

What Drives Consumers to Buy in Live Streaming Commerce? A Systematic Literature Review

Xiling Cui, Monica Law, Mark Ng, Lubanski Lam

Department of Business Administration, Hong Kong Shue Yan University
Wai Tsui Crescent, North Point, Hong Kong

cuxiling@gmail.com, cclaw@hksyu.edu, chng@hksyu.edu, lubanski@gmail.com

Abstract. Live streaming is attracting a growing audience and is becoming an integral part of people's lives. The literature on live streaming commerce has seen a surge in studies since the phenomenon emerged in the past few years. This study systematically reviews existing literature on live streaming commerce from the perspective of consumer behavior. Thirty-five papers published between 2015 and 2022 are analyzed to uncover the factors influencing consumer decisions and engagement with live streaming for shopping. The key factors are categorized as internal (consumer characteristics and psychology) and external (platform, product, streamer, social). Key findings suggest that live streamer credibility and interaction play a significant role in building consumer trust and influencing purchase intentions. Additionally, self-congruity with the streamer enhances engagement. The study identifies research gaps related to the impact of real-time interactivity, streamer-viewer relationships, and cultural contexts. It offers insights into consumer behavior theories and strategies for designing engaging live shopping experiences.

Keywords: Live commerce; Consumer behavior; Live streamer; Platform attachment

1. Introduction

One of the most popular marketing strategies in recent years is live streaming commerce (LSC). LSC is defined as ‘the marketing behavior in which live streamers use computers, mobile phones, and the network to promote products online, providing shopping links to facilitate transactions in a short time’ (Lee & Chen, 2021, page 4). Leveraging information and communication technologies, live streaming facilitates product sales by engaging with potential consumers and offering in-depth information about the products. The social distancing policies implemented during the COVID-19 pandemic have further accelerated the development of this innovative marketing strategy. LSC appears to alleviate people’s skepticism regarding traditional e-commerce’s picture-showing strategy, positioning itself as one of the most promising marketing strategies in e-commerce for the foreseeable future.

Researchers have actively delved into this swiftly evolving phenomenon, with papers presented in conferences since 2015 and subsequently published in journals. This trend has not only sustained its momentum but has also accelerated, evident in the increasing number of publications in recent years. Researchers have progressed from merely describing the LSC phenomenon to exploring its influencing factors, offering suggestions for achieving impressive results in this field. While previous works have often been isolated, focusing on singular aspects, some researchers have recognized the need for a systematic literature review to present a comprehensive overview of LSC (e.g., K. Lin et al., 2022; Tanwar et al., 2022). While existing reviews may provide bibliometric analyses of influencer marketing research or explore live streaming in specific industries like tourism and hospitality, there is a noticeable gap in literature reviews focusing on the effectiveness of LSC from the consumer behavior perspective. Therefore, this study aims to fill this research gap by summarizing and reviewing previous studies from this new angle.

Research questions are posed as follows: What consumer psychology factors influence purchase decisions in live streaming? How do live streamer characteristics foster trust and engagement? What similarities and differences exist between traditional e-commerce marketing strategies and LSC? Lastly, what research gaps should future researchers take into consideration?

We have selected and reviewed articles from well-respected journals published between January 2017 and October 2022 to explore the influencing factors affecting the effectiveness of LSC. From a consumer perspective, these factors are categorized into two main groups—internal and external—using attribution theory. Further, we have identified and reviewed more specific sub-categories within these two main categories. Our analysis reveals differences between LSC and traditional e-commerce marketing strategies, and we have also identified gaps in the existing research on this topic, suggesting potential directions for future academic inquiry.

This study contributes to the literature on LSC by reviewing past research patterns and current trends. Examining the influencing factors of LSC offers practical value to live streamers, sellers, and LSC platforms. Lastly, this study illuminates the direction for future research in this area.

2. Research Methodology

2.1. Paper Collection and Screening

The paper selection for the literature review in this study follows a systematic procedure.

Initially, we set broad keywords to ensure the inclusion of all relevant papers. Consequently, we searched for terms such as “live streaming,” “streaming video,” “streaming commerce,” “live commerce,” and “live broadcast” in the paper titles, abstracts, and keywords.

Secondly, we utilized various journal databases, including well-established ones such as ProQuest, EBSCO, ScienceDirect, and Google Scholar. This diverse search across multiple databases aimed to ensure the comprehensive inclusion of relevant papers.

Thirdly, we conducted a cross-check of papers from different databases to eliminate duplicates. Additionally, conference papers were excluded, focusing solely on journal articles.

To maintain journal quality, our fourth step involved restricting the journal list to include only those indexed in Science Citation Index (SCI), Science Citation Index Expanded (SCIE), and Social Sciences Citation Index (SSCI). We employed Web of Science (<https://mjl.clarivate.com/home>) to verify the journals and filtered out papers from journals not listed in SCI, SCIE, and SSCI.

Finally, we implemented measures to ensure selected papers align with our target focus—empirical investigations of LSC from the consumer perspective. Two authors independently reviewed titles, keywords, and abstracts, subsequently discussing and reaching a consensus on paper inclusion. During this process, we excluded papers that employed mathematical methods, such as game theory (T. Zhang et al., 2022; Zhou et al., 2022), those centered on live streaming in gaming, serving a distinct purpose from LSC, and those examining live streaming from alternative perspectives, such as e-retailers’ (Gong et al., 2022; Zheng et al., 2022) or ecosystem perspectives (Xue & Liu, 2022; X. Zhang et al., 2022).

In total, we have selected 35 papers from prestigious journals spanning the years 2017 to 2022 for further analysis, as outlined in Table 1. Each paper is assigned a number for future reference. Additionally, Table 1 provides a summary of the theories, methods, and locations used in the papers, which will be discussed in detail in sub-Section 5.3. The next sub-Section will introduce our coding and analysis procedures for these papers.

2.2. Coding and Data Analysis Using NVivo

Our objective is to examine the selected papers and derive themes related to LSC from a consumer perspective. For data coding and analysis, we employed NVivo 12, utilizing both theory-driven coding and free coding methods. Initially, we began with attribution theory as our coding starting point. According to attribution theory, individual behavior is attributed to both internal and external factors (Malle, 2011). Accordingly, we attribute consumers’ purchasing behavior to internal and external factors. Internal factors are those directly associated with consumers themselves, while external factors encompass variables originating outside of the consumers. These two categories serve as the baseline for further coding.

Table 1: The Papers Selected for the Review

No.	Reference	Journal	Theory	Method	Location
1	Aljukhadar and Senecal (2017)	Online Information Review	Media richness theory	Questionnaire survey	Canada
2	Li et al. (2018)	Computers, Materials & Continua	Extended technology acceptance model	Questionnaire survey	China
3	Todd and Melancon (2018)	Journal of Research in Interactive Marketing	Source credibility theory	Questionnaire survey	USA
4	Shan et al. (2019)	International Journal of Advertising	Self-congruence theory	Questionnaire survey	China
5	Sun et al. (2019)	Electronic Commerce Research and Applications	Affordance theory	Questionnaire survey	China
6	Gong et al. (2020)	Sustainability	Self-determination theory	Questionnaire survey	China
7	Hu and Chaudhry (2020)	Internet Research	Stimulus-organism-response (SOR) model	Questionnaire survey	China
8	Zhang et al. (2020)	The Service Industries Journal	Construal level theory	Quasi-experiment	China
9	Zhang et al. (2020)	Journal of Services Marketing	Social exchange theory	Questionnaire survey	China

10	Park and Lin (2020)	Journal of Retailing and Consumer Services	Self-congruity theory	Questionnaire survey	China
11	Quan et al. (2020)	Asia Pacific Journal of Information Systems	Attractiveness theory	Questionnaire survey	China
12	Xu et al. (2020)	Journal of Electronic Commerce Research	SOR model	Questionnaire survey	China
13	Wongkitrungrueng and Assarut (2020)	Journal of Business Research	SOR model	Questionnaire survey	Thailand
14	Addo et al. (2021)	The Service Industries Journal	Theory of planned behavior	Questionnaire survey	China
15	Deng et al. (2021)	Information Technology & Tourism	Affordance theory	Conceptual framework	Australia
16	Kang et al. (2021)	International Journal of Information Management	SOR model	Text analytics	China
17	Singh et al. (2021)	Expert Systems with Applications	Perceived value theory	Questionnaire survey	India
18	Li et al. (2021)	Journal of Retailing and Consumer Services	Attachment theory & Socio-technical theory	Questionnaire survey	China
19	Dong et al. (2022)	Sustainability	SOR model	Questionnaire survey	China
20	Guan et al. (2022)	Information Systems Journal	Flow theory	Questionnaire survey	China
21	Z. Ma et al. (2022)	Frontiers in Psychology	Attachment/loyalty/parasocial interaction theory	Questionnaire survey	China & Korea
22	Lo et al. (2022)	Journal of Business Research	SOR model	Questionnaire survey	Malaysia
23	Lv et al. (2022)	Journal of Travel & Tourism Marketing	Attention-interest-desire-action model	Onsite survey	China
24	Guo et al. (2022)	Sustainability	SOR model	Questionnaire survey	China
25	Wang et al. (2022)	Decision Support Systems	Affordance theory	Interview & online survey	China
26	Xu et al. (2022)	Journal of Global Information Management	Affordance theory	Questionnaire survey	China
27	M. Zhang et al. (2022)	Computers in Human Behavior	Socio-technical system theory & trust transfer theory	Questionnaire survey	China
28	S. Zhang et al. (2022)	The Service Industries Journal	Grounded theory	Interview	
29	Z. Zhang et al. (2022)	Sustainability	SOR model	Questionnaire survey	China
30	R. Zheng et al. (2022)	Journal of Retailing and Consumer Services	Reasoned action/planned behavior/media richness/ uses and gratifications/ involvement theory	Data crawling	Korea
31	Lin et al. (2022)	Asia Pacific Journal of Marketing and Logistics	SOR model	Questionnaire survey	China

32	Lyu et al. (2022)	Electronic Commerce Research	Social learning theory & innovation diffusion theory	Data crawling	China
33	Ma et al. (2022)	Electronic Commerce Research and Applications	The theory of telepresence and trust	Questionnaire survey	China
34	Yang et al. (2022)	Journal of Hospitality and Tourism Management	Social interaction theory	Data extraction	China
35	Xiao et al. (2022)	Journal of Retailing and Consumer Services	Axiomatic design theory	Questionnaire survey	China

Subsequently, we meticulously reviewed each paper, coding variables and categorizing them into the previously defined internal and external factors. Throughout the review process, we systematically formed sub-categories. Internal factors were further classified into consumers' characteristics and their psychology and behavior. External factors underwent an initial classification based on their occurrence in LSC, encompassing platform-related, product- and content-related, streamer-related, viewer-related, and cultural factors.

These variables are then subjected to further classification based on their similarities and differences, forming a third layer of codes. In cases where categories entail numerous distinct factors, a fourth layer is constructed accordingly. The theme code for LSC is detailed in the Appendix, where all variables, along with their references, are organized into the respective categories. To visually represent these relationships, we created a mind map, as illustrated in Fig. 1.

Finally, the code structure and the mind map undergo several rounds of discussion among the authors for further refinement. The ultimate version of the mind map is presented in Fig. 1, while the comprehensive theme code is detailed in the appendix.

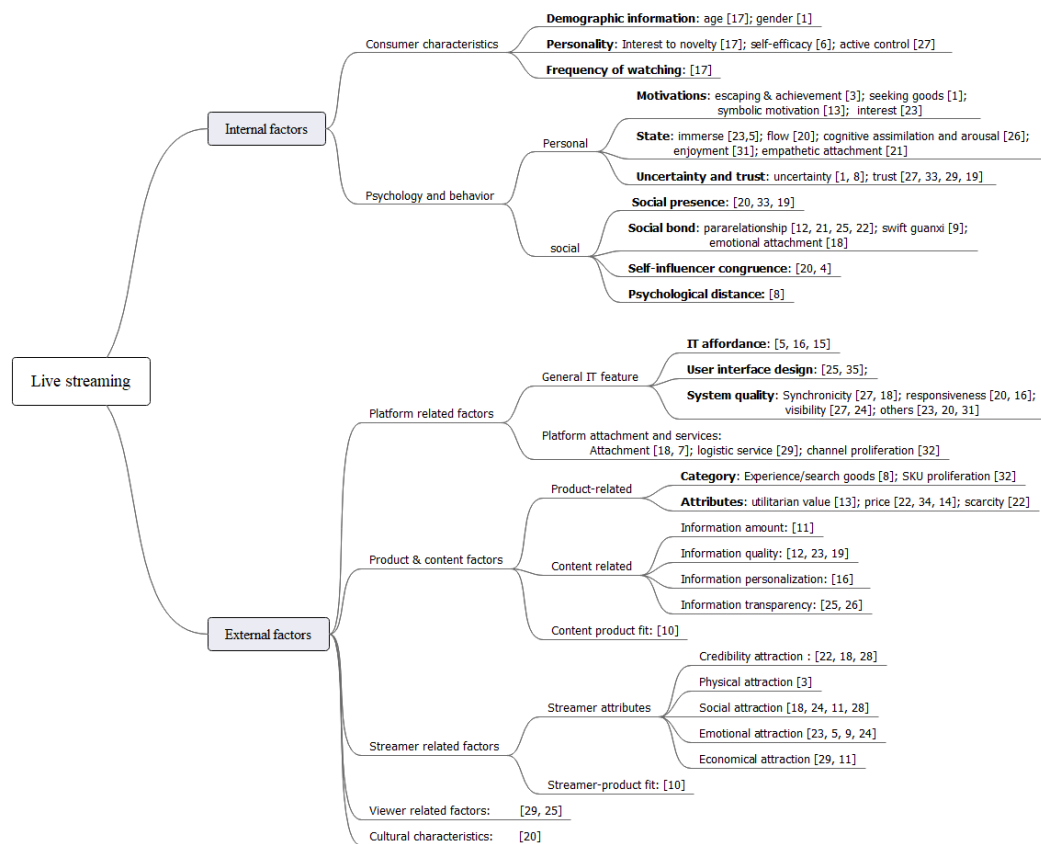


Fig.1: Mind Map of Influencing Factors (with the Reference No.s Indicated)

3. Internal Factors Influencing Live Streaming

From the consumer perspective, this study defines internal factors to encompass general basic consumer characteristics, such as demographic information, personality, and frequency of watching live streaming. These characteristics are not tied to a specific live stream. Additionally, temporary psychology and behavior during a specified live stream are considered. Furthermore, consumer psychology and behavior are classified into personal and social aspects. The research findings are summarized in Tables 2 and 3.

Table 2. The summarized key findings on internal factors

Category	Key Findings	References
Consumer Characteristics	Youth are the main viewers of live streaming	Singh et al., 2021
	Live streaming broadcasts are more popular among females	Aljukhadar & Senecal, 2017
	Interest in novelty and aptitude for innovation increase frequency of watching live streaming	Singh et al., 2021
	High self-efficacy and active control increase engagement in live streaming activities	Lei et al., 2022; Gong et al., 2020
Consumer Psychology and Behavior	Escaping from daily routine and achievement are motivations for watching live streams	Todd & Melancon, 2018
	Symbolic motivation impacts consumer engagement and trust	Wongkitrungrueng & Assarut, 2020
	Interest in a product leads to purchase behavior and interest in live streams leads to continuous watching	Lv et al., 2022
	Immersion, flow, cognitive assimilation, arousal, serendipity, and empathetic attachment impact behavior	Sun et al., 2019; Guan et al., 2022; Xu et al., 2020; S. C. Lin et al., 2022; Z. Ma et al., 2022
	Perceived uncertainty and trust influence engagement in live streaming	Zhang, Qin, et al., 2020; Aljukhadar & Senecal, 2017
	Green trust is positively related to green purchase intention in live streaming	Dong et al., 2022
	Social presence increases engagement and trust	X. Ma et al., 2022; Dong et al., 2022
	Para-relationship, swift guanxi, and emotional attachment affect behavior	Wang et al., 2022; Xu et al., 2020; Lo et al., 2022; Z. Ma et al., 2022
Self-influencer congruence and psychological distance impact behavior	Shan et al., 2019; Guan et al., 2022; Zhang, Qin, et al., 2020	

3.1. Consumer Characteristics

3.1.1. Demographic Information

Regarding consumer demographic information, research indicates that the primary viewers of live streaming are youth (Singh et al., 2021). Gender also plays a crucial role in live streaming, with broadcasts being more popular among females than males. This suggests that rich media interaction has a more significant impact on females (Aljukhadar & Senecal, 2017).

3.1.2. Consumer Personality

Consumer personality plays a crucial role in sustaining interest in live streaming. For instance, individuals with a penchant for novelty and an affinity for innovative techniques are more likely to watch live streaming regularly, fostering continuous usage intentions (Singh et al., 2021). Moreover, individuals with high self-efficacy—defined as the confidence to effectively apply learned abilities to accomplish tasks—are more inclined to watch and engage in live streaming activities compared to

those with lower self-efficacy levels (Lei et al., 2022; Gong et al., 2020). Additionally, the concept of active control, referring to the degree of control participants have in exchanging information, has been found to be positively correlated with trust in streamers and products (M. Zhang et al., 2022).

3.1.3. Frequency of Watching Live Streaming

A study has delved into consumers' frequency of watching live streaming and discovered its impact on users' continued watching intention (Singh et al., 2021). Individuals with a high frequency of watching live streams tend to seek assistance from this type of broadcast when engaging in online shopping.

3.2. Consumer Psychology and Behavior

Consumers' psychology and behavior can also be categorized into specialized layers that emerge during the process of social interaction. In the following sections, we will review research findings on these two categories.

3.2.1. Consumer Personal Psychology and Behavior

3.2.1.1. Consumer Motivations

Consumers' initial goals play a significant role in shaping their behavior when watching live streams. The primary reason people turn to live streams is to escape from the pressures of daily routine (Todd & Melancon, 2018). For consumers driven by recreational browsing motivation, live streaming offers enhanced practical benefits. However, for those seeking specific products, the live streaming channel is as effective as the conventional channel (Aljukhadar & Senecal, 2017).

Additionally, achievement serves as another primary reason for consumers to watch live streaming. In this context, achievement refers to the goal of continuous learning, aspiring to become a well-rounded individual in a specific area by enhancing additional skills or accumulating operational knowledge (Todd & Melancon, 2018). Symbolic motivation represents another type, illustrating consumers' goal to present and enhance their personal identity through shopping. This subconscious motive significantly influences consumer engagement and trust in sellers (Wongkitrungrueng & Assarut, 2020). Furthermore, the interest in a product translates into purchase behavior, while the interest in watching live streams leads to a continuous watching intention (Lv et al., 2022).

3.2.1.2. Consumer State

During a live stream, consumers undergo a change in psychological state that subsequently influences their behavior. Immersion is one of the investigated factors in this context, denoting the degree to which consumers are absorbed, involved, and engrossed with ideas in LSC. Higher consumer immersion in live streaming correlates with an increased likelihood of making purchases on the broadcast channel (Sun et al., 2019). Another study found that immersion leads to product and live stream interest, subsequently influencing purchase behavior (Lv et al., 2022). A similar state known as 'flow' has also been examined in a recent study, showing its impact on the purchase intention of virtual gifts (Guan et al., 2022).

A study by Xu et al. (2020) investigated cognitive assimilation and arousal. Cognitive assimilation is defined as the degree of acceptance, where thoughts, beliefs, or attitudes are adjusted through the acquisition, assimilation, and absorption of streamer influences. Arousal refers to the degree to which a viewer feels stimulated, active, or inspired by the streamer during the live stream. Users exhibiting high levels of cognitive assimilation and arousal demonstrate a significant relationship with impulsive purchasing, entertainment purchasing, and social sharing (Xu et al., 2020).

Another state mentioned is called serendipity, where consumers unexpectedly find something valuable during live streaming, even if they didn't initially intend to make a purchase. The perceived enjoyment resulting from such serendipitous discoveries can directly drive consumers' impulsive intention to buy products (S. C. Lin et al., 2022). An unusual state, termed empathetic attachment, involves the audience's attachment to the comeback of KPop performers. Sustained loyalty arising from this state significantly influences consumers' purchase intention (Z. Ma et al., 2022).

3.2.1.3. Uncertainty and Trust

Perceived uncertainty stands out as another crucial factor in live streaming. It characterizes how consumers feel uncertain about the outcome of a transaction, and this uncertainty can have a negative impact on their decision to make a purchase from online shopping platforms (Zhang, Qin, et al., 2020). In essence, consumers who have certainty regarding a product's quality and after-sales service are more likely to voluntarily engage in live streaming (Aljukhadar & Senecal, 2017).

Trust has been a subject of investigation in recent years, covering trust in brands, products, and the individuals representing them. While some trust-related topics may fall under the category of socio-psychological behavior of consumers, most studies do not distinctly separate or differentiate consumer trust (e.g., (M. Zhang et al., 2022)). Therefore, we have reviewed all discussions on trust in this category for easy comparison.

Trust has been confirmed to positively influence purchase hesitation, with live streaming sessions demonstrating a more intricate setup than traditional online shopping in terms of trust (X. Ma et al., 2022). Perceived trust has been found to be closely related to impulsive buying behavior (Z. Zhang et al., 2022). Trust in streamers and products impacts continuance intention in LSC (M. Zhang et al., 2022). Trust towards web celebrities, also known as 'cewebrities,' and platforms influences viewers' intention to reuse a certain platform; notably, cewebrity trust plays a more crucial role than platform trust (Li et al., 2018).

A unique form of trust known as green trust in live-streaming e-commerce is defined as optimistic and positive expectations wherein consumers have faith in the platform, sellers' honesty, and their environmental responsibility. Green trust has been identified as positively correlated with green purchase intention (Dong et al., 2022).

3.2.2. Consumer Social Psychology and Behavior

3.2.2.1. Social Presence

Social presence refers to individuals' sense of being present in the process of live streaming. Both consumer-anchor and consumer-consumer interactions contribute to increasing social presence in LSC (X. Ma et al., 2022). Social presence is anticipated to enhance the sense of engagement by creating an enjoyable live streaming atmosphere and increasing consumers' awareness of information to highlight the usefulness of products.

A study has found that social presence across different social media channels can improve trust, ultimately leading to purchase intention (Dong et al., 2022). Additionally, social presence can impact perceived proximity to the streamer and the sense of belonging to the viewer crowd (Guan et al., 2022). The mediating effect of social presence between participant interaction and trust has also been identified (X. Ma et al., 2022).

3.2.2.2. Social Bond

Social bond emerges as a crucial social psychological factor impacting live streaming in complex and diverse ways, encompassing various relationship types such as para-social relationships, 'swift guanxi' relationships, and emotional attachment.

Firstly, para-relationship, defined as the illusory relationship or the unilateral feeling of intimacy developed by viewers toward social actors in mass media, has been identified in LSC (Wang et al., 2022). It represents the subjective state in which live streaming viewers establish a one-way and intimate relationship with a broadcaster, fostering a sense of attachment. This connection, in turn, contributes to social sharing, compulsive buying, and hedonic consumption (Xu et al., 2020). Another study found that parasocial interaction positively influences affective reactions, leading to impulsive buying behavior (Lo et al., 2022). Parasocial interaction is also discovered to impact empathetic attachment and sustained loyalty toward performers (Z. Ma et al., 2022). Finally, the dynamic brand experience resulting from social bond leads to impulsive purchases (Wang et al., 2022).

Secondly, 'swift guanxi' describes the phenomenon where consumers swiftly establish a relationship with live streamers based on reciprocal values such as mutual understanding, reciprocal

favors, and relationship harmony. From the consumer’s perspective, if they perceive that their needs are met by online streamers, receive positive rewards from interactions, and are respected by live streamers, they are likely to form a ‘swift guanxi’ relationship. This relationship, in turn, increases their purchase intention (Zhang, Sun, et al., 2020).

Thirdly, emotional attachment to streamers signifies that consumers form a close relationship with streamers, reflecting their feelings. Consumers may consider themselves as friends of the streamers, engage more, and seek to learn more about their new virtual friends. Research indicates that the higher the emotional attachment to the live streamer, the longer the visit duration and user retention (Li et al., 2021).

3.2.2.3. Self-influencer Congruence

Self-influencer congruence is a psychological state that elucidates the similarity between a consumer’s ideal self-image and a live streamer’s image. The greater the range of self-influencer congruence, the stronger the para-social identification toward the live streamer becomes, leading to more effective endorsement outcomes (Shan et al., 2019). Another study found that the perceived proximity to the streamer increases the flow state and purchase intention (Guan et al., 2022).

3.2.2.4. Psychological Distance

Psychological distance refers to a non-physical distance between individuals and certain objects or events, influencing how an individual processes and interprets a phenomenon. Individuals experiencing a far psychological distance tend to engage in high-degree construal, focusing on abstract and important information, such as product function, quality, and monetary value. On the other hand, those with a close psychological distance engage in low-degree construal, paying attention to concrete, non-important details, such as payment methods. Research has found that psychological distance negatively affects online purchase intention (Zhang, Qin, et al., 2020).

4. External Factors Influencing Live Streaming

The external factors refer to elements external to consumers and can be further classified based on subjects into platform-related factors, product- and content-related factors, streamer-related factors, and viewer-related factors. These categories exclusively discuss factors directly stemming from external subjects, while the psychological and behavioral factors induced by these external factors have been classified separately in Section 3.2. The research findings are summarized in Table 3.

Table 3. The summarized key findings on external factors

External Factors	Key Findings	References
Platform-related Factors	IT affordance (visibility, meta-voicing, guidance shopping) positively influences immersion and presence, leading to purchasing intention	Sun et al., 2019
	Affordances (temporal, spatial, interactive, media) impact the actions of live streamers, viewers, and sponsors	Deng et al., 2021
	User interface design influences the impression of consumers and their perceived value of the platform	Xiao et al., 2022; Wang et al., 2022
	Bullet screen/Danmu function affects dynamic stream experience	Wang et al., 2022
	System quality factors (synchronicity, responsiveness, visibility) impact trust, engagement, and purchase behavior	M. Zhang et al., 2022; Li et al., 2021; Guo et al., 2022; Kang et al., 2021; Lv et al., 2022
	Demand, convenience, interactivity, and playfulness stimulate perceived enjoyment	S. C. Lin et al., 2022

	Higher platform attachment leads to more frequent visits, longer platform usage, and active participation	Hu & Chaudhry, 2020; Li et al., 2021
	Logistic service quality is positively related to trust, perceived value, and impulsive buying behavior	Z. Zhang et al., 2022
	Channel proliferation positively impacts the conversion rate	Lyu et al., 2022
Product- and Content-related Factors	Experience goods are difficult to evaluate, while search goods can be described through parameters. Perceived uncertainty is higher for experience goods compared to search goods in LSC.	Zhang, Qin, et al., 2020
	SKU proliferation (adding different forms of a similar product) leads to a higher conversion rate	Lyu et al., 2022
	Utilitarian value of a product enhances trust, seller trust, and consumer engagement	Wongkitrungrueng & Assarut, 2020
	Price perception and fairness influence consumer engagement in LSC-related travel businesses	Yang et al., 2022; Addo et al., 2021
	Scarcity persuasion positively influences cognitive reactions in LSC	Lo et al., 2022
	Information amount attracts consumers with clear shopping goals, leading to a stronger parasocial relationship	Quan et al., 2020
	Information quality affects psychological feelings, attitudes, beliefs, and purchase intention	Xu et al., 2020; Dong et al., 2022
	Informativity influences immersion in LSC	Lv et al., 2022
	Information personalization has a reversed U-shaped effect on tie strength in LSC	Kang et al., 2021
	Information transparency helps consumers make effective judgments and leads to impulsive purchases	Xu et al., 2022; Wang et al., 2022
	Content-product fit influences consumer attitudes, purchase intention, and entertainment needs	Park & Lin, 2020
Streamer-related Factors	Streamers' quick response, valuable marketing activities, authenticity, and professional information positively influence trust and impulsive buying behavior	Z. Zhang et al., 2022
	Streamers' popularity, professionalism, and attractiveness moderate the relationship between live streaming portfolio and conversion rate	Lyu et al., 2022
	Sustained attraction influences empathetic attachment, sustained loyalty, and purchase intention	Z. Ma et al., 2022
	Streamers' reliability, sincerity, and ability to share feelings affect product quality perceptions	S. Zhang et al., 2022
	Vicarious expression/experience positively influences consumer platform attachment and affective reactions	Li et al., 2021; Lo et al., 2022
	Physical attraction of streamers, influenced by	Todd & Melancon, 2018

	demographic characteristics, impacts audience perception and source credibility	
	Popular streamers with good reputation and large fan base leverage network traffic for purchasing power, while an affinity towards gentle, polite, patient, and approachable streamers fosters a sense of belonging and intimacy.	S. Zhang et al., 2022
	Streamers' initiative to communicate and affective interactivity positively influence social attraction and attachment	Quan et al., 2020; Li et al., 2021
	Interactivity influences intention to buy through perceived risk and value co-creation	Guo et al., 2022
	Empathy provided by streamers contributes to personalized care, consumer engagement, and increased sales	Sun et al., 2019; Zhang, Sun, et al., 2020
	Entertainment provided by streamers positively influences intention to buy and immersion	Guo et al., 2022; Lv et al., 2022
	Economic bonds, such as discounts and bargains offered by streamers, positively influence consumer attitudes	Quan et al., 2020
	Promotional incentive information positively influences trust and perceived value	Z. Zhang et al., 2022
	High streamer-product fit enhances source trustworthiness, streamer attractiveness, and consumer trust, leading to purchase intention	Park & Lin, 2020
Viewer-related Factors	Online purchasing behavior, cues, and comments positively impact consumer participation, impulsive buying, and perceived value, leading to the purchase of products not initially intended.	Z. Zhang et al., 2022
	Danmu (live commenting) affects dynamic brand experience	Wang et al., 2022
Cultural Characteristics	Social orientation influences perceived proximity to the streamer and sense of belonging to the viewer group, while harmony primarily impacts the sense of belonging to the viewer group but not the perceived proximity to the streamer.	Guan et al., 2022

4.1. Platform-related Factors

Factors such as general IT features and consumers' platform attachment can influence the effectiveness of live streaming. General IT features encompass common characteristics found in a LSC platform, including IT affordance, synchronicity, interactivity, and user interface design. On the other hand, consumers' platform attachment centers around a LSC platform's user stickiness.

4.1.1. General IT Feature

4.1.1.1. IT Affordance

IT affordance describes the extent to which a technical third party offers transaction-oriented assistance based on the motivation and capacity of consumers and sellers. It comprises visibility affordance, meta-voicing affordance, and guidance shopping affordance (Sun et al., 2019). Visibility affordance refers to the platform's ability to provide observable product information, while meta-voicing affordance allows consumers to comment on the LSC platform. Guidance shopping affordance necessitates the platform to offer personalized services and products (Sun et al., 2019;

Kang et al., 2021). These three types of affordances have been found to positively influence immersion and presence, subsequently leading to consumer purchasing intention (Sun et al., 2019). Another study focused on travel-related live streaming identified a classification of affordances, including temporal, spatial, interactive, and media affordances, proposing that these affordances can impact the actions of travel live streamers, viewers, and sponsors in their engagements (Deng et al., 2021).

4.1.1.2. User Interface Design

User interface design, a fundamental feature of a broadcast, directly influences consumers' impressions of the LSC platform. The convenience derived from this design not only positively impacts consumers' perceived value but also drives continuous usage of live streaming services. Researchers have examined 13 different interface designs across various consumer segmentations, encompassing participation utilities, preferential mechanisms, interaction tools, sharing tools, streamer information, event information, commerce cues, channel lists, live streaming logs, live streaming videos, reminders, recommendations, and transaction suites (Xiao et al., 2022).

Additionally, more specific interfaces in LSC, such as bullet information (also known as bullet screen or danmu in China), have been investigated. Bullet screen/Danmu is a function where all comments are presented on the screen, enabling consumers to interact instantly with the streamer and other viewers. This feature has been found to significantly impact the dynamic stream experience (Wang et al., 2022).

4.1.1.3. System Quality

System quality, in the context of this study, is defined as the characteristics of the information systems, specifically LSC systems (Vijai, 2018). Various aspects of system quality have been discussed in the literature.

Firstly, synchronicity is identified as a crucial technical feature of LSC platforms. It refers to the extent to which live streaming viewers can communicate synchronously, measuring the speed of consumers' input and feedback. Synchronicity has been found to be positively associated with trust in streamers and products (M. Zhang et al., 2022) as well as consumer platform attachment (Li et al., 2021).

Secondly, responsiveness, defined as the degree to which a platform responds to a consumer's request, exhibits a reversed U-shaped influence on consumer engagement in LSC platforms (Kang et al., 2021). A study has found that responsiveness, coupled with self-presentation, positively affects perceived proximity to the streamer and the sense of belonging to the viewer crowd (Guan et al., 2022). While responding promptly to consumers' requests satisfies them and enhances their trust toward the platform, excessive responsiveness may lead to learning myopia and hinder services and product providers from attracting new users (Kang et al., 2021).

Thirdly, visibility, representing the possibility of visibly demonstrating the product to consumers, has been identified as influencing trust in streamers and products (M. Zhang et al., 2022). The visibility and authenticity of live streaming positively impact the intention to buy, both directly and indirectly through perceived risk and value co-creation (Guo et al., 2022).

Moreover, a separate study discovered that factors such as demand, convenience, interactivity, and playfulness positively stimulate consumers' perceived enjoyment (S. C. Lin et al., 2022). Interactivity, in particular, has been associated with an increase in consumers' immersion, ultimately leading to purchase behavior (Lv et al., 2022). However, a contrasting study found that such two-way communication does not affect perceived proximity to the streamer and the sense of belonging to the viewer crowd (Guan et al., 2022).

4.1.2. Platform Attachment and Services

Platform attachment signifies the consumer stickiness of a LSC platform. A stronger connection with consumers results in higher platform attachment. Elevated platform attachment encourages consumers to visit the platform more frequently, use it for longer durations, and actively participate in shopping

activities (Hu & Chaudhry, 2020; Li et al., 2021).

Logistic service quality has been found to have a positive relationship with trust and perceived value, subsequently influencing impulsive buying behavior (Z. Zhang et al., 2022). Channel proliferation in LSC denotes the increased interactive ways provided by platforms for live streamers to promote products to the audience. Research has identified a positive and statistically significant coefficient of channel proliferation on the conversion rate (Lyu et al., 2022).

4.2. Product- and Content-related Factors

We categorize product- and content-related factors into product-related factors, content-related factors, and product-content fit. Product-related factors encompass product categories and product attributes, while content-related factors include information amount, information quality, information personalization, information transparency, and content diversity.

4.2.1. Product-related Factors

4.2.1.1. Product Category

As consumers are unable to physically touch goods in Live Streaming Commerce (LSC), the evaluation of products in different categories yields varying outcomes. Experience goods, such as video games, food, and clothes, present challenges in assessment. In contrast, search goods, like computers and cameras, can be described through parameters. Consumers experience higher perceived uncertainty when streamers promote experience goods compared to search goods, as the former requires more comprehensive information for confident purchasing decisions (Zhang, Qin, et al., 2020).

SKU proliferation refers to the addition of various forms of a similar product in the live stream; live streams with higher SKU proliferation tend to have a higher conversion rate to purchases (Lyu et al., 2022).

4.2.1.2. Product Attributes

Several product attributes can significantly influence the outcome of Live Streaming Commerce (LSC). Firstly, utilitarian value, representing the predicted utility of a specific product or service, plays a pivotal role in increasing consumers' trust in a product. This, in turn, enhances trust in sellers and boosts consumer engagement (Wongkitrungrueng & Assarut, 2020).

Secondly, price is a crucial consideration for consumers in LSC, particularly in the travel business (Yang et al., 2022). Fair pricing has been identified as a factor positively affecting consumer engagement (Addo et al., 2021). Price perception, specifically the perception of monetary value, strongly correlates with consumers' cognitive reactions, ultimately leading to impulsive buying behavior (Lo et al., 2022).

Thirdly, scarcity persuasion, utilizing limited volume or time promotions to create a sense of scarcity, has also been found to be positively related to consumers' cognitive reactions (Lo et al., 2022).

4.2.2. Content-related Factors

4.2.2.1. Information Amount

The information amount denotes the completeness of information, which tends to attract consumers with clear shopping goals, commonly referred to as task attraction. This phenomenon leads consumers to develop a stronger parasocial relationship with the sellers (Quan et al., 2020).

4.2.2.2. Information Quality

Information quality pertains to the extent to which the live streaming channel furnishes complete, reliable, and useful information (Xu et al., 2020). In comparison to parasocial interaction and seller's attractiveness, information quality exerts a more significant influence on the audience's psychological feelings, attitudes, and beliefs. Trust influenced by information quality directly correlates with purchase intention (Dong et al., 2022). A similar concept, informativity, has been identified as affecting immersion (Lv et al., 2022).

4.2.2.3. Information Personalization

Information personalization gauges the degree to which live streaming content meets the individual requirements of each consumer. Research has uncovered a reversed U-shaped effect on tie strength, indicating that consumers may become defensive and concerned about their privacy when exposed to overly personalized content in live streaming (Kang et al., 2021).

4.2.2.4. Information Transparency

In the context of online shopping, information transparency in LSC pertains to the provision of sufficient and understandable information by LSC platforms. Enhanced information transparency empowers consumers to make effective judgments in the realm of LSC (Xu et al., 2022). Additionally, guidance information has been found to impact dynamic brand experience, ultimately influencing impulsive purchases (Wang et al., 2022).

4.2.3. Content-product Fit

Content-product fit gauges the alignment between live streaming content and the product being sold. When there is a match between the live content and the product, consumers tend to develop both utilitarian and hedonic attitudes toward the seller. Additionally, the consumer's hedonic attitude toward the seller positively influences their purchase intention, primarily meeting viewers' need for entertainment (Park & Lin, 2020).

4.3. Streamer-related Factors

We categorize streamer-related factors into two components: streamer attributes and streamer-product fit. Streamer attributes comprise four dimensions: streamer credibility, physical attraction, social attraction, and task attraction.

4.3.1. Streamer Attributes

Streamers who exhibit quick response, deliver valuable marketing activities, demonstrate authenticity and credibility, possess a deep understanding of products, and provide professional, clear, and accurate information are found to have a positive relationship with trust, which, in turn, leads to impulsive buying behavior (Z. Zhang et al., 2022). Additionally, the popularity, professionalism, and attractiveness of streamers moderate the relationship between the live streaming portfolio and conversion rate (Lyu et al., 2022). Sustained attraction is also identified as influencing empathetic attachment and sustained loyalty, ultimately leading to purchase intention in LSC hosted by comeback pop performers (Z. Ma et al., 2022). These attractions can be classified into several types as follows.

4.3.1.1. Credibility Attraction

Streamers characterized by reliability, responsibility, sincerity, and trustworthiness can leverage these traits as indicators of product quality, establishing themselves as key opinion leaders (S. Zhang et al., 2022). The ability of streamers to genuinely share their feelings is considered instrumental in shaping consumer perceptions. Furthermore, vicarious expression/experience, which involves streamers facilitating consumer product experiences by answering questions, showcasing product attributes, and trying on products live, has been shown to positively influence consumer platform attachment (Li et al., 2021). In a separate study, it has been found to impact consumers' affective reactions (Lo et al., 2022).

4.3.1.2. Physical Attraction

The physical attraction of the streamer proves to be a significant factor in Live Streaming Commerce (LSC), closely tied to the streamer's demographic characteristics, including gender. Research suggests that male audiences tend to find female streamers more attractive than their male counterparts, with a higher likelihood of exhibiting escapism motivation toward female streamers. Additionally, both male and female audiences rate female streamers significantly higher in source credibility compared to male streamers. However, there is a perception that male streamers are perceived as more professional by both audiences (Todd & Melancon, 2018).

4.3.1.3. Social Attraction

Social attraction in LSC is a crucial aspect linked to the streamers' appealing social images. Notably, popular streamers, recognized for their good reputation, high rankings, and a large fan base, are often

recommended by the platform. This popularity has the potential to transform network traffic into purchasing power, translating into commercial value conversion (S. Zhang et al., 2022). Another facet of social attraction arises from the affinity viewers feel towards streamers who exhibit qualities such as gentleness, politeness, patience, non-aggressiveness, and approachability. These streamers excel in fostering a sense of care for everyone, narrowing the psychological distance, and cultivating a feeling of belonging and intimacy among their audience (S. Zhang et al., 2022).

In addition, when streamers take the initiative to communicate more with consumers and engage in more affective interactivity, they receive greater social attraction (Quan et al., 2020) and foster stronger attachment from consumers (Li et al., 2021). This increased interactivity positively influences the intention to buy, both directly and indirectly through perceived risk and value co-creation (Guo et al., 2022).

4.3.1.4. Emotional Attraction

Empathy, as an emotional attribute that streamers provide to consumers, demonstrates personalized care, making consumers feel they receive high-quality interaction. This attribute not only contributes to consumer engagement (Sun et al., 2019) but also leads to increased sales (Zhang, Sun, et al., 2020). Another emotional attribute that streamers can offer is entertainment, which has been found to have a positive correlation with the intention to buy (Guo et al., 2022) and immersion, ultimately leading to purchase behavior (Lv et al., 2022).

4.3.1.5. Economical Attraction

In a live streaming broadcast, many streamers provide discounts to consumers, creating an economic bond. For viewers, watching live streaming becomes worthwhile as they receive various benefits such as free shipping vouchers, flash deal coupons, and even gifts. These economic returns have a positive impact on consumers' attitudes toward streamers (Quan et al., 2020). Furthermore, promotional incentive information has been found to be positively related to trust and perceived value (Z. Zhang et al., 2022).

4.3.2. Streamer-product Fit

Streamer-product fit measures the extent to which the streamer and the product are aligned. A high streamer-product fit enhances consumer attitudes toward source trustworthiness. Moreover, it serves as a crucial antecedent for streamer attractiveness and consumer trust in streamers, subsequently influencing consumer purchase intention (Park & Lin, 2020).

4.4. Viewer-related Factors

Live streaming not only allows consumers to observe each other's behavior but also has a noticeable impact on their own actions. When consumers witness their peers engaging in online purchasing behaviors, such as leaving comments and participating in real-time interactions, it serves as encouragement for them to join live streaming sessions. Through peer cues, consumers gain access to additional product information, allowing them to evaluate whether a product aligns with their needs. This exposure sometimes even leads to the purchase of products they had not initially intended to buy. Furthermore, real-time online comments from peers are positively correlated with perceived value and subsequently influence impulsive buying behavior (Z. Zhang et al., 2022). As mentioned in section 4.1.1.2, danmu has been found to impact dynamic brand experience (Wang et al., 2022).

4.5. Cultural Characteristics

Cultural characteristics have also been examined in this context. Specifically, social orientation has been identified as influencing the perceived proximity to the streamer and the sense of belonging to the viewer group (Guan et al., 2022). Additionally, the concept of harmony has been found to have an impact on the sense of belonging to the viewer group, although it does not affect the perceived proximity to the streamer (Guan et al., 2022).

5. Future Study Directions

After sorting out the influencing factors in Fig. 1, we identify the research gaps that future studies can explore.

5.1. Uniqueness of Live Streaming Commerce

LSC, despite its innovative format, falls under the broader category of e-commerce. Consequently, there are discernible parallels between this emerging e-commerce strategy and traditional approaches. A noteworthy similarity lies in the analysis of traditional e-commerce strategies, which, like LSC, can be scrutinized based on internal and external factors. Internal factors, encompassing consumer characteristics and their psychology and behavior, exhibit resemblances across both LSC and traditional e-commerce. Similarly, external factors in traditional e-commerce, such as platform-related and product- and content-related factors, share common ground with the considerations in LSC. As we delve deeper into the intricacies of various e-commerce strategies, future studies have the potential to unearth additional parallels, contributing to the formulation of comprehensive theories for the broader field of e-commerce.

Nevertheless, this novel e-commerce strategy boasts distinct features. LSC thrives on the live streaming engagement of a presenter who showcases products directly to the audience, deviating from traditional reliance on text, images, or commercials. The interactive nature of this format places the streamer at the core of the strategy, introducing unique dynamics. Notably, consumer psychology and behavior extend beyond individual considerations to encompass real-time social interaction. As depicted in Fig. 1, various aspects of social psychological behavior, including social presence (Dong et al., 2022; Guan et al., 2022; X. Ma et al., 2022), social bond (Xu et al., 2020; Zhang, Sun, et al., 2020; Li et al., 2021; Lo et al., 2022), self-influencer congruence (Shan et al., 2019; Guan et al., 2022), and psychological distance (Zhang, Qin, et al., 2020), have been explored in the literature. While these factors predominantly delve into the social and interactive dimensions, a closer examination reveals that the existing literature has not emphasized the real-time characteristics of live-streaming commerce. Consequently, there is ample room for future studies to explore how real-time commerce influences consumer behavior and the overall effectiveness of this evolving e-commerce paradigm.

Furthermore, live-streaming commerce assumes two crucial roles beyond its consumers—those of the streamer and other viewers. These roles distinguish it from traditional e-commerce. As depicted in Fig. 1, a limited number of studies have delved into streamer-related factors (Lyu et al., 2022; Z. Ma et al., 2022; Z. Zhang et al., 2022). However, there remains a noticeable gap in research concerning stream-product fit, and investigations into viewer-related factors are notably scarce. Consequently, future studies are anticipated to explore the alignment between streamers and products, the resonance between streamers and viewers, and various characteristics pertaining to viewers.

5.2. Research Gap in Each Sub-category

Firstly, concerning consumer characteristics, the majority of studies focus on college students within a specific cultural context. Consequently, there has been limited exploration into the influence of consumer age, income, education levels, and cultural backgrounds. Diverse age groups, income brackets, and education levels often represent varying degrees of innovativeness (Park & Lin, 2020). Additionally, Eastern and Western cultures exhibit distinct values (Hu & Chaudhry, 2020). A more comprehensive understanding could be gained by investigating the impact of these demographic factors on consumer behavior. Moreover, future research could explore the moderating influence of specific personality traits, such as self-construal (interdependent vs. independent), curiosity, and self-monitoring. These traits, previously applied in studying donation behavior in live streaming, may offer valuable insights in the context of LSC, given their similarities and high correlation (Zhang, Sun, et al., 2020).

Secondly, in the realm of consumer psychology and behavior, research has established that trust

positively influences purchase hesitation, indicating the intricate nature of trust in live streaming environments compared to traditional online shopping (X. Ma et al., 2022). This suggests the need for further studies to delve into the nuanced relationship between trust and consumer behavior in LSC. Additionally, while previous research has examined the impact of perceived similarity and self-influencer congruence, consumers' self-concept can be evaluated across various dimensions, including lifestyle, personality, appearance, and motivation (Shan et al., 2019). Hence, it is imperative to explore other dimensions of consumer identity for perceived familiarity and self-influencer congruence. Furthermore, existing literature has explored various match-ups such as self-influencer congruence, product-content congruence, and streamer-product congruence (Park & Lin, 2020). Future studies should extend this exploration to consider the congruence between consumers' shopping goals and influencer's live streaming content.

Thirdly, in the context of platform-related factors, existing studies have explored general IT factors like synchronicity, responsiveness, and interactivity (Li et al., 2021). However, specific IT factors such as game mechanisms and the danmu effect, which are crucial and distinctive influencers in live streaming, have received limited attention (Wang et al., 2019; Zimmer et al., 2020). Additionally, the majority of studies in the literature have been confined to the Taobao platform. To broaden our understanding, future research should encompass a diverse range of platforms, including services like TikTok, Amazon Live, and Instagram Live.

Fourth, considering product- and content-related factors, it is noteworthy that a predominant portion of products on LSC platforms falls under the categories of cosmetics and clothing, reflecting the predominantly female audience (Xu et al., 2020). As the audience base for live streaming continues to grow, future research should broaden its scope to include other product categories, addressing the needs of both male and female consumers, including electronic products.

Fifth, concerning streamer-related factors, consumers often perceive streamers as motivated primarily by financial gain. However, recent research suggests that consumers appreciate streamers who genuinely care about their well-being (Shan et al., 2019). Future studies could delve into streamer motivations, including altruistic motives. Additionally, current research has predominantly focused on small sellers within live streaming platforms, warranting exploration of the impact of seller size (small sellers vs. large firms) as a key moderating variable for LSC sales (Wongkitrungrueng & Assarut, 2020).

Sixth, in terms of viewer-related factors, the prevalence of spam comments and fake comments in live stream comment sections poses a significant challenge (Kang et al., 2021). Identifying methods to discern and address spam and fake comments is crucial in exploring viewer-related factors. Future studies could employ machine learning techniques to investigate the differentiation between authentic comments and unusual comments, shedding light on how these comments impact consumer trust toward both the streamer and the product.

5.3. Literature Accumulation, Theories, Methodology, and Locations

We have also assessed the volume of studies on similar influencing factors and observed that there is currently insufficient data for meta-analysis on specific relationships. However, the publications related to LSC have demonstrated a growing trend. For instance, only one publication was released in 2015, followed by none in 2016, two in 2017, and one in 2018. Subsequently, the number of publications has increased, with four papers in 2019, eight in both 2020 and 2021, and nine in the first half of 2022. This trajectory suggests an increasing focus on LSC research in recent years. We anticipate that more studies will be conducted in the coming years. As the body of research expands, there will be an opportunity for meta-analysis to summarize the relationships between specific influencing factors and the effectiveness of LSC.

Among the 35 papers reviewed, the majority have incorporated theoretical frameworks, with only

six lacking clear theoretical application. This underscores the prevalent use of solid theoretical foundations in current LSC studies, emphasizing the recognized importance of theory application. Furthermore, the observed diversity in applied theories is noteworthy. The Stimulus-Organism-Response model has been employed in seven instances, the Technology Acceptance Model three times, and the Means-End Chain theory three times. Conversely, the remaining 18 theories have been applied only once each. This diversity highlights the validation of LSC research through the lens of various theoretical perspectives.

The research methodologies employed in the reviewed literature exhibit diversity, albeit with a notable inclination towards a singular method—surveys. Out of the 35 studies, 29 have utilized survey questionnaires for data collection. In contrast, two studies have employed interviews, two have employed text analytics, and one has utilized an experimental approach. This skewed distribution suggests a need for greater methodological balance in future LSC research, encouraging the exploration of methods beyond surveys. Moreover, there is a noticeable imbalance in the geographical distribution of research. The majority of studies (29 out of 35) have been conducted in Mainland China, with only two studies each in Thailand, the US, and Taiwan, and one in Canada. Hence, there is a call for more studies in diverse countries and regions to enhance the generalizability of research findings.

6. Discussions and Conclusions

6.1. Theoretical and Practical Implications

This study provides both theoretical and practical implications. First, the research findings highlight the crucial importance of streamer credibility, compelling content, and dynamic social interactions in shaping meaningful engagement and facilitating successful purchases within the realm of LSC. By emphasizing these factors, the analysis sheds light on the key drivers that contribute to the effectiveness of LSC as a sales channel.

In addition, this study draws attention to existing research gaps that warrant further exploration. One such research gap pertains to a deeper understanding of real-time interactions within the context of LSC. While the analysis acknowledges the significance of social interactions, it highlights the need for more comprehensive investigations into the intricacies of these interactions. Exploring the dynamics between streamers and viewers in real-time can provide valuable insights into the factors that influence engagement and purchase decisions.

Furthermore, the analysis underscores the importance of considering cultural nuances in LSC. Cultural factors play a substantial role in shaping consumer behavior and preferences. However, the impact of these cultural nuances on engagement and purchase behavior in LSC remains relatively unexplored. Understanding how cultural characteristics influence viewers' perceptions, preferences, and decision-making processes can enhance the effectiveness of LSC strategies and interventions.

To address these research gaps, the analysis advocates for a greater application of consumer behavior theories within the context of LSC. By drawing on established theories and frameworks, researchers can elucidate the underlying mechanisms that drive engagement and facilitate successful purchases. This interdisciplinary approach can provide a more comprehensive understanding of the complex dynamics at play in LSC and inform the development of effective strategies for streamers, platforms, and marketers.

In terms of practical implications, the findings of this study hold significant implications for businesses and marketers operating within the live commerce retail channel. The study suggests a strategic emphasis on several key factors that can enhance the effectiveness of live commerce platforms. First and foremost, the careful selection of credible streamers is crucial. Streamers who possess a strong reputation, authenticity, and expertise in their respective domains are more likely to

garner trust and credibility from their viewers. By partnering with credible streamers, businesses can leverage their influence to promote their products or services, making it more likely for viewers to consider and make purchases based on their recommendations.

Furthermore, fostering social connections between streamers and viewers is essential. Creating a sense of community and belonging can significantly enhance viewer engagement and loyalty. Businesses and platforms should encourage streamers to interact with their viewers, respond to comments and questions, and create a welcoming and inclusive environment. This not only strengthens the bond between the streamer and their audience but also cultivates a positive brand image and fosters long-term customer relationships.

Additionally, harnessing the interactive features of platforms is key to cultivating an engaging and immersive shopping experience. Live commerce platforms often offer various interactive tools, such as real-time chats, polls, and interactive product demonstrations. Businesses should leverage these features to actively engage viewers during live streams, encourage their participation, and provide them with a personalized and interactive shopping experience. This can help to create a sense of excitement, increase viewer involvement, and ultimately drive conversions.

6.2. Conclusion

This study comprehensively reviews literature from January 2015 to October 2022 on LSC using NVivo 12. It investigates the influencing factors that may impact the effectiveness of LSC, conducting a systematic review that integrates evidence on consumer behavior in LSC, categorizing internal and external influencing factors. The study underscores the pivotal role of streamer credibility, compelling content, and active social interactions in driving successful engagement and purchases. The analysis identifies research gaps in understanding real-time interactions, streamer-viewer dynamics, and cultural nuances, advocating for a greater application of consumer behavior theories to elucidate engagement mechanisms. In practical terms, the findings suggest a focus on selecting credible streamers, fostering social connections between streamers and viewers, and leveraging interactive platform features to create an immersive shopping experience. This study establishes a foundation to advance research, inform strategies, and optimize the evolving live commerce retail channel.

Acknowledgment

The authors would like to acknowledge the research fund provided by Proactive Think Tank Limited (BA/RS/2020/003) and the support from the Enterprise and Social Development Research Centre.

References

- Addo, P. C., Fang, J., Asare, A. O., & Kulbo, N. B. (2021). Customer engagement and purchase intention in live-streaming digital marketing platforms. *The Service Industries Journal*, 41(11-12), 767-786. <https://doi.org/10.1080/02642069.2021.1905798>
- Aljukhadar, M., & Senecal, S. (2017). Communicating online information via streaming video: the role of user goal. *Online Information Review*, 41(3), 378-397. <https://doi.org/10.1108/oir-06-2016-0152>
- Deng, Z., Benckendorff, P., & Wang, J. (2021). Travel live streaming: an affordance perspective. *Information Technology & Tourism*, 23, 189-207. <https://doi.org/https://doi.org/10.1007/s40558-021-00199-1>

- Dong, X., Zhao, H., & Li, T. (2022). The role of live-streaming E-commerce on consumers' purchasing intention regarding green agricultural products. *Sustainability* 14(4374). <https://doi.org/https://doi.org/10.3390/su14074374>
- Gong, H., Zhao, M., Ren, J., & Hao, Z. (2022). Live streaming strategy under multi-channel sales of the online retailer. *Electronic Commerce Research and Applications*, 55, 101184.
- Gong, X., Ye, Z., Liu, K., & Wu, N. (2020). The Effects of Live Platform Exterior Design on Sustainable Impulse Buying: Exploring the Mechanisms of Self-Efficacy and Psychological Ownership. *Sustainability*, 12(6). <https://doi.org/10.3390/su12062406>
- Guan, Z., Hou, F., Li, B., Phang, C. W., & Chong, A. Y.-L. (2022). What influences the purchase of virtual gifts in live streaming in China? A cultural context-sensitive model. *Information Systems Journal*, 32, 653-689.
- Guo, H., Sun, X., Pan, C., Xu, S., & Yan, N. (2022). The sustainability of fresh agricultural produce live broadcast development: Influence on consumer purchase intentions based on live broadcast characteristics. *Sustainability* 14(7159). <https://doi.org/https://doi.org/10.3390/su14127159>
- Hu, M., & Chaudhry, S. S. (2020). Enhancing consumer engagement in e-commerce live streaming via relational bonds. *Internet Research*, 30(3), 1019-1041. <https://doi.org/10.1108/intr-03-2019-0082>
- Kang, K., Lu, J., Guo, L., & Li, W. (2021). The dynamic effect of interactivity on customer engagement behavior through tie strength: Evidence from LSC platforms. *International Journal of Information Management*, 56. <https://doi.org/10.1016/j.ijinfomgt.2020.102251>
- Lee, C.-H., & Chen, C.-W. (2021). Impulse Buying Behaviors in Live Streaming Commerce Based on the Stimulus-Organism-Response Framework. *Information*. 2021; 12(6):241, 12(6). <https://doi.org/https://doi.org/10.3390/info12060241>
- Lei, Y., Zhou, Q., Ren, J., & Cui, X. (2022). From “personal” to “interpersonal”: a multilevel approach to uncovering the relationship between job satisfaction and knowledge sharing among IT professionals. *Journal of Knowledge Management*, 26(6), 1566-1588.
- Li, D., Zhang, G., Xu, Z., Lan, Y., Shi, Y., Liang, Z., & Chen, H. (2018). Modelling the roles of celebrity trust and platform trust in consumers' propensity of live-streaming: An extended TAM method. *Computers, Materials & Continua*, 55(1), 137-150.
- Li, Y., Li, X., & Cai, J. (2021). How attachment affects user stickiness on live streaming platforms: A socio-technical approach perspective. *Journal of Retailing and Consumer Services*, 60. <https://doi.org/10.1016/j.jretconser.2021.102478>
- Lin, K., Fong, L. H. N., & Law, R. (2022). Live streaming in tourism and hospitality: A literature review. *Asia Pacific Journal of Tourism Research*, 27(3), 290-304. <https://doi.org/10.1080/10941665.2022.2061365>
- Lin, S. C., Tseng, H. T., Shirazi, F., Hajli, N., & Tsai, P. T. (2022). Exploring factors influencing impulse buying in live streaming shopping: a stimulus-organism-response (SOR) perspective. *Asia Pacific Journal of Marketing and Logistics, Ahead-of-print*.
- Lo, P.-S., Dwivedi, Y. K., Tan, G. W.-H., Ooi, K.-B., Aw, E. C.-X., & Metri, B. (2022). Why do consumers buy impulsively during live streaming? A deep learning-based dual-stage SEM-ANN analysis. *Journal of Business Research*, 147, 325-337. <https://doi.org/https://doi.org/10.1016/j.jbusres.2022.04.013>
- Lv, X., Zhang, R., Su, Y., & Yang, Y. (2022). Exploring how live streaming affects immediate buying behavior and continuous watching intention: A multigroup analysis. *Journal of Travel & Tourism Marketing*, 39(1), 109-135. <https://doi.org/10.1080/10548408.2022.2052227>

- Lyu, W., Qi, Y., & Liu, J. (2022). Proliferation in LSC, and key opinion leader selection. *Electronic Commerce Research and Applications*, September 2022.
- Ma, X., Zou, X., & Lv, J. (2022). Why do consumers hesitate to purchase in live streaming? A perspective of interaction between participants. *Electronic Commerce Research and Applications*, 55, 101193.
- Ma, Z., Song, L., Zhou, J., Chong, W., & Xiong, W. (2022). How do comeback Korean pop performers acquire audience empathetic attachment and sustained loyalty? Parasocial interactions through live stream shows. *Frontiers in Psychology*, 13, 865698. <https://doi.org/10.3389/fpsyg.2022.865698>
- Malle, B. F. (2011). Attribution theories: How people make sense of behavior. In D. Chadee (Ed.), *Theories in social psychology* (pp. 72-95). Wiley-Blackwell.
- Park, H. J., & Lin, L. M. (2020). The effects of match-ups on the consumer attitudes toward internet celebrities and their live streaming contents in the context of product endorsement. *Journal of Retailing and Consumer Services*, 52, 101934.
- Quan, Y., Choe, J. S., & Im, I. (2020). The Economics of Para-social Interactions During Live Streaming Broadcasts : A Study of Wanghongs. *Asia Pacific Journal of Information Systems*, 30(1), 143-165. <https://doi.org/10.14329/apjis.2020.30.1.143>
- Shan, Y., Chen, K.-J., & Lin, J.-S. (2019). When social media influencers endorse brands: the effects of self-influencer congruence, parasocial identification, and perceived endorser motive. *International Journal of Advertising*, 39(5), 590-610. <https://doi.org/10.1080/02650487.2019.1678322>
- Singh, S., Singh, N., Kalinić, Z., & Liébana-Cabanillas, F. J. (2021). Assessing determinants influencing continued use of live streaming services: An extended perceived value theory of streaming addiction. *Expert Systems with Applications*, 168(15 April 2021), 114241.
- Sun, Y., Shao, X., Li, X., Guo, Y., & Nie, K. (2019). How live streaming influences purchase intentions in social commerce: An IT affordance perspective. *Electronic Commerce Research and Applications*, 37. <https://doi.org/10.1016/j.elerap.2019.100886>
- Tanwar, A. S., Chaudhry, H., & Srivastava, M. K. (2022). Trends in Influencer Marketing: A Review and Bibliometric Analysis. *Journal of Interactive Advertising*, 22(1), 1-27. <https://doi.org/10.1080/15252019.2021.2007822>
- Todd, P. R., & Melancon, J. (2018). Gender and live-streaming: source credibility and motivation. *Journal of Research in Interactive Marketing*, 12(1), 79-93. <https://doi.org/10.1108/jrim-05-2017-0035>
- Vijai, J. P. (2018). Examining the relationship between system quality, knowledge quality and user satisfaction in the success of knowledge management system: An empirical study. *International Journal of Knowledge Management Studies*, 9(3), 203-221.
- Wang, D., Luo, X. R., Hua, Y., & Benitez, J. (2022). Big arena, small potatoes: A mixed-methods investigation of atmospheric cues in live-streaming e-commerce. *Decision Support Systems*, 158(2022), 113801.
- Wang, K., Zhao, P., Lu, Y., & Gupta, S. (2019). What Motives Users to Participate in Danmu on Live Streaming Platforms? The Impact of Technical Environment and Effectance. *Data and Information Management*, 3(3), 117-134.
- Wongkitrungrueng, A., & Assarut, N. (2020). The role of live streaming in building consumer trust and engagement with social commerce sellers. *Journal of Business Research*, 117, 543-556. <https://doi.org/10.1016/j.jbusres.2018.08.032>

- Xiao, Q., Wan, S., Zhang, X., Siponen, M., Qu, L., & Li, X. (2022). How consumers' perceptions differ towards the design features of mobile live streaming shopping platform: A mixed-method investigation of respondents from Taobao Live. *Journal of Retailing and Consumer Services*, 69, 103098.
- Xu, X., Wu, J.-H., & Li, Q. (2020). WHAT DRIVES CONSUMER SHOPPING BEHAVIOR IN LIVE STREAMING COMMERCE? *Journal of Electronic Commerce Research*, 21(3).
- Xu, Y., Jiang, W., Li, Y., & Guo, J. (2022). The Influences of Live Streaming Affordance in Cross-Border E-Commerce Platforms. *Journal of Global Information Management*, 30(2), 1-24. <https://doi.org/10.4018/JGIM.20220301.oa3>
- Xue, J., & Liu, M. T. (2022). Investigating the live streaming sales from the perspective of the ecosystem: the structures, processes and value flow. *Asia Pacific Journal of Marketing and Logistics*, (ahead-of-print).
- Yang, J., Zeng, Y., Liu, X., & Li, Z. (2022). Nudging interactive cocreation behaviors in live-streaming travel commerce: The visualization of real-time danmaku. *Journal of Hospitality and Tourism Management*, 52, 184-197.
- Zhang, M., Liu, Y., Wang, Y., & Lu Zhao. (2022). How to retain customers: Understanding the role of trust in LSC with a socio-technical perspective. *Computers in Human Behavior*, 127, 107052.
- Zhang, M., Qin, F., Wang, G. A., & Luo, C. (2020). The impact of live video streaming on online purchase intention. *The Service Industries Journal*, 40(9-10), 656-681. <https://doi.org/10.1080/02642069.2019.1576642>
- Zhang, M., Sun, L., Qin, F., & Wang, G. A. (2020). E-service quality on live streaming platforms: swift guanxi perspective. *Journal of Services Marketing*, 35(3), 312-324. <https://doi.org/10.1108/jsm-01-2020-0009>
- Zhang, S., Huang, C., Li, X., & Ren, A. (2022). Characteristics and roles of streamers in e-commerce live streaming. *The Service Industries Journal*, 42(13-14), 1001-1029. <https://doi.org/10.1080/02642069.2022.2068530>
- Zhang, T., Tang, Z., & Han, Z. (2022). Optimal online channel structure for multinational firms considering live streaming shopping. *Electronic Commerce Research and Applications*, (ahead-of-print), 101198.
- Zhang, X., Chen, H., & Liu, Z. (2022). Operation strategy in an E-commerce platform supply chain: whether and how to introduce live streaming services? *International Transactions in Operational Research*, (ahead-of-print).
- Zhang, Z., Zhang, N., & Wang, J. (2022). The Influencing Factors on Impulse Buying Behavior of Consumers under the Mode of Hunger Marketing in Live Commerce. *Sustainability*, 14(2122). <https://doi.org/https://doi.org/10.3390/su14042122>
- Zheng, R., Li, Z., & Na, S. (2022). How customer engagement in the live-streaming affects purchase intention and customer acquisition, E-tailer's perspective. *Journal of Retailing and Consumer Services*, 68, 103015.
- Zhou, Y., Wang, S., & Hu, Y. (2022). Manufacturers' social e-commerce channel selection strategy with social popularity concern. *Electronic Commerce Research*, (ahead-of-print).
- Zimmer, F., Scheibe, K., & Zhang, H. (2020). Gamification elements on social live streaming service mobile applications. *International Conference on Human-Computer Interaction*,

Appendix. Code Structure of the Influencing Factors in NVivo

Code name and relationship

Internal Factors

Consumer characteristics

- Demographic information
- Consumer personality
- Frequency of watching live streaming

Consumer Psychology and Behavior

Consumer personal psychological behavior

- Consumer motivations
- Consumer state
- Uncertainty and trust

Consumer social psychological behavior

- Social presence
- Social bond
- Self-influencer congruence
- Psychological distance

External Factors

Platform-related factor

General IT feature

- IT affordance
- User interface design
- System quality

Platform attachment and service

Product- and content-related factor

Product-related factor

- Product category
- Product attributes

Content-related factor

- Information amount
- Information quality
- Information personalization
- Information transparency

Content-product fit

Streamer-related factor

Streamer attributes

- Credibility attraction
- Physical attraction
- Social attraction
- Emotional attraction
- Economical attraction

Streamer-product fit

Viewer-related factor

Cultural characteristics
