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## Article

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# **Consumer Buying Intention in Livestreaming Commerce: An Integrated Model of Socio-Technical System Theory and Uses & Gratifications Theory**

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## **Abstract**

This study develops a framework to analyze the determinants influencing consumer buying intention in livestreaming commerce by being a pioneer that integrates socio-technical system theory with the uses and gratifications theory. This study contributes literature on understanding consumer behavior within livestreaming commerce by examining how hedonic and utilitarian gratifications mediate the influence of interactivity, personalization, and visibility on consumer purchasing intention. The research also analyses the moderating role of perception of social media influencers on the link between hedonic gratifications, utilitarian gratifications, and purchase intention. Data were collected from 396 consumers across the TikTok platform in Vietnam market in the sector of home appliances, and partial least squares structural equation modelling (PLS-SEM) was applied for data analysis using Smart PLS 4.0. The results indicate that both hedonic and utilitarian gratifications mediate the relationship between socio-technical determinants including interactivity, personalization, visibility and buying intention. Interestingly, the moderating effect of perception of social media influencer on the relationship between hedonic gratifications and purchase intention is significantly positive, whereas no such moderating impact is evident for the relationship of utilitarian gratifications and purchasing intention. These findings also offer for marketing practitioners aiming to enhance consumer buying intention through livestreaming commerce.

**Keywords:** Livestreaming commerce, buying intention, social media influencer, socio-technical system theory, uses and gratifications theory, Vietnam.

## 1. Introduction

The emergence of advanced technology has catalyzed a transformation in consumer behavior within the realm of online shopping that leads to the increase of shopping method called livestreaming commerce. Livestreaming commerce is the use of multimedia platforms to conduct e-commerce activities that allowing real-time engagement, entertainment, and social interactions alongside shopping (Freberg et al., 2011). Unlike traditional e-commerce when products are solely displayed through image, text and pre-recorded video, livestreaming commerce enriches shopping experience by offering reliable and high quality of information as streamers can adapt viewers' responses in the real-time by showing details of products or interacting with the queries of viewers on livestream session; thus, facilitate consumption decisions (Wongkitrungrueng & Assarut, 2020).

Existing research on consumer behavior motivations within the livestreaming context has been effectively explored by both social and technical terms (Zhang et al., 2022), yet these enablers have typically been examined in isolation (Ma, 2024). This study aims to address this critical gap by developing a comprehensive framework for examining the determinants of consumer purchase intentions within the context of livestreaming commerce, utilizing both socio-technical perspectives based on socio-technical system of Bostrom and Heinen (1977). From the social regards, scholars focus on the mechanisms through the interaction of various participants—such as buyers, streamers, and co-viewers, thereby influencing purchase intentions (Cai et al., 2018; Ma, 2021). On the technical side, livestreaming commerce is conceptualized as a form of human-computer interaction, where IT affordance theory highlights the importance of platform features and user perceptions (Sun et al., 2019). Furthermore, while socio-technical enablers have been intensively applied in terms of how they affect customer engagement (Ma, 2024), customer stickiness (Chang et al., 2024), continuance intention (Zhang et al., 2022), research on their impact on purchase intention is considerably limited.

In the study of media consumption, uses and gratifications theory (U&G theory) offers a strong foundation for understanding how psychological and social motives influence on media usage pattern of consumers, particularly livestreaming environment (Cai et al., 2018; Ma, 2021). Nonetheless, existing literature have seen the scarcity of research exploring the impact of socio-technical enablers under the mechanism of gratifications (Chang et al., 2024; Li et al., 2021; Zhang et al., 2022). Drawing on U&G theory, our study is among the first to incorporate the uses and gratifications theory into the study of socio-technical enablers to verify determinants that drive consumer to have intention to buy product within livestreaming context. This study seeks to understand the mediating role of hedonic and utilitarian gratifications in the relationship between socio enablers- such as personalization, interactivity, and visibility and purchase intention within livestreaming commerce.

Utilitarian gratifications relate to goal-oriented behaviors, allowing consumer to gather product information or make informed purchasing decisions (Wongkitrungrueng & Assarut, 2020). In contrast, hedonic gratifications focus on enjoyment and entertainment derived from interactive and emotional arousing content, reflecting enjoyment pleasure viewers experience while engaging streamers and other participants. Therefore, the first objective of this study is to verify the multifaceted gratifications that drive purchase intention in livestreaming commerce.

In the stream of research based on U&G theory, results explaining how gratifications affect consumer behavior in the livestreaming context have seen inconsistent implications. Prior findings show that both utilitarian and hedonic gratifications have a significant positive impact on consumers' purchase intention (Cai et al., 2018; Zhang et al., 2023). In contrast, perceived utility has not been identified as a significant determinant of purchase intention that a non-significant relationship is found in the study of Ma (2021). These mixed results explaining relationship between gratifications and purchase intention can be due to the effect of endorsement and product types (Ma, 2021). Based on social identity theory, individuals derive part of their self-concept from membership in social groups, which fosters a sense of belonging and shared value (Ashforth & Mael, 1989). In the context of livestreaming commerce, social media influencer (SMI) is identified as ordinary users are perceived as experts within their social networks, attracting followers who share similar traits, emphasizing the role of SMIs in shaping consumer behavior. Recent research have highlighted how SMI characteristics impact on consumer's shopping experience and purchase intentions (Chen & Yang, 2023; De Veirman et al., 2017), yet the moderating effect of SMI in the link between gratifications and buying intentions remains underexplored. In fact, consumer often perceive high risks due to the absence of tangible product experience in virtual shopping environments (Chae & Lee, 2013). In this context, SMIs serve as credible sources, enhancing consumer confidence through their authenticity and expertise (Wang et al., 2025) by offering intimate relationship and interactivity in personal level (Farivar et al., 2021). Thus, the second objective of this study is to provide comprehensive understanding the role of the perception of social media influencers moderate the relationships between different types of gratification and consumers' purchase intention in livestreaming contexts.

This study aims to conceptualize and empirically verify an integrated framework between U&G theory and socio-technical system theory by adding a livestream shopping behavior in an emerging market context, addressing the dominance of research mostly conducted in China, where the livestreaming industry is more established (Zhang et al., 2023). Recently, the studies that taken in China have seen limitations due to its application might be depend on cultural, economics, and demographic variations (Ma, 2021). Xu et al. (2020) also call the need for future research to explore the distinctive context of livestreaming commerce, adopt more diverse theoretical frameworks, and verify a broader of determinant to get more comprehensive understanding of consumer behavior. Therefore, this study focuses on Vietnam, a rapidly growing and strategically important emerging market in Southeast Asia.

Specifically, we collected data through survey from 396 Vietnamese consumers via TikTok platform about their buying home appliances behavior. In 2024, Vietnam and Thailand have become the fastest-growing e-commerce markets in Southeast Asia (ASEAN Vietnam, 2024). Statista (2024) also shows that livestreaming commerce has emerged as the most consumed form of livestreaming content, surpassing other prevalent content categories since 2022. Vietnam has emerged as one of the most dynamic live commerce markets globally, hosting approximately 2.5 million livestream shopping events and involving over 50,000 sellers on platforms such as Shopee, TikTok Shop, Lazada, and various social commerce platforms (Chi, 2024).

In this context, the present study pursues the following two research questions:

- RQ1: How to explain the mechanism between the characteristics of livestreaming commerce—namely (1) personalization, (2) interactivity, (3) visibility and buying intention in livestreaming commerce in the regarding utilitarian and hedonic gratifications?
- RQ2: What is the effect of perception of social media influencer on the relationship between hedonic and utilitarian gratifications and buying intention in livestreaming commerce?

The present study aims to contribute to the influencer marketing and livestreaming commerce literature by providing new insights into the formation of consumers' buying intentions for home appliances from the combined perspectives of socio-technical system and users' gratifications, with the moderating role of consumer perception of social media influencers. The study's findings will offer new insights to researchers interested in studying consumer behavior in livestreaming commerce and assist producers and marketing managers of home appliances in designing marketing strategies to promote consumer purchases of these products through livestreaming.

The subsequent sections of the paper are structured as follows: First, we provide a literature review followed by the hypothesis development. Next, we detail the research methodology, including data analysis and findings. Third, we delve into a discussion of the main findings, exploring both theoretical and managerial implications. Lastly, we address limitations and propose indications for future research.

## **2. Literature Review**

### *2.1. Livestreaming Commerce Through the Lens of Socio-Technical System Theory*

Proposed by Bostrom & Heinen (1977), socio-technical theory has evolved in response to modern technological advancements, refers to the interplay between social and technical factors in the process of understanding an organization. The theory posits that the technological advancements consist of the technical and social subsystems. The social

system focuses on human perspective such as values, attitude, skill and relationships while the technical system prioritizes on its technological competencies (Zhang et al., 2022).

Given the context of livestreaming commerce, the socio-technical system theory recently has been widely acknowledged to explain customer engagement, customer stickiness, continuance intention (as shown in the Table 1), its application to consumer purchase intention remains under investigated. Livestreaming, an interactive communication technology that facilitates real-time video broadcasting coupled with text-based chat, first emerged in the early 1990s (Sun et al., 2019). Its popularity surged with the proliferation of mobile technology and the widespread adoption of social media platforms. Livestreaming commerce—a rapidly evolving form of e-commerce—experienced exponential growth globally since the COVID-19 pandemic, particularly on e-commerce platforms and social networking sites (Luo et al., 2023). This format integrates live streaming into online retail environments, allowing streamers and users to interact in real time via video, voice, and text. As a result, it offers businesses a novel and immersive approach to engage with consumers and promote products instantaneously (Luo et al., 2024).

Rooted in socio-technical systems theory, in the context of livestreaming commerce, three key characteristics—interactivity, personalization, and visibility—are determined social enablers in this current study. Interactivity which is reflected through the interactive nature of livestream, facilitating real-time interpersonal interactions among viewers, streamers, and co-viewers (Hu et al., 2017). Liu & Shrum (2002) conceptualized interactivity involves to three key constructs which are active control, two-way communication, and synchronicity. In fact, livestreaming method heighten ability of control via live chat function, where customer actively post their queries and received immediate response from wither streamers of other participants in real-time (Zhang et al., 2023). Consequently, such dynamic exchanges reinforce interactive dialogue and reduce customer uncertainties, thereby leverage overall shopping experience (Chen & Lin, 2018; Zhang et al., 2023).

Drawing on related work, we construct technical enablers based on affordance theory with two main determinants which are visibility and personalization. According to Bygstad et al. (2016), affordance refers to the possibility for action that emerge from the interaction of a technological object and an individual pursuing specific goal. IT affordance is widely adopted to explain the possibility for purchase-oriented actions stimulated by technical objects, shaped by capability and goal of buyers and sellers in the online purchase environment especially within livestreaming context (Dong & Wang, 2018; Sun et al., 2019; Zhang et al., 2023). Specifically, visibility convey how product visually present to customer, personalization facilitates customized service based on individual demand (Liu & Zhang, 2024; Zhang et al., 2023). In contrast with traditional e-commerce platforms that product information heavily depends upon static formats such as photo, video and text-based description, livestreaming commerce offers real experience by allowing streamers to show product comprehensively in real-time (Nguyen et al., 2025; Wongkitrungrueng &

Assarut, 2020). In addition, livestreaming also provides personalize assistance since seller can transmit visual and audio instantly, respond directly to customer inquiries (Chen & Lin, 2018; Zhang et al., 2022).

**Table 1: Overview of Related Work Adopting Socio-Technical Approach**

Study	Dependent Variable(s)	Socio-technical Enablers	Other Variables	Methodology	Product Category / Livestreaming platform
Li et al. (2021)	User stickiness (visit duration & user retention)	<ul style="list-style-type: none"> <li>• Interaction</li> <li>• Identification</li> <li>• Synchronicity</li> <li>• Vicarious expression</li> </ul>	Emotional attachment to streamers & Platform attachment	Quantitative research via online website survey (N=425)	An e-commerce platform, Taobao in China
Zhang et al. (2022)	Continuance intention	<ul style="list-style-type: none"> <li>• Active control</li> <li>• Synchronicity</li> <li>• Two-way communication</li> <li>• Personalization</li> <li>• Visibility</li> </ul>	Trust in streamers & Trust in products	Quantitative research via online survey (N=446)	An e-commerce platform, Taobao in China
Ma (2024)	Customer engagement	<ul style="list-style-type: none"> <li>• Identification with streamers</li> <li>• Personal focus</li> <li>• Multiple sensory cues</li> <li>• Immediate feedback</li> </ul>	Informational support & Emotional support	Quantitative data collected from research agent (N=298)	N/A
Chang et al. (2024)	Customer stickiness & Purchase intention	<ul style="list-style-type: none"> <li>• Interactivity</li> <li>• Visualization</li> <li>• Entertainment</li> </ul>	Cognitive Trust & Affective Trust	Quantitative research online survey across social media platforms (N=682)	E-commerce platforms in Indonesia
This research	Buying intention	<ul style="list-style-type: none"> <li>• Interactivity</li> <li>• Visibility</li> <li>• Personalization</li> </ul>	Utilitarian & Hedonic Gratifications	Quantitative research via online survey across Tiktok (N=396)	Social networking site, Tiktok

## 2.2 *Uses & Gratification (U&G) Theory*

Proposed by Katz et al. (1973), the uses and gratifications (U&G) theory describes how individual motivation in media consumption in regards of social and psychological motives behind individuals' choices to engage with specific media platforms. The theory explains the root of how people select a specific media based on their needs and preferences, leading to satisfaction derived from fulfilling various personal demands. Gratifications in U&G is defined as the fulfillment of needs through particular activities or media engagement (Chiu & and Huang, 2015). Prior research indicates that U&G theory widely adopted to effectively explain consumer behavioral intention withing livestreaming context (Cai et al., 2018; Wongkitrungrueng & Assarut, 2020). As such, utilitarian gratifications are typically characterized as "goal-oriented, rational and functionally purposed" (Cai et al., 2018). Conversely, hedonic gratifications pertain the enjoyment, fun and entertainment in using a new technology, product or service (Ma, 2021). Together, these gratifications reflect the multifaceted motivations influencing on consumer behavior on both practical and emotional aspects in shaping consumer buying intention.

Previous studies have demonstrated inconsistent findings regarding the impact of hedonic and utilitarian gratifications on consumer behavior in the livestreaming context. Adopting the network effect theory, the study emphasizes the role of perceived network size on enjoyment and utility gratifications, noting that hedonic gratifications is a significant predictor of livestreaming commerce intention while perceived utility had nonsignificant impact on livestream shopping intention (Ma, 2021). Meanwhile, study of Cai et al. (2018) show that both gratifications have positively influence on purchase intention and distinct intentions in live streaming shopping were linked to specific motivations and product types. Specifically, utilitarian motivations were exclusively associated with utilitarian intentions in product related, while hedonic motivations significantly predicted hedonic intentions in celebrity related. In line with prior research, Zhang et al. (2023) show consumer purchase intention is explained by information gratification which individuals tend to seek useful function based on informative seller and entertainment gratification which customer intentions is strongly based on how emotional arousal they perceived through livestreaming session. Consequently, these studies underscore the need for further investigation to conceptualize consumer buying intention is shaped by gratification mechanism.

### 2.2.1. The Mediating Role of Hedonic Gratifications

Individuals often seek multisensory experiences to derive pleasure (Holbrook & Hirschman, 1982). Previous research has indicated that the tendency to seek enjoyment in fun and entertaining experiences while shopping online may significantly shape consumers' adoption of online shopping (Joo & Yang, 2023). In livestreaming, streamers serve as both entertainers and salespeople, building emotional connections with viewers through shared experiences and personalized support (Luo et al., 2024; Ma, 2021). Interactivity enhances this experience through detailed product demonstrations and real-time interactions with streamers through live chats, fostering enjoyment (Lv et al., 2018;



Wulf et al., 2020). Li et al. (2025) highlighted that the interactive atmosphere in livestreaming can stimulate consumers' sense of safety and confidence.

Also, streamers engage in video interactions with their viewers to analyze problems in depth (Ma, 2023). Product virtualization technologies amplify hedonic motivations of livestream shopping (Kim & Forsythe, 2007). Additionally, livestreaming also openly allows viewers negotiate price which indicate can be enjoyable (Wolfinbarger & Gilly, 2001). Occasionally, streamers engage in video interactions with their viewers to analyze problems in depth. Therefore, it is very likely that consumers feel care, understanding and empathy through such interactions with streamers (Yang et al., 2024). Hedonic and utilitarian gratifications are crucial for understanding shopping intentions in this context (Joo & Yang, 2023; Ma, 2021, 2023). Therefore, this study hypothesizes that:

- H1a: Hedonic gratifications positively mediate the effect of interactivity on buying intention.
- H1b: Hedonic gratifications positively mediate the effect of personalization on buying intention.
- H1c: Hedonic gratifications positively mediate the effect of visibility on buying intention.

#### 2.2.2. The Mediating Role of Utilitarian Gratifications

The present study conceptualizes utilitarian gratifications as the degree to which individuals believe that livestreaming commerce serves specific purposes, it serves specific purposes, such as efficiently acquiring high-quality products or addressing concerns through informative content. Wongkitrungrueng & Assarut (2020) found that enhanced product visibility increases utilitarian value by providing accessible information. The interactive nature of live streaming facilitates personalized queries, reducing perceived risks (Zhang et al., 2022) and increasing information transparency (Kang et al., 2021). From the perspective of product information, prompt responses from sellers enable information seekers to quickly clarify their specific concerns and gain a thorough understanding of products (Weiss et al., 2008). Tan (2024) revealed that during the livestreaming, sellers may introduce the product functions and features in response to questions raised by consumers, which in turn enhance their perception of product quality. Livestreaming commerce enhances perceived utilitarian value by enabling real-time interactions that assist consumers in resolving issues during live shopping sessions (Zhang et al., 2022). Ma (2021) identified utilitarian gratifications as a key driver of livestream users' purchase intentions, with utilitarian gratifications driving viewers to seek useful product information and valuable recommendations from streamers. Therefore, this study hypothesizes that:

- H2a: Utilitarian gratifications positively mediate the effect of interactivity on buying intention.

- H2b: Utilitarian gratifications positively mediate the effect of personalization on buying intention.
- H2c: Utilitarian gratifications positively mediate the effect of visibility on buying intention.

### 2.3. *The Moderating Role of Perception of Social Media Influencer*

Social media influencers (SMI) or as known as digital celebrities (Ma, 2021) are individuals who create relevant content across their social network channels, shaping audience attitudes as third-party endorsers (Freberg et al., 2011). In the digital marketing landscape, influencers leverage their online presence to engage with audiences, impacting their perceptions and behaviors toward products and services. Social media platforms such as, which enable content creation and user interaction, foster community building (Farivar et al., 2021; Kietzmann et al., 2011) making them key spaces for influencer marketing (De Veirman et al., 2017). Based on social identity theory, SMI act as representatives of specific social groups, embody shared values that help followers develop a sense of belonging (Ashforth & Mael, 1989). In the context of live-streaming platforms, users who follow streamers are essentially aligning themselves with a specific social group, which reinforces the perceived opinion leadership of the influencer (Ma, 2021). Through this process, SMI effectively shape consumer behavior by reinforcing group identity and social bonds.

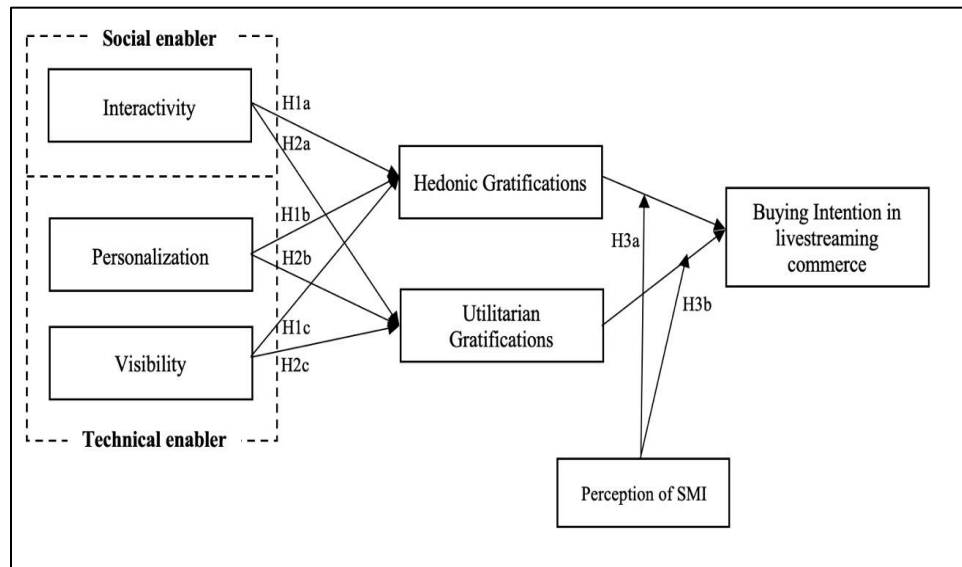
In livestreaming commerce context, one of the key characteristics of live streamers who are considered SMI is their ability to create a unique and intimate relationship with their followers (Farivar et al., 2021; Xu et al., 2020). Influencers can interact with their audience on a more personal level, discussing topics of mutual interest and sharing their own experiences (Ferchaud et al., 2018). Therefore, influencers relate to their audiences more authentically, presenting themselves not as distant celebrities but as ordinary individuals who understand the consumers' needs and preferences (Ma, 2023; Wang et al., 2022). Secondly, streamers often adopt influencer-like roles by sharing real-time glimpses into their daily lives, preferences, and personal expertise, thereby fostering a close-knit relationship between the influencer and their audience (Hu et al., 2017; Luo et al., 2024). Such interactivity not only enhances perceived closeness but also encourages active audience participation, as viewers engage with content and experiences as they unfold. This heightened sense of connection often leads to habitual behaviors—such as repeat viewing and purchasing—as consumers seek continued engagement and product-related information from streamers (Farivar et al., 2017).

Based on information economics theory, consumers often face uncertainty regarding product quality and utility due to asymmetric and imperfect information in the market (Nelson, 1970). This uncertainty is heightened in online purchasing environments, where the lack of tangible experience and credible information increases perceived risk (Chae & Lee, 2013). In such environments, consumers lack access to reliable cues that typically aid in evaluating product value, leading to hesitation and reduced purchase intention. Prior

literature has shown that perceived product quality is significantly influenced by product recommendations made by online celebrities or influencers (Liu et al., 2020). It can be explained by the source credibility theory that SMI help mitigate this uncertainty by acting as trustworthy and expertise source who provide insights into products (Nguyen et al., 2025). In livestreaming commerce, streamers frequently deliver both informational and emotional content, reflecting their dual role as sources of cognitive and affective influence on consumer decision-making (Luo et al., 2024). Informative content, such as product details and promotions, aids purchasing decisions, while affective content, like personal stories, strengthens emotional connections (Ma, 2023). These findings suggest that the influence of SMI moderates the relationship between consumer gratifications (hedonic and utilitarian) and purchase intention; therefore, this study hypothesize that:

- H3a: Perception of social media influencer moderates the relationship between hedonic gratifications and buying intention.
- H3b: Perception of social media influencer moderates the relationship between utilitarian gratifications and buying intention.

Figure 1 depicts the proposed research framework and hypothetical relationship between variables



**Figure 1: Proposed Research Model**

### 3. Methodology

#### 3.1 Measurements

The measurement scales for this study were adapted from established research thus ensuring measurement reliability and validity. The measurement scale interactivity was adapted from Lin et al. (2019). The measurements personalization and visibility were referred from the work of Zhang et al. (2022). In terms of perception of social media influencer, the measurement scale was referred from the study of Ma (2021). The scale measuring hedonic gratifications and utilitarian gratifications were drawn from the study of Ma (2023). Lastly, purchase intention was adapted from Peng et al. (2024).

Given that the original question items were in English, the measurement scales were first translated into Vietnamese by one of the Vietnamese authors, who is proficient in English. The translated items were then re-translated back into English by another author using the back-translation method, as recommended by Braun and Johnson (2011). Two pre-test rounds were conducted to assess the questionnaire's content and face validity. Initially, a qualitative evaluation was carried out through in-depth interviews with two professional marketing researchers and two domain experts. Based on their feedback, necessary revisions were made to enhance the clarity, accuracy, and relevance of the questionnaire. minor adjustments were implemented to enhance the expression of constructs such as interactivity, personalization, visibility, and perception of social media influencers, while the scales measuring gratifications and buying intentions remained unchanged, as presented in Table 3. Following these adjustments, a pilot test ( $n = 50$ ) was conducted, and all items were measured using a five-point Likert scale.

#### 3.2. Sampling and Data Collection

In the absence of an appropriate sampling frame consisting of TikTok users, this study utilized the snowball sampling method, a non-probability referral-based approach in which participants suggest friends and acquaintances as potential respondents for an online survey (Brickman Bhutta, 2012). This sampling technique was effectively adopted in previous consumer behavior studies in livestreaming commerce (Ding et al., 2025; Li et al., 2022; Tian & Li, 2023). In the second quarter of 2024, data collection to test the research hypotheses involved surveying audiences with experience in purchasing home appliances across TikTok platform. TikTok, a globally popular video-based social media platform launched in 2017, has become a significant player in Vietnam's digital landscape, with 69.2 million users as of 2024, ranking it among the top five countries for TikTok usage worldwide (OBERLO, 2024). According to the report of MMA Global (2022) home appliance category stands at the third top purchased good categories through social commerce platforms.

Given that our study focuses on perception of digital celebrities and tests the model within the context of livestream within social commerce, it is essential that the target sample population is familiar with digital celebrities. Consistent with prior research of Hu et al. (2017) and Liu and Zhang (2020) we employed a screening question to ensure the

eligibility of respondents. Specifically, participants were required to be acquainted with at least one social media influencer. To verify this, all respondents were asked to confirm their understanding of the term “social media influencer” in the beginning of the survey. Additionally, to confirm participants' experience with livestream shopping, a screening question was posed: “Have you ever watched a livestream selling home appliance products on TikTok?” This ensured that all respondents had prior experience with livestream commerce, particularly within the product category of interest.

By using the snowball sampling technique, the sample size progressively increased as respondents introduced individuals within their social network, helping to identify suitable participants. Recognizing the risk of sample bias inherent in snowball sampling, the survey initially involved 10 participants from our Tiktok networks, who were asked to invite others from their circles. As suggested by Kirchherr and Charles (2018), initial respondents were selected from a diverse group of gender, age, education and experience in buying home appliances product in live streams to enhance the sample diversity. Additionally, respondents received clear instructions on how to complete the questionnaire to mitigate social desirability (Podsakoff et al., 2012). Their anonymity, confidentiality, and privacy were guaranteed. In total, 396 valid responses were collected and analyzed. As suggested by Hair et al. (2010), the minimum sample size should be ten times the number of items. Given that this study has 29 items, the effective sample size of 396 is appropriate. A summary of the respondents' demographic characteristics is presented in Table 2.

**Table 2: Profile of Participants (N=396)**

Characteristics	Category	Number of Participants	Percentage (%)
Gender	Male	177	44.7
	Female	219	55.3
Age	Under 18	16	3.2
	18-30	188	47.8
	31-40	134	33.6
	41-50	39	10.2
	51-60	14	3.9
	Above 60	5	1.3
Education	≤ High school	29	7.4
	University/College graduate	339	85.5
	Postgraduate	28	7.1
Experience in buying home appliances product in livestream	Experienced	255	64.5
	Not experienced	141	35.5

#### 4. Data Analysis

##### 4.1 Analytical Methods

Structural equation modeling (SEM) technique is used to examine hypothesized relationships and validate conceptual model. There are two approaches: covariance-based (CB-SEM) and partial least squares structural equation modeling (PLS-SEM). This study employs PLS-SEM over CB-SEM for several reasons. First, this method has become increasingly popular in various marketing disciplines (Nguyen et al., 2015; Vu & Nguyen, 2025). Second, PLS-SEM is idea for studies that aim to develop theory (Dash & Paul, 2021). Given that this study incorporates social enablers and technical enablers as predecessors of hedonic gratification and utilitarian gratification, it is considered an extension of the U&G theory. Third, PLS-SEM is a versatile technique suitable for this study because it can accommodate complex path models with mediation and moderation mechanisms and does not require normally distributed data (Hair et al., 2019), which was an important consideration as the distribution type was unknown before the data collection.

#### 4.2 The Measurement Model

To evaluate the measurement model and verify the internal consistency reliability of the constructs, factor loadings, Cronbach's alpha coefficients, and composite reliability (CR) values were computed. As recommended by Hair et al. (2019), the outer loading of each item should be greater than 0.708, while Cronbach's alpha coefficient and CR values must be greater than 0.70. Table 3 shows that all 29 items had outer loadings higher than 0.708 except for INTER1 (0.604). Therefore, this item was eliminated, retaining 28 items for further analysis. Cronbach's alpha values ranged from 0.783 to 0.844, and CR values ranged between 0.874 and 0.895. Thus, all constructs fulfilled the statistical requirements for internal consistency reliability. Following Fornell and Larcker (1981), the average variance extracted (AVE) values were used to assess the convergent validity of the scales. Table 3 reveals that all seven constructs have AVE values between 0.547 and 0.699, exceeding the threshold of 0.50, thereby confirming convergent validity.

**Table 3: Convergent Validity and Reliability of Constructs**

Constructs	Measurement Items	Outer Loading	CR	AVE
Interactivity (Lin et al., 2019)	INTER1- I feel that I have a lot of control in the livestream*	0.604	0.878	0.547
	INTER2- I can freely choose what I want to see in the livestream	0.761		
	INTER3- Livestream have two-way communication between streamers and viewers	0.765		
	INTER4- Livestream give viewers the opportunity to talk to streamers	0.756		
	INTER 5- Streamers in the livestream respond to my questions very quickly.	0.769		
	INTER 6- I am able to get information from streamers in the livestream at very rapidly	0.767		
Personalization (Zhang et al., 2022)	PERS1- Streamers in livestream can provide me with information on all alternative products I intend to buy	0.788	0.871	0.627
	PERS2- Streamers in livestream can help me establish my product needs	0.770		
	PERS3- Streamers in livestream can help me identify which product attributes best fit my needs	0.834		

	PERS4- Streamers in livestream can provide me with personal product customization based on my requirements	0.775		
Visibility (Zhang et al., 2022)	VIS1- Livestream provides me detailed pictures and videos of the products	0.830	0.895	0.680
	VIS2- Livestream makes the product attributes visible to me	0.803		
	VIS3- Livestream makes information about how to use products visible to me	0.833		
	VIS4- Livestream helps me to visualize products like in the real world	0.831		
Perception of social media influencer (Ma, 2021)	PDC1- SMI have many followers	0.860	0.895	0.681
	PDC2- SMI are quite competent	0.809		
	PDC3- SMI have social networks and resources	0.780		
	PDC4- SMI are regarded as a good source for advice	0.850		
Hedonic gratifications (Ma, 2023)	HED1- “I find livestream to be very enjoyable.”	0.748	0.888	0.665
	HED2- “I find livestream to be very fun”	0.823		
	HED3- “I find livestream to be a good method of relieving boredom.”	0.824		
	HED4- “The actual process of using livestream services is pleasant”	0.864		
Utilitarian gratifications (Ma, 2023)	UTN1- “I find using livestream to be very useful”	0.810	0.887	0.662
	UTN2- “I find using livestream to be very efficient”	0.861		
	UTN3- “Livestream is useful for finding high-quality products”	0.837		
	UTN4- “Livestream is useful for receiving product information”	0.743		
Buying intention (Chang et al., 2024)	BI1-“ I will consider livestream shopping as my first choice for shopping”	0.768	0.874	0.699
	BI2- “I intend to purchase products or services through livestream”	0.867		
	BI3- “I hope I will purchase products or services through livestream”	0.870		

Note (s): \*Removed item



The discriminant validity assessment involved comparing the square root values of AVE with correlation coefficients between constructs. For each construct, the square root of its AVE must exceed its correlation coefficients with other constructs. Table 4 confirms discriminant validity for all six constructs, as the square roots of AVE exceed the correlation coefficients in their respective rows and columns. Additionally, the heterotrait-monotrait (HTMT) ratio provided another measure of discriminant validity. As shown in Table 5, all HTMT ratios are below 0.9, further confirming discriminant validity (Henseler et al., 2015).

**Table 4: Discriminant Validity by Fornell and Larcker's (1981) Criterion**

	1	2	3	4	5	6
1. HED	<b>0.815</b>					
2. INTER	0.759	<b>0.776</b>				
3. PERS	0.729	0.703	<b>0.792</b>			
4. BI	0.495	0.485	0.496	<b>0.836</b>		
5. UTN	0.665	0.669	0.653	0.455	<b>0.814</b>	
6. VIS	0.586	0.528	0.514	0.356	0.484	<b>0.825</b>

Note(s): The square roots of AVE are shown on the diagonal

**Table 5: Discriminant Validity by the HTMT Ratio**

	1	2	3	4	5	6
1. HED	-					
2. INTER	0.891	-				
3. PERS	0.889	0.844	-			
4. BI	0.612	0.594	0.621	-		
5. UTN	0.800	0.794	0.794	0.562	-	
6. VIS	0.700	0.618	0.618	0.443	0.578	-

#### 4.3 Structural Model

This paper examines both mediating and moderating hypotheses. Based on Table 4, interactivity ( $\beta = 0.423$ ,  $p < 0.001$ ), personalization ( $\beta = 0.334$ ,  $p < 0.001$ ), and visibility ( $\beta = 0.191$ ,  $p < 0.001$ ) showed positive associations with hedonic gratifications, which in turn positively influenced buying intention ( $\beta = 0.346$ ,  $p < 0.001$ ). Similarly, interactivity ( $\beta = 0.376$ ,  $p < 0.001$ ), personalization ( $\beta = 0.328$ ,  $p < 0.001$ ), and visibility ( $\beta = 0.117$ ,  $p < 0.05$ ) demonstrated positive associations with utilitarian gratifications, which also positively influenced buying intention ( $\beta = 0.225$ ,  $p < 0.05$ ). As shown in Tables 6, the

variance inflation factor (VIF) scores were less than 3.3, indicating that multicollinearity is not a potential issue in this study (Hair et al., 2019).

**Table 6: Results of Direct Effects**

Direct Effects	Path Coefficient	t-value	P-value	Inner VIF
INTER → HED	0.423	9.965	0.000	2.135
PERS → HED	0.334	7.204	0.000	2.092
VIS → HED	0.191	5.012	0.000	1.469
HED → BI	0.346	4.712	0.000	1.791
INTER → UTN	0.376	5.569	0.000	2.135
PERS → UTN	0.328	4.777	0.000	2.092
VIS → UTN	0.117	2.167	0.030	1.469
UTN → BI	0.225	3.089	0.002	1.791

Based on Table 7, the results show that the indirect influences of interactivity on buying intention through hedonic gratifications ( $\beta = 0.146$ ,  $p < 0.001$ ) and utilitarian gratifications ( $\beta = 0.085$ ,  $p < 0.01$ ) were statistically and positively significant. However, an insignificant direct relationship between interactivity and purchase intention was seen. Thus, hedonic gratifications and utilitarian gratifications fully mediate the effect of interactivity on buying intention (Zhao et al., 2010), supporting H1a and H2a. Similarly, the indirect influences of visibility on purchase intention through hedonic gratification ( $\beta = 0.066$ ,  $p < 0.001$ ) and utilitarian gratifications ( $\beta = 0.026$ ,  $p < 0.05$ ) were statistically and positively significant. Conversely, visibility had a non-significant direct effect on buying intention ( $\beta = 0.045$ ,  $p > 0.05$ ). Thus, hedonic gratifications and utilitarian gratifications fully mediate the effect of visibility on buying intention (Zhao et al., 2010), supporting H1c and H2c.

On the other hand, the indirect relationships between personalization and buying intention, via hedonic gratifications ( $\beta = 0.115$ ,  $p < 0.001$ ) and utilitarian gratifications ( $\beta = 0.074$ ,  $p < 0.05$ ), were significant. Therefore, H1b and H2b were supported. As the direct relationship between personalization and buying intention was also significant and pointed in the same direction ( $\beta = 0.198$ ,  $p < 0.01$ ), we can conclude that hedonic gratifications and utilitarian gratifications display a complementary mediating effect (Zhao et al., 2010).

**Table 7: Results of Indirect Effects**

Hyp oth.	Indirect Paths	Direct Paths		Indirect Paths		Remarks
		$\beta$	p-value	$\beta$	p-value	
H1a	INTER $\rightarrow$ HED $\rightarrow$ BI	0.137	0.100	0.146	0.000	Full mediator
H1b	INTER $\rightarrow$ UTN $\rightarrow$ BI	0.137	0.100	0.085	0.003	Full mediator
H2a	PERS $\rightarrow$ HED $\rightarrow$ BI	0.198	0.009	0.115	0.000	Complementary mediator
H2b	PERS $\rightarrow$ UTN $\rightarrow$ BI	0.198	0.009	0.074	0.021	Complementary mediator
H1c	VIS $\rightarrow$ HED $\rightarrow$ BI	0.045	0.412	0.066	0.000	Full mediator
H2c	VIS $\rightarrow$ UTN $\rightarrow$ BI	0.045	0.412	0.026	0.044	Full mediator

The coefficient of determination ( $R^2$ ), which indicates the explained variance of each endogenous latent variable, was used to assess predictive accuracy of the model (Hair et al., 2019). Interactivity, personalization, and visibility accounted for 68.2% of the variance in hedonic gratifications and 52.6% of the variance in utilitarian gratifications. Hedonic and utilitarian gratifications accounted for 30.1% of the variance in buying intention. These values exceeded the 10% threshold recommended by Hair et al. (2019), demonstrating substantial predictive power of the model.

#### 4.4 The Moderating Effect of Social Media Influencer

H3a and H3b predicted the interaction between perception of SMI and hedonic gratifications, and between perception of SMI and utilitarian gratifications. Table 8 summarizes the multiplication variables between these constructs. The interaction term between the perception of social media influencers and hedonic gratifications showed a significant and positive relationship with consumers' buying intention ( $\beta = 0.139$ ,  $p < 0.05$ ). This indicates that higher consumer perception of digital celebrities strengthened the effect of hedonic gratifications on buying intention, supporting H3a. However, while the interaction term between the perception of social media influencers and utilitarian gratifications was negative, it was not statistically significant ( $\beta = -0.059$ ,  $p > 0.05$ ). Therefore, H3b was not supported.

**Table 8: Results of Moderation Effects**

Hypothesis	Moderation Effects	$\beta$	Standard Errors	t-value	P-value	Remark
	HED $\rightarrow$ BI	0.320	0.079	4.026	0.000	
H3a	PSM x HED $\rightarrow$ BI	0.139	0.069	2.013	0.044	Supported
	UTN $\rightarrow$ BI	0.189	0.077	2.450	0.014	
H3b	PSM x UTN $\rightarrow$ BI	-0.059	0.059	0.955	0.340	Not supported

Based on the empirical analysis findings, it can be concluded that interactivity, personalization, and visibility exhibit positive effects on hedonic gratifications, indicating that livestreaming sessions offering consumers opportunities for interactivity, personalization, and visibility can enhance their positive emotional response. Similarly, these three factors significantly boost utilitarian gratification, showing that social and technical enablers enhance consumers' perception of information value of the livestreaming. Both hedonic and utilitarian gratification positively influence buying intention, with hedonic gratification showing a slightly stronger effect. This suggests that consumers are more likely to make purchases when they find the livestreaming entertaining. Further analysis reveals that hedonic and utilitarian gratifications fully mediate the relationship between interactivity, visibility, and buying intention, while partially mediating the relationship between personalization and buying intention. Additionally, perception of social media influencers moderates the effect of hedonic gratification on buying intention, suggesting that consumers who view live streamers as credible references are more inclined to purchase recommended products.

## 5. Discussion and Recommendations

### 5.1 Discussion of the Findings

This study presents a model that explores how influencing factors derived from socio-technical theory—namely interactivity, visibility, and personalization—affect purchase intention within the livestreaming commerce context. Notably, it expands existing literature by integrating the U&G theory to examine the mediating roles of utilitarian and hedonic gratifications. The empirical study results validated most of our hypotheses, demonstrating the model's appropriateness in livestreaming commerce research.

First, the structural model results highlight that personalization has both direct and indirect effect on purchase intention through the mediating role of hedonic gratifications and utilitarian gratifications. The direct effect of personalization suggests that greater personalization during livestream sessions strengthens consumers' intention to purchase. This finding builds upon prior work of Tan (2024), implying that when streamers tailor their respond with personalized queries to individual viewer needs, it increases the

likelihood of purchase. Moreover, the study confirms that utilitarian and hedonic gratifications mediate the relationship between personalization and purchase intention. Viewers who perceive useful information through personalized communication with streamer that enrich their knowledge about a product, thus enhancing their intent to buy (Zhang et al., 2022). Simultaneously, receiving real-time, personalized engagement can evoke enjoyment and emotional satisfaction (Lv et al., 2018), further reinforcing the purchase intention.

Second, while the direct effect of interactivity and visibility on purchase intention were not statistically significant, the indirect relationship of these two enablers and purchase intention, via hedonic gratifications and utilitarian gratifications, were statistically and positively significant. This result contradicts previous findings that demonstrated direct relationships between interactivity and purchase intention (Ma, 2021; Li et al., 2025), as well as between visibility and purchase intention (Liu & Zhang, 2024). This inconsistency may be explained by perceived risk during livestream viewing (Song & Liu, 2021). While livestream shopping enhances interactivity and visibility, it does not necessarily reduce perceived risk, which continues to be a critical barrier to purchase intention. Consumers may question the credibility of the information presented or view streamers as potential sources of uncertainty, thereby limiting the impact of rich media and interactive features (Song & Liu, 2021). Another possibility suggested by Wang et al. (2025) is this discrepancy may arise because consumers often watch livestreams for entertainment or product exploration, and only engage in interaction when they are genuinely interested in making a purchase.

Lastly, the moderating analysis reveals that the perception of social media influencers positively moderates the relationship between hedonic gratifications and purchase intention in livestreaming contexts. However, it exerts an insignificant negative moderating effect on the relationship between utilitarian gratifications and purchase intention. Sweller (1988) cognitive overload theory explains that when viewers are presented with an overwhelming amount of information, it can exceed their limited processing capacity, hindering their ability to retain information and make informed decisions. In livestream settings, cognitive overload may occur as influencers who are considered expertise in this field rapidly share product details, promotions, and engage in continuous interactions. As a result, streamers who focus heavily on delivering informational content may inadvertently reduce user engagement, such as fewer comments and virtual gifts (Chang et al., 2024; Zhang et al., 2023; Zhang et al., 2022). Additionally, it can be explained based on the heuristic-systematic model of information processing, which suggests that individuals often rely on low-effort strategies when evaluating information (Eagly & Chaiken, 1993). In this context, perceptions of SMI may function as heuristic cues that simplify decision-making (Ma, 2021).

## 5.2 Theoretical Implications

The present study makes several noteworthy contributions to the literature.

First, the research extends the current literature by applying the socio-technical systems theory to the livestreaming commerce context, a perspective often overlooked in previous studies. While past research has tended to examine technical or social components in isolation, this study integrates both the technical subsystem and the social subsystem to provide a more holistic understanding of how these enablers jointly shape consumer experiences and intentions in livestream settings. Furthermore, while socio-technical enablers have been investigated for their impact on customer engagement (Ma, 2024), customer stickiness (Chang et al., 2024), continuance intention (Zhang et al., 2022); research on their impact on customer intention is still limited. This study confirms the integrative effects of interactivity, personalization, and visibility on consumers' buying intention in livestreaming. Hence, it contributes to the body of knowledge on socio-technical systems theory regarding possible consumer responses to social and technical enablers.

Second, unlike the majority of prior studies that emphasize the mediating role of trust in the relationship between socio-technical enablers and consumer behavior (e.g., Chang et al., 2024; Zhang et al., 2023; Zhang et al., 2022), this study adopts the U&G theory to explore the mediating effects of utilitarian and hedonic gratifications. By doing so, it deepens the theoretical understanding of how consumers psychologically respond to livestream features—beside the trust-centric lens. The research results verified the full mediating effect of hedonic gratification and utilitarian gratification on the relationship between interactivity, visibility, and buying intention, and the partial mediating effect of these factors on the relationship between personalization and buying intention. Thus, this study not only confirms the relevance of U&G theory in livestream commerce but also enriches the literature on this framework by providing an understanding of the antecedents (i.e., social and technical enablers) and consequences (i.e., buying intention) of functional (utilitarian) and emotional (hedonic) gratifications in livestreaming contexts.

Third, given the increasing prominence of influencers in shaping online consumer behavior, this research provides insight into how social media influencers perception strengthens the link between gratifications and purchase intention. Numerous studies have confirmed the influence of SMI on consumer behaviors (Chung & Cho, 2017; Djafarova & Rushworth, 2017), this current study also extend the understanding the moderating role of SMI in the livestream context (Ma, 2021). The examination of the mediating effects of hedonic gratification and utilitarian gratification, combined with the analysis of SMI's contingency effect, provides a comprehensive understanding of the mechanisms and boundary conditions in the relationship between social and technical enablers and consumers' purchase intention.

Fourth, this study adds contextual depth to the existing body of research by focusing on Vietnam, a fast-growing Southeast Asian market in the livestream commerce sector. While much of the prior literature has concentrated on China or Western contexts, the cultural and technological dynamics of Southeast Asia remain underexplored. By providing empirical evidence from Vietnam, this study highlights regional distinctions in consumer

responses to livestream shopping. This contribution is especially relevant as livestreaming commerce continues to expand across emerging markets.

### *5.3 Practical Implications*

This study offers several key practical implications for livestream commerce platforms, marketers, and content creators aiming to enhance consumer purchase intention.

The findings underscore the pivotal role of personalization in livestream environments. Streamers should tailor content and interactions to individual viewer needs—for example, by addressing specific questions or offering personalized recommendations. Such strategies not only provide relevant product information but also foster a sense of emotional connection and enjoyment, thereby increasing the likelihood of purchase.

While, interactivity and visibility did not directly impact purchase intention, they significantly influence it indirectly through gratification mechanisms. This suggests that interactive features such as live chats, polls, and product demonstrations, as well as high-quality visual content, should be strategically employed to stimulate consumers' informational and emotional needs. Rather than expecting these features alone to drive purchases, practitioners should focus on how they enhance user experience which ultimately motivates consumer action.

Despite increased interactivity and visibility, consumers may still question the credibility of information or the intentions of streamers. As a result, streamers and brands should adopt transparent communication, provide verifiable information, and avoid overloading viewers with excessive content. Simplified messaging can reduce or break down the livestream into multiple sessions, helping consumers process information more efficiently and make informed decisions.

The study confirms that the perception of influencer moderates the relationship between hedonic gratifications and purchase intention. Influencers serve as heuristic cues, especially when consumers engage in low-effort information processing. Therefore, partnering with influencers who are perceived as authentic, trustworthy, and entertaining can amplify emotional engagement and foster spontaneous purchase behavior.

### *5.4 Limitations and Future Research*

This research has several limitations that should be addressed by future studies. First, while the self-report cross-sectional survey approach has advantages and is common in empirical research, it is subject to social desirability bias. Future research should consider other methods, such as in-depth interviews or longitudinal studies, to better assess consumer behavior. Second, our study highlighted the moderating effect of perception of social media influencer on the link between hedonic gratification and consumers' buying intentions. There may be other moderators influencing this relationship. Thus, future research could explore additional potential moderators, such as self-congruency. Third, this study develops and validates the theoretical framework using data from an emerging country.

The generalizability of our findings should be examined in other contexts, such as developed countries or other emerging economies. Fourth, there is scope for future studies to consider other constructs that are drawn from other underpinning theories, such as Elaboration Likelihood Model, Technology Acceptance Model, or source credibility theory. These theories have been widely cited in the influencer marketing literature. The integration of constructs from these theories and social-system theory, and the U&G theory may offer a better understanding of consumers' buying intention in livestreaming context from multiple perspectives. Finally, this study focused on individuals who purchased home appliances through TikTok. Future research could conduct cross-platform studies or test the proposed model with different product categories, such as fashion or food products.

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