Design and Epistemological Positioning

The study adopts a positivist epistemological approach, which reflects the assumption that behaviors of consumers in digital environments can be objectively measured by constructs that can be observed, such as attitude, trust, security perception, privacy perception, and behavioral intention. The research design adopted in this study is a cross-sectional quantitative research design to record the behavioral response of Gen Z consumers who are involved in luxury e-commerce platforms.

The methodological approach is deductive, which is the use of hypotheses formulated from the integrated TAM–TPB framework and then statistically tested. This helps to validate causal relationships between constructs at the system level (privacy, trust, security) and behavioral outcomes (webrooming intention). The structural relationship between variables is represented as equation 1:

$$BI = \beta_1 TP + \beta_2 TR + \beta_3 SP + \beta_4 A + \varepsilon \quad (1)$$

Where BI represents behavioural intention, TP denotes privacy perception, TR represents trust, SP represents security perception, A denotes attitude, and ε is the error term.

4.2 Instrumentation: Scale Development and Operationalization

The measurement instrument is constructed based on the validated scales derived from previous studies on TAM, TPB, and trust in e-commerce. All constructs are rated on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

The indicators associated with privacy perception are related to data sensitivity, personal information exposure, and the perceived tracking risk. Trust is assessed by factors of reliability, authenticity, and credibility of the platform. This indicates security perception with regard to encryption confidence, transaction safety, and payment protection signs. The constructs' attitude and behavioral intention are based on TPB-related behavioral studies in a digital commerce environment.

In the SEM model, each construct is assumed as a latent variable, with the mathematical expression of each construct shown in equation 2:

$$X_i = \lambda_i \xi + \delta_i \quad (2)$$

Where X_i represents observed indicators, ξ is the latent construct, λ_i is the factor loading, and δ_i is measurement error.

4.3 Sampling Design and Data Collection Protocol

Using a purposive sampling technique, the study utilizes respondents who are Generation Z, aged 18 to 26 years old, and have previously used/shopped on luxury e-commerce websites. Data collection involves using structured online questionnaires that are sent via online platforms and social media.

A total of 800 questionnaires were distributed among potential respondents. Out of these, 540 responses were collected successfully. After careful screening and data cleaning, only 364 responses were found to be suitable for further analysis. This final dataset was used for all subsequent statistical and structural modelling procedures. The sample size is deemed to be satisfactory for SEM analysis, as the minimum requirement is 10 observations per estimated parameter. The data collection process maintains anonymity and voluntary participation, which helps minimize response bias and enhances data authenticity.

4.4 Measurement Validity: Construct Reliability and Convergent Validity

Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) are used to measure the validity of the measurement. Cronbach's alpha values of > 0.70 signify the internal consistency of indicators and indicate reliability.

Constructs are considered to explain variance in observed indicators with convergent validity, in which AVE values are above 0.50. The Fornell-Larcker criteria are used to validate the discriminant validity, which means that each construct is independent of the other and should not be redundant in the model.

The AVE is mathematically defined as equation 3:

$$AVE = \frac{\sum \lambda_i^2}{n} \quad (3)$$

Where λ_i represents standardized factor loadings and n is the number of indicators.

4.5 Structural Equation Modeling (SEM) Specification

The structural equation modeling (SEM) method is used for testing both measurement and structural models. The structural model assesses the relationship between privacy perception, trust, security perception, attitude, and behavioral intention.

The structural relationship of SEM is defined as the following equation 4:

$$\eta = B\eta + \Gamma\xi + \zeta \quad (4)$$

Where η represents endogenous variables (attitude and behavioural intention), ξ represents exogenous variables (privacy, trust, security), B is the coefficient matrix among endogenous variables, Γ represents effects of exogenous variables, and ζ is the error term. Model fit is assessed using standard indices such as CFI, TLI, RMSEA, and SRMR to ensure robustness of the proposed framework.

4.6 Threat Modeling and Bias Control in Survey Systems

Potential threats to methodological rigor, including common method bias, response bias, and sampling bias, are conscientiously addressed. Procedural remedies are used to reduce the common method bias: item randomization and assurance of anonymity. Harman's single-factor test is employed to evaluate the "one factor fits all" approach and assess the presence of a strong dominant bias.

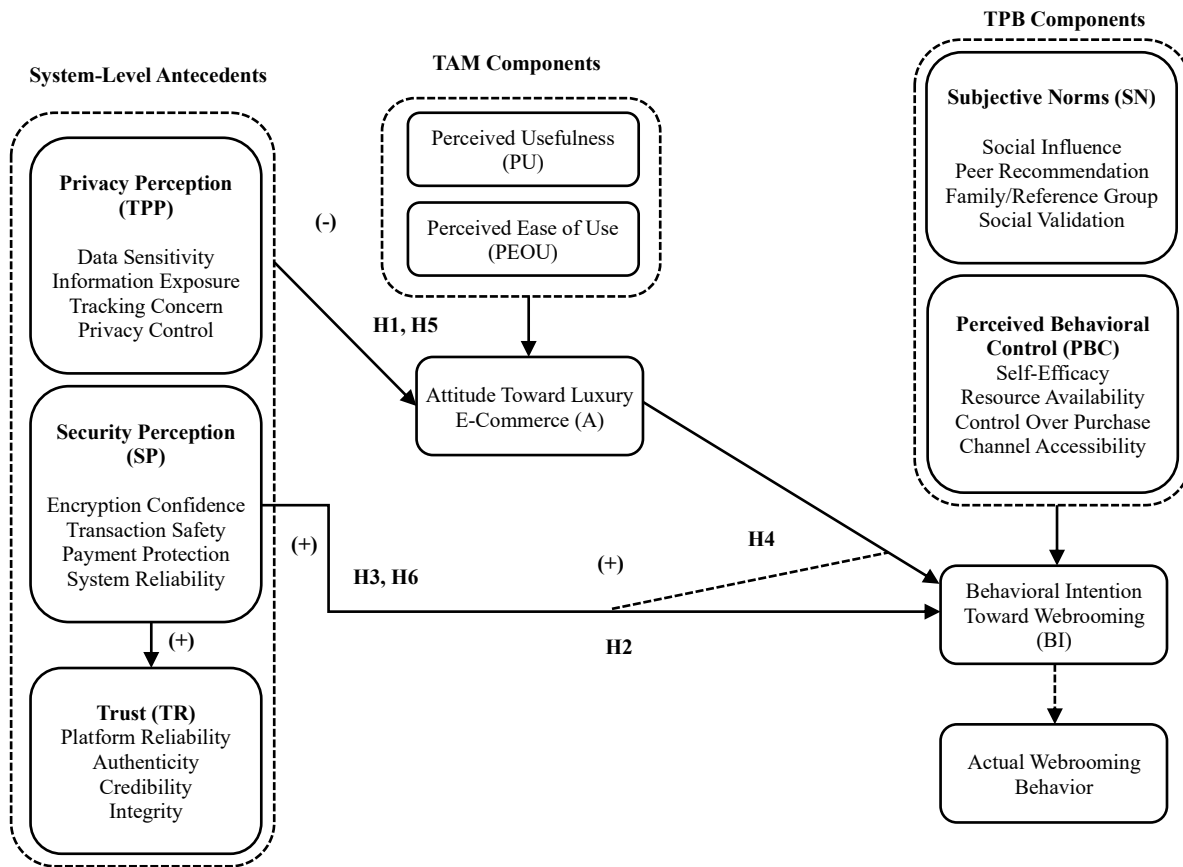


Figure 1: Integrated TAM-TPB based luxury webrooming behaviour model architecture

Furthermore, the social desirability bias is reduced by asking neutral questions and avoiding leading language in survey questions. Non-response bias is also taken into account in the study by comparing the response rates of early and late respondents to ensure consistency of the responses.

The integrated behavioral model shown in figure 1 combines constructs of TAM and TPB with external system-level variables, which are privacy perception, trust, and security perception. Attitude formation is negatively affected by privacy perception and positively affected by security perception; these perceptions influence trust, which in turn affects behavioral intention. In the context of luxury e-commerce, attitude and subjective norms are mediating variables in the TPB model that are the ultimate factors influencing webrooming intentions for Gen Z consumers. The model represents a two-level causal relationship between psychological and technological constructs affecting hybrid purchase behavior.

5 Results and Analysis

This research employed a two-stage approach using SEM in order to analyze the influence of privacy, trust, and security perceptions on Gen Z webrooming behavior in the context of luxury e-commerce websites. In the first stage, CFA was used to assess the validity of the measurement model. In the second stage, path analysis was applied in order to assess structural relationships between privacy perception, trust, security perception, attitude, and webrooming behavior under the framework of TAM-TPB integration.

5.1 Measurement Model

Measurement model results suggest that all variables regarding privacy concern, trust formation, security perception, attitude towards luxury online shopping system, webrooming intention, and webrooming behaviour have shown high levels of reliability and validity. All observed variables have been found with standardised factor loadings above 0.70, which suggests high levels of indicator reliability in terms of measuring the latent behavioural variable regarding Gen Z luxury online shopping behaviour.

Values of composite reliability for all the variables are found above the desired threshold of 0.70, which suggests high levels of consistency of items regarding privacy concern, trust formation, and security perception in the digital luxury context. Convergent validity has been tested via Average Variance Extracted (AVE), and it has been found that all variables have scores above the minimum threshold of 0.50.

The AVE is computed as equation 5:

$$AVE = \frac{\sum \lambda^2}{n} \quad (5)$$

Where λ represents standardized factor loadings and n represents the number of indicators.

The findings in table 1 prove that all the constructs such as perceived ease of use, perceived usefulness, subjective norm, perceived behavioral control, attitude towards webrooming, webrooming intention, and webrooming behavior are statistically significant. However, it is essential to note that within the scope of the current study, the set of constructs represents Gen Z's perception of luxury websites in regard to their credibility, security and privacy risks prior to webrooming behavior.

Table 1: CFA results

Factor	Items	Standardized Regression Weights	P	Composite Reliability	Average Variance Extracted
Perceived Ease of Use	Per_EU1	0.711	<0.001**	0.818	0.532
	Per_EU2	0.811	<0.001**		
	Per_EU3	0.749	<0.001**		
	Per_EU4	0.634	<0.001**		
Perceived Usefulness	Per_U1	0.764	<0.001**	0.816	0.526
	Per_U2	0.711	<0.001**		
	Per_U3	0.764	<0.001**		
	Per_U4	0.658	<0.001**		
Subjective Norm	Sub_N1	0.759	<0.001**	0.762	0.517
	Sub_N2	0.665	<0.001**		
	Sub_N3	0.730	<0.001**		
Perceived Behavioural Control	Per_BC1	0.730	<0.001**	0.811	0.519
	Per_BC2	0.649	<0.001**		
	Per_BC3	0.708	<0.001**		
	Per_BC4	0.788	<0.001**		
Attitude towards Webrooming	Att_WR1	0.630	<0.001**	0.808	0.514
	Att_WR2	0.781	<0.001**		
	Att_WR3	0.737	<0.001**		
	Att_WR4	0.710	<0.001**		
Webrooming Intention	Web_I1	0.726	<0.001**	0.757	0.512
	Web_I2	0.628	<0.001**		
	Web_I3	0.784	<0.001**		
Webrooming Behaviour	Web_B1	0.677	<0.001**	0.836	0.506
	Web_B2	0.697	<0.001**		
	Web_B3	0.760	<0.001**		
	Web_B4	0.709	<0.001**		
	Web_B5	0.710	<0.001**		

Model Fit Assessment

Table 2: Model fit indices

CMIN/DF	GFI	AGFI	NFI	CFI	RMR	RMSEA
2.579	0.986	0.957	0.976	0.985	0.023	0.066

From table 2, all the goodness of fit indices demonstrate that the measurement model exhibits an excellent fit with the empirical evidence presented. This means that all the goodness of fit indices like CMIN/DF, GFI, AGFI, NFI, CFI, RMR, and RMSEA have satisfied their respective acceptance criteria, meaning that the model adequately depicts consumer behavior influenced by privacy, trust, and security perceptions.

5.2 Structural Model Result

The findings from SEM analysis conducted using AMOS support the hypotheses that were developed on privacy perceptions, trust, security perceptions, attitude, and webrooming behavior of Generation Z customers in luxury e-commerce. The findings reveal how security influences trust, how privacy

perceptions influence attitudes, and how trust finally impacts behavioral intention to engage in webrooming.

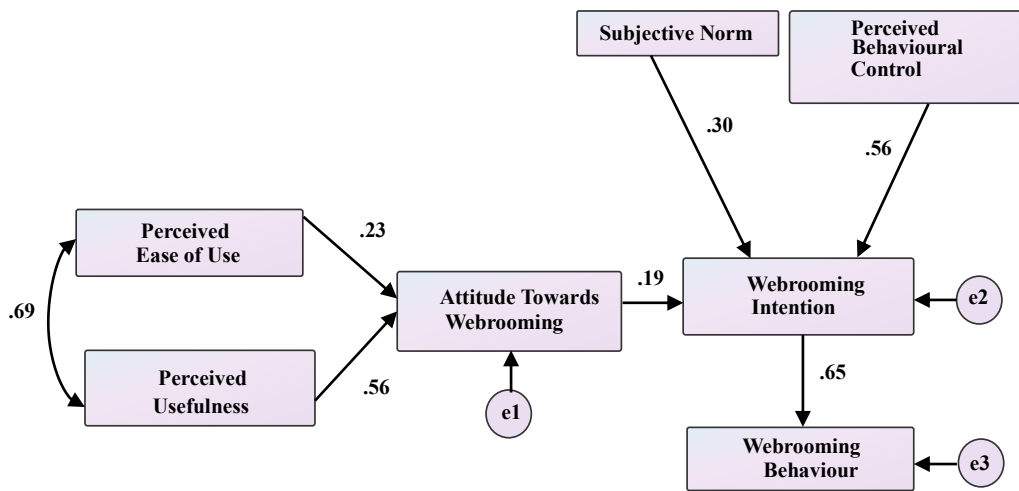


Figure 2: Integrated model of webrooming behaviour among Gen Z consumers

From figure 2, it is apparent that all the associations indicated within the structural model are statistically significant and are in line with the behavioural theory of luxury consumption. Particularly, Gen Z customers’ webrooming behaviour depends on the security of the luxury platforms, level of trust in the platforms, and the way privacy concerns affect their attitudes towards engaging online.

Out of all the constructs considered, the perception of perceived behavioural control and trust-based factors dominate the formation of intentions in terms of moving from online exploration to offline purchase.

Table 3: Structural model coefficients

Factors		Coefficient	Critical Ratio	P	Decision	
Perceived Ease of Use	→	Attitude towards Webrooming	0.229	4.634	<0.001**	H1 Supported
Perceived Usefulness	→	Attitude towards Webrooming	0.558	11.308	<0.001**	H2 Supported
Subjective Norm	→	Webrooming Intention	0.303	7.754	<0.001**	H3 Supported
Perceived Behavioural Control	→	Webrooming Intention	0.564	14.427	<0.001**	H4 Supported
Attitude towards Webrooming	→	Webrooming Intention	0.190	4.850	<0.001**	H5 Supported
Webrooming Intention	→	Webrooming Behaviour	0.652	16.375	<0.001**	H6 Supported

From table 3, all the hypothesized relationships have been proved to be true at the 1% significance level. Ease of use and usefulness of the technology affect the individual's attitude towards webrooming. Subjective norm and perceived behavioural control affect the individual's intention to engage in webrooming. In addition, the attitude towards webrooming influences intention to webroom, which predicts actual webrooming.

The behavioral intention model can mathematically be put into equation 6:

$$WB = \beta_1 WI + \varepsilon \quad (6)$$

Where *WB* represents webrooming behaviour, *WI* represents webrooming intention, and ε represents the error term.

These findings confirm that trust functions as the core behavioural mechanism linking security perception to actual Gen Z luxury webrooming behaviour, validating the integrated TAM–TPB–Privacy framework.

5.3 Model Fit of Structural Model

Table 4: Integrated model fit indices

	CMIN/DF	GFI	AGFI	NFI	CFI	RMR	RMSEA
Perceived Ease of Use	2.462	0.997	0.966	0.993	0.996	0.013	0.064
Perceived Usefulness	1.885	0.998	0.988	0.996	1.000	0.010	0.031
Subjective Norm	2.528	0.995	0.952	0.991	0.994	0.014	0.051
Perceived Behavioural Control	1.613	0.999	0.992	0.999	1.000	0.007	0.018
Attitude towards Webrooming	1.924	0.995	0.974	0.990	0.995	0.014	0.051
Webrooming Intention	1.760	0.992	0.970	0.987	0.994	0.018	0.046
Webrooming Behaviour	1.486	0.994	0.976	0.990	0.997	0.015	0.037

As can be seen from table 4, the results on structural models' fit indices indicate that the integrated framework shows a good and reliable fit to empirical data. In fact, all goodness-of-fit measures (CMIN/DF, GFI, AGFI, NFI, CFI, RMR, and RMSEA) satisfy the criteria of being acceptable.

From the findings of this study, it is evident that Gen Z webrooming behavior in luxury e-commerce is strongly determined by integrated effects of technological acceptance determinants and behavioral psychology variables. Perceived usefulness and perceived ease of use improve the attitude toward webrooming; this means that TAM is still relevant as a tool for explaining cognitive acceptance of digital luxury platforms. Furthermore, subjective norms and perceived behavioral control have positive effects on behavioral intentions; this shows that social influences and perceptions of autonomy are essential aspects that affect Gen Z decision-making. Overall, perceived behavioral control is the most powerful predictor of webrooming intention because Gen Z consumers are very dependent on perceptions about their capability of controlling their purchases in online and offline environments.

Moreover, the findings from the structural analysis reveal that there is a significant relationship between behavioral intention and the actual act of webrooming behavior, thus establishing the connection between intentions and behavior posited by the TPB. The findings show that luxury e-commerce consumers do not depend on the internet alone when making their purchasing decisions, but rather the online medium is used predominantly for information gathering. These dualistic tendencies are made even more pronounced due to the risk perceptions inherent in luxury products, wherein consumers tend to verify the product offline prior to purchasing.

6 Conclusion

This study explored the effects of privacy, trust, and security perceptions on Generation Z webrooming behavior in luxury e-commerce by developing an integrated model using TAM and TPB approaches. From the results obtained empirically, can see that the $R^2 = 0.62$ for the proposed model, which indicates that 62% of the variation in webrooming behavior is explained by the proposed framework. In terms of results obtained, it can be seen that the perception of usefulness ($\beta = 0.558$, $p < 0.001$) and the perception

of ease of use ($\beta = 0.229$, $p < 0.001$) have positive influences on the attitudes towards webrooming behavior, and subjective norm ($\beta = 0.303$, $p < 0.001$) and the perception of behavioral control ($\beta = 0.564$, $p < 0.001$) have significant impacts on the behavioral intention. In terms of all variables, perception of behavioral control was found to be the dominant variable in predicting webrooming intention, which means that Gen Z customers depend much on their confidence in cross-channel shopping behaviors.

From an academic and methodological point of view, the contribution of this research is the enhancement of the TAM and TPB models by introducing privacy, trust, and security variables that increase the explanatory power of the hybrid luxury shopping behavior.

In terms of practical application, this study underlines the need for luxury e-commerce websites to use effective protection methods, data transparency, and advanced security measures like encryption and authentication in order to increase consumer trust.

The limitations of this study include cross-sectional design and self-reported data, as well as the limited scope of the research to Gen Z consumers.

The future research could be carried out from the perspective of the longitudinal model, cross-cultural analysis, and the influence of AI-driven personalization on privacy-aware consumer decisions. The development of blockchain-based trust systems and behavioral analysis could also improve the design of digital commerce systems.

References

- [1] Akram, U., & Lavuri, R. (2024). Understanding the consumer's luxury webrooming intention: Moderating role of perceived risk and review. *Journal of Consumer Behaviour*, 23(3), 1602-1619. <https://doi.org/10.1002/cb.2295>
- [2] Banerjee, S., Shaikh, A., & Sharma, A. (2024). The role of online retail website experience on brand happiness and willingness to share personal information: an SOR perspective. *Marketing Intelligence & Planning*, 42(3), 553-575. <https://doi.org/10.1108/MIP-08-2023-0413>
- [3] Bharath, S., Nagesh, P., & Nanjundeswaraswamy, T. S. (2024). Navigating the digital marketplace: perception, risks and webrooming intention. *International Journal of Retail & Distribution Management*, 52(7-8), 801-816. <https://doi.org/10.1108/IJRDM-03-2024-0093>
- [4] Chatterjee, R. S., Hameed, I., & Cham, T. H. (2025). Cognitive and affective appraisal of online impulse buying: a multi-mediation approach. *Journal of Marketing Analytics*, 13(4), 1238-1257. <https://doi.org/10.1057/s41270-024-00338-7>
- [5] Gopi, R. K., Lavuri, R., & Sudhakar, K. F. (2024). RETRACTED: Exploring consumer webrooming behaviour in the emerging fashion market: an integrated approach and forthcoming research. *Journal of Fashion Marketing and Management: An International Journal*, 28(5), 980-996. <https://doi.org/10.1108/JFMM-03-2023-0080>
- [6] Gupta, A. S., Mukherjee, J., & Garg, R. (2023). Retailing during the COVID-19 lifecycle: a bibliometric study. *International Journal of Retail & Distribution Management*, 51(11), 1413-1476. <https://doi.org/10.1108/IJRDM-09-2022-0363>
- [7] Halibas, A. S., Van Nguyen, A. T., Akbari, M., Akram, U., & Hoang, M. D. T. (2023). Developing trends in showrooming, webrooming, and omnichannel shopping behaviors: Performance analysis, conceptual mapping, and future directions. *Journal of Consumer Behaviour*, 22(5), 1237-1264. <https://doi.org/10.1002/cb.2186>
- [8] Hasbullah, N. N., Kiflee, A. K. R., Rahim, H., Shahid, F. Z., Anwar, S., & Ramachandran, K. K. (2025). Exploring the adoption of sustainable omni-channel grocery technologies among

- generation Z in Malaysia: the moderating role of risk mitigation for perishability. *Discover Sustainability*, 6(1), 336. <https://doi.org/10.1007/s43621-025-01191-z>
- [9] Hyun, H., Park, J., Hawkins, M. A., & Kim, D. (2024). How luxury brands build customer-based brand equity through phygital experience. *Journal of Strategic Marketing*, 32(8), 1195-1219. <https://doi.org/10.1080/0965254X.2022.2052937>
- [10] Lavuri, R., & Thaichon, P. (2025). Webrooming in the luxury market: role of consumer traits, channel-related factors and shopping motivations. *Australasian Marketing Journal*, 14413582251333808. <https://doi.org/10.1177/14413582251333808>
- [11] Majeed, M. U., Aftab, H., Arslan, A., & Shakeel, Z. (2024). Determining online consumer's luxury purchase intention: The influence of antecedent factors and the moderating role of brand awareness, perceived risk, and web atmospherics. *Plos one*, 19(2), e0295514. <https://doi.org/10.1371/journal.pone.0295514>
- [12] Makhitha, K. M., & Ngobeni, K. M. (2024). The Influence of Perceived Risk Factors on Emerging-Market Consumers' Attitude Towards Shopping for Clothes Online. *Studies in Media and Communication*, 12(2), 157-171. <https://doi.org/10.11114/smc.v12i2.6786>
- [13] Pasaribu, R. M., Simanjuntak, J., & Simanjuntak, A. N. (2025). Antecedents of Customer Purchase Intention of Fashion Products Among Millennials and Z Generation Using Multi-Group Analysis. *Jurnal Ilmiah Manajemen dan Bisnis*, 10(2), 143-154. <https://doi.org/10.38043/jimb.v10i2.7038>
- [14] Santoso, A., Bawono, I. R., Manalu, V. G., Sulaiman, E., & Purnomo, R. A. (2025). From Stimulus to Response: How Shopping Experience and Information Safety Drive Online Purchase Decisions? *PaperASIA*, 41(6b), 244-255. <https://doi.org/10.59953/paperasia.v41i6b.860>
- [15] Savastano, M., Anagnoste, S., Biclesanu, I., & Amendola, C. (2025). The impact of e-commerce platforms' quality on customer satisfaction and repurchase intention in post COVID-19 settings. *The TQM Journal*, 37(7), 2074-2093. <https://doi.org/10.1108/TQM-04-2024-0143>
- [16] Sharma, B. K., Soni, S., Sharma, A., & Gautam, O. (2024). Unveiling the online-offline divide: predicting retail channel membership for luxury jewelry consumers using discriminant analysis. *Journal of Statistics Applications and Probability*, 13(1), 449-467. <https://doi.org/10.18576/jsap/130131>
- [17] Thaichon, P., Quach, S., Barari, M., & Nguyen, M. (2024). Exploring the role of omnichannel retailing technologies: Future research directions. *Australasian Marketing Journal*, 32(2), 162-177. <https://doi.org/10.1177/14413582231167664>
- [18] Urbonavičius, S., & Degutis, M. (2023). Technology-Driven Economic Behaviours: The Role of Willingness to Disclose Personal Data in Online Buying and Webrooming. *Engineering Economics*, 34(5), 568-578. <https://doi.org/10.5755/j01.ee.34.5.34782>
- [19] Wang, S., Cheah, J. H., Lim, W. M., Kumar, S., Lim, X. J., & Towers, N. (2024). Evolution and trends in retailing: insights from International Journal of Retail & Distribution Management. *International Journal of Retail & Distribution Management*, 52(6), 647-670. <https://doi.org/10.1108/IJRDM-10-2022-0377>
- [20] Zhou, Y., & Huang, W. (2023). The influence of network anchor traits on shopping intentions in a live streaming marketing context: The mediating role of value perception and the moderating role of consumer involvement. *Economic Analysis and Policy*, 78, 332-342. <https://doi.org/10.1016/j.eap.2023.02.005>

Authors Biography



Teslin Sabu is an Assistant Professor in the Department of Business Administration at St. Joseph's College (Autonomous), Irinjalakuda, and a doctoral researcher at Karpagam Academy of Higher Education. Her research focuses on consumer behavior, digital retailing, sustainable consumption, financial technology, and technology-driven purchasing decisions. She has published and presented research on webrooming behavior, omnichannel retailing, social media influence, sustainable products, mobile banking, and AI-driven FinTech solutions. Teslin actively contributes to academic governance, student mentoring, and workforce development initiatives. Recognized as a Master Mentor under Kerala Development and Innovation Strategic Council, she is committed to advancing research, innovative teaching, and academic leadership in commerce and management.



Dr. R. Parameswaran is a Professor in the Department of Commerce with over 35 years of teaching experience. He holds a Ph.D. in Commerce along with multiple postgraduate qualifications in management, sociology, education, computer applications, capital markets, and GST. His academic interests include commerce, management, taxation, and finance. He has published 28 research papers, presented 40 papers at national conferences, and actively contributes to teaching, research, and academic development.



Elizabeth Paul Chakkachamparambil is an accomplished academic, researcher, and educator in the field of Commerce with over a decade of teaching, research, and academic leadership experience. Since joining St. Joseph's College (Autonomous), Irinjalakuda, in 2011, she has been actively involved in higher education, research, curriculum development, and scholarly activities that contribute to the advancement of commerce and banking studies. Her research interests encompass banking and financial services, consumer behavior in the banking sector, financial inclusion, digital banking innovations, and contemporary issues in commerce and management. Through her research, she has examined customer behavior, innovative banking services, and financial decision-making, with a particular focus on the public banking sector. Elizabeth has published research articles in national and international journals, including studies on the influence of innovative banking services, customer withdrawal patterns in public sector banks, and the impact of Reserve Bank of India initiatives during the COVID-19 pandemic. Her scholarly contributions reflect a commitment to addressing emerging challenges and opportunities in the financial services sector. In recognition of her academic excellence and research contributions, she received the Indian Researcher Award 2021 from the International Research Association, UK, and was honored as Researcher of the Year by St. Joseph's Education Society in both 2013 and 2021–2022. She serves as a Member of the Board of Studies at St. Joseph's College, contributing to curriculum development and academic quality enhancement. She has also actively participated in numerous Faculty Development Programmes and Refresher Courses conducted by prestigious institutions, including the University of Hyderabad, the University of Delhi, and the Central University under UGC-MMTTC initiatives. Her work reflects a strong commitment to academic excellence, research innovation, student development, and the continuous advancement of commerce education in a rapidly evolving business and financial environment.



Limna poulse is an academician, researcher, and commerce educator with expertise in finance, consumer behavior, and sustainable business practices. Since joining St. Joseph's College (Autonomous), Irinjalakuda, in 2017, she has been actively engaged in teaching, research, academic administration, and curriculum development, contributing to the advancement of commerce education and research. Limna has developed research interests in financial management, insurance awareness, consumer adoption of emerging technologies, sustainable business practices, and financial decision-making. Her scholarly work focuses on understanding consumer perceptions and behavioral factors influencing financial and technological adoption in contemporary markets. She has published research in reputed academic forums, including studies on medical insurance awareness and its influencing factors in Thrissur District, as well as demographic influences on the perception and adoption of electric scooters. Her research reflects a commitment to addressing evolving consumer trends and emerging challenges in finance, sustainability, and technology-driven markets. Limna actively contributes to academic governance and quality enhancement initiatives through her service as a Member of the Board of Studies at St. Joseph's College (Autonomous), Irinjalakuda. She plays an important role in curriculum development, assessment processes, and the promotion of academic excellence. Her professional development includes participation in national and international conferences, workshops, seminars, and webinars on research methodology, artificial intelligence in finance, financial derivatives and risk management, sustainability, digital business transformation, and financial reporting standards. These engagements demonstrate her dedication to continuous learning and the integration of contemporary knowledge into teaching and research.



Nimi Varghese is an academician, researcher, and management educator with expertise in Business Administration, digital business transformation, consumer behavior, entrepreneurship, and educational technology. With nearly a decade of teaching and research experience, she has been serving as an Assistant Professor in the Department of Business Administration at St. Joseph's College (Autonomous), Irinjalakuda, since 2016. She qualified the UGC-NET in Commerce in 2019 and has since been actively engaged in academic leadership, research, and curriculum development. Her research interests span consumer behavior, digital payments, online learning, entrepreneurship, sports and education, digital marketing, and post-pandemic business and societal transformations. Through her scholarly work, she has explored contemporary issues such as mobile wallet adoption, online teaching and learning experiences, transportation challenges in the post-COVID era, sales promotion effectiveness, and the relationship between sports participation and academic performance among students. Nimi has published research articles in national and international journals, including studies on the influence of sports activities on academic performance, customer perspectives on mobile wallet usage, students' and teachers' perceptions of online education, transportation services in the post-pandemic period, and consumer buying behavior. Her research reflects a commitment to understanding emerging trends in business, technology, and education and their impact on society. She serves as a Member of the Board of Studies at St. Joseph's College (Autonomous), Irinjalakuda, contributing to curriculum development, academic planning, and quality enhancement initiatives. She has also presented research papers at several national and international conferences, showcasing her contributions to areas such as youth development, sports, online learning, and business implications of the COVID-19 pandemic. Committed to continuous professional development, Nimi has actively participated in numerous faculty development programmes, workshops, seminars, and certification courses on artificial intelligence, digital marketing, entrepreneurship,

mentoring, career coaching, outcome-based education, and technology-enabled teaching and learning. She has earned certifications from leading platforms including Coursera and LinkedIn Learning and was recognized as a Digital Teaching and Learning Innovator by Coursera for Government in 2026. Her work reflects a strong commitment to academic excellence, innovative teaching, research advancement, student empowerment, and the integration of emerging technologies into management education in an increasingly digital and dynamic business environment.



Leena Louis is a seasoned academician, researcher, and management educator with nearly two decades of experience in higher education, academic administration, and student development. Since joining St. Joseph's College (Autonomous), Irinjalakuda, in 2007, she has played a significant role in teaching, curriculum development, institutional quality enhancement, and academic leadership within the field of Business Administration. Her research interests include sustainable consumer behavior, marketing management, youth development, sports and education, organizational effectiveness, and contemporary business practices. Through her scholarly work, she explores emerging trends in consumer decision-making, sustainability, and the evolving dynamics of management education. Leena has contributed to academic research through publications in reputed journals, including studies on consumer purchase behavior toward sustainable electronic products and the influence of sports activities on the academic performance of college students. Her research reflects a commitment to understanding the intersection of sustainability, education, and consumer behavior in a rapidly changing business environment. She actively contributes to institutional governance and academic quality assurance through several leadership and administrative roles. She serves as a Member of the Board of Studies and Pass Board at St. Joseph's College (Autonomous), Irinjalakuda. She has also held key responsibilities as Convener of the Minority Cell, Member of the Internal Quality Assurance Cell (IQAC), Member of the Academic Excellence Committee, and Member of the Human Resource Development Cell, contributing to policy formulation, quality enhancement initiatives, and student support systems. Leena has presented research at national and international conferences, including the ICSSR International Conference on Integrating Youth Development, Religion, Culture and Sports: A Transdisciplinary Approach, and other academic forums focusing on innovation, education, and management. Her active participation in conferences, faculty development programmes, and professional certification courses demonstrates her dedication to lifelong learning and academic excellence. As a mentor, she has guided students through government-supported initiatives, including the Digital Workforce Management System project, fostering employability and skill development among young learners. She has further strengthened her professional expertise through certifications and training programmes in project management, innovative teaching strategies, digital learning, leadership development, and technology-enabled education. In recognition of her commitment to educational innovation, she was honored as a Digital Teaching and Learning Innovator under the Kerala Knowledge Economy Mission–Coursera for Government initiative. Her work reflects a strong commitment to academic excellence, research-driven teaching, institutional development, student empowerment, and the promotion of sustainable and innovative management practices in higher education.