

RESEARCH ARTICLE

The impact of anchor attributes and product content on impulse buying behaviour of beauty consumers

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ABSTRACT

This study is guided by the relevant literature on impulse buying behaviour (IBB) and the "stimulus-organism-response (SOR) model" to explore the relationship between anchor attributes and beauty product content on IBB. The stratified random sampling method was used to collect data from 466 customers in the beauty live broadcast, and regression analysis was used to understand the impact of anchor attributes and beauty product content on IBB. Research results prove that anchor attributes and beauty product content significantly impact IBB. The mediating variable directly affects beauty product content and IBB, as well as an indirect impact on anchor attributes and IBB. This research paper will significantly benefit live broadcast, e-commerce practitioners, and researchers, helping them fully understand the relationship between anchor attributes, beauty product content, and consumer IBB.

Keywords: live e-commerce; anchor attributes; beauty product; IBB

Commerce live broadcast is the product of the two-way integration of e-commerce and live broadcast in the context of the digital era^[1]. In 2023, the scale of China's e-commerce market reached 50.57 trillion yuan ("2023 China E-commerce Market Data Report", 2023), a year-on-year increase of 6.31% from 47.57 trillion yuan in 2022. In addition, the number of active anchors on the platform exceeds 2.7 million, and the development of the industry demonstrates vigorous vitality. E-commerce live streaming has become a popular marketing tool for e-commerce, and cosmetics companies have begun to explore the "live streaming + e-commerce" model. The "2022 -2023 China Cosmetics Industry Development and User Insights Research Report" shows that 72.6% of consumers purchase cosmetics on a comprehensive e-commerce platform. Compared with traditional e-commerce, live e-commerce broadcasts can display products more comprehensively, are highly interactive, and have a wider audience, allowing companies to achieve the purpose of attracting traffic and customers.

With the popularity of live e-commerce broadcast marketing, more and more research has been conducted. The entertainment nature of live broadcasts and the intensity of price discounts are the main factors affecting consumer behaviour^[2]. It used a questionnaire survey to explore the impact of live broadcast characteristics on consumers' social presence and traffic experience and the effect on consumers'

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consumption willingness in the live broadcast e-commerce scenario^[3]. There are many studies on the influence of live broadcast e-commerce on consumption intention and consumer behaviour. However, only some empirical studies directly focus on the core elements of live broadcast e-commerce, anchor attributes, and product content on consumers. There is a lack of empirical analysis of how anchor attributes and product content specifically affect impulse buying in on-site e-commerce. In addition, cosmetics provide instant sensory enjoyment and psychological satisfaction. Consumers can immediately see the effects (such as lipstick colour and skin gloss) in the live broadcast, and the transmission of information is more advantageous. At the same time, beauty cosmetics are low-decision-making products. This instant feedback form can easily trigger IBB^[4]. However, in live e-commerce, there is a lack of practical, theoretical analysis and integration in understanding consumer behaviour.

Therefore, based on the SOR theory, the customer group data of the beauty live broadcast was selected through stratified sampling to construct a research model on the IBB of beauty consumers with anchor attributes and product content as independent variables and consumer perceived value as the intermediary variable. The relationship between e-commerce live broadcasts, perceived value, and IBB is obtained through data research, empirical analysis, and suggestions for e-commerce live broadcasts and beauty anchors. Empirical analysis research content is added to the research gap in this area.

1. Theoretical basis

1.1. SOR theory

The SOR (stimulus, organism, response) theory is a general model of human behaviour. This model shows that external factors drive consumer purchasing behaviour. Stimulation, which comes from the external environment, including colour, sound, movement, etc., affects consumers' behaviour through their physiological and psychological reactions. Consumers are motivated by multiple factors in the external environment and make purchasing decisions driven by motivation. At present, many scholars have used the SOR theory to study consumer behaviour. Based on the SOR theory, a theoretical model of consumers' purchase intention of organic agricultural products was designed^[5, 6]. The SOR framework was used to study consumers' shopping paths, such as how website stimulation affects consumers' online shopping attitudes, the ability to regulate emotional purchasing, and repeat purchase intentions^[7]. Additionally, the impact of the scarcity of medical protective equipment on Chinese consumers' impulse purchases was analysed using the SOR model and the bandwagon effect theory^[8]. In consumer behaviour, the stimulus-organism-response model has been widely used in studying the impact of internal and external stimuli on online consumer behaviour. Therefore, this article applies SOR theory to e-commerce live shopping, using anchor attributes and beauty product content as stimulus variables, perceived value as motivation, and IBB as response behaviour to explore the IBB of beauty consumers in e-commerce live broadcasts—current situation and influencing factors.

1.2. Impulsive buying behaviour (IBB)

The IBB is the purchasing behaviour that consumers do not plan to buy before entering the consumer's place of consumption but are ultimately stimulated by the shopping environment^[9]. IBB is an unplanned purchase. Consumers purchase more products than planned due to a sudden desire to buy without considering long-term needs^[10, 11]. (1955) The IBB is a hedonic, irrational behaviour; consumers will immediately turn their impulsive thoughts into actual actions^[12]. This behaviour is usually influenced by emotional and environmental factors and is characterised by suddenness and irrationality^[11]. The IBB is affected by personal personality factors and is closely related to environmental stimuli, such as website design and promotional activities^[13]. The shopping environment, consumers' emotional state, and how goods

are displayed will affect IBB^[13]. Social media marketing content and interaction methods can significantly increase consumers' IBB tendencies^[14]. Additionally, e-commerce live broadcasts can substantially improve consumers' IBB through real-time interaction and emotional resonance^[15].

Although scholars have different definitions of IBB, they can summarise the characteristics of consumers' IBB intention into four points: 1) unplanned nature; 2) stimulating factors in the shopping environment; 3) immediate decision-making; 4) Both cognitive and emotional responses. The IBB in this article refers to the buying behaviour that consumers make on impulse due to the stimulation of anchor recommendations without pre-planning. It is divided into two dimensions according to the measurement indicators, using an 8-scale questionnaire^[16].

1.3. Anchor attributes and beauty product content

E-commerce live streaming, or "e-commerce + live streaming," is a new e-commerce model in which e-commerce companies use live streaming to display, try out, recommend products, and conduct Q&A interactions with consumers online, ultimately promoting consumer purchasing behaviour^[17]. Compared with traditional e-commerce and TV shopping, e-commerce live streaming has the characteristics of real-time interaction, fan economy, social shopping, and two-way guidance of content and e-commerce^[18]. E-commerce anchors are the key to distinguishing e-commerce live streaming from traditional e-commerce^[19]. E-commerce anchors attract consumers through information source characteristics such as professionalism, popularity, and interactivity and use scenario-based and interactive methods to convey product information, enhance the on-site experience, and gain consumer trust and recognition, ultimately affecting consumers' online purchasing decisions^[17]. E-commerce anchors often play a leading role in live broadcasting scenarios. They serve as agents to establish and maintain market relationships between merchants and consumers, convey product information and usage experience, enhance consumers' shopping awareness, and persuade them to make online purchases^[20]. According to the KOL theory, anchor attributes, such as Internet celebrity characteristics, professionalism, and interactive behaviour, impact consumers' immediate purchasing intentions and behaviours^[19]. The anchor attributes defined in this article mainly refer to the dimensions of anchors' professionalism, popularity, and interactivity.

Product content includes the necessary functional information of products that meet consumer needs and product prices, appearance, and quality. According to the 4P theory of marketing, ingredients, efficacy, packaging, quality, etc., of products belong to the basic information of products. Consumers understand the basic information about products and perceive the utility value, which is the main influencing factor that promotes consumers' IBB^[21]. In addition to the basic information about products, the product content that consumers pay attention to includes information related to the price or value of products, discounts or coupons, etc. The product content of this article mainly includes product price discounts, product functions, and other aspects^[19]

2. Research hypothesis

The social cognitive theory emphasises the importance of interaction in learning and behaviour change^[22]. The high interactivity in social e-commerce can enhance the social connection between viewers and anchors and increase the likelihood of purchase^[23, 24]. Anchors' real-time interaction with viewers, such as answering questions and providing personalised recommendations, significantly increased viewers' IBB^[21]. Recommendations from well-known Internet celebrities can stimulate the audience's desire to purchase more than unknown celebrities, especially in social media^[25, 26]. Individuals with professional knowledge are more likely to be trusted when disseminating information^[26]. The anchor's professionalism significantly increased

viewers' trust and IBB in their recommended products^[27]. The anchor's professionalism, popularity, interactivity, and other characteristics impact consumers' consumption decisions, so the anchor's attributes positively impact IBB.

H1: Anchor attributes have a positive impact on IBB

H2: Anchor attributes have a positive effect on perceived value

Product efficacy, ingredient packaging, and other information are the main factors attracting consumers. Price discounts are a promotional strategy that attracts consumers by lowering product prices, thereby promoting purchasing behaviour ^[28]. Providing detailed and complete product information can enhance consumers' perceived value. Consumers can obtain rich and accurate product information during the live broadcast, which helps them make faster purchasing decisions. Research pointed out that detailed and complete product information can improve consumers' perceived value, thereby increasing the possibility of impulse purchases^[29]. Consumers' perception of price discounts will affect their purchasing decisions, especially impulse purchases^[30]. Price discounts significantly increase consumers' IBB, especially in e-commerce environments^[31]. Price discounts can dramatically enhance the perceived value of a product and increase IBB^[32].

H3: Beauty product content has a positive impact on consumers' IBB

H4: Beauty product content has a positive effect on perceived value

High-profile anchors can increase consumers' trust and attention to their recommended products, thereby increasing their perceived value. Recommendations from well-known Internet celebrities can increase consumers' perceived value, increasing purchase intention^[33]. Anchors with high professionalism can provide detailed and authoritative product information and enhance the product's perceived value^[34]. Professional anchors can increase the perceived value of products, thereby increasing consumers' purchase intention^[35]. Highly interactive anchors can improve consumers' trust and perceived value of products by interacting and responding to audience questions in real-time. Highly interactive anchors can increase the audience's sense of participation and perceived value, promoting IBB^[36]. Detailed displays of products and experience sharing during live broadcasts can significantly improve consumers' perceived value, encouraging impulse purchases^[37]. Therefore, anchor attributes and beauty product content impact consumers' perceived value and promote IBB by increasing perceived value. Thus, perceived value mediates between anchor attributes, product content, and IBB.

H5: Perceived value has a positive impact on IBB

H6: Anchor attributes positively affect IBB through perceived value

H7: Beauty product content positively affects IBB through perceived value

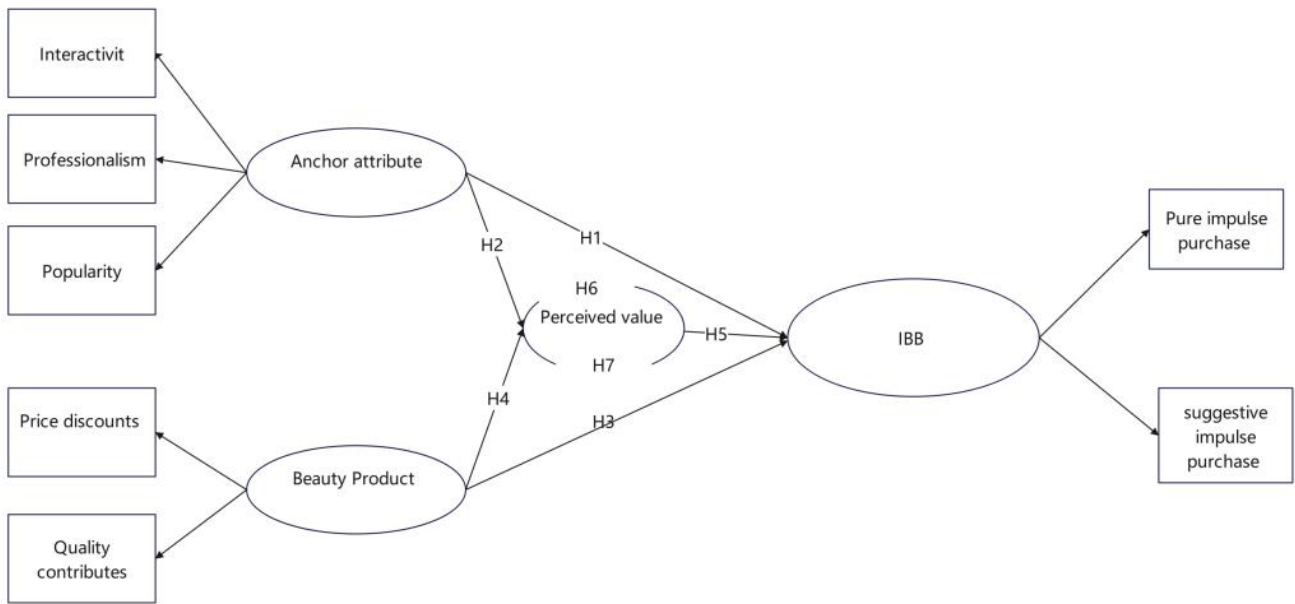


Figure 1. Conceptual model of this study.

3. Data Analysis

This study selected consumers who purchase beauty products on the TikTok live broadcast platform. Refer to TikTok's official daily ranking of the top 100. This ranking primarily considers beauty product sales amount, user activity, number of live broadcasts, etc. According to the number of fans, the live broadcasts in the rankings are divided into three types: head, waist, and tail.

Table 1. Number of different anchor types in TikTok's top 100 rankings.

Anchor type	Live broadcast type	Number of fans	Quantity
Head		Greater than 5 million	11
Waist	Beauty products	3 million-5 million	19
Tail		Less than 3 million	70

Data source: The top 100 beauty products anchors on TikTok list on September 7, 2023.

Stratified random sampling in live broadcasts is mainly classified according to the number of fans, and then samples are randomly selected according to the proportion of the population. Careful consideration of the number of anchors at the head, waist, and tail and the number of fans; select one head anchor, one waist anchor, and six tail anchors, enter their live broadcast, purchase beauty products, and then enter the fan group, through and management The personnel communicated the purpose and significance of this survey questionnaire and promised to share the research results with them. They also explained that the collected questionnaires are only for scientific research, and paid questionnaires will be distributed among the fan groups after obtaining consent.

Table 2. Sampling data list.

Anchor type	Anchor name	Number of fans	Proportion	Number of questionnaires (540 copies are counted)
Head	Dou dou	10.13 million	46.84%	253
Waist	Autumn fish and vegetables	7.28 million	33.66%	182
	Cherry meatballs	302,000	1.40%	8
	A branch of Nannan	2.18 million	10.08%	54
Tail	susu Mochi	80000	0.37%	2
	Shins	103,000	0.48%	3
	Mao Xiaoxing	1.08 million	4.99%	27
	Xiao Naimian	470,000	2.17%	10

Data source: September 7, 2023, the top 100 beauty products anchors on TikTok list.

Through the stratified random sampling method, 466 valid questionnaires were collected, and the proportion of valid questionnaires reached 86.29%. The questionnaires met the research requirements^[38]. Through the reliability test of the collected questionnaires, the reliability of this questionnaire was 0.974, $kmo=0.871$ was more significant than 0.8; the approximate chi-square value of the Bartlett sphericity test was 6619.639, indicating that the questionnaire had good reliability and validity, and the next step of analysis could be carried out.

Regarding age, most people who bought beauty products in the live broadcast were young. The proportion of those under 40 was as high as 86%, indicating that the beauty shopping group was relatively young. This age group had more significant shopping needs, more vital economic control ability, and better familiarity with the Internet, which matched the age of beauty users in the iMedia Consulting Report, indicating that the sample data was valid. From the gender perspective, the ratio of males to females in the questionnaire collected this time is close to 2:8. The shopping level of women is much higher than men's. Although the ratio could be more balanced, this is consistent with the online sales population and the consumer group of beauty products. In addition, the data released by the TikTok list shows that female users account for more than three-quarters of the total number of live broadcast users, consistent with the survey data of CNNIC in 2022. The participants in this survey met the characteristics of consuming beauty products and watching live online broadcasts. Therefore, the results of this questionnaire survey meet the overall research needs and conditions and can be further analysed in depth.

3.1. Analysis of the current situation of IBB

Through statistical data analysis, the mean of IBB is 4.09, indicating that the respondents believe that they tend to buy impulsively when consuming on e-commerce live broadcast platforms. The mean of anchor attributes is close to 4, and the standard deviation is slight, indicating that most consumers are more aware of the anchor's professionalism, interactivity, and popularity. The mean of product information is between 3 and 4, and the standard deviation is significant, indicating that different consumers have different degrees of recognition of product content, quality, price, etc. However, the mean is relatively high, suggesting that most respondents have a more positive view of product quality, price, and content. The mean of perceived value is high, close to 4.1, and the standard deviation is slight, indicating that consumers are more satisfied with anchors, products, and services.

Table 3. Summary Statistics.

Var Name	Obs	Mean	SD
Professionalism	466	4.08	0.892
Interactivity	466	4.06	0.910
Reputation	466	4.08	0.922
Anchor Attribute	466	4.07	0.863
Quality contributes	466	3.45	1.248
Price discounts	466	3.22	1.376
Product content	466	3.34	1.271
Perceived value	466	4.08	0.862
Pure impulse purchase	466	4.08	0.912
Suggestive impulse purchase	466	4.10	0.898
IBB	466	4.09	0.877

3.2. Analysis of Factors Influencing IBB

(1) Related analysis

According to **Table 4**, the correlation coefficient between anchor attributes and impulsive buying is 0.95***, and the correlation coefficient between perceived value and impulsive buying is 0.94***, indicating a robust positive correlation between these variables. Anchor attributes show a strong correlation between perceived value and IBB, suggesting that changes in anchor attributes are closely related to scores of perceived values and IBB. This indicates that anchor attributes significantly influence consumers' evaluations of product content, perceived value, and behavioral intentions. The higher the consumers' perceived value of a product, the more likely they are to make impulsive purchases. The correlation coefficient between product content and IBB is 0.39***, indicating a moderate positive correlation. Product content shows a moderate correlation with perceived value and IBB, suggesting that product content has a particular impact on perceived value and IBB.

Table 4. Correlation Coefficient.

	Gender	Age	Education level	Identity	Monthly income level	Anchor attributes	Product content	Perceived value	IBB
Gender	1	0.06	0.12***	0.10**	0.06	0.04	-0.05	0.05	0.04
Age	0.08*	1	0.34***	0.78***	0.63***	0.03	-0.07	-0.04	0.01
Education level	0.11**	0.40***	1	0.35***	0.38***	0.00	-0.03	-0.01	0.02
Identity	0.10**	0.72***	0.33***	1	0.64***	-0.00	-0.07*	-0.05	-0.03
Monthly income level	0.01	0.66***	0.42***	0.63***	1	-0.01	-0.05	-0.06	-0.04
Anchor attributes	0.04	-0.03	-0.01	-0.05	-0.05	1	0.20***	0.69***	0.72***
Product content	-0.08*	-0.05	-0.03	-0.08*	-0.07*	0.39***	1	0.24***	0.20***
Perceived value	0.04	-0.04	-0.02	-0.05	-0.06	0.93***	0.42***	1	0.71***
IBB	0.04	-0.02	0.00	-0.05	-0.05	0.95***	0.39***	0.94***	1

Gender	Age	Education level	Identity	Monthly income level	Anchor attributes	Product content	Perceived value	IBB
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Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

(2) Multiple linear regression analysis

Through correlation analysis, it was verified that the two pairs are related. To further explore the impact of each variable on the dependent variable, multiple linear regression analysis was performed to find out the impact relationship. The analysis in **Table 3** is as follows: The influence of anchor attributes on IBB and perceived value. The influence coefficients are 0.94764*** and 0.94109***, respectively. This shows that anchor attributes have a powerful positive impact on IBB and perceived value. This is consistent with the existing literature. For example, Mohan et al. (2019) mentioned in their study that the influence of online celebrities or anchors can significantly increase consumers' purchase intentions, especially regarding impulse purchases. The impact coefficients of product content on IBB and perceived value are 0.27155*** and 0.29271***, respectively, which shows that product content has a moderate positive impact on perceived value. According to the literature, the quality and presentation of product information are crucial to consumers' perceived value^[39], and complete and vivid product descriptions can enhance consumers' perceived value. In addition, variables related to personal characteristics such as gender, age, education, status, and monthly income level have small or insignificant effects in most cases. This may indicate that individual factors, such as gender, age, etc., may not be as crucial as anchor attributes and product content regarding IBB and perceived value. This is consistent with the results of some market research that indicate that consumer decision-making is driven more by external factors (such as advertising and sales pitches) rather than personal characteristics^[40]. Assumptions 1, 2, 3, 4, and 5 are acceptable based on the above analysis.

Table 5. OLS regression results.

	(1) IBB	(2) Perceived value	(3) IBB	(4) Perceived value	(5) IBB
Anchor attributes	0.94764*** (67.52)	0.94109*** (58.07)			
Product content			0.27155*** (9.97)	0.29271*** (10.76)	
Perceived value					0.92627*** (62.40)
Gender	0.00519 (0.14)	0.01181 (0.27)	0.19874* (1.84)	0.21099* (1.95)	0.00318 (0.08)
Age	0.02795 (1.52)	-0.00191 (-0.09)	0.02111 (0.41)	-0.00967 (-0.19)	0.03009 (1.52)
Education level	0.01120 (0.56)	-0.00770 (-0.33)	0.01971 (0.35)	0.00036 (0.01)	0.01938 (0.91)
Identity	-0.03191 (-1.05)	0.00979 (0.28)	-0.04682 (-0.55)	-0.00198 (-0.02)	-0.04504 (-1.39)
Monthly income level	-0.00660 (-0.78)	-0.00558 (-0.57)	-0.00929 (-0.39)	-0.00739 (-0.31)	-0.00246 (-0.27)
_cons	0.19342*	0.26201**	2.78474***	2.74142***	0.24714**

	(1.93)	(2.27)	(10.68)	(10.53)	(2.31)
N	466	466	466	466	466
r ²	0.894	0.862	0.361	0.581	0.879
r ² _a	0.89	0.86	0.36	0.58	0.88

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

3.3. Mediating factor analysis

Through regression analysis, anchor attributes and product content directly impact consumers' IBB. According to the SOR theory, external factors such as anchors and product information need to influence the body's behavior through individual internal stimulation.

Table 6 shows that anchor attributes strongly impact IBB (coefficient is 0.94764***). This means that the characteristics of the anchor, such as attractiveness, trustworthiness, or interaction style, significantly affect consumers' tendency to make impulse purchases. Anchor attributes also significantly positively impact perceived value (0.94109***), indicating that anchors play an essential role in consumers' perception of the value of products or services. The influence coefficient of anchor attributes on IBB through perceived value is reduced, with a coefficient of 0.54844***, but it is still significant. Perceived value is introduced as a new independent variable, significantly impacting IBB (coefficient is 0.42419***). Anchor attributes significantly affect all models, especially in the IBB and perceived value models. In summary, perceived value plays a partial mediating role between anchor attributes and IBB.

This model reveals the importance of anchor attributes and perceived value in IBB. Especially in the context of digital marketing and social media, the influence of anchors is significant. In the live broadcast, consumers not only watch the products introduced by the anchors but also enjoy the anchors' professional knowledge, personal connotation, knowledge accumulation, and attention to consumers. Therefore, Wei Ya and Li Jiaqi bring 200 goods a day. Billions of marketing records. This is consistent with the trend of modern consumer behavior, that is, in the era of information explosion, consumers increasingly rely on the recommendations of social media influencers and Internet celebrities to make purchasing decisions. These findings contribute to a better understanding of factors influencing IBB in the online shopping environment and provide insights into digital marketing strategies, particularly in decision-making regarding leveraging anchor influence and enhancing perceived product value.

Table 6. OLS regression results.

	(1) IBB	(2) Perceived value	(3) IBB
Anchor attributes	0.94764*** (67.52)	0.94109*** (58.07)	0.54844*** (16.66)
Perceived value			0.42419*** (13.07)
Gender	0.00519 (0.14)	0.01181 (0.27)	0.00018 (0.01)
Age	0.02795 (1.52)	-0.00191 (-0.09)	0.02876* (1.79)
Education level	0.01120 (0.56)	-0.00770 (-0.33)	0.01446 (0.83)
Identity	-0.03191 (-1.05)	0.00979 (0.28)	-0.03606 (-1.36)
Monthly income level	-0.00660	-0.00558	-0.00423

	(-0.78)	(-0.57)	(-0.57)
_cons	0.19342*	0.26201**	0.08228
	(1.93)	(2.27)	(0.94)
N	466	466	466
r ²	0.894	0.862	0.920
r ² _a	0.89	0.86	0.92

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

(2) Verify that product content affects IBB through perceived value

It can be seen from **Table 7** that product content has a significant positive impact on IBB (the coefficient is 0.27155***). This suggests that how a product is described and presented is vital in prompting consumers to make impulse purchases. Product content has a significant positive impact on perceived value (coefficient is 0.29271***), indicating that the quality and presentation of product information are crucial to consumers' perceived value. In the model that includes perceived value as an independent variable, perceived value has a significant influencing factor (coefficient is 0.92597***), indicating that consumers' perceived product value significantly affects IBB. At the same time, the direct effect of product content on IBB becomes insignificant in this model. Therefore, perceived value fully mediates the relationship between product content and IBB.

Table 7. OLS regression results.

	(1) IBB	(2) Perceived value	(3) IBB
Product content	0.27155*** (9.97)	0.29271*** (10.76)	0.00051 (0.04)
Perceived value			0.92597*** (56.57)
Gender	0.19874* (1.84)	0.21099* (1.95)	0.00337 (0.08)
Age	0.02111 (0.41)	-0.00967 (-0.19)	0.03007 (1.52)
Education level	0.01971 (0.35)	0.00036 (0.01)	0.01938 (0.91)
Identity	-0.04682 (-0.55)	-0.00198 (-0.02)	-0.04499 (-1.38)
Monthly income level	-0.00929 (-0.39)	-0.00739 (-0.31)	-0.00244 (-0.27)
_cons	2.78474*** (10.68)	2.74142*** (10.53)	0.24627** (2.26)
N	466	466	466
r ²	0.762	0.881	0.879
r ² _a	0.76	0.88	0.88

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

This means that the impact of product content on IBB is mainly achieved through the mediating variable of perceived value. The attractiveness of product content, discount prices, and other characteristics affect the audience's perceived value of the product and ultimately impact their IBB. Consumers will only make impulse purchases when they perceive that the product is of good quality, high value, and good value for money. Perceived value plays a complete mediating role between product content and IBB.

Based on the above data results, in e-commerce live broadcasts, the host attributes and product content positively impact beauty consumers' consumption impulse. The mediating effect of perceived value exists, and all seven hypotheses are established. Unlike traditional marketing, the host attributes have a greater stimulation on consumers' IBB than the product content itself; that is, product content is a factor that attracts consumers to buy, but the host's professional introduction and convenient and caring timely communication and interaction are the main forces stimulating consumers' IBB.

4. Research conclusions

Based on SOR theory, this paper establishes a research model and studies the relationship between e-commerce live streaming and beauty IBB through factor analysis and regression analysis. The following conclusions are drawn:

4.1. Significant influence of anchor attributes

Descriptive statistics and correlation analysis show that anchor attributes significantly correlate with IBB. In the regression analysis, anchor attributes are the key factors affecting IBB and perceived value. This emphasises the strong influence of anchors' popularity, professionalism, and interactive ability on consumer purchasing behaviour in digital and social media-driven markets. The real-time interaction and social impact of live e-commerce significantly increased consumers' IBB tendencies^[41, 42]. The anchor's emotional expression and interaction with the audience can enhance the audience's emotional connection, thereby promoting IBB^[43]. Limited-time offers and promotions significantly increased the occurrence of IBB in live e-commerce^[44]. However, when the product is less attractive, the anchor's credibility and professionalism have less impact on consumers' IBB^[45]. This shows that anchor attributes cannot significantly increase consumers' perceived value in all cases^[46]. Even if the anchor has high credibility and professionalism, the possibility of IBB is still low if the audience is not very interested in the product. Consumers pay less attention to the product than to the anchor's attributes when buying; that is, in terms of influencing consumer decisions, the influence of the anchor is stronger than the attractiveness of the product itself, which is a big difference from other product markets.

4.2. Perceived value as a mediating factor

Perceived value plays an essential mediating role in IBB. Correlation analysis shows a strong positive correlation between perceived value and IBB, and regression analysis also shows that perceived value significantly impacts IBB. This means consumers' high perception of product value may prompt them to make more impulsive purchases. This part of the study is consistent with findings that immersion, real-time interaction, and social factors are essential in attracting users to watch live broadcasts on platforms like Facebook and Snapchat^[47]. Similarly, traditional sales research shows salespeople's politeness, warm reception, and sincere suggestions can stimulate consumers' IBB^[48].

4.3. The importance of product content

Although the direct impact of product content on IBB is not very significant in some models, it is significantly positively correlated with perceived value. This shows that product content is vital in shaping consumers' perceived value, indirectly affecting IBB. Beauty products are consumables with low decision-making, high emotional drive, and immediate satisfaction^[49]. Cosmetics are usually highly emotionally driven, and consumers are easily influenced by emotional factors such as packaging design, colour, smell, and visual effects after use^[50]. Visual displays in advertisements and social media, KOL recommendations,

etc., can strongly stimulate consumers' emotional resonance and promote IBB^[13, 51]. Other products (such as home appliances and furniture) rely more on rational decision-making, and consumers tend to consider factors such as product functionality, durability, and psychological satisfaction. The live broadcast lets Consumers immediately see the effects (such as lipstick colour and skin radiance). This immediate feedback mechanism easily triggers IBB^[32].

4.4. The role of consumer characteristics is limited

In all models, gender, age, education level, identity, and monthly income level do not significantly impact IBB. This indicates that these demographic variables play a minor role in explaining impulsive buying behaviour. Although some literature mentions that specific demographic characteristics may influence consumer behaviour ^[52], this study does not find significant evidence to support this.

These conclusions are crucial for understanding consumer behaviour patterns in digital marketing. The influence of host attributes and perceived value is particularly critical, especially in the increasing popularity of live sales and social media marketing. These findings can help merchants and marketers develop more effective strategies to drive sales by strengthening the host's influence and enhancing the product's perceived value. At the same time, these conclusions also emphasise the importance of paying attention to the quality and presentation of product content when formulating market strategies. Although personal characteristics have a relatively small impact on IBB, understanding the characteristics of the target consumer group is still a key component of developing an effective marketing strategy. This study provides valuable insights into influencing and understanding consumer behaviour in the digital age. By comprehensively considering the host attributes, perceived value, product content, and personal characteristics, the consumer's purchase decision process can be better understood and influenced.

5. Research Discussion

This study concludes that, with an average value of 4.09, customer IBB occurs relatively frequently in the e-commerce live broadcast scenario. This research essentially confirms previous findings, which state that consumers are stimulated by online live broadcast scenarios, particularly by the professionalism, popularity, and interactivity of the anchor, and that the IBB in E-commerce Live Streaming rate is very high during limited-time beauty products price discounts^[31, 46, 53-56]. Research by Zhang et al. (2022) shows that limited-time offers and promotions significantly increase the occurrence of IBB in live e-commerce^[46]. Some scholars also pointed out that due to information asymmetry in online sales, consumers cannot face beauty products directly and have low trust and high-risk perception, making purchasing decisions difficult^[57]. This situation occurred in the early stages of e-commerce development when consumers needed to trust e-commerce fully. Nowadays, with the popularisation and development of e-commerce and the improvement of after-sales returns and exchanges, consumers have fewer worries and lower costs. Moulard et al. (2021) found that the anchor's emotional expression and interaction with the audience Can enhance the audience's emotional connection, thereby promoting IBB^[58].

This study's findings align with those of Lee and Gan's (2020) research, which shows that real-time interaction-based e-commerce live streaming is essential to the media economy and that the attributes of media roles greatly influence users' IBB^[16, 32].

This study demonstrates that while beauty product content promotes consumers' IBB, it does so in a less significant way than anchor qualities. This conclusion deviates slightly from previous research. For instance, Lou and Yuan (2019) discovered that actual customer demand for beauty products still determines whether or not recommendations from well-known anchors might cause IBB^[59]. Customers may need to rely more on

anchors in e-commerce live broadcasts, which will lessen their focus on beauty products and potentially influence the likelihood of IBB. Furthermore, consumers' perception of the worth of beauty products may only sometimes rise with intricate displays and information. Excessive information can often cause customers to experience information overload, which lowers the effectiveness of their purchasing decisions and lessens the likelihood of IBB. Customers' buying decisions can also be influenced by the information about a beauty product's clarity and detail. Having enough info can make customers feel less hesitant and boost the chance they will purchase^[60]. Colour, image, and beauty product packaging design are visual components that directly impact consumers' purchase intentions. Visual solid appeal increases customers' likelihood of impulsive beauty product purchases^[61].

Furthermore, live e-commerce frequently uses quick discounts and transient promotions to heighten customers' sense of urgency. These tactics encourage impulsive purchases by giving customers the impression that they will miss out on the opportunity if they do not buy right away^[62]. While it is commonly accepted that limited time offers encourage IBB, there are situations when this tactic could make customers suspect that retailers are inventing a false feeling of urgency, which would diminish the perceived value of the deals.

Accordingly, the anchor's appeal draws more customers to e-commerce live broadcasts than the beauty products, with the anchor having a more significant influence. This is partly caused by the unique qualities of beauty items and, in part, by the features of live broadcast e-commerce.

Based on the findings of this study, anchor selection and training should be optimised. Since anchor attributes significantly affect consumers' behavioural intentions and perceived value, enterprises should pay attention to the selection and training of anchors. Personalised marketing strategies should be developed based on different consumers' characteristics. Personalisation strategies can increase consumer engagement and purchase intent. At the same time, future research can expand the sample range to cover consumers from different regions, cultures and economic backgrounds and select other product categories to analyse IBB.

Author contributions

Conceptualization, Dongzhou; methodology, Dongzhou; funding acquisition, Khunanan Sukpasjaroen. All authors have read and agreed to the published version of the manuscript.

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Conflict of interest

There is no conflict of interest in this article.

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