



Relationship between Content Characteristics, Immersion, and Customer Purchase Intention in Live-streaming Commerce

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Abstract

Purpose: This study examines the relationship between content characteristics and customer viewing and purchase intention in live-streaming commerce. **Research design, data, and methodology:** For this purpose, seven independent factors such as entertainment, artistry, storytelling, informativity, interactivity, reliability, and technicality are extracted based on previous literature. The viewing intention and purchase intention are adopted as dependent factors. The role of 'immersion' is investigated as a mediating factor between the independent and dependent factors. **Results:** The results showed that entertainment, artistry, technicality, and reliability significantly affected immersion, and immersion affected viewing intention and purchase intention. Immersion was found to play a mediating role between content characteristics and consumer viewing and purchase intention. **Conclusions:** The results indicate that the content characteristics not only attract customers but also affect their immersion, viewing intention, and purchase intention directly or indirectly in the live-streaming commerce sector.

Keywords: Content characteristics, live-streaming commerce, immersion, customer purchase intention, electronic commerce

JEL Classification Code: D80, D83, M30, M37, O32

1. Introduction^a

Live streaming has emerged as a widely adopted platform for sales, particularly in recent years. Live streaming, also known as live broadcasting, is a prevalent form of user-generated content (Hu et al., 2017). Live streaming represents a novel combination of various media forms and comprises a streamer who disseminates real-time video content, including but not limited to gaming, performance demonstrations, vlogging, and other similar content. (Hu et

al., 2017; Hamilton et al., 2014). Live streaming enables the facilitation of interactions and connections between streamers and viewers, as well as among viewers themselves, through the provision of comment sections and message-based discussion forums on the streamer's channel (Hamilton et al., 2014). Conventional e-commerce primarily employs text, images, and other static details to depict goods, which may impede consumers' ability to fully comprehend the description and quality of the product. Conversely, live streaming e-commerce leverages the dynamic nature of video content to provide a more immersive and experiential

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understanding of the product, thereby enhancing the customers' ability to perceive the product in real-time and to have a digital sensation of touch. Live streaming platforms enable broadcasters to establish and grow their ventures, which may include revenue streams such as viewer contributions, payments, personal brand merchandise sales, and a portion of the platform's advertising revenue, through the dissemination of live content (Zhao et al., 2018a; Zhang & Liu, 2015). The 2020 Singles' Day advance sale on Taobao Live, which lasted for less than 30 minutes, generated an unprecedented transaction value of \$7.5 billion (Arora et al., 2021). An advantage of live-streaming commerce is the ability for customers to observe the properties of products, such as the fabric, color, design, and potential pairings, in a real-time setting (Cai & Wohn, 2019). The rapid expansion of the industry has been propelled by the significant increase in the number of customers engaging in live-streaming e-commerce (Clement Addo et al., 2021; Gandhi et al., 2021). Additionally, live streaming allows companies to interact with their audience in innovative and unique ways. Live streaming represents a cost-effective method of enhancing marketing strategies, fostering engagement with potential customers, and cultivating loyal customer bases. Prior research on the appeal of various new online interactive media has highlighted the importance of the perceived value of the content for audiences. Providing compelling content has been found to increase audience attention and engagement (Li, 2018).

The perceived value of the content is enhanced and becomes more engaging and attractive to the audience when the content characteristics are diverse and valuable. However, the extent to which the content characteristics of live streaming affect customer viewing and purchase intention is yet to be fully understood. To address this knowledge gap, this study aims to investigate the interactive features of live-streaming content that determine viewer viewing and purchase intention. The research on content characteristics of live-streaming commerce is still in its nascent stages. The primary objective of this study is to fill the knowledge gap regarding the factors of content characteristics of live streaming that influence viewers' and buyers' desire to view and purchase. To achieve this, a conceptual framework is developed to examine the relationship between content characteristics and viewing and purchase intention in live streaming commerce. An empirical study is undertaken using survey data collected from a questionnaire survey. Multiple regression analysis is employed to measure and analyze the relationship between content characteristics and customer viewing and purchase intention, with consumer immersion serving as a mediator. The research findings provide both theoretical and practical implications and serve as a model for further investigation

in the field of live-streaming commerce, ultimately helping to establish it as a financially viable business model.

2. Research Background

It is challenging for conventional firms and e-commerce entities to contend with the formidable platform for product advertising, sales, and promotion that instantaneously reaches a vast audience. Consequently, the rate of business expansion will probably intensify. It is crucial to investigate the operational mechanisms of live streaming sellers' approaches as it represents a more fluid and participatory platform in comparison to conventional online commerce. One of the paramount determinants in enhancing the viewership and revenue of live streaming is its compelling and unique content features, which account for its widespread appeal. It is essential to comprehend the live-streaming content attributes that result in trust and purchase intent for the advancement of business, as marketing-focused live-streaming content concepts and methods significantly contribute to a critical extent. In academic circles, there has been a surge of attention devoted to exploring the impact of Live-Streaming Commerce Events on customers. Earlier studies on the factors that influence customer purchasing behavior in live-streaming commerce have primarily focused on the consumer-side considerations, such as trust and perceived product ambiguity, as well as the streamers' characteristics, such as physical appearance and values (Lu & Chen, 2021; Xu et al., 2020). However, prior research has a deficiency in its examination of the influence of live-streaming content characteristics on viewership and purchasing. Regarding customer perception and purchase intention in live-streaming commerce, there remains a scarcity of empirical studies on the effect of content characteristics. Despite the limited number of studies that have addressed this issue, the choice to focus on content characteristics of live streaming in this study may seem inconsequential, however, this is not the case. This study focuses on content characteristics rather than other aspects of live streaming, which have not been thoroughly explored and analyzed in previous research. Consequently, to delve into the factors that impact the effectiveness of live streaming selling (i.e., the seller's content strategies), this study incorporates entertainment, artistry, storytelling, informativity, interactivity, technicality, and reliability as independent variables. The analysis aims to examine the relationship between these variables and customer viewing intention and to consider immersion as a mediating factor that affects purchasing behavior. This study aims to examine the impact of consumer views and buying intentions on live-streaming commerce platforms by investigating the content characteristics of the live-streaming platform and drawing

upon established research on consumer purchases. The results of this study could have practical implications for businesses and organizations operating in the rapidly growing live-streaming sector. The paper is structured as follows: we first provide an overview of the live-streaming platform used for the study, followed by a review of relevant literature on the content characteristics and immersion of live-streaming platforms on the internet. Then, we outline the data collection process and methodologies to assess the influence of live-streaming content characteristics on customer viewing and purchase intention in live-streaming commerce. Finally, we contextualize our results within the existing body of literature.

Previous research has demonstrated that the accessibility, attractiveness, and immersive nature of live-streaming make it more appealing to consumers compared to other forms of online shopping (Cai et al., 2018; Liang, 2011; Haimson & Tang, 2017). There is an emerging body of evidence suggesting that consumers are attracted to live-streaming purchases due to their utilitarian value (such as real-time communication and information), hedonic value (experiencing pleasure), and social value (sense of belongingness). These factors can enhance customers' attitudes and actions towards sellers or products, thereby influencing buying decisions and ultimately increasing purchase intention (Ang et al., 2018; Nah & Siau, 2019; Wongkitrungrueng & Assault, 2020). In the context of e-commerce, consumers' purchasing decisions are impacted by not just the quality of the end product, but by various other factors, such as the sales environment and how the content is presented (Wongkitrungrueng et al., 2020). Live streaming can provide viewers with numerous benefits, including the fulfillment of needs, reduction of loneliness and psychological distance, minimization of perceived risk, enhancement of value perception and self-connection with the streamer, and increased willingness to watch and make purchases (Ma, 2021; Yu et al; 2018; Xue et al 2020; Zhou et al; 2019; Corrêa et al., 2020; Kim & Kim, 2020).

2.1. Literature Review

2.1.1 Content Characteristics

Consumers often prefer live streaming over traditional online shopping due to its interactive, responsive, and entertaining nature (Liang, n.d.; Haimson & Tang, 2017; Cai et al., 2018)Cai et al., 2018). Live-streaming broadcasts offer a diversity of content to viewers, including but not limited to games, discussions, culinary experiences, lifestyle, and entertainment (Gao et al., 2021; Chen et al., 2021). Live-streaming allows real-time interaction with text, audio, and visual components, providing consumers with trustworthy information from multiple perspectives to assess a product's performance, including price, quality, and characteristics

(De Wit et al., 2020; Zhou et al., 2018). Several recent studies have demonstrated that the content category of a video has a significant impact on user behavior, including viewing, liking, and commenting (Khan & Vong, 2014; Lange, 2007). The level of interest generated by the content is positively correlated with the degree of attention and engagement it receives (Li, 2018). The motivations of online shoppers encompass both utilitarian and hedonistic considerations (Childers et al., 2001). In live-streaming commerce, content is one of the keys to success. Sellers use persuasive techniques like incentives and group events to enhance the viewing experience, make sales more entertaining, and stand out from competitors (Andersen & Buvik, 2002; J. Z. Zhang et al., 2016). Consumers are more likely to buy a product they have a favorable disposition towards. To sustain engagement during live-streamed product suggestions, celebrities should provide not just product information, but also entertainment activities, games, flash sales, and incentives to encourage interaction and reduce boredom (Park & Lin, 2020). According to the persuasion-based approach (Wongkitrungrueng et al., 2020), sellers use rewards like cash and gifts to incentivize participation in games, which increase viewer engagement and prolong watch times, creating a more lively selling environment. Additionally, the distribution of coupons and discounts during live streaming has been demonstrated to trigger impulsive purchases among consumers (Chen et al., n.d.). Seller verbal attractiveness also affects user purchase behavior (Aghekyan-Simonian et al., 2012). It is said that price sometimes has a limited impact on purchase intention (Chandrurangphen et al., 2022). Watching intention can lead to customer purchase intention over time, as viewers are more likely to make purchases once they establish a habit of watching. The shopping process and product attributes, pricing, and promotion have no impact on watching intention, as they only affect buyers (Ho et al., 2022). The live-streaming can be perceived by viewers as both entertaining and informative, leading to consideration for purchasing (Woodcock & Johnson, 2019). The selling price that is lower than the market rate serves as an incentive that draws consumers to place orders and experience the thrill and excitement of the live broadcast (Lee & Chen, 2021).

Some authors say that the consumers can be categorized as either "problem solvers" or those seeking "entertainment, escapism, excitement, sensory stimulation, and enjoyment (Hirschman & Holbrook, 1982)." The live-streaming channel offers compelling content features that engender trust among viewers, such as inviting a satisfied customer onto the show and providing personal testimonials about the efficacy of the products or services. This helps to draw viewers to the channel.

2.1.2 Viewing and Purchase Intention

Consumer behavior can be represented by their purchase intention, which is the disposition to buy products and services. This reflects the consumer's willingness to make a purchase. It's believed that a consumer's beliefs and attitudes towards a specific product are likely to determine their future purchasing behavior (Engel et al., 1995). The success of a company is significantly impacted by Purchase Intention (PI), which is a manifestation of a consumer's positive outlook and beliefs toward specific products, leading them to consider making a purchase (Agmeke et al., 2019). The live-streaming offers exclusive marketing possibilities due to its one-of-a-kind features. Numerous studies have shown that the customer experience has a considerable effect on a consumer's purchase intention and even encourages repeat purchasing behavior (Rose et al., 2011; Ma et al., 2022). The willingness of a consumer to purchase products or services is referred to as purchase intention. This represents their tendency to make a purchase. A consumer's attitudes and beliefs toward a specific product are likely to influence their future purchasing behavior (Engel and others, 1995). Scholars in academia have emphasized that elements associated with the perception of value, such as entertainment, social interaction, information, and image, can directly influence a consumer's purchasing behavior (Hu & Chaudhry, 2020; Chen & Lin, 2018).

Table 1: Demographics of Respondents

Content Charact eristics	Description	References
Entertai nment	Increasing audience engagement and earn higher tips by incorporating entertaining and stress-relieving elements	Spielmann (2014), Eisend (2009), Imlawi and Gregg, (2014), Hou et al. (2019), Sjöblom and Hamari (2017)
Artistry	Artistic values, charms, and techniques in broadcasting, content, story, ambiance, and the streamer's performances	Chandrruangphen et al. (2021), Hu et al. (2017)
Storytelling	Designing the content for sales with stories. Storylines help consumers access and increase interest.	Hamby et al. (2015) Hamby and Brinberg (2016), Schembri and Latimer (2016)
Informati vity	Detailed info on product, delivery, installation, and practical use lead to customer purchase intention.	Lim et al. (2020), Darian et al. (2001), Welbourne and Grant (2016), Sun et al. (2019)
Interacti vity	Quick response to customer inquiries, telepresence, social presence, and proper	Gummerus et al. (2004), Zeithaml et al. (2002)

	information.	Venkatesh and Johnson (2002)
Reliabilit y	Reliability is improved through the chances of evaluating price, quality, and features through viewing.	Zhou et al. (2018)
Technica lity	Technology features for interactions, visibility, meta-voicing, guidance shopping, etc.	Sun et al. (2019)
Immersion	Improved flow and immersion experiences increase the likelihood of shopping.	Haimson and Tang, (2017), Cai et al. (2018), Van Noort et al. (2012)
viewing intention	Regular audience-broadcaster interactions are important for attracting and retaining viewers.	Hamilton et al. (2014)
Purchase intention	Intention to purchase specific products from a provider.	Rose et al. (2011), Ma et al. (2022)

2.2. Building Hypothesis

The purpose of this study is to investigate the critical factors of content characteristics that influence customer viewing and purchase intention in live-streaming commerce. For this purpose, the study will delve into the impact of various factors such as entertainment, artistry, storytelling, informativity, interactivity, Q&A sessions, product demonstration, and customer feedback.

2.2.1 Entertainment

The aim is to evoke happiness, and interest, or provide a break from reality and relieve stress by allowing the audience to temporarily forget their concerns (Bosshart & Macconi, 1998). "I delight in browsing and envisioning the day when I'll have the financial means to make purchases. Shopping is an exciting expedition" (Sherry Jr, 1990). This "exciting expedition" demonstrates shopping's potential for entertainment and enjoyment, emphasizing the experience itself rather than just the end result (Hirschman & Holbrook, 1982). Jeff Bezos of Amazon.com says making the online shopping experience more enjoyable is one key to his success, in line with broader web trends (Tribune, 1999). It mainly pertains to individuals who experience feelings of relaxation, relief, enjoyment, interest, and joy while watching live programs (Chen et al., 2014) (Hou et al., 2019). Humor appeals have a positive impact on the intention to keep watching all types of live streaming, according to research. Additionally, users are found to tune into live streaming in pursuit of entertainment (Kotera et al., 2022; Lim & Kim, 2017; Hilvert-Bruce et al., 2018). Research has shown that social media users seeking entertainment feel a greater sense of social presence and

immersion while watching live streaming, aligning with previous studies (Chen et al., 2022). The study identified five dimensions of use and satisfaction for live-streaming users and explored their motivations for watching, including entertainment, social interaction, filling idle time, habit, and perceived usefulness in meeting psychological needs (Chen et al., 2022). Survey shows that most customers are attracted to live streaming for its humor and fun aspect. Humor can create positive emotions and arousal (Lammers et al., 1983). Previous literature has suggested that humor can serve as a reward that influences persuasion (Markiewicz, 1974). Additionally, humor can trigger arousal, leading to a positive impact (Lammers et al., 1983). Humor appeals have a positive impact on the intention to continuously watch all types of live streaming (Hou et al., 2019). Imlawi & Gregg, 2014; Hou et al., 2019) Humor appeals positively affect social network engagement and intention to continue watching by fulfilling viewers' desire for enjoyment and emotional stress release. Thus, we propose that the influence of humor on consumer behavior and purchase intention in live streaming should be further investigated.

H1a: Entertainment characteristics of content will positively affect immersion.

H1b: Entertainment characteristics of content will positively affect viewing intention.

H1c: Entertainment characteristics of content will positively affect customer purchase intention.

2.2.2 Artistry

Consumers who engage in live-streaming shopping are often drawn in by the immersive surroundings, which include elements such as the design, layout, and decor of the virtual shopping environment, enhancing their level of involvement in the context (Zhang et al., 2020). The immersive environment created by live-streaming is capable of attracting attention and arousing the interest of viewers, leading to greater engagement and participation (Sun et al., 2019). The study demonstrates that a positive emotional state, as a result of perceived enjoyment, is influenced by factors such as attractiveness and expertise (Lee & Chen, 2021). Previous studies have primarily considered the expertise or physical appearance of the live streamers as direct factors impacting consumer purchase intention (Zhao et al., 2018). Live streaming often involves a separate camera view of the artist's face, allowing for interaction between the streamer and viewers through live text chat. The streamer can respond to comments and questions. Many artists add elements to their videos such as names and social media handles or show donations and subscriptions. The focus is on social interaction and includes a casual conversation between the streamer and viewers.

Performances in live streams are often musical or theatrical, with a relaxed or spontaneous feel. The streamer's characteristics and self-presentation through unique images attract fans, and their followers interpret these symbolic meanings during their interactions (Li, 2018). A viewer may be drawn to a streamer and hold admiration for their attitudes, values, special talents, or even their individuality. (Hu et al., 2017). The previous study suggests that it is the streamers' personalities that play a crucial role in determining viewers' intention to remain engaged. (Hamilton et al., 2014). Live streaming can be viewed as a means of personal branding, where the broadcaster creates a distinct online identity to attract and retain followers. (Tang et al., 2016).

H2a: Artistry characteristics of content will positively affect immersion.

H2b: Artistry characteristics of content will positively affect viewing intention.

H2c: Artistry characteristics of content will positively affect customer purchase intention.

2.2.3 Storytelling

Storytelling refers to the act of delivering information to customers through interesting stories (Xu et al., 2021; Zhou et al., 2021). Live streamers can use narratives to deliver intense messages and information to customers, which can increase customer immersion and purchase intention (Zhou et al., 2021). Revitalizing brands, products, places, and heritage through storytelling is a highly effective marketing strategy that can improve customer loyalty (Lee & Shin, 2015). According to theory, immersion in a story increases the likelihood of changing attitudes and behaviors in alignment with its message (Green & Brock, 2000). Scholars in psychology (Green & Brock, 2000), communication (Hinyard & Kreuter, 2007), and marketing (Escalas, 2007). The power of narratives to influence is widely recognized, as they sway through the portrayal of characters in a setting and by creating cause-and-effect connections. A story or narrative refers to the unfolding of events that result in a change in the characters' circumstances, moving them from their original state to a later outcome (van Laer et al., 2014). Transmedia storytelling engages consumers in a comprehensive and interactive experience by spreading elements of a fictional story across various platforms over time and space. Through transmedia storytelling, live-streaming experiences are enriched with unique narrative storylines, fostering a sense of social immersion for the viewer (Li et al. 2020; Sjöblom et al. 2019). This type of involvement is characterized by getting transported to the story world and relating closely to the characters. Based on the evidence presented earlier, we hypothesize that

H3a: Storytelling characteristics of content will positively affect immersion.

H3b: Storytelling characteristics of content will positively affect viewing intention.

H3c: Storytelling characteristics of content will positively affect customer purchase intention.

2.2.4 Informativity

Live-streaming commerce is a novel approach to selling where an anchor utilizes live streaming on various online platforms to showcase products engagingly and interactively. The anchor provides consultations, responds to questions, and facilitates the sales process (Hilvert-Bruce et al., 2018). Information seeking of live streaming (Hilvert-Bruce et al., 2018; Chen & Chang, 2019) The sharing of personal information, such as fashion, food, beauty, tourism, and current events through live shows or community platforms, has been recognized as a widespread cognitive motivator. This highlights the influence of leadership and public opinion by showcasing the power it holds (Lin et al., 2018). For instance, live streaming is used by streamers to demonstrate content tutorials or give comprehensive product information to the audience (Li et al., 2021). The intention to persist in watching live streams strengthens as people perceive more benefits that can be derived from it (Chen & Lin, 2018). The service of guiding shoppers to locate the desired products is known as seller shopping guidance, and it is provided by salespersons who possess the necessary knowledge (Darian et al., 2001). Before making a purchase, consumers tend to seek information about a product to ensure it meets their expectations, as well as to gather as much information as possible to decrease uncertainty during the purchasing process (Dowling, 1986). Based on the evidence presented earlier, we hypothesize that

H4a: Informational characteristics of content will positively affect immersion.

H4b: Informational characteristics of content will positively affect viewing intention.

H4c: Informational characteristics of content will positively affect customer purchase intention.

2.2.5 Interactivity

Products are showcased in a lively and interactive manner in live-streaming commerce (Hilvert-Bruce et al., 2018). Additionally, individuals tune in to streams to experience social connections with online groups and build strong bonds with individuals who are far away (Hamilton et al., 2014). The interaction between spectators in the chat feature enhances the feeling of social presence among viewers (Kim, 2015) Therefore, it motivates them to engage in and fully immerse themselves in the exchange of information (Li et

al., 2018). Interaction increases the intention to continuously watch in all forms of live streaming, except for the live streaming of events (Hou et al., 2019). Moreover, interaction can enhance the perceived worth of the live stream as perceived by viewers (Bao et al., 2016). The interaction quality is elevated through the high efficiency and effectiveness, mutual communication, and active control perceived by viewers, leading to positive attitudes (Chiang & Hsiao, 2015). Live participation satisfies the audience's need for socialization and entertainment, resulting in identification, focused attention, sharing, and purchasing behavior (Park & Lin, 2020). Customers may observe and passively experience a product being examined by a streamer, resulting in a form of vicarious interaction (Horton & Strauss, 1957). Interactions with internet celebrities known as streamers on social media platforms provide customers with in-depth product information and insights (Bao et al., 2016). Studies suggest that viewers tend to develop a stronger emotional connection and identification with media personalities who provide a more immersive experience through parasocial interaction (Brown & Basil, 2010; Brown, 2015; (Frederick et al., 2012). Live-streaming shopping creates a strong sense of telepresence, making customers feel comfortable. Interactivity with media personalities through social media increases emotional attachment and engagement, impacting consumer behavior. Based on the evidence presented earlier, we hypothesize that

H5a: Interactivity characteristics of content will positively affect immersion.

H5b: Interactivity characteristics of content will positively affect viewing intention.

H5c: Interactivity characteristics of content will positively affect customer purchase intention.

2.2.6 Technicality

Live-streaming activities offer immediate opportunities and robust technical support for self-expression (Tang et al., 2016). We believe that technical features are crucial for facilitating information sharing and social interaction, which are key to new forms of online commerce (Grange & Benbasat, 2010). Purchasing through live streaming is a novel method of shopping that is enabled not only by conventional shopping features but also by innovative technological features (Cai & Wohn, 2019). Furthermore, technology features such as interactions, visibility affordance, meta-voicing affordance, and guidance shopping affordance are considered a factor in shaping consumers' purchase intentions through live-streaming e-commerce (Sun et al., 2019). Currently, businesses are utilizing live streaming technology, due to its real-time interaction characteristics, to enhance engagement and drive

higher sales through online marketing (Hu & Chaudhry, 2020). Vicarious trialability in e-commerce allows customers to simulate product experience through live streaming without physical interaction or sensory inputs (Cai & Wohn, 2019; (Chen et al., n.d). Consumers want the benefits of interactivity, media flexibility, and convenience when accessing and manipulating product information, which are not available through traditional shopping channels (Hoffman & Novak, 1996). Based on the evidence presented earlier, we hypothesize that

- H6a:** Technicality characteristics of content will positively affect immersion.
- H6b:** Technicality characteristics of content will positively affect viewing intention.
- H6c:** Technicality characteristics of content will positively affect customer purchase intention.

2.2.7 Reliability

Live-streaming offers various capabilities and features that enable real-time interaction between consumers and streamers, providing accurate information on various aspects of a product, and thereby allowing consumers to effectively evaluate its price, quality, and attributes (Zhou et al., 2018; De Wit et al., 2020). Live Video Streaming (LVS) can offer comprehensive product information through the use of visual, auditory, and movement elements (Yen, 2018). As a result, the information provided during live streaming becomes more trustworthy and is enriched with a wealth of content (Hsu et al., 2013). The realism, visual appeal, and interactive nature of live streaming bring consumers closer to cross-border products, creating a sense of proximity in both space and time (Hu & Chaudhry, 2020). In live streaming, the professional proficiency of the streamers enhances the belief of consumers that the information being presented is more credible compared to the information found on traditional e-commerce websites (Hu & Chaudhry, 2020). Based on the evidence presented earlier, we hypothesize that

- H7a:** Reliability characteristics of content will positively affect immersion.
- H7b:** Reliability characteristics of content will positively affect viewing intention.
- H7c:** Reliability characteristics of content will positively affect customer purchase intention.

2.2.8 Immersion and Viewing Intention

Hong and Kwon's study indicate that immersion has a positive impact on a viewer's intention to watch personal broadcasting (Hong & Kwon, 2019). Specifically, their research found that immersion has a positive influence on the viewer's intention to watch. According to (Yim et al.,

2017), customers in a virtual shopping environment are more likely to feel pleasure when they are fully immersed. This feeling of pleasure can directly impact their purchase behavior, as highlighted by (Chen et al., 2017). Live streaming shopping's vividness enhances its ability to entice customers, leading to a sense of immersion among the audience (Yim et al., 2017). Immersion is a very important factor in explaining viewing and purchase intention in commercial activities using new media (Joo, 2022; Sun et al., 2019). In particular, the immersive experience mediates between the characteristics of content provided by live-streaming commerce streamers and purchase intention. Live streamers provide attractive and interesting content for customers to immerse themselves in live broadcasting, and customer immersion becomes stronger as they fall into the content provided by live streaming commerce streamers (Joo, 2022; Sun et al., 2019). Viewers' immersion is a mediating factor that increases viewing intention and purchase intention, so it is necessary to verify the mediating effect of immersion. Based on the evidence presented earlier, we hypothesize that

- H8:** Immersion will positively affect viewing intention.
- H9:** Immersion will positively affect customer purchase intention.
- H10:** Viewing intention will positively affect customer purchase intention.
- H11:** Immersion will play a mediating role between content characteristics and purchase intention.

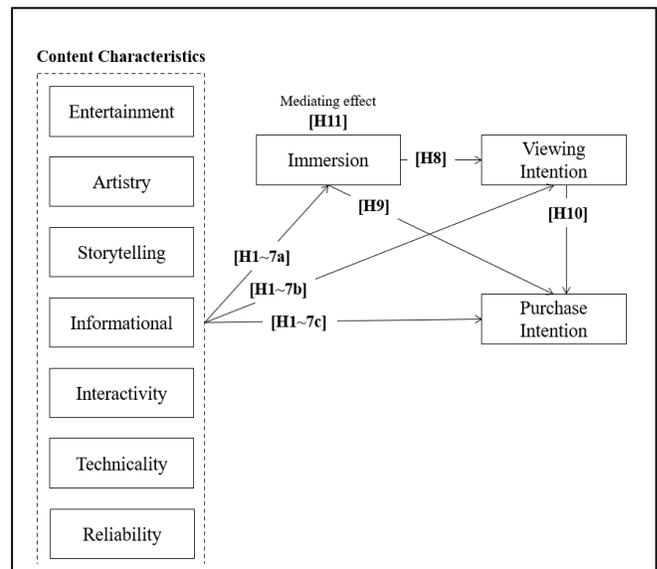


Figure 1: Research Model

2.3. Research model

This study aims to investigate the relationship between content characteristics, immersion, viewing intention, and

purchase intention in live-streaming commerce. Specifically, it seeks to identify how content characteristics such as entertainment, artistry, storytelling, informativity, interactivity, reliability, and technicality impact immersion, viewing intention, and purchase intention. The model proposes that immersion will have a positive effect on customer purchase intention and that viewing intention will also positively affect customer purchase intention. Furthermore, the model suggests that immersion will mediate the relationship between content characteristics and purchase intention. The study will collect data through a questionnaire survey method and perform multiple regression analysis to test the hypotheses. The research model of this paper is developed, as shown in Figure 1.

3. Empirical Study

3.1. Research Method

3.1.1. Data Collection

Data collection for this study was conducted through the use of a questionnaire survey method. The questionnaire consisted of three sections and was administered online and offline targeted to college students and MAB students. The first section, the demographic inquiry, aimed to gather information about the respondents' basic characteristics, including age, gender, education level, occupation, prior experience with live commerce, monthly purchases, average viewing time, and knowledge of live commerce. The second section focused on the respondents' trading experience, while the third section measured the content qualities, consumer purchase intention factors, and immersion. To ensure the validity of the results, a pre-test was conducted using a preliminary questionnaire to assess each variable before the formal questionnaire was finalized. A total of 190 questionnaires and 185 valid questionnaires were collected in the formal research. The data collected through this questionnaire survey method was used to validate the model and provide insights into the relationship between content characteristics, immersion, and customer purchase intention in live-streaming commerce. In addition to the primary constructs, we also considered the consumers' gender, age, and education. Experience in online shopping, and live streaming watching frequency in the survey. The Demographic of Respondents is shown in Table 2

Table 2: Demographics of Respondents

	Items	Frequency	Percentage
Gender	Male	93	50.3
	Female	92	49.7
Age	20-29	97	52.4

	30~39	19	10.3
	40~49	43	23.2
	50-59	21	11.4
	>59	5	2.7
Education	High school graduates	20	10.8
	Be at college	99	53.5
	College graduates	66	35.6
Occupation	Student	84	45.4
	Staff	65	35.1
	Civil Servant	9	4.9
	Housewife	6	3.2
	Entrepreneurs	11	5.9
	Other	8	4.3
	Missing Values	2	1.1
Experience (Months)	<3	119	64.3
	3~6	15	8.1
	6~12	22	11.9
	12~24	15	8.1
	>24	12	6.5
	Missing value	2	1.1
Purchase Frequency (Months)	<1	153	82.7
	2	17	9.2
	3~5	11	5.9
	>10	1	0.5
	Missing Value	3	1.6
Average Viewing (Minute)	<10	99	53.6
	11~30	25	13.5
	31~61	8	4.3
	>60	3	1.6
Total		185	100

3.2. Research Result

3.2.1. Reliability and Validity

This study used SPSS version 21 to confirm the reliability and validity of the research model. The measurement items of storytelling, interactivity, entertainment, artistry, technicality, informational, reliability, immersion, viewing intention, and purchase intention, which are the main factors of this study, were constructed by referring to items and variables that were sufficiently verified in previous studies. Reliability indicates whether the same measured value can be obtained by repeatedly measuring the same concept, confirming the accuracy and consistency of the concept to be measured. For reliability verification, the internal consistency of the items was confirmed with Cronbach's alpha coefficient (Hair et al., 2006). As a result of the

analysis, all Cronbach's alpha values were above 0.7, confirming that the measured variables of this study had high consistency. Validity checks whether the concept to be measured is accurately measured. Exploratory factor analysis was performed using the orthogonal (Varimax) rotation method to verify the conceptual validity of the measurement items of the measurement variables. Factor analysis was performed based on the Eigenvalue of 1.0, and the factor loading was 0.5 or more. The explanatory value of the independent variable's cumulative variance (the rolling sum of squares loading) was 78.5%. The reliability and validity verification results are shown in Table 3.

Table 3: Validity Analysis

Construct and Items	F.L.*	α**
<Entertainment> · enjoy shopping · feel a different kind of fun and storytelling · You will experience the fun of watching · Immerse yourself in a pleasant and pleasant atmosphere · Situation setting and product descriptions are interesting	.636 .647 .636 .696 .600	.93
<Artistry> · Artistic characteristics are added to the content · The expression of the Background and videos have an artistic aspect · The completeness of expressions such as music, sound, and story · In directing the live stage, artistry is considered · You can feel the artistic characteristics of the content	.777 .796 .704 .779 .797	.93
<Storytelling> · Live commerce has a story that draws attention · Live commerce has an interesting situation (plot) setting. · Live commerce uses stories to easily understand product information. · Live commerce explains products and services with interesting stories. · Live commerce has a concept and content that draw attention	.775 .727 .601 .694 .659	.89
<Informativity> · Informing you of new news · Provides various information · Provide useful information · Provide valuable information	.739 .675 .606 .598	.89
<Interactivity> · Content tends to reflect customer opinions · Coordinate content progress and operation through interaction · Such as events, prizes, and discounts are reflected in the content · Comments and ratings affect the progress of this content · Interaction with customers is active in the progress	.773 .821 .744 .757 .804	.90
<Reliability> · In live commerce, the characteristics of live content increase trust. · Live commerce is created with reliable content. · Live commerce is more reliable than other channels. · In live commerce, real-time interaction increases trust. · In Live commerce, believable explanations, demonstrations, and content.	.814 .780 .799 .610 .746	.90

<Technicality> · Use new techniques for expression. · Technology plays an important role in content development. · It utilizes video production methods and technologies · It uses various filming, video, production, and expression technologies · It utilizes various voice, music, and sound technologies.	.632 .709 .729 .733 .655	.91
<Immersion> · focus on live video while watching live commerce. 1 · become immersed in the live video while watching live commerce.2 · While watching video, I do not think of anything other than live video. · While watching live commerce, I am immersed .so time passes quickly. · While watching, I get immersed in the live video and lose track of time.	.631 .770 .841 .833 .870	.93
<Viewing Intention> · It provides differentiated content from other channels · enjoy watching live commerce. · I'm worth watching for watching live commerce. · willing to watch live commerce. · willing to recommend watching live commerce.	.625 .903 .724 .677 .780	.90
<Purchase Intention> · I am willing to purchase goods and services on live commerce. · I think it is necessary to buy goods and services in live commerce. · Live commerce products and services are worth purchasing. · When purchasing goods and services in live commerce is profitable. · I recommend the purchase of goods and services in live commerce.	.804 .711 .804 .855 .799	.93
Eigen Value	2~4	Total Variance (78)
Variance (%)	6~11	

Note: * Factor Loading, ** Cronbach's α

3.2.2. Common Method Bias

Common method bias is a severe problem because systematic error variance appears within structural relationships and distorts the relationship between concepts (Hair et al., 2006). Podsakoff et al. (2003) argue that 25% of the variance of the metrics surveyed in social science research is likely to be the systematic error variance. Systematic error variance causes errors by contracting or expanding the relationship of the structure and reducing the problem of same method bias. It is necessary to control the cause of method bias in the questionnaire design and collection process (Podsakoff et al., 2003). In this study, the same method bias was confirmed using Harman's Single Factor Test (Harman's Single Factor Test) among the methods for checking the same method bias (Podsakoff et al., 2003). If only one factor with an Eigen Value of 1.0 or higher is derived through factor analysis or the variance is concentrated on one factor, it is considered to have the same

method bias (Podsakoff et al., 2003). As a result of confirming the same method bias through the exploratory factor or analysis results, the Eigen Value of each factor was 2.5~4.5, and the ratio of variance explaining each factor was 6.5~11.6. Therefore, it is interpreted that there is no concern about the exact method bias as the dispersion ratio is evenly distributed. The Correlation Analysis is shown in Table 4.

Table 4: Correlation Analysis

	1	2	3	4	5	6	7	8	9	10
1	1									
2	.66**	1								
3	.69**	.53**	1							
4	.67**	.54**	.60**	1						
5	.66**	.65**	.58**	.63**	1					
6	.54**	.35**	.57**	.57**	.52**	1				
7	.61**	.45**	.55**	.67**	.51**	.49**	1			
8	.63**	.57**	.46**	.50**	.55**	.24**	.50**	1		
9	.70**	.60**	.55**	.64**	.58**	.36**	.70**	.76**	1	
10	.61**	.49**	.52**	.62**	.50**	.47**	.73**	.57**	.81**	1

Note1: 1. Entertainment; 2. Artistry; 3. Storytelling; 4. Informativity; 5. Technicality; 6. Interactivity; 7. Reliability; 8. Immersion; 9. Viewing Intention; 10. Purchase Intention

Note2: * p<0.1, ** p<0.05, *** p<0.01

3.2.3. Multiple Regression Analysis

Multiple regression analysis was performed to verify the hypothesis of this study. As a result of the analysis, it was found that the R squared value was 0.329~0.661 and the F value was all significant. To confirm the suitability of the regression model, the Durbin-Watson value was checked. Durbin-Watson value confirms the correlation between the residuals. As a result of the analysis, it was 1.804 to 1.886, close to the standard value of 2 and not close to 0 or 4. This means that there is no correlation between the residuals. It can be seen that there are no problems such as distortion of regression analysis results or inflated t-values and p-values. Therefore, the regression model of this study was found to be acceptable, and it was also confirmed that there was no problem with multicollinearity. The tolerance limit is the reciprocal of VIF, and if it shows a value of 0.1 or more, it can be interpreted that there is no multicollinearity problem. And if VIF shows a value of 10 or less, it is considered that there is no multicollinearity. As a result of the analysis, both the tolerance limit and the VIF value are normal values, so there is no multicollinearity problem.

Table 5 shows the results of the multiple regression analysis. From the results, various content characteristics such as entertainment, artistry, interactivity, technicality, and reliability significantly affect viewers' immersion directly. In turn, immersion also significantly affects viewing and purchase intention. Thus, hypotheses 1a, 2a, 4a, 6a, and 7a were accepted in the context of the relationship between content characteristics and viewers' immersion. Hypothesis 8a and 8b are also accepted in the relationship

between viewers' immersion, viewing intention, and customer purchase intention. In addition, content characteristics of entertainment, artistry, interactivity, and reliability also directly affect viewing intention significantly. Thus, hypotheses 1b, 2b, 4b, and 7b are accepted in the relationship between content characteristics and viewing intention. Viewing intention also significantly affects customer purchase intention, verifying that viewing intention significantly affects customer purchase intention in live-streaming commerce. Thus, hypothesis 10 is also accepted. However, a limited number of independent factors directly affect customer purchase intention, indicating that the indirect effect needs to be investigated in this context. Only two content characteristics such as entertainment reliability significantly affect customer purchase intention. Thus, only hypotheses 1c and 7c are accepted in the relationship between content characteristics and customer purchase intention.

Hypothesis		St	β	t	
H1a	Entertainment	→	IM	.38	4.1***
H2a	Artistry			.17	2.2**
H3a	Storytelling			.00	.01
H4a	Informativity			.05	.60
H5a	Interactivity			-.23	-3.2***
H6a	Technicality			.18	2.2**
H7a	Reliability			.17	2.3**
H1b	Entertainment	→	V.I.	.31	4.0***
H2b	Artistry			.14	2.2**
H3b	Storytelling			.01	.24
H4b	Informativity			.11	1.5
H5b	Interactivity			-.17	-2.9**
H6b	Technicality			.08	1.2
H7b	Reliability			.40	6.4***
H1c	Entertainment	→	P.I.	.14	1.7*
H2c	Artistry			.10	1.5
H3c	Storytelling			.00	.10
H4c	Informativity			.10	1.2
H5c	Interactivity			.06	.93
H6c	Technicality			-.02	-.37
H7c	Reliability			.51	7.5***
H8	IM	→	V.I.	.76	16.2***
H9	IM	→	P.I.	.57	9.4***
H10	V.I.	→	P.I.	.81	18.7***

Note1: * p<0.1, ** p<0.05, *** p<0.01

Note2: (V.I.) Viewing Intention; (P.I.) Purchase Intention; (IM) Immersion

Path H1~7a: R²=0.5, F=25.8(0.0), VIF 1.8~3.0, Durbin-Watson 1.8
 Path H1~7b: R²=0.6, F=49.3(0.0), VIF 1.8~3.0, Durbin-Watson 1.8
 Path H1~7c: R²=0.6, F=38.1(0.0), VIF 1.8~3.0, Durbin-Watson 1.8
 Path H8: R²=0.591, F=264.8(0.0), VIF 1, Durbin-Watson 1.8
 Path H9: R²=0.329, F=89.9(0.0), VIF 1, Durbin-Watson 1.8
 Path H10: R²=0.658, F=352.0(0.0), VIF 1, Durbin-Watson 1.9

3.2.4 Mediating Effect

The mediating effect refers to the effect of a third variable or concept intervening between the independent and dependent variables. Complete mediation only pays attention to indirect effects. When independent variables impact dependent variables through parameters, mediation effects will occur. To confirm the media effect of the model in this study, the Sobel Test (Sobel, 1982 delete) was used. Sobel identification can use the standard error of the direct effect to obtain the standard error of the indirect effect and the standard error to calculate the statistic (Sobel, 1982). The Z value should be calculated directly using SPSS version 21 with the formula below proposed by Sobel.

$$Z = \frac{a \times b}{\sqrt{(a^2 \times SEb^2) + (b^2 \times SEa^2)}}$$

The identification results of mediating effects of immersion can be summarized into three types. First, directly and indirectly, entertainment and reliability affect viewing intention and purchase intention, with immersion as the medium. Therefore, immersion plays the role of partial mediation between independent variables and customer purchase intention. Second, artistry and technicality indirectly affect customer purchase intention via immersion as a medium, with no direct impact. This explains that immersion plays a complete mediating role between the independent and dependent variables (Baron & Kenny, 1986). Immersion also plays a mediating role between technicality and viewing intention. Third, storytelling and informativity have no direct impact on viewing and purchase intention. Thus, immersion does not mediate between independent variables and purchase intention for these factors. In conclusion, hypothesis 9 established to test the mediating role of immersion is partially accepted, indicating that various content characteristics can indirectly affect customer purchase intention via the mediating role of immersion.

Path		Indirect Effect	Z	Result
Storytelling	→ IM	0.0	0.0	No Effect
Interactivity		-0.1	-3.0***	Competitive Mediation
Entertainment		0.2	3.8***	Partial Mediation
Artistry	→ P.I	0.0	2.1**	Complete Mediation
Technicality		0.1	2.1**	Complete Mediation
Informativity		0.0	0.5	No Effect
Reliability	·	0.1	2.2**	Partial Mediation

Note1: * p<0.1, ** p<0.05, *** p<0.01

Note2: (V.I.) Viewing Intention; (P.I.) Purchase Intention; (IM) Immersion

4. Discussion

This study conducted a questionnaire among consumers in South Korea who have an online shopping experience through live-streaming commerce. Based on the existing research, this paper constructs and verifies the research model of the influence of content characteristics on customer purchase intention in live-streaming commerce. This study aimed to examine the impact of entertainment, artistry, storytelling, informativity, interactivity, technicality, reliability, and immersion on viewing intention and purchase intention in the context of live-streaming commerce. The results of the multiple regression analysis showed that entertainment, artistry, technicality, and reliability have significant effects on immersion and in turn, that immersion has a significant effect on viewing and purchase intentions. The mediating effect of immersion was also studied, and the results showed that immersion plays a meaningful role between independent and dependent variables.

5. Conclusion

This study explored the relationship between content characteristics, immersion, viewing intention, and customer purchase intention in live-streaming commerce. The results of the investigation make a meaningful contribution to the existing body of knowledge in live-streaming commerce. An important contribution is the development of a conceptual framework that outlines the interplay between content characteristics, immersion, viewing intention, and purchase intention. This framework might identify the specific content characteristics that are most effective in enhancing immersion and how different facets of immersion, such as perceived realism or sensory immersion, influence purchase intentions. The study aimed to examine the relationship between the content characteristics of live-streaming commerce and viewer viewing and purchase intention. The results of multiple regression analysis showed that entertainment, artistry, technicality, and reliability have an impact on immersion, which in turn affects viewing intention and purchase intention. Storytelling, interactivity, and information were not found to affect immersion. The study found that immersion plays a mediating role in the relationship between content characteristics and viewing intention and purchase intention. The study would shed light on how live-streaming commerce influences consumer decision-making and purchasing behavior, specifically the impact of immersion and content characteristics on purchase intention. Additionally, the study would further our understanding of live-streaming commerce as a sales

strategy and offer valuable insights to businesses on how to create compelling and successful live-streaming events that drive sales. In conclusion, this research would make a significant theoretical contribution to the field of e-commerce and digital marketing by providing a deeper understanding of the relationship between content characteristics, immersion, and customer purchase intention in live-streaming commerce and providing businesses with practical insights on how to create effective live-streaming events.

The results of this study have important implications for live-streaming commerce practitioners. First, the findings of this empirical analysis can be used to develop marketing and sales strategies in live-streaming commerce. The content characteristics of live-streaming commerce did not directly affect the purchase intention. However, content characteristics influenced customers' purchase intention by mediating immersion and viewing intention. Therefore, live-streaming commerce practitioners need to thoroughly manage content characteristics to increase customer immersion and purchase. Entrepreneurs must learn more about content characteristics in live-streaming commerce to better understand customers' immersion, viewing intention, and purchase intention in live-streaming commerce. Second, this study is significant because it confirmed the mediating roles of immersion. Most live streaming commerce studies focus on the mediating role of trust (Lu & Chen, 2021; Wongkitrungrueng & Assarut, 2020). However, this study aims to verify the mediating role of immersion. In live-streaming commerce, immersion acts as a complementary and partially mediating factor between content characteristics and customer purchase intention. Therefore, to increase sales, live-streaming commerce companies must focus on essential content characteristics and immersion.

The research has also several minor limitations. While some meaningful insights have been gleaned, there are still shortcomings in the research, such as the limitations of the survey sample and its potential susceptibility to respondent bias. Additionally, there is a scarcity of studies on the relationship between these factors in live-streaming commerce and a shortage of available references. Furthermore, many studies have relied on self-report measures, such as surveys, to evaluate immersion, which can be susceptible to bias and may not adequately capture the intricate and dynamic nature of the immersion experience. Possible future research directions in this field include: conducting more comprehensive and multi-faceted studies on the content characteristics of live streaming commerce, including the use of various forms of content (such as product demonstrations, Q&A sessions, customer testimonials), the role of the host, and the implementation of interactive features. Investigating the effect of live streaming commerce across different cultures and regions,

as cultural differences may affect the impact of content characteristics, immersion, and purchase intention.

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