



The Impact of E-Commerce Livestreaming Characteristics on Consumer Engagement and Actual Purchasing Behavior Among Gen Z Consumers in Saudi Arabia

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ABSTRACT: The rapid growth of livestreaming ecommerce transformed online retail by providing consumers with interactive and immersive shopping experiences. Despite the increasing adoption of livestreaming commerce in Saudi Arabia, limited research had examined how specific livestreaming characteristics shaped the purchasing behavior of Generation Z consumers. This study aimed to examine the effects of influencer authenticity and credibility, interactivity, and entertainment value on Generation Z consumers' engagement and purchasing behavior. It also investigated the mediating role of consumer engagement and the moderating role of perceived product involvement based on the Stimulus Organism Response framework. Data were collected from 260 Generation Z consumers in Saudi Arabia using a structured survey. The relationships among livestreaming characteristics, consumer engagement, purchasing behavior, and perceived product involvement were analyzed to test the proposed direct, mediating, and moderating effects. The findings showed that influencer authenticity and credibility, interactivity, and entertainment value significantly enhanced consumer engagement. Influencer authenticity and credibility and interactivity had significant direct effects on purchasing behavior, whereas entertainment value had no significant direct effect. Consumer engagement significantly predicted purchasing behavior and mediated the relationship between interactivity and purchasing behavior. Perceived product involvement also positively moderated the relationship between consumer engagement and purchasing behavior, indicating that the effect of engagement on purchasing behavior was stronger for products with high levels of involvement. The findings demonstrated that consumer engagement represented an important psychological mechanism linking livestreaming characteristics with purchasing behavior and highlighted perceived product involvement as an important boundary condition in explaining Generation Z consumers' responses to livestreaming commerce. The study provided context specific insights into the developing livestreaming commerce market in Saudi Arabia and offered practical implications for influencers, livestreaming platforms, and online retailers. Future research should examine additional psychological and contextual factors influencing livestreaming purchasing behavior

and validate the proposed relationships across different age groups, product categories, cultural settings, and ecommerce markets.

Keywords: E-commerce livestreaming; Gen Z; consumer engagement; purchasing behavior; product involvement; Saudi Arabia.

1. Introduction

The rapid development of digital technology has transformed the global retail landscape, with livestreaming commerce emerging as an important development in ecommerce [1, 2]. Livestreaming commerce can significantly influence consumer behavior by enabling real time interactions, stimulating impulse purchases, and strengthening customer loyalty [2]. Li et al. [3] reported that livestreaming ecommerce has gained considerable popularity and has the potential to encourage impulsive purchasing behavior. More broadly, the accessibility, variety, and convenience offered by online shopping platforms have transformed consumer purchasing habits and contributed to the widespread adoption of ecommerce [4]. This digital shopping experience has been further enhanced by livestreaming technologies, which provide consumers with more dynamic, interactive, and immersive environments [5].

Livestreaming commerce integrates online shopping with live video content, allowing consumers to obtain product information, communicate with influencers or sellers, and make purchasing decisions within the same digital environment. Hu and Chaudhry [6] argued that livestreaming ecommerce increased consumer engagement and facilitated transactional activities by combining entertainment with immediate purchasing opportunities. Unlike conventional ecommerce, livestreaming commerce provides synchronous communication that enables consumers to ask questions, observe product demonstrations, receive immediate responses, and interact with other viewers. Consequently, livestreaming ecommerce combines the informational richness of online shopping with the immediacy and interactivity of live video content [5]. These characteristics have made livestreaming an increasingly important channel through which businesses can attract consumers, strengthen engagement, and influence purchasing behavior.

Generation Z represents a particularly relevant consumer segment for understanding the development of livestreaming commerce. According to Van den Bergh et al. [7], Generation Z is one of the most diverse generations and constitutes a substantial proportion of the global population. In Saudi Arabia, livestreaming ecommerce has gained increasing attention, particularly among Generation Z consumers, generally defined as individuals born between 1997 and 2012 [7]. This digitally oriented generation has grown up with social media, mobile technologies, and online shopping and therefore tends to expect convenient, interactive, and engaging digital experiences. The relatively young demographic structure of Saudi Arabia has also created substantial demand for innovative forms of digital commerce. This development has occurred alongside the broader digital transformation promoted under Saudi Vision 2030, which has encouraged technological adoption and the expansion of the digital economy [7, 8]. These conditions provide an important context for examining how Generation Z consumers respond to livestreaming commerce.

Several characteristics of livestreaming commerce may determine how effectively it engages consumers and influences their purchasing behavior. Influencer authenticity and credibility can strengthen consumer trust in product information and recommendations, while

interactivity enables immediate communication and greater participation during livestreaming sessions. Entertainment value can further enhance the consumer experience by generating enjoyment and maintaining viewers' attention. However, these characteristics may not necessarily translate directly into purchasing behavior. Consumer engagement may provide an important psychological mechanism through which consumers respond to livestreaming stimuli before making purchasing decisions. Moreover, the strength of this relationship may depend on perceived product involvement because consumers may respond differently when purchasing products that require greater attention, consideration, or personal relevance.

The Stimulus Organism Response framework provides an appropriate theoretical foundation for explaining these relationships. Within this framework, environmental stimuli influence individuals' internal psychological states, which subsequently generate behavioral responses. In the context of livestreaming commerce, influencer authenticity and credibility, interactivity, and entertainment value can be conceptualized as external stimuli, while consumer engagement represents an internal psychological response that may subsequently influence purchasing behavior. Product involvement may further shape this process by affecting the extent to which engagement is translated into purchasing decisions. Applying this framework therefore provides a systematic approach to understanding how livestreaming characteristics influence consumers through both direct and indirect pathways.

Despite increasing scholarly attention to livestreaming ecommerce, limited evidence is available regarding how its specific characteristics influence Generation Z consumers in Saudi Arabia. Existing studies have predominantly examined livestreaming commerce in other markets, particularly Asian contexts, and have frequently focused on purchase intention rather than actual purchasing behavior. Moreover, relatively little research has simultaneously examined influencer authenticity and credibility, interactivity, and entertainment value in relation to both consumer engagement and actual purchasing behavior among Saudi Generation Z consumers. This represents an important research gap because consumer responses to livestreaming characteristics may vary according to cultural, demographic, and market conditions. Evidence derived from other markets may therefore not fully explain the behavior of Generation Z consumers within Saudi Arabia's rapidly developing digital commerce environment.

This study contributed to the literature by developing an integrated explanation of how livestreaming characteristics were associated with purchasing behavior among Generation Z consumers in Saudi Arabia. The study extended the Stimulus Organism Response framework by positioning consumer engagement as a psychological mechanism connecting livestreaming stimuli with purchasing behavior and by incorporating perceived product involvement as a boundary condition affecting the engagement and purchasing behavior relationship. Rather than examining livestreaming characteristics or purchase intentions independently, this approach provided a more comprehensive explanation of how and under what conditions livestreaming experiences translated into actual consumer behavior. From a practical perspective, the findings provided evidence that could assist livestreaming platforms, online retailers, and influencers in designing more authentic, credible, interactive, and engaging livestreaming experiences while considering differences in consumers' levels of product involvement.

Accordingly, this study aimed to examine the effects of influencer authenticity and credibility, interactivity, and entertainment value on consumer engagement and purchasing

behavior among Generation Z consumers in Saudi Arabia. It further aimed to determine whether consumer engagement mediated the relationships between livestreaming characteristics and purchasing behavior and whether perceived product involvement moderated the relationship between consumer engagement and purchasing behavior. Data from 260 Generation Z consumers were used to test these relationships within the Stimulus Organism Response framework. Through these objectives, the study sought to provide a more comprehensive understanding of the psychological and contextual mechanisms underlying purchasing behavior in Saudi Arabia's emerging livestreaming commerce environment.

2. Theory and Hypotheses

2.1. Theoretical Framework: Stimulus Organism Response Theory.

This study examined how three characteristics of ecommerce livestreaming, namely influencer authenticity and credibility, interactivity, and entertainment value, influenced Generation Z consumers' purchasing behavior, with consumer engagement serving as a mediating variable. In addition, the study examined whether perceived product involvement moderated the relationship between consumer engagement and purchasing behavior. The Stimulus Organism Response (SOR) theory proposes that external environmental stimuli influence consumers' internal cognitive and psychological states, which subsequently shape their behavioral responses. Previous research has indicated that consumers may develop both positive and negative cognitive evaluations when responding to external stimuli. Guo [9] reported that consumers carefully evaluated the advantages and disadvantages of different products when making purchasing decisions. Building on the SOR framework, Li et al. [10] demonstrated that streamer characteristics, including personal charisma and professionalism, and streamer performance, particularly interactivity and entertainment, influenced impulsive purchasing behavior through consumers' trust and flow experiences.

Within the SOR framework, stimuli refer to external environmental cues that influence consumers' internal psychological states and subsequent behavioral responses. In the context of livestreaming ecommerce, influencer authenticity and credibility, interactivity, and entertainment value represent distinct external characteristics of the livestreaming environment. Influencer authenticity and credibility provide informational and trust related cues concerning the influencer and promoted products. Interactivity reflects the extent of communication and consumer participation enabled during a livestream, whereas entertainment value represents the enjoyable and engaging aspects of the shopping experience. These characteristics therefore function as stimuli because they originate from the livestreaming environment and influence consumers' internal psychological states. Consumer engagement represents the organism component, reflecting consumers' cognitive, emotional, and behavioral involvement with livestreaming content, while purchasing behavior represents the behavioral response. This theoretical integration provides a clear basis for explaining how specific livestreaming characteristics may translate into purchasing behavior through consumer engagement.

The proposed relationships among the study variables are illustrated in Figure 1. The framework conceptualizes influencer authenticity and credibility, interactivity, and entertainment value as stimuli that influence consumer engagement and purchasing behavior. Consumer engagement is positioned as an internal psychological mechanism linking

livestreaming characteristics with purchasing behavior, while perceived product involvement is incorporated as a moderator of the relationship between consumer engagement and purchasing behavior.

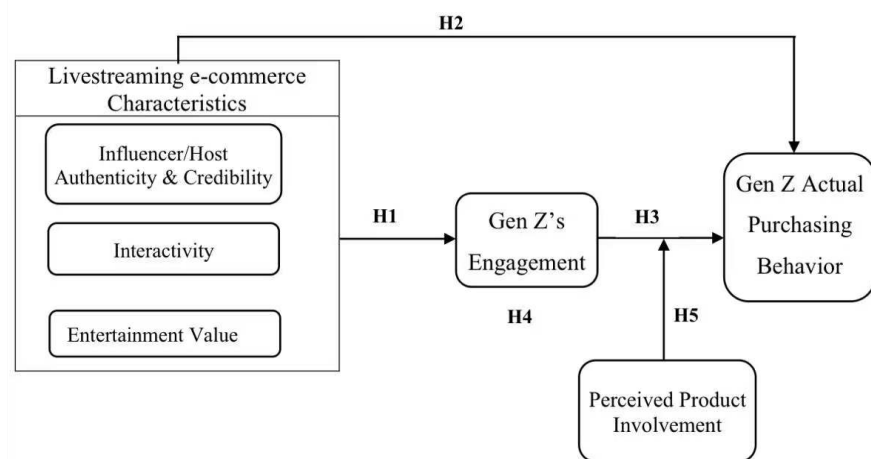


Figure 1. Proposed Research Framework.

2.2.1. Livestreaming Characteristics and Consumer Engagement.

Livestreaming commerce involves several interconnected elements, particularly the host or presenter, consumer engagement, and technological features [2]. The host, who often functions as an influencer, plays an important role in establishing consumer trust and enhancing the credibility of promoted products. Consumers may be more receptive to recommendations from individuals whom they follow, trust, or perceive as relatable than to conventional forms of advertising. This relationship is further supported by research highlighting the importance of parasocial interaction and social presence in shaping consumer responses within livestreaming commerce environments [11].

The emergence of livestreaming commerce has substantially transformed the digital retail environment. Often referred to as live commerce or live shopping, this form of ecommerce integrates real time video broadcasting with online shopping functions, enabling consumers to communicate with sellers, observe product demonstrations, obtain product information, and make purchases within a single digital environment [12]. Streamers may function as influencers or opinion leaders, and their perceived credibility and relatability can substantially shape consumer attitudes and behavioral intentions [13]. The SOR model, originally developed by Mehrabian and Russell [14], provides a theoretical explanation for this process by proposing that environmental stimuli generate internal cognitive and emotional responses that subsequently influence behavior. Previous research has also demonstrated that livestreaming ecommerce can positively influence consumer engagement, particularly within the Chinese market context.

Influencer authenticity and credibility are particularly important because consumers must assess the reliability of both the information provided and the individual communicating that information. Abbasi and Salim [15] found that influencer credibility had a significant positive influence on consumers' purchase intentions in Saudi Arabia. Similarly, Kothari et al. [16] reported that the credibility of social media advertising had a significant positive influence on consumer behavior. The perceived credibility of online advertising can also depend on how naturally promotional content is integrated into consumers' existing social media activities. Advertisements that maintain users within the social media environment, such as those

directing consumers to a brand's social media page, may be perceived as more credible because they are consistent with ongoing interactions and cause less disruption to platform engagement [17].

Beyond influencer credibility, interactivity and entertainment value represent important characteristics that distinguish livestreaming commerce from conventional online shopping. Interactivity enables consumers to communicate directly with streamers, ask questions, receive immediate responses, and participate in the livestreaming experience. Such communication can strengthen consumers' sense of involvement and encourage greater engagement with both the streamer and the promoted products. Entertainment value can similarly attract attention and generate enjoyment, thereby encouraging consumers to remain involved with livestreaming content. From the SOR perspective, these livestreaming characteristics function as environmental stimuli that can generate stronger cognitive, emotional, and behavioral engagement. Based on these theoretical arguments and previous empirical evidence, the following hypotheses were proposed:

H1a: Influencer authenticity and credibility have a positive effect on consumer engagement in ecommerce livestreaming.

H1b: Interactivity has a positive effect on consumer engagement in ecommerce livestreaming.

H1c: Entertainment value has a positive effect on consumer engagement in ecommerce livestreaming.

2.2.2. Livestreaming Characteristics and Generation Z Purchasing Behavior.

Livestreaming has emerged as a diversified and interactive digital medium that enables the real time transmission of audio and video content and has been increasingly integrated into ecommerce [18,20]. Unlike conventional online shopping, livestreaming allows consumers to observe product demonstrations, communicate directly with streamers, obtain immediate product information, and interact with other consumers. These characteristics can reduce information asymmetry and uncertainty while increasing consumers' perceived value of the shopping experience. Guo et al. [18] demonstrated that livestreaming characteristics significantly increased consumers' overall perceived value and purchase intention while reducing perceived uncertainty. From the SOR perspective, livestreaming characteristics therefore represent external stimuli that can directly shape consumers' behavioral responses.

Influencer authenticity and credibility are particularly important in livestreaming commerce because consumers frequently rely on streamers to evaluate products that they cannot physically examine before purchasing. A credible and authentic influencer can increase confidence in product information and recommendations, thereby reducing perceived risk and facilitating purchasing decisions. Credibility can also encourage consumers to interact more actively with promotional content on social media. Ngo et al. [19] found that entertainment, information quality, interactivity, positive evaluations and recommendations from other consumers, and streamer attractiveness and expertise positively influenced purchase intention. Among these factors, streamer related characteristics demonstrated the strongest influence, whereas information quality showed the weakest effect [19].

Interactivity represents another important characteristic of livestreaming commerce because it enables consumers to communicate with streamers and other viewers in real time. Social media platforms increasingly incorporate livestreaming functions that facilitate the

immediate transmission of audio and video content over the Internet [20]. Through these functions, consumers can ask questions, request additional product information, observe responses to other viewers, and receive immediate feedback. Such interactions can reduce uncertainty and create a more participatory shopping environment, potentially increasing the likelihood of purchasing behavior.

Entertainment value may also influence purchasing behavior by creating enjoyable and stimulating shopping experiences. Entertaining livestreams can attract consumers' attention, encourage them to remain on the platform, and increase their exposure to product information and promotional messages. Previous studies of social media livestreaming commerce have generally focused on a limited range of determinants of purchase intention, including streamer characteristics, content quality, and platform features [21]. However, these factors may not fully capture the complex and multidimensional nature of social media livestreaming commerce. Moreover, existing studies have predominantly examined general consumer populations or other generational groups, leaving Generation Z relatively underexplored despite its importance within digital commerce environments [22]. Given Generation Z consumers' extensive exposure to social media and interactive digital technologies, examining how specific livestreaming characteristics influence their actual purchasing behavior is particularly relevant. Accordingly, the following hypotheses were proposed:

H2a: Influencer authenticity and credibility in ecommerce livestreaming have a positive effect on Generation Z consumers' purchasing behavior.

H2b: Interactivity in ecommerce livestreaming has a positive effect on Generation Z consumers' purchasing behavior.

H2c: Entertainment value in ecommerce livestreaming has a positive effect on Generation Z consumers' purchasing behavior.

2.2.3. Consumer Engagement and Purchasing Behavior.

Consumer engagement has received considerable attention across several research fields, including marketing, organizational behavior, consumer behavior, and service management [23]. It generally reflects the extent to which consumers become cognitively, emotionally, and behaviorally involved in their interactions with brands, products, platforms, or marketing activities. In livestreaming commerce, engagement is particularly important because consumers are not merely passive recipients of information but can actively participate by viewing, commenting, asking questions, sharing content, and interacting with streamers and other viewers.

Zheng et al. [24] found that consumer engagement in livestreaming had a significant positive effect on purchase intention and customer acquisition in emerging retail markets. Similarly, Aprianingsih et al. [25] examined the antecedents of consumer engagement in livestreaming ecommerce through the SOR framework, demonstrating the relevance of engagement as an internal consumer response to characteristics of the livestreaming environment. Consumer engagement has increasingly been recognized as an effective mechanism for attracting consumers and encouraging purchasing decisions [26]. Livestreaming can provide engaged consumers with richer product information and interactive experiences that enable them to evaluate whether products satisfy their needs, thereby strengthening purchase intentions [27]. Previous studies have consequently identified positive

relationships between engagement during livestream shopping and consumer purchase intentions [26, 28].

Within the SOR framework, consumer engagement represents the organism component connecting external livestreaming stimuli with subsequent behavioral responses. As consumers become more cognitively, emotionally, and behaviorally engaged in a livestream, they may devote greater attention to product information, develop stronger connections with streamers, and become more involved in the overall shopping experience. These psychological responses can increase the likelihood that engagement will translate into actual purchasing behavior. Therefore, the following hypothesis was proposed:

H3: Consumer engagement has a positive effect on purchasing behavior in ecommerce livestreaming.

2.2.4. Mediating Effect of Consumer Engagement.

Consumer engagement refers to the degree of consumers' involvement and connection with a business, brand, product, or related activities [23, 29]. It emphasizes interactive consumer experiences that have become increasingly important with technological advancement and the rapid expansion of Internet based marketing environments [30]. Livestreaming commerce further strengthens these interactive experiences by reducing communication barriers among streamers, consumers, and other participants. Such interactive characteristics are particularly relevant to the development of consumer engagement behaviors both before and after purchasing decisions [31].

Hu and Chaudhry [6] demonstrated that social bonds generated through interpersonal interactions positively affected consumer engagement and emphasized the importance of engagement in developing relationships between livestreaming operators and consumers. Previous theoretical and empirical studies have also demonstrated that ecommerce can benefit from the integration of livestreaming technologies [32]. Nevertheless, relatively limited research has examined how specific consumer engagement behaviors translate livestreaming characteristics into behavioral outcomes. The consumer engagement literature has therefore emphasized the need for further investigation of the consequences of engagement for consumer outcomes, including purchase intention and organizational outcomes [33].

Previous research has explained several mechanisms through which consumer engagement can influence consumer behavior [23, 34]. In social media environments, engagement has commonly been reflected through behavioral activities such as viewing, liking, sharing, and commenting. Sun et al. [35] identified a positive relationship between consumer engagement and purchase intention in livestreaming shopping. Similarly, Lin et al. [36] conceptualized audience rewards, likes, and comments as engagement activities within livestreaming environments. Clement Addo et al. [32] considered likes, views, chats, and time spent on a platform as indicators of consumer engagement. These activities demonstrate that consumers can progress from passive exposure to active participation in livestreaming environments.

Consumer engagement has consequently been identified as an important factor in predicting and explaining behavioral outcomes such as purchase intention and has been regarded as an effective acquisition and retention mechanism for developing and sustaining customer relationships [37]. Using the SOR framework, Han and Jo [38] found that consumer engagement positively influenced purchase intention in fashion livestream commerce.

Theoretically, this relationship suggests that consumer engagement may serve as an explanatory mechanism through which external livestreaming stimuli influence subsequent purchasing behavior.

In the present framework, influencer authenticity and credibility, interactivity, and entertainment value represent external stimuli that may first generate cognitive, emotional, and behavioral engagement. This engagement subsequently represents the organismic state through which these livestreaming characteristics can influence purchasing behavior as the response. Consumer engagement was therefore proposed as a mediator that explains how livestreaming characteristics are translated into purchasing actions among Generation Z consumers. Accordingly, the following hypotheses were proposed:

H4a: Consumer engagement mediates the relationship between influencer authenticity and credibility and Generation Z consumers' purchasing behavior.

H4b: Consumer engagement mediates the relationship between interactivity and Generation Z consumers' purchasing behavior.

H4c: Consumer engagement mediates the relationship between entertainment value and Generation Z consumers' purchasing behavior.

2.2.5. Moderating Role of Perceived Product Involvement.

Product involvement reflects the degree of personal relevance, interest, and importance that consumers associate with a product and its purchasing decision. Consumers with higher levels of product involvement generally devote greater cognitive effort and attention to evaluating product information because the consequences of their purchasing decisions are perceived as more important. Product involvement may therefore determine whether engagement with livestreaming content is translated into actual purchasing behavior.

Astuti et al. [39] found that high product involvement moderated the relationship between purchase intention and actual purchasing behavior among Generation Z consumers in Indonesia. Their findings indicated that high involvement products not only affected consumers' decision making processes but also strengthened the relationship between purchase intention and actual purchasing behavior. However, further investigation of this relationship across different contexts, particularly ecommerce environments, remains necessary [40]. Peng et al. [41] similarly found that high product involvement affected the moderating role of time pressure in the relationships between functional, emotional, and social value and purchase intention.

The importance of product involvement has also been identified in emerging digital shopping environments. Serravalle et al. [42] demonstrated that product involvement influenced consumers' flow states in augmented reality environments as well as behavioral intentions, including purchase intention, intention to visit retailers' websites, and intention to recommend or share their experiences. Previous research has therefore emphasized the importance of product involvement in explaining consumer behavioral responses [42, 43].

Within the SOR framework, consumers' behavioral responses to an internal psychological state may vary according to individual and contextual conditions. Perceived product involvement can function as such a boundary condition by determining the extent to which consumer engagement is converted into purchasing behavior. When product involvement is high, consumers attach greater personal relevance to product related decisions

and may process livestreaming information more carefully. Consequently, cognitive, emotional, and behavioral engagement during a livestream may be more likely to translate into purchasing actions. In contrast, when product involvement is low, consumers may participate in livestreaming primarily for entertainment or casual browsing, potentially weakening the relationship between engagement and purchasing behavior. Accordingly, the following hypothesis was proposed:

H5: Perceived product involvement positively moderates the relationship between consumer engagement and purchasing behavior, such that the relationship is stronger when perceived product involvement is high.

3. Materials and Methods

3.1. Research Design, Sampling, and Data Collection.

This study employed a quantitative research design using a cross sectional survey to collect data from Generation Z consumers in Saudi Arabia who had prior experience with ecommerce livestreaming. A purposive sampling approach was employed to ensure that respondents had relevant experience with livestream shopping. The target population consisted of Generation Z consumers aged 18 to 26 years who resided in Saudi Arabia and had previously watched or participated in ecommerce livestreaming.

Data were collected using both an online questionnaire administered through Google Forms and printed questionnaires distributed directly to eligible participants. The online questionnaire was disseminated through relevant social media platforms and online networks, while printed questionnaires were distributed in person to reach additional respondents who met the study criteria. The questionnaire was provided in both Arabic and English to improve accessibility and cultural appropriateness. A back translation procedure was applied to ensure consistency in meaning between the Arabic and English versions. Before completing the questionnaire, participants were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality and anonymity of their responses.

To ensure that respondents were relevant to the research objectives, four inclusion criteria were applied. Participants were required to (1) reside in Saudi Arabia, (2) belong to Generation Z and be aged between 18 and 26 years, (3) have prior experience watching or participating in ecommerce livestreaming, and (4) have purchased or seriously considered purchasing products through an ecommerce livestreaming platform. Questionnaires that were incomplete or contained unusable responses were excluded from the analysis.

A total of 320 questionnaires were obtained through the online and printed survey modes. Following data screening and the removal of incomplete or unusable responses, 260 valid questionnaires were retained for analysis, representing a valid response rate of 81.25%. The final sample size was considered adequate for evaluating the proposed structural model, which incorporated direct, mediating, and moderating relationships. Given the complexity of the model and the application of Partial Least Squares Structural Equation Modeling (PLS SEM), the sample of 260 respondents provided sufficient observations for estimating the proposed relationships and testing the study hypotheses.

The first section of the questionnaire collected respondents' demographic characteristics and background information to describe the Generation Z sample and identify relevant contextual characteristics associated with livestream shopping. The information collected

included gender, age group, education level, experience with ecommerce platforms, frequency of online purchasing, previous use of livestream shopping, family influence on purchasing decisions, and quality of Internet access. These variables provided an overview of respondents' demographic characteristics and digital consumption patterns and confirmed that the sample represented Generation Z consumers with relevant online shopping experience.

3.2. Measures.

The study adopted established measurement scales from previous literature to operationalize the constructs included in the conceptual framework. Influencer authenticity and credibility were measured using seven items adapted from Chetoui et al. [44] and Moulard et al. [45]. These items captured respondents' perceptions of streamer trustworthiness, reliability of product recommendations, purchase worthiness, genuineness, value congruence, honesty, and sincerity. Interactivity was assessed using four items adapted from Chen and Yang [46], measuring the extent to which livestream hosts responded to viewers, enabled direct communication, facilitated active participation, and created a dynamic shopping experience. Entertainment value was measured using three items adapted from Xu et al. [21], focusing on respondents' enjoyment, perceived entertainment, and amusement during livestream shopping.

Consumer engagement and actual purchasing behavior were treated as conceptually distinct constructs. Consumer engagement represented the extent to which consumers were psychologically and behaviorally involved in livestreaming experiences, whereas actual purchasing behavior reflected consumers' reported purchasing activities. In the proposed SOR framework, consumer engagement therefore represented the internal organismic state, while purchasing behavior represented the behavioral response. Consumer engagement, which served as the mediating variable, was measured using eight items adapted from Wongkitrungrueng and Assarut [29]. The items captured behavioral engagement, following and monitoring livestream sellers, revisiting livestreams, recommendations, and other engagement related responses.

Perceived product involvement, which served as the moderating variable, was measured using seven items adapted from Faisal et al. [47]. These items reflected consumers' perceived need for, value of, relevance of, attractiveness of, interest in, and appeal of products recommended by livestreamers. Purchasing behavior was measured using four items adapted from Qing et al. [48]. The items assessed respondents' reported purchasing activities, including purchase frequency, spending, previous purchases from livestream sellers, and continued purchasing from livestreaming platforms during the preceding year. Higher scores therefore represented stronger reported purchasing behavior. All construct items were measured using a Likert type response scale, with higher scores representing stronger perceptions, engagement, involvement, or purchasing behavior.

3.3. Data Analysis Procedure.

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS SEM) with SmartPLS 4. The analysis was conducted in two stages consisting of measurement model assessment followed by structural model assessment. The measurement model was evaluated for internal consistency reliability, convergent validity, and discriminant validity. Internal consistency reliability was assessed using Cronbach's alpha and composite reliability (CR), while convergent validity was evaluated using the average variance extracted (AVE).

Discriminant validity was examined using the heterotrait monotrait ratio (HTMT). Reliability values of at least 0.70 and AVE values of at least 0.50 were considered acceptable, while HTMT values below 0.85 indicated adequate discriminant validity.

Following confirmation of the measurement model, the structural model was evaluated using path coefficients, the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and variance inflation factor (VIF). The proposed hypotheses were tested using a bootstrapping procedure with 5,000 resamples and a two tailed significance level of $p < 0.05$. A relationship was considered statistically significant when the bootstrapped 95% confidence interval did not include zero. Mediation was assessed by examining the significance of the specific indirect effects of the livestreaming characteristics on purchasing behavior through consumer engagement. The moderating effect of perceived product involvement was evaluated by testing the interaction between consumer engagement and perceived product involvement in predicting purchasing behavior. These procedures enabled the assessment of the proposed direct, mediating, and moderating relationships within the research model.

4. Results

The demographic and contextual characteristics of the Generation Z respondents are presented in Table 1. Of the 260 respondents, 54.2% were male and 45.8% were female. The largest age group was 21 to 23 years (37.3%), followed by those aged 24 to 26 years (25.0%), 18 to 20 years (22.3%), and 27 to 30 years (15.4%).

Table 1. Characteristics of Generation Z Respondents.

Variable	Description	Frequency	Percent (%)
Gender	Male	141	54.2
	Female	119	45.8
Age group	18 to 20	58	22.3
	21 to 23	97	37.3
	24 to 26	65	25.0
	27 to 30	40	15.4
Education level	High school or below	15	5.8
	Diploma	39	15.0
	Bachelor's degree	184	70.8
	Postgraduate degree (Master's/PhD)	22	8.4
Prior experience using ecommerce platforms	Less than 1 year	34	13.1
	1 to 2 years	69	26.5
	3 to 4 years	92	35.4
	More than 4 years	65	25.0
Family influence on purchasing decisions	Low influence	46	17.7
	Moderate influence	122	46.9
	High influence	92	35.4
Quality of Internet access	Poor	19	7.3
	Moderate	40	15.4
	Good	201	77.3

Regarding educational attainment, most respondents held a bachelor's degree (70.8%), followed by a diploma (15.0%), a postgraduate degree (8.4%), and a high school qualification or below (5.8%). Most respondents also had substantial experience using ecommerce platforms, with 35.4% reporting three to four years of experience, 26.5% reporting one to two years, and 25.0% reporting more than four years. Family influence on purchasing decisions

was predominantly moderate (46.9%) or high (35.4%). In addition, 77.3% of respondents reported good Internet access, indicating that most participants had adequate digital access to engage in online and livestream shopping activities. Overall, the characteristics presented in Table 1 indicate that the sample comprised digitally experienced Generation Z consumers with relevant exposure to ecommerce environments.

4.1. Establishing the Measurement Model.

The reliability and convergent validity results for the measurement constructs are presented in Table 2. Cronbach's alpha (CA) values ranged from 0.86 to 0.91, exceeding the recommended threshold of 0.70 and indicating satisfactory internal consistency. Composite reliability (CR) values ranged from 0.89 to 0.93, further confirming the reliability of the constructs. The average variance extracted (AVE) values ranged from 0.64 to 0.71, with all values exceeding the recommended threshold of 0.50 and therefore supporting adequate convergent validity. The mean scores ranged from 3.69 for purchasing behavior to 3.95 for entertainment value, indicating generally moderate to high perceptions across the study constructs. Overall, the results demonstrated satisfactory internal consistency and convergent validity, supporting further evaluation of the structural model.

Table 2. Construct Measurement Scales, Reliability, and Validity

Construct	Sample Item	No. of Items	Mean	CA	CR	AVE	Ref.
IAC	Livestream influencers/hosts are trustworthy when promoting products.	7	3.74	0.88	0.91	0.67	[44]
INT	The livestream host actively responds to viewers' questions in real time.	4	3.81	0.86	0.90	0.64	[46]
ENT	Watching the livestream shopping session was enjoyable.	3	3.95	0.89	0.92	0.69	[21]
ENG	I spend more time on pages that have live video streaming.	4	3.88	0.91	0.93	0.71	[29]
PPI	I think the products recommended by the streamer are what I need.	7	3.77	0.87	0.90	0.65	[47]
PB	I have purchased products/services from livestream sellers within the previous year.	4	3.69	0.86	0.89	0.64	[48]

Note: IAC = influencer authenticity and credibility; INT = interactivity; ENT = entertainment value; ENG = consumer engagement; PPI = perceived product involvement; PB = purchasing behavior; CA = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted.

Confirmatory factor analysis was subsequently conducted by comparing the proposed six factor model with alternative models containing one to five factors. As presented in Table 3, model fit progressively improved as the number of factors increased. The one factor model demonstrated poor fit ($\chi^2 = 1584.27$, $df = 230$, $\chi^2/df = 6.89$, RMSEA = 0.124, TLI = 0.61, CFI = 0.65, and IFI = 0.65). In contrast, the proposed six factor model provided the best fit to the data ($\chi^2 = 512.34$, $df = 215$, $\chi^2/df = 2.38$, RMSEA = 0.056, TLI = 0.93, CFI = 0.94, and IFI = 0.94). These values satisfied the recommended model fit thresholds and supported the distinctiveness of the six constructs included in the research model. Discriminant validity was further assessed using the heterotrait monotrait ratio (HTMT). All HTMT values were below the recommended threshold of 0.85, indicating that discriminant validity was established.

Collinearity was evaluated using variance inflation factor (VIF) values, which ranged from 2.02 to 2.61. These values were below the threshold of 5.0, indicating that multicollinearity was not a concern. Collectively, these findings confirmed that the measurement model satisfied the requirements for reliability, convergent validity, discriminant validity, and collinearity and was therefore suitable for subsequent structural model analysis.

Table 3. Confirmatory Factor Analysis.

Model	χ^2	df	χ^2/df	RMSEA	TLI	CFI	IFI
One factor model	1584.27	230	6.89	0.124	0.61	0.65	0.65
Two factor model	1216.54	229	5.31	0.106	0.71	0.74	0.74
Three factor model	982.33	227	4.33	0.091	0.79	0.82	0.82
Four factor model	761.48	224	3.40	0.074	0.86	0.88	0.88
Five factor model	623.17	220	2.83	0.063	0.91	0.92	0.92
Six factor model	512.34	215	2.38	0.056	0.93	0.94	0.94

Note: Recommended thresholds: $\chi^2/\text{df} < 3.00$, RMSEA < 0.08 , CFI > 0.90 , TLI > 0.90 , and IFI > 0.90 .

The relationships among the six study constructs were also examined through correlation analysis, as presented in Table 4. Influencer authenticity and credibility, interactivity, and entertainment value were positively correlated with consumer engagement and purchasing behavior. Consumer engagement was positively correlated with perceived product involvement and showed the strongest correlation with purchasing behavior ($r = 0.63$, $p < 0.001$). Perceived product involvement was also positively correlated with purchasing behavior ($r = 0.58$, $p < 0.001$). All correlation coefficients remained below 0.80, indicating that the constructs were related but did not exhibit problematic levels of multicollinearity. These correlations provided preliminary evidence of associations among the study variables before testing the proposed structural relationships.

Table 4. Correlation Analysis.

Construct	1	2	3	4	5	6
1. IAC	1					
2. INT	0.54*	1				
3. ENT	0.58*	0.60**	1			
4. ENG	0.49**	0.55**	0.57**	1		
5. PPI	0.42**	0.46**	0.44**	0.51*	1	
6. PB	0.47***	0.52***	0.56***	0.63***	0.58***	1

Note: IAC = influencer authenticity and credibility; INT = interactivity; ENT = entertainment value; ENG = consumer engagement; PPI = perceived product involvement; PB = purchasing behavior. ** $p < 0.001$, * $p < 0.05$, $p < 0.10$.

4.2. Hypotheses Testing Results- Direct Effects.

Before examining the structural relationships, discriminant validity and collinearity were further evaluated using the heterotrait monotrait ratio (HTMT) and variance inflation factor (VIF), respectively. As presented in Table 5, all HTMT values were below the recommended threshold of 0.85, ranging from 0.55 to 0.79, which confirmed adequate discriminant validity among the constructs. This indicated that each construct captured a conceptually and empirically distinct dimension and that the relationships observed in the structural model were unlikely to result from excessive overlap among the variables. The VIF values ranged from 2.02 to 2.61 and remained below the threshold of 5.0, indicating that multicollinearity was not a concern. These results further demonstrated that the predictor constructs provided sufficiently

independent information for estimating their respective effects on consumer engagement and purchasing behavior. Therefore, the measurement properties supported proceeding with the structural model and hypothesis testing.

Table 5. Discriminant Validity (HTMT) and Collinearity Statistics (VIF).

Construct	IAC	INT	ENT	ENG	PPI	PB	VIF
IAC	—						2.10
INT	0.65	—					2.25
ENT	0.69	0.72	—				2.38
ENG	0.61	0.68	0.70	—			2.55
PPI	0.55	0.59	0.57	0.66	—		2.02
PB	0.63	0.71	0.74	0.79	0.73	—	2.61

Note: IAC = influencer authenticity and credibility; INT = interactivity; ENT = entertainment value; ENG = consumer engagement; PPI = perceived product involvement; PB = purchasing behavior; VIF = variance inflation factor.

The results of the direct effect analysis are presented in Table 6. All three livestreaming ecommerce characteristics had significant positive effects on Generation Z consumer engagement. Influencer authenticity and credibility significantly influenced consumer engagement ($\beta = 0.312$, $t = 5.421$, $p < 0.001$), supporting H1a. Interactivity also had a significant positive effect on consumer engagement ($\beta = 0.284$, $t = 4.978$, $p < 0.001$), supporting H1b. Similarly, entertainment value had a significant positive effect on consumer engagement ($\beta = 0.356$, $t = 6.102$, $p < 0.001$), supporting H1c. Among the three predictors, entertainment value showed the largest standardized path coefficient, indicating that it had the strongest association with consumer engagement within the proposed model.

Regarding purchasing behavior, influencer authenticity and credibility had a significant positive effect ($\beta = 0.198$, $t = 3.214$, $p = 0.001$), supporting H2a. Interactivity also significantly and positively influenced purchasing behavior ($\beta = 0.167$, $t = 2.876$, $p = 0.004$), supporting H2b. In contrast, entertainment value did not have a significant direct effect on purchasing behavior ($\beta = 0.097$, $t = 1.552$, $p = 0.151$); therefore, H2c was not supported. This result indicated that although entertainment value significantly enhanced consumer engagement, its direct relationship with purchasing behavior was not statistically significant.

Finally, consumer engagement had a strong and significant positive effect on purchasing behavior ($\beta = 0.429$, $t = 7.215$, $p < 0.001$), supporting H3. Among the significant direct predictors of purchasing behavior, consumer engagement had the largest standardized path coefficient. These findings indicated that consumer engagement played an important role in translating livestreaming experiences into purchasing behavior.

Table 6. Structural Model Results for Direct Effects.

Hypothesis	Path	β	t value	p value	Result
H1a	IAC $\rightarrow$ ENG	0.312	5.421	<0.001	Supported
H1b	INT $\rightarrow$ ENG	0.284	4.978	<0.001	Supported
H1c	ENT $\rightarrow$ ENG	0.356	6.102	<0.001	Supported
H2a	IAC $\rightarrow$ PB	0.198	3.214	0.001	Supported
H2b	INT $\rightarrow$ PB	0.167	2.876	0.004	Supported
H2c	ENT $\rightarrow$ PB	0.097	1.552	0.151	Not supported
H3	ENG $\rightarrow$ PB	0.429	7.215	<0.001	Supported

The explanatory power, predictive relevance, and effect sizes of the structural model are summarized in Table 7. The model explained 48% of the variance in consumer engagement ($R^2 = 0.48$) and 51% of the variance in purchasing behavior ($R^2 = 0.51$), indicating meaningful explanatory power for both endogenous constructs. The Q^2 values for consumer engagement (0.34) and purchasing behavior (0.37) were greater than zero, demonstrating predictive relevance. Regarding effect sizes, entertainment value had the largest effect on consumer engagement ($f^2 = 0.15$), followed by influencer authenticity and credibility ($f^2 = 0.12$) and interactivity ($f^2 = 0.09$). For purchasing behavior, consumer engagement showed the largest effect ($f^2 = 0.18$), whereas influencer authenticity and credibility ($f^2 = 0.05$) and interactivity ($f^2 = 0.04$) showed smaller effects. Entertainment value had a negligible effect on purchasing behavior ($f^2 = 0.01$), which was consistent with its nonsignificant direct path. Overall, these results demonstrated that the structural model had meaningful explanatory and predictive relevance, with consumer engagement playing an important role in explaining purchasing behavior.

Table 7. Predictive Relevance and Effect Sizes of the Structural Model.

Endogenous Construct	Predictor	R^2	Q^2	f^2	Effect Size
Consumer engagement	IAC → ENG	0.48	0.34	0.12	Small
	INT → ENG	—	—	0.09	Small
	ENT → ENG	—	—	0.15	Small to moderate
Purchasing behavior	IAC → PB	0.51	0.37	0.05	Small
	INT → PB	—	—	0.04	Small
	ENT → PB	—	—	0.01	Negligible
	ENG → PB	—	—	0.18	Moderate

4.3. Hypothesis Testing Results: Indirect and Moderating Effects.

The mediating role of consumer engagement was examined to determine whether engagement transmitted the effects of livestreaming ecommerce characteristics, namely influencer authenticity and credibility, interactivity, and entertainment value, to purchasing behavior. The mediation and moderation results are presented in Table 8. The indirect effect of interactivity on purchasing behavior through consumer engagement was positive and statistically significant ($\beta = 0.122$, $t = 3.875$, $p = 0.001$), supporting H4b. This result indicated that higher interactivity was associated with stronger consumer engagement, which subsequently contributed to greater purchasing behavior. Consumer engagement therefore served as a significant mediating mechanism between interactivity and purchasing behavior.

In contrast, the indirect effect of influencer authenticity and credibility on purchasing behavior through consumer engagement was not statistically significant ($\beta = 0.064$, $t = 1.139$, $p = 0.247$); therefore, H4a was not supported. Similarly, the indirect effect of entertainment value through consumer engagement was not statistically significant ($\beta = 0.082$, $t = 1.247$, $p = 0.193$), and H4c was not supported. These findings indicated that consumer engagement did not significantly mediate the relationships between these two livestreaming characteristics and purchasing behavior. Perceived product involvement was subsequently examined as a moderator of the relationship between consumer engagement and purchasing behavior. As shown in Table 8, the interaction between consumer engagement and perceived product involvement had a positive and statistically significant effect on purchasing behavior ($\beta = 0.118$, $t = 2.542$, $p = 0.011$), supporting H5. This finding indicated that perceived product involvement strengthened the positive relationship between consumer engagement and

purchasing behavior. Specifically, as consumers perceived products as more personally relevant, important, or interesting, the association between their livestreaming engagement and purchasing behavior became stronger.

Table 8. Structural Model Results for Indirect and Moderating Effects.

Relationship	Hypothesis	Path	β	t value	p value	Result
Mediating	H4a	IAC $\rightarrow$ ENG $\rightarrow$ PB	0.064	1.139	0.247	Not supported
	H4b	INT $\rightarrow$ ENG $\rightarrow$ PB	0.122	3.875	0.001	Supported
	H4c	ENT $\rightarrow$ ENG $\rightarrow$ PB	0.082	1.247	0.193	Not supported
Moderating	H5	ENG $\times$ PPI $\rightarrow$ PB	0.118	2.542	0.011	Supported

The nature of the significant moderating effect is illustrated in Figure 2. The slope representing high perceived product involvement was steeper than that representing low perceived product involvement. This pattern indicated that the positive relationship between consumer engagement and purchasing behavior was stronger at higher levels of perceived product involvement. Conversely, when perceived product involvement was low, the relationship between engagement and purchasing behavior was weaker. Thus, the moderation pattern provided further support for H5 and indicated that highly involved consumers were more likely to translate their engagement during livestreaming sessions into purchasing behavior.

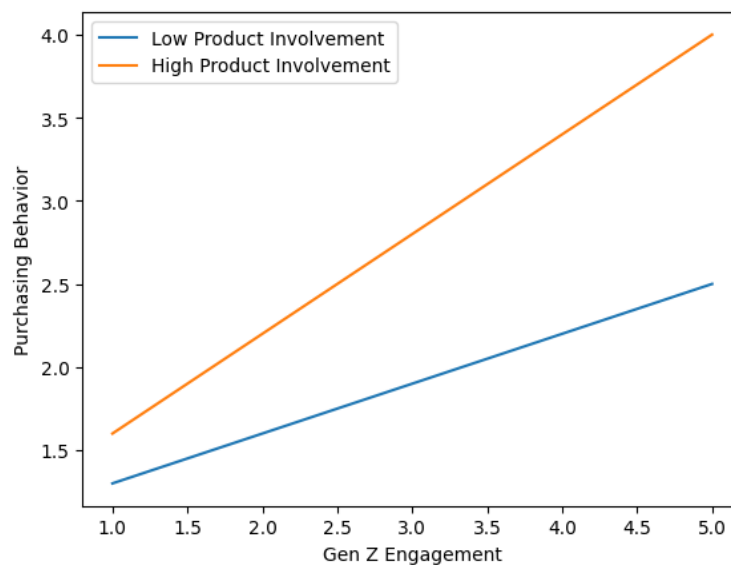


Figure 2. The moderating Role of Product Involvement.

5. Discussion

This study examined the direct effects of three livestreaming ecommerce characteristics on consumer engagement and purchasing behavior among Generation Z consumers in Saudi Arabia. Influencer authenticity and credibility and interactivity significantly enhanced both consumer engagement and purchasing behavior. These findings highlighted the importance of trust and real time interaction in livestreaming ecommerce, with consumer engagement further mediating the relationship between interactivity and purchasing behavior. Thus, credible influencers and interactive features, such as live chat, immediate feedback, and product demonstrations, strengthened consumer involvement and helped translate engagement into actual purchases. In contrast, entertainment value significantly enhanced consumer

engagement but did not directly influence purchasing behavior. This finding indicated that entertaining livestreams attracted Generation Z consumers and encouraged interaction, but enjoyment alone was insufficient to generate purchasing behavior. Actual purchasing decisions might have depended more strongly on factors such as product value, credibility, price, and relevance. Thus, entertainment appeared to strengthen engagement without necessarily converting that engagement into purchasing behavior. One of the main contributions of this study was its contribution to understanding consumer behavior within the real time interactive environment provided by livestreaming commerce. The findings showed that direct and personalized interactions with hosts or influencers contributed to consumer trust and purchasing responses. Thus, the findings supported the Stimulus Organism Response (SOR) framework, in which environmental stimuli, represented in this study by livestreaming based digital interactions, influenced consumers' internal responses and subsequent behavioral decisions [13, 21, 49, 50].

Consumer engagement emerged as the strongest direct predictor of purchasing behavior, highlighting its central role within the proposed framework. The significant relationship between engagement and purchasing behavior indicated that active participation, emotional connection, and involvement in livestreaming sessions increased the likelihood of purchasing. This finding supported the proposition that engagement served as a behavioral conversion mechanism through which livestreaming experiences were translated into actual purchasing behavior. The mediation analysis further revealed that consumer engagement significantly transmitted the effect of interactivity on purchasing behavior but did not significantly mediate the effects of influencer authenticity and credibility or entertainment value. These findings indicated that different livestreaming characteristics operated through different mechanisms. Hosts or presenters in livestreaming environments served as intermediaries in developing trust between brands and consumers, suggesting that trust in digital marketing depended not only on brand reputation but also on the credibility of the individual presenting the product [29,36,50].

The nonsignificant mediation effects for H4a and H4c provided an important theoretical insight into the SOR framework. Although influencer authenticity and credibility and entertainment value significantly enhanced consumer engagement, these effects were not significantly transmitted to purchasing behavior through engagement. This finding indicated that engagement did not function as an automatic pathway through which all livestreaming stimuli resulted in purchasing outcomes. For influencer authenticity and credibility, consumers might have become more engaged because they perceived influencers as genuine and trustworthy, but this positive engagement might not have been sufficient to generate an actual purchase without additional considerations, such as product value, price, relevance, or perceived risk. Similarly, entertainment value might have captured consumers' attention and encouraged participation in livestreaming sessions without necessarily creating a sufficiently strong purchasing motive. These findings therefore extended the SOR perspective by demonstrating that different stimuli could activate consumers' internal engagement without producing identical behavioral consequences. In this context, consumer engagement appeared to function as a context dependent mechanism rather than a universal mediator, highlighting the importance of additional cognitive and evaluative factors in determining whether engagement was ultimately converted into purchasing behavior.

The moderation analysis revealed that perceived product involvement significantly strengthened the relationship between consumer engagement and purchasing behavior. This

finding indicated that engagement became more influential when consumers perceived a product as important or personally relevant. For products with high levels of involvement, consumers appeared to rely more strongly on livestreaming interactions, product information, and trust related cues when making purchasing decisions. Highly involved consumers tended to devote greater attention to product information, demonstrations, and influencer recommendations, making their engagement with livestreaming content more relevant to their purchasing decisions. In contrast, products with lower levels of involvement required less extensive evaluation, and consequently, consumer engagement had a weaker relationship with purchasing behavior. These findings demonstrated that the effect of consumer engagement on purchasing behavior depended partly on consumers' perceived importance and relevance of the products being considered.

The findings also highlighted the strategic importance of integrating digital marketing activities with livestreaming commerce to strengthen business competitiveness. Previous studies indicated that real time consumer interactions during livestreaming sessions significantly influenced purchasing intentions and consumer engagement [49, 50]. Businesses that effectively integrated livestreaming commerce strategies could gain competitive advantages by using data analytics, collaborating with credible influencers, and maintaining appropriate ethical standards [2]. The findings therefore indicated that businesses could benefit from scheduling livestreaming sessions consistently, creating anticipation, and encouraging active participation among target consumers. Selecting credible and relatable hosts or influencers was also important because consumers' trust in these individuals contributed to engagement and purchasing behavior. Furthermore, the use of analytics to understand consumer preferences could assist businesses in aligning the products and promotions presented during livestreaming sessions with consumer needs and market demand.

6. Implications

6.1. Theoretical Implications.

This study extended the Stimulus Organism Response (SOR) framework in the context of livestreaming ecommerce in four ways. First, it demonstrated that influencer authenticity and credibility, interactivity, and entertainment value functioned as distinct external stimuli that influenced consumers' internal engagement and purchasing responses. Second, the findings showed that consumer engagement functioned as an important organismic mechanism, particularly by transmitting the effect of interactivity to actual purchasing behavior. However, the nonsignificant mediation effects for influencer authenticity and credibility and entertainment value demonstrated that different livestreaming stimuli operated through different pathways. Third, the study extended the SOR framework by identifying perceived product involvement as a boundary condition. Specifically, the relationship between the organismic state of consumer engagement and the behavioral response of purchasing became stronger when perceived product involvement was higher. Finally, by applying the SOR framework to Generation Z consumers in Saudi Arabia, the study provided context specific evidence that extended its application to livestreaming ecommerce within an emerging digital market.

6.2. Practical Implications.

The findings provided several practical implications for livestream marketers and ecommerce platforms. First, influencer authenticity and credibility were important for both consumer engagement and purchasing behavior. Therefore, firms should select influencers who are trustworthy, knowledgeable, and genuine rather than focusing primarily on follower numbers. Second, interactivity should be encouraged through live question and answer sessions, product demonstrations, immediate responses, polls, and other forms of viewer participation because active interaction helped translate consumer engagement into purchasing behavior. Third, entertainment should complement rather than replace informative and credible product content because entertainment increased engagement but did not directly influence purchasing behavior.

The findings also indicated that livestreaming strategies should be tailored according to consumers' perceived product involvement. Products with higher levels of involvement might require more detailed information, credible recommendations, demonstrations, and opportunities for interaction, whereas products with lower levels of involvement might benefit from simpler presentations, entertainment, promotions, and other mechanisms designed to attract attention. Brands should therefore combine trustworthy influencers, genuine communication, meaningful interaction, useful product information, and appropriate entertainment to strengthen engagement and purchasing outcomes. Firms should also evaluate livestreaming effectiveness using engagement indicators such as comments, interaction rates, viewing duration, and active participation rather than relying solely on the number of views.

7. Conclusion

This study provided a clearer understanding of how livestreaming characteristics influenced Generation Z consumers' purchasing behavior in Saudi Arabia. Drawing on the SOR framework, the findings demonstrated that influencer authenticity and credibility, interactivity, and entertainment value significantly enhanced consumer engagement. Influencer authenticity and credibility and interactivity also directly influenced purchasing behavior, whereas entertainment value did not have a significant direct effect. Consumer engagement emerged as an important predictor of purchasing behavior and significantly mediated the relationship between interactivity and purchasing behavior. In addition, perceived product involvement strengthened the relationship between consumer engagement and purchasing behavior. Collectively, these findings demonstrated that livestreaming purchasing behavior depended not only on the characteristics of livestreaming content but also on consumers' psychological engagement and perceived relevance of the products being promoted. Despite these contributions, several limitations were acknowledged. The cross sectional research design and purposive sampling approach limited causal interpretations and the generalizability of the findings. Furthermore, the study relied on self reported data and examined only selected characteristics of livestreaming commerce. Future studies could employ longitudinal or experimental research designs, include larger and more diverse samples, and incorporate objective purchasing records to provide stronger evidence of actual consumer behavior. Further research could also examine additional psychological mechanisms, including trust, perceived value, perceived risk, and social presence, and compare livestreaming consumers across different countries, cultural contexts, generations, and product categories.

Author Contributions

Hassan Abdullah: conceptualisation, data collection, formal analysis, original draft preparation, theoretical framework development. Dinara Bostanova: conceptualisation, supervision, review and editing.

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Conflict of Interest

No conflict of interest was reported by all authors.

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