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Streamer Characteristics and Brand Identification in Livestream Commerce: Evidence from Time-Honored Brands

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Abstract

The revitalization of time-honored brands has been identified as a strategic priority in China's national development agenda, yet many long-established brands continue to face declining market share and limited engagement with younger consumers. E-commerce livestreaming, characterized by real-time interaction and broad digital reach, has emerged as a potentially powerful channel for reversing this trend. However, the mechanisms through which livestreaming strengthens brand identification with time-honored brands among young consumers remain poorly understood. Drawing on the stimulus–organism–response (SOR) framework, social presence theory (SPT) and parasocial interaction theory (PSI), this study investigates how streamer characteristics—popularity, professionalism, and interactivity—shape brand identification with time-honored brands in livestreaming environments. Survey data were collected from 434 young consumers aged 18–40 who had viewed time-honored-brand livestreams within the previous six months. Structural equation modelling was used to test a model incorporating social presence, perceived authenticity of time-honored brands, and trust in time-honored brands as sequential mediators and consumer–streamer relationship strength as a moderator. The results show that streamer popularity and professionalism significantly enhance both social presence and perceived brand authenticity, whereas streamer interactivity primarily strengthens social presence. Social presence and perceived authenticity both increase trust in time-honored brands, which in turn predicts brand identification with time-honored brands. Streamer popularity and professionalism influence brand identification through two serial mediation pathways—via social presence and trust, and via authenticity and trust—while streamer interactivity operates mainly through the social presence–trust pathway. In addition, consumer–streamer relationship strength amplifies the effect of social presence on trust but attenuates the effect of authenticity on trust. By integrating SOR with SPT and PSI in a moderated serial mediation framework, this study provides new insight into how livestreaming transforms external cues into durable brand identification with time-honored brands among young consumers. The findings extend time-honored branding theory into digitally mediated commerce and offer evidence-based guidance for the strategic renewal of time-honored brands in the platform economy.

Keywords: livestreaming; young consumers; time-honored brands; streamer characteristics; brand identification; SOR framework; parasocial interaction theory; social presence; trust; authenticity

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1. Introduction

High-quality development has become a central objective of China's modernization strategy, in which brand building is regarded as a critical mechanism for enhancing national competitiveness and facilitating industrial upgrading. Within this context, time-honored brands represent a distinctive category of legacy enterprises. In China, time-honored brands (laozihao) typically refers to firms officially recognized by the Ministry of Commerce as having a long operating history (often spanning several decades or centuries), distinctive products or services, inherited craftsmanship, and strong cultural embeddedness. Conceptually, they correspond to what prior literature describes as heritage brands—brands with a stable core identity rooted in longevity, tradition, and intergenerational continuity [1,2]. Beyond their economic value, they represent an important form of cultural capital and are therefore integral to the pursuit of culturally grounded modernization [3]. Despite their symbolic and economic significance, many time-honored brands have experienced long-term decline. More than 90% of China's time-honored brands have disappeared since the early years of the People's Republic [4], reflecting structural weaknesses in innovation, market adaptation, and consumer engagement.

A key challenge is that many time-honored brands continue to rely heavily on traditional, offline marketing strategies, while lagging behind in digital transformation and platform-based retailing [5,6]. Limited online presence, weak e-commerce capability, and insufficient digital communication have constrained their market reach and eroded competitiveness [7,8]. These limitations are especially problematic given the growing dominance of digital-native consumers, who expect interactive, personalized, and omnichannel experiences [9,10]. Such challenges are particularly acute among young consumers, who dominate contemporary consumption but often perceive time-honored brands as outdated in style, packaging, and engagement logic [11]. Understanding how time-honored brands can regain identification among this cohort has therefore become both a practical and theoretical priority.

Existing research on time-honored brands has largely focused on brand equity [12], brand extension [13], and perceived authenticity [14], but has paid comparatively little attention to the transformation of marketing contexts, particularly the rise of e-commerce livestreaming [15]. Livestream commerce represents a fundamentally different mode of consumer–brand interaction, characterized by real-time communication, influencer mediation, and socially embedded purchasing. In this environment, consumers rely less on static product information and more on experiential cues generated through interaction, observation, and social interpretation [16,17]. Despite its growing importance, livestreaming remains under-theorized in time-honored branding research [18].

Moreover, most existing studies treat "consumers" as a homogeneous group, overlooking generational differences in media usage patterns, consumption psychology, and social interaction preferences [19,20]. However, consumer behavior literature consistently demonstrates that generational cohorts differ significantly in digital engagement, brand perception, and technology adoption [21,22]. In this study, "young consumers" refers to individuals aged 18–40, encompassing late Generation Y (Millennials) and early Generation Z. This cohort represents the most digitally immersed segment of the population and constitutes the dominant user base of social media and livestream commerce platforms [23]. Compared with older cohorts, young consumers exhibit stronger preferences for interactivity, immediacy, peer influence, and participatory online experiences [24]. These characteristics make them particularly responsive to livestream shopping environments, where real-time interaction and social presence are central features. Despite their prominence in livestream commerce, limited research has examined how young consumers shape

brand identification, especially in the context of time-honored brands that traditionally rely on heritage, authenticity, and cultural symbolism.

From a theoretical perspective, prior studies of heritage-brand livestreaming have also tended to rely on single-framework explanations, most commonly the stimulus–organism–response (SOR) model [25–27]. Although SOR theory has proven useful for analyzing how environmental cues influence consumer reactions, its linear logic is limited in capturing the socially rich and psychologically layered interactions that define livestreaming. In this context, consumer responses are not driven by stimuli alone but by the subjective experience of being socially and emotionally present with others. To address this limitation, this study advances the SOR framework by integrating social presence theory (SPT) and parasocial interaction theory (PSI) to more precisely conceptualize the socio-emotional mechanisms underlying livestreaming commerce. Although the SOR model provides a robust structure for explaining how environmental stimuli shape internal states and subsequent behavioral responses [28], the "organism" component has often been treated as an undifferentiated psychological construct in prior e-commerce research. In livestreaming contexts, however, consumers' internal states are shaped not only by technological affordances but also by relational dynamics embedded in streamer–viewer interactions. SPT explains how mediated communication conveys warmth, immediacy, and the sense of human co-presence [29]. Subsequent research has extended this perspective to online commerce, demonstrating that perceived social presence enhances trust, involvement, and relational perceptions [30–32]. Nevertheless, livestreaming commerce differs from traditional online environments because it fosters asymmetrical yet emotionally meaningful relationships between viewers and streamers. PSI posits that audiences can develop one-sided perceptions of intimacy, friendship, and emotional attachment toward media figures [33]. In contemporary digital environments, such parasocial bonds are intensified through real-time interaction, self-disclosure, and influencer authenticity [34,35]. Integrating SPT and PSI within the SOR framework is therefore theoretically necessary. SPT captures the perception of "being with" the streamer, whereas PSI explains the deeper perception of "being connected to" the streamer. Together, they provide a multidimensional conceptualization of the organism as a structured socio-emotional process encompassing co-presence, perceived intimacy, and relational attachment.

Furthermore, existing studies have typically examined either mediating or moderating mechanisms in isolation, resulting in partial explanations of how livestreaming affects time-honored brands [13]. By jointly modelling serial mediators (social presence, brand authenticity, and brand trust) and a key relational moderator (consumer–streamer relationship strength), this study opens the "black box" between livestreaming stimuli and brand identification.

Using quantitative methods, this research examines how streamer characteristics (popularity, professionalism, and interactivity) influence brand identification with time-honored brands among young consumers in livestreaming environments. By integrating SOR, SPT, PSI, serial mediation, and relational moderation into a unified framework, the study provides new theoretical and empirical insight into how time-honored brands can sustain relevance and cultural value in the digital economy.

2. Theoretical Framework and Research Hypotheses

2.1. Theoretical Framework

2.1.1. Stimulus–Organism–Response (SOR) Model

The SOR model, originally proposed by Mehrabian and Russell (1974), explains how environmental stimuli influence individual behavioral responses through internal psychological states [28]. The model conceptualizes a sequential process: Stimulus (S) →

Organism (O) → Response (R), in which external cues first affect internal cognitive and affective processes, which in turn shape behavioral outcomes.

In e-commerce research, the SOR model has been widely adopted to examine how digital environmental cues influence consumers' internal evaluations and purchase-related responses [36]. Within livestreaming commerce, stimuli typically include streamer characteristics, platform affordances, and interactive features; organismic states encompass cognitive evaluations (e.g., trust, authenticity perception) and affective reactions (e.g., enjoyment, emotional arousal); and responses involve purchase intention, engagement, or brand-related attitudes.

However, when applied to time-honored brands, the SOR mechanism operates under distinct boundary conditions that differ from generic influencer-driven commerce. Time-honored brands are characterized by historical continuity, accumulated reputation, cultural symbolism, and intergenerational transmission. These attributes introduce a pre-existing layer of brand heritage meaning that precedes livestream exposure. Consequently, livestream stimuli do not operate on a "neutral" brand schema; rather, they interact with historically embedded brand associations and collective cultural memory [37].

This heritage-based pre-structuring alters the nature of the "stimulus" in the SOR chain. For emerging or purely commercial brands, streamer cues primarily function as persuasive signals. In contrast, for time-honored brands, streamer cues function as interpretive bridges that translate historical legitimacy and cultural authenticity into contemporary relevance. Thus, livestreaming stimuli in this context carry a dual role: (1) activating heritage-based symbolic capital and (2) re-contextualizing tradition within a modern interactive environment [3,28].

Moreover, the extension of SOR from physical retail atmospherics to digitally mediated, relational environments has been debated [38]. In influencer-driven settings, stimuli are embedded within interpersonal exchanges rather than static environmental cues. This relational embeddedness becomes particularly salient for time-honored brands, whose legitimacy depends not only on functional quality but also on perceived authenticity and cultural continuity [39]. Therefore, explaining young consumers' identification with time-honored brands requires complementing the SOR structure with theories that specify how interactive mechanisms mediate heritage meaning reconstruction.

To address these theoretical requirements, this study integrates SPT and PSI to explicate how livestreaming stimuli facilitate brand identification among younger consumers.

2.1.2. Social Presence Theory (SPT)

Social presence refers to the extent to which individuals perceive others as psychologically accessible and "real" within a mediated communication environment. Originally developed in the context of telecommunications research, SPT posits that communication media differ in their capacity to transmit verbal and nonverbal cues, and that these differences influence the perceived salience of interpersonal interaction. Media that convey richer cues—such as facial expressions, tone of voice, and immediacy signals—are more likely to generate a heightened sense of warmth, intimacy, and human contact [29].

Subsequent research has extended social presence theory to digitally mediated environments, particularly in online commerce contexts. Rather than viewing social presence solely as a fixed property of communication media, contemporary perspectives conceptualize it as a user perception shaped by technological affordances, interactive features, and social cues embedded in platforms [31]. In e-commerce settings, perceived social presence has been associated with enhanced trust formation, reduced uncertainty, increased engagement, and stronger relational evaluations [40]. These developments suggest that social presence plays

a critical role in explaining how digital environments simulate interpersonal interaction and foster socio-emotional responses.

In livestreaming commerce, social presence is particularly salient because real-time video, synchronous interaction, and multimodal communication cues create a vivid and immersive environment. Through immediate feedback, verbal engagement, and visible audience participation, livestreaming platforms approximate aspects of face-to-face interaction, thereby intensifying perceptions of co-presence and situational immersion. When integrated with the SOR framework, SPT helps specify how livestreaming stimuli translate into internal affective and cognitive states that ultimately shape consumer responses, including brand-related evaluations and identification [28].

Importantly, the role of social presence becomes theoretically distinctive in the context of time-honored brands. Heritage brands often face a "generational distance" problem: younger consumers may perceive them as outdated, rigid, or culturally distant despite their historical prestige. Social presence in livestreaming environments reduces this psychological distance by humanizing the brand and embedding it within contemporary interaction. In this sense, social presence does not merely enhance immersion; it functions as a mediating mechanism that transforms abstract heritage into socially accessible experience [29,30].

Furthermore, because time-honored brands derive value from perceived authenticity and continuity, the perception of a real and present communicator becomes critical for safeguarding authenticity reinterpretation. Social presence ensures that heritage narratives are not perceived as static historical claims but as living traditions communicated by credible representatives [3].

However, SPT primarily explains situational co-presence and immediacy. It does not fully account for the development of enduring relational bonds with specific media figures. To explain how livestream-based interaction evolves into deeper relational attachment that facilitates brand identification, PSI is incorporated [34].

2.1.3. Parasocial Interaction Theory (PSI)

PSI provides a theoretically grounded lens for understanding relational dynamics in mediated environments. Originally conceptualized by Horton and Wohl (1956) [33], parasocial interaction refers to the illusion of a face-to-face relationship that audiences develop with mediated performers. Although such interactions are structurally one-sided, audiences may nonetheless experience emotional closeness, perceived friendship, and intimacy with media figures.

With the evolution of digital platforms, PSI has extended beyond traditional mass media to interactive online environments. Contemporary research suggests that social media and livestreaming technologies intensify parasocial processes by enabling real-time communication, personalized engagement, and repeated exposure to influencers [41]. Even when reciprocity remains limited, users often interpret these interactions as relational exchanges, fostering affective attachment and perceived relational bonds with streamers [42].

In livestreaming commerce contexts, consumers do not merely perceive the presence of a communicator; they frequently develop relational ties with specific streamers. Through self-disclosure, storytelling, direct responses to viewer comments, and personalized address, streamers cultivate perceived intimacy and companionship. Such practices facilitate parasocial relationships characterized by emotional closeness, trust, and identification. Compared with SPT—which primarily explains perceptions of co-presence and immediacy—PSI more directly captures the development of enduring, asymmetric relational bonds between consumers and streamers [43].

Importantly, parasocial interaction extends beyond situational perceptions to explain how audiences internalize streamer attributes and integrate them into their own self-concept. In influencer marketing and online commerce contexts, parasocial relationships have been shown to enhance persuasion effectiveness, increase trust in endorsed products, and strengthen brand-related attitudes [44]. Thus, PSI provides a contemporary and contextually relevant theoretical perspective for examining relational attachment in livestreaming commerce.

For time-honored brands, PSI assumes a theoretically amplified role. Because these brands embody collective heritage and cultural symbolism, young consumers' identification often requires symbolic reinterpretation rather than mere transactional trust. Relationship with streamers can allow consumers to internalize heritage meanings. In this mechanism, the streamer helps to legitimize the modernization of tradition. Thus, unlike generic livestreaming commerce where PSI primarily strengthens product trust or purchase intention, PSI in the context of time-honored brands facilitates symbolic assimilation. It helps young consumers reconcile modern self-identity with traditional brand heritage [1].

In summary, understanding livestreaming commerce of time-honored brands requires more than a standalone relational explanation. While the SOR model offers a structural framework for linking environmental stimuli to internal states and behavioral responses, it does not specify the socio-relational content of those internal states [28]. SPT explains how technological and interactive cues generate perceptions of human warmth and co-presence, thereby shaping situational immersion [29,30]. PSI, in turn, accounts for how viewers move beyond co-presence to develop perceived friendship, emotional attachment, and relational identification with streamers [33].

Integrating SOR, SPT, and PSI is therefore theoretically necessary. Within this integrated framework, livestreaming stimuli generate perceptions of social presence, which create the situational foundation for interaction. These perceptions may further evolve into parasocial bonds characterized by relational attachment. Together, social presence and parasocial interaction specify the multidimensional nature of the "organism" in the SOR model, transforming it from a general psychological state into a structured socio-emotional mechanism.

2.2. Research Hypotheses

2.2.1. Effects of Streamer Characteristics

In digital marketing environments, live-streaming commerce has become a prominent channel for brand communication and identity formation. While prior livestreaming research generally conceptualizes streamer cues as environmental stimuli that influence social presence, trust, and identification in a relatively linear fashion, this study argues that such mechanisms operate differently in the context of time-honored brands. Time-honored brands are characterized by accumulated historical legitimacy, intergenerational transmission, and symbolic cultural meanings [37]. Unlike newly established brands that rely heavily on exposure and traffic conversion, time-honored brands face the dual challenge of preserving perceived authenticity while adapting to digitally mediated, entertainment-oriented commercial formats.

Accordingly, this study integrates the SOR framework with SPT and PSI perspectives to examine how streamer characteristics function as stimuli in shaping young consumers' internal evaluations and subsequent brand identification. Crucially, for time-honored brands, streamer characteristics enhance transactional persuasion. Specifically, this study focuses on three key streamer characteristics—popularity, professionalism, and interactivity—and examines how these attributes influence perceived social presence and brand authenticity, which subsequently shape brand identification [19]. By foregrounding social presence

and brand authenticity as central organismic states in heritage-brand livestreaming, this research delineates a boundary condition under which the classic "streamer cue → trust → identification" pathway is contingent upon the preservation and credible communication of brand heritage.

Effects of Streamer Popularity

Streamer popularity reflects a composite of personal history, competence, achievements and public reputation, and serves as a critical antecedent of audience attention [45]. Highly popular streamers in live-streaming commerce function as salient environmental stimuli. Their extensive follower base and heightened visibility increase their persuasive potential and amplify their influence on consumer perceptions and responses.

Within live-streaming contexts, social presence refers to users' immersive perception of "being with others" through mediated interaction and typically encompasses awareness presence, affective presence and cognitive presence [46]. Streamers with high popularity are more likely to enhance awareness presence by making their existence more salient to viewers and encouraging active participation. In terms of affective presence, popular streamers often leverage personal charisma and relational closeness to establish emotional connections with audiences, facilitating emotional contagion and engagement. With respect to cognitive presence, popular streamers are generally perceived as more knowledgeable and experienced, enabling clearer product demonstrations and more effective information transmission, thereby enhancing consumers' understanding and evaluation of products [32]. The resulting increase in social presence can strengthen trust and attention toward live-streaming content and, in turn, promote favorable consumer responses. Accordingly, the following hypothesis is proposed:

H1a. *Streamer popularity positively influences consumers' perceived social presence.*

Beyond its effects on social presence, streamer popularity also shapes consumers' perceptions of brand authenticity in live-streaming commerce [47]. In the case of time-honored brands, authenticity is not merely a quality signal but a core dimension of brand value, rooted in historical continuity, craftsmanship, and cultural symbolism. As such, the endorsement of highly popular streamers may exert a dual effect. On the one hand, their reputation and visibility can enhance perceived credibility and reduce uncertainty, particularly among young consumers who lack prior experience with heritage brands. On the other hand, excessive commercialization or entertainment-oriented presentation may risk diluting perceptions of historical authenticity if not carefully aligned with brand heritage [39].

Therefore, in heritage-brand livestreaming contexts, streamer popularity contributes to authenticity perceptions only when popularity is accompanied by responsible curation and credible narrative framing of brand history. Highly popular streamers typically adopt rigorous product selection standards and rely on professional teams to ensure quality control, which may reinforce the perception that time-honored brands remain faithful to traditional standards despite operating in digital marketplaces [1]. Moreover, well-known streamers tend to place greater emphasis on reputation management and therefore invest more effort in understanding and accurately communicating brand heritage, production processes, and symbolic meanings. Their live-streaming practices often involve higher levels of transparency—such as disclosure of sourcing, pricing and selection processes—which reduces information asymmetry between brands and consumers and further reinforces perceptions of authenticity [48].

Consequently, in the specific boundary condition of time-honored brands, streamer popularity operates not merely as an attention-generating cue but as a legitimacy-

amplifying mechanism that strengthens consumers' belief in the continuity and credibility of brand heritage within digitally mediated interactions [3]. Therefore, the following hypothesis is advanced:

H1b. *Streamer popularity positively influences consumers' perceived authenticity of time-honored brands.*

Effects of Streamer Professionalism

In live-streaming commerce, streamer professionalism is reflected in in-depth product knowledge, clear and accurate explanations, timely and effective responses to consumer inquiries, and a keen understanding of consumer needs [49]. When streamers demonstrate a high level of professionalism, consumers are more likely to develop trust and perceive interactions as authentic and natural.

However, in the context of time-honored brands, streamer professionalism assumes a more structurally significant role than in general livestreaming settings. Unlike emerging brands that rely primarily on promotional persuasion, time-honored brands derive their competitive advantage from historically accumulated legitimacy, craftsmanship traditions, and symbolic cultural meanings [37]. Consequently, professionalism is not merely an indicator of selling competence but a mechanism through which historical and cultural brand assets are translated into digitally mediated consumer experiences.

Social presence refers to consumers' perceived sense of social interaction and connectedness with others—either the streamer or fellow viewers—during live-streaming. Streamer professionalism constitutes a key antecedent of this perception. Through professional performance, streamers can more effectively guide interactive dynamics and create a communication environment that approximates face-to-face interaction, thereby enhancing consumers' sense of participation and belonging [50]. This heightened social presence not only improves the viewing experience but may also shape subsequent evaluations and behavioral responses. By increasing the credibility and comprehensibility of live-streaming content, professionalism strengthens consumers' sense of "being present" within the virtual environment.

Importantly, for time-honored brands, social presence is not solely a function of interpersonal warmth but also of cultural immersion. Professional streamers who accurately articulate brand lineage, traditional production techniques, and historical anecdotes enable consumers—particularly younger audiences with limited prior exposure—to experience a simulated proximity to the brand's heritage. In this sense, professionalism enhances not only interpersonal presence but also "heritage presence," a perceived closeness to the brand's historical continuity [29].

Thus, under the boundary condition of heritage brands, streamer professionalism operates as a competence-based stimulus that activates both relational and cultural dimensions of social presence, strengthening the organismic state beyond what is typically observed in non-heritage livestreaming contexts [3]. Accordingly, the following hypothesis is proposed:

H2a. *Streamer professionalism positively influences consumers' perceived social presence.*

Beyond its effects on social presence, streamer professionalism also shapes consumers' perceptions of the authenticity of time-honored brands. When streamers demonstrate professional expertise—such as providing detailed explanations of brand history, cultural heritage, production processes and product attributes, and addressing consumer questions with authoritative knowledge—consumers are more likely to perceive the brand's historical continuity and cultural value. This professional mediation reduces uncertainty and

enhances the credibility of brand-related information, thereby strengthening perceptions of brand authenticity [51].

For heritage brands, authenticity is a foundational value proposition rather than a supplementary attribute. Any inconsistency, exaggeration, or superficial storytelling in live-streaming may threaten perceptions of historical integrity. Therefore, streamer professionalism functions as a safeguarding mechanism that protects authenticity from dilution in highly commercialized digital environments [52].

Moreover, professional streamers are better positioned to convey brand narratives and values through structured storytelling and evidence-based explanations, reinforcing consumers' understanding of the brand's genuine character. By leveraging perceived authority and epistemic credibility, streamer professionalism contributes to a coherent and credible brand image within live-streaming contexts [45].

Accordingly, in contrast to the conventional livestreaming logic in which professionalism primarily enhances transactional trust, this study argues that for time-honored brands, professionalism reinforces authenticity by ensuring accurate heritage representation and reducing the perceived risk of symbolic distortion [2,39]. Based on these arguments, the following hypothesis is advanced:

H2b. *Streamer professionalism positively influences consumers' perceived authenticity of time-honored brands.*

Effects of Streamer Interactivity

Streamer interactivity refers to the extent of real-time engagement between streamers and viewers, including live chat exchanges, gift-giving, question-and-answer interactions and participatory activities. Live-streaming commerce is inherently interactive and sustained interaction enables consumers to develop closer and more trusting relationships with streamers, thereby increasing interest in and favorable attitudes toward featured products or services as well as strengthening engagement and persistence in purchase decision-making [53].

High-frequency and responsive interactions—such as real-time feedback, interactive questioning, lotteries and audience participation in discussions—function as salient environmental stimuli in live-streaming contexts. These interactive cues enhance consumers' sense of involvement and connectedness, thereby strengthening perceived social presence [54]. Interactivity reduces psychological distance between streamers and consumers and fosters a communication environment that approximates face-to-face social interaction, allowing consumers to experience authentic interpersonal engagement within virtual settings. Moreover, interactive features can stimulate peer-to-peer communication among viewers through comment sections or on-screen messages, further amplifying social presence [16]. Accordingly, the following hypothesis is proposed:

H3a. *Streamer interactivity positively influences consumers' perceived social presence.*

However, in the context of time-honored brands, interactivity performs a function that extends beyond relational engagement. Unlike newly established brands that primarily rely on interaction to increase immediacy and entertainment value, time-honored brands carry historically embedded meanings, cultural symbolism, and claims of continuity [37]. Consequently, interactive exchanges in livestreaming settings become arenas in which brand heritage is negotiated, interpreted, and validated in real time.

Beyond its effects on social presence, streamer interactivity also shapes consumers' perceptions of the authenticity of time-honored brands. Through bidirectional communication and immediate feedback, interactive live-streaming allows consumers to gain

deeper insights into brand-specific attributes, such as traditional craftsmanship, quality assurance and cultural heritage. These authentic interaction experiences reduce uncertainty and scepticism regarding brand claims and convey a credible and reliable brand image [55].

For heritage brands in particular, authenticity is grounded in perceptions of historical continuity and adherence to tradition. Interactive livestreaming enables consumers—especially younger cohorts with limited direct experience of such brands—to question, verify, and co-construct meanings related to craftsmanship, origin stories, and production processes. In this sense, interactivity functions as a transparency mechanism that allows audiences to actively scrutinize heritage claims rather than passively accept promotional narratives [2].

Moreover, interactive dynamics facilitate the development of parasocial interaction with the streamer, who often serves as a symbolic bridge between past and present. When viewers receive immediate responses to heritage-related inquiries or observe detailed demonstrations of traditional techniques upon request, they may perceive the brand as more open, accountable, and faithful to its historical roots. This co-created authenticity distinguishes heritage-brand livestreaming from conventional transactional livestreaming models, in which interaction primarily enhances entertainment and impulse buying [9,34].

Accordingly, under the boundary condition of time-honored brands, streamer interactivity operates not merely as a relational stimulus but as a heritage-validation mechanism that reinforces authenticity through dialogic verification and participatory meaning-making [39]. Based on this reasoning, the following hypothesis is advanced:

H3b. *Streamer interactivity positively influences consumers' perceived authenticity of time-honored brands.*

2.2.2. Effects of Social Presence and Brand Authenticity on Trust in Time-Honored Brands

Effect of Social Presence on Trust in Time-Honored Brands

In live-streaming commerce, perceived social presence plays a critical role in shaping consumers' trust in time-honored brands. Heightened social presence provides consumers with an immersive, face-to-face-like interaction experience. This experiential proximity enhances consumers' understanding of brand heritage, cultural significance and distinctive value, thereby fostering positive emotional bonds and trust toward time-honored brands [56].

However, the role of social presence in the context of time-honored brands extends beyond relational warmth or interpersonal comfort. Time-honored brands are characterized by accumulated historical legitimacy, symbolic continuity, and intergenerational transmission of craftsmanship [37]. For younger consumers—who may lack direct offline exposure to such brands—live-streaming often constitutes a primary contact point through which brand heritage is interpreted and experienced.

Social presence, by simulating authentic interpersonal communication, reduces perceived psychological distance not only between consumer and streamer but also between consumer and brand history. In heritage-brand livestreaming, social presence can be conceptualized as a mechanism of "heritage proximity," whereby mediated interaction creates a sense of closeness to historical traditions and cultural narratives. When consumers feel socially embedded within the live-streaming environment, they are more likely to perceive brand-related information as credible and less commercially manipulated [40].

Moreover, social presence enhances relational trust by signaling immediacy, transparency, and responsiveness—elements that are particularly salient for brands claiming historical continuity and enduring quality standards. Because time-honored brands rely on reputational capital accumulated over long periods, trust formation is closely tied to the per-

ceived alignment between historical identity and contemporary presentation. High social presence reduces suspicions of symbolic inconsistency or opportunistic commercialization, thereby reinforcing institutional trust in the brand's long-standing integrity [30].

As a result, time-honored brands presented within high-social-presence environments are more likely to be perceived as reliable and culturally meaningful entities worthy of long-term support. This trust-based perception can subsequently translate into sustained behavioral intentions, including continued patronage and positive word-of-mouth [57]. Based on this reasoning, the following hypothesis is proposed:

H4. *Consumers' perceived social presence positively influences trust in time-honored brands.*

Effect of Brand Authenticity on Trust in Time-Honored Brands

In live-streaming contexts, perceived authenticity of time-honored brands exerts a positive influence on brand trust. By authentically presenting historical heritage, traditional craftsmanship and consistent product quality, live-streaming enables brands to convey credible signals of continuity and integrity. Such authentic representations allow consumers to directly observe and evaluate brand values, reducing uncertainty and strengthening trust [58].

Nevertheless, authenticity in time-honored brands is not merely an evaluative perception but a foundational source of brand legitimacy. Unlike contemporary commercial brands, whose trust is often grounded in performance or transactional reliability, time-honored brands derive trust from perceived fidelity to tradition and historical continuity [2].

Authenticity signals—such as transparent disclosure of production processes, demonstration of traditional techniques, and consistent narrative alignment with brand history—function as institutional assurances of non-opportunistic behavior. In digital environments where commercial persuasion may be perceived as exaggerated or manipulative, authenticity serves as a stabilizing cue that anchors trust judgments [59].

For heritage brands, the authenticity–trust linkage is therefore structurally stronger and qualitatively distinct from that of non-heritage brands. Trust emerges not only from perceived product reliability but also from confidence in the brand's commitment to preserving cultural identity and craftsmanship standards over time. When consumers perceive authenticity in livestreaming presentations, they interpret such signals as evidence that the brand's contemporary digital adaptation does not compromise its historical essence. This perceived continuity transforms authenticity into institutional trust grounded in cultural and temporal consistency [39].

Specifically, the transparent communication of brand stories, production processes and cultural legacy through live-streaming enhances consumers' perceptions of brand genuineness and reliability. When consumers perceive a brand as authentic, they are more likely to form stable trust beliefs and regard the brand as a trustworthy symbol of cultural and product value [60]. Accordingly, the following hypothesis is advanced:

H5. *Consumers' perceived authenticity of time-honored brands positively influences trust in time-honored brands.*

2.2.3. Effect of Trust in Time-Honored Brands on Brand Identification

Time-honored brands leverage their accumulated historical heritage, distinctive brand narratives and broad social recognition to establish strong brand trust within live-streaming commerce environments. This trust is grounded in consumers' confidence in brand continuity, cultural legitimacy and quality assurance. When consumers perceive these attributes through live-streaming interactions, trust functions as a key psychological mechanism that translates external stimuli into deeper cultural identification and emotional attachment [61].

However, in the context of time-honored brands, the trust–identification linkage is qualitatively distinct from that observed in contemporary commercial brands. For emerging brands, trust often facilitates repeat purchase intentions or transactional loyalty. In contrast, time-honored brands possess institutionalized historical legitimacy and symbolic cultural capital. Consequently, trust in such brands extends beyond performance reliability to encompass confidence in historical continuity and preservation of cultural meaning [37].

From a social identity perspective, brand identification occurs when consumers incorporate brand-related meanings into their self-concept. For heritage brands, this identification process is deeply intertwined with collective memory and cultural belonging. When consumers trust that a time-honored brand faithfully preserves traditional craftsmanship and historical values, they are more likely to perceive the brand as a culturally meaningful symbol aligned with their personal or generational identity [62].

In live-streaming contexts, trust reduces skepticism regarding the commercialization of heritage and mitigates concerns that digital adaptation may dilute historical authenticity. Thus, trust operates as a legitimacy-affirming mechanism that reassures consumers that engagement with the brand does not contradict, but rather reinforces, its historical essence. This reassurance enables consumers to internalize the brand as part of their extended self, transforming trust into identification grounded in cultural continuity rather than mere transactional satisfaction [30].

Higher levels of trust therefore increase the likelihood that consumers will integrate time-honored brands into their self-concept and everyday consumption practices. Trusted heritage brands are more readily perceived as meaningful symbols of tradition and authenticity rather than mere market offerings, encouraging consumers to actively endorse and disseminate positive brand representations. In this process, brand trust not only facilitates cognitive acceptance but also fosters affective commitment and long-term identification [63]. Accordingly, under the boundary condition of time-honored brands, trust functions as the pivotal organismic state that bridges digitally mediated interactions and culturally embedded brand identification [28]. Based on this theoretical reasoning, the following hypothesis is proposed:

H6. *Consumers' trust in time-honored brands positively influences brand identification.*

2.2.4. Serial Mediation Effects

Serial Mediation of Social Presence and Trust in Time-Honored Brands

Non-verbal cues conveyed by streamers play a central role in shaping viewers' perceived social presence. Expressive visual and auditory cues can enhance emotional resonance, engagement and identification, while interactive features such as on-screen comments and likes allow viewers to participate collectively in the live-streaming process. These shared interactions strengthen the sense of co-presence and immersion experienced by viewers [46].

Within the SOR framework, streamer characteristics (e.g., popularity, professionalism, and interactivity) function as environmental stimuli, perceived social presence represents an organismic experiential state, and brand identification constitutes the behavioral response. However, in the context of time-honored brands, this serial process is embedded within a heritage-legitimacy structure that differentiates it from conventional livestreaming commerce models [38].

In live-streaming commerce, streamers with greater popularity are more likely to be perceived as credible and influential sources of product information. Their visibility and audience scale enhance consumers' perceptions of informational authenticity, thereby strengthening social presence [64]. Once consumers experience heightened social presence,

perceived psychological distance between the streamer and the audience is reduced, approximating face-to-face interaction. This experiential proximity increases susceptibility to persuasive messages and, in turn, enhances trust in time-honored brands. Trust subsequently functions as a key psychological mechanism through which social presence is translated into deeper brand identification [56].

Critically, for time-honored brands, social presence does not merely intensify persuasive influence; it fosters perceived proximity to historical continuity and cultural tradition. As heritage brands derive their legitimacy from accumulated historical capital and symbolic continuity, the transition from social presence to trust reflects not only relational assurance but also institutional validation. Consumers interpret immersive interaction as evidence that the brand's historical identity remains intact within contemporary digital presentation. Trust thus emerges as confidence in both product reliability and heritage integrity [37]. Based on this reasoning, the following hypothesis is proposed:

H7a. *Streamer popularity positively influences brand identification with time-honored brands through the serial mediation of perceived social presence and trust in time-honored brands.*

Streamer professionalism similarly operates through a serial mediation pathway. By leveraging specialized product knowledge and extensive practical experience, professional streamers reduce consumers' information-processing costs and facilitate efficient understanding of product attributes. Through vivid and authoritative explanations, streamers enhance consumers' sense of "being present" in the live-streaming environment, thereby strengthening perceived social presence [65]. This heightened presence fosters trust in time-honored brands, which in turn reinforces brand identification. In heritage-brand livestreaming, professionalism strengthens the social presence → trust transition by ensuring accurate representation of brand lineage, craftsmanship standards, and cultural symbolism. This safeguards authenticity during digital commercialization, allowing trust to function as a bridge between experiential immersion and culturally grounded identification [3,30]. Accordingly, the following hypothesis is advanced:

H7b. *Streamer professionalism positively influences brand identification with time-honored brands through the serial mediation of perceived social presence and trust in time-honored brands.*

Streamer interactivity also contributes to brand identification via a comparable serial mechanism. Frequent and responsive interactions during product demonstrations improve information exchange efficiency and reduce psychological distance between streamers and consumers. These interactive dynamics enhance consumers' shopping experience and generate stronger social presence [66]. Elevated social presence subsequently promotes trust in time-honored brands, which ultimately strengthens brand identification [56].

For time-honored brands, interactive engagement allows consumers to actively verify heritage claims, inquire about production techniques, and participate in narrative co-construction. This dialogic validation process deepens the social presence → trust transition by reinforcing perceptions of transparency and historical fidelity. Consequently, identification is formed not only through affective immersion but through participatory affirmation of heritage authenticity—distinguishing this serial mediation mechanism from conventional transactional livestreaming models [9,62]. Based on this argument, the following hypothesis is proposed:

H7c. *Streamer interactivity positively influences brand identification with time-honored brands through the serial mediation of perceived social presence and trust in time-honored brands.*

Serial Mediation of Brand Authenticity and Trust in Time-Honored Brands

In live-streaming commerce, streamer popularity increases the salience and visibility of recommended time-honored brands, thereby attracting consumer attention. When highly popular streamers provide detailed and credible accounts of brand heritage, traditional craftsmanship and product attributes, consumers are more likely to perceive these brands as authentic. This heightened perception of brand authenticity strengthens trust, as consumers infer reliable quality and cultural legitimacy from authentic brand signals. Established brand trust subsequently promotes favorable evaluations and facilitates the internalization of brand values, ultimately enhancing brand identification [45].

Within the SOR framework, streamer characteristics operate as stimuli, brand authenticity represents a core cognitive–symbolic organismic state, trust reflects relational and institutional assurance, and brand identification constitutes the response. However, for time-honored brands, authenticity is not merely one evaluative cue among many; it is the foundational source of brand legitimacy [2]. Unlike contemporary brands whose authenticity may be constructed through marketing narratives, time-honored brands derive authenticity from historically embedded continuity, craftsmanship traditions, and accumulated cultural capital [37].

Therefore, the serial pathway from authenticity to trust to identification is structurally stronger and theoretically distinct in heritage-brand contexts. Authenticity signals—such as demonstrations of traditional production techniques, transparent disclosure of historical lineage, and consistent narrative alignment—serve as institutional guarantees that the brand's present commercialization does not compromise its historical essence. Trust thus emerges not only from perceived reliability but from confidence in the preservation of cultural and temporal continuity [39].

Accordingly, brand authenticity and brand trust jointly constitute a serial mediation pathway linking streamer popularity to identification with time-honored brands. In this mechanism, authenticity acts as a heritage-validation filter that precedes trust formation, ensuring that identification is grounded in culturally meaningful continuity rather than short-term promotional persuasion [67]. Based on this reasoning, the following hypothesis is proposed:

H8a. *Streamer popularity positively influences brand identification with time-honored brands through the serial mediation of perceived brand authenticity and trust in time-honored brands.*

Streamer professionalism similarly operates through a serial mediation mechanism. By delivering authoritative explanations of brand history, product characteristics and cultural meaning, professional streamers help consumers develop a clearer understanding of the core values embedded in time-honored brands [51]. Professional competence enhances the credibility of information conveyed, thereby reinforcing perceptions of brand authenticity. These authenticity perceptions are subsequently translated into brand trust, which facilitates consumers' emotional acceptance and identification with the brand [16].

For heritage brands, professionalism safeguards authenticity during digital mediation. Accurate and consistent presentation of brand lineage prevents symbolic distortion, allowing authenticity to function as a credible precursor to institutional trust. Trust, in turn, enables consumers to internalize the brand as part of their identity, particularly when the brand embodies collective memory and cultural heritage [68,69]. Based on this theoretical logic, the following hypothesis is advanced:

H8b. *Streamer professionalism positively influences brand identification with time-honored brands through the serial mediation of perceived brand authenticity and trust in time-honored brands.*

Streamer interactivity also contributes to brand identification through a comparable serial mediation process. Real-time, bidirectional interactions allow consumers to actively engage with streamers by asking questions and sharing experiences, while streamers can respond promptly and communicate authentic brand narratives and values [70]. Such interactive exchanges enhance consumers' perceptions of brand authenticity by fostering emotional resonance and experiential credibility. These authenticity cues subsequently promote trust in time-honored brands, which in turn strengthens brand identification [66].

In the specific context of time-honored brands, interactivity enables participatory verification of heritage claims. Consumers can directly inquire about production techniques, ingredient sourcing, and historical evolution, transforming authenticity from a passive perception into a dialogically constructed validation process. This participatory authenticity strengthens institutional trust and facilitates culturally grounded identification, distinguishing this pathway from conventional livestreaming commerce models centered on impulse purchasing [68,71]. Accordingly, the following hypothesis is proposed:

H8c. *Streamer interactivity positively influences brand identification with time-honored brands through the serial mediation of perceived brand authenticity and trust in time-honored brands.*

2.2.5. Moderating Role of Consumer–Streamer Relationship Strength

In live-streaming commerce, streamers typically cultivate heterogeneous audiences that include both long-term followers and newly acquired viewers, resulting in varying levels of relationship strength between consumers and streamers. Similar to consumer–brand relationships, consumer–streamer relationships differ in trust, familiarity and emotional attachment. Prior research suggests that relationship strength shapes how consumers process information: when relationships are weak, consumers rely more heavily on content-based cues, whereas in strong relationships, judgments are influenced more by relational heuristics and affective bonds [72].

In the context of live-streaming, consumer–streamer relationship strength can be conceptualized as the intensity of parasocial interaction, reflecting perceived intimacy, familiarity, and emotional closeness. According to parasocial interaction theory, stronger relational bonds increase reliance on relational trust and heuristic processing, thereby altering the weight assigned to different informational cues.

Within the SOR framework, social presence and brand authenticity represent distinct organismic states that contribute to trust formation. However, their relative influence on trust may vary depending on relationship strength.

First, consumer–streamer relationship strength is expected to amplify the effect of perceived social presence on trust in time-honored brands. Social presence reflects perceived interpersonal closeness and immediacy [30]. When consumers maintain strong relational bonds with streamers, heightened social presence reinforces existing affective trust and facilitates trust transfer from the streamer to the endorsed brand [73].

For time-honored brands, this amplification mechanism is particularly salient. As heritage brands derive legitimacy from historical continuity and cultural symbolism [37], trust formation often involves both relational and institutional dimensions. In strong consumer–streamer relationships, interpersonal trust accumulated through repeated interactions may spill over to the time-honored brand, accelerating the conversion of social presence into institutional trust. Thus, relationship strength strengthens the social presence $\rightarrow$ trust pathway through relational trust transfer.

Second, consumer–streamer relationship strength may attenuate the effect of perceived brand authenticity on trust. Authenticity represents a content-based, heritage-grounded evaluative cue that signals historical continuity and adherence to tradition [2]. When consumer–streamer relationships are weak, consumers lack strong relational heuristics

and therefore rely more heavily on authenticity signals to assess trustworthiness. In contrast, when relationships are strong, trust judgments are already substantially shaped by affective attachment and relational loyalty. Under such conditions, incremental authenticity information contributes less marginal impact to trust formation.

From a theoretical standpoint, this attenuation effect derives from cue substitution and heuristic-systematic processing logic. Strong relational bonds activate heuristic processing routes, reducing reliance on systematic evaluation of authenticity cues. For time-honored brands—whose authenticity is foundational rather than promotional—strong relational trust may partially substitute for authenticity verification. Consequently, the authenticity → trust linkage weakens as consumer–streamer relationship strength increases [74].

Importantly, this dual moderation pattern is theoretically coherent within a heritage-brand context. Time-honored brands possess pre-existing institutional legitimacy rooted in historical continuity. When relational bonds are weak, consumers require authenticity-based evidence to establish trust. When relational bonds are strong, interpersonal trust in the streamer compensates for or partially substitutes authenticity-based evaluation. Thus, relationship strength amplifies relational trust transfer while attenuating authenticity-based trust formation [3,75]. Based on these arguments, the following hypotheses are proposed:

H9a. *Consumer–streamer relationship strength positively moderates the relationship between perceived social presence and trust in time-honored brands, such that the relationship is stronger when relationship strength is high.*

H9b. *Consumer–streamer relationship strength negatively moderates the relationship between perceived brand authenticity and trust in time-honored brands, such that the relationship is weaker when relationship strength is high.*

2.3. Integrated Theoretical Framework Based on SOR Model, SPT and PSI

In summary, the hypotheses proposed in this study are derived from an integrated theoretical perspective that combines the SOR model, SPT, and PSI to explain the psychological mechanisms underlying livestreaming commerce. The SOR framework provides the structural foundation of the model by conceptualizing streamer characteristics as environmental stimuli that influence consumers' internal psychological states and ultimately shape brand identification [28]. However, SOR alone offers a general causal architecture and does not specify the socio-relational and cultural content embedded within the organism component.

SPT refines this structure by explaining how livestreaming cues generate perceptions of co-presence [29]. These perceptions clarify how streamer characteristics are translated into experiential immersion and trust formation [30]. Nevertheless, livestreaming commerce involves more than situational co-presence. Consumers often develop emotionally meaningful yet asymmetric bonds with streamers, characterized by relational closeness.

PSI complements SPT by accounting for these one-sided yet psychologically significant relationships [33]. Through repeated exposure, self-disclosure, and personalized engagement, streamers cultivate parasocial bonds that intensify consumer–streamer relationship strength and enhance persuasive effectiveness [34,43].

While prior livestreaming studies typically employ this theoretical integration to explain transactional outcomes such as purchase intention [35], the present research extends this framework into the domain of time-honored brands, where historical continuity and cultural legitimacy are central value propositions. Time-honored brands are not merely market offerings; they represent institutionalized heritage entities characterized by accumulated symbolic capital and intergenerational transmission [37]. Consequently, the organism

component in the SOR framework must incorporate not only relational immersion (social presence) but also heritage-based authenticity perceptions.

In this heritage-brand context, social presence operates as a mechanism of experiential proximity, reducing psychological distance not only between consumer and streamer but also between consumer and brand history. Parasocial interaction strengthens relational trust transfer, enabling interpersonal trust in the streamer to spill over into institutional trust in the brand [73]. Meanwhile, authenticity functions as a legitimacy-validation filter that ensures digital commercialization does not undermine historical continuity [2].

Thus, the integration of SOR, SPT, and PSI yields a heritage-contingent mechanism: streamer characteristics (stimuli) shape experiential and authenticity-based organismic states, which jointly generate relational and institutional trust, ultimately fostering culturally grounded brand identification. Unlike conventional livestreaming logic—where the pathway primarily explains short-term persuasion—this framework accounts for the transformation of digitally mediated interaction into long-term identification with historically embedded brands [68,76].

The integration of these three theoretical perspectives is therefore conceptually coherent and necessary. While SOR specifies the stimulus–internal state–response sequence, SPT explains the experiential perception of "being with" others in livestreaming contexts, and PSI elucidates the relational experience of "feeling connected to" the streamer. When situated within a corporate heritage brand framework, these theories collectively explain how digitally mediated socio-emotional processes translate into culturally anchored brand identification [77,78]. Based on this integrated theoretical foundation, the overall research model is proposed, as illustrated in Figure 1.

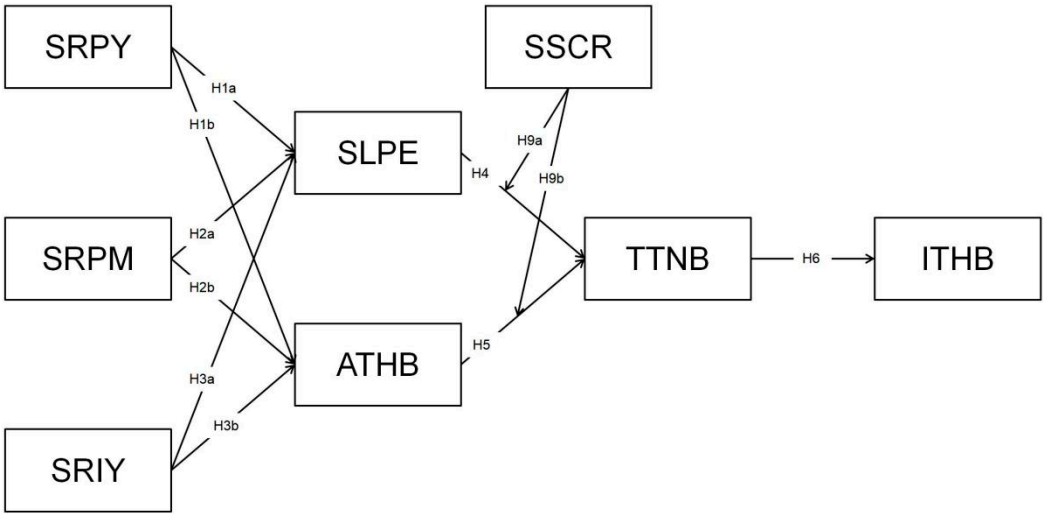


Figure 1. Research Model. SRPY = Streamer popularity; SRPM = Streamer professionalism; SRIY = Streamer interactivity; SLPE = Social presence; ATHB = Authenticity of time-honored brands; SSCR = Consumer–streamer relationship strength; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

3. Research Design and Data Analysis

3.1. Data Collection

Data were collected through a questionnaire survey administered to young consumers aged 18–40 who had watched live-streaming commerce sessions featuring time-honored brands within the past six months. This sampling strategy was adopted for two primary reasons. First, young consumers constitute the core audience and purchasing force in live-streaming commerce, while time-honored brands are actively pursuing strategies of market

rejuvenation through digital channels. Focusing on this demographic therefore provides practical relevance for understanding brand development. Second, restricting participation to individuals with recent viewing experience ensured that respondents possessed clear and accurate memories of live-streaming interactions, thereby reducing recall bias and enabling reliable measurement of emotional responses and brand identification.

The questionnaire employed a five-point Likert scale and consisted of seven sections. The first section screened respondents based on whether they had viewed live-streaming commerce related to time-honored brands within the past six months; respondents without such experience were excluded from further participation. The second section measured perceptions of streamer characteristics, including streamer popularity, professionalism and interactivity. The third and fourth sections assessed perceived social presence and perceived authenticity of time-honored brands, respectively, based on respondents' subjective experiences. The fifth and sixth sections measured trust in time-honored brands and brand identification following exposure to live-streaming commerce. The final section collected demographic information, including gender, age, education level, occupation, frequency of viewing time-honored brand live streams and monthly income. To improve data quality, attention-check items were embedded at multiple points in the questionnaire.

The survey was administered online using the Wenjuanxing platform, with participants completing the questionnaire primarily via mobile devices by scanning a QR code provided by the researchers. Online data collection offered several advantages, including geographic flexibility, lower administrative costs and rapid response rates. Participants were informed in the survey introduction that all data would be used solely for academic research, which helped encourage accurate and honest responses.

Data collection was conducted between 6 June and 13 September 2025. A pilot study involving 30 participants was first carried out to identify issues related to item clarity and redundancy; feedback from the pilot was used to refine the questionnaire before formal distribution. A total of 492 questionnaires were distributed. Responses were excluded if they met any of the following criteria: (i) straight-line responding (selecting the same option for all items); (ii) abnormally short completion time (less than 200 s); (iii) failure to pass attention-check questions (e.g., items instructing respondents to select a specific response). After data cleaning, 434 valid questionnaires were retained, yielding an effective response rate of 88%.

Table 1 summarizes the demographic characteristics of the respondents. The sample consisted of 48.4% male and 51.6% female participants. In terms of age, respondents aged 31–35 accounted for the largest proportion (31.3%), followed by those aged 26–30 (25.8%) and 18–25 (24.0%), with the smallest proportion aged 36–40 (18.9%). Regarding education, most respondents held a bachelor's degree (58.3%), followed by master's degree holders (16.6%), associate degree holders (15.7%), doctoral degree holders (1.8%) and others (7.6%). In terms of occupation, the majority were employed (65.7%), followed by students (19.8%), with smaller proportions self-employed (7.6%), unemployed or job-seeking (4.1%) and other categories (4.1%). Most respondents reported watching live-streaming commerce one to three times per week (51.6%), while 30.9% watched four to five times per week and 17.5% watched six times or more per week. Monthly income was most commonly reported in the range of RMB 6001–9000 (27.4%), followed by below RMB 3000 (20.0%), RMB 3001–6000 (19.4%), RMB 9001–12,000 (19.1%) and above RMB 12,000 (14.1%).

Table 1. Demographic Characteristics of the Study Sample (N = 434).

Variable	Category	Frequency	Percentage
Gender	Male	210	48.4%
	Female	224	51.6%
Age	18–25	104	24%
	26–30	112	25.8%
	31–35	136	31.3%
	36–40	82	18.9%
Education	Senior high school or below	33	7.6%
	College degree	68	15.7%
	Bachelor's degree or equivalent	253	58.3%
	Master's degree	72	16.6%
	Doctor's degree	8	1.8%
Occupation	Student	86	19.8%
	Employed	285	65.7%
	Self-employed	33	7.6%
	Unemployed or seeking employment	18	4.1%
	Other	12	2.8%
Frequency of live-streaming commerce viewing over the past six months	>6 times every week	76	17.5%
	4–5 times every week	134	30.9%
	1–3 times every week	224	51.6%
Monthly income	≤¥3000	87	20.0%
	¥3001–¥6000	84	19.4%
	¥6001–¥9000	119	27.4%
	¥9001–¥12,000	83	19.1%
	>¥12,001	61	14.1%

3.2. Measurement of Variables

This study examines eight constructs: streamer popularity, streamer professionalism, streamer interactivity, perceived social presence, perceived authenticity of time-honored brands, consumer–streamer relationship strength, trust in time-honored brands, and brand identification with time-honored brands (see Table 2).

Drawing on prior research, consumer decision-making in live-streaming commerce differs from traditional e-commerce contexts, as purchase behavior is increasingly driven by streamer-related cues rather than product information alone. Factors such as streamer attractiveness, expertise, interactive engagement, visibility and popularity have been shown to exert significant influence on consumer responses [45]. Accordingly, streamer popularity, streamer professionalism and streamer interactivity are specified as independent variables.

Streamer popularity refers to the degree to which a streamer is recognized by the public and reflects influence, popularity and market value within a given social or professional domain. Streamer professionalism is defined as the extent to which a streamer demonstrates systematic knowledge, technical competence, emotional stability and professional conduct in achieving live-streaming objectives (e.g., entertainment, sales or information dissemination). Streamer interactivity denotes the direct and reciprocal communication between streamers and consumers, as well as among consumers, enabled by the visibility and real-time characteristics of live-streaming platforms, unconstrained by temporal or spatial boundaries. Measures for these three constructs were adapted from Wei et al. (2022) [45], with four items each used to assess streamer popularity, professionalism and interactivity.

The mediating variables include perceived social presence, perceived authenticity of time-honored brands and trust in time-honored brands. Perceived social presence is defined as the extent to which individuals perceive the real existence of others during

online communication. This construct was measured using a five-item scale adapted from Gong et al. (2023) [50]. Perceived authenticity of time-honored brands captures the extent to which a brand maintains originality, consistency and credibility across dimensions such as historical heritage, core values, product or service quality, cultural meaning and consumer relationships. This construct was measured using a five-item scale adapted from Morhart et al. (2015) [59]. Trust in time-honored brands refers to a stable and positive psychological reliance based on consumers' perceptions of a brand's historical continuity, consistent quality assurance, distinctive cultural value and established social reputation. This construct was measured using a four-item scale adapted from Jung et al. (2014) [79].

The moderating variable, consumer–streamer relationship strength, is conceptualized as the overall bonding force that stabilizes and sustains the relationship between consumers and streamers. Consistent with Shi et al. (2005) [80], relationship strength comprises affective and cognitive components, reflecting emotional attachment and belief-based evaluation of relationship value. In the livestreaming commerce context, repeated real-time interactions and community engagement foster relational embeddedness beyond transactional exchange. Accordingly, this construct was measured using a five-item scale adapted from Shi et al. (2005) [80]. Items such as "Ending my relationship with this streamer would be costly for me" and "Switching to another streamer would have a significant impact on my life" capture the cognitive dimension of relationship strength, operationalized as the belief that maintaining the relationship is valuable and important. In this context, "cost" and "impact" refer not merely to economic switching barriers but to perceived psychological, social, and experiential losses (e.g., trust, familiarity, and community connection), thereby reflecting perceived relational indispensability rather than calculative loyalty.

The dependent variable is identification with time-honored brands, which refers to consumers' deep cognitive recognition and emotional attachment to a brand's identity and values, derived from its historical legacy, cultural heritage, distinctive craftsmanship and credibility commitments. Brand identification with time-honored brands was measured using a three-item scale adapted from Urska et al. (2011) [81]. All measurement items were assessed using five-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 2. Measurement Items and Sources.

Variable	Measurement Items	Source
Streamer popularity	The streamer is well known on live-streaming platforms or within the relevant field.	Wei et al., 2022 [45]
	The streamer has a good public reputation.	
	The streamer enjoys high popularity and attention within the industry.	
	The streamer has achieved notable accomplishments in the industry.	
Streamer professionalism	I believe the streamer possesses relevant knowledge about the product domain.	Wei et al., 2022 [45]
	I believe the streamer has a good understanding of the products being recommended.	
	I believe the streamer has extensive experience related to the products.	
	I believe the streamer can effectively evaluate the products being promoted.	

Table 2. *Cont.*

Variable	Measurement Items	Source
Streamer interactivity	The streamer's live-streaming content allows me to participate actively.	Wei et al., 2022 [45]
	When watching the live-stream, I can communicate with the streamer in a timely manner.	
	When watching the live-stream, I can communicate with other viewers in real time.	
	When watching the live-stream, I can freely express my opinions through on-screen comments.	
Social presence	During this live-streaming session, I feel a sense of human contact.	Gong et al., 2023 [50]
	During this live-streaming session, other participants are aware of my presence.	
	During this live-streaming session, I experience a sense of social interaction.	
	During this live-streaming session, I can exchange information with other participants.	
	During this live-streaming session, I can perceive a sense of human warmth.	
Authenticity of time-honored brands	After watching the live-stream, I believe this time-honored brand has a strong historical heritage.	Morhart et al., 2015 [59]
	After watching the live-stream, I believe this time-honored brand is a timeless classic.	
	After watching the live-stream, I believe this time-honored brand has stood the test of time.	
	After watching the live-stream, I believe this time-honored brand is honest and reliable.	
	After watching the live-stream, I believe this time-honored brand adheres to a set of moral values.	
Consumer–streamer relationship strength	I have a strong personal connection with this streamer.	Shi et al., 2005 [80]
	I maintain a very close relationship with this streamer.	
	Ending my relationship with this streamer would be costly for me.	
	Switching to another streamer would have a significant impact on my life.	
	Regardless of how I feel, I believe I should maintain my relationship with this streamer.	
Trust in time-honored brands	After watching the live-stream, I believe this time-honored brand meets my expectations.	Jung et al., 2014 [79]
	After watching the live-stream, I have strong confidence in this time-honored brand.	
	After watching the live-stream, I believe this time-honored brand will not disappoint me.	
	After watching the live-stream, I believe this time-honored brand guarantees satisfaction.	

Table 2. *Cont.*

Variable	Measurement Items	Source
Brand identification with time-honored brands	I feel that my personality is very similar to the personality of this time-honored brand.	Urska et al., 2011 [81]
	I feel that I have much in common with other users of this time-honored brand.	
	I feel that my values are very similar to the values reprby this time-honored brand.	

3.3. Data Analysis

The research model was estimated using partial least squares structural equation modelling (PLS-SEM) implemented in SmartPLS 4.0. Although the proposed model consists exclusively of reflective constructs and could, in principle, be estimated using covariance-based SEM (CB-SEM), several methodological and research-design considerations support the use of PLS-SEM in the present study.

First, the primary objective of this research is not merely theory confirmation but the explanation and prediction of brand identification with time-honored brands in livestreaming contexts. Specifically, the model incorporates multiple serial mediation paths (social presence → trust; authenticity → trust) and moderation effects (consumer–streamer relationship strength), forming a moderated serial mediation structure. PLS-SEM is particularly appropriate for analyzing complex predictive models that integrate mediation and moderation simultaneously, as it prioritizes maximization of explained variance (R^2) in endogenous constructs [40,82]. In this study, brand identification represents a key endogenous outcome variable with substantive managerial implications, making variance explanation and predictive accuracy central analytical objectives.

Second, although the measurement model is reflective, the structural model exhibits substantial complexity, including eight latent constructs, four exogenous predictors, two serial mediation mechanisms, and interaction terms. Compared with CB-SEM, PLS-SEM provides greater estimation stability in models involving multiple indirect and interaction effects, especially when the research emphasis lies in examining structural relationships and indirect pathways rather than global model fit [83].

Third, PLS-SEM is distribution-free and does not assume multivariate normality. Preliminary assessment of the dataset indicated deviations from normality in several observed indicators (absolute skewness and kurtosis values exceeding recommended thresholds). Given that CB-SEM relies on large-sample normal theory for maximum likelihood estimation, the use of PLS-SEM reduces the risk of biased parameter estimates under non-normal conditions [84].

Fourth, the study adopts a latent variable interaction approach to test moderation effects. PLS-SEM enables direct estimation of interaction terms through the product indicator approach and two-stage method without imposing restrictive distributional assumptions. This flexibility makes it well suited for modelling the moderating role of consumer–streamer relationship strength within a multi-mediator framework [85].

The empirical analysis was conducted using partial least squares structural equation modeling (PLS-SEM). Consistent with established methodological guidelines [86], the analysis followed a two-stage procedure: (1) assessment of the measurement model and (2) evaluation of the structural model. Statistical analyses were conducted using SmartPLS 4.0 and SPSS 27.0. Specifically, SmartPLS 4.0 was employed to estimate the measurement and structural models, perform bootstrapping procedures (10,000 resamples), and conduct PLSpredict analyses, whereas SPSS 27.0 was used for preliminary data screening,

descriptive statistics, normality assessment, exploratory factor analysis, and Harman's single-factor test.

Given that all constructs were measured using a single survey instrument, procedural and statistical remedies were applied to assess potential common method bias (CMB). Statistically, Harman's single-factor test was conducted through exploratory factor analysis to determine whether a single dominant factor accounted for the majority of covariance among the measurement items. In addition, variance inflation factors (VIFs) were examined to assess potential collinearity issues that may indicate common method variance. These procedures jointly ensured that CMB did not threaten the validity of the empirical analysis.

The measurement model was assessed prior to hypothesis testing to ensure adequate reliability and validity of the constructs. Indicator reliability was evaluated by examining the outer loadings of the reflective measurement items on their respective latent constructs. Internal consistency reliability was assessed using Cronbach's alpha and composite reliability (CR). Convergent validity was evaluated using the average variance extracted (AVE), ensuring that each construct captured a substantial proportion of variance from its indicators. Discriminant validity was examined using the Fornell–Larcker criterion and cross-loading analysis. The square root of AVE for each construct was compared with its inter-construct correlations, and item loadings were assessed to confirm that each indicator loaded highest on its intended construct.

After establishing the adequacy of the measurement model, the structural model was evaluated to test the hypothesized relationships. Collinearity diagnostics were conducted to ensure that predictor constructs did not exhibit problematic multicollinearity. Path coefficients were estimated to assess the direction and strength of the hypothesized relationships among constructs. The statistical significance of the structural paths was evaluated using a non-parametric bootstrapping procedure with 10,000 resamples. The explanatory power of the model was assessed using the coefficient of determination (R^2) for endogenous constructs. Mediation effects were examined by estimating indirect effects through bootstrapping to assess the significance of hypothesized mediating mechanisms. Moderation effects were tested by incorporating interaction terms into the structural model, and their significance was evaluated using bootstrapping procedures.

Predictive relevance was examined using PLSpredict with 10-fold cross-validation. As shown in Table 3, all endogenous constructs exhibited positive Q^2 predict values, indicating adequate predictive relevance. Specifically, social presence (Q^2 = 0.507), authenticity of time-honored brands (Q^2 = 0.471), and trust in time-honored brands (Q^2 = 0.512) demonstrated large predictive relevance, while brand identification with time-honored brands (Q^2 = 0.317) showed moderate predictive relevance. In addition, out-of-sample predictive performance was evaluated by comparing PLS-based prediction errors with linear model (LM) benchmarks. The results of Table 4 indicate that the majority of indicators (11 out of 17) yielded lower RMSE values under the PLS model compared to the LM benchmark, suggesting moderate predictive power and supporting the predictive superiority of the PLS-SEM approach for the present research model.

Table 3. PLSpredict Results for Endogenous Constructs.

Variable	Q^2 Predict	RMSE	MAE
SLPE	0.507	0.707	0.492
ATHB	0.471	0.732	0.499
TTNB	0.512	0.703	0.524
ITHB	0.317	0.831	0.656

Note: SLPE = Social presence; ATHB = Authenticity of time-honored brands; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

Table 4. Comparison of PLS-SEM and Linear Model Prediction Errors (RMSE).

Item	PLS-SEM_RMSE	LM_RMSE
SLPE1	0.803	0.804
SLPE2	0.927	0.882
SLPE3	0.878	0.884
SLPE4	0.874	0.867
SLPE5	0.867	0.876
ATHB1	0.829	0.813
ATHB2	0.842	0.860
ATHB3	0.815	0.817
ATHB4	0.793	0.806
ATHB5	0.799	0.810
TTNB1	0.698	0.704
TTNB2	0.797	0.804
TTNB3	0.799	0.813
TTNB4	0.754	0.756
ITHB1	0.810	0.789
ITHB2	0.905	0.880
ITHB3	0.873	0.834

Note: SLPE = Social presence; ATHB = Authenticity of time-honored brands; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

Taken together, the use of PLS-SEM is theoretically and methodologically justified in this study. Although CB-SEM would be suitable for strict covariance-based theory testing, the present research emphasizes variance explanation, predictive capability, and the simultaneous estimation of moderated serial mediation effects in a complex livestreaming commerce context. PLS-SEM therefore provides an analytically appropriate and robust estimation approach aligned with the study's research objectives and data characteristics.

3.3.1. Common Method Bias

Given the single-source, self-report survey design, we implemented several procedural remedies to mitigate potential common method bias (CMB). First, respondents were assured of anonymity and confidentiality to reduce evaluation apprehension. Second, the questionnaire clearly emphasized that there were no right or wrong answers and that participants should respond honestly based on their personal perceptions. Third, measurement items were carefully worded to minimize ambiguity and reduce socially desirable responding. In addition, items measuring different constructs were interspersed throughout the questionnaire to create psychological separation and reduce respondents' ability to infer the study's hypotheses.

Statistically, we first conducted Harman's single-factor test as an initial diagnostic. An exploratory principal component analysis of all measurement items revealed six factors with eigenvalues greater than 1, jointly accounting for 64.4% of the total variance. The first (largest) factor explained only 12.697% of the variance, indicating that no single factor dominated the covariance among the measures (See Table 5). Although Harman's test is widely considered insufficient as a standalone assessment of CMB, it provides preliminary evidence that common method variance is unlikely to be severe [87,88].

Because Harman's test alone does not conclusively rule out CMB, we further applied the full collinearity VIF approach, which is commonly recommended in PLS-SEM research as a more rigorous diagnostic [89]. As shown in Table 6, all inner VIF values ranged from 1.000 to 2.079, well below the conservative thresholds of 3.3 and 5. These results suggest that multicollinearity and common method bias are unlikely to materially distort the structural relationships. Taken together, the procedural and statistical evidence indicates that CMB does not pose a serious threat to the validity of the findings.

Table 5. Total Variance Explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.669	34.320	34.320	11.669	34.320	34.320	4.317	12.697	12.697
2	3.781	11.121	45.441	3.781	11.121	45.441	3.863	11.362	24.059
3	1.514	4.453	49.894	1.514	4.453	49.894	2.995	8.808	32.867
4	1.231	3.619	53.513	1.231	3.619	53.513	2.900	8.528	41.396
5	1.066	3.134	56.647	1.066	3.134	56.647	2.497	7.343	48.739
6	0.943	2.773	59.420	0.943	2.773	59.420	2.340	6.883	55.623
7	0.885	2.604	62.024	0.885	2.604	62.024	1.835	5.396	61.019
8	0.808	2.376	64.400	0.808	2.376	64.400	1.150	3.382	64.400
9	0.763	2.244	66.645						
10	0.734	2.158	68.802						
11	0.684	2.013	70.815						
12	0.661	1.945	72.760						
13	0.639	1.879	74.639						
14	0.607	1.785	76.424						
15	0.589	1.733	78.157						
16	0.561	1.651	79.808						
17	0.534	1.571	81.379						
18	0.508	1.494	82.874						
19	0.504	1.481	84.355						
20	0.489	1.439	85.794						
21	0.477	1.401	87.195						
22	0.471	1.385	88.580						
23	0.423	1.245	89.825						
24	0.398	1.171	90.996						
25	0.384	1.131	92.127						
26	0.366	1.076	93.202						
27	0.348	1.024	94.226						
28	0.337	0.992	95.218						
29	0.324	0.954	96.172						
30	0.312	0.919	97.091						
31	0.274	0.807	97.898						
32	0.259	0.760	98.659						
33	0.250	0.735	99.394						
34	0.206	0.606	100.000						

Table 6. VIF Results.

Variable	Tolerance	VIF
ATHB	0.545	1.834
SLPE	0.545	1.834
TTNB	0.481	2.079
ITHB	1.000	1.000

Note: ATHB = Authenticity of time-honored brands; SLPE = Social presence; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

3.3.2. Reliability and Validity of the Measurement Model

The evaluation of the outer (measurement) model comprised assessments of indicator reliability, internal consistency, convergent validity, and discriminant validity. Indicator reliability was examined by loading each item onto its corresponding latent construct. As shown in Table 7, factor loadings ranged from 0.658 to 0.887, exceeding the recommended threshold of 0.60 [90], indicating that the observed variables adequately captured their underlying constructs.

Internal consistency was supported by Cronbach's α values between 0.731 and 0.898 and composite reliability (CR) values between 0.832 and 0.912, all exceeding the recommended minimum of 0.70 [91]. Convergent validity was further confirmed by average variance extracted (AVE) values ranging from 0.554 to 0.676, which are well above the 0.50 criterion [92], indicating that each construct explained more than half of the variance of its indicators.

Table 7. Reliability and Validity of the Constructs.

Variable	Item	Factor Loading	Cronbach's Alpha	CR	AVE
SRPY	SRPY1	0.816	0.772	0.854	0.594
	SRPY2	0.734			
	SRPY3	0.755			
	SRPY4	0.776			
SRPM	SRPM1	0.762	0.748	0.841	0.569
	SRPM2	0.739			
	SRPM3	0.764			
	SRPM4	0.753			
SRIY	SRIY1	0.769	0.731	0.832	0.554
	SRIY2	0.776			
	SRIY3	0.767			
	SRIY4	0.658			
SLPE	SLPE1	0.803	0.835	0.883	0.603
	SLPE2	0.725			
	SLPE3	0.828			
	SLPE4	0.773			
	SLPE5	0.749			
ATHB	ATHB1	0.773	0.841	0.887	0.611
	ATHB2	0.805			
	ATHB3	0.741			
	ATHB4	0.801			
	ATHB5	0.787			
SSCR	SSCR1	0.858	0.898	0.912	0.676
	SSCR2	0.887			
	SSCR3	0.776			
	SSCR4	0.736			
	SSCR5	0.845			
TTNB	TTNB1	0.785	0.789	0.863	0.613
	TTNB2	0.794			
	TTNB3	0.754			
	TTNB4	0.797			
ITHB	ITHB1	0.812	0.756	0.859	0.671
	ITHB2	0.820			
	ITHB3	0.825			

Note: SRPY = Streamer popularity; SRPM = Streamer professionalism; SRIY = Streamer interactivity; SLPE = Social presence; ATHB = Authenticity of time-honored brands; SSCR = Consumer–streamer relationship strength; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

Discriminant validity was assessed using the Fornell–Larcker criterion and cross-loading analysis. As shown in Table 8, the square root of the average variance extracted (AVE) for each construct exceeds its correlations with all other constructs, satisfying the Fornell–Larcker criterion and indicating adequate discriminant validity [92]. Consistent with this result, the cross-loading matrix (Table 9) shows that each measurement item loads more strongly on its intended construct than on any other construct, providing further evidence of discriminant validity [83].

As shown in Table 6, all variance inflation factor (VIF) values for the various constructs in this study ranged between 1.000 and 2.079, well below the conservative threshold of 5, indicating that multicollinearity does not pose a concern in the structural model [89]. The overall quality of the model was further evaluated using the goodness-of-fit (GOF) index. The GOF value was 0.538, which substantially exceeds the recommended benchmark of 0.36 [93], indicating strong explanatory power and an overall satisfactory model fit.

Table 8. Correlations among constructs and square roots of AVE.

	SRPY	SRPM	SRIY	SLPE	ATHB	SSCR	TTNB	ITHB
SRPY	0.771							
SRPM	0.582	0.755						
SRIY	0.575	0.613	0.744					
SLPE	0.557	0.584	0.675	0.776				
ATHB	0.568	0.657	0.528	0.543	0.782			
SSCR	0.364	0.212	0.302	0.460	0.582	0.771		
TTNB	0.577	0.697	0.560	0.518	0.666	0.181	0.783	
ITHB	0.607	0.539	0.519	0.532	0.505	0.381	0.181	0.819

Note: Diagonal elements represent the square root of the AVE for each construct; off-diagonal elements represent inter-construct correlations. SRPY = Streamer popularity; SRPM = Streamer professionalism; SRIY = Streamer interactivity; SLPE = Social presence; ATHB = Authenticity of time-honored brands; SSCR = Consumer–streamer relationship strength; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

Table 9. Results of Cross-Loadings Analysis.

	SPRY	SRPM	SRIY	SSCR	SLPE	ATHB	ITHB	TTNB
SRPY1	**0.816**	0.487	0.458	0.382	0.511	0.470	0.489	0.447
SRPY2	**0.734**	0.371	0.450	0.208	0.355	0.430	0.435	0.472
SRPY3	**0.755**	0.476	0.460	0.235	0.422	0.408	0.468	0.403
SRPY4	**0.776**	0.430	0.430	0.278	0.417	0.440	0.478	0.461
SRPM1	0.497	**0.769**	0.560	0.210	0.518	0.483	0.479	0.547
SRPM2	0.413	**0.776**	0.461	0.261	0.518	0.406	0.406	0.443
SRPM3	0.438	**0.767**	0.416	0.330	0.552	0.331	0.369	0.314
SRPM4	0.350	**0.658**	0.370	0.077	0.413	0.338	0.267	0.345
SRIY1	0.388	0.424	**0.762**	0.088	0.419	0.541	0.396	0.524
SRIY2	0.388	0.432	**0.739**	0.071	0.374	0.497	0.344	0.497
SRIY3	0.475	0.513	**0.764**	0.226	0.472	0.472	0.451	0.526
SRIY4	0.501	0.480	**0.753**	0.249	0.494	0.472	0.430	0.556
SSCR1	0.330	0.266	0.203	**0.858**	0.428	0.101	0.339	0.177
SSCR2	0.350	0.268	0.175	**0.887**	0.388	0.110	0.357	0.164
SSCR3	0.210	0.176	0.113	**0.776**	0.346	0.025	0.222	0.056
SSCR4	0.228	0.181	0.077	**0.736**	0.269	−0.028	0.244	−0.004
SSCR5	0.281	0.266	0.185	**0.845**	0.372	0.137	0.312	0.151
SLPE1	0.469	0.533	0.478	0.373	**0.803**	0.475	0.465	0.454
SLPE2	0.412	0.462	0.318	0.467	**0.725**	0.271	0.360	0.267
SLPE3	0.475	0.546	0.511	0.325	**0.828**	0.481	0.449	0.420
SLPE4	0.434	0.565	0.464	0.365	**0.773**	0.405	0.461	0.436
SLPE5	0.370	0.505	0.471	0.282	**0.749**	0.446	0.316	0.406
ATHB1	0.420	0.378	0.482	−0.005	0.382	**0.773**	0.361	0.529
ATHB2	0.459	0.472	0.553	0.156	0.454	**0.805**	0.408	0.505
ATHB3	0.425	0.361	0.432	0.071	0.383	**0.741**	0.393	0.436
ATHB4	0.418	0.440	0.566	0.121	0.441	**0.801**	0.403	0.561
ATHB5	0.495	0.405	0.522	0.135	0.455	**0.787**	0.411	0.561
ITHB1	0.485	0.384	0.429	0.335	0.415	0.347	**0.812**	0.474
ITHB2	0.470	0.452	0.424	0.334	0.426	0.408	**0.820**	0.467
ITHB3	0.530	0.438	0.466	0.273	0.463	0.476	**0.825**	0.553
TTNB1	0.488	0.445	0.567	0.092	0.417	0.508	0.468	**0.785**
TTNB2	0.463	0.468	0.572	0.165	0.439	0.559	0.518	**0.794**
TTNB3	0.382	0.430	0.527	0.106	0.381	0.540	0.404	**0.754**
TTNB4	0.469	0.409	0.514	0.199	0.382	0.476	0.519	**0.797**

Note: SRPY = Streamer popularity; SRPM = Streamer professionalism; SRIY = Streamer interactivity; SLPE = Social presence; ATHB = Authenticity of time-honored brands; SSCR = Consumer–streamer relationship strength; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands. Bold values indicate the factor loadings of each measurement item on its corresponding (intended) construct. As shown, all bolded loadings are higher than the cross-loadings on other constructs, demonstrating adequate discriminant validity.

3.3.3. Hypothesis Testing

Direct Effects

The results of the structural model are summarized in Table 10. Streamer popularity (β = 0.182, $p < 0.01$), streamer professionalism (β = 0.206, $p < 0.001$), and streamer interactivity (β = 0.444, $p < 0.001$) each exerted a significant positive effect on social presence, supporting hypotheses H1a, H2a, and H3a, respectively.

Table 10. Results of Direct Effects Testing.

Hypothesis	Path Relationship	Standardized Regression Coefficient	Sample Mean	SE	T Value	*p* Value	Result
H1a	SRPY→ SLPE	0.182	0.185	0.067	2.733	0.006	Support
H1b	SRPY → ATHB	0.242	0.243	0.059	4.089	0.000	Support
H2a	SRPM → SLPE	0.206	0.206	0.056	3.681	0.000	Support
H2b	SRPM → ATHB	0.444	0.447	0.056	7.943	0.000	Support
H3a	SRIY → SLPE	0.444	0.445	0.060	7.337	0.000	Support
H3b	SRIY → ATHB	0.116	0.116	0.072	1.616	0.106	Unsupported
H4	SLPE → TTNB	0.301	0.290	0.076	3.959	0.000	Support
H5	ATHB → TTNB	0.519	0.528	0.061	8.575	0.000	Support
H6	TTNB → ITHB	0.612	0.614	0.034	17.787	0.000	Support

Note: SRPY = Streamer popularity; SRPM = Streamer professionalism; SRIY = Streamer interactivity; SLPE = Social presence; ATHB = Authenticity of time-honored brands; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

Streamer popularity (β = 0.242, $p < 0.001$) and streamer professionalism (β = 0.444, $p < 0.001$) also showed significant positive effects on authenticity of time-honored brands, providing support for H1b and H2b. In contrast, the effect of streamer interactivity on authenticity of time-honored brands was not significant (β = 0.116, $p > 0.05$), and H3b was therefore not supported.

Social presence (β = 0.301, $p < 0.001$) and authenticity of time-honored brands (β = 0.519, $p < 0.001$) both had significant positive effects on trust in time-honored brands, supporting H4 and H5. Finally, trust in time-honored brands had a strong positive effect on brand identification with time-honored brands (β = 0.612, $p < 0.001$), providing support for H6.

Mediation Analysis

To test the hypothesized mediation effects, we applied a non-parametric bootstrapping procedure with 10,000 resamples to obtain estimates of the indirect effects, together with their standard errors, t values, and *p* values. The results of the mediation analysis are reported in Table 11.

Table 11. Results of Mediation Analysis.

Hypothesis	Path Relationship	Standardized Regression Coefficient	Sample Mean	SE	T Value	*p* Value	Result
H7a	SRPY → SLPE → TTNB → ITHB	0.034	0.033	0.015	2.268	0.023	Support
H7b	SRPM → SLPE →TTNB → ITHB	0.038	0.037	0.015	2.532	0.011	Support
H7c	SRIY → SLPE → TTNB → ITHB	0.082	0.080	0.025	3.205	0.001	Support
H8a	SRPY → ATHB → TTNB → ITHB	0.077	0.079	0.021	3.742	0.000	Support
H8b	SRPM → ATHB → TTNB → ITHB	0.141	0.145	0.028	5.064	0.000	Support
H8c	SRIY → ATHB →TTNB → ITHB	0.037	0.038	0.025	1.478	0.139	Unsupported

Note: SRPY = Streamer popularity; SRPM = Streamer professionalism; SRIY = Streamer interactivity; SLPE = Social presence; ATHB = Authenticity of time-honored brands; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

A significant serial mediation effect of social presence and trust in time-honored brands was observed between streamer popularity and brand identification with time-

honored brands (indirect effect = 0.034, t = 2.268, $p < 0.05$), supporting H7a. A similar serial mediation was found for streamer professionalism (indirect effect = 0.038, t = 2.532, $p < 0.05$; H7b) and for streamer interactivity (indirect effect = 0.082, t = 3.205, $p < 0.01$; H7c).

In addition, a second serial mediation pathway via authenticity of time-honored brands and trust in time-honored brands was significant for streamer popularity (indirect effect = 0.077, t = 3.742, $p < 0.001$; H8a) and streamer professionalism (indirect effect = 0.141, t = 5.064, $p < 0.001$; H8b). However, this mediation pathway was not significant for streamer interactivity (indirect effect = 0.037, t = 1.478, $p > 0.05$), and H8c was therefore not supported.

Moderation Analysis

The moderating effects of consumer–streamer relationship strength were tested using SmartPLS, with the results reported in Table 12. The interaction between consumer–streamer relationship strength and social presence was positive and statistically significant ($\beta = 0.247$, $p < 0.001$), indicating that relationship strength positively moderates the effect of social presence on trust in time-honored brands, thereby supporting H9a.

Table 12. Results of Moderation Analysis.

Hypothesis	Path Relationship	Standardized Regression Coefficient	Sample Mean	SE	T Value	*p* Value	Result
H9a	SSCR × SLPE → TTNB	0.247	0.234	0.070	3.531	0.000	Support
H9b	SSCR × ATHB → TTNB	−0.179	−0.176	0.080	2.228	0.026	Support

Note: SSCR = Consumer–streamer relationship strength; SLPE = Social presence; ATHB = Authenticity of time-honored brands; TTNB = Trust in time-honored brands.

In contrast, the interaction between consumer–streamer relationship strength and authenticity of time-honored brands was negative and significant ($\beta = -0.179$, $p < 0.05$), indicating that relationship strength weakens the positive effect of authenticity of time-honored brands on trust in time-honored brands, providing support for H9b.

Structural Model Evaluation

The hypotheses were tested using partial least squares (PLS) analysis of the inner (structural) model. Path coefficients and coefficients of determination (R^2) were estimated to evaluate both the strength and direction of the relationships among constructs, as well as the predictive accuracy of the model. Path coefficients capture the magnitude and direction of the hypothesized causal effects, whereas R^2 values indicate the proportion of variance explained in each endogenous variable.

Statistical significance was assessed using a bootstrapping procedure, which provides more accurate inference than asymptotic approximations when working with empirical data [94]. This resampling approach was therefore used to evaluate the significance of all structural paths.

As illustrated in Figure 2, all hypothesized paths were statistically significant except for the effect of streamer interactivity on authenticity of time-honored brands, which was not supported. The model explained 52.2% of the variance in social presence ($R^2 = 0.522$), 49.1% of the variance in authenticity of time-honored brands ($R^2 = 0.491$), 52.2% of the variance in trust in time-honored brands ($R^2 = 0.522$), and 37.4% of the variance in brand identification with time-honored brands ($R^2 = 0.374$), indicating a strong overall predictive performance.

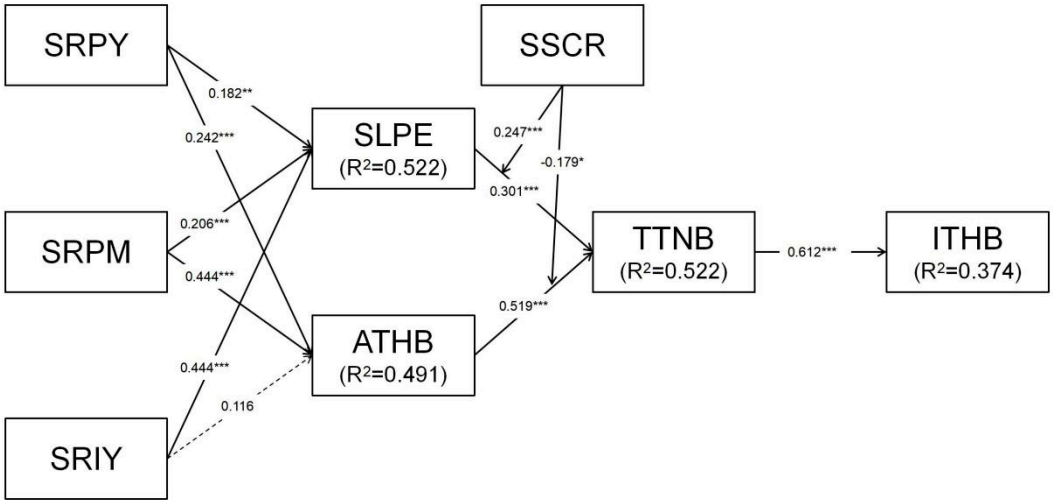


Figure 2. Structural Model with Standardized Path Coefficients. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Solid arrows represent supported paths; dashed arrows represent unsupported paths. SRPY = Streamer popularity; SRPM = Streamer professionalism; SRIY = Streamer interactivity; SLPE = Social presence; ATHB = Authenticity of time-honored brands; SSCR = Consumer–streamer relationship strength; TTNB = Trust in time-honored brands; ITHB = Brand identification with time-honored brands.

4. Discussion and Conclusions

4.1. Research Findings

Grounded in the SOR framework, SPT and PSI, this study examined how e-commerce livestreaming enhances brand identification with time-honored brands among young consumers. Using survey data from 434 respondents aged 18–40 who had viewed time-honored brands livestreams within the previous six months, we investigated how streamer characteristics—namely popularity, professionalism, and interactivity—influence social presence and perceived authenticity of time-honored brands, which in turn shape brand trust and ultimately brand identification with time-honored brands. We further examined the moderating role of consumer–streamer relationship strength. Statistical analyses were conducted using SmartPLS 4.0 and SPSS 27.0, yielding several theoretically and practically important findings for time-honored brands operating in livestreaming environments.

First of all, all three streamer attributes—popularity, professionalism, and interactivity—were found to exert significant positive effects on social presence. This result is consistent with prior work showing that livestreamer characteristics enhance viewers' perceptions of social presence [56]. By extending this line of inquiry to time-honored brands livestreaming, our findings demonstrate that even in contexts shaped by tradition, history, and cultural continuity, digitally mediated interactions with streamers can meaningfully reconstruct consumers' sense of social connectedness. This not only broadens the application of social presence theory but also provides new insight into how time-honored brands can revitalize their cultural relevance through digital intermediaries. In addition, streamer popularity and professionalism were found to positively influence perceived authenticity of time-honored brands, whereas streamer interactivity showed no significant effect. This pattern is broadly consistent with previous research indicating that knowledgeable and reputable streamers can reinforce authenticity perceptions [49]. Importantly, our study extends this insight into the livestreaming context, showing how authenticity of time-honored brands is reconfigured when historical brands are presented in real-time digital marketplaces. The absence of a significant effect of interactivity on perceived authenticity diverges from some prior livestreaming studies [95]. This discrepancy may reflect the distinctive nature of time-honored brands, whose authenticity is deeply rooted in historical legacy, traditional

craftsmanship, and enduring quality. These attributes are more effectively communicated through authoritative narratives and culturally grounded storytelling than through highly interactive, entertainment-oriented exchanges. In livestreaming, interactivity often emphasizes immediacy, promotion, and affective engagement, which may inadvertently dilute the gravitas and cultural depth that underpin authenticity of time-honored brands. Excessive or overly commercialized interaction may even conflict with consumers' expectations of time-honored brands as stable, dignified, and historically anchored. By demonstrating these boundary conditions, our findings challenge the prevailing assumption that interactivity is universally beneficial in livestream commerce and call for a more nuanced understanding of how different interaction modes shape brand meaning.

Secondly, with respect to the serial mediation of social presence and trust in time-honored brands, our results show that streamer characteristics—namely popularity, professionalism, and interactivity—exert significant positive effects on brand identification with time-honored brands through this two-stage pathway. These findings are consistent with prior work demonstrating that livestreamer attributes enhance consumers' perceptions of informational authenticity and social connection, thereby strengthening brand trust and identification [64–66]. By explicitly modelling social presence and trust in time-honored brands as sequential mediators, this study advances existing research by clarifying how livestreaming stimuli are transformed into deep brand identification. Streamer attributes do not influence brand identification directly; rather, they first create a strong sense of social presence in the livestreaming environment, fostering feelings of interpersonal connection and warmth. This experiential "being there" facilitates the emergence of trust toward time-honored brands in the livestreaming context, which in turn becomes the critical psychological mechanism through which enduring brand identification is formed. A second serial mediation pathway, operating through authenticity of time-honored brands and trust in time-honored brands, was found to be significant for streamer popularity and streamer professionalism. These findings are consistent with prior work [51]. When streamers are widely recognized and perceived as highly knowledgeable, consumers are more likely to perceive time-honored brands as authentic, and this enhanced authenticity perception subsequently reinforces brand trust, ultimately strengthening brand identification with time-honored brands. These findings reveal a progressive causal chain: streamer attributes shape authenticity perceptions, authenticity consolidates trust, and trust crystallizes into stable brand identification. This model provides a coherent explanation of how externally mediated signals in livestreaming environments are translated into deep-seated consumer–brand bonds. In contrast, streamer interactivity did not significantly affect brand identification with time-honored brands through the authenticity–trust pathway. This result diverges from the dominant digital marketing assumption that interactivity universally promotes authenticity and trust [95]. In the context of time-honored brands, identification is rooted in consumers' emotional resonance with historical legacy, cultural meaning, and enduring quality—forms of value that are built through temporal continuity rather than transactional immediacy. Typical livestream interactions, which emphasize promotions, price incentives, and entertainment, may stimulate short-term engagement but risk reducing brand communication to momentary exchanges, thereby weakening the symbolic gravity and cultural distinctiveness that underpin authenticity of time-honored brands. By demonstrating this boundary condition, our findings challenge the presumed universality of the "interactivity–authenticity–trust–identification" chain and call for a more context-sensitive theory of brand identification in heritage settings.

Finally, our analysis further reveals a dual moderating role of consumer–streamer relationship strength. Specifically, relationship strength positively moderates the link between social presence and trust in time-honored brands, but negatively moderates the re-

lationship between authenticity of time-honored brands and trust in time-honored brands. The positive moderation of the social presence–trust relationship aligns with previous research showing that stronger consumer–streamer relationships amplify viewers' perceived social presence and emotional engagement, thereby strengthening brand-related outcomes [46]. By extending this logic to time-honored brands, our findings demonstrate that when consumers feel psychologically closer to a streamer, the sense of "being there" in the livestreaming environment is more readily translated into trust in the time-honored brands. Importantly, this indicates that the trust-building function of social presence is contingent on relational proximity: the stronger the consumer–streamer bond, the more effectively social presence fosters brand trust and, ultimately, brand identification. In contrast, the negative moderation of the authenticity–trust relationship reveals a more complex dynamic that diverges from some prior studies [72]. Time-honored brands already possess a strong authenticity foundation rooted in historical continuity, cultural meaning, and long-term quality reputation. When consumer–streamer relationships become excessively strong, attentional focus may shift from the brand to the streamer as a person. Under these conditions, trust is increasingly anchored in interpersonal attachment rather than in the brand's intrinsic authenticity. As a result, the role of perceived brand authenticity as the primary basis of trust is weakened, explaining why relationship strength attenuates, rather than amplifies, the authenticity–trust linkage. Together, these findings highlight that consumer–streamer relationship strength does not simply magnify all trust-building mechanisms. Instead, it selectively strengthens trust derived from experiential social presence while simultaneously diluting trust grounded in authenticity of time-honored brands, thereby reshaping the pathways through which brand identification with time-honored brands is formed in livestreaming contexts.

4.2. Theoretical Contributions

First, this study advances time-honored brand research by introducing e-commerce livestreaming as a novel and theoretically meaningful context for understanding brand identification with time-honored brands. Existing scholarship on the revitalization and development of time-honored brands has largely focused on offline strategies, such as traditional advertising and physical retailing, which reflect the logic of conventional brand communication [13,14]. While this body of work has generated important insights into how time-honored brands survive and evolve in traditional market environments, it offers limited explanatory power for understanding brand identification formation under conditions of digital transformation. By contrast, livestreaming represents a fundamentally different mode of consumer–brand interaction, characterized by real-time communication, social embeddedness, and influencer-mediated persuasion. Despite its growing economic and cultural significance, this context has received little systematic attention in time-honored brand theory. By theorizing and empirically testing how livestreaming reshapes the formation of brand identification with time-honored brands among younger consumers, this study fills a critical gap in the literature and extends time-honored branding theory into the domain of platform-based, interactive commerce.

Second, this study makes a conceptual advance by explicitly centering young consumers as the focal population in time-honored brand research. Most existing studies treat the consumer base of time-honored brands as a largely homogeneous group [17,19,20], thereby obscuring systematic differences in how distinct demographic cohorts construct brand identification. This limitation is particularly problematic in contemporary media environments, where digital platforms have fundamentally altered how brands are encountered, interpreted, and evaluated. As digital natives, young consumers constitute the most active participants in livestreaming commerce and represent a pivotal force shaping

future market trajectories. Their consumption practices and brand perceptions are therefore critical to the long-term sustainability and revitalization of time-honored brands. Yet, this strategically important group has remained under-theorized in the literature, resulting in models of brand identification with time-honored brands that lack generational sensitivity and predictive power. By foregrounding young consumers as a distinct analytical category, this study provides a more fine-grained account of how brand identification with time-honored brands is formed under conditions of platform-mediated interaction. In doing so, it offers a theoretically grounded basis for understanding how time-honored brands can engage emerging consumer cohorts through targeted, differentiated, and digitally embedded communication strategies.

Third, this study advances theory by integrating the SOR framework with SPT and PSI to construct a more comprehensive and dynamic model of brand identification with time-honored brands in livestreaming environments. Although prior research grounded in the SOR paradigm has effectively demonstrated how external stimuli in e-commerce livestreams shape consumer responses, the linear stimulus–organism–response logic remains limited in explaining the psychologically nuanced and socially embedded interactions that characterize contemporary livestreaming commerce [26,96]. By incorporating SPT, this study elucidates the mechanism through which livestreaming stimuli are translated into psychological and behavioral outcomes. In livestream commerce, external cues do not trigger responses directly; rather, they first evoke a sense of social presence—a subjective perception of interpersonal connection and co-presence—which subsequently shapes authenticity perceptions, trust and brand identification. This perspective refines the "organism" component of the SOR framework by conceptualizing it as a socially constructed and relationally embedded psychological state, thereby enhancing the model's explanatory precision in digitally mediated environments. Furthermore, by integrating PSI, this study extends the analysis from general social presence to the formation of quasi-social, one-sided relational bonds between viewers and livestream hosts. PSI emphasizes that audiences can develop enduring feelings of intimacy, familiarity, and emotional attachment toward media figures despite the absence of reciprocal interaction. In livestreaming contexts, where hosts communicate in real time and often adopt personalized, conversational styles, such parasocial bonds become particularly salient. These bonds not only intensify perceived social presence but also strengthen authenticity judgments and trust transfer mechanisms, ultimately fostering deeper brand identification with time-honored brands. The simultaneous integration of SOR theory, SPT, and PSI enables this study to capture both situationally induced socio-emotional states and relationally sustained psychological attachments. This tripartite theoretical framework moves beyond purely cognitive or affective explanations and accounts for the dynamic interplay between environmental stimuli, socio-emotional processing, and quasi-relational bonding processes. As a result, the explanatory scope of the SOR framework is substantially expanded for socially mediated digital consumption contexts, offering a more robust and theoretically coherent foundation for understanding how livestreaming environments reshapes consumer behavior and reinforce brand identification with time-honored brands.

Fourth, this study advances the literature by jointly modelling mediation and moderation mechanisms in explaining brand identification with time-honored brands in e-commerce livestreaming. Previous research on time-honored in digital commerce has typically examined either mediating processes or moderating conditions in isolation, resulting in partial and fragmented explanations of how livestreaming influences brand outcomes [97,98]. By integrating serial mediators with relational moderators in a single analytical framework, this study captures both the internal psychological transmission processes and the contextual contingencies under which these processes operate. This

combined moderated–mediation perspective moves beyond single-path explanations and reveals how multiple mechanisms interact dynamically to shape brand identification with time-honored brands in livestreaming environments. In doing so, the model opens the "black box" between livestreaming stimuli and brand outcomes, providing a more complete and theoretically coherent account of how and when time-honored brands succeed in building identification among young consumers. This integrative approach offers a stronger conceptual foundation for both future research and evidence-based practice in digital time-honored branding.

4.3. Practical Implications

First, the findings demonstrate that streamer characteristics—popularity, professionalism, and interactivity—are key drivers of brand identification with time-honored brands. For time-honored brands seeking renewal and long-term relevance, this underscores the strategic importance of building a rigorous and systematic framework for streamer selection and development. Rather than relying on audience size or short-term traffic metrics alone, brands should adopt a multidimensional evaluation model that integrates visibility, professional credibility, and interactive capability. At the level of popularity, streamers with strong reputations and loyal follower bases provide immediate reputational leverage, effectively serving as trust intermediaries that lower consumers' perceived risk and accelerate brand acceptance. Professionalism is even more critical: streamers must possess not only detailed product knowledge but also the ability to articulate the historical depth, cultural meaning, and craftsmanship that define time-honored brands. When delivered by a knowledgeable and credible host, livestreaming can transform routine product demonstrations into compelling narratives of brand heritage, thereby generating emotional value alongside functional information. Interactivity acts as a catalytic mechanism that converts attention into engagement and affiliation. Streamers with strong empathic and communicative skills can foster immersive, socially rich environments through responsive dialogue and creative formats, enabling viewers to feel personally acknowledged and socially embedded. This sense of relational inclusion strengthens emotional attachment and community identification. When these three attributes operate in concert, the role of the streamer extends far beyond that of a sales agent. Streamers become digital brand ambassadors and relational connectors, actively co-constructing the brand's contemporary meaning. Through repeated interactions, they help shift consumers from awareness to trust and from trust to enduring identification, thereby enabling time-honored brands to build resilient and renewable brand equity in platform-based markets.

Second, the findings show that social presence and perceived authenticity of time-honored brands are pivotal antecedents of brand trust and brand identification. Accordingly, time-honored brands should seek to transform livestreaming spaces into culturally rich and trust-enhancing environments. The goal is not technological sophistication per se, but the integration of setting, interaction, and narrative to generate a strong sense of co-presence and experiential authenticity. Rather than relying on generic studio backdrops, brands should situate livestreams within their most historically and culturally meaningful physical spaces, such as heritage retail stores, traditional workshops, or production facilities. These environments provide visual and symbolic evidence of continuity, craftsmanship, and legacy, allowing authenticity to be communicated through tangible cues rather than abstract claims. Interaction should likewise move beyond transactional promotion and scripted question-answer exchanges. Streamers should act as knowledgeable guides and authentic companions, leading audiences through production processes, demonstrating traditional techniques, and openly discussing sourcing standards and imperfections. Such transparency humanizes the brand and provides a credible foundation for trust. At the

same time, interactive tools such as live chat and call-ins can be used to invite consumers to share their own brand experiences, converting one-way broadcasting into a participatory community dialogue. Through these practices, livestreaming can evolve from a sales channel into a social and cultural hub that simultaneously strengthens social presence and authenticity perceptions. This dual activation creates the conditions under which trust deepens and durable brand identification with time-honored brands can emerge.

Third, the results show that consumer–streamer relationship strength exerts opposite moderating effects on the two key trust-building pathways: it amplifies the impact of social presence on trust in time-honored brands while attenuating the effect of perceived brand authenticity. This duality implies that time-honored brands must adopt a carefully balanced livestreaming strategy that leverages relational closeness without allowing brand meaning to become overshadowed by the streamer's personal appeal. On the one hand, brands should actively cultivate streamers who are capable of forming deep relational bonds with their audiences. High-frequency and personalized interactions—such as addressing viewers by name, remembering individual preferences, and fostering shared community symbols—can maximize social presence and transform livestreams into emotionally resonant "affective communities." Under these conditions, strong consumer–streamer ties efficiently translate social presence into brand trust. On the other hand, brands must ensure that authenticity of time-honored brands is communicated through institutionalized and verifiable channels that do not depend solely on the streamer. This can be achieved by regularly featuring brand custodians, master artisans, or heritage experts in livestreams; by directing visual attention to sourcing sites, production facilities, and quality-control processes; and by maintaining a consistent repository of brand narratives through short videos and editorial content across platforms. These practices anchor authenticity in observable facts and enduring brand narratives rather than in the fluctuating credibility of individual streamers. Together, this dual strategy stabilizes trust formation: even when consumer–streamer relationships are exceptionally strong, brand trust continues to derive not only from interpersonal attachment but also from a firm cognitive and cultural understanding of the brand itself. This synergy enables time-honored brands to harness the benefits of relational intimacy without compromising the integrity of their authentic brand foundations.

4.4. Limitations and Future Directions

First, the formation of brand identification with time-honored brands is a multidimensional and complex process. Owing to constraints of scope and model parsimony, this study does not incorporate all potentially relevant drivers, such as consumers' nostalgic attachment, perceived product quality, or competitive market conditions. Instead, we focused on the emerging role of streamer characteristics as a theoretically and practically salient factor in digital commerce. Future research should extend this framework by integrating additional dimensions, including social interaction climate, perceived brand innovativeness, and cross-cultural communication strategies, to develop a more comprehensive and dynamic model of brand identification with time-honored brands in the digital era.

Second, the analysis was conducted within a single livestreaming context and did not explicitly compare online livestreaming with traditional offline or other digital retail environments. Comparative studies across multiple consumption contexts would enable a more precise assessment of how brand identification with time-honored brands pathways vary by channel and interaction mode, thereby providing more nuanced strategic guidance for time-honored brand management across heterogeneous marketing environments.

Third, although the moderating effect of relationship strength produced theoretically meaningful findings—strengthening the impact of social presence on trust while

weakening the effect of authenticity on trust—the present explanation remains inferential rather than directly tested. Specifically, the study does not empirically examine whether stronger relational ties shift consumers' evaluative orientation from brand-based cognitive assessment toward streamer-based relational trust transfer. If such a reorientation occurs, consumers embedded in stronger relationships may rely more heavily on streamer cues and less on brand-level authenticity signals in forming trust judgments. Future research should therefore incorporate additional relational and trust-transfer constructs and employ experimental or longitudinal designs to explicitly test whether relationship strength structurally reweights trust antecedents. Such efforts would clarify whether the observed moderation reflects a substantive shift in trust formation mechanisms rather than a context-bound effect.

4.5. Conclusions

Drawing on the SOR framework, SPT and PSI, this study examined how streamer characteristics—popularity, professionalism, and interactivity—shape brand identification with time-honored brands among young consumers in e-commerce livestreaming. Using survey data, we show that these streamer attributes influence brand identification through their effects on social presence and perceived authenticity of time-honored brands, which in turn build trust in time-honored brands. The analysis further incorporated consumer–streamer relationship strength as a moderating condition, allowing a more nuanced assessment of how relational proximity alters the trust-building process. The results demonstrate that streamer popularity, professionalism, and interactivity all enhance social presence, whereas popularity and professionalism also strengthen perceived authenticity of time-honored brands. Both social presence and authenticity significantly increase trust in time-honored brands, which, in turn, is a strong predictor of brand identification with time-honored brands. Moreover, streamer popularity and professionalism influence brand identification through two serial mediation pathways—via social presence and trust, and via authenticity and trust—while streamer interactivity operates primarily through the social presence–trust pathway. Consumer–streamer relationship strength further conditions these effects, amplifying the role of social presence in building trust while attenuating the influence of authenticity on trust. By positioning livestreaming as a central site for the contemporary reconstruction of time-honored brand meaning, this study develops an integrated model that combines SOR framework with SPT and PSI to explain how digital interactions translate into enduring brand identification. In doing so, it provides new theoretical insight into the psychological and relational mechanisms through which time-honored brands can engage younger generations in platform-based commerce. Although the study cannot encompass all possible determinants of brand identification with time-honored brands and does not compare livestreaming with traditional marketing contexts, it offers a systematic foundation for future research. In particular, while the findings reveal a differentiated moderating role of relationship strength, the underlying mechanism—whether stronger relational ties redirect consumers' trust formation from brand-based evaluation toward streamer-based trust transfer—remains to be empirically verified. Future research may therefore incorporate additional relational and trust-transfer constructs and adopt multi-method designs to clarify this potential structural shift in trust antecedents. By extending the framework across additional dimensions, mechanisms, and settings, subsequent studies can further refine our understanding of how time-honored brands sustain relevance and legitimacy in increasingly relational and digitally mediated commerce environments.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

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