How Does User-generated Content Quality Translate into Purchasing Behaviour? The Mediating Role of Platform Governance and the Moderating Effect of Educational Differences

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Abstract

Against the backdrop of the digital economy, social commerce platforms have become a crucial driver of China's e-commerce development, in which user-generated content (UGC) plays a central role in shaping consumer trust and purchasing behaviour. Drawing on the Stimulus-Organism-Response (S-O-R) theory, this study constructs and empirically tests an integrated framework that examines how multidimensional UGC quality influences purchasing behaviour through the mediating role of platform governance, while accounting for the moderating effect of users' educational attainment. UGC quality is conceptualised along five dimensions, namely information quality, interaction quality, presentation quality, the appropriateness of emotional arousal, and political correctness. Based on questionnaire data collected from users of major social commerce platforms in China, structural equation modelling is employed for empirical analysis. The results indicate that most dimensions of UGC quality exert a significant positive effect on consumer purchasing behaviour, and that platform governance functions as a stable and significant mediator between UGC quality and purchasing behaviour, whereas the moderating effect of educational attainment is selective and emerges only in certain cognitively and value-sensitive dimensions. These findings extend the behavioural explanatory framework of multidimensional UGC quality, enrich the application of S-O-R theory in digital consumption contexts, and provide empirical evidence to support social commerce platforms in optimising content governance mechanisms, enhancing conversion efficiency, and implementing differentiated operational strategies.

Keywords

Social commerce, User-generated content, Platform governance, Consumer purchasing behaviour, Educational attainment

Introduction

In recent years, social commerce platforms have expanded rapidly within China's digital economy. They have reshaped the traditional transaction logic of e-commerce, which was previously centred on search and price comparison [1]. This transformation has been driven by the deep integration of user-generated content (UGC), social interaction, and algorithmic recommendation. In the early stage of platform development, UGC effectively reduced consumers' information acquisition costs and decision uncertainty, thereby significantly facilitating purchasing behaviour. However, as platforms have continued to scale up and content supply has become increasingly dense, social commerce has gradually revealed a structural bottleneck characterised by declining conversion efficiency. More specifically, while interactive behaviours such as browsing, liking, and commenting remain highly active, actual purchases, repeat purchases, and conversion stability have exhibited a sustained downward trend. This phenomenon of "high engagement but low conversion" has become a core practical challenge commonly faced by social commerce platforms, indicating that existing explanatory frameworks of purchasing behaviour are no longer sufficient to address the new demands emerging as platform development enters a more mature stage.

From the perspective of platform practice and user experience, the decline in purchasing behaviour is not merely attributable to contracting demand or diminishing user interest. Rather, it is more fundamentally associated with qualitative shifts in the content ecosystem. On the one hand, the continued expansion of UGC volume has intensified content homogeneity and informational noise,

such that consumers' decision costs may increase rather than decrease when confronted with large quantities of similar or low-quality content. On the other hand, certain content can achieve high levels of audience engagement and attention-grabbing effects. Such content, however, often lacks credibility in its information, appropriateness in its emotional expression, or alignment with mainstream social value norms. This deficiency, in turn, gradually erodes consumers' trust in the platform's overall content ecosystem.

This suggests that the current conversion dilemma in social commerce is not a question of whether content exists, but whether content quality can effectively support consumer decision-making and behavioural conversion. Nevertheless, extant research has predominantly examined the effects of UGC from single-dimensional perspectives. These dimensions mainly include information quality, credibility, and interactivity. Such research overlooks that UGC acts as a composite stimulus with multiple quality attributes, which exert joint and potential interactive influences on users. As a result, prior work has struggled to explain the empirical paradox whereby purchasing behaviour declines despite the continuous growth of content supply. Accordingly, systematic integration and analysis of the multidimensional structure of UGC quality constitutes a necessary starting point for understanding the recent changes in purchasing behaviour.

Moreover, even a sole focus on UGC quality remains insufficient to fully account for the underlying mechanism of behavioural change. In social commerce contexts, UGC does not influence consumer decisions in a direct and unmediated manner [2]. Rather, it must pass through platform-level processes of screening, ranking, recommend-ation, and standardisation before entering consumers' decision horizons and exerting behavioural guidance. In practice, ambiguous governance rules, imbalances in review and incentive mechanisms, or algorithmic overemphasis on traffic-oriented logics often prevent high-quality content from receiving sustained exposure while amplifying low-quality or even misleading content, thereby eroding consumer trust and suppressing purchasing behaviour.

This implies that the decline in purchases is not only a content-quality issue, but also a question of how content quality is converted - or distorted - through platform governance mechanisms, positioning platform governance as a critical mediating link between UGC and purchasing behaviour. In addition, both existing research and platform practices often implicitly assume consumer homogeneity, neglecting differences across users in content interpretation, risk judgement, and sensitivity to normative considerations. In particular, educational attainment - an important proxy for information-processing capability and cognitive complexity - may significantly shape how users respond to UGC and governance mechanisms. Ignoring such heterogeneity not only weakens explanatory power regarding behavioural changes, but may also lead to "one-size-fits-all" governance strategies with limited effectiveness. Therefore, from the dual perspective of mediating mechanisms and moderating conditions, a systematic investigation of the relationships among UGC quality, platform governance, and consumer purchasing behaviour is of clear practical relevance and strong research necessity.

Research objectives

Based on the above practical context and identified theoretical gaps, the overall objective of this study is to systematically elucidate how user-generated content (UGC) is transformed into consumer purchasing behaviour through the critical mechanism of platform governance within social commerce contexts, and to further explain how this transformation process varies across different user groups. By doing so, the study aims to provide a theoretically grounded and practically relevant response to the contemporary challenges of weakened purchasing behaviour and declining trust in social commerce environments.

To achieve this overarching objective, the study pursues the following three specific research objectives:

(1) Drawing on the Stimulus-Organism-Response (S-O-R) theoretical framework, this study conceptualises UGC quality as a multidimensional external stimulus system composed of informational attributes, interactive attributes, emotional attributes, and normative attributes [3]. At the same time, platform governance is explicitly theorised at the level of the "Organism", and defined as an institutional organism that bridges external stimuli and individual behavioural responses. By shaping consumers' perceptions of content credibility, transactional fairness, and platform normativity, platform governance plays a pivotal mediating role between

external stimuli (UGC) and behavioural responses (purchasing behaviour). Building on this conceptualisation, the study moves beyond prior approaches that reduce UGC to a single-dimensional stimulus and narrowly interpret the organism as an individual psychological state. Instead, it systematically examines how multidimensional UGC quality operates jointly under the filtering and regulatory mechanisms of platform governance to influence consumer purchasing behaviour. Thereby, it can address the limitations of single-dimensional models in explaining purchasing behaviour dynamics in social commerce contexts.

(2) Within this theoretical framework, the study further defines platform governance as the core mediating mechanism linking UGC quality and consumer purchasing behaviour. Specifically, it focuses on the institutional functions of platforms in content moderation, algorithmic recommendation, and behavioural standardisation processes, demonstrating that the influence of UGC does not occur naturally or through a linear transmission process. Rather, UGC must be filtered, amplified, and constrained by platform governance mechanisms to be translated into stable and sustained behavioural outcomes. Through this perspective, the study seeks to remedy a key limitation in existing research, which has tended to treat platform governance merely as an exogenous contextual factor or a parallel independent variable, without adequately uncovering its internal transmission mechanisms.

(3) In response to the implicit assumption of consumer homogeneity prevalent in existing research and platform practices, this study introduces educational level as a moderating variable. It systematically examines differences across users with varying educational backgrounds in terms of information processing capabilities, risk recognition patterns, and behavioural response pathways. By doing so, the study reveals the heterogeneous mechanisms through which UGC quality and platform governance jointly influence consumer purchasing behaviour. This objective aims to provide empirically grounded insights to support differentiated content governance strategies and more refined user management practices on social commerce platforms.

Theoretical foundations and variable selection

Selection of the theoretical foundation (S-O-R theory)

The Stimulus-Organism-Response (S-O-R) theory provides a systematic analytical framework for understanding how external environmental factors influence behavioural outcomes through individuals' internal psychological and cognitive mechanisms. Its core logic lies in the proposition that external stimuli does not directly determine behavioural responses. Rather, their effects are mediated through individuals' processes of perception, interpretation, and evaluation. In the context of social commerce, user-generated content (UGC) constitutes the primary source of informational and situational stimuli faced by consumers. Its multidimensional quality characteristics - including informational attributes, interactive features, emotional expressions, and normative implications. Thereby, they jointly shape consumers' cognitive and affective responses toward the platform environment and transaction objects.

However, S-O-R theory emphasises that the influence of stimuli on behavioural responses is not linear, but must be filtered and reconstructed through mediating mechanisms at the "organism" level. In digital platform contexts, platform governance serves precisely as the key institutional mechanism that performs this organismic function. Through processes such as content screening, ranking, recommendation, and standardisation, platform governance shapes consumers' overall perceptions of content credibility, fairness, and safety, thereby transforming UGC quality into psychological states that can be absorbed by consumers and utilised in decision-making.

Furthermore, S-O-R theory also highlights the moderating role of individual characteristics in the stimulus-organism-response pathway, suggesting that different individuals may exhibit heterogeneous psychological processing and behavioural responses when exposed to identical stimuli and environmental conditions. Educational attainment, as an important individual characteristic reflecting cognitive ability, depth of information processing, and sensitivity to normative considerations, influences how consumers interpret and weight signals derived from UGC quality and platform governance, thereby moderating their ultimate purchasing responses. Accordingly, within the S-O-R theoretical framework, multidimensional UGC quality serves as the external stimulus (S). Platform governance acts as the organismic mediating mechanism

that links external stimuli to behavioural responses (O), while educational attainment functions as a key individual moderator in shaping this stimulus-response transformation process. Collectively, these core elements constitute a coherent and internally consistent theoretical pathway that influences consumer purchasing behaviour (R), thereby providing a rigorous and unified theoretical foundation for the overall research model of this study.

User-generated content quality and consumer purchasing behaviour

A substantial body of research has consistently demonstrated that user-generated content (UGC) exerts a significant influence on consumer purchasing decisions, particularly in social commerce and content-driven platform contexts. Prior studies, drawing on perspectives such as information quality, interactivity, credibility, and emotional arousal, have repeatedly verified that high-quality UGC can promote purchase intentions and actual purchasing behaviour by reducing information asymmetry, enhancing trust, and increasing perceived value [4,5]. As research perspectives have continued to expand, scholars have increasingly recognised that the influence of UGC on consumer behaviour is not confined to rational informational dimensions. Meanwhile, they think that emotional responses, social identification, and implicit value norms embedded in content also play critical roles in shaping consumer decision-making processes [6,7].

Nevertheless, existing studies on UGC quality measurement remain largely concentrated on informational attributes and interactive features, paying relatively limited attention to whether content aligns with prevailing social norms and value positions, or whether emotional expressions fall within reasonable and socially acceptable boundaries. In real-world social commerce platforms, it is not uncommon for content to be information-rich and visually appealing. Yet such content often undermines consumer trust and even inhibits purchasing behaviour, owing to misaligned value orientations or imbalanced emotional expressions. Political correctness and the appropriateness of emotional arousal capture precisely these content characteristics. Although both exert tangible influences on consumer behaviour in practice, they have not yet been systematically incorporated into the core measurement framework of UGC quality. Accordingly, by introducing political correctness and emotional arousal appropriateness into the multidimensional structure of UGC quality and examining their effects alongside traditional quality dimensions, this study seeks to achieve a more comprehensive understanding of the actual behavioural effects of content quality in social commerce contexts. This constitutes an important extension of the existing literature on UGC quality measurement.

The mediating role of platform governance in consumer purchasing behaviour

Within the field of digital platform research, platform governance is a critical institutional factor that has long been emphasized by scholars. It exerts a formative influence on user behaviour. Prior studies have generally focused on the effects of platform governance approaches on consumer purchasing decisions. Such approaches include content moderation, rule-setting, incentive mechan-isms, and algorithmic recommendation, which exert their impacts by shaping user trust, perceived fairness, and willingness to participate [8-10]. In e-commerce and social platform contexts, further research has shown that clear and effective governance rules can reduce misinformation and opportunistic behaviour, enhance consumers' overall trust in platforms and their content ecosystems, and thereby positively influence purchasing behaviour [11,12].

While these studies provide a solid foundation for understanding the importance of platform governance, their analytical perspectives largely treat governance as an independent institutional input, focusing primarily on its direct effects on consumer behaviour. By contrast, the mechanistic role of platform governance within the content influence process remains underexplored. In social commerce environments, UGC does not affect consumers in its "raw" form; rather, it must pass through platform-level processes of screening, ranking, recommendation, and standardisation before entering consumers' decision horizons and functioning as an effective stimulus. In this process, platform governance effectively assumes the critical role of converting content quality into information that is perceptible, comparable, and ultimately actionable for consumers. Treating platform governance merely as a parallel antecedent variable alongside UGC risks overstating the direct

effects of content itself and fails to explain the substantial conversion differences observed across platforms under conditions of similar content supply. Therefore, from a process-oriented perspective, positioning platform governance between UGC and consumer purchasing behaviour enables a more accurate understanding of the true pathways through which content influences behaviour. This logic underpins the present study's conceptualisation of platform governance as a mediating variable.

Educational differences and heterogeneous effects on consumer behaviour

Consumer behaviour research has long established that individual differences play a crucial role in information processing and behavioural responses. Among these differences, educational attainment - reflecting cognitive ability, depth of information processing, and sensitivity to normative considerations - has been shown to significantly influence how consumers interpret informational cues and adopt decision strategies [13]. In digital platform and online consumption contexts, related studies further demonstrate a consistent research finding. Users with different educational backgrounds often exhibit distinct trust formation mechanisms and purchasing response patterns when exposed to the same information [14,15].

This stream of research indicates that consumers do not process platform content and institutional signals in a homogeneous manner. Rather, behavioural responses depend heavily on individuals' cognitive resources and judgement capabilities. However, in much of the existing UGC literature, educational attainment has typically been treated as a control variable, rather than being systematically incorporated into analytical frameworks to examine its moderating role in the effects of UGC quality and platform governance. This practice implicitly assumes consumer homogeneity and limits the ability to explain the pronounced differences in user responses to identical content and governance mechanisms observed in real-world platforms. As the user base of social commerce platforms becomes increasingly diverse, reliance on average effects alone is insufficient to fully capture the underlying logic of changes in purchasing behaviour. Re-examining the heterogeneous pathways through which UGC quality and platform governance operate from the perspective of educational differences can therefore deepen understanding of consumer decision-making and provide more targeted theoretical foundations for differentiated governance and refined platform operations.

Research hypotheses

Prior studies have repeatedly verified the significant influence of UGC quality on consumer purchasing behaviour across multiple dimensions, including information, interaction, presentation, emotion, and value norms. Building on this foundation, the present study conceptualises UGC quality as a multidimensional construct and proposes the following direct effect hypotheses:

H_{1a}: The informational credibility of UGC has a significant positive effect on consumer purchasing behaviour.

H_{1b}: The interaction quality of UGC has a significant positive effect on consumer purchasing behaviour.

H_{1c}: The expressive/presentation quality of UGC has a significant positive effect on consumer purchasing behaviour.

H_{1d}: The appropriateness of emotional arousal in UGC has a significant positive effect on consumer purchasing behaviour.

H_{1e}: The political correctness of UGC (i.e., alignment with values and ideological norms) has a significant positive effect on consumer purchasing behaviour.

In social commerce contexts, the influence of UGC on consumer purchasing behaviour does not occur directly, but is instead transformed through platform governance mechanisms such as content moderation, algorithmic recommendation, and standardisation. Based on the institutional mediating function of platform governance in the content-behaviour transformation process, the following mediation hypotheses are proposed:

H_{2a}: Platform governance mediates the relationship between the informational credibility of UGC and consumer purchasing behaviour.

H_{2b}: Platform governance mediates the relationship between the interactional quality of UGC and consumer purchasing behaviour.

H_{2c}: Platform governance mediates the relationship between the expressive/presentation quality of UGC and consumer purchasing behaviour.

H_{2d}: Platform governance mediates the relationship between the appropriateness of emotional arousal in

UGC and consumer purchasing behaviour.

H_{2e}: Platform governance mediates the relationship between the political correctness of UGC and consumer purchasing behaviour.

Consumers do not respond homogeneously when processing multidimensional UGC information and platform governance signals. Educational attain-ment, as an important indicator of individuals' cognitive processing capability and value sensitivity, may moderate the above relationships. Accordingly, the following moderation hypotheses are proposed:

H_{3a}: Users' educational attainment positively moderates the direct effects of UGC quality dimensions on consumer purchasing behaviour.

H_{3b}: Users' educational attainment positively moderates the indirect effects of UGC quality on consumer purchasing behaviour through platform governance.

Research methodology and design

Research type, research paradigm, and research design

This study adopts a descriptive quantitative research approach, aiming to empirically examine the structural relationships among user-generated content (UGC) quality, platform governance mechanisms, individual difference factors, and consumer purchasing behaviour within social commerce contexts through systematic data collection and statistical analysis. Descriptive quantitative research does not merely focus on surface-level description. Rather, it emphasises a comprehensive depiction of the direction, magnitude, and statistical significance of relationships among multiple variables. This orientation is highly consistent with the present study's objective of investigating the combined effects of multidimensional UGC quality on consumer purchasing behaviour [16]. At the operational level, individual-level quantitative data are collected through a structured questionnaire, enabling abstract constructions such as UGC quality, platform governance, and purchasing behaviour to be operationalised and measured. This provides a solid empirical foundation for subsequent model testing [17]. Compared with exploratory or purely descriptive surveys, a theory-driven and hypothesis-oriented quantitative research design is more effective in uncovering stable patterns and generalisable regularities in consumer behaviour within social commerce contexts. From the perspective of research paradigm and design logic, this study is grounded in the positivist paradigm, which emphasises hypothesis testing through observable data and statistical techniques, as well as the verifiability and replicability of research findings. The Stimulus-Organism-Response (S-O-R) theory provides a clear causal logic for the study, whereby UGC quality is conceptualised as the external stimulus (S), platform governance and individual cognitive differences represent organism-level mechanisms (O), and consumer purchasing behaviour constitutes the ultimate behavioural outcome (R) [18,19]. Within this theoretical framework, a cross-sectional research design is employed, with data collected at a single point in time to capture consumers' overall perceptions of UGC content and platform governance, as well as their behavioural responses in specific platform-use contexts. Although cross-sectional designs are unable to capture long-term dynamic changes, they are highly efficient and appropriate for testing multivariate structural relationships, including direct, mediating, and moderating effects.

Consequently, they have been widely applied in consumer behaviour and information systems research. This research design ensures the operational feasibility of the proposed model and provides methodological consistency for subsequent structural equation modelling analyses.

Sample selection, sampling method, and sample size determination

The target population of this study comprises actual users of social commerce platforms in China. To ensure data validity, respondents were required to meet the following criteria: being aged 18 years or above, possessing full civil capacity, and having real experience in browsing user-generated content (UGC) on social commerce platforms, along with either actual purchasing behaviour or a clear purchase intention. These criteria ensure that respondents are capable of making informed evaluations of UGC quality, platform governance mechanisms, and their own purchasing behaviour. Data was collected through a structured online questionnaire, a method widely adopted in digital platforms and consumer behaviour research due to its ability to enhance sample coverage and data collection efficiency while ensuring anonymity and ethical compliance.

Regarding the sampling method, given the large scale of social commerce users in China and the absence of an

operable complete sampling frame, this study employed convenience sampling, a non-probability sampling technique. Questionnaires were distributed to eligible users via social media channels and online survey platforms. This approach demonstrates high practical feasibility in platform-based and online consumer research and has been widely adopted in prior empirical studies.

When determining the appropriate sample size for this study, comprehensive consideration was given to both the statistical requirements inherent in structural equation modelling (SEM) and the complexity of the proposed research model. Following the widely adopted sample size guidelines developed by Krejcie and Morgan (1970), for a large population with a 95% confidence level and a margin of error of ±5%, the minimum required sample size is approximately 384 valid responses. Furthermore, existing methodological literature on structural equation modelling indicates that for models incorporating multiple latent variables, along with mediating and moderating pathways, a sample size ranging from 300 to 400 is generally sufficient to guarantee stable parameter estimation and adequate statistical power. Taking these established criteria into account, while also accounting for the potential risk of invalid or incomplete responses commonly associated with convenience sampling, a total of approximately 600 questionnaires were distributed during the formal data collection phase.

Variable measurement and questionnaire design

All variables in this study were measured using well-established scales that have been repeatedly validated in prior literature, with minor semantic adaptations to fit the social commerce research context. This approach ensures both content validity and contextual appropriateness of the measurement instruments. With respect to specific variable measurements, the independent variable UGC quality was conceptualised as a multidimensional construct comprising five dimensions: informational credibility, interaction quality, expressive quality, appropriateness of emotional arousal, and political correctness. Informational credibility (four items), interaction quality (four items), expressive quality (three items), appropriateness of emotional arousal (four items), and political correctness (three items) were adapted from established scales in the literature on electronic word-of-mouth, content quality, and emotional communication (see Tables 1 and 2).

The questionnaire in this study adopted a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree, where higher scores represented a higher level of agreement with the corresponding measurement items. Before conducting the formal survey, a pilot test was administered to a sample of 40 respondents to assess the reliability and validity of the measurement scales. The scales were systematically evaluated using multiple indicators, including the content validity ratio (CVR), exploratory factor loadings, item-total correlations, and perceived understandability of the items. The results of the pilot test revealed that all content validity ratio values were greater than 0.80, all factor loadings exceeded the recommended threshold of 0.50, and all item-total correlations were higher than 0.50. In addition, the average understandability score of the items was above 4 points on a five-point scale.

These findings collectively confirmed that the measurement scales possessed satisfactory content validity and preliminary structural adequacy, and no items were identified for deletion or revision. Furthermore, the pilot test results showed that the Cronbach's α coefficients for all dimensions ranged from 0.72 to 0.85, which indicated good internal consistency reliability (as presented in Table 3).

The mediating variable platform governance was measured from the perspective of users' perceptions, covering platform supervision mechanisms, regulatory mechanisms, community co-construction, and content review processes. A total of four measurement items were employed, yielding a Cronbach's α of 0.82, which indicates a high level of reliability. The dependent variable consumer purchasing behaviour was measured using four items reflecting purchase intention, actual purchase, repeat purchase, and recommendation intention. The Cronbach's α for this construction reached 0.85, indicating strong reliability and a comprehensive representation of consumers' behavioural outcomes in social commerce contexts. The moderating variable educational attainment was measured as a categorical variable with seven levels, ranging from "primary school or below" to "doctoral degree or above," and was used for subsequent multi-group analysis and moderation effect testing.

Overall, the measurement scales demonstrated satisfactory reliability and item quality during the pilot testing stage, providing a robust foundation for subsequent measurement model assessment and structural model analysis using collected formal survey data.

Table 1. Measurements of variables.

Variable category	Dimension	Measurement sub-dimensions	Source
Independent variable	Information credibility (IC)	(1) Reliability: content is honest and not misleading (2) Expertise: publisher's knowledge level and experience in the relevant domain (3) Accuracy: correctness of facts and data (4) Objectivity: content remains neutral, avoiding subjective bias	Hassan et al. (2021)
	Interaction quality (IQ)	(1) Responsiveness: speed and relevance of replies to comments and queries (2) Engagement: quantity and depth of dialogues elicited (e.g., comment counts, secondary creations) (3) Interpersonal interaction: politeness, information symmetry, and problem-solving efficiency in communications (4) Social support: emotional (e.g., encouragement, empathy) or informational assistance provided during interactions	Wang et al. (2022)
	Presentation quality (PQ)	(1) Content clarity: clear logical structure and concise, comprehensible language (2) Design quality: aesthetic layout and layering of multimedia elements (images, text, videos) (3) Technical quality: loading speed, compatibility, and playback stability across devices	Ming (2023)
	Emotional arousal reasonableness (EAR)	(1) Arousal level: intensity of emotional activation (e.g., excitement or calm) (2) Valence: positive or negative emotional direction (3) Dominance: strength of emotion's guidance on behavior (e.g., encouraging sharing or restraining impulses) (4) Relevance: fit between emotional expression and social-commerce context	Xu et al. (2023)
	Political correctness (PC)	(1) Inclusivity: promotion of diversity and equality across gender, age, culture, etc. (2) Non-discrimination: avoidance of biases based on race, gender, or other group identities (3) Cultural sensitivity: respect for regional customs and societal values, avoiding offensive expressions	Song & Hu (2025)
Mediating variable	Monitoring mechanisms	Platform oversight and sanctions against violations to ensure rule enforcement	Cao et al. (2023)
	Normative mechanisms	Establishment of codes of conduct and operational policies to define compliance boundaries for users and merchants	Wang et al. (2024)
	Community building	Use of incentives and interactive mechanisms to foster user participation in governance and cultivate a self-regulating community culture	Shi et al. (2024)

Variable category	Dimension	Measurement sub-dimensions	Source
	Content moderation	Identification, review, and removal of inappropriate UGC to maintain information quality and platform norms	Yuan & Wang (2023)
Dependent variable	Purchase intention	Consumers' subjective willingness to make future purchases	Ata et al. (2021)
	Actual purchase	Consumers' completion of real purchase transactions on the platform	Antwi (2021)
	Repeat purchase	Consumers' behavior of buying again from the same platform or for the same product after the initial purchase	Charistianty et al. (2023); Lee & Ha (2023)
	Recommendation intention	Consumers' willingness to recommend the platform or product to others	Gupta & Kumar (2023)
Moderating variable	Education level	(1) Primary school or below (2) Junior high school (3) Senior high school or vocational equivalent (4) Junior college (associate degree) (5) Bachelor's degree (6) Master's degree (7) Doctorate and above	Zhai et al. (2022); Xiong et al. (2023); Huang et al. (2020)

Table 2. Pre-test result.

Dimension	Code	Item example	CVR	Factor loading	Item-total correlation	Under-standability
Information credibility (IC)	IC1	I believe that the tone of UGC on this platform is honest and non-misleading.	0.84	0.62	0.57	4.6
	IC2	I believe UGC creators on this platform demonstrate expertise and experience in relevant fields.	0.86	0.65	0.59	4.5
	IC3	I believe the facts and data included in UGC on this platform are accurate and error-free.	0.83	0.60	0.55	4.4
	IC4	I believe the tone of UGC on this platform remains neutral, avoiding subjective bias.	0.85	0.63	0.58	4.7
Interaction quality (IQ)	IQ1	I believe responses to UGC on this platform are prompt and relevant.	0.82	0.54	0.53	4.3
	IQ2	I believe UGC on this platform generates a high volume of conversations with sufficient depth.	0.88	0.67	0.60	4.6
	IQ3	I believe UGC on this platform promotes polite communication among users, with balanced	0.84	0.61	0.56	4.5

Dimension	Code	Item example	CVR	Factor loading	Item-total correlation	Under-standability
		information exchange and efficient problem resolution.				
	IQ4	I believe UGC interactions on this platform provide emotional encouragement or practical informational support.	0.83	0.59	0.55	4.4
Presentation quality (PQ)	PQ1	I believe the text in UGC on this platform is logically clear, concise, and easy to understand.	0.81	0.52	0.51	4.2
	PQ2	I believe the multimedia elements in UGC on this platform are aesthetically arranged and well-structured.	0.85	0.63	0.57	4.5
	PQ3	I believe UGC on this platform loads smoothly across different devices without technical glitches.	0.82	0.56	0.54	4.3
Emotional arousal appropriateness (EA)	EA1	I believe the emotional intensity aroused by UGC on this platform (e.g., excitement or calmness) is moderate.	0.87	0.66	0.60	4.7
	EA2	I believe the positive or negative emotional tone in UGC on this platform is reasonable.	0.84	0.62	0.58	4.5
	EA3	I believe the emotional tone in UGC on this platform appropriately guides behavior (e.g., encouraging sharing or curbing impulses).	0.83	0.61	0.56	4.4
	EA4	I believe the emotional expressions in UGC on this platform align well with the social e-commerce context.	0.85	0.64	0.59	4.6
Political correctness (PC)	PC1	I believe the tone of UGC on this platform promotes diversity and equality in terms of gender, age, culture, etc.	0.86	0.65	0.58	4.7
	PC2	I believe the tone of UGC on this platform avoids biases based on race, gender, etc.	0.84	0.62	0.56	4.5
	PC3	I believe the tone of UGC on this platform respects regional cultures and social values, avoiding offense.	0.85	0.63	0.57	4.6
Platform governance (PG)	PG1	I believe this platform effectively monitors violations and enforces sanctions.	0.88	0.67	0.60	4.7

Dimension	Code	Item example	CVR	Factor loading	Item-total correlation	Under-standability
	PG2	I believe this platform establishes clear behavioral guidelines and operational policies.	0.86	0.65	0.58	4.6
	PG3	I believe this platform promotes user participation in governance through incentive mechanisms, fostering a self-regulating community.	0.84	0.62	0.56	4.5
	PG4	I believe this platform identifies, reviews, and removes inappropriate UGC promptly.	0.87	0.66	0.60	4.7
Consumer purchase behavior (CPB)	CPB1	I have the subjective intention to purchase products in the future based on UGC.	0.85	0.64	0.58	4.6
	CPB2	I have completed actual purchases on the platform based on UGC.	0.83	0.61	0.56	4.4
	CPB3	I would make repeat purchases on the same platform or for the same product after the initial purchase.	0.84	0.62	0.57	4.5
	CPB4	I am willing to recommend this platform or product to others.	0.86	0.65	0.59	4.7
Education level (EDU)	EDU	Please select your highest educational attainment (e.g., Bachelor's, Master's, Doctorate). 1. Primary school or below 2. Junior high school 3. Senior high school 4. Junior college 5. Bachelor's degree 6. Master's degree 7. Doctoral degree or above	/			

Note: pre-test criteria: CVR>0.80, factor loading >0.50, item-total correlation >0.50, understandability >4 (out of 5).

Table 3. Result of pilot test (40 samples).

Dimension	Cronbach's α	Item Code	CVR	Factor Loading	Item-Total Correlation
Information credibility (IC)	0.78	IC1	0.84	0.62	0.57
		IC2	0.86	0.65	0.59
		IC3	0.83	0.60	0.55
		IC4	0.85	0.63	0.58
Interaction quality (IQ)	0.75	IQ1	0.82	0.54	0.53
		IQ2	0.88	0.67	0.60
		IQ3	0.84	0.61	0.56
		IQ4	0.83	0.59	0.55

Dimension	Cronbach's α	Item Code	CVR	Factor Loading	Item-Total Correlation
Presentation quality (PQ)	0.72	PQ1	0.81	0.52	0.51
		PQ2	0.85	0.63	0.57
		PQ3	0.82	0.56	0.54
Emotional arousal appropriateness (EA)	0.8	EA1	0.87	0.66	0.60
		EA2	0.84	0.62	0.58
		EA3	0.83	0.61	0.56
		EA4	0.85	0.64	0.59
Political correctness (PC)	0.74	PC1	0.86	0.65	0.58
		PC2	0.84	0.62	0.56
		PC3	0.85	0.63	0.57
Platform Governance (PG)	0.82	PG1	0.88	0.67	0.60
		PG2	0.86	0.65	0.58
		PG3	0.84	0.62	0.56
		PG4	0.87	0.66	0.60
Consumer purchase behavior (CPB)	0.85	CPB1	0.85	0.64	0.58
		CPB2	0.83	0.61	0.56
		CPB3	0.84	0.62	0.57
		CPB4	0.86	0.65	0.59

Data analysis procedures

During the data analysis stage, this study adopted an integrated analytical strategy combining SPSS 30.0 and SmartPLS 4.1.1. First, SPSS 30.0 was used for systematic data screening and preprocessing, including the removal of invalid responses, treatment of missing values and outliers, and standardisation of reverse-coded items. On this basis, demographic analysis and descriptive statistical analysis were conducted to comprehensively characterise the sample profile and to assess the overall data distribution.

Subsequently, the cleaned dataset was imported into SmartPLS 4.1.1, and partial least squares structural equation modelling (PLS-SEM) was employed to test the proposed research model. Specifically, the analysis examined the direct effects of multidimensional user-generated content (UGC) quality on consumer purchasing behaviour, the mediating role of platform governance, and the moderating effect of educational attainment. In the model evaluation process, the reliability and convergent validity of the measurement model were assessed sequentially, followed by the estimation of path coefficients and their significance levels using the bootstrapping procedure. In addition, model fit, explanatory power, and predictive capability were evaluated using a set of established indicators, including the standardised root mean square residual (SRMR), R^2, f^2, and Q^2.

Through this integrated analytical procedure, the study established a complete and coherent workflow encompassing data collection, quality control, and model testing, thereby providing a robust methodological foundation for the systematic verification of the proposed research hypotheses.

Empirical analysis results

Data cleaning (using SPSS 30.0)

Prior to conducting the formal empirical analysis and hypothesis testing, the raw data collected in this study underwent a rigorous and systematic data cleaning procedure to ensure their accuracy, completeness, and internal consistency. Data cleaning serves as a fundamental and indispensable step in empirical research, as it helps minimize biases caused by missing data, outliers, and invalid responses, thereby improving the overall reliability and validity of subsequent model estimation and statistical inference [20,21]. In the present study, SPSS 30.0 was used to conduct the initial data screening and quality evaluation. A comprehensive missing value analysis was performed across all

measurement items, including those assessing the independent variable, dependent variable, mediating variable, and moderating variable. The results demonstrated that no missing values were identified for any of the key research variables, resulting in a missing rate of 0%. This outcome indicates a high level of respondent engagement and questionnaire completeness. As no missing data were detected, listwise deletion, pairwise deletion, or multiple imputation techniques were unnecessary. Consequently, all valid responses could be directly retained and used for the subsequent descriptive statistics, reliability and validity tests, and structural equation modelling analysis.

At the same time, in accordance with the predefined screening criteria integrated into the questionnaire design, responses that failed to meet the requirements of the study's target population were systematically excluded from further analysis. Specifically, invalid cases included respondents who had no prior usage experience of social commerce platforms, those with insufficient shopping engagement on such platforms, and individuals under the age of 18. Following rigorous data screening and cleaning procedures, a total of 531 valid questionnaires were ultimately retained for subsequent statistical analysis, representing an effective response rate of 96.6%. This final valid sample size is sufficient and statistically robust for conducting the subsequent structural equation modelling, parameter estimation, and hypothesis testing, thereby providing a solid and reliable data foundation for the empirical analysis of this study.

Regarding outlier detection as presented in Table 4, this study employed SPSS 30.0 to perform descriptive statistics and identify outliers using the Z-score method, with a threshold of $|Z| > 3$ to detect extreme observations that substantially deviated from the overall data distribution. The diagnostic analysis identified a total of five outliers across several items measuring UGC quality dimensions and consumer purchasing behaviour, with Z-scores ranging from -3.20 to -4.03. Subsequent careful examination verified that these extreme values did not stem from data entry mistakes or coding errors, but instead reflected authentic but extreme individual responses from participants. To preserve the overall sample size while reducing the potential distortion of extreme values on the normality of data distribution and the stability of model estimation, the mean substitution method was adopted to handle these outliers. This treatment is widely recognised to improve estimation robustness, especially under conditions of a relatively large sample size and a low proportion of outliers [22]. Following the outlier treatment, the overall data distribution became more stable and met the fundamental assumptions required for descriptive statistical analysis, structural equation modelling, and hypothesis testing. This process ensured reliability and scientific rigor of the subsequent empirical results and research conclusions.

Table 4. Outlier test.

Observation ID	Variable	Original value	Z-score
2	IV03-Q3	1	−3.87
198	DV-Q4	2	−3.45
263	IV01-Q1	1	−4.03
322	IV04-Q1	1	−3.99
368	DV-Q3	2	−3.20

Descriptive statistical analysis

Descriptive statistical analysis constitutes an essential foundation of empirical research, as it enables a systematic portrayal of sample characteristics and variable distributions, thereby providing necessary contextual information for subsequent model construction and hypothesis testing. In this study, SPSS 30.0 was used to conduct demographic and variable-level descriptive statistical analyses based on 531 valid questionnaires. The results indicate an overall effective response rate of 96.6%, reflecting a high level of data completeness. Respondents ranged in age from 19 to 65 years, with a mean age of 42 years (see Figure 1).

Among them, the age groups of 40-49 (23.9%), 50-59 (24.5%), and 60+ (11.7%) accounted for relatively high proportions, suggesting the coexistence of both middle-aged and older user groups within the social commerce user structure. Gender distribution was relatively balanced, with females accounting for 52.2% and males 47.8% of the sample. In terms of educational attainment, respondents holding a bachelor's degree or above accounted for 52.0%, indicating a generally strong capacity for information comprehension and processing. Occupational and regional distributions were highly diversified (see Figure 2), with respondents drawn from all 31 provinces, municipalities, and autonomous regions in China, providing a solid basis for subsequent analyses of user heterogeneity (see Figure 3 and 4).

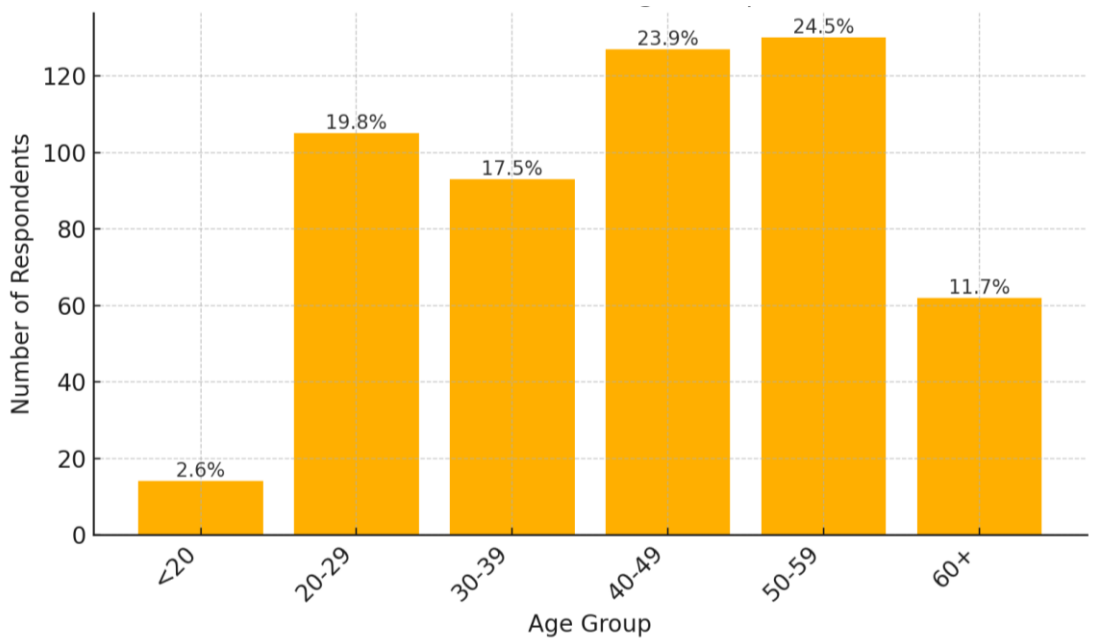

Figure 1. Distribution of age group.

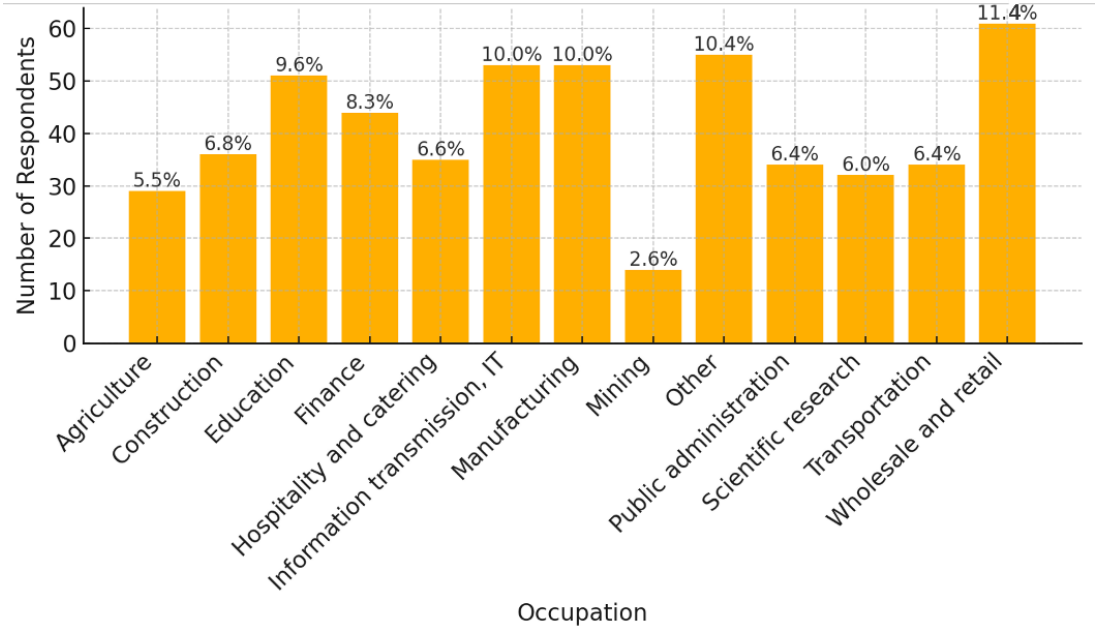

Figure 2. Distribution of occupation.

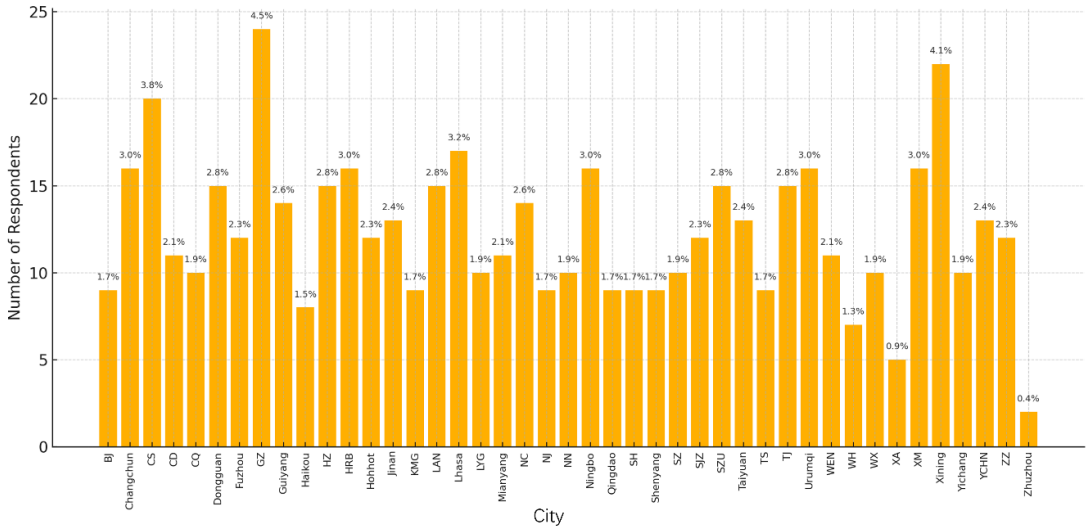

Figure 3. Respondents' city distribution.

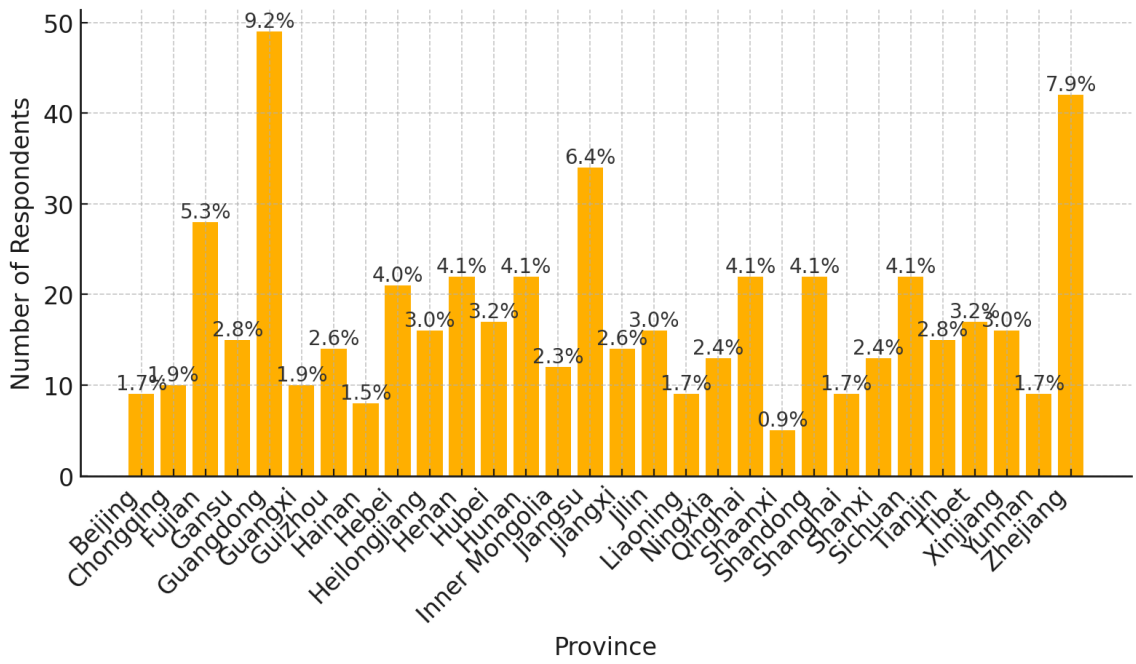

Figure 4. Distribution of province.

Descriptive statistics were computed for the five dimensions of UGC quality (informational credibility, interaction quality, expressive/presentation quality, emotional arousal appropriateness, and political correctness; see Table 6). Mean scores ranged from 3.949 to 4.024, standard deviations from 0.716 to 0.779, and medians were 4. Respondents showed positive and moderately varied evaluations of UGC quality. Mild negative skewness and near-zero kurtosis indicated no severe non-normality, and coefficients of variation below 0.20 reflected high consistency in perceptions.

For the mediating variable platform governance, means were 4.499-4.535, standard deviations 0.514-0.533, and median 5, indicating highly positive and concentrated evaluations. The dependent variable purchasing behaviour had lower means (3.810–3.844) with near-zero skewness, showing balanced distribution. The moderating variable educational attainment had larger standard deviation, indicating high heterogeneity, which supports testing its moderating role in the model [23].

Overall, the distributions of all variables were generally well-behaved, with no evident abnormalities or severe skewness observed. Such favorable distribution characteristics fully meet the basic statistical requirements for subsequent structural equation modelling and hypothesis testing. In turn, this provides a solid and reliable data foundation for further empirical analysis in the present study.

Table 6. Descriptive statistics summary.

Variable type	Variable name	Max	Min	Mean	Standard deviation	Variance	Kurtosis	Skewness	(CV)
Independent variables	IV01-Q1	5	1	3.989	0.742	0.551	−0.145	−0.316	0.186
	IV01-Q2	5	2	3.966	0.736	0.542	−0.570	−0.174	0.186
	IV01-Q3	5	2	3.949	0.734	0.539	−0.642	−0.121	0.186
	IV01-Q4	5	2	3.974	0.757	0.573	−0.392	−0.297	0.190
	IV02-Q1	5	2	4.002	0.744	0.553	−0.435	−0.279	0.186
	IV02-Q2	5	2	4.015	0.757	0.573	−0.320	−0.365	0.189
	IV02-Q3	5	2	4.015	0.729	0.532	−0.448	−0.258	0.182
	IV02-Q4	5	2	4.024	0.743	0.552	−0.397	−0.316	0.185
	IV03-Q1	5	2	4.011	0.745	0.555	−0.432	−0.293	0.186
	IV03-Q2	5	2	4.021	0.778	0.605	−0.564	−0.326	0.193
	IV03-Q3	5	1	4.011	0.779	0.607	−0.276	−0.380	0.194
	IV04-Q1	5	1	3.979	0.748	0.560	0.196	−0.454	0.188

	IV04-Q2	5	1	3.992	0.735	0.540	0.022	−0.361	0.184
	IV04-Q3	5	2	3.964	0.730	0.533	−0.143	−0.325	0.184
	IV04-Q4	5	2	3.992	0.740	0.547	−0.340	−0.297	0.185
	IV05-Q1	5	2	4.013	0.763	0.583	−0.659	−0.252	0.190
	IV05-Q2	5	2	4.000	0.716	0.513	−0.438	−0.216	0.179
	IV05-Q3	5	2	4.024	0.753	0.567	−0.637	−0.253	0.187
Mediating variables	MED-Q1	5	3	4.499	0.533	0.284	−1.175	−0.333	0.119
	MED-Q2	5	3	4.535	0.514	0.264	−1.509	−0.307	0.113
	MED-Q3	5	3	4.514	0.530	0.280	−1.207	−0.362	0.117
	MED-Q4	5	3	4.510	0.515	0.265	−1.562	−0.208	0.114
Dependent variables	DV-Q1	5	3	3.838	0.570	0.325	−0.148	−0.001	0.148
	DV-Q2	5	3	3.810	0.579	0.335	−0.290	0.040	0.152
	DV-Q3	5	2	3.832	0.573	0.328	−0.047	−0.050	0.150
	DV-Q4	5	2	3.844	0.536	0.287	0.336	−0.193	0.139
Moderating variables	MODV	8	1	4.320	1.587	2.520	−0.492	−0.055	0.367

Note: N=531; Median: independent variables = 4, mediating variables = 5, dependent variables = 4, moderating variables = 4.

Normality test

Prior to structural model analysis, this study used SPSS 30.0 to conduct normality tests on all variables to examine their distribution properties and verify the suitability of subsequent statistical methods. Distributions were initially checked via descriptive statistics, histograms, and Q-Q plots (Figure 7), followed by the Cramér-von Mises test. As shown in Table 7, p-values for all variables were below 0.05, indicating a deviation from the normal distribution.

Most variables had similar meanings amediasans, with skewness and kurtosis within acceptable ranges, showing only mild non-normality. With a large sample, normality tests are highly sensitive to small deviations, leading to significant results despite mild departures. As PLS-SEM imposes few distribution assumptions and performs robustly with non-normal data and large samples, violations of normality were not problematic. Accordingly, no data normalization or transformation was conducted. The model was directly analyzed using SmartPLS 4, ensuring reliable estimation and valid interpretation.

Table 7. Normal distribution test.

Variable	Mean	Median	Min observed value	Max observed value	Standard deviation	Kurtosis	Skewness	Cramér-von Mises Statistic
DV-Q1	3.838	4	3	5	0.569	−0.148	−0.001	13.734
DV-Q2	3.810	4	3	5	0.579	−0.290	0.040	12.960
DV-Q3	3.832	4	2	5	0.573	−0.047	−0.050	13.746
DV-Q4	3.844	4	2	5	0.535	0.336	−0.193	16.349
IV01-Q1	3.989	4	1	5	0.741	−0.145	−0.316	7.447
IV01-Q2	3.966	4	2	5	0.736	−0.570	−0.174	7.314
IV01-Q3	3.949	4	2	5	0.733	−0.642	−0.121	7.266
IV01-Q4	3.974	4	2	5	0.756	−0.392	−0.297	7.158
IV02-Q1	4.002	4	2	5	0.743	−0.435	−0.279	7.327
IV02-Q2	4.015	4	2	5	0.756	−0.320	−0.365	7.2080
IV02-Q3	4.015	4	2	5	0.729	−0.448	−0.258	7.619

Variable	Mean	Median	Min observed value	Max observed value	Standard deviation	Kurtosis	Skewness	Cramér-von Mises Statistic
IV02-Q4	4.024	4	2	5	0.742	−0.397	−0.316	7.362
IV03-Q1	4.011	4	2	5	0.744	−0.432	−0.293	7.294
IV03-Q2	4.021	4	2	5	0.777	−0.564	−0.326	6.461
IV03-Q3	4.011	4	1	5	0.779	−0.276	−0.380	6.550
IV04-Q1	3.979	4	1	5	0.748	0.196	−0.454	8.035
IV04-Q2	3.992	4	1	5	0.734	0.022	−0.361	7.889
IV04-Q3	3.964	4	2	5	0.729	−0.143	−0.325	8.250
IV04-Q4	3.992	4	2	5	0.739	−0.340	−0.297	7.588
IV05-Q1	4.013	4	2	5	0.763	−0.659	−0.252	6.605
IV05-Q2	4.000	4	2	5	0.716	−0.438	−0.216	7.980
IV05-Q3	4.024	4	2	5	0.752	−0.637	−0.253	6.823
MED-Q1	4.499	5	3	5	0.533	−1.175	−0.333	13.974
MED-Q2	4.535	5	3	5	0.514	−1.509	−0.307	15.030
MED-Q3	4.514	5	3	5	0.529	−1.207	−0.362	14.242
MED-Q4	4.510	5	3	5	0.515	−1.562	−0.208	14.798
MODV	4.320	4	1	8	1.586	−0.492	−0.055	1.6490

Note: N=531, Mises p-value=0.

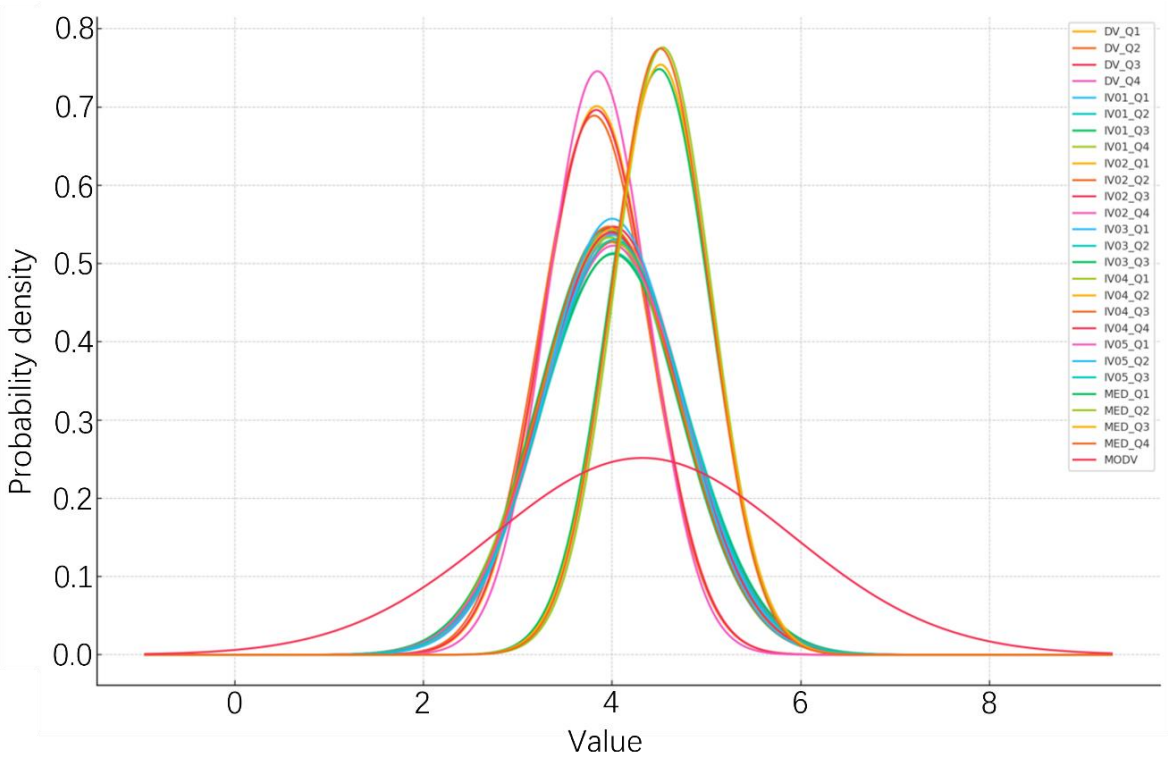

Figure 7. Normal distribution result.

Multicollinearity test

Prior to estimating the structural model, this study conducted a multicollinearity test for all research variables to ensure that excessive linear correlations among the independent variables did not compromise the stability of parameter estimation or the interpretability of the results. Multicollinearity can inflate the standard errors of regression coefficients, reduce statistical significance, and even lead to sign reversals, thereby obscuring the true effects of variables. It is therefore necessary to assess multicollinearity before model estimation.

Following widely accepted standards in the literature, the variance inflation factor (VIF) was employed to evaluate the degree of multicollinearity. VIF values exceeding 10 (or the more conservative threshold of 5) are typically regarded as indicative of serious multicollinearity problems. Based on calculations using SPSS 30.0, the VIF values for all variables in this study range from 1.5 to 3.2, which are well below commonly accepted thresholds, indicating a low overall risk of multicollinearity (see Table 8).

Specifically, the VIF values for the various dimensions of UGC quality fell within acceptable ranges, suggesting that although some shared variance exists among these dimensions, it does not reach a level that would distort model estimation. The platform governance variable exhibited the lowest VIF values, indicating a high degree of independence. The VIF levels for the dependent and moderating variables also remained within safe ranges. Collectively, these results demonstrate the absence of significant multicollinearity issues in the dataset, confirming its suitability for subsequent PLS-SEM analysis. This provides a robust data foundation for testing the direct effects of UGC quality, the mediating role of platform governance, and the moderating effects of educational attainment.

Table 8. Variance inflation factor (VIF) for variables.

Variable	VIF
IV01-Q1	2.7
IV01-Q2	2.6
IV01-Q3	2.8
IV01-Q4	2.8
IV02-Q1	3.0
IV02-Q2	3.1
IV02-Q3	3.1
IV02-Q4	3.2
IV03-Q1	2.6
IV03-Q2	3.1
IV03-Q3	2.9
IV04-Q1	2.9
IV04-Q2	3.0
IV04-Q3	2.9
IV04-Q4	2.8
IV05-Q1	2.4
IV05-Q2	2.6
IV05-Q3	2.6
MED-Q1	1.5
MED-Q2	1.5
MED-Q3	1.5
MED-Q4	1.5
DV-Q1	1.7
DV-Q2	1.8
DV-Q3	2.0
DV-Q4	1.7
MODV	2.4

Reliability and validity tests

To assess the internal consistency and stability of the measurement instruments, this study conducted reliability analysis for all latent variable scales using IBM SPSS Statistics 30.0. Reliability analysis primarily evaluates the consistency among measurement items included in a research scale. It further determines whether these multiple indicators can stably and reliably reflect the same underlying latent construction. As such, reliability analysis constitutes a critical step in ensuring the reliability of measurement results and the replicability of research findings. The results based on Cronbach's α indicate (see Table 9), the α values of all constructions are substantially higher than the commonly accepted threshold of 0.700. These results demonstrate a high level of internal consistency across all measurement scales.

Further examination of the "Cronbach's α if item deleted" statistics reveals that the removal of any individual item does not lead to a notable increase in the corresponding α value. This indicates that all measurement items make stable and balanced contributions to their respective constructions, and that no item deletion or scale adjustment is necessary. Overall, the scales employed in this study exhibit satisfactory reliability in measuring multidimensional UGC quality, platform governance, and consumer purchasing behaviour, thereby meeting the requirements for measurement stability in subsequent PLS-SEM analysis.

Table 9. Reliability statistics result.

Scale	Item	Overall Cronbach's α	Cronbach's α if item deleted
Information quality (IV01)	IV01-Q1	0.932	0.918

Scale	Item	Overall Cronbach's α	Cronbach's α if item deleted
	IV01-Q2		0.917
	IV01-Q3		0.919
	IV01-Q4		0.916
Interaction quality (IV02)	IV02-Q1	0.945	0.938
	IV02-Q2		0.936
	IV02-Q3		0.939
	IV02-Q4		0.937
Presentation quality (IV03)	IV03-Q1	0.912	0.903
	IV03-Q2		0.901
	IV03-Q3		0.904
Emotional appropriateness (IV04)	IV04-Q1	0.942	0.934
	IV04-Q2		0.933
	IV04-Q3		0.935
	IV04-Q4		0.934
Political correctness (IV05)	IV05-Q1	0.896	0.887
	IV05-Q2		0.886
	IV05-Q3		0.885
Platform governance (MED)	MED-Q1	0.883	0.867
	MED-Q2		0.864
	MED-Q3		0.869
	MED-Q4		0.866
Purchase behavior (DV)	DV-Q1	0.907	0.895
	DV-Q2		0.894
	DV-Q3		0.893
	DV-Q4		0.894

With respect to validity assessment, this study further employed Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity using SPSS 30.0 to examine whether the data were suitable for factor analysis and whether the scales accurately captured the underlying latent construct structure. The results shown as Table 10, the KMO measure of sampling adequacy is 0.847, which falls within the "meritorious" range of 0.800-0.900, indicating a high degree of shared variance among measurement variables and suitability for factor analysis. Meanwhile, Bartlett's Test of sphericity yields an approximate chi-square value of 7,983.95 (df=351) with $p<0.001$, rejecting the null hypothesis that the correlation matrix is an identity matrix and confirms the presence of significant correlations among the items.

Taken together, these findings indicate that the questionnaire demonstrates good construct validity, with measurement items effectively converging on and discriminating among different latent constructs. This provides a reliable empirical foundation for subsequent analyses of the relationships among the various dimensions of user-generated content quality, platform governance mechanisms, and consumer purchasing behaviour.

Table 10. KMO and Bartlett's test.

Test	Statistic	Value
KMO measure of sampling adequacy	/	0.847
Bartlett's Test of sphericity	Approximate chi-square value	7,983.95
	Degrees of freedom	351
	Significance (Sig.)	0.000***

Exploratory factor analysis

During factor extraction, principal component analysis was employed, and the number of factors was determined according to the criterion of eigenvalues greater than 1. An orthogonal rotation method was applied to enhance the interpretability of the factor structure. The results indicate as Table 11 that all measurement items exhibited relatively high loadings on their respective factors, with no significant cross-loading observed. At the empirical level, this suggests that the measurement scales effectively distinguish between the core constructs, namely multidimensional user-generated content (UGC) quality, platform governance, and consumer purchasing behaviour. This effective dis-criminability thereby provides preliminary support for the study's hypothesised multidimensional structure.

Table 11. Factor loading coefficient table.

Factor	Indicator	Unstandardized loading	Standardized loading	z value	Standard deviation	p value
IV-01	IV01-Q1	1.000	0.834	/	/	/
	IV01-Q2	0.986	0.829	22.282	0.044	0.000***
	IV01-Q3	0.999	0.842	22.765	0.044	0.000***
	IV01-Q4	1.022	0.836	22.543	0.045	0.000***
IV-02	IV02-Q1	1.000	0.849	/	/	/
	IV02-Q2	1.024	0.853	24.416	0.042	0.000***
	IV02-Q3	0.984	0.851	24.324	0.040	0.000***
	IV02-Q4	1.025	0.870	25.187	0.041	0.000***
IV-03	IV03-Q1	1.000	0.836	/	/	/
	IV03-Q2	1.108	0.886	23.919	0.046	0.000***
	IV03-Q3	1.085	0.867	23.467	0.046	0.000***
IV-04	IV04-Q1	1.000	0.848	/	/	/
	IV04-Q2	0.994	0.859	24.601	0.040	0.000***
	IV04-Q3	0.977	0.850	24.165	0.040	0.000***
	IV04-Q4	0.983	0.844	23.904	0.041	0.000***
IV-05	IV05-Q1	1.000	0.820	/	/	/
	IV05-Q2	0.953	0.833	20.822	0.046	0.000***
	IV05-Q3	1.027	0.854	21.237	0.048	0.000***
MEDV	MED-Q1	1.000	0.600	/	/	/
	MED-Q2	0.969	0.603	11.202	0.086	0.000***
	MED-Q3	1.036	0.625	11.515	0.09	0.000***
	MED-Q4	0.976	0.606	11.244	0.087	0.000***
DV	DV-Q1	1.000	0.653	/	/	/
	DV-Q2	1.046	0.672	13.849	0.075	0.000***
	DV-Q3	1.106	0.718	14.652	0.075	0.000***
	DV-Q4	0.962	0.669	13.789	0.070	0.000***

Additionally, Table 12 reports the convergent validity (via average variance extracted, AVE) and internal consistency (via composite reliability, CR) of the measurement model. All constructions met the recommended thresholds: AVE (0.588-0.746) >0.500, and CR (0.801-0.916) >0.700. These results confirm adequate variance explanation by latent constructs and satisfactory scale consistency.

Table 12. Valuation of module.

Factor	AVE	Composite reliability (CR)
IV-01	0.697	0.902
IV-02	0.732	0.916
IV-03	0.746	0.898
IV-04	0.723	0.913
IV-05	0.699	0.874

Factor	AVE	Composite reliability (CR)
MEDV	0.588	0.801
DV	0.647	0.873

A further examination was conducted on the internal factor loadings and structural stability of the measurement model. All items exhibited standardized loadings that were well above the commonly accepted threshold value of 0.400 on their respective corresponding factors.

In addition, the loadings of most items were distributed within the moderate-to-high range. This indicates strong associations between observed indicators and their latent factors. Moreover, inter-factor correlations remain generally low, and no excessive overlap is observed among the dimensions of the independent variables (see Table 13), suggesting a sound basis for constructing differentiation.

Table 13. Pearson correlations and AVE square root values.

/	IV-01	IV-02	IV-03	IV-04	IV-05	MEDV	DV
IV-01	0.835	/	/	/	/	/	/
IV-02	0.035 (p=0.418)	0.856	/	/	/	/	/
IV-03	0.006 (p=0.881)	−0.048 (p=0.268)	0.864	/	/	/	/
IV-04	−0.031 (p=0.480)	−0.029 (p=0.499)	0.039 (p=0.367)	0.850	/	/	/
IV-05	−0.036 (p=0.412)	0.042 (p=0.335)	−0.066 (p=0.128)	−0.039 (p=0.365)	0.836	/	/
MEDV	0.372*** (p<0.001)	0.265*** (p<0.001)	0.224*** (p<0.001)	0.324*** (p<0.001)	0.308*** (p<0.001)	0.608	/
DV	0.176*** (p<0.001)	0.210*** (p<0.001)	0.161*** (p<0.001)	0.288*** (p<0.001)	0.261*** (p<0.001)	0.500*** (p<0.001)	0.678

Subsequently, a rigorous confirmatory factor analysis (CFA) was conducted to systematically validate and verify the measurement model, with a full set of model fit indices comprehensively reported in Table 14. All fitness indices consistently met or exceeded the commonly recommended criteria: $\chi^2/df = 0.927$ (< 3.000), GFI = 0.966 (> 0.900), RMSEA = 0.011 (< 0.100), and CFI/NFI/NNFI ≥ 0.966. These empirical results strongly and unequivocally confirm an excellent overall model fit, indicating that the measurement model is well-specified and consistent with the theoretical structure proposed in this study. The estimated path coefficients (detailed in Table 15) further reveal that UGC quality dimensions (IV-01/02/03/04/05) exert statistically significant and positive effects on both MEDV and DV ($p < 0.001$), whereas all other hypothesized paths are found to be statistically non-significant ($p > 0.05$). These findings provide clear empirical support for the core structural relationships hypothesized in the research model.

Overall, the results of the systematic exploratory factor analysis unequivocally confirm that the measurement instruments employed in this study exhibit a clear and stable factor structure, with latent constructs effectively identified. The sound psychometric properties demonstrated across exploratory and confirmatory procedures further validate the reliability and validity of the adopted measurement scales. This provides a reliable measurement foundation for subsequent confirmatory factor analysis and structural equation modelling, laying a solid empirical groundwork for hypothesis testing and theoretical interpretation.

Table 14. Model fit.

Fit index	Criteria	Observed value
X^2	/	257.764
df	/	278.000
p-value	>0.05	0.803
χ^2/df	<3.00	0.927
GFI	>0.90	0.966
RMSEA	<0.10	0.000
RMR	<0.05	0.011
CFI	>0.90	1.003
NFI	>0.90	0.966
NNFI	>0.90	1.003

Table 15. Parameter estimates.

Factor A	Factor B	Unstandardized estimate	Standard error	z value	p value	Standardized estimate
IV-01	IV-02	0.015	0.019	0.828	0.408	0.040
	IV-03	0.002	0.019	0.121	0.904	0.006
	IV-04	−0.013	0.019	−0.717	0.473	−0.034
	IV-05	−0.016	0.019	−0.849	0.396	−0.042
	MEDV	0.093	0.013	7.192	0.000***	0.468
	DV	0.049	0.012	3.910	0.000***	0.212
IV-02	IV-03	−0.019	0.019	−1.028	0.304	−0.049
	IV-04	−0.013	0.019	−0.679	0.497	−0.032
	IV-05	0.018	0.019	0.946	0.344	0.046
	MEDV	0.067	0.012	5.563	0.000***	0.331
	DV	0.059	0.013	4.569	0.000***	0.249
IV-03	IV-04	0.016	0.019	0.843	0.399	0.040
	IV-05	−0.027	0.019	−1.428	0.153	−0.070
	MEDV	0.056	0.012	4.797	0.000***	0.281
	DV	0.045	0.012	3.617	0.000***	0.195
IV-04	IV-05	−0.018	0.019	−0.913	0.361	−0.044
	MEDV	0.083	0.013	6.517	0.000***	0.405
	DV	0.081	0.014	5.953	0.000***	0.341
IV-05	MEDV	0.079	0.013	6.223	0.000***	0.392
	DV	0.074	0.013	5.529	0.000***	0.320
MEDV	DV	0.082	0.010	8.116	0.000***	0.682

Note: ***p<0.001, **p<0.01, *p<0.05.

Structural equation modelling analysis

The structural equation modelling results obtained using SmartPLS 4.1.1 indicate that both the measurement model and the structural model constructed in this study exhibit solid statistical foundations and strong robustness. The measurement model assessment results are presented in Table 16 that all standardised factor loadings exceed 0.70, while Cronbach's α and composite reliability (CR) values are well above the recommended threshold of 0.700. In addition, all constructions achieve average variance extracted (AVE) values of 0.500 or higher. Discriminant validity is further confirmed by the Fornell-Larcker criterion and the heterotrait-monotrait ratio (HTMT) confidence intervals (see Table 17).

Table 16. Congeneric reliability (rho_c).

Variable	Original sample	Sample mean	Standard deviation	T statistic	p value
DV	0.855	0.854	0.009	93.967	0.00***
IV-01	0.932	0.931	0.004	207.564	0.00***
IV-02	0.941	0.940	0.004	219.690	0.00***
IV-03	0.936	0.935	0.005	187.013	0.00***
IV-04	0.938	0.938	0.004	221.241	0.00***
IV-05	0.923	0.922	0.006	165.354	0.00***
MEDV	0.817	0.816	0.011	75.614	0.00***

Table 17. Heterotrait-monotrait ratio (HTMT) - confidence interval.

Path	Original value	Sample mean	2.5%	97.5%
IV-01 ↔ DV	0.212	0.213	0.120	0.309

Path	Original value	Sample mean	2.5%	97.5%
IV-02 ↔ DV	0.249	0.250	0.156	0.347
IV-02 ↔ IV-01	0.048	0.067	0.034	0.129
IV-03 ↔ DV	0.192	0.194	0.101	0.289
IV-03 ↔ IV-01	0.021	0.053	0.024	0.113
IV-03 ↔ IV-02	0.054	0.070	0.028	0.146
IV-04 ↔ DV	0.342	0.342	0.252	0.427
IV-04 ↔ IV-01	0.037	0.060	0.026	0.127
IV-04 ↔ IV-02	0.036	0.060	0.028	0.127
IV-04 ↔ IV-03	0.048	0.065	0.027	0.136
IV-05 ↔ DV	0.318	0.318	0.224	0.411
IV-05 ↔ IV-01	0.040	0.060	0.025	0.129
IV-05 ↔ IV-02	0.047	0.067	0.027	0.148
IV-05 ↔ IV-03	0.074	0.083	0.030	0.164
IV-05 ↔ IV-04	0.044	0.062	0.024	0.138
MEDV ↔ DV	0.680	0.681	0.598	0.758
MEDV ↔ IV-01	0.468	0.468	0.380	0.552
MEDV ↔ IV-02	0.331	0.331	0.230	0.433
MEDV ↔ IV-03	0.283	0.285	0.192	0.378
MEDV ↔ IV-04	0.405	0.406	0.304	0.505
MEDV ↔ IV-05	0.393	0.393	0.296	0.488
MODV ↔ DV	0.701	0.700	0.644	0.750
MODV ↔ IV-01	0.072	0.077	0.017	0.160
MODV ↔ IV-02	0.037	0.058	0.026	0.122
MODV ↔ IV-03	0.063	0.070	0.018	0.149
MODV ↔ IV-04	0.062	0.070	0.015	0.154
MODV ↔ IV-05	0.003	0.040	0.009	0.099
MODV ↔ MEDV	0.018	0.059	0.021	0.116

Collectively, these results demonstrate that the observed indicators reliably and accurately capture their corresponding latent constructions, effectively minimising the influence of measurement error on structural path estimation. On this basis, no significant multicollinearity issues are detected in the structural model (see Table 18 and Table 19), and the path coefficients, t-values, and confidence intervals obtained directly from the bootstrapping procedure (5,000 resamples) are all empirically and statistically interpretable, providing a solid and reliable foundation for subsequent hypothesis testing.

Table 18. Cronbach's α - sample mean, standard deviation, t statistic.

Variable	Name	Original sample	Sample mean	Standard deviation	T statistic
DV	Customer purchase behavior	0.773	0.772	0.017	46.476
IV-01	Information credibility	0.902	0.902	0.007	131.458
IV-02	Interaction quality	0.916	0.916	0.006	144.786
IV-03	Presentation quality	0.897	0.897	0.008	106.037
IV-04	Emotional arousal appropriateness	0.913	0.912	0.006	142.410
IV-05	Political correctness	0.874	0.874	0.010	89.416
MEDV	Platform governance	0.781	0.780	0.022	32.444
MODV	Education level	/	/	/	/

Note: all variables' P=0.00***.

Table 19. Path coefficient results.

Path	Original sample	Sample mean	Standard deviation	T statistic	p
IV-01 → DV	0.027	0.026	0.027	0.981	0.000
IV-01 → MEDV	0.383	0.383	0.030	12.575	0.000
IV-02 → DV	0.144	0.144	0.028	5.122	0.000
IV-02 → MEDV	0.261	0.263	0.032	8.045	0.000
IV-03 → DV	0.064	0.063	0.025	2.533	0.011
IV-03 → MEDV	0.238	0.239	0.029	8.092	0.000
IV-04 → DV	0.240	0.241	0.027	9.007	0.000
IV-04 → MEDV	0.346	0.348	0.031	11.003	0.000
IV-05 → DV	0.179	0.18	0.028	6.311	0.000
IV-05 → MEDV	0.341	0.341	0.032	10.702	0.000
MEDV → DV	0.311	0.310	0.032	9.667	0.000
MODV → DV	0.629	0.628	0.024	25.756	0.000
MODV → MEDV	−0.012	−0.012	0.031	0.398	0.690
MODV × IV-01 → DV	−0.038	−0.038	0.029	1.292	0.196
MODV × IV-01 → MEDV	−0.023	−0.023	0.031	0.721	0.471
MODV × IV-02 → DV	0.010	0.010	0.028	0.362	0.717
MODV × IV-02 → MEDV	−0.004	−0.004	0.033	0.110	0.912
MODV × IV-03 → DV	0.054	0.053	0.027	1.994	0.046
MODV × IV-03 → MEDV	−0.036	−0.035	0.030	1.182	0.237
MODV × IV-04 → DV	0.030	0.029	0.025	1.203	0.229
MODV × IV-04→ MEDV	−0.012	−0.013	0.031	0.406	0.685
MODV × IV-05 → DV	0.057	0.057	0.028	2.008	0.045
MODV × IV-05 → MEDV	−0.013	−0.013	0.032	0.408	0.683
MODV × MEDV → DV	−0.000	−0.000	0.034	0.008	0.994

Here's a polished, academic-style expansion of your text, with clearer logic, richer detail, and better flow for a research paper: At the level of direct effects, with the exception of informational credibility, the remaining four dimensions of UGC quality all exert significant positive effects on consumer purchasing behaviour. Among these dimensions, the appropriateness of emotional arousal shows the strongest direct impact, followed by political correctness, interaction quality, and presentation quality in sequence (see Figure 8). This empirical pattern clearly indicates that content with strong emotional resonance and consistent value orientation plays an especially prominent and irreplaceable role in driving consumers' final purchase decisions within the social commerce environment.

Meanwhile, all dimensions of UGC quality demonstrate significant positive effects on perceived platform governance, and their path coefficients are generally higher than the corresponding direct effects on purchasing behaviour.

This key finding implies that UGC quality does not directly influence purchasing behaviour in a simple linear manner. Instead, it first shapes and enhances users' comprehensive perceptions and evaluations of platform governance, and then indirectly drives purchasing behaviour through this mediating mechanism.

Furthermore, platform governance itself also has a significant positive effect on consumer purchasing behaviour and acts as a partial mediator across multiple influence paths. These results collectively reveal the complex transmission mechanism of UGC quality in social commerce: high-quality UGC improves users'

trust and recognition of platform governance, thus effectively promoting their actual purchasing behaviour.

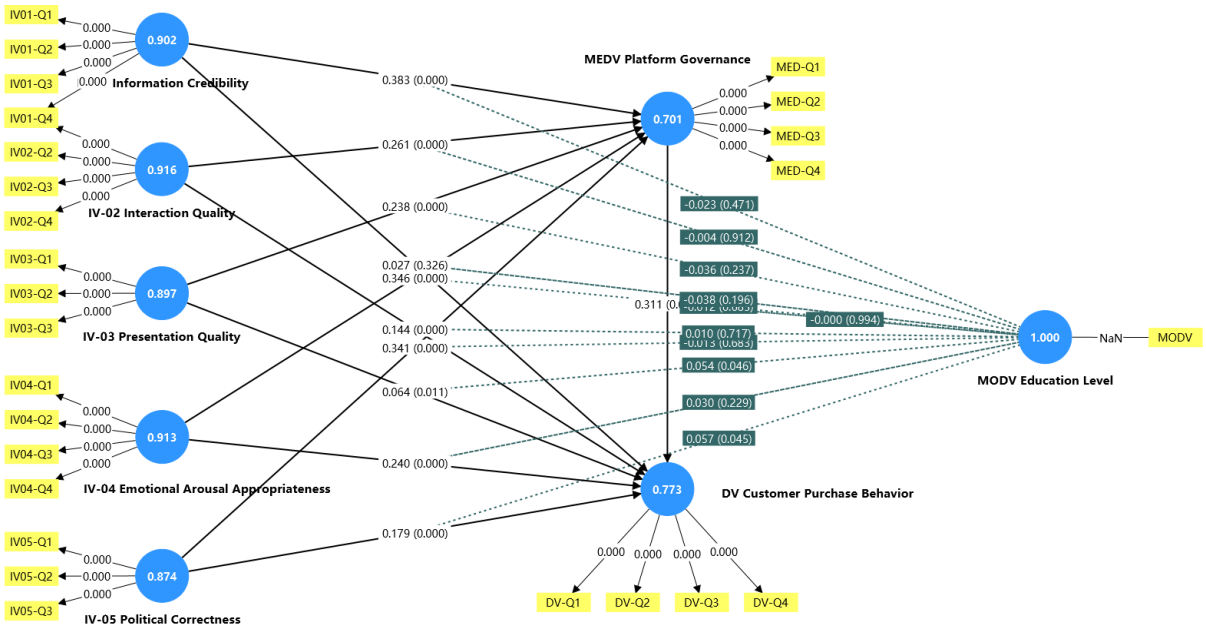

Figure 8. Graphical output of model analysis results.

An examination of effect sizes (f^2) in Table 20 reveals that informational credibility, interaction quality, and presentation quality mainly exert indirect influence on purchasing behaviour through platform governance. In contrast, appropriateness of emotional arousal and political correctness exert both direct effects on purchasing behaviour and indirect effects via this mediating mechanism. These results highlight the pivotal transmission role of platform governance between UGC quality and consumer purchasing behaviour.

Table 20. F^2 result.

Path	Original sample	Sample mean	Standard deviation	T statistic	p value
IV-01 → DV	0.002	0.004	0.005	0.403	0.000
IV-01 → MEDV	0.279	0.284	0.051	5.480	0.000
IV-02 → DV	0.062	0.065	0.025	2.517	0.012
IV-02 → MEDV	0.131	0.136	0.036	3.601	0.000
IV-03 → DV	0.012	0.014	0.010	1.205	0.000
IV-03 → MEDV	0.107	0.112	0.029	3.730	0.000
IV-04 → DV	0.160	0.163	0.038	4.215	0.000
IV-04 → MEDV	0.229	0.237	0.049	4.695	0.000
IV-05 → DV	0.089	0.092	0.030	2.979	0.003
IV-05 → MEDV	0.221	0.226	0.047	4.689	0.000
MEDV → DV	0.171	0.172	0.040	4.294	0.000
MODV → DV	1.320	1.326	0.154	8.579	0.000
MODV → MEDV	0.000	0.002	0.003	0.096	0.923
MODV × IV-01 → DV	0.003	0.005	0.006	0.567	0.571
MODV × IV-01 → MEDV	0.001	0.003	0.004	0.255	0.799
MODV × IV-02 → DV	0.000	0.003	0.003	0.086	0.932
MODV × IV-02 → MEDV	0.000	0.002	0.003	0.009	0.993
MODV × IV-03 → DV	0.008	0.010	0.008	0.953	0.340
MODV × IV-03 → MEDV	0.002	0.004	0.004	0.521	0.602

Path	Original sample	Sample mean	Standard deviation	T statistic	p value
MODV × IV-04 → DV	0.003	0.004	0.005	0.540	0.589
MODV × IV-04 → MEDV	0.000	0.002	0.003	0.097	0.922
MODV × IV-05 → DV	0.008	0.011	0.009	0.927	0.354
MODV × IV-05 → MEDV	0.000	0.002	0.003	0.101	0.919
MODV × MEDV → DV	0.000	0.002	0.003	0.000	1.000

About moderating effects, educational attainment exhibits a strong direct predictive effect on consumer purchasing behaviour, but its effect on platform governance is not statistically significant. This suggests that educational attainment primarily reflects individual-level differences in decision-making capability rather than differences in perceptions of platform-level institutional arrangements. Among the interaction effects tested, educational attainment exhibits a significant positive moderating role only in two relationships: between presentation quality and purchasing behaviour, and between political correctness and purchasing behaviour. The remaining interaction terms, however, do not reach statistical significance, indicating that educational attainment does not exert a universal moderating effect across all tested pathways. This indicates that the moderating role of educational attainment is selective rather than universal. In terms of overall model quality, the R^2 value for consumer purchasing behaviour reaches 0.711, while that for platform governance is 0.487, both meeting and approaching the criteria for moderate-to-high explanatory power (see Table 21). In addition, model fit indices such as SRMR, D_ULS, and D_G reveal minimal discrepancies between the estimated model and the saturated model (see Table 22).

Table 21. R^2 result.

Variable	Original sample	Sample mean	Standard deviation	T statistic	p value
DV	0.711	0.718	0.022	32.859	0.00
MEDV	0.487	0.500	0.029	16.956	0.00

Table 22. Model fit results.

Metric	Model	Original sample	Sample mean	95%	99%
SRMR	Saturated model	0.020	0.022	0.025	0.027
	Estimated model	0.021	0.023	0.026	0.028
D_ULS	Saturated model	0.250	0.240	0.260	0.270
	Estimated model	0.255	0.245	0.265	0.275
D_G	Saturated model	0.150	0.145	0.155	0.160
	Estimated model	0.152	0.147	0.157	0.162

Overall, the research hypotheses receive systematic support at the levels of direct effects, mediating effects, and partial moderation effects. The findings validate the core theoretical framework in which UGC quality influences consumer purchasing behaviour through platform governance, while simultaneously revealing the relative predominance of emotional and value-oriented factors in social commerce contexts.

Summary of hypothesis testing

All hypothesis testing results from H_{1a} to H_{3b} are systematically summarised in Table 23. This table provides a consolidated overview of the hypothesised pathways, standardised path coefficients, significance levels, and support status, thereby offering a clear and intuitive basis for interpreting the overall findings. As indicated by the summary results, all five dimensions of UGC quality - information credibility, interaction quality, presentation quality, emotional arousal appropriateness, and political correctness - exert significant positive effects on consumer purchasing behaviour, with hypotheses H_{1a}-H_{1e} fully supported. These findings suggest that, within social commerce contexts, consumer

decision-making is not driven solely by rational information evaluation, but is jointly influenced by interactive experiences, emotional resonance, and normative content. Notably, emotional arousal appropriateness and political correctness exhibit relatively stronger effects, further underscoring the necessity of conceptualising UGC as a multidimensional composite stimulus system.

Building upon the robust support for the direct effects, mediation analysis further highlights the pivotal role of platform governance in the mechanism through which UGC influences consumer behaviour. As shown in Table 23, hypotheses H_{2a}-H_{2e} are all supported, indicating that the effects of UGC quality on consumer purchasing behaviour - regardless of the specific quality dimension - must be transmitted through platform governance mechanisms. Specifically, UGC quality first shapes the intensity and effectiveness of platform governance in terms of content moderation, algorithmic recommendation, and behavioural standardisation, which in turn translates into stable consumer behavioural responses. This finding clearly demonstrates that the influence of UGC does not occur naturally or operate through a linear process, but is instead embedded within the institutional processes of platform-based filtering, amplification, and constraint. In doing so, the results empirically revise prior approaches that have treated platform governance merely as an exogenous contextual condition or a parallel independent variable.

In contrast to the systematic establishment of direct and mediating effects, the moderating role of educational level exhibits a pronounced pattern of selectivity. The summary results show that educational level does not significantly moderate the effects of information credibility, interaction quality, or emotional arousal appropriateness on consumer purchasing behaviour, nor does it significantly moderate the mediating pathways through platform governance across the UGC dimensions. These findings suggest that platform governance, as an institutional mechanism, operates with a relatively stable logic across consumer groups with different educational backgrounds.

However, educational level demonstrates significant positive moderating effects on the relationships between presentation quality and consumer purchasing behaviour, as well as between political correctness and consumer purchasing behaviour. This indicates that consumers with higher levels of education are more sensitive to professional presentation, structured content, and normative values, and that their purchasing behaviour is more strongly reinforced by these dimensions of UGC quality. Overall, consumer heterogeneity does not exert uniform influence across all examined pathways. Instead, it manifests selectively on specific content attributes. This provides a more nuanced framework for understanding boundary conditions linking content characteristics, platform institutions, and individual differences.

Table 23. Hypothesis testing.

Hypothesis	Pathway	Coefficient	P-value	Conclusion
H_{1a}	IV-01 → DV	0.027	0.000	Supported
H_{1b}	IV02 → DV	0.144	0.000	Supported
H_{1c}	IV03 → DV	0.064	0.011	Supported
H_{1d}	IV04 → DV	0.240	0.000	Supported
H_{1e}	IV05 → DV	0.179	0.000	Supported
H_{2a}	IV01 → MEDV → DV (mediation)	IV01 → MEDV: 0.383 MEDV → DV: 0.311	0.000	Supported
H_{2b}	IV02 → MEDV → DV (mediation)	IV02 → MEDV: 0.261 MEDV → DV: 0.311	0.000	Supported
H_{2c}	IV03 → MEDV → DV (mediation)	IV03 → MEDV: 0.238 MEDV → DV: 0.311	0.000	Supported
H_{2d}	IV04 → MEDV → DV (mediation)	IV04 → MEDV: 0.346 MEDV → DV: 0.311	0.000	Supported
H_{2e}	IV05 → MEDV → DV (mediation)	IV05 → MEDV: 0.341 MEDV → DV: 0.311	0.000	Supported

Conclusion

Research findings

Based on the empirical results derived from structural equation modelling, this study systematically reveals the multidimensional mechanisms through which user-generated content (UGC) quality influences consumer purchasing behaviour in social commerce contexts. The findings indicate that informational credibility, interaction quality, presentation quality, appropriateness of emotional arousal, and political correctness all exert significant positive effects on consumer purchasing behaviour. This suggests that consumer decision-making is not driven solely by rational informational cues, but is instead shaped by the joint influence of cognitive evaluation, emotional resonance, and social-normative considerations. Furthermore, platform governance plays a stable and significant mediating role between UGC quality and consumer purchasing behaviour, with all dimensional pathways receiving statistical support. This demonstrates that high-quality content can be effectively transformed into sustained and stable purchasing behaviour only through the filtering and amplification mechanisms embedded in platform review, recommendation, and standardisation processes. These findings highlight the pivotal hub role of platform governance in the content-behaviour conversion process in social commerce and indicate that the effects of UGC do not occur naturally, but are instead embedded within platform institutional structures.

At the level of individual differences, the results reveal a distinctly uneven pattern of moderation. Educational attainment does not exert a universal moderating effect across all relationships between UGC quality dimensions and consumer purchasing behaviour. Rather, significant positive moderation emerges only for presentation quality and political correctness. Consumers with higher levels of education demonstrate advantages in information structure comprehension and normative judgment. These advantages render them more sensitive to high-quality visual presentation and inclusive, norm-consistent content. Such heightened sensitivity thereby amplifies their behavioural responses along with these specific content dimensions. In contrast, the effects of informational credibility, interaction quality, and appropriateness of emotional arousal on purchasing behaviour exhibit strong generalisability across different educational groups.

Further analysis shows that educational attainment does not moderate the mediating role of platform governance between UGC quality and purchasing behaviour. It indicates platform governance, as an institutional mechanism, operates with a high degree of structural stability and is not altered by differences in users' educational backgrounds. Overall, these findings reveal a pattern of "selective manifestation" of consumer heterogeneity in social commerce contexts, whereby individual differences primarily influence content pathways characterised by high cognitive and normative sensitivity. While platform governance functions as a cross-group, consistently operating mediating mechanisms, it underpins unified content governance and long-term value creation in social commerce contexts.

Research contributions

At the theoretical level, this study offers a systematic extension of existing research on social commerce and consumer behaviour. First, it moves beyond the dominant research paradigm that conceptualises user-generated content (UGC) quality as a single or limited set of attributes, redefining it instead as a multidimensional stimulus system comprising informational credibility, interaction quality, presentation quality, appropriateness of emotional arousal, and political correctness. This reconceptualisation more accurately captures the complex content environment faced by consumers in social commerce contexts.

Second, within the Stimulus-Organism-Response (S-O-R) theoretical framework, the study redefines the notion of "stimulus" by incorporating not only rational information and emotional cues, but also value-normative factors (political correctness) and the appropriateness of emotional intensity (appropriateness of emotional arousal). Thereby, limitations in traditional S-O-R models pertaining to normative signals and emotional boundaries are addressed. More importantly, this study theoretically elevates platform governance from its conventional treatment as an exogenous institutional condition or parallel antecedent variable to a core mediating mechanism linking UGC quality and consumer purchasing behaviour. Empirically, this study demonstrates that content influence must be channelled through platform review, recommendation, and

standardisation processes to be transformed into stable behavioural outcomes. This finding thus corrects the simplified assumption of a "direct UGC effect" that prevails in prior research.

Finally, by introducing educational attainment as a moderating variable, the study reveals that consumer heterogeneity is not universal, but instead exhibits a structurally "selective moderation" pattern, thereby enriching nuanced explanations of boundary conditions related to individual differences in consumer behaviour theory.

At the practical level, this study provides actionable insights for social commerce platforms, content creators, and governance stakeholders. For platforms, the findings suggest that reliance on content volume growth or emotional stimulation alone is insufficient to achieve sustainable conversion. Instead, platforms should establish systematic governance and recommendation mechanisms centred on multidimensional UGC quality, with particular emphasis on incorporating political correctness and appropriateness of emotional arousal into content evaluation criteria and algorithmic weighting systems, to reduce the spillover of risky content and enhance the overall trust environment.

The empirical results further indicate that the mediating effect of platform governance is not significantly influenced by differences in users' educational attainment, implying that platforms can achieve cross-group content amplification through unified, transparent, and stable governance rules without excessive reliance on user segmentation strategies. For content creators, the findings highlight the importance of shifting from "emotional intensity competition" toward "emotional authenticity and value alignment". They can enhance long-term trust and repurchase potential through improved presentation quality, norm-consistent expression, and emotional restraint. This is particularly critical when targeting highly educated user groups, for whom structured and value-friendly content demonstrates stronger conversion advantages. For regulators and industry organisations, the study underscores the central role of platform governance in the content-behaviour conversion process. It can provide empirical evidence in support of a coordinated governance model centred on "quality-governance-trust". This contributes to achieving a more balanced approach between innovation promotion and risk prevention, and to advancing the social commerce ecosystem toward high-quality and sustainable development.

Research limitations and directions for future research

Despite the progress made in systematically elucidating the mechanisms linking user-generated content (UGC) quality, platform governance, and consumer purchasing behaviour, this study is subject to several limitations.

First, at the research design level, the use of cross-sectional survey data constrains the analysis to a single temporal snapshot. This limits the ability to rigorously identify causal directions among the key constructs examined in this study. It also restricts the capture of potential dynamic interactions and lagged effects between UGC generation, platform governance feedback, and consumer behaviour in social commerce contexts.

Second, the study relies primarily on self-reported data to measure perceptions of UGC quality, evaluations of governance, and purchasing behaviour. Although comprehensive data cleaning and statistical tests were conducted, social desirability bias, recall bias, and common method bias may still influence path estimates. In the absence of platform behavioural logs or actual transaction data for triangulation, construct validity and internal validity remain subject to certain constraints.

Third, with respect to sampling, the use of convenience sampling and online surveys may bias the sample toward users with higher digital literacy and usage frequency, resulting in insufficient coverage of low-frequency users and digitally marginalised groups, which may weaken the external generalisability of the findings. Although the overall sample size meets the requirements for PLS-SEM analysis, statistical power may still be limited when identifying complex moderating effects and subgroup differences.

Finally, at the level of analytical methods and theoretical modelling, while PLS-SEM is well suited for handling non-normal data and complex structures, its predictive orientation and limitations in global model fit assessment may restrict the rigorous evaluation of theoretical model adequacy.

Considering these limitations, future research may be advanced along several dimensions, including research design, data sources, methodological tools, and theoretical extension. Methodologically, longitudinal or

multi-wave research designs could be adopted for future studies. These designs should incorporate cross-lagged panel models or latent growth models as analytical tools. Such an approach would more clearly identify the causal ordering and dynamic evolutionary paths among UGC quality, platform governance, and consumer behaviour. In addition, integrating multi-source data (e.g., platform behavioural logs, clickstream and purchase records, and content exposure metrics) with survey-based perceptual data can be implemented. This integration enables methodological triangulation, reduces common method bias, and enhances the robustness of research results.

In terms of sampling strategies, future studies could employ stratified or mixed sampling approaches to deliberately include users with diverse age profiles, educational backgrounds, digital literacy levels, and platform usage intensities. They could also combine measurement invariance testing with multi-group analysis to more finely capture user heterogeneity and moderating mechanisms. From an analytical perspective, covariance-based SEM, Bayesian SEM, and robustness or sensitivity analyses could be conducted in parallel with PLS-SEM to cross-validate findings and strengthen the reliability of parameter estimation and theoretical inference. Finally, at the theoretical and construct level, future research could further expand the conceptualisation of UGC quality by incorporating emerging elements such as multimodal content, AI-generated content, and algorithmic recommendation contexts. Subsequent studies can integrate theoretical perspectives from behavioural economics, information ecology, and digital ethics. These integrated frameworks may enable a more systematic examination of the potential risks and externalities of UGC and platform governance, as well as their roles in facilitating consumer decision-making. This multi-perspective analysis can further contribute to the development of a theoretical framework that is both temporally adaptive and socially responsible.

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Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Zhao, W., Wang, A., Chen, Y. (2019) How to maintain the sustainable development of a business platform: a case study of Pinduoduo social commerce platform in China. *Sustainability*, 11(22), 6337.

[2] Geng, R., Chen, J. (2021) The influencing mechanism of interaction quality of UGC on consumers' purchase intention - an empirical analysis. *Frontiers in Psychology*, 12, 697382.

[3] Zhu, L., Li, H., Wang, F. K., He, W., Tian, Z. (2020) How online reviews affect purchase intention: a new model based on the stimulus-organism-response (S-O-R) framework. *Aslib Journal of Information Management*, 72(4), 463-488.

[4] Asyraff, M. A., Hanafiah, M. H., Zain, N. A. M., Hariani, D. (2024) Unboxing the paradox of social media user-generated content (UGC) information qualities and tourist behaviour: Moderating effect of perceived travel risk. *Journal of Hospitality and Tourism Insights*, 7(4), 1809-1830.

[5] Hernandez-Ortega, B. (2019) Not so positive, please! Effects of online consumer reviews on evaluations during the decision-making process. *Internet Research*, 29(4), 606-637.

[6] Shareef, M. A., Mukerji, B., Alryalat, M. A. A., Wright, A., Dwivedi, Y. K. (2018) Advertisements on Facebook: Identifying the persuasive elements in the development of positive attitudes in consumers. *Journal of Retailing and Consumer Services*, 43, 258-268.

[7] Dirwan, D., Latief, F. (2023) Understanding the Psychology Behind Consumer Behavior. *Advances in Business & Industrial Marketing Research*, 1(3), 130-145.

[8] Mukhopadhyay, S., Bouwman, H. (2019) Orchestration and governance in digital platform ecosystems: a literature review and trends. *Digital Policy, Regulation and Governance*, 21(4), 329-351.

[9] Hung, S. W., Cheng, M. J., Lee, C. J. (2022) A new mechanism for purchasing through personal interactions: fairness, trust and social influence in online group buying. *Information Technology & People*, 35(5), 1563-1589.

[10] Gorwa, R. (2019). What is platform governance? *Information, Communication & Society*, 22(6),

854-871.

[11] 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), 7617.

[12] He, H., Zhang, B. (2022) Strategy analysis of multi-agent governance on the e-commerce platform. *Journal of Theoretical and Applied Electronic Commerce Research*, 18(1), 1-18.

[13] Abdel Wahab, H., Diaa, N. M., Ahmed Nagaty, S. (2023) Demographic characteristics and consumer decision-making styles: Do they impact fashion product involvement? *Cogent Business & Management*, 10(2), 2208430.

[14] Liao, M., Sundar, S. S. (2022) When e-commerce personalization systems show and tell: Investigating the relative persuasive appeal of content-based versus collaborative filtering. *Journal of Advertising*, 51(2), 256-267.

[15] Liu, Y., Li, Q., Edu, T., Jozsa, L., Negricea, I. C. (2020) Mobile shopping platform characteristics as consumer behavior determinants. *Asia Pacific Journal of Marketing and Logistics*, 32(7), 1565-1587.

[16] Mastana, A. S. (2025) A primer on partial least squares structural equation modeling (PLS-SEM). *Wisdom Journal of Humanities and Social Sciences*, 2(1 (January)), 62-64.

[17] Takona, J. P. (2024) Research design: qualitative, quantitative, and mixed methods approaches. *Quality & Quantity*, 58(1), 1011-1013.

[18] Steg, L., Van den Berg, A. E., De Groot, J. I. (2018) Environmental psychology: history, scope, and methods. *Environmental psychology: An introduction*, 1-11.

[19] Vesely, S., Klöckner, C. A. (2020) Social desirability in environmental psychology research: three meta-analyses. *Frontiers in Psychology*, 11, 1395.

[20] Corrales, D. C., Corrales, J. C., Ledezma, A. (2018) How to address the data quality issues in regression models: a guided process for data cleaning. *Symmetry*, 10(4), 99.

[21] Çetin, V., Yıldız, O. (2022) A comprehensive review on data preprocessing techniques in data analysis. *Pamukkale Üniversitesi Mühendislik Bilimleri Dergisi*, 28(2), 299-312.

[22] Nyitrai, T., Virág, M. (2019) The effects of handling outliers on the performance of bankruptcy prediction models. *Socio-Economic Planning Sciences*, 67, 34-42.

[23] Zhang, K. Z., Xu, H., Zhao, S., Yu, Y. (2018) Online reviews and impulse buying behavior: the role of browsing and impulsiveness. *Internet Research*, 28(3), 522-543.