THE EFFECTS OF STREAMER, CONTEXT, AND PRODUCT ON CONSUMERS'
PURCHASE AND CONTINUOUS WATCHING INTENTION IN LIVESTREAMING
COMMERCE

by

Yue Cen

Submitted in partial fulfilment of the requirements for the degree of Master of Science

at

Dalhousie University
Halifax, Nova Scotia
December 2023

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the
Mi'kmaq. We are all Treaty people.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This dissertation explores the impact of three critical elements in livestreaming commerce, streamer, context, and product, on consumer purchase and continuous watching intention, by integrating the self-determination theory (SDT) and Stimulus-Organization-Response (SOR) model.

In the study, the streamer's characteristic includes interactivity, similarity, and expertise, the context's characteristic includes visual effects and the livestreaming atmosphere, while product's characteristic includes price and product diversity. The dissertation focuses on analyzing the changes in consumer psychology caused by these three factors that can affect consumers' purchase and continuous watching intention.

The results indicate that all three elements stimulate the consumers, increasing their emotional participation and attachment. These factors can influence consumers' autonomous motivation according to SDT, thereby promoting the continuity of purchasing decisions and watching. The SOR model further emphasizes how these stimuli affect consumers' emotions and cognition, affecting their behavioral decisions.

In conclusion, this study offers a deep understanding of the key factors affecting consumer behavior in livestreaming commerce, providing essential insights for improving consumer attractiveness, promoting sales, and enhancing consumer loyalty.

Keywords: Livestreaming, Streamer, Context, Product, SOR, SDT, Purchase intention, Continuous watching intention.

LIST OF ABBREVIATIONS USED

AVE	Average Variance Extraction
CMB	Common Method Bias
CFA	Confirmatory Factor Analysis
CR	Composite Reliability
HTMT	Hero Trait Mono Trait Ratio
SOR	Stimulus-Organization-Response
SDT	Self-determination Theory
TAM	Technology Acceptance Model
UGT	Use and Gratification Theory
VIF	Variance Inflation Factors

ACKNOWLEDGEMENTS

I would like to express my deep gratitude to all those who played a crucial role in the completion of this paper. Their guidance, professional knowledge, and unwavering support played an important role in the formation of this research.

Dr. Qi Deng, my thesis supervisor: Throughout the entire journey, your guidance was invaluable. Your insightful feedback, constructive criticism, and encouragement are the driving forces behind the quality and depth of this work.

Dr. Jenny Chen, my co-supervisor: I sincerely appreciate your valuable contribution and professional knowledge. Your guidance provided additional perspectives, greatly improving the overall quality of this thesis.

Members of the Thesis Committee:

Dr. Kyung Lee: Your critical feedback and thoughtful insights have been essential for improving the methods and analysis of this study.

Dr. Hamed Aghakhani: I appreciate your meticulous attention to the details and valuable advice, which have enhanced the rigor and coherence of this thesis.

CHAPTER 1 INTRODUCTION

With the development of information technology, livestreaming shopping has become a part of people's daily lives. Livestreaming shopping constitutes a constantly evolving business model where hosts, also known as streamers, directly promote and sell products or services to consumers through real-time online video (Cai & Wohn, 2019). This contemporary shopping model mainly occurs on e-commerce platforms like Amazon or popular social media platforms like Facebook (Wongkitrungrueng & Assarut, 2020). Compared to traditional e-commerce, livestreaming shopping provides consumers with a series of unique advantages that help enhance their shopping decisions (Lee, 2001). Traditional e-commerce has weak social attributes and only provides consumers with two main communication channels: buyer reviews and customer service. Besides, traditional e-commerce mainly relies on static images and textual representations of products, which requires consumers to invest much time in filtering and comparing information before purchasing (Pires & Aisbett, 2003). On the contrary, in livestreaming shopping, streamers introduce products or services to consumers through real-time video communication, giving consumers a more immersive shopping experience and helping them build a comprehensive understanding of products or services (Ki & Kim, 2019; Zeng et al., 2023).

Livestreaming commerce, initially popularized in China, has been a tremendous success. From 2017 to 2022, the Chinese livestreaming commerce market surged from $3 billion to $480 billion (Arora et al., 2021; Koetsier, 2022). Due to its potential to enhance consumer engagement, conversion rate, and sales, global brands, retailers, tech giants, and start-ups view livestreaming commerce as a considerable opportunity and the next generation of retailing, leading to a rush to enter this burgeoning field (Gao et al., 2021). As a result, this new shopping model is rapidly proliferating globally. In the US, the livestreaming commerce market is expected to grow from about $20 billion in 2022 to an estimated $68 billion by 2026 (Coresight Research, 2022). However, despite its rapid growth, businesses entering the North American market for livestreaming commerce still

encounter challenges due to the immature settings of livestreaming platforms (Cai et al., 2018).

Due to the early development of the Chinese livestreaming commerce market, research has mainly focused on China, while overlooking the North American market. This limited focus restricts our understanding of the global impact of this emerging business model. Addressing the North American market can lead to the development of business strategies that are more widely applied in the international market. In addition, previous research has mainly focused on the impact of streamers on consumer purchasing behavior while ignoring other vital elements in livestreaming, such as product and context (Li & Peng, 2021; Hou et al., 2020; Kang et al., 2021). Therefore, research calls for a systematically examination of the streamer, product, and context in the livestreaming commerce as they are all integral to livestreaming shopping.

To bridge these research gaps, this study investigates consumers' livestreaming watching and shopping behavior in the context of North America. Specifically, drawing on the Stimulus-Organization-Response (SOR) model and Self-Determination theory (SDT), this research explores: 1) how the characteristics of three core elements of livestreaming shopping, namely, streamer (e.g., perceived interactivity, perceived similarity, and perceived expertise), product (e.g., perceived price attractiveness and product diversity), and context (e.g., visual complexity, time pressure, and perceived social herding), influence consumers perceptions (e.g., relatedness, competence, and autonomy) and purchase and continuous watching intention; 2) whether and how the consumer perception mediates these effects. To achieve the objective, this study aims to answer the question: How do the streamer, context, and product affect consumers' purchase and continuous watching intention in livestreaming commerce?

This research provides a deeper understanding of consumer behavior in the North American livestreaming commerce market, by thoroughly and meticulously analyzing the three core factors in the livestreaming environment and shows that external stimuli can cause profound changes in consumer psychology and ultimately shape consumer

behavior. These insights enable emerging media companies and business entities to enhance their products and services by strategically adjusting the fundamental elements inherent in livestreaming. In addition, these findings provide practical guidance and valuable insights for enterprises to implement livestreaming business strategies effectively. This can include enhancing the professional level of streamers, adjusting sales strategies within the livestreaming to create a suitable atmosphere, and enhancing product attributes. Consequently, this study was of great significance for improving the overall quality of livestreaming commerce.

The remaining parts of this dissertation are organized as follows: Firstly, I review previous research related to livestreaming, followed by the research model and hypotheses development. Secondly, I describe the research methodology, data analysis, and results. Thirdly, I discuss the research findings from the perspective of both theoretical and practical implications, acknowledging limitations, and proposing future research directions.

CHAPTER 2 LITERATURE REVIEW

Research on livestreaming shopping has emphasized a variety of theoretical frameworks, platforms, countries, research outcomes, and methodologies. This diversity reflects the growing interest in livestreaming shopping as a dynamic and evolving consumer behavior and e-commerce research phenomenon. This study is related to studies on livestreaming commerce and key elements of livestreaming shopping. A general summary of previous literature can be found in Appendix A.

2.1 Livestreaming Commerce Research

Most previous research adopted theoretical frameworks such as SOR to explore different characteristics of factors in livestreaming. Different external factors influenced the behavior of consumers, and the SOR model delved into the cognitive and emotional processes of consumers toward livestreaming shopping (Kang et al., 2021; Hu & Chaudhry, 2020; Fei et al., 2021; Tong et al., 2022). Based on this, most studies illustrated the consumers' purchase intention and their engagement. Since livestreaming shopping was a new shopping model, a few studies used Technology Acceptance Model (TAM) to study consumer behavior in livestreaming shopping, such as continuous watching and repeated watching intention, indicating the long-term impact of the livestreaming shopping experience (Wongkitrungrueng & Assarut, 2020; Lim et al., 2020; Lv et al., 2022; Hou et al., 2020; Guo et al., 2022). In the context of livestreaming, previous studies used Self-Determination Theory (SDT) to study the intrinsic motivation of consumers' behavior during livestreaming shopping. It offered a framework to understand why consumer engaged in livestreaming and what drove their continued participation. In addition, previous studies have also used the Use and Gratification Theory (UGT) to explore the consumer's intention to generate emotional attachment and social sharing behavior (Smock et al., 2011; Zhao et al., 2019; Hou et al., 2020; Cai & Wohn, 2019).

Most importantly, the existing study investigated the consumer behavior in different countries and the influence of different platforms on consumer behavior. Of the 44

papers, 38 studied livestreaming shopping in China as it is the fastest-growing livestreaming commerce market. The platforms have a wide range, including e-commerce platforms such as Taobao (Xu et al.,2020; Park & Lin, 2020; Zhang et al., 2020; Geng et al., 2020; Guo et al., 2022) and JD (Guo et al., 2022). In addition, a few studies also investigated some of South Asian countries like Thailand livestreaming market on social media platforms such as Facebook Live (Wongkitrungrueng et al., 2020; Cai & Wohn, 2019). Furthermore, although the North American market has not been extensively studied, out of 44 articles, one has researched game platforms such as Twitch (Todd & Melancon, 2018), and one has studied short video platforms such as TikTok in America (Guo et al., 2022).

To date, previous studies have investigated various factors that affect consumer behavior. For example, interactivity, professionalism, authority, resource credibility, visual complexity, emotional stimulation, and product practicality. Overall, these factors can be summarized as characters (streamer), scenes (context), and goods (product). In order to gain a multi-faceted understanding of consumer behavior and the decision-making process of consumers in livestreaming shopping, 80% of articles used surveys, and few also used interviews (Zhang et al., 2022).

Table 1 shows a summary of the literature on livestreaming.

Table 1. Summary of Literature on Livestreaming

Source	Theory	DVs	Livestreaming Key Elements			
			Streamer	Context	Product	Other
Fei et al (2021)	SOR	Purchase intension		Herding message Interaction text		
Zeng et al (2023)	Elaboration likelihood model	Purchase intention		Bullet screen quality Bullet screen sentiment Source credibility The number of bullet screen		
Lu & Chen (2021)	Signaling theory	Purchase intention	Value similarity Characteristic similarity			
Tong et al. (2022)	SOR	Purchase intention		Visual complexity		
Park & Lin (2020)	Self-congruity theory	Purchase intention			Product fit	
Zhang et al. (2020)	Construal level theory	Purchase intention				Strategies
Wang et al. (2022)	Affordance theory	Purchase intention		Atmospheric Cues Guidance information Bullet information Parasocial interaction		

Source	Theory	DVs	Livestreaming Key Elements			
			Streamer	**Context**	**Product**	**Other**
Zhang et al. (2022)	Social exchange theory	Purchase intention	Usefulness Vividness Responsiveness Interaction Empathy			
Lee et al. (2021)	SOR	Purchase intention	Attractiveness Trustworthiness Expertise	Purchase convenience	Product usefulness Product Price Product usefulness	
Huang & Suo (2021)	SOR	Purchase intention	Interpersonal interaction	Time pressure Visual appeal	Price promotion	
Lou et al. (2022)	SOR	Purchase intention	Streamer popularity		Product popularity	
Lv et al. (2022)	Attention-interest-desire-action	Purchase intention Continuous watching intention	Informativity Interactivity	Entertainment		
Ming et al. (2021)	SOR Flow theory	Purchase intention		Presence of platform Presence of viewers Presence of streamers Telepresence		

Source	Theory	DVs	Livestreaming Key Elements			
			Streamer	**Context**	**Product**	**Other**
Hou et al. (2020)	UGT	Purchase intention; Continuous watching intention	Interactivity Humor appeal Sex appeal			Social status display
Guo et al. (2022)	N/A	Continuous watching intention Purchase intention	Beauty Warmth Expertise Humor Passion			
Cheng et al. (2022)	Theater theory	Purchase intention	Popularity Preciseness Attractive Trust Professional Concreteness Similarity Interactivity Immersion Creativity	Social promotion Availability Platform convenience Platform trust	Product discount Product quality Product awareness Product diversity	Service quality
Gao et al. (2018)	SDT	Purchase intention		Telepresence Social presence		
Li et al. (2022)	SOR	Purchase intention	The social presence of the broadcaster	Presence of the platform		Presence of the Viewers

Source	Theory	DVs	Livestreaming Key Elements			
			Streamer	**Context**	**Product**	**Other**
Shang et al. (2023)	SOR	Purchase intention		Background fit		Trust Perceived pleasure
Sun et al. (2019)	Affordance theory	Purchase intention		Visibility Meta voicing Guide shopping Telepresence		
Current study	SOR SDT	Purchase intention Continue watching intention	Perceived interactivity Perceive similarity Perceived expertise	Time pressure Visual complexity Perceived social herding	Product diversity Perceived price attractiveness	

2.2 Key Elements of Livestreaming Shopping

According to the main characteristics of the influencing factors of livestreaming, previous research has divided the factors that affect consumer behavior into four aspects: streamer, context, product, and others.

2.2.1 Streamer

The streamer refers to the host who sells the products and services in livestreaming. Streamers have the most significant impact, and all livestreaming would revolve around them (Lim et al., 2020).

The behavior of the streamer was the primary driver of consumers' purchasing impulses and willingness (Lee et al., 2021). The interaction between streamers and consumers was the main activity of livestreaming shopping (Kang et al., 2021). These interactions could strengthen the relationship between streamers and consumers, who depended most on livestreaming shopping (Hou et al., 2020). Language interaction between streamers and consumers would enhance their positive emotions (Lou et al., 2022). Streamers would use different styles to talk with consumers and change their styles when introducing different products, making livestreaming shopping more attractive (Xu et al., 2020; Li & Peng, 2021). Humorous and outgoing streamers attracted more consumers' attention and were more likely to gain consumer recognition (Kang et al., 2021; Guo et al., 2022). When streamers interacted and communicated with consumers, the consumers' intimacy and trust would increase (Lee et al., 2021; Liu et al., 2021). They would consider livestreaming shopping a part of their lives and share it with friends (Li & Peng, 2021). When streamers used professional knowledge to introduce products to consumers, consumers may think they could learn knowledge from livestreaming, increasing their satisfaction and positive emotion (Zhang et al., 2022; Chen et al., 2020).

2.2.2 Context

Context refers to the environment, atmosphere, and elements in livestreaming shopping. Previous studies have investigated the importance of context in livestreaming shopping,

verifying their driving effects on consumer consumption behavior, emotional impact, and purchasing behavior (Lu & Chen, 2021).

Many context factors could affect consumers' purchasing behavior. Bullet information and visual background could help consumers understand the product and brand, which could affect consumers' purchasing emotions (Tong et al., 2022). Consumers obtained product information through bullet screens or background text information (Wang et al., 2022). Simultaneously, consumers typically used bullet information to interact with streamers. In this way, consumers generated trust in livestreaming (Zeng et al., 2023). Moreover, the streamers adjusted the atmosphere through bullet screens in the livestreaming, which enhanced consumers' emotions (Yang & Lee, 2023). The streamers used methods such as a countdown to render the atmosphere (Lv et al., 2022). These methods could generate competitive behavior among consumers and improve their purchasing behavior (Huang & Suo, 2021). Technology could help consumers improve their shopping experience. Ming et al. (2021) emphasized that livestreaming shopping could help consumers reduce their shopping time and improve shopping efficiency as streamers can showcase products' telepresence to consumers through real-time video.

2.2.3 Product

Product refers to the items sold in the livestreaming, including the goods and services. The product played a crucial and indispensable role in livestreaming and is an indispensable element.

Product price is the most critical factor in livestreaming. Unlike traditional e-commerce, the price of livestreaming shopping products has different structures (Huang & Suo, 2021). This price structure could effectively capture consumers' attention and improve the conversion of purchase rates (Lee et al., 2021). Besides, different platforms had different product price support (Zhang et al., 2022). In this way, merchants chose different platforms for livestreaming, which resulted in different prices for the same product on different platforms. Simultaneously, the authority of channels and platforms could help establish more trust in livestreaming (Zeng et al., 2023). Park & Lin (2020)

also emphasized that a fully functional platform could help increase product sales as the platform would review the authenticity of product channels and ensure after-sales functionality. Furthermore, the diversity of products could help consumers improve their experience and emotional connection (Luo et al., 2022). Consumers could freely choose various products and think this was more comfortable than the physical store experience (Zhang et al., 2020). In a diversified livestreaming room, matching product functions could affect sales and conversion rates. Lee et al. (2021) explained that the primary consideration of consumers in livestreaming shopping was the perceived usefulness of the product.

2.2.4 Other Factors

In addition to the three core factors, many other factors affect consumer behavior. Previous studies have investigated the impact of different factors on consumer behavior in livestreaming and the different behaviors of consumers during livestreaming. Many factors in livestreaming encouraged consumers to continue watching and purchasing products (Hou et al., 2020). For research on consumer motivation, many articles suggested that livestreaming satisfied people's sense of social achievement in the virtual world (Cai & Wohn, 2019). Social relationships in livestreaming also impacted consumers' willingness to purchase (Hu & Chaudhry, 2020). Social status, social trends, and the demand for social activities motivated consumers to watch livestreaming shopping and purchase (Chen et al., 2020; Fei et al., 2021).

Due to the early development of the Chinese livestreaming market, previous research mainly focused on the Chinese market (Guo et al., 2022). Despite the enormous potential of the North American market, its development could have been faster. North American streamers usually use their spare time to do the livestreaming, rather than treating it as a job. Therefore, they generally do not receive professional training. Meanwhile, many livestreaming platforms have relatively simple settings, such as having their background layout at home or outdoors. The setting of livestreaming platforms is also relatively single, for example, TikTok uses virtual gifts for rewards, rather than actual currency, which is different from Chinese market. Previous studies indicated that streamer, context,

and products are the three critical factors of livestreaming shopping (Shang et al., 2023). However, whether and how these factors affect consumer behavior in the North American market remains incomplete (Li & Peng, 2021). As the North American market started to rise quickly, livestreaming commerce businesses face many challenges. Therefore, further research on this livestreaming market is required (Wongkitrungrueng & Assarut, 2020).

Besides, previous research mainly focused on the isolated effects of various factors in livestreaming on consumer behavior (Luo et al., 2022; Liu et al., 2023). However, as a medium, livestreaming has three factors (streamer, context, product) that coexist and may collectively impact consumers. Although some studies have studied multiple elements, their focus remained consistent, such as examining the characteristics of the streamer (Kang et al., 2021; Lu & Chen, 2021). Thus, a clear research gap requires a multi-faceted and systematic investigation into the combined impact of these three core factors on consumer behavior in livestreaming.

Unlike previous studies, this study systematically investigates the effects of streamer, context, and product and understands how they influence consumers' purchase and continuous watching intention in the North American market.

CHAPTER 3 THEORETICAL FOUNDATION

In this chapter, I briefly present two theoretical foundations of this study, Stimuli-Organism-Response (SOR) and self-determination theory (SDT).

3.1   Stimuli-Organism-Response

The Stimuli-Organism-Response (SOR) model originated from environmental psychology. It explains and predicts the effects of different environmental stimuli on human cognition, emotions, and behavior (Deng et al., 2021). In the model, S(Stimuli) refers to external factors that can affect an individual. O (Organism) refers to a person's internal state, including feelings, emotions, and cognitive behavior. R (Response) is a behavioral decision of an organism that combines external environmental stimuli and internal psychological attitudes, including avoidance and approaching behavior (Wang et al., 2022). The model assumes that different external stimuli affect a person's internal state, determining their decision-making behavior. The stimuli and response of the SOR model are connected through a series of internal variables of the organism.

The SOR model is widely applied in understanding human behavioral intentions by focusing on internal emotions and cognitive factors (Shang et al., 2023). In previous studies, researchers have relied on the SOR model to explore consumer purchasing behavior in livestreaming commerce (Huang & Suo, 2021). Employing the SOR model, research has showed that consumers were subjected to stimuli in a livestreaming environment, which could cause emotional changes and subsequently affect their behavior (Huang & Suo, 2021). For example, the streamer's professional knowledge shared in livestreaming can create a solid shopping atmosphere and arouse consumer excitement, affecting purchase intention. The SOR model is well-suited for understanding livestreaming shopping since it can capture the dynamic nature of the consumer's livestreaming shopping experience and the real-time nature of livestreaming. As shown in Table 1, 15 out of 44 studies I reviewed used SOR to study livestreaming shopping behaviors. In livestreaming shopping, a consumer's internal state, such as emotion, perception of product, and recognition of content, can be affected by many external

stimuli, such as interaction, product display, and the atmosphere of the livestreaming room. These internal state changes, in turn, can further affect consumer behaviors like purchasing, sharing livestreaming, and posting comments. Livestreaming shopping represents a process of external stimuli and consumer psychological changes, ultimately driving consumer behavior. Thereby, the SOR model provides a structured and multi-faceted approach to understanding and analyzing the dynamic behaviors of consumers in livestreaming shopping. Combining the SOR model and previous research on livestreaming shopping, this study proposes that during livestreaming shopping, consumers' perceptions (O) can be systematically influenced by three major stimuli (S) (streamer-related, context-related, and product-related characteristics), and then impact their purchase and continuous watching behaviors (R).

3.2 Self-Determination Theory

The self-determination theory (SDT) discusses the instinct and extinct motivations people choose in activities. The fundamental viewpoint of this theory is that people have three innate and universal psychological needs: *relatedness, competence, and autonomy* (Zhao et al., 2018). According to the SDT, *relatedness* refers to the need to feel connected and a sense of belonging with others, *competence* refers to the experience of mastery and being effective in one's activity, and *autonomy* refers to feeling that one has a choice and willingly endorses one's behavior (Yoon & Rolland, 2012). When these needs are met, people's internal motivation will be enhanced. SDT is widely applied in psychology, education, and market environments, including consumer intention and behavior (Ryan, 1995). Previous studies have also stated that the satisfaction of basic psychological needs often led to positive outcomes (Deci, 2005).

Self-determination theory (SDT) serves as a suitable lens for examining consumer behavior in livestreaming shopping, as it greatly emphasizes consumers' intrinsic motivations and psychological needs. In livestreaming, increased intrinsic motivation leads to consumption behavior and continuous watching behavior. Specifically, when consumers have more consumption choices in livestreaming shopping, it enhances their sense of self-determination, enhancing their internal motivation to engage in purchase

and continuous watching behavior (Giertz et al., 2022). Consumers often participate in activities because of their interest in products, streamers' demonstrations, or experiences. Furthermore, consumers can freely watch and interact with streamers, which meets the need for autonomy (Gao et al., 2018). Consumers may also improve their competence by acquiring product knowledge from the streamers and making wise purchasing decisions with the support of an immersive product demonstration (Zhao et al., 2018). The interactive function of livestreaming shopping allows consumers to connect, share viewpoints, and participate in discussions, promoting relatedness (Giertz et al., 2022). Similarly, streamers are driven by their passion for sharing knowledge in livestreaming. Consumers interested in the subject matter are more likely to make purchases (Gao et al., 2018). These results indicate that consumers' intrinsic motivation can drive their consumption behavior in livestreaming shopping (Törhönen et al., 2020). These intrinsic motivations are consistent with the concept of self-determination behavior (Ryan & Deci, 2008). As such, the current study draws on the SDT to describe three primary psychological motivations for consumers to drive their time and energy toward purchase and continuous watching intention in livestreaming shopping.

Combining SOR and SDT in livestreaming research offers a multi-faceted framework to explain how streamer, context, and product features influence consumers' behavior in livestreaming commerce and a mechanism that explains why such impacts occur. Specifically, the framework of SOR suggests that the three elements (streamer, context, product) of livestreaming shopping can serve as stimuli (S) and influence consumers' internal states (O), which will further influence their purchase and continuous watching intention (R). SDT helps to define the nature of consumers' internal state from a motivational perspective and identifies three psychological needs (relatedness, competence, and autonomy) that are highly related to the consumers' behavior in livestreaming shopping. Taken together, this research examines how the three elements (streamer, context, and product) of livestreaming shopping change consumers' perception of fulfilling their three psychological needs (relatedness, competence, autonomy) and thereafter influence their purchase and continuous watching intention.

CHAPTER 4 HYPOTHESES DEVELOPMENT

In accordance with the two theoretical foundations, SOR and SDT, I propose and present the research model illustrated in Figure 1. Specifically, the characteristics of three livestreaming elements (streamer, context, and product) have the potential to influence the satisfaction of consumers' psychological needs (relatedness, competence, and autonomy), which will consequently impact consumers' purchase and continuous watching intention.
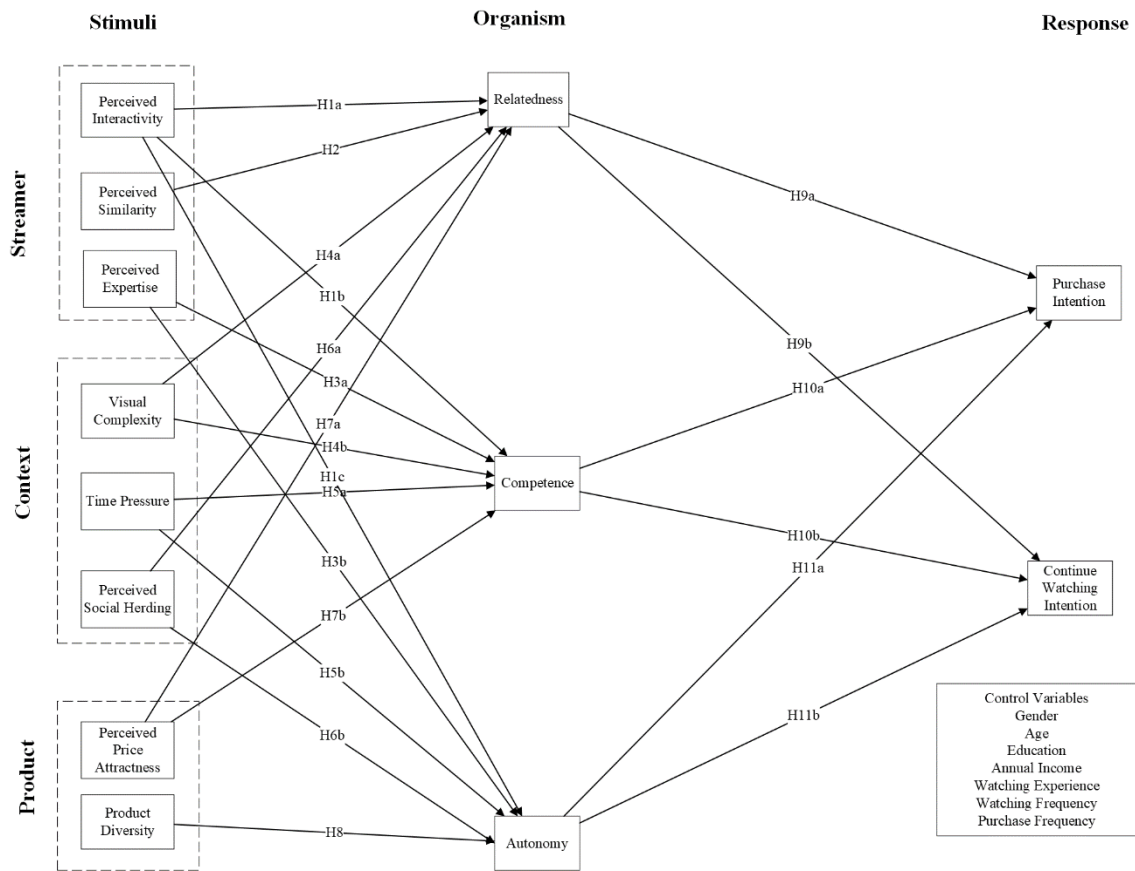
Figure 1. Research Model

4.1 Streamer

The element of livestreaming, streamer, includes perceived interactivity, perceived similarity, and perceived expertise.

Perceived Interactivity

Perceived interactivity refers to the interaction between consumers and streamers in livestreaming. In livestreaming shopping, the interaction between streamers and consumers is a crucial element that enhances the consumers' perceived value in livestreaming and differentiates livestreaming shopping from other traditional online shopping experiences (Bao et al., 2016; Teo et al., 2003).

During the livestreaming, streamers can engage in real-time communication with consumers. This real-time interaction allows consumers to directly converse with the streamer, asking questions and making requests, to which the streamer can promptly respond (Hou et al., 2020). Livestreaming provides a social platform for people to engage not only with the streamer but also with other consumers while watching the livestream. An interactive streamer can facilitate an atmosphere where consumers are encouraged to communicate with each other. During the livestreaming, streamers can organize different forms of interactive activities, such as challenging questions or games, to engage consumers and stimulate consumers' enthusiasm. Consumers can actively participate in these activities, sometimes even playing games together with other consumers to win rewards from the streamer. The interactions initiated and facilitated by the streamer have been found to increase well-being and shape the active role of consumers (Li & Peng, 2021). When a streamer is interactive, consumers perceive that the streamer values their engagement and have high self-expression during livestreaming shopping (Li & Peng, 2021). As a result, consumers feel a stronger sense of connection to livestreaming shopping.

The interactive and real-time features of livestreaming also increase communication quality and efficiency, which could result in favorable consumer attitudes (Chiang & Hsiao, 2015; Hou et al., 2020). During livestreaming, streamers can vividly introduce products to consumers, allowing consumers to view product details more clearly by such as zooming in. When streamers interact with consumers, they share in-depth information and answer consumer questions about the products. These interactions help consumers gain a deeper understanding of the products, helping them make more informed purchase

decisions tailored to their needs. Furthermore, the interactions will enable consumers to obtain personalized product information, such as packaging, significant functions, and usage tips that are most relevant to their needs (Xu et al., 2020). Through livestreaming, consumers can exchange information with other consumers to obtain the latest practical information about the products. This interactive process empowers consumers to gain a better understanding of the products and develop a sense of control over their shopping decisions. Therefore, the study proposes that:

H1a. The perceived interactivity between the streamer and the consumer positively influences the relatedness between customers and livestreaming.

H1b. The perceived interactivity between the streamer and the consumer positively influences customers' competence in livestreaming.

H1c. The perceived interactivity between the streamer and the consumer positively influences customers' autonomy in livestreaming.

Perceived Similarity

Perceived similarity refers to customers' perception that the livestreaming streamer shares similar values, experiences, or ideas as them (Lu & Chen, 2021). Perceived similarity can be reflected in streamers and consumers sharing common topics and reaching a consensus by discussing everyday experiences. During the livestreaming, streamers can enhance intimacy and establish a personal image by sharing similar values (Lu & Chen, 2021). When a streamer shares similar values, experiences, or ideas with consumers, the consumers will sense a closer relationship with the streamer and consider the streamer their friend. Such interactions and conversations based on shared values and experiences will warm consumers and strengthen the emotional attachment between the streamer and consumers (Liu et al., 2021). Consumers will be more willing to watch livestreaming from the streamer and to discuss and share their product ideas in livestreaming. Sharing similar values can also enhance trust in the livestreaming (Guo et al., 2022). Consumers easily bond with a streamer when they perceive similarities. Naturally, consumers can develop strong trust in the streamer and believe the streamer is providing authoritative and trustworthy information and product recommendations (Guo

& Sun, 2022). Besides, when a product is recommended by a streamer who is perceived to be similar, consumers are more likely to believe that the product will fit their needs (Wongkitrungrueng & Assarut, 2020). As a result, consumers will feel a stronger connection to the livestreaming. Therefore, the study proposes that:

H2. The perceived similarity between the streamers and consumers positively influences the relatedness between the consumers and livestreaming.

Perceived Expertise

Perceived expertise refers to the streamer's knowledge, experience, and abilities (Li & Peng, 2021). This professional knowledge refers to the specialized knowledge of products introduced in the livestreaming, including daily knowledge, product information, and usage (Xu et al., 2022). Streamers receive professional training to effectively convey product-related information to consumers by showcasing products to consumers with vivid explanations and real-time communication. When watching livestreaming, consumers can obtain professional knowledge from the streamer. For example, a beauty streamer may recommend specific makeup products to consumers and educate consumers on makeup tips. When consumers perceive a streamer as having expertise, they tend to view livestreaming as a fast-paced and exciting way for acquiring knowledge and relying on it. The knowledge provided by the streamer helps consumers better understand whether a product meets their needs without having to spend much time searching for the product information, thus reducing consumers' burden in product selection and evaluation (Xue & Liu, 2023). Besides, when product information and recommendations are from an expertise streamer, consumers will feel more confident in their purchase decisions based on the information and recommendations. The reduced burden and increased confidence can lead to a feeling of autonomy (Kashdan et al., 2009).

Moreover, the high level of knowledge obtained in livestreaming can then be applied by consumers in their daily lives when they independently explore similar products in the

future and share them with their family or friends. In this way, consumers' competence will increase. Therefore, the study proposes the following:

H3a. The streamer's perceived expertise positively influences customers' competence in livestreaming.

H3b. The streamer's perceived expertise positively influences customers' autonomy in livestreaming.

4.2 Context

The second element of livestreaming, context, includes visual complexity, time pressure, and perceived social herding.

Visual complexity

Visual complexity refers to the different elements presented in the livestreaming background and the complexity conveyed by these elements (Deng & Poole, 2012). The background of livestreaming should be designed with consideration of consumer preferences, product characteristics, and streamer style (Gao et al., 2018). Previous research has found that an appropriately decorated visual background can help attract consumers (Ha & Lennon, 2010). Consumers believe the livestreaming background patterns must meet their aesthetic standards (Huang & Suo, 2021). When the visual background of livestreaming does not fit consumers' preferences, they may develop a mentality of rejection and even choose not to watch this type of livestreaming (Zhang et al., 2020). The visual complexity of the livestreaming can affect consumers' attitudes toward the streamer. When the background of the livestreaming creates an optimal environment for consumers, they will feel more comfortable in this livestreaming room and become more willing to communicate with the streamer like friends, as well as consume in the livestreaming room (Guo et al., 2022). For example, when the livestreaming background is designed to be simple and symmetrical, consumers are more willing to engage with the streamer (Ren, 2021). On the contrary, high visual complexity in livestreaming can reduce the consumers' level of pleasure (Ren, 2021). An overly complex background can quickly pressure consumers to quit watching livestreaming (Lee

et al., 2021). When the visual complexity is high and the background contains too much information unrelated to the product, consumers will find it challenging to concentrate during the livestreaming (Wang et al., 2014). In these cases, consumers struggle to concentrate on both the streamer and the product, and it takes them longer to process the information presented in the livestreaming (Luo et al., 2022). As a result, the complex visual background will require consumers to put more effort into making purchasing decisions correctly, which can reduce their loyalty to livestreaming (Ren, 2021). Therefore, the study proposes that:

H4a. Visual complexity negatively influences the relatedness between consumers and livestreaming.
H4b. Visual complexity negatively influences the consumer's competence.

Time pressure

Time pressure refers to the time restriction on the consumers when making purchase decisions (Huang & Suo, 2021). In livestreaming shopping, time pressure could arise from real-time promotional activities, such as limited-time promotions and challenging games. These interactive activities are usually initiated by the streamer with the objectives of enhancing livestreaming activity and increasing consumer enthusiasm but may unintentionally affect consumers' psychological and emotional status (Wang et al., 2022; Xu et al., 2020). For example, during livestreaming, the streamers can launch countdown promotional activities where consumers are only given a very short time (e.g., 30 seconds) to place the order. Alternatively, the streamers may create a feeling of urgency by informing consumers that only a few orders will be accepted for a product with a good deal. The time pressure stemming from these promotional activities could increase the anxiety and stress of the consumers and reduce the ability and quality of consumers' decision-making (Huang & Suo, 2021; Wang & Liu, 2008). Under high time pressure, consumers can easily feel cognitive and emotional overload (Chen et al., 2009). During limited-time promotional activities, streamers tend to spend more time urging consumers to purchase goods rather than providing detailed product information or sharing using experiences. As a result, these activities invisibly prevent consumers from

accurately judging whether the product meets their needs and can lead to impulsive consumption behavior among consumers. Because of this, consumers can feel less controlled when involved with these activities with time pressure (Cai et al., 2018). Therefore, the study proposes that:

H5a. The time pressure in livestreaming negatively influences the consumer's competence.

H5b. The time pressure in livestreaming negatively influences the consumer's autonomy.

Perceived Social Herding

Perceived social herding refers to the group's influence on consumers' decisions, viewpoints, and behaviors, including imitation behavior and information reduction (Yang & Lee, 2023). In this study, perceived social herding refers to consumers imitating and following the behavior of others in a livestreaming environment. Herding behavior is prevalent in e-commerce and may even be enlarged by the features of livestreaming shopping platforms. For example, in many livestreaming platforms, when a consumer makes a purchase, this will be announced as a bullet screen for all consumers to see. Because in livestreaming shopping, consumers could make purchases at the same time, and in that case, multiple bullet screens that announce these orders will occur one-by-one in a high frequency. This can send a strong signal to consumers that the product is popular. This feature of livestreaming the resulting social herding may influence consumers in twofold. On the one hand, when consumers following others, they may develop a sense of belonging and connection with the consumer community in this livestreaming channel. When consumers imitate other consumers in purchasing a specific product or making certain choices, they could feel that they become part of the consumer community in this livestreaming channel, which strengthens the collective identity. Moreover, when consumers see other consumers making similar choices, they further verify their choices and actions and may become more confident with their decisions. However, on the other hand, when consumers follow others in making a purchase, they may not be able to clearly evaluate their personal preferences to determine whether this product is suitable or not. This may lead consumers to make decisions that may not meet

their personal needs and values, reducing the quality and initiative of decision-making (Luo & Lin, 2013). Besides, in case where a consumer makes a different selection from the majority of other consumers, the consumer may develop a sense of uncertainty and even become less confident with their own choice. These external pressure limits the freedom of independent decision-making, thereby weakening autonomy (André et al., 2018; Huang & Suo, 2021). Therefore, the study proposes that:

H6a. The perceived social herding in livestreaming positively influences the relatedness between consumers and livestreaming.

H6b. The perceived social herding in livestreaming negatively influences the consumer's autonomy.

4.3 Product

The third element of livestreaming, product, includes perceived price attractiveness, product diversity, and relatedness.

Perceived Price Attractiveness

Perceived price attractiveness refers to consumer satisfaction with the product price (Bambauer-Sachse & Mangold, 2009). Setting a satisfactory price for promotion by merchants significantly impacts consumer behavior (Büyükdag et al., 2020). In livestreaming shopping, when streamers offer good deals, consumers become more willing to purchase products and more comfortable choosing them based on their needs (Guo et al., 2022). After obtaining products with great deals through livestreaming shopping, consumers will perceive that livestreaming shopping provides convenience for their lives and develop a sense of loyalty towards livestreaming shopping (Ren, 2021). They will be more inclined to share the shopping experience with their social connections and view livestreaming shopping as more related to them (Ming et al., 2021).

The perceived price attractiveness can also influence consumers' perception of competence. When livestreaming provides better price promotion, consumers will increase a sense of spaciousness in the price, and their attention to prices will decrease

(Bambauer-Sachse & Grewal, 2021; Büyükdag et al., 2020). The effects of the decreased attention to price are twofold. For one thing, consumers can buy products at lower prices and share the product with others (Jacowitz & Kahneman, 1995). For another, consumers can focus more on evaluating the product (Block & Harper, 1991). Consumers believe they apply heuristics to evaluate the product and price (Tversky & Kahneman, 1974). As a result, the attractive prices of livestreaming create a perception of competence in making wise and savvy purchasing decisions (Bambauer-Sachse & Mangold, 2009). Therefore, the study proposes that:

H7a. Perceived price attractiveness positively influences the relatedness of the consumers and livestreaming.

H7b. Perceived price attractiveness positively influences the consumer's competence.

Product Diversity

Product diversity refers to the variety of products offered during the livestreaming. In livestreaming shopping, one livestreaming can offer a wide range of products, from fast-moving consumer goods (e.g., groceries and household products) to furniture, electronics (e.g., computers and TVs), and appliances (e.g., washers and fridges). Even for livestreaming that focuses on a specific product category can still offer consumers a wide range of products. For example, a beauty livestreaming event may offer consumers various makeup products. The wide variety of products enables consumers to make their own choices, strengthening the feelings of self-selection and self-control (Liu et al., 2013). When a streamer provides a variety of products in the same category (e.g., lipsticks of various colors from various brands), they can introduce the products, compare the products on behalf of consumers, and make personalized recommendations based on consumers' personal preferences and various needs. In this way, consumers can better understand the various choices and gain comprehensive information about the product (Zahari et al., 2021). Consumers can then choose the best product that fits their needs and experience control over the shopping experience. Thus, the perception of autonomy will increase. Therefore, the study proposes that:

H8. The diversity of products positively influences the consumer's autonomy.

Under the SDT framework, three psychological needs can be identified: relatedness, competence, and autonomy.

Relatedness

Relatedness refers to an individual's closer relationship with others (Li & Peng, 2021). It is a human pursuit of building relationships. People seek to establish relationships and gain approval in social interactions. This will make them feel warm and allow them to get to know each other and engage in deeper social interactions (McAdams, 1980; Heo et al., 2020). In the current research, relatedness refers to a closer relationship between consumers and the livestreaming they watch. As the relatedness between consumers and livestreaming increases, the stickiness between them also increases (Gao et al., 2018). In this way, consumers will develop a sense of belonging and engage more with the livestreaming shopping (Li & Peng, 2021; Ren, 2021). As a result, consumers likely rely more on livestreaming for shopping among various shopping methods.

The livestreaming shopping platform allows consumers to communicate with the streamers and interact with other consumers who may share similar interests and values. The connections consumers establish while watching livestreaming shopping resemble other social interactions. For example, consumers can share good deals, usage experiences with the products, or recommendations on similar products. Consumers can showcase their image and personal charm in real-time interactions with other consumers. Through such interactions, consumers can obtain a social identity and even harvest positive emotions (Klassen et al., 2012; Osborne, 2020). When consumers connect closely with livestreaming shopping, they tend to consider livestreaming a part of their lives and engage more in such social interactions. When consumers have leisure time, they will watch livestreaming; even if they do not purchase products, they will watch livestreaming and chat with other consumers.

H9a-b: The relatedness between consumers and livestreaming positively influences the purchase intention (a) and continuous watching intention (b).

Competence

Competence refers to individuals' efficiency, challenges, and achievements in their activities (Thomson, 2006). In the current research, competence refers to the benefits and knowledge obtained from watching livestreaming shopping. In livestreaming shopping, consumers can obtain various competences, such as knowledge about the product, practical tips on better using the products, or the belief in one's ability to secure a good deal, etc. When consumers acquire specific competences in livestreaming shopping, their satisfaction and productive learning experience will increase (Jang et al., 2010). Consumers will believe that livestreaming shopping brings them many benefits and is very useful. This will increase consumers' intellectual and emotional stimulations and their trust in livestreaming shopping (Li & Peng, 2021; Lu & Chen, 2021). As such, consumers will be more convinced that livestreaming shopping is a crucial way to acquire relevant knowledge and benefits and make purchases. For example, when consumers obtain professional knowledge about a product from watching livestreaming shopping, they will better understand the features and usages of the product and become more confident that they can better evaluate the product and make wise purchase decisions to select the most suitable and cost-effective product (Bambauer-Sachse & Mangold, 2009). Besides, the knowledge obtained from livestreaming shopping can also be shared by consumers with their family and friends (Taylor & Ntoumanis, 2007). Hence, consumers will appreciate the livestreaming shopping content and be more willing to engage with the livestreaming shopping (Guo et al., 2022; Osborne, 2020). Therefore, the study proposes that:

H10a-b: The consumer's competence positively influences the purchase intention (a) and continuous watching intention (b).

Autonomy

Autonomy refers to consumers' feelings of having choices and willingly endorsing their behaviors in the livestreaming shopping (Yoon & Rolland, 2012). During the livestreaming shopping, when consumers have the autonomy to freely choose the products they need, they will feel empowered and that they can control their purchase decisions. When consumers believe they can make purchase decisions based on their preferences and personal needs during livestreaming, they will develop a positive attitude and become more satisfied (Gao et al., 2018). The feeling of free to make choices without being influenced by external factors will also lead to the perception of enjoyment (Lee et al., 2015). As such, consumers experiencing autonomy will be more likely to engage more with livestreaming shopping. Besides, autonomy can increase stickiness when consumers watch the livestreaming (Gao et al., 2018). When consumers can express their ideas about products or services freely in the livestreaming room, they will rely more on livestreaming shopping because they may perceive the conversations and comments that they encounter during watching the livestreaming to be more trustworthy. Consequently, consumers will appreciate the livestreaming shopping and be more willing to engage with the livestreaming shopping (Guo et al., 2022; Osborne, 2020). Therefore, the study proposes that:

H11a-b. The consumer's autonomy positively influences the purchase intention (a) and continuous watching intention (b).

CHAPTER 5 METHODOLOGY

To test the proposed hypotheses, an online survey was conducted with Amazon Live users. Amazon Live is one of North America's largest livestreaming shopping platforms (Guo et al., 2021). Compared to social media livestreaming platforms such as TikTok and Instagram, Amazon Live is built on the Amazon platform, which is a traditional e-commerce platform, and it already has a large consumer base. Launched in 2019, Amazon Live is a mature and stable livestreaming shopping platform with complete website settings (Cai et al., 2019). As of December 2021, there have been over 6000 livestreaming merchants on Amazon Live, surpassing 47% of other new media livestreaming platforms in the North American market (Yang & Lee, 2023). The enormous potential of Amazon Live can provide tremendous data support for the research. Therefore, I chose Amazon Live to conduct as an online survey for the research context in this study.

5.1 Measurement Development

The survey had 13 variables, and all construct measurements were adopted from the existing studies and rephrased into a livestreaming context. The measurement items are shown in Appendix B. The responses were measured on a 7-point Likert-type scale. Except for the main variables of interests, the survey also asked participants several other questions, such as the other platforms and devices they typically use for livestreaming shopping, their demographical information (e.g., age, gender, income, and education level), and their livestreaming watching and shopping habits (e.g., watching experience, watching frequency, and purchase frequency). These variables served as control variables in the following data analysis.

5.2 Sampling and Data Collection

The survey participants were recruited from Prolific. Prolific is a professional platform that provides online research support for recruiting and managing participants. It can ensure the diversity of participants and provide high-quality data collection (Palan & Schitter, 2018). For data collection, U.S. residents who are Amazon Live users and have

watched livestreaming shopping via Amazon Live within the last month were recruited to participate in the current study. Since Prolific does not have a built-in filter for Amazon Live users, this study followed the guidelines provided by Prolific on recruiting a custom sample (Prolific, 2023). Specifically, the sample recruitment was conducted in two steps (see Figure 2). In the first step, I ran a short screening survey where participants were asked to answer questions indicating whether they are Amazon Live users and have watched livestreaming shopping within the last month. The first survey was conducted with U.S. residents, and 4,100 participants completed this screening survey. Then, based on the answers from the first survey, I invited 1,247 participants who met criteria to participate in main survey.

```
┌─────────────────────────────────────────────┐
│  Screening survey: 4,100 U.S. residents     │
└─────────────────────────────────────────────┘
          │  Those who are Amazon Live users and watched livestreaming
          │  shopping on Amazon Live within last month
          ▼
┌─────────────────────────────────────────────┐
│  Invited 1,247 participants to Main Survey  │
└─────────────────────────────────────────────┘
          │
          ▼
┌─────────────────────────────────────────────┐
│  703 participants completed the Main Survey │
└─────────────────────────────────────────────┘
          │  Step 1: Those who are Amazon Live users and watched
          │  livestreaming shopping-relate content on Amazon Live
          │  Step 2: Those who complete all variable measurements
          ▼
┌─────────────────────────────────────────────┐
│  517 completed responses remained           │
└─────────────────────────────────────────────┘
```

Figure 2. Illustration of the Data Collection Process

The data were collected from September to October 2023. Each participant received a USD 2.5 reward when they completed the main survey. The illustration of the process is shown in Figure 2. The main survey included various screening questions to ensure the

targeted sample was recruited. Specifically, the participants were asked to provide one livestreaming shopping channel or streamer they watched within the last month, the link to the livestreaming shopping channel or streamer and discuss what the livestreaming shopping was about. Then, participants were asked to answer the rest of survey questions based on their experiences with this livestreaming shopping channel or streamer they provided. Initially, 703 survey responses were obtained. Then, a data cleaning process was conducted to ensure methodological rigor and data quality. First, participants who failed to meet the predetermined criteria were excluded by evaluating their responses to the screening questions in the survey. First, participants who listed Amazon Live as the platform they watched within the last month were retained. In contrast, those who provided other livestreaming platforms, such as YouTube Live, TikTok, or Instagram Live, were removed from the dataset. This exclusion was necessary as these participants did not meet the basic requirements of the study. Second, participants who watched Amazon Live but did not watch shopping-related content (e.g., participants who watched Amazon Live channels related to sports news) were also removed from dataset. Notably, some participants claimed their participation in shopping activities on Amazon Live. However, analysis of the provided links indicated that the websites they provided were Amazon's main websites, not Amazon Live. These participants were also removed from the dataset. Third, some participants encountered difficulties filling out specific links to the Amazon Live channel or streamer they watched. I adjusted this by retrieving relevant livestreaming details based on the provided name of the livestreaming channel or streamer. This helped include participants who could not find the links but could still provide solid information about the livestreaming shopping they watched. If the corresponding Amazon Live channel or streamer could not be found, the responses would be removed from dataset. Lastly, I removed the incomplete survey responses. After the data-cleaning stage, 517 complete and valid responses remained in dataset. The demographic information of the final sample is shown in Table 2.

Table 2. Description of the Sample

Category	Items	Frequency	Percentage
Gender	Male	310	60.0%

Category	Items	Frequency	Percentage
	Female	207	40.0%
Age	18-24	56	10.8%
	25-34	183	35.4%
	35-44	150	29.0%
	45-54	80	15.5%
	55-64	31	6.0%
	65+	17	3.3%
Education	Some high school or less	4	0.8%
	High school diploma or equivalent	46	8.9%
	Some college, but no degree	80	15.5%
	Associates or technical degree	57	11.0%
	Bachelor's degree	242	46.8%
	Graduate or professional degree	88	17.0%
Annual income	Less than $25000	34	6.6%
	$25000-$49999	102	19.7%
	$50000-74999	121	23.4%
	$75000-$99999	102	19.7%
	$100000-$149999	101	19.5%
	$150000+	57	11.0%
Watching experience	Within 6 months	196	37.9%
	6-12 months	166	32.1%
	12-18 months	88	17.0%
	18-24 months	32	6.2%
	More than 24 months	35	6.8%
Watching frequency	Daily	22	4.3%
	2-3 times per week	186	36.0%
	Once per week	136	26.3%
	2-3 times per month	90	17.4%
	Monthly	49	9.5%
	Once every 2-3 months	34	6.6%
Purchase frequency	Daily	6	1.2%
	2-3 times per week	39	7.5%
	Once per week	69	13.3%
	2-3 times per month	129	25.0%
	Monthly	113	21.9%
	Once every 2-3 months	215	41.6%

As Table 2 illustrates, the gender distribution of the sample, i.e., 60% males and 40% females, is consistent with previous studies (Lee et al., 2019; Wan et al., 2017). In addition, most of the respondents belonged to the age group of 25 to 44, which is also consistent with previous studies (Wan et al., 2017). Besides, 63.8% of the respondents held bachelor's degrees and above. The significant feature of this group was their increased purchasing power, making them the primary users of livestreaming shopping, as they tended to adopt this consumption model quickly. Furthermore, it was worth noting that more than 60% of respondents have used the livestreaming shopping platform for over six months. More than 90% of respondents watch livestreaming shopping at least once a month. Around 60% of respondents purchase products monthly or more frequently through livestreaming shopping.

5.3 Statistical Analysis Technique

This study adopted the partial least squares structural equation model (PLS-SEM) to test the research model. As explained by Kock (2018), the PLS-SEM was chosen because of its established practicality in previous studies in business and social sciences. As Kono and Sato (2023) emphasized, PLS-SEM has apparent advantages over traditional methods, more robust adaptability, and was conducive to elucidating complex theoretical frameworks. SmartPLS 4.0 was used to analyze the data.

CHAPTER 6 RESULTS

6.1 Measurement Model

Since measurements were adapted from various sources, I first conducted a confirmatory factor analysis (CFA) to evaluate the reliability and validity of the measurements (Brown & Moore, 2012). I first checked the reliability and convergent validity of the measurement model by examining the factor loading, composite reliability (CR), Cronbach's alpha, and the average variance extracted (AVE).

As shown in Table 3, all standardized factor loadings were greater than 0.8, CR and Cronbach's alpha were greater than 0.7, and AVEs were greater than 0.5 (Fornell & Larcker, 1981; Hess et al., 2009). These indices show that the measurement exhibits good composite reliability and convergent validity.

Table 3. Measurement Scale

Construct and Measurement	Items	Factor Loadings	Cronbach's Alpha	CR	AVE
Perceived Interactivity (IN)	PIN1	0.82	0.76	0.86	0.68
	PIN2	0.84			
	PIN3	0.81			
Perceived Similarity (PS)	PS1	0.83	0.91	0.94	0.74
	PS2	0.85			
	PS3	0.88			
	PS4	0.89			
	PS5	0.86			
Perceived Expertise (PE)	PE1	0.86	0.83	0.90	0.75
	PE2	0.87			
	PE3	0.86			
Visual Complexity (VC)	VC1	0.86	0.89	0.92	0.75
	VC2	0.84			
	VC3	0.88			
	VC4	0.89			
Time Pressure (TP)	TP1	0.81	0.87	0.91	0.72
	TP2	0.83			
	TP3	0.88			
	TP4	0.87			
	PSH1	0.85	0.87	0.92	0.79

Construct and Measurement	Items	Factor Loadings	Cronbach's Alpha	CR	AVE
Perceived Social Herding (SH)	PSH2	0.91			
	PSH3	0.90			
Perceived Price Attractiveness (PA)	PPA1	0.89	0.92	0.94	0.77
	PPA2	0.85			
	PPA3	0.90			
	PPA4	0.89			
	PPA5	0.85			
Product Diversity (PD)	PD1	0.84	0.80	0.88	0.71
	PD2	0.88			
	PD3	0.81			
Relatedness (RE)	LSR1	0.90	0.91	0.95	0.85
	LSR2	0.94			
	LSR3	0.93			
Competence (CO)	LSC1	0.88	0.89	0.93	0.76
	LSC2	0.88			
	LSC3	0.90			
	LSC4	0.83			
Autonomy (AU)	LSA1	0.86	0.89	0.92	0.75
	LSA2	0.87			
	LSA3	0.87			
	LSA4	0.85			
Purchase Intention (PI)	PI1	0.90	0.94	0.96	0.81
	PI2	0.90			
	PI3	0.91			
	PI4	0.89			
	PI5	0.89			
Continuous Watching Intention (CW)	CW1	0.82	0.86	0.91	0.78
	CW2	0.89			
	CW3	0.92			

To check the discriminant validity, I compared the square root values of AVE to the inter-construct correlations in Table 4. As shown in Table 4, the squared root of the AVE for each construct was greater than all the related inter-construct correlations (Fornell & Larcker, 1981). In addition, to further confirm the discriminant validity, I also checked the Heterotrait–monotrait Ratios of Correlations (HTMT). The results showed that the HTMT values fell below the recommended threshold value of 0.9 (Henseler et al., 2015). Therefore, these results confirmed that the discriminant validity of all scales was established.

Table 4. Fornell-Larker Criterion

	IN	PS	PE	VC	TP	SH	PA	PD	RE	CO	AU	PI	CW
Perceived Interactivity (IN)	**0.82**												
Perceived Similarity (PS)	0.40	**0.86**											
Perceived Expertise (PE)	0.50	0.56	**0.86**										
Visual Complexity (VC)	-0.35	-0.28	-0.31	**0.87**									
Time Pressure (TP)	-0.02	-0.11	-0.14	0.20	**0.85**								
Perceived Social Herding (SH)	0.32	0.32	0.15	-0.09	0.33	**0.89**							
Perceived Price Attractiveness (PA)	0.44	0.44	0.50	-0.29	-0.14	0.18	**0.88**						
Product Diversity (PD)	0.51	0.47	0.57	-0.37	-0.13	0.18	0.64	**0.84**					
Relatedness (RE)	0.55	0.54	0.44	-0.31	0.02	0.50	0.49	0.48	**0.92**				
Competence (CO)	0.53	0.52	0.44	-0.30	0.02	0.44	0.49	0.52	0.79	**0.87**			
Autonomy (AU)	0.40	0.49	0.55	-0.36	-0.27	0.17	0.50	0.57	0.56	0.56	**0.86**		
Purchase Intention (PI)	0.44	0.50	0.49	-0.27	-0.03	0.40	0.58	0.57	0.60	0.62	0.55	**0.90**	
Continuous Watching Intention (CW)	0.48	0.51	0.52	-0.32	-0.09	0.32	0.53	0.59	0.64	0.65	0.60	0.64	**0.88**

Given the use of self-reported survey methods in this study, it was necessary to evaluate the potential existence of Common Method Bias (CMB). The study used the Variance Inflation Factor (VIF) as a diagnostic tool for this evaluation. The result showed that the VIF values were between 1.066 and 2.854, consistently remaining below the established threshold value of 3.3 advocated by Kock (2017). Therefore, this result confirmed that the measurement model was free from common method bias.

6.2   Structure Model

SmartPLS 4.0 was used to test the structural model and hypotheses. The bootstrapping procedure was chosen to estimate path significance. The results of the structural model were presented in Table 5.

Table 5. Path Coefficients, T-values, and P-values

Hypotheses	Path	Coefficients	T values	P values	Support
H1a	IN → RE (+)	0.25	5.77	0.00	**Yes**
H1b	IN → CO (+)	0.31	5.96	0.00	**Yes**
H1c	IN → AU (+)	0.05	0.96	**0.34**	No
H2	PS → RE (+)	0.23	5.10	0.00	**Yes**
H3a	PE → CO (+)	0.15	2.90	0.00	**Yes**
H3b	PE → AU (+)	0.28	5.12	0.00	**Yes**
H4a	VC → RE (-)	-0.07	1.92	**0.06**	Marginal
H4b	VC → CO (-)	-0.09	1.98	0.05	**Yes**
H5a	TP → CO (+)	0.10	2.46	0.01	**Yes**
H5b	TP → AU (-)	-0.22	5.70	0.00	**Yes**
H6a	SH → RE (+)	0.31	8.71	0.00	**Yes**
H6b	SH → AU (-)	0.12	3.17	**0.00**	No
H7a	PA → RE (+)	0.21	4.88	0.00	**Yes**
H7b	PA → CO (+)	0.27	5.13	0.00	**Yes**
H8	PD → AU (+)	0.34	7.11	0.00	**Yes**
H9a	RE → PI (+)	0.17	3.36	0.00	**Yes**
H9b	RE → CW (+)	0.21	4.47	0.00	**Yes**
H10a	CO → PI (+)	0.27	4.70	0.00	**Yes**
H10b	CO → CW (+)	0.26	5.02	0.00	**Yes**
H11a	AU → PI (+)	0.27	6.02	0.00	**Yes**
H11b	AU → CW (+)	0.27	6.83	0.00	**Yes**

Overall, the model explained 47% of the variance of purchase intention and 56% of the variance of continuous watching intention, respectively. Also, 53.5% of the variance in relatedness, 38.4% of the variance in competence, and 44.8% of the variance in autonomy were explained by the current model.

In terms of the effects of streamers, as shown in Table 5, perceived interactivity positively affected relatedness ($\beta = 0.25$, $p < .001$) and competence ($\beta = 0.31$, $p < .001$). Therefore, H1a and H1b were supported. However, the impact of perceived interactivity on autonomy was not significant; thus, H1c was not supported ($\beta = 0.05$, $p > .05$). The lack of significant effect of perceived interactivity on autonomy may be attributed to the design of livestreaming shopping, where consumers can behave autonomously throughout the shopping experience regardless of whether the streamer is interactive or not. Consumers are free to join, stay, or leave the livestreaming at their discretion and can make independent purchase choices. Because of this, whether a streamer is interactive or not may not affect how consumers perceive autonomy within the livestreaming context. Perceived similarity positively impacted relatedness ($\beta = 0.23$, $p < .001$), and H2 was supported. Perceived expertise positively influenced competence ($\beta = 0.15$, $p < .05$) and autonomy ($\beta = 0.28$, $p < .001$), supporting H3a and H3b.

Regarding the effects of livestreaming context, visual complexity had no impact on relatedness ($\beta = -0.07$, $p = .06$), but had a negative impact on competence ($\beta = -0.09$, $p < .05$). Thus, H4a was marginally support, while H4b was supported. This result suggests that the perception of the consumer's relatedness with a livestreaming may be mainly determined by content-related factors, such as the streamer's communication or product deals, rather than the visual background.

Time pressure had a significant positive impact on competence ($\beta = 0.10$, $p < .05$) and a significant negative impact on autonomy ($\beta = -0.22$, $p < .001$), supporting H5b but not H5a. One possible explanation for this inconsistent result is that although time pressure strengthens consumers' perception of autonomy, it simultaneously stimulates their

learning ability. When faced with time constraints, consumers become more proactive in interacting with streamers, paying closer attention to livestreaming content. At the same time, the time restrictions also encourage consumers to make the purchase decision in a short period, thus facilitating the feelings of efficiency and competence.

Perceived social herding positively influenced relatedness ($\beta = 0.31$, $p < .001$) and autonomy ($\beta = 0.12$, $p < .05$), supporting H6a but contradicting H6b. In online shopping, consumers typically incorporate online reviews to help them make purchase decisions (Zhang et al., 2014). Because of this, even though consumers may be influenced by other consumers' comments and purchases when watching livestreaming shopping, they may view this as a normal information processing and decision-making process instead of a signal of losing autonomy. Besides, by observing other consumers' comments and behaviors, consumers may feel more confident in their ability to make wise decisions and select appropriate products. Therefore, the perceived social herding positively impacted the consumer's autonomy.

Regarding the effects of product features, the results showed that perceived price attractiveness positively affected relatedness ($\beta = 0.21$, $p < .001$) and competence ($\beta = 0.27$, $p < .001$). Thus, H7a and H7b were supported. Product diversity had a significant positive impact on autonomy ($\beta = 0.34$, $p < .001$). Thus, H8 was supported. Besides, the results showed that relatedness, competence, and autonomy all positively impacted purchase intention (relatedness: $\beta = 0.17$, $p < .05$; competence: $\beta = 0.27$, $p < .001$; and autonomy: $\beta = 0.27$, $p < .001$) and continuous watching intention (relatedness: $\beta = 0.21$, $p < .001$; competence: $\beta = 0.26$, $p < .001$; and autonomy: $\beta = 0.27$, $p < .001$). Thus, H9a, H9b, H10a, H10b, H11a, and H11b were all supported.

Regarding control variables, the results showed that age had no significant impact on purchase intention. However, it had a negative impact on the willingness to continue watching livestreaming shopping. Specifically, as individuals aged, their tendency to continue watching livestreaming shopping decreased. This result might be attributed to the reluctance of older individuals, especially those over 50, to accept and participate in

emerging shopping models to a certain extent. Because of the heavy reliance on technology in livestreaming shopping, older people may find it less adaptable and more inclined towards traditional shopping methods, reducing their interest in continuous watching livestreaming. Besides, a negative correlation existed between consumers' watching frequency and their willingness to continue watching livestreaming shopping. Specifically, people with lower viewing frequencies were more willing to watch livestreaming in the future. This can be attributed to the curiosity of individuals with lower watching frequencies, making it easier for them to continue consuming. In contrast, consumers with high watching frequency often believed that livestreaming shopping was a familiar and less novel way of consumption, reducing their willingness to continue watching. Finally, the purchasing frequency of consumers was inversely proportional to their purchasing intention. Consumers with lower purchasing frequency were more inclined to try different consumption patterns. In contrast, frequent buyers of livestreaming shopping were very familiar with marketing and promotional strategies, which made them less willing to make additional purchases in such situations.

CHAPTER 7 DISCUSSION

7.1 Theoretical Implications

Based on the SOR model and SDT, this dissertation investigated how the three core elements affected consumer purchase and continuous watching intention through psychological need satisfaction. This study offered several theoretical implications.

Firstly, this study contributes to the growing body of literature on livestreaming shopping and consumer behavior. By integrating the Stimuli-Organism-Response (SOR) model and Self-Determination Theory (SDT) into a unified research framework, the study advances understanding of how consumers' psychological needs for relatedness, competence, and autonomy are influenced by various factors within the livestreaming shopping context. Therefore, this study provides a new framework for comprehending consumer behavior within the realm of livestreaming.

Secondly, this study extends the application of SDT to the realm of livestreaming shopping, demonstrating its effectiveness in explaining consumers' purchase and continuous watching intention in this emerging domain. Although existing studies have investigated livestreaming, only a few studies have explored the three core elements that influence consumer behavior from the perspective of SDT. The study empirically supports the relationships between perceived streamer characteristics, livestreaming context, and product features with consumers' psychological needs, highlighting the relevance of SDT as a theoretical framework for understanding the consumers' behavior in livestreaming.

Thirdly, this dissertation enriched the literature on consumer behavior by using the SOR model. Even though the purchase and continuous watching intention often happened in livestreaming, previous studies have not thoroughly addressed this issue. By employing the SOR model, this study established the pivotal role of three core elements in connecting purchase and continuous watching intentions. According to the SOR model, the results illustrated that three core elements were connected to consumers' behavior

through the satisfaction of psychological needs. These findings revealed that one of the underlying reasons driving the influence of these core elements on consumer behavior was their ability to stimulate consumers' psychological responses.

Fourthly, this dissertation contributes to the existing study on vital factors in livestreaming by conducting research in the North American market, complementing previous studies that mainly focused on the Chinese market. The research findings bridge a significant gap in the literature, providing new insights into the dynamics of livestreaming commerce.

The theoretical implications of this study advance our understanding of the core factors influencing consumers' psychological needs in the context of livestreaming shopping. By proposing a unified research framework and examining the interplay of streamer characteristics, livestreaming context, and product features, this research provides a multi-faceted framework for interpreting consumer motivations and behaviors in this burgeoning field.

7.2 Practical Implications

In addition to theoretical implications, the study in this dissertation also offers several practical implications for both streamers and the livestreaming industry. These implications can guide strategies and actions to enhance the consumer experience and drive greater engagement, loyalty, and sales.

Firstly, the findings in this dissertation provide valuable insights into how streamer characteristics influence consumers' psychological needs. Perceived interactivity and similarity positively impact relatedness, while perceived expertise enhances competence and autonomy. These results highlight the crucial role of streamers in creating connections, sharing relatable experiences, and demonstrating expertise to enhance consumer engagement and satisfaction. Understanding these effects guides both streamers and marketers in leveraging these qualities for an enhanced consumer experience. Given streamers' vital role in economic and social development, it is essential

for them to maintain a high level of professionalism and quality. Improving livestreaming capabilities, promptly responding to consumer questions, and refining professional skills to introduce products effectively are key aspects streamers should focus on. Sharing personal experiences enhances emotional connections, increasing consumers' intention to purchase and continue watching livestreams.

Secondly, the study highlights the impact of livestreaming context factors, visual complexity, time pressure, and perceived social herding. Visual complexity negatively affects competence, suggesting that consumers may experience cognitive strain with overly complex visual backgrounds. Time pressure, while positively influencing competence, negatively affects autonomy, indicating consumers may perceive greater efficiency but potentially feel restricted in decision-making freedom. Perceived social herding positively impacts relatedness and autonomy, emphasizing the role of social influence in livestreaming shopping. These findings underscore the multidimensional nature of livestreaming context and its implications for consumer well-being and motivation. The study suggests that a well-designed livestreaming room atmosphere enhances the visual experience and purchase intention. Decorations matching the brand or event theme can elevate the livestreaming atmosphere, increasing consumer cognition and purchase intent. Streamers can design interactive links to enhance the consumer's sense of participation and stimulate their behavior effectively.

Thirdly, the research underscores the critical role of product characteristics, including perceived price attractiveness and product diversity, in enhancing relatedness, competence, and autonomy. Perceived price attractiveness positively influences relatedness and competence, stressing the importance of offering attractive deals to engage consumers and boost satisfaction. Product diversity enhances autonomy by providing a diverse array of choices, empowering consumer decision-making. These findings contribute to understanding how product-related factors address consumers' psychological needs, enhancing greater loyalty and engagement in livestreaming shopping platforms. This suggests that strategic use of perceived price attractiveness can create satisfaction and relatedness, increasing consumer engagement and trust during

livestreams. Marketers should create a diverse range of products to cater to various tastes, enabling consumers to exercise autonomy in decision-making. The study emphasizes that effective product strategies, such as discounts and promotional prices, stimulate consumer enthusiasm and emotional resonance. Continuous innovation in content based on product characteristics is crucial, and businesses can diversify products to meet consumer needs, encouraging both purchases and sustained viewership of livestreaming.

Fourthly, acknowledging the interplay between consumers' psychological needs, demographics, and watching habits is also important. Recognizing that older consumers may be less inclined to adopt new shopping models, such as livestreaming shopping, helps tailor strategies for different age groups. Leveraging the curiosity of viewers with lower watching frequencies can lead to increased engagement and loyalty. For marketers, segmenting consumers based on their watching and purchasing frequency aids in targeted marketing efforts.

The practical implications of this study provide actionable guidance for streamers, marketers, and platforms in the livestreaming shopping industry. Recognizing the significance of streamer characteristics, livestreaming context factors, and product features in shaping consumers' psychological needs can lead to more effective strategies, ultimately driving the success of livestreaming shopping platforms. Understanding consumer demographics and watching behavior differences helps tailor marketing efforts to enhance customer engagement and sales.

7.3 Limitations

Despite the valuable insights gained from this research, several limitations could be considered, providing opportunities for future research to further examine the complex dynamics of consumer behavior in the context of livestreaming commerce.

Firstly, the study relied on a survey with Amazon Live users. Although Amazon Live started to grow in 2020, some platforms, such as TikTok and Facebook Live, started earlier (Chen et al., 2022). Furthermore, other platforms have different characteristics.

Due to each platform having different target consumers, it is easy to limit consumer characteristics. Future studies should focus on various livestreaming platforms, such as TikTok, Instagram Live, Facebook Live, and YouTube Live.

Secondly, the study primarily focused on the North American market and Amazon Live users. While this choice was made to provide a specific context, it limits the generalizability of the results to a broader global context. Different regions and livestreaming platforms may exhibit unique characteristics and user behaviors that were not explored in this research. Comparative studies across platforms and regions could shed light on these differences.

Thirdly, the collected data in this study captured a single point in time, restricting the ability to investigate the temporal dynamics of livestreaming commerce behavior. A longitudinal approach could offer more robust insights into how consumer behaviors and perceptions evolve over time, providing a deeper understanding of this dynamic context.

Lastly, this study focused on three core elements, while other factors are indispensable in livestreaming. Livestreaming is a complex process, and many influencing factors are involved in livestreaming shopping. Future research can focus on other factors, such as technology and consumer characteristics, to provide a more multi-faceted understanding of consumer behavior during livestreaming shopping. Moreover, this study primarily focused on the mediating role of psychological needs satisfaction in connecting the core elements (streamer, context, and product) to consumer behavior. While this approach is informative, the research did not extensively explore potential moderation effects. Investigating under what conditions these core elements might strengthen or weaken their impact on consumer behavior would add a layer of richness to the findings.

CHAPTER 8 CONCLUSION

In the era of rapid information development, livestreaming combines entertainment, information dissemination, and e-commerce. By employing a unified research framework that integrates the Stimuli-Organism-Response (SOR) model and Self-Determination Theory (SDT), this study examines the multi-faceted effects of streamer, context, and product on purchase and continuous watching intention in livestreaming. The research sheds light on the mechanisms that underlie consumer behavior in this emerging shopping, provides important insights into this multifaceted relationship, and emphasizes the critical importance of these elements in promoting the sustainable development of livestreaming platforms.

The findings demonstrate that streamer characteristics, including perceived interactivity, similarity, and expertise, play a significant role in shaping consumers' relatedness, competence, and autonomy. These attributes significantly influence how consumers perceive the livestreaming experience and connect with the streamer. Specifically, perceived interactivity and expertise positively impact relatedness and competence, underscoring the importance of streamers actively engaging with their audience and establishing credibility. Although perceived interactivity's effect on autonomy was not significant, likely due to inherent autonomy in livestreaming shopping, these findings offer crucial insights for live streamers and marketers seeking to enhance their influence on consumers' psychological needs. The streamer's role is pivotal, and consumers prioritize streamers' interactivity, similarity, and expertise, influencing purchasing decisions and the intention to continue watching. Streamers with distinctive characteristics are more likely to retain viewers, transforming them into consumers and significantly impacting consumer experiences and choices.

The study highlights the importance of livestreaming context factors. Visual complexity, if not effectively managed, can detract from consumers' competence. Streamers should prioritize clear and readable visuals to enhance the viewer experience. Time pressure, while enhancing competence, has a conflicting effect on autonomy. It stimulates

consumers' learning ability and efficiency but may compromise their sense of autonomy. Perceived social herding, on the other hand, positively impacts relatedness and autonomy. This emphasizes the importance of encouraging consumers to share their experiences and harness the power of social influence in livestreaming shopping. In addition, the livestreaming atmosphere significantly influences consumers' purchase and continuous watching intention. Visual aesthetics and situational factors, such as the livestreaming room's atmosphere, can affect consumer engagement and purchase intention. The research underscores the need for marketers to carefully plan livestreaming to attract consumers' attention and provide a pleasant watching experience.

Product characteristics are key drivers of consumer behavior. Perceived price attractiveness enhances relatedness and competence, a powerful tool for marketers to boost engagement. Product diversity empowers consumers, providing choices and positively affecting autonomy. Livestreaming product content significantly influences purchase and continuous watching intention. The research emphasizes the importance of product value and diversity in determining consumer purchasing intention. Effective product display enhances purchasing intention, prompting consumers to take consumption actions. Diverse product choices contribute to sustained viewership of livestreaming.

Understanding the interplay between consumers' psychological needs and their demographics and watching habits cannot be ignored. The study showed age-related differences, indicating that older consumers may be less inclined to embrace emerging shopping models like livestreaming. Moreover, viewers with lower watching frequencies are more likely to continue watching, highlighting the role of curiosity in driving consumer engagement. Marketers should tailor strategies based on these demographic and behavioral differences.

These findings have profound implications for content creators and livestreaming platforms. Knowing the important role of streamers, content creators should focus on shaping streamers' images and ensuring their personalities resonate with target users.

Interactivity and expertise are vital for helping streamers to sustain consumer interest and encourage purchase intention. For products, marketers should emphasize vividly showcasing them, highlighting their value and relevance to consumers.

With the continuous and rapid development of livestreaming, this study has laid a solid foundation for future research and the development of more effective strategies in the North American market. The insights from this study provide a solid foundation for streamers, marketers, and platforms to refine their strategies and cater to consumers' psychological needs more effectively. The impact of streamers, context, and products on purchase and continuous watching intention highlights consumers' content-based interaction style and their ability to make purchasing decisions.

The research reveals the impact of streamer, context, and product on purchase and continuous watching intention in livestreaming. The research results are valuable for content creators, marketers, and livestreaming platforms. With insights from this study, the industry can create more attractive livestreaming experiences, meeting consumer needs and preferences, to drive the long-term development of this emerging shopping model.

REFERENCES

Arora, A., Glaser, D., Kim, A., Kluge, P., Kohli, S., & Sak, N (2021, July 21). It's Showtime! How Live Commerce Is Transforming the Shopping Experience. Retrieved September 11, 2023, from https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/its-showtime-how-live-commerce-is-transforming-the-shopping-experience

Awa, H. O., Ojiabo, O. U., & Emecheta, B. C. (2015). Integrating TAM, TPB and TOE frameworks and expanding their characteristic constructs for e-commerce adoption by SMEs. *Journal of Science & Technology Policy Management*, *6*(1), 76-94.

André, Q., Carmon, Z., Wertenbroch, K., Crum, A., Frank, D., Goldstein, W., & Yang, H. (2018). Consumer choice and autonomy in the age of artificial intelligence and big data. *Customer Needs and Solutions*, *5*, 28-37.

Bao, H., Li, B., Shen, J., & Hou, F. (2016). Repurchase intention in the Chinese e-marketplace: Roles of interactivity, trust and perceived effectiveness of e-commerce institutional mechanisms. *Industrial Management & Data Systems*, *116*(8), 1759-1778.

Brown, T. A., & Moore, M. T. (2012). Confirmatory factor analysis. *Handbook of Structural Equation Modeling*, *361*, 379.

Bambauer-Sachse, S., & Mangold, S. C. (2009). Are temporally reframed prices really advantageous? A more detailed look at the processes triggered by temporally reframed prices. *Journal of Retailing and Consumer Services*, *16*(6), 451-457.

Bambauer-Sachse, S., & Grewal, D. (2011). Temporal reframing of prices: When is it beneficial? *Journal of Retailing*, *87*(2), 156-165.

Block, R. A., & Harper, D. R. (1991). Overconfidence in estimation: Testing the steamering-and-adjustment hypothesis. *Organizational Behavior and Human Decision Processes*, *49*(2), 188-207.

Cai, J., Wohn, D. Y., Mittal, A., & Sureshbabu, D. (2018). Utilitarian and hedonic motivations for livestreaming shopping. *Proceedings of the 2018 ACM International Conference on Interactive Experiences for TV and Online Video*, 81-88.

Chen, Y. C., Shang, R. A., & Kao, C. Y. (2009). The effects of information overload on consumers' subjective state towards buying decision in the internet shopping environment. *Electronic Commerce Research and Applications*, *8*(1), 48-58.

Cai, J., & Wohn, D. Y. (2019). Livestreaming commerce: Uses and gratifications approach to understanding consumers' motivations. *Proceedings of the Annual Hawaii International Conference on System Sciences*, 2548–2557.

Chen, Y. H., Chen, M. C., & Keng, C. J. (2020). Measuring online livestreaming of perceived services cape: Scale development and validation on behavior outcome. *Internet Research*, *30*(3), 737-762.

Cheng, H., Huang, Y. T., & Huang, J. (2022). The application of DEMATEL-ANP in livestream E-commerce is based on the research of consumers' shopping motivation. *Scientific Programming, Volume 2022,* Article ID 4487621, 1-15.

Chiang, H. S., & Hsiao, K. L. (2015). YouTube stickiness: The needs, personal, and environmental perspective. *Internet Research*, *25*(1), 85-106.

Coresight research (2022, August 31). VERB's MARKET Hosts Shop fest 2022: Brands See Peak Engagement via Livestreaming Q&A. Retrieved September 11, 2023, from https://coresight.com/research/verbs-market-hosts-shopfest-2022-brands-see-peak-engagement-via-livestreaming-qa/

Deng, M., Deng, P., Chen, B., Liang, Q., & Deng, G. (2021). Research on Tik Tok platform livestreaming e-commerce to help rural revitalization based on SOR model. *Academic Journal of Business & Management*, *3*(6), 91-94.

Deng, L., & Poole, M. S. (2012). Aesthetic design of e-commerce web pages–Webpage complexity, order, and preference. *Electronic Commerce Research and Applications*, *11*(4), 420-440.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macro theory of human motivation, development, and health. *Canadian Psychology / Psychologies Canadienne*, *49*(3), 182-185.

Fei, M., Tan, H., Peng, X., Wang, Q., & Wang, L. (2021). Promoting or attenuating? An eye-tracking study on the role of social cues in e-commerce livestreaming. *Decision Support Systems*, *142*, 113466.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research, 18*(3), 382-388.

Guo, W., & Sun, N. (2022). Unprofessional or admirable? Determinants of purchasing behavior in government officials' livestreamed shopping. *International Journal of Environmental Research and Public Health, 19*(20), 13073.

Gao, W., Liu, Y., Liu, Z., & Li, J. (2018). How does presence influence purchase intention in online shopping markets? An explanation based on self-determination theory. *Behavior & Information Technology*, *37*(8), 786-799.

Guo, Y., Zhang, K., & Wang, C. (2022). Way to success: Understanding top streamer's popularity and influence from the perspective of source characteristics. *Journal of Retailing and Consumer Services*, *64*, 102786.

Geng, R., Wang, S., Chen, X., Song, D., & Yu, J. (2020). Content marketing in e-commerce platforms in the internet celebrity economy. *Industrial Management & Data Systems*, *120*(3), 464-485.

Giertz, J. N., Weiger, W. H., Törhönen, M., & Hamari, J. (2022). Content versus community focus in livestreaming services: How to drive engagement in synchronous social media. *Journal of Service Management*, *33*(1), 33-58.

Ha, Y., & Lennon, S. J. (2010). Online visual merchandising (VMD) cues and consumer pleasure and arousal: Purchasing versus browsing situation. *Psychology & Marketing, 27*(2), 141-165.

Hou, F., Guan, Z., Li, B., & Chong, A. Y. L. (2020). Factors influencing people's continuous watching intention and consumption intention in livestreaming: Evidence from China. *Internet Research*, *30*(1), 141-163.

Heo, J., Kim, Y., & Yan, J. (2020). Sustainability of live video streamer's strategies: Livestreaming video platform and audience's social capital in South Korea. *Sustainability*, *12*(5), 1-13.

He, Y., Li, W., & Xue, J. (2022). What and how drives consumer engagement and purchase intention in officer livestreaming? A two-factor theory perspective. *Electronic Commerce Research and Applications*, *56*, 101223.

Hu, M., & Chaudhry, S. S. (2020). Enhancing consumer engagement in e-commerce livestreaming via relational bonds. *Internet Research*, *30*(3), 1019-1041.

Huang, Y., & Suo, L. (2021). Factors affecting Chinese consumers' impulse buying decision of livestreaming E-commerce. *Asian Social Science*, *17*(5), 16-32.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43,* 115-135.

Jacowitz, K. E., & Kahneman, D. (1995). Measures of streamering in estimation tasks. *Personality and Social Psychology Bulletin*, *21*(11), 1161-1166.

Jang, H., Reeve, J., & Deci, E. L. (2010). Engaging students in learning activities: It is not autonomy support or structure but autonomy support and structure. *Journal of Educational Psychology*, *102*(3), 588-600.

Kang, K., Lu, J., Guo, L., & Li, W. (2021). The dynamic effect of interactivity on customer engagement behavior through tie strength: Evidence from livestreaming commerce platforms. *International Journal of Information Management*, *56*, 102251.

Kashdan, T. B., Mishra, A., Breen, W. E., & Froh, J. J. (2009). Gender differences in gratitude: Examining appraisals, narratives, the willingness to express emotions, and changes in psychological needs. *Journal of Personality*, *77*(3), 691-730.

Koetsier, J (2022, January 22). Livestream Shopping: A $500 Billion Market In 2022 As Amazon, Google, Facebook, TikTok Jump In? Retrieved September 11, 2023, from https://www.forbes.com/sites/johnkoetsier/2022/01/22/livestream-shopping-a-500-billion-market-in-2022-as-amazon-google-facebook-tiktok-jump-in/?sh=699bca983bc5

Klassen, R. M., Perry, N. E., & Frenzel, A. C. (2012). Teachers' relatedness with students: An underemphasized component of teachers' basic psychological needs. *Journal of Educational Psychology*, *104*(1), 150-165.

Kono, S., & Sato, M. (2023). The potentials of partial least squares structural equation modeling (PLS-SEM) in leisure research. *Journal of Leisure Research*, *54*(3), 309-329.

Kock, N. (2018). Minimum sample size estimation in PLS-SEM: An application in tourism and hospitality research. *Applying Partial Least Squares in Tourism and Hospitality Research*, 1-16.

Ki, C. W. C., & Kim, Y. K. (2019). The mechanism by which social media influencers persuade consumers: The role of consumers' desire to mimic. *Psychology & Marketing*, *36*(10), 905-922.

Li, Y., & Peng, Y. (2021). What drives gift-giving intention in livestreaming? The perspectives of emotional attachment and flow experience. *International Journal of Human–Computer Interaction*, *37*(14), 1317-1329.

Li, Y., Li, X., & Cai, J. (2021). How attachment affects user stickiness on livestreaming platforms: A socio-technical approach perspective. *Journal of Retailing and Consumer Services*, *60*, 102478.

Lee, C. S. (2001). An analytical framework for evaluating e-commerce business models and strategies. *Internet Research*, *11*(4), 349-359.

Lu, B., & Chen, Z. (2021). Livestreaming commerce and consumers' purchase intention: An uncertainty reduction perspective. *Information & Management*, *58*(7), 103509.

Lee, E. J., & Overby, J. W. (2004). Creating value for online shoppers: Implications for satisfaction and loyalty. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, *17*, 54-67.

Lee, Y., Lee, J., & Hwang, Y. (2015). Relating motivation to information and communication technology acceptance: Self-determination theory perspective. *Computers in Human Behavior*, *51*, 418-428.

Liu, G. H., Sun, M., & Lee, N. C. A. (2021). How can live streamers enhance viewer engagement in eCommerce streaming? *Proceedings of the Annual Hawaii International Conference on System Sciences,* 3079–3089.

Liu, L., Fang, J., Yang, L., Han, L., Hossin, M. A., & Wen, C. (2023). The power of talk: Exploring the effects of streamers' linguistic styles on sales performance in B2B livestreaming commerce. *Information Processing & Management*, *60*(3), 103259.

Lim, J. S., Choe, M. J., Zhang, J., & Noh, G. Y. (2020). The role of wishful identification, emotional engagement, and parasocial relationships in repeated viewing of live-streaming games: A social cognitive theory perspective. *Computers in Human Behavior*, *108*, 106327.

Lin, G. Y., Wang, Y. S., Wang, Y. M., & Lee, M. H (2021). What drives people's intention toward live stream broadcasting. *Online Information Review, 45*(7), 1268-1289.

Lou, L., Jiao, Y., Jo, M. S., & Koh, J. (2022). How do popularity cues drive impulse purchase in livestreaming commerce? The moderating role of perceived power. *Frontiers in Psychology*, *13*, 948634.

Luo, B., & Lin, Z. (2013). A decision tree model for herd behavior and empirical evidence from the online P2P lending market. *Information Systems and e-Business Management*, *11*, 141-160.

Luo, X., Cheah, J. H., Lim, X. J., & Ng, S. I. (2022). A bibliometric review of user behaviors research in livestreaming commerce. *Journal of Marketing Advances & Practices, 4*(1), 32-49.

Lv, X., Zhang, R., Su, Y., & Yang, Y (2022). Exploring how livestreaming affects immediate buying behavior and continuous watching intention: A multigroup analysis. *Journal of Travel & Tourism Marketing, 39*(1), 109-135.

Ming, J., Jianqiu, Z., Bilal, M., Akram, U., & Fan, M (2021). How does social presence influence impulse buying behavior in livestreaming commerce? The role of SOR theory. *International Journal of Web Information Systems, 17*(4), 300-320.

McAdams, D. P. (1980). A thematic coding system for the intimacy motive. *Journal of Research in Personality, 14*(4), 413-432.

Osborne, M. S. (2020). Entering the live-streaming void and emerging victorious: Teaching performance psychology under pressure. *International Journal on Innovations in Online Education, 4*(2), 1-23.

Pires, G. D., & Aisbett, J. (2003). The relationship between technology adoption and strategy in business-to-business markets: The case of e-commerce. *Industrial Marketing Management*, *32*(4), 291-300.

Park, H. J., & Lin, L. M. (2020). The effects of matchups on the consumer attitudes toward internet celebrities and their livestreaming contents in the context of product endorsement. *Journal of Retailing and Consumer Services*, *52*, 101934.

Palan, S., & Schitter, C. (2018). Prolific. ac—A subject pool for online experiments. *Journal of Behavioral and Experimental Finance*, *17*, 22-27.

Prolific. (2023). How do I recruit a custom sample. Retrieved November 11, 2023, from https://researcher-help.prolific.com/hc/en-gb/articles/360015732013

Ryan, R. M (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality, 63*(3), 397-427.

Raafat, R. M., Chater, N., & Frith, C. (2009). Herding in humans. *Trends in Cognitive Sciences*, *13*(10), 420-428.

Ren, L. (2021). How live stream shopping influences brand loyalty on Taobao Live: A perspective of parasocial interaction: The effects of affective commitment, real-time interactivity, visual complexity, live streamer type (Master's thesis, University of Twente).

Shang, Q., Ma, H., Wang, C., & Gao, L. (2023). Effects of background fitting of e-commerce livestreaming on consumers' purchase intentions: A cognitive-affective perspective. *Psychology Research and Behavior Management*, *16*, 149-168.

Sun, Y., Shao, X., Li, X., Guo, Y., & Nie, K. (2019). How livestreaming influences purchase intentions in social commerce: An IT affordance perspective. *Electronic Commerce Research and Applications*, *37*, 100886.

Smock, A. D., Ellison, N. B., Lampe, C., & Wohn, D. Y. (2011). Facebook as a toolkit: A uses and gratification approach to unbundling feature use. *Computers in Human Behavior*, *27*(6), 2322-2329.

Todd, P. R., & Melancon, J (2018). Gender and livestreaming: Source credibility and motivation. *Journal of Research in Interactive Marketing, 12*(1), 79-93.

Tong, X., Chen, Y., Zhou, S., & Yang, S. (2022). How background visual complexity influences purchase intention in livestreaming: The mediating role of emotion and the moderating role of gender. *Journal of Retailing and Consumer Services*, *67*, 103031.

Törhönen, M., Sjöblom, M., Hassan, L., & Hamari, J (2020). Fame and fortune, or just fun? A study on why people create content on video platforms. *Internet Research, 30*(1), 165-190.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: heuristics and biases: Biases in judgments reveal some heuristics of thinking under uncertainty. *Science, 185*(4157), 1124-1131.

Thomson, M. (2006). Human brands: Investigating antecedents to consumers' strong attachments to celebrities. *Journal of Marketing, 70*(3), 104–119.

Taylor, I. M., & Ntoumanis, N. (2007). Teacher motivational strategies and student self-determination in physical education. *Journal of Educational Psychology, 99*(4), 747-760.

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*, 113801.

Wongkitrungrueng, A., Dehouche, N., & Assarut, N (2020). Livestreaming commerce from the sellers' perspective: implications for online relationship marketing. *Journal of Marketing Management, 36*(5-6), 488-518.

Wongkitrungrueng, A., & Assarut, N. (2020). The role of livestreaming in building consumer trust and engagement with social commerce sellers. *Journal of Business Research*, *117*, 543-556.

Wang, Q., Yang, S., Liu, M., Cao, Z., & Ma, Q. (2014). An eye-tracking study of website complexity from cognitive load perspective. *Decision Support Systems*, *62*, 1-10.

Wan, J., Lu, Y., Wang, B., & Zhao, L. (2017). How attachment influences users' willingness to donate to content creators in social media: A socio-technical systems perspective. *Information & Management*, *54*(7), 837-850.

Xu, X., Wu, J. H., & Li, Q (2020). What drives consumer shopping behavior in livestreaming commerce? *Journal of Electronic Commerce Research, 21*(3), 144-167.

Xue, J., & Liu, M. T. (2023). Investigating live streaming sales from the perspective of the ecosystem: the structures, processes and value flow. *Asia Pacific Journal of Marketing and Logistics, 35*(5), 1157-1186.

Yang, Q., & Lee, Y. C. (2023). The effect of livestreaming commerce quality on customers' purchase intention: extending the elaboration likelihood model with herd behavior. *Behavior & Information Technology*, 1-22.

Yoon, C., & Rolland, E. (2012). Knowledge-sharing in virtual communities: Familiarity, anonymity, and self-determination theory. *Behavior & Information Technology, 31*(11), 1133-1143.

Zhao, Q., Chen, C. D., Cheng, H. W., & Wang, J. L (2018). Determinants of streamers' continuance broadcasting intentions on Twitch: A self-determination theory perspective. *Telematics and Informatics, 35*(2), 406-420.

Zhao, K., Hu, Y., Hong, Y., & Westland, J. C. (2019). Understanding characteristics of popular streamers on livestreaming platforms: Evidence from Twitch. tv. *Journal of the Association for Information Systems,* 1-44.

Zhang, S., Huang, C., Li, X., & Ren, A (2022). Characteristics and roles of streamers in e-commerce livestreaming. *The Service Industries Journal, 42*(13-14), 1001-1029.

Zeng, Q., Guo, Q., Zhuang, W., Zhang, Y., & Fan, W. (2023). Do real-time reviews matter? Examining how bullet screen influences consumers' purchase intentions in livestreaming commerce. *Information Systems Frontiers*, *25*(5), 2051-2067.

Zhou, J., Zhou, J., Ding, Y., & Wang, H. (2019). The magic of danmaku: A social interaction perspective of gift sending on livestreaming platforms. *Electronic Commerce Research and Applications*, *34*, 100815.

Zhang, K. Z., Zhao, S. J., Cheung, C. M., & Lee, M. K. (2014). Examining the influence of online reviews on consumers' decision-making: A heuristic–systematic model. *Decision Support Systems*, *67*, 78-89.

Zhang, S., Huang, C., Li, X., & Ren, A (2022). Characteristics and roles of streamers in e-commerce livestreaming. *The Service Industries Journal, 42*(13-14), 1001-1029.

Zhang, M., Sun, L., Qin, F., & Wang, G. A (2020). E-service quality on livestreaming platforms: swift guanxi perspective. *Journal of Services Marketing, 35*(3), 312-324.

Zahari, N. H. M., Azmi, N. N. N., Kamar, W. N. I. W. A., & Othman, M. S. (2021). Impact of livestreaming on social media on impulse buying. *Asian Journal of Behavioral Sciences, 3*(1), 13-23

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.

APPENDIX A. Key Findings of Previous Research

Source	Platform Country Sample size	Method	DVs	Key Findings
Kang et al. (2021)	Weibo Live China	Field study	Customer engagement	Interactivity plays a significant role in emotion attachment and tie strength has a mediator effect between consumer behavior and perceived interactivity.
Wongkitrungrueng & Assarut (2020)	Facebook Live Thailand N=261	Survey	Customer engagement	Symbolic value, utilitarian and hedonic values have effects on consumer behavior through consumer trust.
Hu & Chaudhry (2020)	Taobao Live China N=327	Survey	Consumer engagement	Social and structural bonds positively influence customer engagement and financial bonds have indirect effect on consumer behavior.
Lim et al. (2020)	Twitch South Korea N=485	Survey	Loyalty-repeat viewing	Wishful identification and emotional engagement influence consumer loyalty.
Liu et al. (2021)	Weibo Live China N=537	Survey	Customer engagement	The characteristic of streamer such as authenticity, similarity increase consumer intimacy and generating consumer engagement.
Fei et al. (2021)	Taobao Live China N=58	Experiment	Purchase intension	The message in the livestreaming community could get the consumers' intention. Interactive information can have a dispersed effect. Meanwhile, these texts have positive spillover effect.

Source	Platform Country Sample size	Method	DVs	Key Findings
Zeng et al. (2023)	Taobao Live China	Field study	Purchase intention	Bullet screens can have an impact on consumer purchasing behavior. The credibility of resources has a negative impact on purchase intention. The type of product has a moderating effect on consumer purchase intention.
Lu & Chen (2021)	Taobao Live China (JingDong Douyin, Kuaishou) N=535	Survey	Purchase intention	Streamer's characteristic has impact on consumer behavior through interactivity, hence decrease uncertain feeling about product and increase consumers' trust.
Tong et al. (2022)	Taobao Live China N=432	Experiment	Purchase intention	Visual complexity has a positive impact on consumers' purchase intention as it could around positive emotion. And gender has a vital moderating effect.
Luo et al. (2022)	Taobao Live China N=402	Survey	Sales performance	The popularity of streamers and products can affect consumer purchasing behavior. Because this will enhance the reputation of the streamer. Meanwhile, the perception of power will have a moderating effect.
Liu et al. (2023)	1688 China N=915	Survey	Sales performance	The characteristics of three different speech act will have different effects on sales performances.
Xu et al. (2020)	Taobao China N=300	Survey	Impulsive consumption; Social sharing	Cognitive and emotional changes can affect consumer behavior.

Source	Platform Country Sample size	Method	DVs	Key Findings
Park & Lin (2020)	Taobao Live &Yizhibo China N=256	Survey	Purchase intention	The appropriateness of product resources can affect the attractiveness, credibility, and consumer attitudes towards live streaming content, thereby influencing consumer behavior.
Todd & Melancon (2018)	Twitch N=998	Survey	Consumer engagement	Different genders of streamers have varying impacts on consumer behavior.
Wongkitrungrueng et al. (2020)	Facebook Live Thailand	Field study	Customer-focused outcomes Seller-focused outcomes Dyadic outcomes	Different sales methods have different impacts on consumer behavior. These sales methods help to understand the relationship between merchants and live streaming.
Zhang et al. (2020)	Taobao Live China N=149	Experiment	Purchase intention	Live streaming can increase consumer purchasing intention by building relationships with them. In addition, the type of product has a moderating effect.
Zhou et al. (2019)	Douyu China	Field study	Paid gifting	The behavior of consumer in livestreaming community has significant impact on paid gifting.
Wang et al. (2022)	China N=35	Interview	Purchase intention	The context and streamer characteristic has a positive impact on purchase intention.

Source	Platform Country Sample size	Method	DVs	Key Findings
Geng et al. (2020)	Taobao China	Field study	N/A	The characteristics of streamers have a certain impact on consumer behavior.
Zhang et al. (2022)	Taobao Live China N=417	Survey	Purchase intention	The characteristics of anchors and the quality of information have a positive impact on consumer behavior.
Li & Peng (2021)	China N=403	Survey	Paid gifting	The characteristics of streamer and context have impact on users' flow experience.
Zhang et al. (2022)	Taobao Live China N=446	Interview	N/A	The characteristics of technology have led to an increase in consumer trust in streamers and products, thereby affecting their willingness to continue watching.
Lee et al. (2021)	China N=433	Survey	Purchase intention	Consumer emotions have a positive impact on purchase intention. At the same time, the attractiveness and professionalism of the streamer can affect consumer emotions. The usefulness of a product and the convenience of purchase both affect consumer purchasing behavior.
Huang & Suo (2021)	Taobao Live China N=477	Survey	Purchase intention	The characteristics of the streamer (interactivity), product features (price discounts), and the background of the live broadcast have a positive impact on consumer purchasing behavior.
Lou et al. (2022)	Taobao Live China	Field study	Purchase intention	The characteristics of language have different effects on sales performance. Encouraging language has a positive effect. Logical language has negative effects.

Source	Platform Country Sample size	Method	DVs	Key Findings
Lv et al. (2022)	Trip.com China N=449	Survey	Purchase intention Continuous watching intention	The characteristics of the streamer (informative, entertaining, and interactive) and the characteristics of the product (product interest) have a positive impact on consumer sustained viewing behavior.
Ming et al. (2021)	China N=405	Survey	Purchase intention	Live streaming platforms, streamers, and consumers appearing remotely have a positive impact on consumer trust, leading to the generation of consumer purchase intentions. At the same time, consumer perception of power has a moderating effect on consumer trust and impulsive buying behavior
Hou et al. (2019)	China N=210	Survey	Purchase intention; Continuous watching intention	The characteristics of streamers (gender, humor, interaction) have a significant impact on consumer behavior. Meanwhile, this role can be reflected in different types of livestreaming.
Zhao et al. (2019)	Facebook Live, YouTube Live Twitch USA N=220	Survey	Stickiness Reward behavior	Professionalism can positively influence consumer behavior. At the same time, social recognition, such as the recognition of live streaming communities and their positive influence on consumer behavior.
Cai & Wohn (2019)	China	Survey	Consumer engagement	There is a positive correlation between hedonic motivation and celebrity motivation, while utilitarian motivation is positively correlated with product motivation.

Source	Platform Country Sample size	Method	DVs	Key Findings
Chen et al. (2020)	Taobao Jingdong Douyin Kuaishou China N=245	Survey	Continuous watching intention Purchase intention	In the process of live shopping, value compatibility, consumer experience delivery, and product presentation have a positive impact on consumer purchase intention.
Guo et al. (2022)	N=209	Survey	Social sharing	The characteristics of streamers, such as beauty, enthusiasm, and humor, have a positive impact on hedonism. However, the popularity of the streamer has an impact on the intention to continue watching but has no effect on the purchasing intention of consumers.
Yoon & Rolland (2012)	Twitch N=215	Survey	Viewing Donating	Competence and relatedness positively influence knowledge-sharing behaviors and autonomy will not influence this behavior.
Giertz et al. (2022)	China N=416	Survey		Community-centered communication can increase viewership and content-centered has a totally different impact.
Guan et al. (2018)	Facebook USA N=267	Survey	Motivate to use Facebook	The streamer and other consumer increase the development of flow experience and generate purchase behavior.

Source	Platform Country Sample size	Method	DVs	Key Findings
Smock et al. (2011)	China N=120	Survey	Purchase intention	The motivation to use Facebook can predict their behavior in using other features, but shared motivation cannot be predicted.
Cheng et al. (2022)	Taobao China N=259	Survey	Purchase intention	The popularity of sellers is a factor that affects consumer shopping. Meanwhile, the characteristics of the product, such as price and quality, can also affect the seller's popularity.
Gao et al. (2018)	China N=687	Survey	Altruism	Remote functionality and social behavior will have a positive impact on consumer relevance and stickiness. Meanwhile, stickiness will have a mediating effect on autonomy and purchase intention.
He et al. (2022)	Taobao Live China N=425	Survey	Visit duration User retention	Utilitarian benefit, hedonic benefit, and risk perception have a moderating effect on consumer behavior.
Li et al. (2021)	Taobao Live China N=189	Survey	Purchase intention	Technical factors and social factors have a positive impact on the emotional attachment and platform attachment of livestreaming, respectively, thereby increasing user stickiness.
Li et al. (2022)	Taobao Live China N=277	Experiment	Brand loyalty	The emergence of livestreaming platforms and streamers can lead to impulsive purchasing behavior among consumers, as their emotions can rise. However, the appearance of other consumers cannot lead to changes in consumer emotions.

Source	Platform Country Sample size	Method	DVs	Key Findings
Ren (2021)	China N=424	Survey	Purchase intention	The interactivity of the streamer has a positive effect on the loyalty of the product. The interaction in live streaming communities can also affect brand loyalty
Shang et al. (2023)	Taobao JD Mogujie Sina Microblog China N=504	Survey	Purchase intention	The adaptability of the background has a positive effect on the cognitive process of consumers. Consumer trust is mainly influenced by background fit. Therefore, consumer cognitive behavior can affect their purchase intention. Meanwhile, perceived value has a greater impact on consumer emotions compared to trust.
Sun et al. (2019)	Twitch	Field study	Cumulative views Number of Followers	The remote function has a positive impact on consumer purchasing intention, which can be achieved by adjusting consumer engagement.

APPENDIX B. Survey Items

Variables	Measurement Items (7-Likert scale)	Source
Perceived Interactivity	1. This streamer was effective in gathering users' feedback. 2. This streamer responded to my questions very quickly. 3. I was able to obtain the information I wanted without any delay.	Hou et al. (2020)
Perceive Similarity	1. I found that the streamer thinks in a similar way as I do. 2. I found that the streamer has similar goals as me. 3. The streamer and I saw things the similar way. 4. The streamers and my views and values were very similar. 5. Overall, the streamer and I had a similar interpretation of things.	Lu & Chen (2021)
Perceived Expertise	1. The expertise of the streamer helped me understand the product better. 2. The expertise of the streamer makes me think this product is useful. 3. During the livestreaming, the streamer taught me a lot about products.	Guo et al. (2022) Zhang et al. (2022)
Perceived Price Attractiveness	1. In this livestreaming, the recommended products were well-priced. 2. In this livestreaming, the prices of recommended products were attractive. 3. In this livestreaming, the prices of recommended products were good deals. 4. In this livestreaming, the prices of recommended products were very reasonable. 5. In this livestreaming, the prices of recommended products were very cost-effective.	Bambauer-Sachse & Grewal (2021) Büyükdag et al. (2020)
Product Diversity	1. The wide selection of products and services these livestreaming offers meet my need. 2. This livestreaming has a good selection of products and service. 3. This livestreaming provides me with multiple choices of products.	Lee & Overby (2004) Wang et al. (2023)
Visual Complexity	I think the visual background in this livestreaming is _____? 1. Unorganized ---------Organized 2. Hard to view--------Easy to view	Park & Lin (2020) Ren (2021)

Variables	Measurement Items (7-Likert scale)	Source
	3. Incoherent---------Coherent	
	4. Messy--------Neat	
Time Pressure	1. I felt like I have less time to decide whether to buy a sale or not in this livestreaming.	Lin & Chen (2018)
	2. I must hurry if I want to buy products recommended by this livestreaming.	
	3. I have a feeling that the sales deadline for the seckill* product will run out very soon.	
	4. I must hurry if I am to buy products recommended by this livestreaming.	
Perceived Social Herding	1. I followed others in this livestreaming to purchased products.	Yang & Lee (2023)
	2. I would choose to buy a product in this livestreaming because many other people are buying it.	
	3. I would follow those people in this livestreaming and buy the same things as them.	
Autonomy	1. When I was watching this livestreaming, I felt free to be who I am.	Gao et al. (2018)
	2. When I was watching this livestreaming, I felt that my choices were based on my true interests and values.	
	3. When I was watching this livestreaming, I felt free to do things my way.	
	4. When I was watching this livestreaming, I was free to express my ideas and opinions.	
Relatedness	1. When I was watching this livestreaming, I felt a lot of closeness with it.	Gao et al. (2018)
	2. When I was watching this livestreaming, I felt loved and cared about.	
	3. When I was watching this livestreaming, I felt like I was in contact with someone who cared for me and who I cared for.	
Competence	1. This livestreaming helped me find ways to make progress.	Chen et al. (2020)
	2. This livestreaming made me a better person.	
	3. I could learn how to make myself better from this livestreaming.	
	4. This livestreaming could provide me with methods for how to do things well.	
Purchase Intention	1. After watching this livestreaming, I had an interest in purchasing products being presented.	Lu & Chen (2021)

Variables	Measurement Items (7-Likert scale)	Source
	2. After watching this livestreaming, I wanted to purchase the products being presented.	Guo et al. (2022)
	3. After watching this livestreaming, I became interested in making a purchase.	
	4. After watching this livestreaming, I was willing to buy the products being presented.	
	5. After watching this livestreaming, I would likely buy the products being presented.	
Continuous Watching Intention	1. I intend to continue watching this livestreaming channel in the future.	Hou et al. (2020)
	2. I would always try to watch this livestreaming channel in my daily life.	
	3. I plan to continue to watch this livestreaming channel frequently.	

* Note: The word 'Seckill' refers to the quick sell out of newly advertised goods.