Research article

Purchase intentions for cultural heritage products in E-commerce live streaming: An ABC attitude theory analysis

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A B S T R A C T

With the increasing popularity of e-commerce live streaming, understanding purchase intentions for cultural heritage products in this context is crucial, prompting the analysis based on the ABC attitude theory. This study investigates how creative products of intangible cultural heritage influence consumers' purchase intentions within the framework of e-commerce live streaming. It further explores the mediating influence of consumer satisfaction in this association, utilizing the ABC attitude theory. The research design encompasses dimensions related to creative products of intangible cultural heritage, e-customer satisfaction, and purchase intention. Confirmatory factor analysis and Structural Equation Modeling (SEM) are utilized to examine the research hypotheses. The study reveals that perceived product quality, perceived interactivity, and professionalism among streamer factors, as well as perceived entertainment among scene factors, positively influence consumer satisfaction. Additionally, intangible cultural heritage has a positive effect on consumers' purchase intention toward creative products of intangible cultural heritage. Furthermore, consumer satisfaction serves as a mediating factor in the relationship between perceived product quality, perceived professionalism and interactivity, perceived entertainment, and consumers' purchase intention. This study is limited to creative products of intangible cultural heritage and involved a relatively small sample size. Moreover, certain perceptual dimensions of e-commerce live streaming were excluded from the analysis. Originality/value – This study contributes to the existing literature on the ABC theory by developing a model that examines consumer satisfaction and purchase intention. The model employed in this study integrates perceptual dimensions pertaining to creative products of intangible cultural heritage within the framework of e-commerce live streaming, utilizing the ABC theory. Additionally, this research contributes to addressing a gap in the existing literature by specifically focusing on the category of creative products of intangible cultural heritage within the broader discourse on dimensions in e-commerce live streaming. Thus, this study presents numerous diverse perspectives that can serve as a basis for further research into the integration of e-commerce live streaming and cultural and creative products associated with intangible cultural heritage.

1. Introduction

China boasts a profoundly rich culture steeped in a remarkably extensive history. Within this cultural tapestry, intangible cultural

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heritage assumes a paramount role as an inseparable component of China's traditional culture, embodying the enduring legacy of Chinese civilization. It encompasses traditional cultural beliefs and serves as a reflection of the productive forces, production relationships, and cognitive capacities of individuals during specific historical epochs. In recent years, the notion of cultural confidence has gained prominence, resulting in heightened attention and concerted efforts dedicated to the preservation and development of intangible cultural heritage. Furthermore, the integration of non-genetic innovation with the cultural and creative industry has stimulated the expansion of the market economy and driven progress in the cultural sector [1–4].

Drawing upon the ABC model of consumer behavior, which encompasses the cognitive-emotional-behavioral components of attitude, the cognitive aspect represents viewers' perception during the live streaming of creative products of intangible cultural heritage (C), satisfaction represents the emotional component (A), and purchase intention represents the behavioral component (B) [5–9]. Within this context, the cognitive components (C) encompass various elements such as Chinese creative products, live-streaming scenes, and the personal influence of streamers. Cultural and creative products are characterized by attributes such as product quality and cultural connotation. Live-streaming scenes provide experiences and entertainment, while the personal influence of streamers manifests through their professionalism and interactivity. The emotional component corresponds to consumer satisfaction, which includes the consumer's recognition of cultural and creative products and their subjective feelings of liking or disliking them. Finally, the behavioral component represents consumers' purchase intentions. Undertaking research on the live streaming of products holds significant value in gaining insights into consumers' subjective attitudes and emotions. Such studies play a crucial role in guiding consumers' comprehension and perception of products, fulfilling their needs, and ultimately enhancing customer satisfaction. Moreover, these research endeavors have the potential to exert a direct influence on consumers' purchase intentions [10–14]. This study analyzes consumers' purchase intentions for intangible cultural heritage creative products in e-commerce live streaming, considering the role of consumer satisfaction as a mediator. Applying the ABC Attitude Theory, it examines factors like product quality, interactivity, professionalism, and entertainment that influence consumer satisfaction. The findings demonstrate a positive influence of intangible cultural heritage on consumers' purchase intentions. By integrating consumer satisfaction and purchase intention, the study contributes to the understanding of e-commerce live streaming within the ABC theory framework. It also provides fresh insights into the dimensions of e-commerce live streaming and their connection to cultural heritage. Currently, studies examining national intangible cultural heritage products have mostly focused on their research design and audience satisfaction concerning offline intangible cultural heritage, among other aspects. Studies investigating consumers' purchase intention toward creative products of intangible cultural heritage in online live broadcasting have been limited [15–18]. The live streaming of intangible cultural heritage has emerged as a significant avenue for consumers to engage with and purchase creative products within this domain. While several scholars have examined consumers' purchase intentions in the context of e-commerce live streaming and explored the influence of streamers, scenes, and product discounts on these intentions, fewer studies have specifically focused on this unique category of live streaming. In this study, we concentrate on the live streaming broadcast rooms showcasing creative products of intangible cultural heritage as our research subject. Our aim is to analyze the impact of scenes, products, and streamers' characteristics in e-commerce live streaming on consumers' purchase intentions. In order to accomplish this, we develop a theoretical model based on the ABC framework. This model encompasses cognitive components (product factors, streamer factors, scene factors) (C), emotional components (consumers' shopping satisfaction) (A), and behavioral components (consumers' purchase intentions) (B) that are relevant to cultural and creative products of intangible cultural heritage in the context of e-commerce live streaming. By employing this model, we are able to investigate consumers' purchase intentions specifically pertaining to creative products of intangible cultural heritage within the realm of e-commerce live streaming.

Although the strengths of Kurpierz et al. [17] theory are not explicitly mentioned, based on the information provided, several potential strengths can be speculated. These strengths include a comprehensive approach that considers multiple dimensions and factors relevant to purchase intentions for cultural heritage products in e-commerce live streaming. By encompassing aspects such as product quality, interactivity, professionalism, entertainment, and consumer satisfaction, their theory offers a more holistic understanding of consumer behavior in this context. Furthermore, the integration of the ABC attitude theory provides a strong foundation for examining consumer attitudes, emotions, and behaviors within the realm of e-commerce live streaming [16,17]. The cognitive-emotional-behavioral components of the ABC attitude theory offer a robust framework for analyzing the complex relationships between variables and their influence on purchase intentions. Another strength lies in the theory's specific focus on creative products of intangible cultural heritage, which sets it apart from theories with broader scopes. This methodological rigor contributes to the theory's robustness in comparison to theories lacking empirical support [17]. Prior research has explored purchase intentions in the realm of e-commerce live streaming, but there is a notable research gap concerning the specific examination of purchase intentions for creative products of intangible cultural heritage in this context. Previous studies have primarily focused on various aspects of e-commerce live streaming, including the impact of streamers, scene factors, and product discounts. However, limited research has been conducted on the distinct category of live streaming for creative products of intangible cultural heritage. This study aims to address this gap by investigating how scenes, products, and streamers' characteristics influence consumers' purchase intentions for creative products of intangible cultural heritage in the context of e-commerce live streaming. The objective is to analyze the impact of scenes, products, and streamers' characteristics within e-commerce live streaming on consumers' purchase intentions for creative products of intangible cultural heritage. The study seeks to comprehend the cognitive, emotional, and behavioral components involved in consumers' attitudes and behaviors towards these products within the context of live streaming. This research contributes to the existing body of knowledge by focusing on the specific category of live streaming for creative products of intangible cultural heritage, applying the ABC Attitude Theory to examine factors such as product quality, interactivity, professionalism, and entertainment that impact consumer satisfaction and purchase intentions. By integrating consumer satisfaction as a mediator, the study provides fresh insights into the dimensions of e-commerce live streaming and its connection to cultural heritage. The aim is to investigate consumers'

purchase intentions within this domain and enhance understanding of their attitudes and behaviors through the analysis of scenes, products, and streamers' characteristics.

2. Literature review

Attitude has become a crucial factor for understanding online retailing. Attitudes help predict behavior, and consumers' attitudes can affect their purchase intentions. According to this theory, attitude comprises three components, namely cognition, affect, and behavior. The cognitive component refers to an individual's cognition of the object of attitude through perception and attention after receiving external stimuli. In this study context, intangible cultural heritage is the basis for producing emotion and behavior. The affective component refers to the subjective feelings of individuals toward the object of attitude after cognition, which influences human behavior. The behavioral component refers to the possibility of an individual to take the initiative to show a certain behavior or performance after attaining cognition and generating emotions. Accordingly, the ABC attitude model with three components and a unified cycle is formed. This model can effectively reflect the relation among consumer cognition, emotion, and behavioral intention. In fact, the ABC model of attitude is often used to study consumers' purchasing behavior. Based on the ABC attitude theory, Zhang et al. (2013) [12] used an empirical analysis to prove that consumers' brand attitude toward luxury goods considerably affects their purchase behavior. Based on the ABC attitude theory, this study constructs a theoretical analysis model of consumers' purchase intention toward creative products of intangible cultural heritage in e-commerce live streaming from three perspectives: consumer cognition, consumer emotion, and consumer behavioral tendency. This research extends the current ABC attitude theory by modeling the dimensions of e-commerce live streaming as an independent variable affecting e-customer satisfaction and purchase intention. Accordingly, this paper provides a useful structure for retailers, explaining the effects of the dimensions of e-commerce live streaming on online retailing of creative products of intangible cultural heritage.

3. Hypothesis development

3.1. Heritage, satisfaction, E-commerce, factors

Products are essential elements in e-commerce live streaming. Products can arouse an emotional connection between users and the context behind the products, aiming at multi-level needs of consumers. In live-streaming shopping, consumers understand the functionality, innovation, and service of non-legacy creative products through a full range of immersive experience, enabling them to judge whether current live-streaming products meet their needs. Studies based on the 5 GAP model have proved that perceived quality positively affects satisfaction. Therefore, the following hypothesis is proposed:

H1   The perceived quality of intangible cultural heritage creative products in e-commerce live streaming significantly affects consumer satisfaction.

Given the research questions posed in this study, descriptive statistics, correlation analysis, and Structural Equation Modeling (SEM) have been selected as the suitable methods to investigate the relationships among the variables. These methods allow for a comprehensive examination of the data and facilitate a deeper understanding of the interdependencies among the variables under investigation.

Descriptive statistics provide a concise summary and characterization of the sample, offering initial insights into data patterns. Correlation analysis is utilized to assess the strength and direction of relationships between variables at the bivariate level. SEM, on the other hand, enables a more rigorous multivariate analysis to test hypotheses involving direct and indirect effects within the proposed theoretical model. Alternative methods that could have been considered include qualitative research techniques such as interviews to gain a deeper understanding of participants' perspectives. However, the primary objective of this study was to empirically examine relationships using a large sample size. While alternative methods such as multiple regression analysis could have been employed, SEM was chosen to enable a comprehensive analysis of all relationships simultaneously, while accounting for measurement error. Although experimental designs could have been utilized to establish causality, the research questions focused on observing naturally occurring patterns rather than manipulating variables. While other advanced techniques like neural networks could have been considered, the selected methods are most appropriate given the non-experimental nature of the research design and the aim of empirically testing hypothesized relationships. To enhance internal validity, multiple control variables were included to account for potential confounding factors. Moreover, transparent reporting of methodology and results contributes to construct validity, enabling critical evaluation of the study's results.

3.2. Streamer factors and consumer satisfaction of intangible cultural heritage cultural and creative products under live e-commerce

E-commerce streamers, who play a central role in e-commerce live streaming, compensate for the limitations of traditional online shopping by showcasing product information and usage experiences to viewers in the form of engaging performances. They serve as a vital link between products or brands and consumers, offering professional product knowledge and facilitating real-time and efficient interactions. As a kind of e-commerce anchors, intangible cultural heritage streamers possess attributes of e-commerce streamers and cultural identity of non-genetic inheritors, enhancing their appeal to consumers.

Interactivity refers to a method of direct communication between the streamer and the user by relying on the visibility and real-time function of the live broadcast on the network (intangible cultural heritage is not limited by time and space) [19–21]. This is an

enhancement of traditional e-commerce and a significant component of live streaming in e-commerce. Through interactive engagement, it enhances the shopping experience and creates a sense of customer presence, allowing individuals to enjoy a relaxed and psychologically gratifying purchasing process [22–24]. The streamer of intangible cultural heritage creative products employs live streaming to showcase the skill-making process, effectively presenting the culture, value, design concepts, and ideas to consumers. They also address consumer doubts and fulfill their needs in real time, thereby enhancing consumer awareness of intangible cultural heritage products. This, in turn, evokes emotional resonance, strengthens cultural identity, and enhances the embodiment of pleasure and satisfaction for consumers. Therefore, the following hypothesis is proposed:

H2a. The perceived interactivity of intangible cultural heritage cultural and creative products in e-commerce live streaming significantly affects consumer satisfaction. Based on the availability of information, it is widely acknowledged that expert information holds significant value, thereby exerting a considerable influence on consumer behavior. In the context of e-commerce streaming, when streamers recommend products, they present product information from a professional and authoritative standpoint, thereby alleviating the burden on consumers to search for specific items. Consequently, this enhances consumers' understanding of the products and contributes to their overall experience and satisfaction with the live streaming platform. In the realm of live e-commerce, streamers specializing in intangible cultural heritage assume a dual identity as inheritors of intangible cultural heritage and as streamers. Consequently, they are expected to possess a high level of professionalism and exhibit notable cultural attributes [25–32]. These factors significantly impact consumer satisfaction with the shopping experience. Hence, this paper formulates the following hypothesis:

H2b. The perceived professionalism of intangible cultural heritage cultural and creative products in live e-commerce significantly affects consumer satisfaction.

3.3. Scenario factors and consumer satisfaction of intangible heritage cultural and creative products under live e-commerce

E-commerce live streaming capitalizes on 5G video technology to recreate offline store settings and establish virtual and personalized social environments. This creates a captivating "stage" for consumers, enabling them to immerse themselves in the ambiance crafted by the streamers, offering a physical and mental respite while indulging in the shopping experience. Through the utilization of live-streaming technology, streamers adeptly present ancient traditional culture in a manner that resonates with contemporary individuals, effectively bridging the gap and eliminating any sense of unfamiliarity or detachment. As a result, cultural expectations of consumers are met, evoking a sense of joy and contentment. Generally, the higher the perceived level of entertainment, the greater the quality of the consumers' shopping experience and the higher their level of satisfaction. Therefore, this paper posits the following hypothesis:

H3. Perceived entertainment of intangible heritage cultural and creative products in e-commerce live streaming significantly affects consumer satisfaction.

3.4. Factors for intangible heritage cultural and creative products and consumers' purchase intention in e-commerce live streaming

In the context of e-commerce live streaming, perceived product quality refers to consumers' subjective evaluation of products, which involves the integration of multiple messages. Generally, a higher perceived product quality leads to an enhanced shopping experience for consumers. Zeithaml et al. [10] posit that consumers' perception of product or service quality has a significant impact on their purchasing behavior. In today's materialistic society, consumers place greater emphasis on the perception of product quality, reliability, technological aspects, as well as the symbolic significance associated with the product. The distinctive attributes of intangible heritage cultural and creative products, such as captivating narratives, innovative designs, and unique characteristics, contribute to elevating the quality of cultural and creative products. This aligns with consumers' psychological expectations for products, fulfills their expectations of product quality, and subsequently enhances their purchase intention. Therefore, this paper postulates the following hypothesis:

H4. The perceived quality of intangible heritage cultural and creative products in e-commerce live streaming significantly affects consumers' purchase intention.

3.5. Streamer factors and consumer purchase intention of intangible heritage cultural and creative products in e-commerce live streaming

In the realm of e-commerce live broadcasting, the anchor assumes a pivotal role as an opinion leader, serving as a bridge between businesses and consumers within the live broadcasting space. Anchors possess notable expertise and social attributes, solidifying their position as key influencers. Streamers often embody the role of intangible cultural heritage inheritors, carrying cultural labels that enhance their credibility. With their profound product knowledge and effective sales communication skills, they directly impact consumers' purchase intention.

As a result, the following hypotheses are proposed:

H5a. The perceived interaction of intangible heritage cultural and creative products in e-commerce live streaming has a significant impact on consumers' purchase intention.

H5b. The perceived professionalism of intangible heritage cultural and creative products in e-commerce live streaming has a

significant influence on consumers' purchase intention.

3.6. Scenario factors and purchase intention toward intangible heritage cultural and creative products under live e-commerce

As people's material life and economic standards improve, consumers are being involved in shopping to satisfy their needs, as well as to have a pleasant experience. The shopping atmosphere created by the live-streaming scenario creates a visual and auditory feast for consumers, creating sensory stimulation and reconstructing the scenario of intangible cultural heritage communication, facilitating the transformation of intangible cultural heritage communication elements, and bringing the distant and ancient intangible cultural heritage closer to the young modern consumers. Consumers are more willing to purchase after being wrapped in an entertaining scene atmosphere [5]. Therefore, this paper proposes the following hypothesis:

H6. The perceived entertainment of intangible heritage cultural and creative products in e-commerce live streaming significantly impacts consumers' purchase intention.

3.7. Consumer satisfaction and purchase intention

Consumer satisfaction encompasses the degree to which consumers' perceptions of the online shopping experience align with their expectations. It is widely recognized that satisfaction plays a crucial role in shaping consumers' ongoing intention to engage in online shopping and is instrumental in establishing and nurturing long-term customer loyalty. Drawing upon previous research results, it can be asserted that satisfaction serves as a pivotal factor influencing consumers' propensity to make purchases. Hence, this paper presents the following hypothesis:

H7. Consumer satisfaction with intangible cultural heritage cultural and creative products in e-commerce live streaming significantly affects purchase intention.

Hypothesis has been separately developed for each e-commerce live-streaming dimension.

4. Research methodology

The methodology for this study involves a quantitative research approach to examine consumers' purchase intentions for intangible cultural heritage creative products in the context of e-commerce live streaming. To ensure the sample's representativeness, a purposive sampling method was employed, specifically targeting individuals who actively engaged in e-commerce live streaming and demonstrated a significant interest in intangible cultural heritage products. Data was collected using online surveys, facilitating convenient and widespread participation. The collected data underwent statistical analysis, including regression analysis and mediation analysis, to explore the proposed relationships and investigate the role of consumer satisfaction as a mediator. This analysis generated empirical evidence regarding the impact of different factors on customer satisfaction and purchase intention, while also examining the mediating effect of consumer satisfaction.

Study design refers to the collection and analysis of data pertaining to intangible cultural heritage, with an aim to combine the relevance of the study purpose with the economy of the procedure. After a review of literature on data collection methods, this research used quantitative research methods to address the objectives. This approach enables the distribution of survey forms to a large number of respondents across different geographical locations at a relatively low cost, in a short time, and with less effort. The results of this study have significant theoretical implications. Firstly, by applying the ABC Attitude Theory to the context of e-commerce live streaming and intangible cultural heritage creative products, this study contributes to the existing literature on consumer satisfaction. It expands our understanding of consumer behavior in this specific domain by examining the dimensions of perceived product quality, interactivity, professionalism, and entertainment. Additionally, the study explores the mediating role of consumer satisfaction, shedding light on the underlying mechanisms that influence consumers' purchase intentions in the context of e-commerce live streaming. Furthermore, this study adds to the body of knowledge on the influence of intangible cultural heritage on consumers' purchase intentions. By demonstrating the positive impact of intangible cultural heritage, the research highlights the importance of preserving and promoting cultural heritage within the e-commerce live streaming context. These results contribute to the broader discourse surrounding cultural heritage preservation, consumer behavior, and the seamless integration of traditional practices with modern technology platforms. The practical implications of this study hold relevance for practitioners and marketers engaged in the realm of e-commerce live streaming, particularly those involved in the promotion and sale of intangible cultural heritage creative products. The study highlights the importance of prioritizing factors such as product quality, interactivity, professionalism, and entertainment to enhance consumer satisfaction. By emphasizing these dimensions, practitioners can craft engaging and immersive experiences for consumers, ultimately influencing their satisfaction levels and purchase intentions [30–34]. Furthermore, this study underscores the importance of integrating intangible cultural heritage elements into product offerings and marketing strategies. By accentuating the cultural heritage aspect, practitioners can elevate the appeal and desirability of their creative products, thereby positively impacting consumers' purchase intentions. Leveraging the distinctive cultural heritage associated with these products can also provide a competitive edge in the e-commerce live streaming market.

5. Result

5.1. Descriptive statistics of the sample

Initially, a descriptive statistical analysis was performed on the research samples, and the findings are presented in Table 1. Among the 309 respondents, men constituted 47.57% and women constituted 52.43%, indicating that non-legacy creative products were purchased predominantly by women. In terms of age, 30.74% of the respondents were aged 18–25 years, 19.74% were aged 26–30 years, 20.06% were aged 31–40 years, 18.77% were aged 41–50 years, 9.06% were aged 51–60 years, and 1.62% were aged ≥60 years.

The analysis reveals that the primary consumers of cultural and creative products related to intangible cultural heritage in the e-commerce live streaming sector are predominantly between the ages of 18 and 40, with a significant representation of middle-aged and young individuals. In terms of educational attainment, a substantial proportion, accounting for 25.57%, possess a junior college degree, while 57.61% hold a bachelor's degree. Regarding monthly disposable income, 21.36% of respondents reported an income of less than 1500 yuan, 32.36% fell within the 1500–3000-yuan income range, 14.89% belonged to the 3000–8000 yuan income bracket, 22.33% had an income of 8000–15,000 yuan, and 9.06% reported an income exceeding 15,000 yuan. Consequently, it can be inferred that individuals with low to moderate incomes are actively purchasing cultural and creative products associated with intangible cultural heritage through live e-commerce platforms. From the perspective of occupational background, public officer (civil servant or public institution staff member) constituted 36.89%, professional and technical staff constituted 13.92%, commercial and service staff constituted 6.9%, production and transportation equipment operators constituted 4.85%, students constituted 21.36%, and freelancers constituted 16.18%. Accordingly, individuals with different professional backgrounds may purchase cultural and creative products of intangible cultural heritage under live e-commerce. In terms of the frequency and duration of watching e-commerce live streaming, 15.53% watched it once or less per month, 21.07% watched it more than 8 times, and nearly 85% watched it for more than 30 min each time, indicating that the participants were familiar with e-commerce live streaming [31–34]. Numerous academic investigations have examined the complex effects of digital transformation on innovation performance, the correlation between sustainable development plans for resource cities and corporate sustainability, the influence of board characteristics on greenwashing behavior and firm value, as well as the understanding of circular economy practices and their consequences for performance. These studies offer comprehensive insights into various aspects of organizational dynamics and environmental management [35–40].

Table 1
Basic information of valid respondents.

Item	Cohort	Count	Ratio (%)
Gender	Male	147	47.57
	Female	162	52.43
Age	18–25	95	30.74
	26–30	61	19.74
	31–40	62	20.06
	41–50	58	18.77
	51–60	28	9.06
	>60	5	1.62
Educational level	High school degree or below	17	5.5
	Associate degree	79	25.57
	Bachelor's degree	178	57.61
	Master's degree	25	8.09
	PHD or higher	10	3.24
Monthly disposable income	<1500	66	21.36
	1501–3000	100	32.36
	3001–8000	46	14.89
	8001–15000	69	22.33
	>15,000	28	9.06
Occupation	Student	66	21.36
	Public officer (civil servant or public institution staff member)	114	36.89
	Freelancer	50	16.18
	Professional and technical staff	43	13.92
	Commercial and service staff	21	6.8
	Operators of production and transport equipment	15	4.85
Average monthly watching e-commerce live streaming frequency	<1	48	15.53
	2–4	80	25.89
	5–7	116	37.54
	>8	65	21.04
Average time spent watching e-commerce live streaming	<10 min	47	15.21
	<30 min	81	26.21
	<1 h	84	27.18
	<2 hour	78	25.24
	>2 hour	19	6.15
Have you seen the live streaming of ICH products	1	309	100
Total		309	100

5.2. Reliability and validity

Validity and reliability are commonly employed to evaluate the extent to which a scale accurately measures the intended constructs and effectively reflects objective realities. Hence, before conducting formal data analysis, a comprehensive examination of the scale's validity and reliability is necessary. Validity refers to the degree to which a test or scale accurately measures the intended characteristics. It implies that the closer the alignment between the concept and the operational definition, the higher the measurement validity. Commonly utilized indicators of validity include content validity or face validity, criterion validity, and construct validity. In this study, the Cronbach's α reliability coefficients of the variables, namely perceived product quality, perceived professionalism of streamers, perceived interactivity of streamers, perceived scenario entertainment, consumer satisfaction, and purchase intention were 0.840, 0.872, 0.876, 0.842, 0.860, and 0.868, respectively. Cronbach's α above 0.6 is acceptable. Furthermore, Bartlett's spherical shape test and Kaiser-Meyer-Olkin (KMO) measurement were carried out for variable data. The results revealed that KMO = 0.898 > 0.7 and P value was 0.000, indicating that the correlation between variables in the measurement model met the requirements. In this study, exploratory factor analysis was performed using the AMOS software to examine various constructs, including the sense of professionalism, sense of interactivity, perceived entertainment, perceived product quality, customer satisfaction, and purchase intention. The factor loadings for each latent variable were found to be above 0.6, indicating strong representation and confirming the scale's structural validity. Subsequently, confirmatory factor analysis was conducted, revealing that the average variance (AV) for each latent variable exceeded 0.5. Additionally, the combined reliability (CR) surpassed 0.8, indicating satisfactory levels of convergent validity (see Table 2 for details).

Additionally, the correlation coefficient matrix of the measured variables was examined using SPSS 26. The analysis revealed statistically significant correlations among purchase intention, perceived professionalism, consumer satisfaction, perceived product quality, perceived entertainment, and perceived interaction ($p < 0.01$). Furthermore, the square root of the average variance extracted (AVE) on the diagonal exceeded the values below the diagonal. This observation suggests that each variable exhibited a certain degree of correlation with one another while maintaining a sufficient level of discrimination. Hence, the findings confirm the satisfactory discriminant validity of the scale (refer to Table 3).

5.3. Model fit indices

The hypothesis model was examined using AMOS 26.0 software to obtain standardized coefficient solutions for the observed variables and evaluate the fit indices of the model (see Table 4). All the indices met the standard threshold for absolute fit, indicating an ideal fit of the model.

5.4. Structural equation path coefficients and hypothesis testing results

The research results of the theoretical model calculated using AMOS 26.0 are summarized, and the path coefficient of the structural equation obtained is depicted in Fig. 2. Perceived product quality of non-legacy creative products under e-commerce live streaming (0.284, P < 0.001), perceived professionalism (0.226, P < 0.001), perceived interaction (0.281, P < 0.001), and perceived

Table 2
Results of reliability and validity analyses.

The path			Factor loading	Cronbach's α	AVE	CR
PP4	<—	Perceived professionalism	0.794	0.872	0.630	0.872
PP3	<—		0.792			
PP2	<—		0.754			
PP1	<—		0.834			
PI5	<—	Interactivity of perception	0.809	0.876	0.589	0.887
PI4	<—		0.769			
PI3	<—		0.661			
PI2	<—		0.801			
PI1	<—		0.787			
PE3	<—	Perceived entertainment	0.827	0.842	0.640	0.842
PE2	<—		0.775			
PE1	<—		0.797			
PPQ3	<—	Perceived product quality	0.834	0.840	0.642	0.843
PPQ2	<—		0.726			
PPQ1	<—		0.838			
CS1	<—	Consumer satisfaction	0.823	0.860	0.675	0.861
CS2	<—		0.758			
CS3	<—		0.879			
PU5	<—	Purchase intention	0.819	0.868	0.573	0.870
PU4	<—		0.684			
PU3	<—		0.698			
PU2	<—		0.753			
PU1	<—		0.82			

Table 3
Divergent validity results.

Items	AVE	PU	CS	PPQ	PE	PI	PP
PU	0.573	0.757					
CS	0.675	0.599	0.822				
PPQ	0.642	0.494	0.520	0.801			
PE	0.640	0.505	0.471	0.327	0.800		
PI	0.589	0.523	0.504	0.388	0.333	0.767	
PP	0.630	0.479	0.437	0.308	0.298	0.323	0.794

Table 4
Modified model fit indices.

Items	Absolute fit				Parsimonious fit	Value added fit		Residual
Fit index	X_2/df	RMSEA	AGFI	GFI	PGFI	CFI	TLI	RMR
Recommended value	< 3	< 0.08	> 0.8	> 0.9	> 0.5	> 0.9	> 0.9	< 0.08
Actual value	1.136	0.021	0.992	0.920	0.731	0.992	0.991	0.058

entertainment (0.247, P < 0.001) positively affected consumer satisfaction, thus verifying H1-H3. Perceived product quality of non-legacy creative products under e-commerce live streaming (0.164, P < 0.05), perceived professionalism (0.224, P < 0.001), perceived entertainment (0.227, P < 0.001), perceived interaction (0.233, P < 0.001), and consumer satisfaction (0.211, P < 0.05) positively affected purchase intention, thus verifying H4-H7 (Table 5).

Fig. 1 illustrates the key factors that influence purchase intention for cultural heritage products in the realm of e-commerce. These factors include authenticity, product quality, cultural significance, value for money, trust and credibility, social influence, convenience and accessibility, marketing and promotion, user experience, and personal motivation and interest. Understanding and addressing these factors can help businesses optimize their strategies and enhance consumers' inclination to purchase cultural heritage products online.

Fig. 2 shows the path coefficients derived from the SEM analysis conducted in this study. SEM was utilized to investigate the intricate connections among various constructs and variables related to the influence of digital transformation on innovation performance, the relationship between sustainable development plans for resource cities and corporate sustainability, the influence of board characteristics on greenwashing behavior and firm value, and the comprehension of circular economy practices and their impact on performance.

Fig. 3 illustrates the conceptual model formulated in this study, which is based on insights derived from the literature concerning the ABC attitude and its influence on repurchase intention. The model incorporates three distinct constructs: e-commerce live-streaming dimensions (as the independent variable), repurchase intention (as the dependent variable), and consumer satisfaction (as the mediator).

5.5. Discussion

Ensuring the validity and dependability of research findings relies heavily on mitigating selection bias in samples. Various strategies can be employed to tackle this issue effectively. The utilization of random sampling techniques like simple random sampling or stratified random sampling helps promote representativeness and diminish systematic biases. Probability sampling methods such as cluster sampling or systematic sampling offer structured approaches to sample selection, minimizing bias. Expanding the sample size allows for a broader participant pool, thereby reducing the potential for sample skewness. Additionally, stratification involves dividing the population into homogeneous subgroups to address biases originating from specific subgroups. To guarantee sufficient representation of underrepresented groups or achieve a balanced sample composition, oversampling and under-sampling techniques can be employed. Oversampling involves intentionally increasing the sample size of minority or underrepresented groups to ensure their

Table 5
Hypothesis testing results.

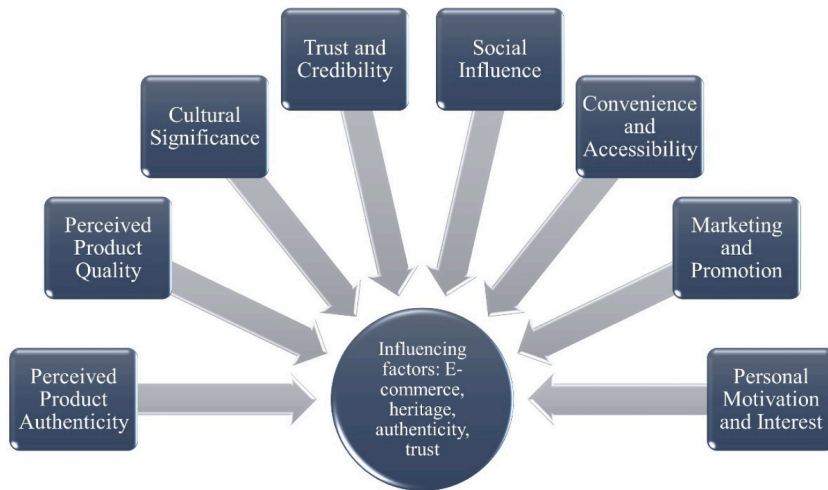| SEM path			Path coefficients	P value	Hypotheses	Testing result
CS	<—	PP	0.198	***	H2b	Confirmed
CS	<—	PI	0.252	***	H2a	Confirmed
CS	<—	PE	0.235	***	H3	Confirmed
CS	<—	PPQ	0.284	***	H1	Confirmed
PU	<—	PP	0.200	***	H5b	Confirmed
PU	<—	PI	0.213	***	H5a	Confirmed
PU	<—	PE	0.219	***	H6	Confirmed
PU	<—	PPQ	0.167	0.008	H4	Confirmed
PU	<—	CS	0.215	0.004	H7	Confirmed

Fig. 1. Graphical abstract of factors influencing purchase intention for cultural heritage products in e-commerce can vary depending on various factors.
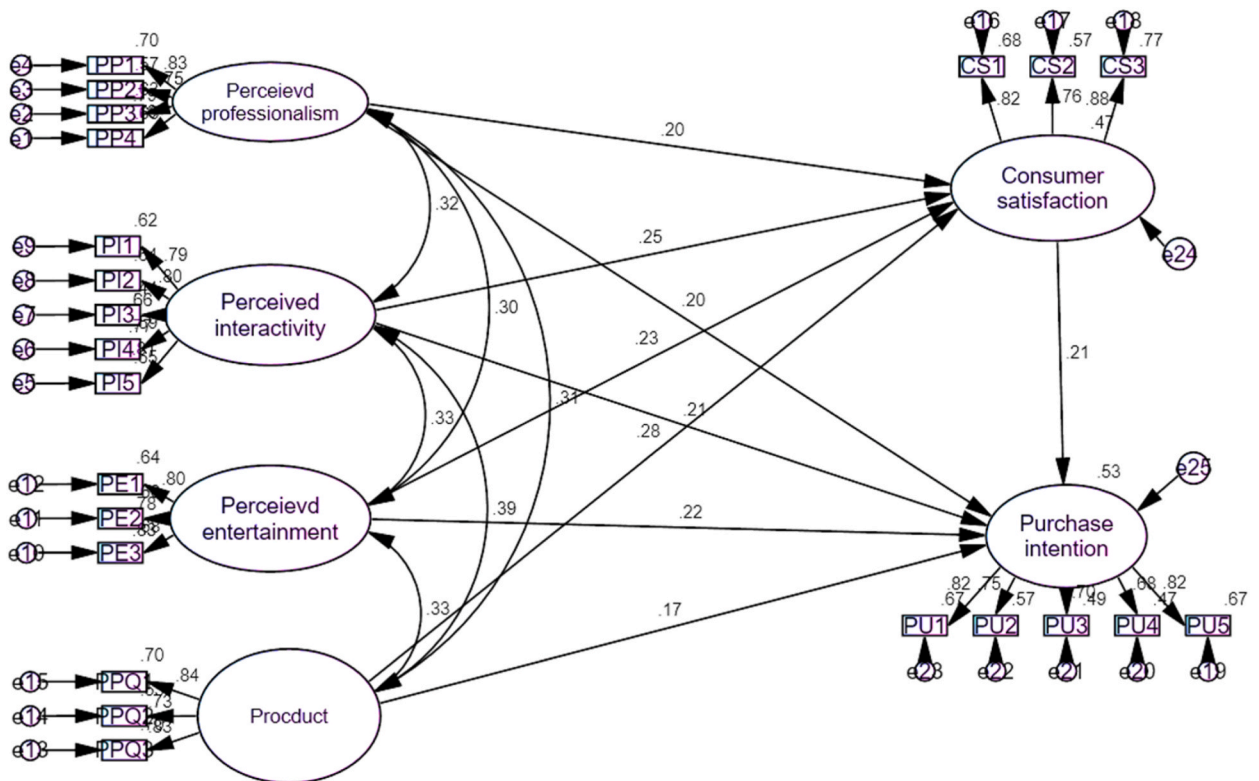

Fig. 2. Path coefficients of the structural equation model.

proportional representation within the overall sample. This approach allows for capturing the unique perspectives and experiences of these groups.

Non-response analysis plays a crucial role in evaluating the biases introduced by non-response, while sensitivity analyses investigate the influence of selection bias on study findings across various scenarios. Transparent reporting of sampling methods, adjustments, and sample characteristics allows readers to evaluate the potential effects of selection bias. Employing these strategies enables researchers to improve sample quality, enhance the validity of their findings, and enhance the generalizability of their research. Sensitivity analysis is a valuable technique that examines the robustness of research findings by assessing the potential impact of
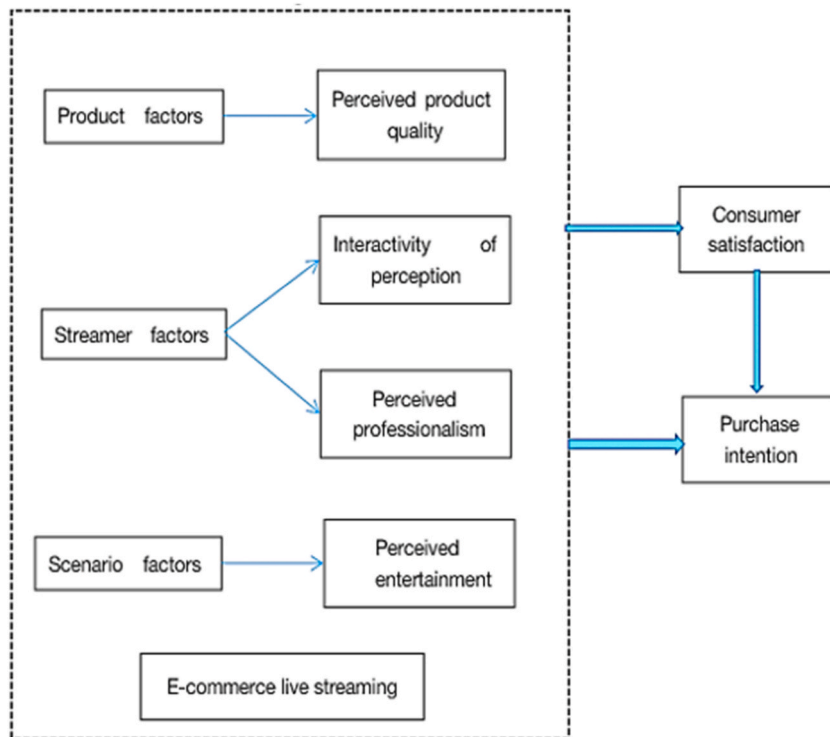
Fig. 3. Conceptual Model depicting the relationship between E-commerce Live-Streaming Dimensions, Repurchase Intention, and Consumer Satisfaction in the context of ABC Attitude Theory.

selection bias under different scenarios or assumptions. Transparent reporting of the sampling methods employed is essential as it provides comprehensive information about the sample size, sampling frame, and any adjustments made to mitigate selection bias. Recent research studies have explored a wide range of topics, including the investigation of daily activity patterns in mobile app usage, the development of multi-labeled corpora for short texts on Twitter [41–45] The exploration of changes in guest preferences for Airbnb accommodations, the understanding of the long-term evolution of mobile app usage, and the adaptation of feature selection algorithms for categorizing Chinese texts [46–49]. By implementing these strategies and considering the complexities of participant selection, researchers can minimize selection bias and enhance the validity and generalizability of their research findings, ensuring that the conclusions drawn from the study accurately reflect the target population and are not distorted by biases introduced during the sampling process.

5.6. Test of mediating effect

Bootstrap calculations were utilized to assess the mediating impact of consumer satisfaction. The mediation effects were deemed significant if the 95% confidence intervals of the coefficients for the respective paths did not overlap with zero. Notably, Table 6 displays the results, indicating that the 95% confidence intervals for the hypothesized paths did not encompass zero, thereby confirming the presence of mediation effects along all four paths.

This study provides insights into the collaborative decision-making processes involved in enhancing cultural heritage. It illustrates the involvement of various stakeholders and their interactions within the decision-making process, emphasizing the significance of collaboration and cooperation among different entities, including cultural organizations, government agencies, local communities, and experts. The study demonstrates the iterative nature of the decision-making process, underscoring the importance of incorporating input from multiple perspectives and facilitating the exchange of knowledge and expertise. This collaborative approach aims to ensure the effective preservation, promotion, and sustainable development of cultural heritage, ultimately benefiting present and future generations.

6. Conclusions

The objective of this study was to develop a model grounded in the ABC attitude theory and examine the factors that impact consumers' inclination to buy cultural and creative products related to intangible cultural heritage within the realm of e-commerce live streaming. The research empirically analyzed the impact of product factors (perceived product quality), streamer factors (professionalism and interactivity), and scene factors (entertainment) on consumers' willingness to purchase, mediated by consumer

Table 6
Bootstrap mediation test.

Path	Standardized indirect effect estimates	95% confidence interval		Intermediary effect
		Lower	Upper	
PPQ–CS–PU	0.174	0.152	0.201	Fully mediation
PE–CS–PU	0.162	0.141	0.189	Fully mediation
PI-CS-PU	0.185	0.163	0.214	Fully mediation
PP–CS–PU	0.155	0.135	0.182	Fully mediation

satisfaction. The results revealed that consumers' perception of product quality, interactivity, professionalism, and entertainment of non-traditional cultural and creative products in live e-commerce significantly influenced consumer satisfaction. Among these factors, perceived product quality had the strongest effect on enhancing consumer satisfaction, followed by perceived interactivity and perceived entertainment. Perceived professionalism had a positive impact on consumer satisfaction, although its effect was relatively small. Additionally, the study revealed that purchase intentions in the context of live e-commerce for cultural products of intangible cultural heritage are significantly influenced by perceived quality, interactivity, professionalism, and entertainment. These findings underscore the significance of enhancing these factors to influence consumer purchase intentions and behaviors. Furthermore, a positive correlation was identified between consumer satisfaction with intangible cultural heritage products in live e-commerce and purchase intentions, indicating that higher levels of satisfaction are associated with stronger purchase intentions. This aligns with previous research emphasizing the pivotal role of satisfaction in driving purchase decisions and fostering long-term consumer relationships. Therefore, it is advisable to enhance the perceived quality, professionalism, interactivity, and entertainment value of intangible cultural heritage products in e-commerce live streaming settings. These improvements have a positive influence on purchase intention and customer satisfaction. Live e-commerce platforms should focus on selecting high-quality products that embody practical and cultural values, provide comprehensive product information during live broadcasts, strengthen brand construction, and enhance streamers' sales ability and cultural attributes. Developing training activities for streamers to improve their professionalism and cultural cultivation is essential. By enhancing interactivity, creating a virtual community, and fostering emotional resonance with consumers, e-commerce live streaming can provide a pleasant shopping experience and meet the diversified needs of consumers. By implementing these strategies, the inherent worth of cultural and creative brands can be acknowledged, leading to heightened consumer satisfaction and bolstered purchase intentions.

7. Limitations and future research

The current study has certain limitations that need to be acknowledged. Firstly, the focus was primarily on creative products associated with intangible cultural heritage, which may restrict the generalizability of the findings to other product categories. Furthermore, the study utilized a comparatively limited sample size, which could have implications for the statistical strength and the generalizability of the findings. Furthermore, certain perceptual dimensions of e-commerce live streaming were not considered in the analysis, potentially overlooking important factors that could influence purchase intentions. To enhance future research, it would be beneficial to expand the scope of the investigation to incorporate a broader range of cultural heritage products. This expansion would contribute to a more comprehensive comprehension of purchase intentions within the context of e-commerce live streaming. Increasing the sample size and incorporating diverse populations would enhance the reliability and generalizability of the findings. Additionally, exploring additional perceptual dimensions of e-commerce live streaming, such as trust, social influence, and perceived value, would provide a more holistic comprehension of consumer behavior in this particular setting. Further research could also examine the effectiveness of different strategies aimed at enhancing consumer satisfaction and purchase intentions, such as personalized recommendations, social interactions, and virtual reality experiences. This would help identify the most effective approaches for promoting cultural and creative products of intangible cultural heritage in the realm of e-commerce live streaming.

Availability of data and materials

The datasets supporting the conclusions of this study are included within the article and supplementary materials.

CRediT authorship contribution statement

Xu Yingqing: Funding acquisition, Formal analysis, Data curation, Conceptualization. **Nurul Ain Mohd Hasan:** Funding acquisition, Formal analysis, Data curation, Conceptualization. **Farhana Muslim Mohd Jalis:** Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2024.e26470.

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