
Digital marketing impacts of live streaming platforms on customer engagement and consumer-based brand equity amongst online Chinese millennials

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Abstract

The digital revolution, paired with the rise of live-streaming platforms like Douyin, Kuaishou, and Taobao Live, has reshaped the landscape of brand-consumer interactions, particularly among online Chinese millennials. This research aims to unpack the digital marketing implications of these platforms, focusing on their perceived ease of use and usefulness, and how these perceptions influence customer engagement and subsequently consumer-based brand equity. Utilizing a quantitative approach with online surveys collected from 300 Chinese millennial participants, this study scrutinized the relationship between the perceived usefulness and ease of use of these platforms toward consumer engagement across cognitive, emotional and behavioural dimensions. This further delved into the subsequent impacts of the multifaceted levels of customer engagement toward two customer-based brand equity under the aspects of brand trust and brand attitudes. Research results underscored the significant role of perceived usefulness in driving consumer engagement on live-streaming platforms. Moreover, platforms that aligned seamlessly with users' expectations of ease saw enhanced engagement metrics. The gathered survey data unearthed a pronounced correlation between the multiple levels of customer engagement toward both brand trust and brand attitude. The way consumers interacted with brands, whether cognitively, emotionally, or behaviourally, bore a distinct influence on their attitudes towards those brands. In essence, heightened engagement often paved the way for more positive brand sentiments, hinting at a roadmap to sustained brand loyalty.

Keywords: digital marketing; live-streaming platforms; Chinese millennials; customer engagement; brand trust; brand attitude

1. Introduction

In the ever-evolving world of digital media, China stands at the forefront with its rapid adoption and innovation of digital platforms. Among these, live-streaming platforms, particularly Douyin,

Received: June 23, 2025. **Revised:** August 26, 2025. **Editorial decision:** September 3, 2025. **Accepted:** September 9, 2025

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Kuaishou, and Taobao Live, have emerged as game-changers, shaping a new digital marketing landscape (Wang & Zhang, 2017). Such platforms have tapped into the digital zeitgeist, offering businesses an unparalleled medium for real-time communication and interaction. Through these platforms, brands are now connecting with vast audiences, most notably the millennial demographic, in immersive ways that were once unattainable (Chen et al, 2020). The modern consumer, particularly in China, craves instantaneity, engagement, and a sense of connection, and live-streaming platforms cater precisely to these desires. As the landscape continuously shifts, understanding the dynamics of these platforms becomes not just beneficial but essential for businesses and marketers aiming to maintain relevance and efficacy in their strategies.

1.1 Research rationale

The remarkable growth of live-streaming platforms, particularly in China, is a testament to the digital transformation that has taken place in recent decades. Douyin, Kuaishou, and Taobao Live are representative of this evolution and they hold considerable sway in shaping digital interactions (Wang & Zhang, 2017). However, despite their immense influence, academic literature has not fully addressed their profound impacts. It is observed that millennials, who are integral to reshaping digital consumption dynamics (Prensky, 2001), are frequently engaging with these platforms. However, comprehensive studies that delve into the depth of their perceptions, reasons behind their engagement, or the relationship between their interactions and brand value perceptions remain scant (Chen et al., 2020).

Exploring these pertinent questions carries both academic and practical importance. On the academic front, there exists an opportunity to enhance our understanding of digital marketing, especially as it intertwines with current technological innovations. The detailed study of user dynamics on live-streaming platforms can offer invaluable insights into how millennials, not just as consumers, but as influential digital natives, perceive real-time content (Liu et al., 2019). On a more practical note, these insights have significant implications for businesses. By understanding the preferences and behaviours of millennials on these platforms, businesses can craft strategies that align more closely with this demographic, ensuring their digital marketing efforts resonate effectively (Xu & Zhang, 2018).

Moreover, this study aims to delve into the less explored domain of the influence of Chinese live-streaming platforms on millennial behaviours and perceptions. The goal is to contribute to academic discourse while also offering actionable insights for businesses. By undertaking this research, there is potential not only to address the existing research gap but also to guide businesses in developing impactful and resonant marketing strategies for the ever-evolving Chinese live-streaming arena (Zhao et al., 2021).

1.2 Research aim & objectives

This study seeks to evaluate the digital marketing impacts of Chinese live-streaming platforms (Douyin, Kuaishou, and Taobao Live) on the customer engagement and consumer-based brand equity among online Chinese millennials. This study concentrates on evaluating the perceived ease of use and usefulness of these platforms, further examining their ramifications on various facets

of customer engagement, as well as on consumer-oriented brand trust and attitudes. In order to achieve the proposed research aims, the following research objectives will be accomplished:

1. To investigate the relationship between perceived usefulness and consumer engagement on live streaming platforms.
2. To explore how perceived ease of use influences consumer engagement on live streaming platforms.
3. To examine the correlation between customer engagement and brand trust on live streaming platforms.
4. To understand the impact of customer engagement on brand attitudes in the context of live streaming.

1.3 Research questions

In order to fulfil the aforementioned research objectives, the following research questions will be answered:

1. How does the perceived usefulness of Chinese live-streaming platforms (Douyin, Kuaishou, and Taobao Live) correlate with the level of consumer engagement among online Chinese millennials?
2. How does the perceived ease of use of these live-streaming platforms impact the frequency and intensity of consumer engagement among Chinese millennials?
3. Is there a direct correlation between the degree of customer engagement on live-streaming platforms and the level of brand trust among online Chinese millennials?
4. How does customer engagement on live-streaming platforms influence brand attitudes and perceptions among online Chinese millennials?

1.4 Structure of study

This study offers a structured, methodical exploration into the digital marketing impacts of Chinese live-streaming platforms, focusing on their influence on customer engagement and consumer-based brand equity among online Chinese millennials. Chapter 1 lays the foundational context of the research by emphasizing the rising significance of live-streaming platforms in China's digital landscape. This chapter highlights the research gaps, articulating the pertinence of this study, discusses the overarching research aim, detailed objectives and the ensuing research questions guiding the inquiry. Chapter 2 presents an in-depth examination of extant academic literature, encompassing areas such as live-streaming platforms, digital marketing dynamics, customer engagement, and customer-based brand equity paradigms. By critically appraising previous works, this chapter aims to establish the current state of knowledge, marking out gaps that this research aims to bridge with formulated research hypotheses.

Chapter 3 presents the methodological system behind the research design, underpinning the justification behind chosen research methods and tools. This chapter elaborates on the research philosophy employed, from sampling techniques and data collection to the analytical tools used, ensuring the study's systematic, rigorous approach. Chapter 4 presents the results and findings,

offering a structured representation of the empirical data and its primary interpretations. These findings are then intricately discussed in Chapter 5, which triangulates empirical evidence with established literature, drawing out meaningful implications and addressing the research objectives. The study ends with Chapter 6 synthesizes the research journey, revisiting the objectives, encapsulating key insights and findings. This chapter also ventures into suggesting potential directions for future scholarly inquiries in this vibrant domain in accordance to identified limitations of the study.

2. Literature review

This chapter undertakes a rigorous examination of empirical literature in the domains of live streaming commerce, technology acceptance, customer engagement behaviour and digital content marketing. This chapter aims to establish theoretical grounds to support the design of this research project, recognising empirical academic knowledge and areas for further research purposes. The dissection and synthesis of key theories form the backbone of the proposed exposition, leading to the formulation of a conceptual model that is rooted in these theoretical explorations. Hypotheses pertaining to perceived usefulness, perceived ease of use, customer engagement, and customer-based brand equity in a live streaming context are postulated, setting the stage for their empirical verification in later chapters.

2.1 The academic landscape of live streaming commerce research

According to Dwivedi et al. (2020), advances in theory and practice of digital marketing have evolved dramatically in recent years due to the development of new technologies, changes in consumer behaviour and the ongoing digital transformation of commerce. Furthermore, Nguyen et al. (2021) argues that the emergence of live streaming in particular represents one of the most innovative and impactful of these recent changes, as reflected by the increasing recognition over the importance of live streaming as a critical component of modern digital marketing practices. In a study by Cai & Wohn (2019), the term live streaming commerce was first coined to conceptualise the unique dynamics of the live streaming and e-commerce shopping experience, adopting a uses and gratifications approach to understand consumers' motivation behind the engagement in live streaming commerce practices. Another study by Guo et al. (2021) focused on exploring the factors that live streaming has on consumers' purchase intentions, discovering that the impact of live streaming features significantly impact the overall perceived value and uncertainty of promoted brand offerings, highlighting that the role of background fitting in live streaming commerce would influence the consumers' cognitive and affective responses.

A systematic literature review conducted by Yuyuan (2022) on the marketing role of live streaming furthered empirical academic insights into the use of live streaming as a marketing tool, proposing positive relationship between effective live streaming marketing strategies, increased brand awareness, customer engagement and e-commerce sales. Yuyuan (2022) further indicated that the success of live streaming as a marketing tool depends on the quality of the content, the engagement of the audience, and the ability of the marketer to build trust with the audience. Similarly, the apparent challenges of live streaming correlate to the highly dynamic nature of live streaming, whereby marketers are required to customise designated digital marketing strategies to make their

live streaming sessions more engaging, such as using interactive features, collaborating with influencers and offering exclusive deals as there are no one size fits all approach (Xu et al. 2020). This is also echoed in Yuyuan's (2022) systematic literature review as a research consensus is established over the challenges to effectively consider the timing and frequency of their live streaming sessions to maximize their impact, posing the need for further research on the effectiveness of live streaming as a marketing tool and the development of relevant theoretical frameworks to guide marketers in their use of live streaming.

An uncertainty reduction perspective is adopted by Lu & Chen (2021) in the study of relationships between live streaming commerce and consumers' purchase intentions, finding that live streaming can help reduce consumers' uncertainty about products and services, thereby increasing their likelihood of making a purchase. Nonetheless, a more recent systematic literature review on the impacts of live streaming by Xu et al. (2023) argues that the rapidly growth in popularity of live streaming and the limited academic understanding over its commercial impacts illustrate a widening gap for future research to address. According to Xu et al. (2023), despite some studies attempting to explore the impact of live streaming on consumer behaviour, there is a clear lack of research understanding over how live streaming would impact customer-based brand equity, representing a research gap that this study aims to address. Furthermore, Xu et al. (2023) also challenged that there is a lack of theoretical frameworks that can adequately guide marketers in their use of live streaming as an effective digital marketing tool, proposing the need to better understand how customers are impacted by live streaming platforms, how it would affect their engagement behaviours and brand related attitudes.

2.2 Theoretical background

This section unfolds the theoretical underpinnings of this research, critically reviewing the application of the technology acceptance model (TAM) in empirical studies, illuminates the extent to which perceived ease of use and usefulness of live streaming platforms can govern user behaviours. Furthermore, the application of the customer engagement behaviour model (CEB) is reviewed to delineate the various dimensions of customer engagement, including cognitive, emotional and behavioural aspects on live streaming platforms. The digital content marketing (DCM) model is also reviewed to uncover empirical academic knowledge into how content generated on digital platforms can influence customer engagement that results in the contribution of consumer-based brand equity, particularly in areas of brand trust and attitudes. The following sub-sections will critically evaluate the rapidly evolving milieu of live streaming commerce, setting the groundwork for subsequent hypothesis development in section 2.3.

2.2.1 Technology acceptance model (TAM)

The TAM model was first proposed by Davis (1985), providing the foundation for understanding user acceptance of information systems as the original was originally created to predict computer usage. The widespread application of the TAM model in recent decades has extended toward different technological contexts, proving its robustness and adaptability over time (Silva, 2015; Lala, 2014; Ahmad, 2018). The TAM model posits that perceived usefulness and perceived ease of use are key determinants of users' attitudes and intentions towards using technology as

illustrated in figure 1 below (Miller & Khera, 2010). The TAM model proposes a three-stage process whereby external factors (system design features) trigger cognitive responses (perceived ease of use and perceived usefulness), which, in turn stimulates an emotional response (attitude toward using technology/intention), subsequently influencing use behaviour (Miller & Khera, 2010). According to Silva (2015), the principal tenet of the TAM model hinges on the perception of potential users, positing that the acceptability of a technological product is contingent upon the users' concurrence with its usefulness and user-friendliness, as opposed to the creator's beliefs. However, this theoretical foundation has also received criticisms as it is argued that the model lacks consideration for the social and cultural variables that might impact the adoption of technology (Malatji et al. 2020; Ajibade, 2018).

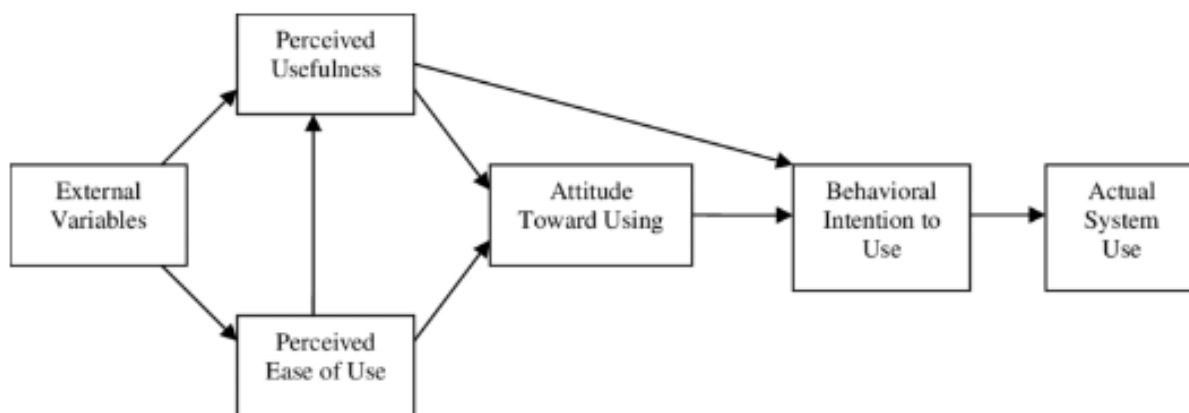


Figure 1: TAM model (Miller & Khera, 2010)

In the context of live streaming platforms, the TAM model has been critically applied in the studies of Ho & Yang (2015), Li et al. (2018) and Camilleri & Falzon (2021), exploring the motivation to use and engage in live streaming platforms from a consumer perspective. Ho & Yang (2015) extended upon the original TAM model to testify other variables that may affect customer attitudes in engaging and using live stream platforms, including perceived playfulness, perceived interaction and user interface design as shown in figure 2. Ho & Yang's (2015) study found significant positive correlations between all extended TAM factors and the intention/ attitude to engage in live streaming platforms, as perceived usefulness and perceived ease of use offered the highest prediction for live streaming platform engagement. Li et al. (2018) proposed an extended TAM model to investigate the roles of celebrity trust and platform trust in consumers' propensity of live-streaming. The study found that celebrity trust and platform trust were positively related to consumers' perceived usefulness and ease of use of live streaming platforms, which in turn positively influenced their intention to use live streaming.

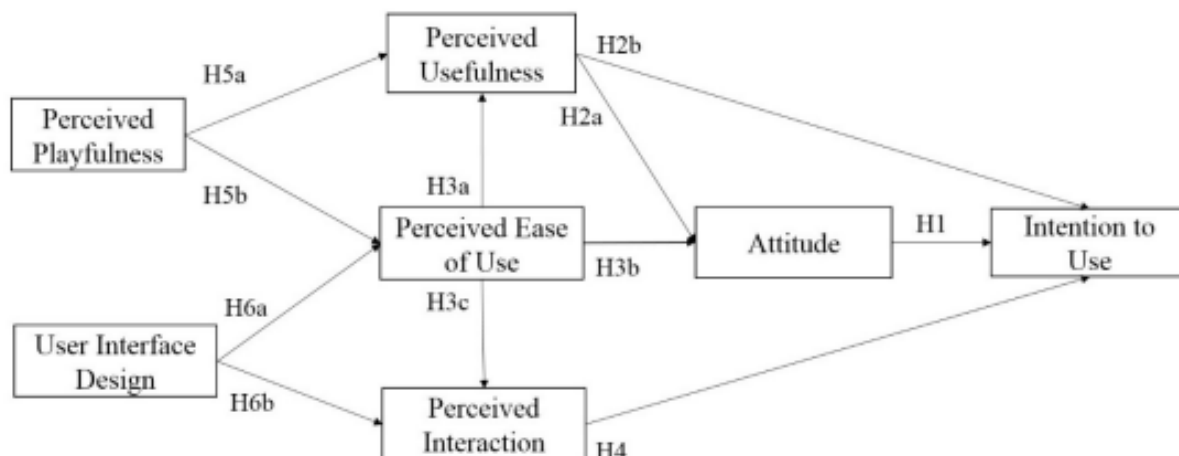


Figure 2: Extended TAM model on live streaming attitudes (Ho & Yang, 2015, p6)

Camilleri and Falzon (2021) integrated the TAM and Uses and Gratifications Theory (UGT) frameworks to better understand the effects of users' perceptions, ritualized and instrumental motivations on their intentions to continue using online streaming services. The study found that users' perceptions of usefulness and ease of use were positively related to their intentions to continue using online streaming services. Additionally, the study found that users' instrumental motivations (e.g., seeking information) were positively related to their intentions to continue using online streaming services, while ritualized motivations (e.g., socializing) were not significantly related to intentions. Another study by Bründl et al. (2017) applied a hedonic variant of the TAM model to explore the influence of co-experience and effectance on enjoyment of live streaming services. Bründl et al.'s (2017) study found that co-experience and effectance were positively related to enjoyment of live streaming services, which in turn positively influenced users' intention to use live streaming services. The aforementioned studies highlight the importance of understanding users' perceptions and motivations when designing and marketing live streaming platforms, paving important theoretical foundation behind the motivation for live streaming users/consumers to use live streaming services.

2.2.2 Customer engagement behaviour model (CEB)

The concept of customer engagement behaviours was first coined under the customer engagement behaviour model (CEB) by Van Doorn et al. (2010), defined as customers' behavioural manifestations toward a brand or firm, beyond purchase, resulting from motivational drivers. In addition, Barari et al.'s (2021) meta-analysis of customer engagement behavioural studies across 184 academic publications found that CEB is commonly defined in research through two key pathways including the organic and the promoted pathways as shown in figure 3. Under the organic pathway, Barari et al. (2021) defines CEB as the type of engagement that is relationship-oriented and develops naturally over time. This form of engagement is deeply influenced by the perceived quality and value of a product or service, as the quality of the relationship that the customer has with the company (Ahman et al. 2022). This reinforces Jaakkola & Alexander's (2014) recognition

of CEB to represent the inherent connection that forms when customers have positive interactions with the brand or product and perceive its value and quality to be high. Alternatively, the promoted pathway of CEB is characterized by firm-driven initiatives, representing the manifestation of deliberate marketing and operational strategies that serve to actively shape the customer's engagement, commonly divided into functional and experiential initiatives according to Huang et al. (2022).

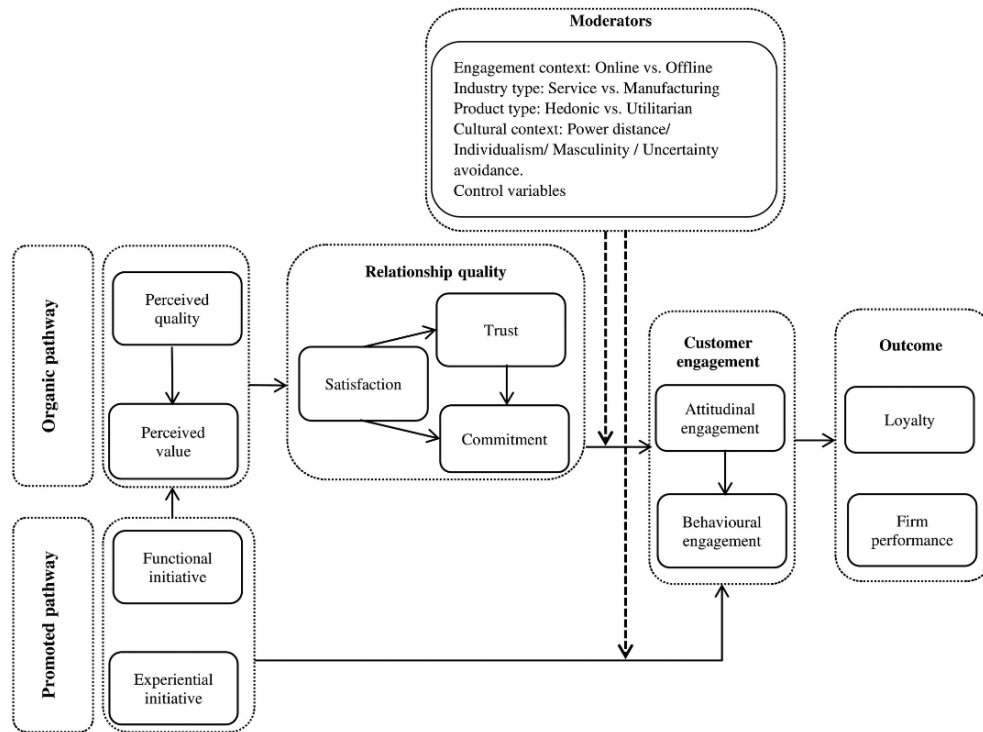


Figure 3: Customer engagement behaviour model (Barari, 2021, p461)

The CEB model conceptual model of the antecedents and consequences of CEBs, including customer, firm and societal factors, proposing that firms and marketers can manage CEBs by taking a more integrative and comprehensive approach that acknowledges their evolution and impact over time (Van Doorn et al. 2010). In the context of digital marketing, the CEB model is commonly applied to further explore and understand the customers' behavioural manifestations beyond purchase, which can be influenced by digital marketing efforts according to Perez-Vega et al. (2021). When applied to the context of new digital technologies, the CEB model is further extended to categorise customer engagement behaviours into the categories of cognitive, emotional and behavioural engagement as shown in figure 4 (Gunuc & Kuzu, 2015). Under the cognitive engagement dimension, this includes the quality and quantity of psychological and cognitive reactions to new technologies, which is found to directly affect the perceptions, beliefs and attitudes toward a new technology as well as the motivation to learn and one's level of involvement in the engagement process (Gunuc & Kuzu, 2015).

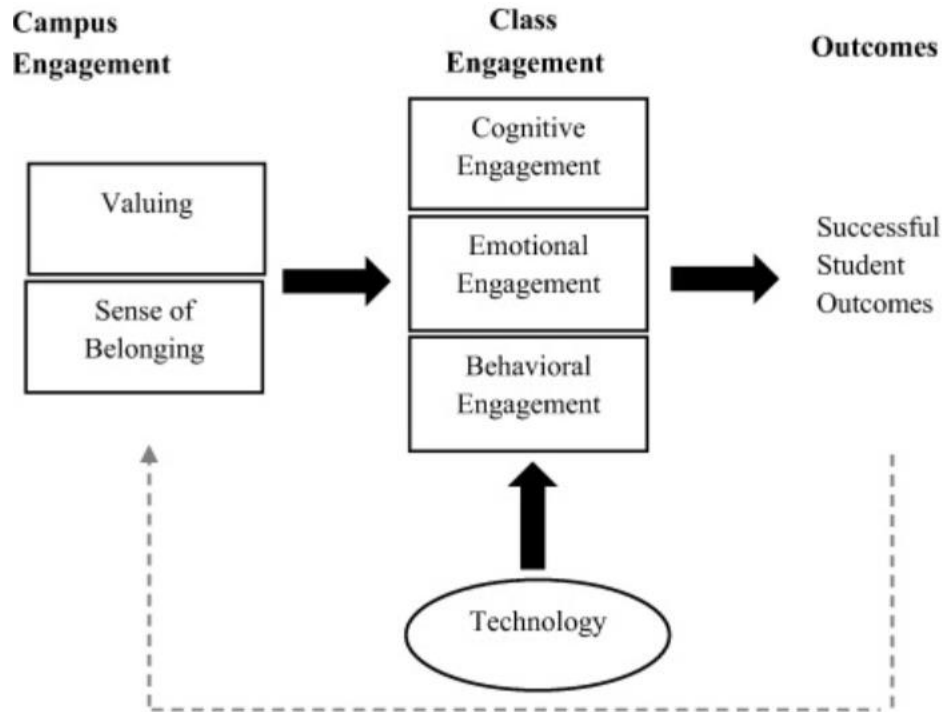


Figure 4: Types of customer engagement behaviours in relation to new technology adoption (Gunuc & Kuzu, 2015, p118)

In Roy et al.'s (2018) study, a customer's cognitive engagement behaviours are defined in relation to the mental investment and attention dedicating to a brand or product, reflecting the deeper psychological relationships and thoughts about a brand, how well they understand its offerings and their level of brand knowledge. Additionally, Roy et al. (2018) argues that when a customer is highly engaged cognitively, they would entail having a top-of-mind awareness and detailed understanding of the brand and its offerings. Under the emotional engagement behaviour dimension, Harwood & Garry (2015) proposes that this would include the affective connection a customer feels towards a brand, encompassing feelings of affection, connection and loyalty. Furthermore, emotionally engaged customers are found to be more likely to have a positive emotional response to a brand, exhibit strong brand affinity and are less sensitive to price (Cheng et al, 2020). Under a behavioural engagement dimension, Carlson et al. (2018) argues that the actions or behaviours that customers exhibit towards a brand, such as purchasing, using, sharing and recommending the product or service are involved. Additionally, Carlson et al. (2018) suggests that the behavioural engagement dimension is often the most tangible and measurable dimension of CBE, as metrics like purchase frequency, amount spent and reviews posted can offer a thorough understanding of a customer's engagement towards a brand or technology.

2.2.3 Digital content marketing model

Digital Content Marketing (DCM) has emerged as an influential approach in contemporary marketing, largely driven by growing consumer scepticism towards traditional advertising and marketing communications. According to Mathew & Soliman (2021), the foundations of DCM

rest on the sincere intent to add value to the consumers' lives in meaningful ways, such as educating them about a brand's usefulness, directly influencing customer acquisition, retention and effectively contributing to a sustainable customer-brand relationship. The DCM model was critically explored in the study of Hollebeek & Macky (2019), exploring the role of digital marketing technologies in fostering consumer engagement, trust and value as shown in figure 5. According to Hollebeek & Mackey (2019), DCM represents a vital element of modern digital marketing as it represents the creation and dissemination of relevant, valuable brand-related content to current or prospective customers, echoing the arguments of Rowley (2008) where the importance of utilising new technologies to create content that is relevant and valuable to customers can foster greater customer engagement, trust and value.

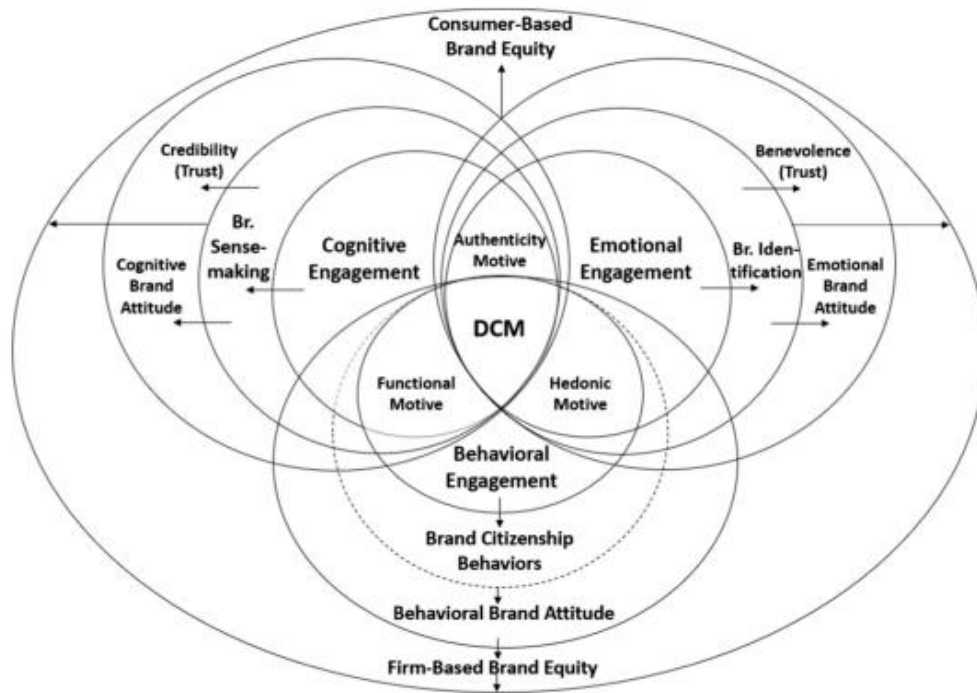


Figure 5: Digital content marketing model (Hollebeek & Macky, 2019, p36)

As suggested in the DCM model proposed by Hollebeek & Macky (2019), the role of DCM creates value for customers by providing them with relevant and valuable content that meets their needs and interests, stimulating high levels of customer engagement via the use of advanced technologies that create opportunities for customers to interact with the brand and its content. In the context of digital marketing, Hollebeek & Macky (2019) proposes that the effects of the DCM model are highly correlated to the customer-based brand equity, whereby the fostered customer engagement, trust and value are positively correlated to the value-based consequences of customer-based brand equity, especially in areas of brand trust and brand attitudes. According to Lopes & Casais' (2022) critical review of DCM research studies, it is found that digital content created by advanced marketing technologies and platforms would positively influence brand awareness, generate leads and increase customer loyalty, putting forth the argument that DCM can be used to create a strong brand identity and build a strong relationship with customers. In the context of live streaming

platforms, Lopes & Casias' (2022) finding is reinforced by the study of Kim & Kim (2022) where interaction between viewers in live streaming can satisfy interpersonal needs, reduce loneliness and psychological distance, reduce perceived risk, enhance viewers' perception of usefulness and the self-connection with the streamer, and promote a cheerful willingness to continue watching and purchasing, suggesting that live streaming can be used to create engaging content that fosters consumer engagement, trust and value as proposed by the DCM model.

Another study by Zhang et al. (2023) critically reviewed empirical research studies conducted on the impacts of live streaming, finding a positive correlation between popular live streaming shows and sales/ revenue, indicating that the perceived value of live streaming commerce is subjectively evaluated by each online viewer consumer's situation, representing an important digital marketing tool that can help to generate leads and increase customer loyalty, Li et al.'s (2022) study further expanded on the application of DCM on live streaming, recognizing its importance to fostering customer based brand equity that ultimately helps to attract and retain customers. According to Li et al. (2022), DCM can be effectively created to increase brand awareness during live streaming, providing customers the opportunities to interact with the brand and its content, further encouraging customer engagement, trust and subsequently increase brand awareness. Additionally, Li et al. (2022) argues that live streaming can be used to increase customer loyalty by providing customers with opportunities to interact with the brand and its content, fostering higher engagement and trust which can lead to increased customer loyalty. As suggested by Gilbert (2019), the research consensus points to the positive influence explained by the DCM model on live streaming, creating and disseminating relevant, valuable brand generated content that helps to build awareness, increase customer loyalty, provide a positive shopping experience and enhance customer engagement.

2.3 Conceptual model and hypotheses formulation

This section is devoted to the articulation of a research conceptual model for this study, designed to evaluate the digital marketing impacts of live streaming platforms on customer engagement and customer-based brand equity through the application of the TAM, CEB and DCM models. These models are pivotal as they offer simplified representations of complex theoretical relationships, thereby enabling better comprehension and study. Constructed from the foundation of empirical research, these models allow us to draw on existing evidence to develop and test new hypotheses.

2.3.1 Perceived usefulness and customer engagement

According to Ajibade (2018), perceived usefulness is construed as the degree to which a user believes that utilizing a specific technology will amplify their task performance. In the realm of live streaming marketing, this is translated as the extent to which consumers believe that live streaming platforms can enhance their experience, be it through informative content or direct interaction with products or services. Ajibade (2018) underscored that the quality of the content, the degree of its interactivity, and the genuineness perceived by the audience play pivotal roles in enhancing perceived usefulness. Echoing these findings, Qing & Jin (2022) emphasized that a

consumer's perception of value from live streaming is heavily influenced by individualized contexts, accentuating the inherent subjectivity in this assessment.

Diving deeper into the nuanced dimensions of customer engagement, Ashraf et al. (2016) drew attention to its multi-faceted nature. Their findings delineated the three dimensions of customer engagement in the e-commerce landscape: cognitive, emotional, and behavioural. While cognitive engagement pertains to the attention and absorption levels of consumers, emotional engagement revolves around the affective connections that consumers build with the platform. Behavioural engagement, on the other hand, taps into the tangible actions and interactions consumers engage in on these platforms. Their research pivoted on the crucial role of perceived usefulness, establishing it as a cornerstone for engagement across these three dimensions, especially in the e-commerce context.

Drawing on the TAM model, Basuki et al. (2021) reinforced that perceived usefulness holds significant sway over consumer engagement, particularly in digital landscapes like social media platforms (as depicted in Figure 6). TAM's extensive application across studies (Abdullah et al. 2016; Usman et al, 2020) has consistently affirmed the influence of perceived usefulness on user behaviours and their subsequent acceptance of technology. In essence, if technologies are perceived as valuable and user-friendly, they hold the potential to foster deeper consumer engagement. Pitafi et al. (2020) distilled this sentiment, suggesting that the inception of technology that is both useful and user-centric can enhance engagement, laying the foundation for robust consumer-brand relationships. With the layered understanding of customer engagement and the instrumental role of perceived usefulness, the research is distilled into the following hypotheses, each addressing a dimension of customer engagement:

H1a: Perceived usefulness is positively correlated to consumer's cognitive engagement on live streaming platforms.

H1b: Perceived usefulness is positively correlated to consumer's emotional engagement on live streaming platforms.

H1c: Perceived usefulness is positively correlated to consumer's behavioural engagement on live streaming platforms.

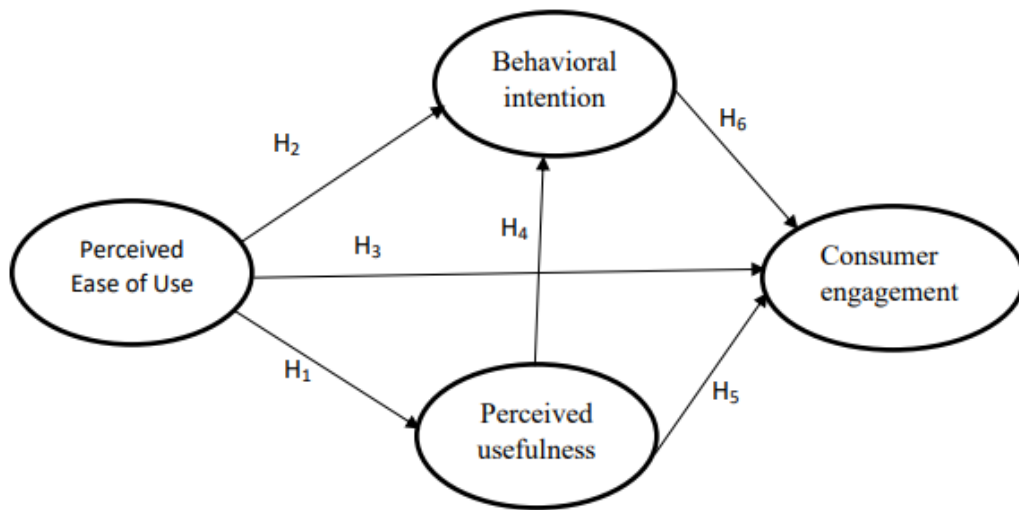


Figure 6: TAM influence on consumer engagement model (Basuki et al. 2021)

2.3.2 Perceived ease of use and customer engagement

According to Bründl et al. (2017), perceived ease of use is typically understood as the degree to which an individual feels that using a particular technology would be free from effort. When applied to live streaming marketing, this pertains to the intuitive nature of the platform and its ease of navigation, both for marketers presenting content and consumers interacting with it. Within this sphere, Camilleri & Falzon (2021) shed light on several dimensions influencing the intention to use live streaming platforms, including flow, entertainment value, quality of social interaction, and endorsements. Flow, in this context, relates to the smoothness and seamlessness of user experience, further highlighting the importance of ease of use.

Meanwhile, Wongkitrungrueng et al. (2020) postulated that live streaming platforms hold paramount importance for online relationship marketing. They underlined the intrinsic relationship between a platform's perceived ease of use and its capacity to foster relationships, accentuating how simplicity can cultivate connections. Ashraf et al. (2016) reinforced this narrative, identifying the perceived ease of use as a pivotal lever influencing the extent of customer engagement on e-commerce platforms. Su (2019) delved deeper into the world of e-commerce live streaming and explored its influencing factors. The study found a conspicuous link between perceived ease of use, the innate enjoyment derived from such platforms, and the resultant customer engagement. Su (2019) accentuated the argument that if consumers find a platform effortless and instinctive, their level of engagement is inherently higher. Echoing this sentiment, Wratsari et al. (2022), while examining the upsurge in live streaming during the COVID-19 pandemic, iterated that platforms with high perceived ease of use tend to assist digital marketers in tailoring content that resonates more with their audience, thereby enhancing engagement levels.

Distilling these theoretical underpinnings, it becomes clear that perceived ease of use is not just about the simplicity of a platform. Instead, it's about how this simplicity catalyses deeper connections, more meaningful interactions, and heightened engagement across cognitive,

emotional, and behavioural dimensions. This understanding informs the following hypotheses:

H2a: Perceived ease of use is positively correlated to consumer's cognitive engagement on live streaming platforms.

H2b: Perceived ease of use is positively correlated to consumer's emotional engagement on live streaming platforms.

H2c: Perceived ease of use is positively correlated to consumer's behavioural engagement on live streaming platforms.

2.3.3 Customer engagement and its impacts on customer-based brand equity (brand trust)

The relationship between customer engagement and customer-based brand equity in digital marketing practices is critically explored in Cambra-Fierro et al.'s (2021) study, finding that customer-based brand equity has both a direct, positive impact on customer satisfaction and customer reputation, posing an indirect impact on customer engagement. This sentiment is further echoed in the studies of Kim & Ko (2012), finding that brands who can deftly cultivate and consistently nurture customer engagement are often rewarded with reinforced brand equity. In practical terms, this translates into improved market positioning and heightened financial outcomes.

Furthermore, Chairunnisa & Ruswanti's (2023) work builds on these foundational insights, unravelling the nuances of the brand-consumer relationship, illustrating that an engaged consumer traverses a comprehensively mapped journey. This journey begins at the stage of brand cognizance, escalating to deeper realms of trust, loyalty, and advocacy. In this trajectory, trust emerges as the pivotal anchor. Kumar et al. (2010) further substantiates this point, emphasizing how genuine customer engagement can be a formidable catalyst in fostering brand trust. In turn, this trust becomes the driving force propelling consumers toward unwavering brand loyalty. Similarly, Cambra-Fierro et al.'s (2021) study found a clear positive relationship between customer engagement and customer-based brand equity, whereby the higher the customer engagement the highest the subsequent customer-based brand equity.

Samarah et al.'s (2022) investigation presents a unique perspective by focusing on the modern digital arena, specifically the burgeoning realm of social media. By positioning brand trust as the mediator, they weave a narrative around the reciprocal nature of brand engagement and trust. In their perspective, a brand's interactive presence on digital platforms can amplify consumer engagement. This engagement, underpinned by brand trust, solidifies into a bond that's hard to sever. A complementary viewpoint comes from Brodie et al. (2011). Their work delineates the cyclical relationship binding brand trust and engagement: one fuels the other, in a never-ending loop, creating a sustainable model of consumer loyalty and brand growth. Additionally, Hollebeek & Macky (2019) highlights importance of customer engagement in building customer-based brand equity, proposing that customer engagement represent a key driver of customer-based brand equity especially in the area of brand trust and brand equity. According to Hollebeek & Macky (2019), through creating and disseminating relevant, valuable brand-related content, companies can foster engagement, trust and value, which can ultimately enhance. Based on these empirical findings, the ensuing hypotheses are posited:

H3a: Consumer's cognitive engagement is positively correlated to brand trust on live streaming platforms.

H3b: Consumer's emotional engagement is positively correlated to brand trust on live streaming platforms.

H3c: Consumer's behavioural engagement is positively correlated to brand trust on live streaming platforms.

2.3.4 Customer engagement and its impacts on customer-based brand equity (brand attitude)

The rise of digital technology has significantly transformed the way consumers interact with brands. In this matrix, 'brand attitude' is defined as an essential component of customer-based brand equity by Hollebeek & Macky (2019) which stands out as a measure of the strength and positivity of a consumer's evaluations regarding a brand. Furthermore, Keller (1993), a leading thinker in brand management, has long asserted that brand attitude is vital, underscoring that the way consumers perceive, feel, and respond to a brand can drastically affect its equity in the marketplace. In this light, the correlation between customer engagement and brand attitude assumes pivotal importance.

Wang & Yang (2010) also critically explored the dynamics of this relationship, emphasizing that customer engagement, in its many facets including cognitive, emotional, and behavioural has direct implications on brand attitude. Their research suggests that an engaged consumer, who is mentally involved, emotionally connected, and behaviourally inclined towards a brand, is more likely to cultivate a positive brand attitude. Similarly, a study by Zeithaml et al. (2013) posits that the digital realm, especially platforms like live streaming, has heightened the weight of real-time interactions. These interactions play a decisive role in shaping a consumer's brand attitude, as engaging content, genuine interactions, and swift feedback mechanisms on live streaming platforms can enhance a consumer's cognitive and emotional connection, leading to more favourable brand attitudes.

Park et al. (2013) investigated the impact of brand experiences on brand attitude in online environments. Their findings reveal that when consumers are deeply engaged, their experiential journey with a brand online directly impacts their attitude towards it. A positive, enriching experience, facilitated by effective engagement strategies, tends to foster more favourable brand attitudes. Furthermore, recent research by Chaudhuri & Holbrook (2021) intertwines the realms of brand attitude and loyalty, postulating that a positive brand attitude, stemming from genuine engagement, can serve as a precursor to brand loyalty. In a world inundated with brand choices, fostering a positive brand attitude through meaningful customer engagement can be the differentiating factor for brands. Drawing from empirical academic knowledge and theoretical foundations, the following hypotheses are proposed:

H4a: Consumer's cognitive engagement is positively correlated to brand attitude on live streaming platforms.

H4b: Consumer's emotional engagement is positively correlated to brand attitude on live streaming platforms.

H4c: Consumer's behavioural engagement is positively correlated to brand attitude on live streaming platforms.

2.4 Summary of literature

The extensive review of the existing body of literature on live streaming commerce research, technology acceptance, customer engagement behaviour, and digital content marketing has shaped the understanding of the intricate and complex relations between these different theoretical models. The academic landscape of live streaming commerce research is in continuous evolution, with the live streaming medium emerging as an effective tool for real-time, interactive brand-customer communication. The field builds upon technology acceptance and customer engagement models, particularly in determining the factors that drive consumers to accept and engage with live streaming platforms. Based on empirical academic literature, the proposed research model for this study is shown in figure 7.

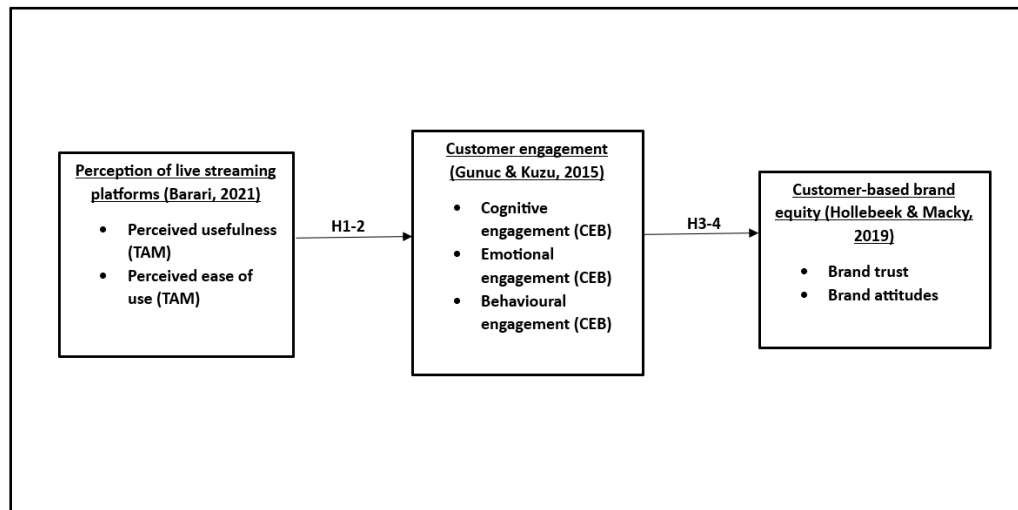


Figure 7: Proposed research model

3. Methodology

The purpose of this chapter is to provide a detailed overview of the research methodology adopted for this study, outlining the strategy, and techniques employed to realize the research aims and tackle the posed questions. The importance of each methodological choice is highlighted based on its congruence with the study's objectives, its appropriateness within the research context, and its capability to yield trustworthy and consistent outcomes. The structure of this chapter adopts a nuanced adaptation of Saunders et al's (2009) research onion framework model as show in figure 8 below, although this rendition does not adhere strictly to the conventional sequence, it endeavours to capture its essence, serving as a tailored approach to methodological progression, beginning with the research philosophy and transitioning through various stages of the research process.

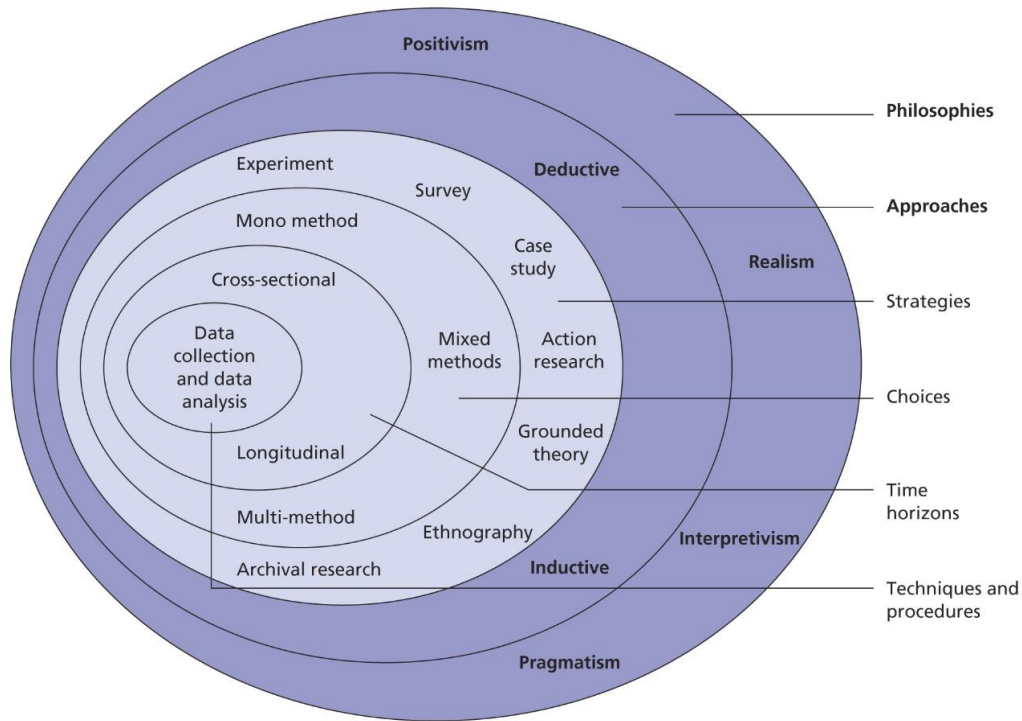


Figure 8: Research onion framework (Saunders et al, 2009)

Section 3.1 delves into the positivist research philosophy underpinning the study. Section 3.2 describes the chosen research design. Section 3.3 details the sample design, highlighting the target population, sample size, and selection criteria. Section 3.4 focuses on data collection, discussing the online survey strategy, questionnaire administration, and timing. Section 3.5 elaborates on the measurement constructs, their design, and measurement techniques. Section 3.6 examines the questionnaire design and the significance of pilot testing. Section 3.7 addresses data handling, reliability assessment, and chosen statistical methodologies. Section 3.8 identifies the study's chosen livestreaming platform. Lastly, Section 3.9 discusses ethical considerations throughout the research process. This structure provides a coherent and systematic overview of the research methodology by offering a comprehensive justification of chosen methods across each stage in the research design, this chapter aims to ensure transparency and credibility, while also providing a blueprint that could be replicated in future research in this area.

3.1 Research philosophy

The philosophy of this study is grounded in positivism, a research paradigm rooted in the belief that knowledge is best achieved through observable facts and their relationships, as positivist researchers primarily focus on quantifiable observations that lend themselves to statistical analysis (Park et al, 2020). In the context of this study, a positivist research philosophy is fitting due to the clear, objective nature of the research question and the methodology adopted to address it. The study seeks to evaluate the digital marketing impacts of Chinese live-streaming platforms on customer engagement and consumer-based brand equity among online Chinese millennials. This requires an analysis of quantifiable data, making positivism an appropriate choice of philosophy.

Moreover, positivist research often involves the development of models, hypotheses and their subsequent testing, aligning with the deductive approach of this study (Ryan, 2018).

The Technology Acceptance Model (TAM) and Customer Engagement Behaviour (CEB) models form the basis for the hypothesis development, which are then empirically tested using quantitative data. The survey instrument used for data collection in this study further supports the positivist philosophy. The instrument employs a five-point Likert scale to measure user perceptions, attitudes and behaviours, which can be quantitatively analysed to produce empirical, generalizable results (Rahi, 2017). Overall, the justification for adopting a positivist research philosophy underpins this study's focus on empirical, quantitative data, allowing for objective measurement and analysis of the research question. This provides a solid foundation for producing credible and generalizable findings that can contribute to both theoretical and practical understandings of the phenomenon.

3.2 Research design

According to Saunders et al (2009), the design of a research serves as the foundational structure upon which a study's methodological choices are made, guiding the researcher in both data collection and analysis, thus establishes the coherence and logic of the research process. The research design adopts a deductive reasoning approach as shown in figure 9 below (Trochim & Donnelly, 2006), whereby deductive research design studies typically start with a theory which then serves as a basis for formulating hypotheses. These hypotheses are tested using empirical observations, providing evidence to either support or refute the theory. Moreover, deductive research design helps to foster clarity, as it requires clear specification of hypotheses before proceeding to the data collection phase (Soiferman, 2010).

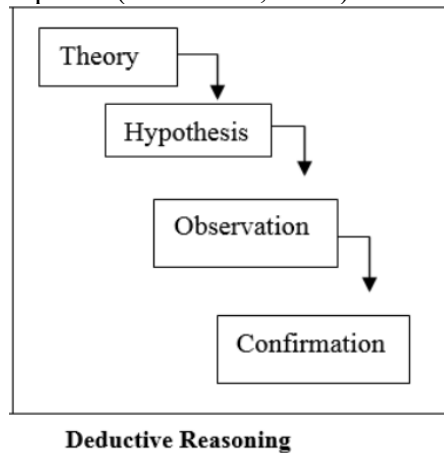


Figure 9: Deductive reasoning research approach (Trochim & Donnelly, 2006)

In the present study, the decision to adopt a deductive approach was influenced by the nature of the research questions and the available body of literature. Drawing on established theories, notably the Technology Acceptance Model (TAM) and the Customer Engagement Behaviour (CEB) model, the study formulates hypotheses related to the engagement and brand equity patterns on Chinese live-streaming platforms. Furthermore, the selection of a deductive research design allows for the direct applicability of the research to existing theoretical paradigms, as well as

offering a structured method for exploring these theories in a novel context (Bryman & Bell, 2015). Additionally, a deductive design inherently promotes objectivity, a trait harmonious with the positivist philosophy that underpins this research. With set hypotheses, the researcher can take a neutral stance, allowing the data to confirm or refute the theoretical propositions without undue influence from subjective interpretations (Collis & Hussey, 2009).

Moreover, this approach encourages a focus on generalizability by empirically testing established theories within the specific milieu of Chinese live-streaming platforms, there's potential to generalize the findings beyond the study's immediate sample. This not only augments the existing literature but also provides stakeholders with broader insights into user engagement dynamics in similar contexts (Robson, 2002). Overall, the choice of a deductive research design ensures a systematic and theory-driven exploration of the research questions. By rooting the study in established theoretical frameworks, and testing them empirically, the research aims to offer a harmonious blend of theoretical depth and practical relevance, generating new insights that offers values for both the academic and practitioner fields (Easterby-Smith et al. 2012).

3.3 Sample design

According to Mugo (2002), the sample design is vital for each research project as it delineates the blueprint for selecting a subset from the larger population, effectively representing the whole and facilitating conclusions with a high level of accuracy. The following sections outlines the justifications behind the sample design of this study.

3.3.1 Definition of the population

The research firmly anchors its focus on Chinese millennials actively immersed in live-streaming platforms. The rationale behind this concentration rests on several pivotal facets. A primary motivator is the sheer demographic heft of millennials, who account for a robust segment of China's internet-savvy users (Zhang et al, 2019). Their digital footprints, broad and diverse, extend markedly to live-streaming platforms. As digital trends have evolved so has the nature of live-streaming, this once predominantly a leisure-driven entertainment avenue has now evolved into a multifunctional conduit, serving roles from e-commerce to fostering real-time social interactions (Luo & Zhong, 2015). With such multifaceted engagement, comprehending the nuances of millennial consumption patterns, interactions, and preferences on these platforms becomes indispensable. Such understanding not only offers an introspective look into their behavioural dynamics but also carries profound implications for practitioners and businesses aiming to optimize their digital outreach. In essence, decoding the symbiotic relationship between millennials and live-streaming platforms could pave the way for more tailored, effective digital marketing strategies in China's vibrant digital ecosystem (Zhang et al, 2019).

3.3.2 Sample Size

A total of 300 Chinese millennials who regularly use live-streaming platforms participated in this study. Selecting an appropriate sample size is essential to ensure the validity of the study's results

and its generalizability to the larger population. The number of participants, 300 in this case, aligns with academic recommendations for achieving statistical power and meaningful data interpretation (Suresh & Chandrashekar, 2012). According to Saunders et al (2009), having a larger sample size reduces the margin of error and increases the confidence level of the research results, ensuring that the findings more accurately reflect the characteristics of the target population. Some academic studies suggest that, for social science research, a sample size between 200 and 500 participants tends to strike an optimal balance between feasibility and the reliability of results (Bartlett et al., 2001).

Furthermore, given the complexity and nuances associated with digital behaviour among millennials on live-streaming platforms, a substantial sample size of 300 provides a richer set of data. This can account for variations and helps in revealing patterns or tendencies that might not emerge in smaller samples (Malhotra & Birks, 2007). Overall, the chosen sample size offers a robust foundation for statistical testing, ensuring the research findings are both reliable and reflective of the broader behaviour and tendencies of Chinese millennials on live-streaming platforms.

3.3.3 Sample selection

The process of sample selection is paramount to ensure accurate results reflective of the targeted group. For this study, the convenience sampling method was chosen due to its feasibility and the specificity of the research demographic. Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher (Etikan et al, 2016). This method, though less random than other sampling methods, offers benefits in terms of feasibility, especially when studying specific populations. Given the research's focus on Chinese millennials who are frequent users of live-streaming platforms, the approach ensured quick and efficient data collection from readily available participants.

Leveraging my personal networks of being a Chinese millennial, I was able to approach potential participants who fit the study criteria. My familiarity with the cultural context and digital habits of the target group played a pivotal role in the circulation of the survey. Furthermore, the dominant role of WeChat, as the leading social media platform in China, was harnessed to distribute the survey (Chen & Shen, 2015). WeChat's expansive user base among Chinese millennials, combined with the familiarity and trust associated with sharing among peer networks, made it an ideal platform for disseminating the research instrument.

One significant advantage of this approach was the speed at which data could be collected. Since participants were chosen based on their accessibility, the time from survey dissemination to data collection was considerably shortened. However, it is essential to acknowledge that convenience sampling might introduce some bias, as it does not guarantee that the sample is representative of the entire population (Etikan et al, 2016). Despite this limitation, the method's practicality made it apt for the scope of this study, as the convenience sampling technique was sufficient in capturing insights from the specific demographic of Chinese millennials engaged with live-streaming platforms.

3.4 Data collection

Given the study's focus on digital interactions of Chinese millennials with live-streaming platforms, the choice of data collection method was decidedly tilted towards online surveys. Their increasing acceptance in academic and commercial research circles, primarily attributed to the efficiencies of time, reach, and convenience, made them an ideal choice for this study (Evans & Mathur, 2005). The process of administering the survey questionnaire was planned and executed with consideration, as the incorporation of WeChat as a medium for survey circulation was strategic. WeChat's widespread popularity among Chinese millennials positions it as a powerful tool for academic endeavours (Zhou et al., 2018). Through WeChat, the survey reached a larger pool of respondents, benefiting from its extensive user base. Moreover, employing digital methods for survey dissemination, beyond the benefits of reach, enables efficient monitoring of responses and even sending reminders to boost participation rates.

The participant experience was central to the survey's design and administration. Online surveys have garnered appreciation for their user-centric designs, ensuring ease and convenience for respondents (Fan & Yan, 2010). The participants in this study were thus able to respond to the survey at a time and pace that suited them, whether accessing it from a computer, tablet, or mobile device. This flexibility not only encourages more candid and comprehensive responses but also tends to push participation rates higher. The survey was open for responses over a span of four weeks. This duration was selected to allow participants ample time, ensuring they didn't feel rushed or pressured. To sustain engagement and ensure maximum participation, periodic reminders were dispatched during this timeframe, nudging those who might have missed or overlooked the initial request. The goal was to harness authentic insights from the defined demographic in the most efficient manner, given the inherent advantages of online surveys, it had emerged as the optimal choice.

3.5 Measurement constructs

In empirical research, ensuring the validity and reliability of measurement constructs is paramount. These constructs serve as a foundation for collecting data, and their alignment with the research objectives dictates the study's quality and authenticity. For this research, the measurement constructs revolved around understanding the demographics and live-streaming habits of Chinese millennials, given their cruciality in gauging their engagement with live-streaming platforms. The initial section of the survey, focused on demographics, was formulated to glean a comprehensive understanding of the participant's background. Questions regarding age, gender, and educational attainment not only position the respondents within a socio-demographic context but also provide insight into the demographic attributes of Chinese live stream viewers (Groves et al., 2009).

Specifically, the age-related question helps in categorizing respondents into more granulated groups, allowing the research to detect potential variations in live-streaming behaviours across different age brackets. Gender, as a demographic variable, has been frequently associated with variations in technology use and online behaviours (Venkatesh & Morris, 2000). By including this construct, the research could potentially uncover gender-based patterns in the adoption and engagement with live-streaming platforms. The highest level of education, as a variable, could

signify a range of socio-economic factors, including income levels, occupational status, and even media consumption habits. Previous studies suggest that educational attainment can be a significant predictor of technology adoption and use (Deursen & Dijk, 2014).

Furthermore, understanding the most frequently used live-streaming platforms could offer granular insights into platform-specific behaviours, preferences, or trends. This is particularly salient, given the competitive landscape of live-streaming services in China, with platforms like Douyin, Kuaishou, and Taobao Live competing for user attention. The frequency and duration of platform use not only showcase the level of commitment or interest users have towards these platforms but also indicate their potential exposure to digital marketing strategies deployed therein (Scheerder et al., 2017). A higher frequency of usage, for example, might correlate with increased receptivity to digital marketing, whereas long-term users could exhibit varying levels of brand loyalty or platform fatigue. In the main body of the survey questions, seven major constructs are incorporated to address proposed research objectives. The definitions of these key measurement construct are as follows:

- Perceived usefulness (PU): The user's belief in how a technology or platform will improve their task performance, especially whether users see the platform as valuable for their goals in live streaming (Barari, 2021)
- Perceived ease of use (PEOU): How effortless users feel a platform is and the straightforwardness of the platform's navigation and interface (Barari, 2021).
- Cognitive engagement (CE): Users' attentiveness and processing of content (Gunuc & Kuzu, 2015).
- Emotional engagement (EE): The emotions users experience while interacting with content (Gunuc & Kuzu, 2015).
- Behavioural engagement (BE): The level of user involvement in live streaming platforms that captures their actions such as likes, shares or comments (Gunuc & Kuzu, 2015).
- Brand trust (BT): The confidence users have in a brand's promises and delivery on the live streaming platform (Hollebeek & Macky, 2019).
- Brand Attitudes (BA): The overall sentiment users hold towards a brand, influenced by their experiences in a live streaming platform (Hollebeek & Macky, 2019)

3.6 Questionnaire design

The questionnaire adopted for this research is structured sequentially, guiding participants through a logical flow of sections. Starting with general questions that initially captures the demographic details of the respondents. This helps to better understand the respondent's background and captures the specifics about live streaming habits. This progression from broad to specific questions ensures that respondents are familiarized with the survey's theme, enhancing the reliability of their responses in the following key questions designed around measuring their attitudes across the aforementioned 7 key variable constructs. The questionnaire is also designed with clear, straightforward language to mitigate the possibility of misinterpretation, ensuring the collection of data that genuinely reflects the respondent's experiences and opinions (Dillman et al, 2014).

3.6.1 Pilot testing

Before the actual deployment of the survey, pilot testing was undertaken. A small subset of the target population was selected for this test, with the goal to identify potential problems in the survey design and rectify them before the full-scale research project begins. This has helped to detect ambiguous or leading questions, technical problems with online survey and timing issues (Van Teijlingen & Hundley, 2001). Feedback from pilot respondents contributed to highlighting questions that might be confusing or misinterpreted. This also offers a chance to assess the reliability and validity of some of the scale measurements used in the questionnaire. By refining the survey based on this feedback, the research ensures that the final version of the questionnaire is more efficient, effective, and accurate. Overall, the questionnaire design, from its structure to its preliminary testing, is crafted to ensure that the collected data is not only rich and detailed but also free from systemic biases or errors, offering a robust foundation for the subsequent analysis.

3.7 Data analysis

According to Saunders et al (2009), the data analysis process is critical for translating raw data into meaningful insights and findings. The process undertaken in this study involves several stages, ensuring the data's reliability, integrity, and relevance to the research objectives.

3.7.1 Data cleaning

Data cleaning was performed upon the collection of 300 online surveys, this a crucial involves scanning the data for errors or inconsistencies that might distort the results. Such errors can emerge from various sources, such as double entries, outliers that are a result of participant misinterpretation, or system glitches in online surveys (Barnes et al., 2018). By methodically addressing and correcting these inconsistencies, this study ensures that the subsequent analysis is grounded in accurate and reliable data, reflecting the genuine experiences and opinions of the respondents.

3.7.2 Missing data

Another challenge often encountered in survey-based research is missing data. Participants might skip certain questions, drop out of the survey midway, or give partial responses. Handling missing data is crucial, as overlooking it can lead to biased results. This was adequately addressed as non-completed surveys were not allowed to be submitted with pop-up notification indicating the location of empty fields which is a useful function of the WeChat survey platform (Little & Rubin, 2019).

3.7.3 Reliability

Reliability concerns the consistency and stability of the responses. To ensure that the results from the survey are reliable, a range of measures was adopted. Cronbach's alpha, a widely recognized measure of internal consistency, was employed to gauge the reliability of scales used in the questionnaire (Tavakol & Dennick, 2011). Scores nearing or exceeding 0.7 are generally deemed acceptable, indicating that the items in the survey are cohesive and measure the same underlying construct. The Cronbach's alpha score across all 31 items is at .970 as shown in figure 10, hence reliability of data is confirmed.

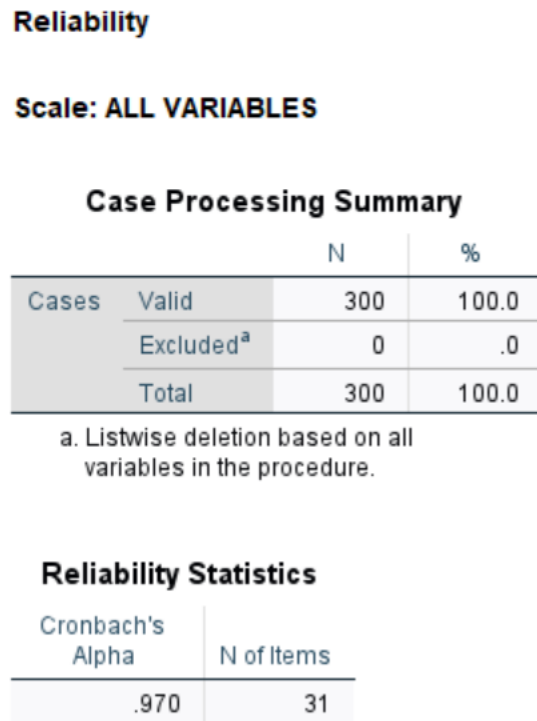


Figure 10: Cronbach's alpha reliability result

3.7.4 Analysis methods and tools

The analytical process commenced with descriptive statistics, which offered a preliminary understanding of the data's central tendencies, distributions and variations. Subsequently, Pearson's correlation was employed to scrutinize the relationships between the selected variables, this method enabled the identification of both the strength and direction of the linear associations among these variables. Meanwhile, regression analysis served as an instrumental approach, facilitating the prediction of outcomes for a dependent variable based on its interactions with specified independent variables (Field, 2013).

3.8 Live streaming platforms

In contemporary digital ecosystems, live-streaming has emerged as a powerful tool, transforming communication, entertainment, and commerce. China, a hub of technological innovation, stands at the forefront of this transformation. The rapid ascendancy of live-streaming in China is not just an isolated technological trend, but a testament to the intricate weave of socio-cultural factors, technological propensity, and evolving consumption habits. The live-streaming industry in China is a vibrant landscape characterized by robust growth rates, diversified content genres, and intense competition. From e-commerce to education, and entertainment to information dissemination, live-streaming in China spans across multiple domains, creating novel avenues for businesses and personal brands alike (Wang & Zhang, 2020). This dynamism is driven by the country's vast internet-savvy population, seeking more interactive and real-time content.

Within this vibrant matrix, a few brands and platforms stand out, primarily due to their vast user bases, innovative offerings, and influential market positioning. Douyin (internationally known as TikTok), for instance, is not merely a platform but a cultural phenomenon. Its short-video format, combined with cutting-edge AI-driven content personalization, has made it an integral part of the digital lives of millions (Zhou, 2018). Douyin's appeal lies not just in its entertainment quotient but also in its ability to provide a platform for businesses, influencers, and ordinary users to interact, collaborate, and transact. Kuaishou offers a somewhat different value proposition. While it also primarily began as a short-video platform, its ethos resonates more with grassroots users, often capturing authentic, unfiltered snippets of everyday life in China (Li et al., 2019). This authenticity has fostered a unique community-driven vibe, making Kuaishou a critical platform for brands aiming to connect at a more organic level with users.

Additionally, Taobao Live encapsulates the confluence of live-streaming with e-commerce. As an arm of the Alibaba ecosystem, Taobao Live synergizes entertainment with shopping, enabling influencers and sellers to host real-time selling sessions, demonstrating products, and interacting directly with potential buyers (Huang & Liu, 2020). The platform exemplifies how live-streaming is reshaping traditional e-commerce paradigms, making shopping a more social and interactive experience. The significance of these platforms, especially in the context of this research, is manifold. They are not just technological platforms but cultural spaces, mirroring and moulding the aspirations, lifestyles, and preferences of Chinese millennials. Given the research's focus on understanding digital marketing impacts in the realm of live-streaming, these platforms form the crux of the investigation, acting as primary touchpoints where user engagement and brand strategies converge.

3.9 Ethical considerations

In conducting this research, several ethical considerations have been taken into account to ensure the protection of participants and the integrity of the study. The research was conducted in compliance with the University of Southampton's ethical guidelines and was approved by the faculty research ethics committee (FREC). Firstly, participation in the study was entirely voluntary. Potential participants were informed about the purpose of the study, the nature of their involvement, the approximate duration of the survey, and their right to withdraw at any time without any

repercussions. Anonymity and confidentiality of participants were rigorously maintained throughout the study. The online survey was designed in a manner that prevents the identification of individual respondents. No personal identifiers such as names or email addresses were collected, and IP addresses were not tracked. All responses were stored securely, with access limited to the researcher and their supervisor.

The data collected from the survey was used solely for the purposes of this research and was not shared with third parties, as all gathered data are destroyed upon the completion of this study. Any reports or publications resulting from the study will present aggregated data, ensuring that individual responses cannot be identified. The online survey included a clear and accessible informed consent form, which participants were required to acknowledge before beginning the survey. This form provided detailed information about the study and reaffirmed the voluntary nature of participation. Finally, the survey questions were designed to be respectful and non-invasive, without delving into sensitive personal issues that could cause distress or discomfort to the participants. This study was committed to upholding the highest ethical standards in its conduct, prioritising the well-being and rights of the participants and ensuring the reliability and validity of the research findings.

4. Results and findings

This chapter presents the findings of the 300 online surveys collected amongst Chinese millennials over a four-week duration, aiming to provide valuable insights into the dynamics of live streaming platforms, consumer engagement, and brand equity. The initial section delves into descriptive statistics, furnishing an overview of the participants' demographic details, live streaming habits, and their perceptions regarding the use and ease of live streaming platforms. Subsequently, the chapter delves into a comprehensive analysis of variable relationships and testifying the accuracy of research hypotheses.

4.1 Descriptive statistics - demographic questions

The descriptive statistics for demographic questions as presented in Table 1 offer a rich insight into the nuances of the survey respondents' profiles. One of the standout patterns emerges from the age distribution. Respondents predominantly hail from the 1988-1992 age bracket, with a representation of 31%, suggesting that live-streaming platforms seem most popular among those in their early 30s. This cohort is closely followed by the 1993-1996 group at 24.7% and then by the 1980-1983 and 1984-1987 groups, with 22.3% and 22% respectively. The gender distribution reveals a noticeable leaning towards females, who make up 56.7% of the participants, compared to the 43.3% of males. This difference might indicate that the platforms in question, or perhaps the nature of the survey itself, resonate more with female users, offering an interesting avenue for further exploration in the study.

Table 1: Descriptive statistics on demographic questions (frequencies)

		Frequency	Percent	Cumulative percent
Age	1980-1983	67	22.3	22.3

	1984-1987	66	22.0	44.3
	1988-1992	93	31.0	75.3
	1993-1996	74	24.7	100.0
	Total	300	100.0	
Gender	Male	130	43.3	43.3
	Female	170	56.7	100.0
	Total	300	100.0	100.0
Education	High school or less	12	4.0	4.0
	College or associate degree	80	26.7	30.7
	Bachelor's degree	128	42.7	73.3
	Postgraduate degree	80	26.7	100.0
	Total	300	100.0	
Platform	Douyin	79	26.3	26.3
	Kuaishou	68	22.7	49.0
	Taobao Live	100	33.3	82.3
	Others	53	17.7	100.0
	Total	300	100.0	
Frequency	Daily	51	17.0	17.0
	Weekly	90	30.0	47.0
	Monthly	85	28.3	75.3
	Less than once a month	74	24.7	100.0
	Total	300	100.0	
Experience	Less than 6 months	26	8.7	8.7
	6 months to less than 1 year	62	20.7	29.3
	1-2 years	95	31.7	61.0
	3-4 years	113	37.7	98.7
	More than 4 years	4	1.3	100.0
	Total	300	100.0	

Education seems to be another crucial dimension. A striking 42.7% of the respondents hold a Bachelor's degree, emphasizing the platform's popularity among those with this academic background. Those with a College or Postgraduate degree follow closely, each constituting 26.7% of the total. On the other end of the spectrum, only 4% reported having High school or lesser education. This hints at a primarily well-educated user base for these platforms. Platform preferences among respondents show varied patterns. Taobao Live takes the lead with 33.3%, signifying its dominance in the live-streaming market among the surveyed users. Douyin and Kuaishou maintain significant traction, with 26.3% and 22.7% respectively, while other platforms constitute 17.7%.

Usage frequency exhibits a notable trend, with 30% using the platforms weekly, establishing a regular engagement pattern. This weekly usage is closely trailed by those who access platforms monthly at 28.3%, and then by those who use it less than once a month, sitting at 24.7%. The daily users represent a committed 17%. Experience with the platform offers another layer of understanding. A significant 37.7% of users have accumulated 3-4 years of experience, suggesting long-term engagement and potentially a high satisfaction level. Those with 1-2 years of experience

form a considerable 31.7%. Meanwhile, newer users, representing 20.7% with 6 months to less than 1 year of usage, and the nascent 8.7% with less than 6 months, reflect the platform's ability to continually attract fresh audiences. Intriguingly, only 1.3% have been engaged for more than 4 years, suggesting a potential research avenue into why long-term usage beyond this point is so limited.

4.1.1 Descriptive statistics – Main survey questions

As illustrated in Table 2 below, a deeper understanding of the respondent's attitudes and perceptions regarding the primary variables in the study is shown. As the table systematically breaks down the participants' responses concerning different aspects of their experience, a clearer image of their engagement emerges. Considering the Perceived Usefulness (PU) dimension, the data shows a generally favourable attitude. PU3 and PU4, with means of 4.01 and 4.02 respectively, signify a strong inclination towards finding live-streaming platforms particularly beneficial in some contexts. However, the standard deviations, being slightly above 1 for all these sub-questions, indicate a moderate variability in the responses. This suggests that while many participants find these platforms valuable, there remains a notable subset who might hold contrary views.

Table 2: Descriptive statistics on key variable survey questions

		N	Min	Max	Mean	Std. Deviation
Perceived usefulness (PU)	PU1	300	1	5	3.79	1.089
	PU2	300	1	5	3.72	1.020
	PU3	300	1	5	4.01	1.094
	PU4	300	1	5	4.02	1.148
Perceived ease of use (PEOU)	PEOU1	300	1	5	3.83	1.112
	PEOU2	300	1	5	3.85	1.022
	PEOU3	300	1	5	3.81	1.097
	PEOU4	300	1	5	3.95	1.053
Cognitive engagement (CE)	CE1	300	1	5	4.02	1.133
	CE2	300	1	5	3.88	1.121
	CE3	300	1	5	3.91	1.075
Emotional engagement (EE)	EE1	300	1	5	3.99	1.139
	EE2	300	1	5	4.11	1.184
	EE3	300	1	5	3.89	1.057
Behavioural engagement (BE)	BE1	300	1	5	3.99	1.171
	BE2	300	1	5	3.87	1.028
	BE3	300	1	5	4.05	1.131
Brand trust (BT)	BT1	300	1	5	4.10	1.118
	BT2	300	1	5	4.11	1.125
	BT3	300	1	5	4.08	1.176
	BT4	300	1	5	4.07	1.141
	BA1	300	1	5	4.10	1.131

Brand attitude (BA)	BA2	300	1	5	4.04	1.134
	BA3	300	1	5	4.13	1.166
	BA4	300	1	5	4.08	1.200
	Valid N (listwise)	300				

The Perceived Ease of Use (PEOU) dimension lends more insights into the participants' user experience. PEOU4, with a mean close to 4, suggests a dominant sentiment that such platforms are relatively user-centric and are devoid of complexities. The proximity of mean values for all sub-questions in this category reaffirms this sentiment. However, the standard deviations, consistently a bit over 1, indicates that this feeling of ease isn't universal. A segment of respondents might have encountered challenges or found the interface less intuitive. Shifting focus to Cognitive Engagement (CE), it is noteworthy that the average values for all sub-categories lie in the 3.88 to 4.02 range. This range signifies that users are not merely passive consumers but are actively processing and engaging with the content. The tight cluster of standard deviations around the 1.1 mark indicates a similar spread of responses, confirming that this cognitive engagement is a widespread phenomenon, albeit with some variances.

Emotional Engagement (EE) offers a slightly varied narrative. EE2, with its mean value surpassing 4.1, suggests a profound emotional connection felt by respondents, potentially towards brands or streamers on these platforms. Emotional ties of such magnitude can be instrumental in fostering brand loyalty and driving purchase intent. Yet, the slightly higher standard deviation for EE2 flags that this emotional resonance might be more profound for some users compared to others. In the realm of Behavioural Engagement (BE), data suggests that participants are not only passive observers but also active contributors, with BE3 recording a mean value slightly above 4. Such figures indicate actions like sharing, liking, or even purchasing, driven by the content consumed. The standard deviations, consistent around the 1.1 mark, point towards a uniformity in this behaviour with some exceptions.

Lastly, both Brand Trust (BT) and Brand Attitude (BA) dimensions shed light on participants' inclination towards brands they encounter on these platforms. The consistently high mean values, especially those surpassing the 4.1 threshold like BT1, BT2, and BA3, underscore a solid trust and positive disposition towards brands. Such strong sentiments can be pivotal in purchase decisions. Yet, the standard deviations, consistently hovering around the mid-1.1 range, remind us of the diversity in respondents' experiences and perceptions.

4.2 Variable relationships & hypotheses testing

The following sections critically examines the relationships of defined variables with the aim to understand the intricate dynamics of consumer behaviours on live streaming platforms. The primary aim of this section is to systematically assess the connections proposed in our research hypotheses, thereby providing a robust understanding of the underlying mechanisms driving consumer engagement and brand perceptions in the digital streaming realm. To accomplish this, the computation of variable data is engaged by averaging the scores of sub-questions for each overarching variable, deriving a comprehensive score that holistically represents facets including

perceived usefulness, perceived ease of use and consumer engagement under the dimensions of cognitive, behavioural and emotional engagement, and customer based brand equity under the dimensions of brand trust and brand attitudes. This aggregated approach ensures that the performed analysis encapsulates the broader trends and patterns, rather than becoming mired in the nuances of individual question responses. Following the computation, Pearson correlation tests are employed to measure the linear relationship between two continuous variables, enabling the measurement of relationship strengths and directions to testify the accuracy of proposed research hypotheses.

4.2.1 Relationship between perceived usefulness and consumer’s cognitive engagement on live streaming platforms

In examining the relationship between Perceived Usefulness (PU) and Cognitive Engagement (CE) on live streaming platforms, a strong positive correlation was identified as shown in table 3. The Pearson correlation coefficient (r) was found to be 0.914, indicating a very high degree of linear association between the two variables. Moreover, the significance value (p-value) reported was less than 0.001, reinforcing the statistical significance of this correlation at the 0.01 level. Given that this result is highly significant and the correlation coefficient is notably high, it confirms that as Perceived Usefulness increases, there is a corresponding and substantial increase in Cognitive Engagement among users on live streaming platforms. This outcome provides compelling evidence in support of hypothesis 1a that posited a positive correlation between PU and CE. The strength and direction of this relationship underscore the pivotal role that perceived usefulness plays in enhancing users' cognitive engagement with live streaming platforms.

Table 3: PU and CE relationship correlation coefficient

Correlation between PU & CE		PU	CE
PU	Pearson Correlation	1	.914**
	Sig. (2-tailed)		.000
	N	300	300
CE	Pearson Correlation	.914**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.2 Relationship between perceived usefulness and consumer’s emotional engagement on live streaming platforms

The relationship between Perceived Usefulness (PU) and Emotional Engagement (EE) on live streaming platforms reveals a significant and robust positive association as shown in table 4. The Pearson correlation coefficient for these variables stands impressively at 0.928, signalling an almost near-perfect linear relation. Further substantiating this finding is the remarkably low p-value, which is less than 0.001, thereby confirming the relationship's statistical significance at the 0.01 level. Such a pronounced correlation suggests that as the perceived usefulness of the platform grows, there is a marked elevation in emotional engagement amongst its users. This discovery is pivotal as it robustly affirms the hypothesis H1b, which postulated a direct positive correlation between PU and EE. The sheer strength and clarity of this association accentuate the crucial role of perceived usefulness in fostering and augmenting emotional resonance and connectivity of users with live streaming platforms.

Table 4: PU and EE relationship correlation coefficient

		PU	EE
PU	Pearson Correlation	1	.928**
	Sig. (2-tailed)		.000
	N	300	300
EE	Pearson Correlation	.928**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.3 Relationship between perceived usefulness and consumer’s behavioural engagement on live streaming platforms

Analysing the correlation between Perceived Usefulness (PU) and Behavioural Engagement (BE) in the context of live streaming platforms uncovers a profoundly significant relationship as shown in table 5. The data illustrates a Pearson correlation coefficient of 0.913 between PU and BE, which underscores a very strong positive linear relationship between the two variables. This is further emphasized by the p-value, which is effectively zero, cementing the statistical significance of this relationship at the 0.01 level. Such a compelling correlation indicates that when users perceive a platform to be more useful, their behavioural engagement with the platform intensifies correspondingly. In light of this evidence, we can confidently validate the hypothesis H1c, which posited a positive correlation between perceived usefulness and behavioural engagement on live streaming platforms. The undeniable potency of this correlation not only substantiates the

hypothesis but also illuminates the pivotal influence of perceived usefulness in determining how users interact and behave within the ecosystem of live streaming platforms.

Table 5: PU and BE relationship correlation coefficient

Correlations between PU and BE

		PU	BE
PU	Pearson Correlation	1	.913**
	Sig. (2-tailed)		.000
	N	300	300
BE	Pearson Correlation	.913**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.4 Relationship between perceived ease of use and consumer’s cognitive engagement on live streaming platforms

When exploring the relationship between Perceived Ease of Use (PEOU) and Cognitive Engagement (CE) on live streaming platforms, the results from Table 6 provide an illuminating perspective. The Pearson correlation coefficient recorded at 0.905 establishes an exceptionally robust positive correlation between these two constructs. This intense association is further fortified by the negligible p-value, which, standing at essentially zero, delineates the relationship's significance even at the stringent 0.01 level. This pronounced correlation infers that the ease with which users can navigate and utilize a platform directly amplifies their cognitive immersion and involvement within that platform. In relation to hypothesis H2a, a positive correlation between the perceived ease of use and cognitive engagement on live streaming platforms is unequivocally corroborated. This insight not only endorses the stated hypothesis but also accentuates the imperative role of user-friendly interfaces in fostering deeper cognitive connection and engagement in the realm of live streaming.

Table 6: PEOU and CE relationship correlation coefficient

Correlations between PEOU and CE

		PEOU	CE
PEOU	Pearson Correlation	1	.905**
	Sig. (2-tailed)		.000
	N	300	300
CE	Pearson Correlation	.905**	1

Sig. (2-tailed)	.000	
N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.5 Relationship between perceived ease of use and consumer’s emotional engagement on live streaming platforms

The exploration of the interconnectedness between Perceived Ease of Use (PEOU) and Emotional Engagement (EE) on live streaming platforms has rendered insightful results as shown in table 7. A strong positive correlation between PEOU and EE with the Pearson correlation coefficient valued at 0.923 is found. This formidable correlation is further substantiated by a p-value of virtually zero, signalling a level of significance that surpasses even the rigorous 0.01 threshold. This robust correlation suggests that when users perceive a platform as user-friendly and straightforward to navigate, it invariably enhances their emotional ties to the content, eliciting stronger feelings and sentiments. This rich emotional resonance underpins the essence of the live streaming experience for many users. As a result, hypothesis H2b, which postulated that perceived ease of use would be positively correlated with emotional engagement on live streaming platforms is resoundingly validated.

Table 7: PEOU and EE relationship correlation coefficient

		PEOU	EE
PEOU	Pearson Correlation	1	.923**
	Sig. (2-tailed)		.000
	N	300	300
EE	Pearson Correlation	.923**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.6 Relationship between perceived ease of use and consumer’s behavioural engagement on live streaming platforms

The investigation into the interrelation between Perceived Ease of Use (PEOU) and Behavioural Engagement (BE) in the context of live streaming platforms has delivered significant insights. According to the analytical results in table 8, a prominent positive correlation is evident between PEOU and BE, represented by a Pearson correlation coefficient of 0.921. This impressive

association is further strengthened by a p-value of essentially zero, which greatly exceeds the stringent 0.01 significance level. This substantial correlation insinuates that as users discern a platform to be more user-friendly and uncomplicated, they are proportionally more inclined to engage behaviourally through interactions, comments, shares, or other participatory actions. The ease of use seems to motivate users to not only consume content but also actively interact and become part of the live streaming experience. Consequently, hypothesis H2c, which posited that the perceived ease of use would exhibit a positive correlation with behavioural engagement on live streaming platforms, finds robust empirical support. These revelations accentuate the imperative of seamless platform operability in facilitating active user participation and engagement in live streaming sessions.

Table 8: PEOU and BE relationship correlation coefficient

Correlations between PEOU and BE

		PEOU	BE
PEOU	Pearson Correlation	1	.921**
	Sig. (2-tailed)		.000
	N	300	300
BE	Pearson Correlation	.921**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.7 Relationship between consumer’s cognitive engagement and brand trust on live streaming platforms

Upon examining the relationship between consumers' Cognitive Engagement (CE) and Brand Trust (BT) on live streaming platforms, the data in table 9 reveals a robust Pearson correlation coefficient of 0.938, denoting a strong positive correlation. This statistically significant finding, given the p-value effectively at zero, resonates with the assertion of hypothesis H3a. The data suggests that as consumers delve deeper into the content, processing and engaging with it, their trust in the associated brand similarly increases. Such findings underline the imperative for brands to curate engaging content on live streaming platforms, not only to capture attention but also to foster and reinforce brand trust among their audience.

Table 9: CE and BT relationship correlation coefficient

Correlations between CE and BT

		CE	BT
CE	Pearson Correlation	1	.938**

	Sig. (2-tailed)		.000
	N	300	300
BT	Pearson Correlation	.938**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.8 Relationship between consumer’s emotional engagement and brand trust on live streaming platforms

An in-depth exploration of the data linking consumers' Emotional Engagement (EE) to Brand Trust (BT) on live streaming platforms demonstrates a pronounced Pearson correlation coefficient of 0.948. This indicates a profoundly positive relationship between the two variables. The statistical significance of this correlation, underscored by a p-value essentially at zero, strongly supports the propositions put forth by hypothesis H3b. This outcome implies that as viewers emotionally resonate with content on live streaming platforms, it translates into heightened trust in the affiliated brand. For brands operating in this digital sphere, this stresses the significance of crafting emotionally resonant content, which not only engages but also deepens the foundational trust with their viewers.

Table 10: EE and BT relationship correlation coefficient

Correlations between EE and BT			
		EE	BT
EE	Pearson Correlation	1	.948**
	Sig. (2-tailed)		.000
	N	300	300
BT	Pearson Correlation	.948**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.9 Relationship between consumer’s behavioural engagement and brand trust on live streaming platforms

When analysing the association between consumers' Behavioural Engagement (BE) and Brand Trust (BT) on live streaming platforms, the Pearson correlation coefficient emerges strikingly strong at 0.932 as shown in table 11. This robust positive correlation is further accentuated by a p-value of essentially zero, providing formidable statistical validation for hypothesis H3c. This empirical evidence suggests a compelling narrative: the more viewers actively interact, participate, or respond to content on these platforms, the greater their trust in the corresponding brand becomes.

For businesses navigating the live streaming realm, this elucidates the paramount importance of fostering active viewer interactions, as these engagements not only captivate but also cement trust, forming a bedrock for sustained viewer-brand relationships.

Table 11: BE and BT relationship correlation coefficient

Correlations between BE and BT			
		BE	BT
BE	Pearson Correlation	1	.932**
	Sig. (2-tailed)		.000
	N	300	300
BT	Pearson Correlation	.932**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.10 Relationship between consumer’s cognitive engagement and brand attitude on live streaming platforms

Examining the relationship between consumers' Cognitive Engagement (CE) and their Brand Attitude (BA) on live streaming platforms, the data uncovers a robust Pearson correlation coefficient of 0.932 as shown in table 12. This highly pronounced positive correlation is further reinforced by a p-value that is virtually zero, bolstering the statistical credibility of hypothesis H4a. Such compelling evidence underscores the narrative that as viewers process and comprehend the content they encounter on live streaming platforms, their sentiment or disposition towards the affiliated brand notably improves. For brands aiming to cultivate a positive image through live streaming, this underlines the essence of delivering content that mentally resonates and engages with viewers. A cognitively stimulating experience not only holds viewers' attention but also plays a pivotal role in shaping their attitudes towards the brand.

Table 12: CE and BA relationship correlation coefficient

Correlations between CE and BA			
		CE	BA
CE	Pearson Correlation	1	.932**
	Sig. (2-tailed)		.000
	N	300	300
BA	Pearson Correlation	.932**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.11 Relationship between consumer’s emotional engagement and brand attitude on live streaming platforms

When exploring the linkage between consumers' Emotional Engagement (EE) and Brand Attitude (BA) within the realm of live streaming platforms, the derived Pearson correlation coefficient stands impressively at 0.950 as shown in table 13. This significant positive correlation, further substantiated by a p-value approaching zero, offers robust support for hypothesis H4b. These findings illuminate the intricate dance between emotions evoked during live streaming sessions and the resultant attitudinal shifts towards the associated brand. It becomes evident that live streaming platforms that effectively tap into the emotional reservoirs of viewers, generating feelings of connection, excitement, or nostalgia, also wield the power to sculpt more favourable brand perceptions. As such, for businesses leveraging live streaming as part of their digital strategy, investing in emotionally resonant content becomes paramount. Such content not only forges deeper emotional connections but can also be the catalyst for a more positive brand sentiment among viewers.

Table 13: EE and BA relationship correlation coefficient

Correlations between EE and BA			
		EE	BA
EE	Pearson Correlation	1	.950**
	Sig. (2-tailed)		.000
	N	300	300
BA	Pearson Correlation	.950**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.12 Relationship between consumer’s behavioural engagement and brand attitude on live streaming platforms

Delving into the nexus between consumers' Behavioural Engagement (BE) and Brand Attitude (BA) in the context of live streaming platforms, the data unveils a substantial Pearson correlation coefficient of 0.937. This pronounced positive correlation, further underscored by a p-value of practically zero, vigorously upholds hypothesis H4c. Such findings underscore the pivotal role of behavioural engagement in shaping and refining viewers' attitudes towards the associated brands on live streaming platforms. In essence, as viewers actively interact, share, or recommend content on these platforms, it not only amplifies their connection to the stream but also bolsters their affinity and allegiance to the brand behind it.

Table 14: BE and BA relationship correlation coefficient

Correlations between BE and BA			
		BE	BA
BE	Pearson Correlation	1	.937**

	Sig. (2-tailed)		.000
	N	300	300
BA	Pearson Correlation	.937**	1
	Sig. (2-tailed)	.000	
	N	300	300

** . Correlation is significant at the 0.01 level (2-tailed).

4.2.13 Summary of hypotheses testing

Upon reviewing the aggregated findings presented in table 15, it becomes evident that the study's foundational hypotheses garnered substantial empirical support across the board. The first three sub-hypotheses (1a, 1b, 1c) pertaining to the perceived usefulness and its correlation with various facets of consumer engagement on live streaming platforms were all confirmed. Similarly, hypotheses 2a, 2b, and 2c, which linked perceived ease of use with cognitive, emotional, and behavioural engagements respectively, were also supported. For hypotheses 3a, 3b, and 3c, a clear positive correlation was observed between different types of consumer engagement and brand trust, reinforcing the symbiotic relationship between engagement and trust-building. Finally, hypotheses 4a, 4b, and 4c posited a positive relationship between different spectrums of consumer engagement and brand attitude, which the data robustly substantiated. Altogether, these consistently affirmative outcomes underscore the paramount importance of both perceived utility and ease of use, as well as the multifaceted nature of engagement, in influencing brand perceptions and attitudes in the realm of live streaming platforms.

Table 15: Summary of hypotheses testing

Hypothesis	Result
1a	Supported
1b	Supported
1c	Supported
2a	Supported
2b	Supported
2c	Supported
3a	Supported
3b	Supported
3c	Supported
4a	Supported
4b	Supported
4c	Supported

5.0 Discussion

This chapter critically discusses the key research findings, setting them against the backdrop of existing academic studies with the goal to distinguish how the results line up with what's already known and understood in the field of live streaming platforms. Furthermore, through triangulating the data findings with empirical academic knowledge, this chapter discusses whether current theories are supported and implications of potential new insights. The following sections provides a structured look at the research findings in alignment to the proposed research objectives and questions in chapter one.

5.1 Perceived usefulness influence on consumer engagement on live streaming platforms

The role of perceived usefulness (PU) in determining consumer engagement across cognitive, emotional, and behavioural dimensions on live streaming platforms has been a topic of rigorous academic inquiry. The robustness of the correlations found in the present study, encompassing all three dimensions, provides an invaluable empirical contribution to this scholarly conversation.

For cognitive engagement (CE), a notably strong positive correlation of $r = 0.914$ was found with perceived usefulness. This quantitative affirmation resonates with Ajibade's (2018) assertion, which accentuates the importance of content quality, interactivity, and the perceived genuineness in fostering a sense of utility. When online millennials discern a heightened utility in the content they're consuming, they exhibit greater levels of attention and absorption, a finding that aligns with Ashraf et al. (2016). Given the fast-paced digital landscape millennials navigate, such a strong cognitive association underscores the significance of meeting their utility expectations to capture their undivided attention.

In terms of emotional engagement (EE), the data revealed an almost impeccable correlation ($r = 0.928$) with perceived usefulness. Qing & Jin (2022) had previously alluded to the deeply personal nature of deriving value from live streaming, highlighting the inherent subjectivity of such perceptions. The empirical evidence suggests that when Chinese millennials find utility in the content of platforms like Douyin or Kuaishou, it isn't merely a cognitive acknowledgment. Instead, there's a profound emotional resonance, which could be attributed to the cultural and socio-digital context they inhabit.

The behavioural dimension of engagement (BE) offered a correlation coefficient of 0.913 with perceived usefulness. This facet of engagement, as detailed by Ashraf et al. (2016), pertains to tangible actions and interactions. Drawing parallels with the Technology Acceptance Model (TAM), as discussed by Basuki et al. (2021), the data underscores that when users, especially millennials, recognize the inherent usefulness of a platform, they are more likely to interact and invest their time. This behavioural inclination suggests a proactive approach to consuming content, which could be the byproduct of a digital age where millennials are spoilt for choice, and hence, only platforms that offer tangible utility witness active engagement.

Overall, the empirical findings offer a comprehensive insight into research objective 1, substantiating the significant role of perceived usefulness in shaping the engagement patterns of Chinese millennials on live streaming platforms. These platforms, to remain relevant and efficacious, must understand and continually adapt to the utility expectations of this demographic. The intricate dynamics between utility perceptions and engagement, as showcased by the data,

warrants designated emphasis, where understanding the millennials' evolving digital lexicon becomes crucial for sustained engagement.

5.2 Perceived ease of use influence on consumer engagement on live streaming platforms

Perceived ease of use, as articulated by Bründl et al. (2017), addresses the notion of a technology being effortlessly usable. Within the realm of live streaming, this conceptualization primarily gravitates around the intuitive nature of platforms, encompassing both marketers who present content and consumers who interact with it. The presented data, with its substantial Pearson correlation coefficients between perceived ease of use (PEOU) and the three facets of engagement including cognitive (CE), emotional (EE) and behavioural (BE) engagement, stands as empirical testimony to these theoretical constructs.

Camilleri & Falzon (2021) emphasized the nuances influencing the propensity to engage with live streaming platforms. Notably, the concept of 'flow' resonates deeply with the current data findings. 'Flow' encompasses the fluidity and seamlessness of a user's experience, reinforcing the paramount importance of ease of use. This is clearly reflected in our findings, as platforms perceived to have a high ease of use also scored high on cognitive engagement. Wongkitrungrueng et al. (2020) and Ashraf et al. (2016) offered insights into the balance of platform usability and relationship-building, particularly in online contexts. The robust positive correlation between PEOU and EE in our data echoes their assertion: platforms that are straightforward to navigate not only simplify access but are also pivotal in fostering deep emotional ties with content.

Su (2019) further elucidated this dialogue, pinpointing the significant connection between a platform's ease of use and the sheer enjoyment and engagement it elicits. This is evident in our data, suggesting that when users perceive a platform as simple and instinctual, their levels of emotional and behavioural engagement amplify. Wratsari et al. (2022) fortified this perspective, suggesting that during unprecedented times, such as the COVID-19 pandemic, platforms that were perceived as user-friendly enabled digital marketers to curate content that resonated more profoundly, spiking engagement levels. Again, this aligns seamlessly with the data patterns observed, where higher perceived ease of use was synonymous with greater behavioural engagement.

In light of the above empirical findings that shows strong correlations between ease of use and the three engagement dimensions, this validates the overarching consensus within the academic literature. The seamless interface doesn't merely signify usability, acting as a linchpin fostering deeper connections, enriching interactions, and magnifying engagement across cognitive, emotional, and behavioural spheres. The hypotheses H2a, H2b, and H2c are not just statistically supported but are deeply entrenched in academic discourse, establishing the undeniable role of perceived ease of use in shaping consumer engagement on live streaming platforms.

5.3 Impacts of consumer engagement towards brand trust (customer-based brand equity) on live streaming platforms

The prolific rise of live streaming platforms has underscored the fundamental importance of consumer engagement and its undoubted influence on brand trust, acting as an underpinning pillar of customer-based brand equity (Hollebeek & Macky, 2019). The data patterns suggest that the

facets of cognitive, emotional and behavioural engagement each forge a robust and direct correlation with brand trust, especially among online Chinese millennials.

Cambra-Fierro et al. (2021) noted that customer-based brand equity, underpinned by elements such as brand trust, can have cascading effects on customer satisfaction, reputation, and consequent engagement. The correlations identified in the dataset, especially with the high Pearson coefficients, firmly resonate with Cambra-Fierro et al.'s narrative. It becomes palpable that when brands cultivate engagement on live streaming platforms, it translates into reinforced brand trust, mirroring Kim & Ko's (2012) assertion that nurturing customer engagement leads to elevated brand equity.

Chairunnisa & Ruswanti (2023) highlighted the consumer's journey from brand awareness to the pinnacle of trust, loyalty, and advocacy. The stages of this trajectory are mirrored in the data findings, where different facets of engagement (cognitive, emotional, behavioural) potentially guide a viewer through this very journey, with trust as the central anchor. Kumar et al. (2010) had cemented this notion, advocating that authentic customer engagement can catalyse brand trust, pushing consumers towards staunch brand loyalty. The dataset affirms this continuum, making it apparent that engaging content, when processed, resonated, and interacted with, unequivocally steers trust in the associated brand.

Moreover, Samarah et al. (2022) encapsulated the synergistic relationship between brand engagement and trust within social media. Transposing their insights to live streaming platforms, the gathered data aligns with their perspective. As brands amplify their interactive presence, consumer engagement surges, and this engagement, when fortified by brand trust, evolves into an enduring brand-consumer bond. Brodie et al. (2011) had cast light on this cyclical, intertwined dance between trust and engagement, also echoing the patterns of the gathered data findings, supporting Hollebeek & Macky (2019) arguments that valuable brand content fosters engagement, trust, and eventually enriches brand equity.

In light of the empirical literature, the data findings support and extends beyond empirical academic knowledge. While the extant literature has carved the blueprint, this research specifically tailors these insights to the live streaming domain, emphasizing its unique dynamics and the imperatives of catering to online Chinese millennials. The correlations found between the facets of consumer engagement and brand trust, as posited in the hypotheses (H3a, H3b, H3c) are fortified by empirical studies, thereby painting a holistic, aligned, and deeper understanding of consumer behaviour on live streaming platforms.

5.4 Impacts of consumer engagement towards brand attitude (customer-based brand equity) on live streaming platforms

The digital zeitgeist of the current era, driven by technological advancements, has fundamentally altered consumer-brand dynamics. Within this paradigm, 'brand attitude', as characterized by Hollebeek & Macky (2019) emerges as a pivotal component of customer-based brand equity. The robust Pearson correlation coefficient of 0.932 between consumers' Cognitive Engagement (CE) and Brand Attitude (BA) on live streaming platforms robustly corroborates Hollebeek & Macky's (2019) assertion that 'brand attitude' is integral to customer-based brand equity. This is further supported by Keller (1993), who emphasized brand attitude's pivotal role in determining a brand's equity. Wang & Yang (2010) had already pointed towards the implications of cognitive

engagement on brand attitude, and our data resonates with this, highlighting that mentally engaged consumers on live streaming platforms are more likely to develop a positive brand sentiment.

This perspective extends to the domain of Emotional Engagement (EE), where our data, marked by a significant Pearson coefficient of 0.950, reveals a compelling association between EE and BA. This aligns with the narrative from Zeithaml et al. (2013), emphasizing the profound influence of real-time interactions on brand attitudes. The idea is that live streaming platforms, through their instantaneous feedback mechanisms and emotionally resonant content, bolster a consumer's emotional connection, and by extension, their overall brand perception.

The relationship between consumers' Behavioural Engagement (BE) and BA, characterized by a notable Pearson coefficient of 0.937 in the data, offers further depth to this discourse. Wang & Yang (2010) stressed the direct influence of a consumer's behavioural inclinations on brand attitude. Our findings emphasize this, showcasing those active interactions, such as content sharing or recommendations on live streaming platforms, enhance the consumer-brand connection. Park et al. (2013) added another layer to this understanding, suggesting that enriching online experiences resulting from effective engagement strategies lead to favourable brand attitudes. This sentiment is echoed in the gathered data, reinforcing the concept that positive behavioural engagements on live streaming platforms can significantly elevate brand perceptions.

Incorporating insights from Chaudhuri & Holbrook (2021), it becomes evident that genuine engagement and the consequent positive brand attitude can lay the foundation for brand loyalty. With an array of brand choices available to consumers today, this correlation underscores the significance of fostering a positive brand attitude through authentic customer engagement. Overall, the data patterns strongly support and complement the empirical academic insights on the relationship between customer engagement and brand attitude, particularly in the context of live streaming platforms. These insights become all the more pertinent for brands striving to navigate the intricacies of the digital domain and resonate with the dynamic demographic of online Chinese millennials.

6. Conclusion

The transformative force of digital technology has consistently redefined the contours of brand-consumer interactions, with live streaming platforms standing at the forefront of this evolution. Anchored by a set of research objectives and questions, this study critically explores the dynamics governing Chinese millennials' engagement with brands on Chinese live-streaming platforms including Douyin, Kuaishou, and Taobao Live. The research findings underscored the pivotal role that perceived usefulness plays in shaping consumer engagement on these platforms. When users discerned palpable benefits and value propositions from a live-streaming platform, their engagement levels surged. In essence, for the digitally native Chinese millennials, the utility of a platform isn't confined to its mere functionality, it extends into the realm of experience. A platform's usefulness becomes intertwined with the richness and depth of the experiences it curates for its users.

Alternatively, in terms of user friendliness/ perceived ease of use, the research indicates that platforms emphasizing easy-to-use designs and smooth user experiences saw increased user engagement. Chinese millennials, deeply rooted in a fast-paced digital world, naturally prefer platforms that align well with their digital habits, avoiding platforms that are difficult to navigate.

The link between customer engagement and brand trust was a significant focus of this study. The data clearly showed a strong connection between these areas. Within the world of live-streaming, consistent and meaningful engagement stood out as the key to building and strengthening brand trust among online Chinese millennials.

One of the standout findings was the close relationship between customer engagement and brand attitudes. The research highlighted that live-streaming platforms that can capture their viewers' attention both mentally, emotionally, and through actions have a major impact on how viewers feel about the related brands. A viewer who is fully engaged is more likely to develop a positive view of a brand, setting the stage for lasting brand loyalty. Overall, this research firmly places live streaming platforms as crucial tools in shaping the relationship between brands and consumers, especially for the dynamic group of online Chinese millennials. The relationships between perceived platform usefulness, ease of use, levels of engagement, brand trust and brand attitudes provide a clear guide for brands looking to stand out in a crowded digital landscape. In this complex online world, genuine engagement stands out as the main direction for brands aiming to build trust, create positive brand views, and make a lasting impression on their audience.

6.1 Limitations and implications for future studies

This research, though comprehensive, bears inherent constraints that need acknowledgment. Primarily, the concentration on the millennial segment within China's digital sphere might curtail the generalizability of findings to other demographic or cultural subsets interacting on these platforms. This narrow demographic lens, while offering detailed insights, risks overlooking the diverse digital behaviours of other age or cultural groups. Moreover, whilst the quantitative methodologies employed in this research provide a rigorous framework for data analysis, it might inadvertently overlook the intricate emotional and experiential facets that a qualitative approach could unearth.

Additionally, more in-depth examination into personal narratives through methods such as interviews or ethnographic research might offer a fuller picture of the user experience. As for future studies, there's a wealth of potential research trajectories in the live-streaming realm that warrants continuous studies. The advent of the Gen-Z demographic, known for its unique digital behaviours, warrants an investigation to discern its live-streaming patterns and preferences. Such insights could aid brands in tailoring their digital strategies for this burgeoning audience segment.

The confluence of e-commerce with live-streaming, often termed 'live commerce', is an emergent trend demanding scholarly attention. This integration, brimming with opportunities and challenges, could be a focal point for future research, especially in understanding how real-time engagements shape buying behaviours and the pivotal role of influencer credibility. Furthermore, as advanced technologies like augmented and virtual reality reach closer to mainstream adoption, their potential integration with live-streaming platforms presents an intriguing research avenue. It would be invaluable to discern how these immersive experiences might recalibrate user engagement metrics and reshape brand perceptions within the live-streaming context.

7. References

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