

# A Study of E-commerce Livestreaming Promote Irrational Consumption using the 4rs of Marketing and Emotion Communication Framework

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**Abstract**—COVID-19 has not only changed the global economic landscape, but also changed the lifestyle of people around the world. With the current pandemic, people are more willing to shop at home. Therefore, it is necessary for companies engaged in e-commerce livestreaming to establish long-term and stable relationships with the audience. 4Rs marketing strategy is a good choice, it focuses on cooperation and win-win with customers. Among the many types of e-commerce livestreams, influencer livestreams are the most popular. It obviously applied the 4Rs marketing strategy, using emotions (passion and excitement) to stimulate the audience, and let the audience become their followers, in order to promote the audience's irrational consumption. It can be said that this is a 4Rs marketing involving emotional communication. This article takes the classic relationship marketing strategy 4Rs and Zhao and Liu's definition of emotional communication as the theoretical framework. It analyzes the relationship between the marketing methods of influencer teams, emotional communication and irrational consumption in e-commerce livestreaming from the four perspectives of "relationship", "retrenchment", "relevance" and "reward". Based on this, we proposed hypotheses and constructed a theoretical model aimed at explaining irrational consumption. This article believes that emotional communication is an important intermediary factor for irrational consumption in e-commerce livestreaming. As the main body of marketing, the influencer team should focus on stimulating the emotions of female consumers. And the influencer team should continue to innovate marketing methods that stimulate emotions to adapt to the audience's declining cognitive trust and increasing media literacy. This study provides useful suggestions for e-commerce livestreaming practitioners. Considering the increasingly complex business environment, emotional communication is the key to e-commerce livestreaming profitability.

**Keywords**-emotion communication; 4Rs; e-commerce livestreaming; irrational consumer; impulse purchase; influencer

## **1 INTRODUCTION**

COVID-19 has had a serious impact on the global economy, but it has also promoted the development of e-commerce. With the spread of the virus today, consumers have more reasons not to leave their homes. Therefore, e-commerce must continue to innovate marketing methods to influence consumers to purchase products or services. As an emerging business model, e-commerce livestreaming is in a period of rapid development [1]. In e-commerce livestreaming, influencers have formed more and more professional teams to stimulate audiences with emotions (passion and excitement), and let audiences become their followers to promote irrational consumption. Irrational consumption is a behavior that is strongly emotionally driven, less receptive cognitive control, and stimulated by special situations [2]. It can be said that this is a kind of relationship marketing involving emotional communication. The emotional communication theory adds a subjective perspective under the rationalist trend of thought, and it is a controversial emerging communication theory [3]. And relationship marketing is a marketing theory that focuses on communication, cooperation and win-win [4].

In this context, the study of e-commerce livestreaming's marketing methods to promote emotion communication is not only beneficial to the marketing practice of e-commerce livestreaming, but also helps to improve the theory of emotion communication.

This article takes the classic relationship marketing strategy 4Rs and Zhao and Liu's definition of emotional communication as the theoretical framework. It analyzes the relationship between the marketing methods of influencer teams, emotional communication and irrational consumption in e-commerce livestreaming from the four perspectives of "relationship", "retrenchment", "relevance" and "reward". Based on this, we proposed hypotheses and constructed a theoretical model aimed at explaining irrational consumption.

This article believes that emotional communication is an important intermediary element of irrational consumption. As the main body of the e-commerce livestreaming, the influencer team should attach importance to marketing methods based on emotional trust, interactive ritual and low-priced products. In addition, female consumer groups are more likely to have emotional communication than men. For e-commerce livestreaming where irrational consumption is the main profit method, attention should be paid to stimulating female emotions. Finally, the emotional stimulation methods of the influencer team should be constantly innovated to adapt to the audience's increasing media literacy.

## **2 THEORETICAL FRAMEWORK**

### **2.1 The 4rs of Marketing**

With the continuous innovation of Internet technology, the business environment and marketing strategies are constantly changing. As a traditional marketing strategy, 4Ps (product, price, place, promotion) takes the market as the core and aims to meet the needs of the market; the 4Cs (customer, cost, convenience, communication) that has been proposed since then are customer-oriented, and its goal is to improve customer satisfaction [5]. It can be said that the development trend of marketing theory is from simply satisfying market demand to considering

the personal subjective feelings of consumers. With the increasing emphasis on consumers in marketing, 4Rs was proposed by Ettenberg. It adapts to the increasingly complex business competition environment based on competition and aims to increase customer loyalty; it includes the following four elements: enhance the relationship with customers (relationship), timely response to market demand (retrenchment), establish relevance with customers' demand (relevance), and promote multi-party win-win (reward) [6].

As Enrico said, e-commerce should focus on establishing long-term relationships with customers to adapt to fierce competition [7]. It can be said that 4Rs is a typical relationship marketing. It can not only understand and adapt to the needs of consumers in time, but also create market demand. On the other hand, it focuses on the interaction with customers and win-win for all parties, which is a sustainable marketing strategy.

## **2.2 Emotion Communication in E-commerce Livestreaming**

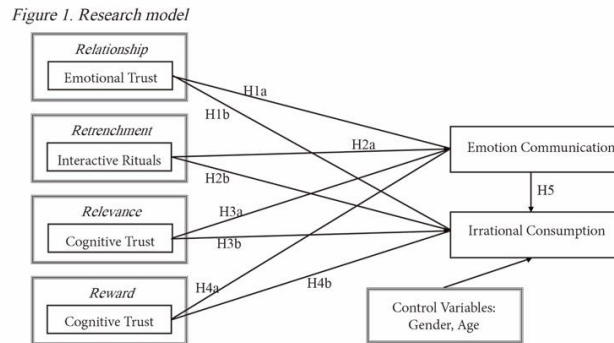
E-commerce livestreaming is both an e-commerce marketing model and a communication field. It refers to "a new type of service mode that anchors use livestreaming technology through some Internet platforms to display close-range products, answer consultations, and guide shopping." [8]. It can be said that e-commerce livestreaming is instant and interactive. It is worth noting that most e-commerce livestreaming can be regarded as an advertising activity, and most of the products they sell are provided by other manufacturers [9]. This means that the communication field includes a total of three parties, namely the anchor, the client (commodity provider) and the audience. Anchors are the core element of the e-commerce livestreaming model, and their social identities are usually influencers, government officials or actors. At present, the most popular is influencer livestreaming. In this type of e-commerce livestreaming, influencers and other staff work together to construct a radial communication field with influencer teams as the central node.

As Xiao and Guo said: "E-commerce livestreaming is using passion and excitement to stimulate audience purchases" [1]. In this field, emotional communication may be a key factor in promoting irrational consumption by the audience. Zhao and Liu defined emotional communication as "the expression, sharing and infectious behavior of individual or group emotions (and the accompanying information)" [10]. It is worth noting that it is an objective phenomenon, and it also includes "the dissemination of factual information caused by emotional factors" [10]. Based on this definition, Shen studied the emotional communication path in e-commerce livestreaming through in-depth interviews; he believes that the triggering of emotions in e-commerce livestreaming is a prerequisite for emotional communication [11]. The question inspired by this is how do they trigger the emotions of the audience in the radial communication field with the influencer team as the central node? When the audience's emotions are triggered, will they irrational consumption?

## **3 RESEARCH MODEL AND HYPOTHESES**

Figure 1 presents the proposed model, which includes the 4Rs marketing strategy of e-commerce live broadcast and the concept of sentiment communication. This model aims to

explain the irrational consumption of e-commerce livestreaming audiences. Each link will be explained in detail below.



**Figure 1** Hypothetical research model

### 3.1 Relationship

The "Relationship" in 4Rs refers to the company through communication to enhance the long-term relationship with customers [12], which is the core concept and the most important content of the company's management. For e-commerce livestreaming, this long-term relationship can be achieved through the "follow" function. e-commerce livestreaming makes full use of the influencer effect. The audience can "follow" the favorite influencer team to become its "follower". When the influencer team starts the livestreaming again, the "followers" will be prompted, and "followers" can also find livestreaming rooms that have been "followed" in the list.

In e-commerce livestreaming, one of marketing method used by influencer teams is to encourage audiences to "follow" them, which can also be said to encourage audiences to trust them [1]. According to the difference between rationality and perceptuality, trust can be divided into cognitive trust and emotional trust: "cognitive trust is based on rational investigation, while emotional trust is based on strong emotional connection" [13]. Xiao and Guo believe that the level of professionalism of e-commerce livestreaming and the quality of the products sold are uneven, and it is difficult for the audience to judge the credibility of the influencer team rationally; therefore, the influencer team needs to promote the emotional trust of the audience [1]. Specifically, the method of the influencer team is to invite celebrities or officials to participate in the livestreaming, and the credibility of these invitees will increase the credibility of the influencer team [1]. On the other hand, influencer teams are also actively shaping their personal media image. For example, they often introduce products from the perspective of consumers, which creates a kind of "consumer" role for anchors. This kind of role marketing can enhance the goodwill of consumers [14], and then induce the audience to have emotional trust.

At the psychological level, emotions come from external stimuli [15]. It can be said that the triggering of emotions by external events is the first step in the spread of emotions [11]. According to the theory of cognitive evaluation, when an external stimulus occurs, people will

first judge its relevance to themselves, and then judge its pros and cons [16]. This means that the relationship between emotional trust and trust can enhance emotions the probability of being triggered. Therefore, it is appropriate to infer that emotional trust has a positive effect on emotional transmission.

On the other hand, as Weinberg and Gottwald have said, the driving factor of irrational consumption is the psychological emotion [2]. When the emotional trust in e-commerce livestreaming is generated, the audience will have less psychological uncertainty about the influencer team, so it is easier to irrational consumption. In addition, many studies have shown that emotional trust has a positive effect on irrational consumption [1][2][17]. Therefore, based on the above discussion, the following hypotheses are proposed:

H1a: Emotional trust can promote the emotion communication.

H1b: Emotional trust can promote irrational consumption.

### **3.2 Retrenchment**

For 4Rs, the meaning of "Retrenchment" is to understand and respond to customer demands in time [18]. e-commerce livestreaming has timeliness and interactivity because it relies on the Internet platform. This allows the influencer team to communicate and interact with customers in a timely manner. The speed at which they understand and respond to customer demands is not limited by objective conditions. The influencer team can directly complete the expression through language or other means, and the most direct way for the audience to express is to post "comments." It can be said that this is one of the important conditions for the influencer team to achieve 4Rs marketing.

In e-commerce livestreaming, the influencer team will constantly read and answer the "comments" posted by the audience. This way of communication will allow all participants in the e-commerce livestreaming to form an "interactive ritual." Collins' interactive ritual chain theory believes that if it contains the following four elements, an interactive ritual can be formed: "Two or more people are present (or virtual presence through the Internet), and there are restrictions on outsiders, and people's attention is focused on the common subject, people share a common emotional experience" [19]. It can be said that interactive rituals can allow participants to obtain almost the same emotional experience [19]. This means that the emotions of the influencer team can affect the emotions of the audience. Therefore, it is reasonable to assume that the interactive ritual has a positive impact on emotion communication.

When the interaction begins, all kinds of information begin to communicate and assimilate [10]. This contains emotional information. Emotion is obviously a factor that promotes irrational consumption [2]. This means that the emotions being communicated will affect irrational consumption. Yan's empirical research shows that interactive rituals have a positive impact on irrational consumption [17]. The resulting hypotheses are:

H2a: Interactive ritual can promote the emotion communication.

H2b: Interactive ritual can promote irrational consumption.

### 3.3 Relevance

In order to obtain a long-term and stable market, it is necessary for companies to relevance their own needs and customer needs, which can enhance customer loyalty [7]. This kind of sincere marketing method allows enterprises and consumers to form a community of interests, which can effectively promote a win-win situation. As mentioned earlier, as a marketing and communication field, e-commerce livestreaming has three stakeholders: influencer team, client and audience. Among them, the demands of the client and the audience are "The client needs to obtain a good promotion effect, and the audience wants to buy low-priced and high-quality goods or services" [11]. This means that the influencer team, as the main body of marketing, should consider its own demands in conjunction with these demands.

In order to meet the audience's needs for product quality, the influencer team must strictly check the quality of the products appearing in the livestreaming. For example, the well-known influencer team "Li Jiaqi" has specially set up a quality inspection team to ensure that the products they introduce have no quality problems [20]. This approach is to relevance one's own demand for brand image and consumers' need for product quality; it will encourage the audience to trust the influencer team more. It is worth noting that the trust here is the "cognitive trust" at the rational level. Although it does not directly involve emotions, it also provides a basis for the interpersonal communication of emotions. It can be said that it can provide help for emotion triggering. Therefore, it can be assumed that cognitive trust has a positive effect on emotion communication.

On the other hand, in order to meet the client's needs for advertising effects, the influencer team should constantly use emotional performance and various methods to deepen the impression of the client's products in the minds of the audience. A psychological study has shown that when people are triggered by external stimuli, people will have a deeper memory of the stimulus and the person who applied the stimulus [21]. This memory will affect people's cognitive when people judge [16], and then to more familiar people Generate cognitive trust. Many studies believe that recognition of cognitive trust has a positive effect on purchase behavior [5]. Based on the above discussion, the following hypotheses are proposed:

H3a: Cognitive trust can promote the emotion communication.

H3b: Cognitive trust ceremony can promote irrational consumption.

### 3.4 Reward

The "reward" of 4Rs means that the enterprise obtains benefits after realizing the relationship, reaction, and association [22]. Only a relationship in which all parties can get rewards can be sustained in a long-term and stable manner. As mentioned above, among the three-party stakeholders of e-commerce livestreaming, the influencer team needs to build its own brand to attract followers to obtain more advertising fees from the client; On the other hand, the client will provide a small number of products for the influencer team at low prices in order to achieve the advertising effect [23]. The audience will continue to watch the livestreaming in order to purchase these low-priced products. It can be said that these interest needs are well connected by the business model of e-commerce livestreaming, and it has prompted stakeholders to act for mutual benefit and win-win results. In this process, all stakeholders will get a "reward".

As an objective phenomenon, emotion communication is spread among groups [10]. The main group of emotional communication in e-commerce livestreaming is the audience. One of the audience's demands is low-priced products. This means that low-priced products can be used as a stimulus to promote emotion communication.

On the other hand, in terms of economics, commodities with prices below the market will cause demand to fall short of demand. This means that many consumers buy goods that are not what they need. This can be regarded as irrational consumption. Therefore, based on the above discussion, the following hypotheses are proposed:

H4a: Low-priced products can promote the emotion communication.

H4b: Low-priced products trust ceremony can promote irrational consumption.

### **3.5 Emotional Communication and Irrational Consumption**

The driving factor of irrational consumption is emotion [2]. This is also the main logic of emotional marketing. Emotional communication can form a unified emotion between individuals [11]. In this context, the purposeful guidance of consumers' emotions can influence the group's irrational consumption. Based on this discussion, the following hypotheses are proposed:

H5: Emotional communication can promote irrational consumption.

## **4 METHODS**

The data in this article was collected using questionnaires. It can collect a wide range of opinions and is suitable for social surveys and psychology [5]. For this research involving emotion and irrationality, the questionnaire survey method can use more feedback to understand the psychological activities of the audience.

We first collected 50 similar statements based on the above hypothesis. In order to avoid social expectations bias, we have adapted these sentences to a certain extent to make it difficult for respondents to perceive the purpose of the problem [24]. And we edited these sentences into 25 items of "favorable" and "unfavorable" each. The survey project conducted a pilot test on 36 e-commerce live broadcast consumers who believed that they had made at least one irrational purchase in the past year. The items in the survey use the five-point Likert scale that ranged from (1) strongly disagree to (5) strongly agree. We give each item a score. For example, the scores for items deemed favorable from strongly disagree to strongly agree are: 1-5, and vice versa. We will calculate the average of all the scores obtained and select items with too low or too high scores to be included in the questionnaire based on the average. This can prevent respondents from avoiding extreme options. The final questionnaire has 8 questions.

We joined two WeChat follower groups by watching various e-commerce live broadcasts on Taobao and Douyin live broadcast platforms and invited 1,000 people to fill out the questionnaire. E-commerce livestreaming on Douyin and Taobao platforms are currently the most popular in China [25]. Of the 127 responses received, 13 could not be used due to incomplete filling, and the effective response rate was 97.64%.

To evaluate potential non-response bias, we added control variables (gender and age) to the questionnaire. According to the data of the Wei Hotspot Big Data Research Institute, the male to female ratio of e-commerce livestreaming users is 43.94:56.06, and the male to female ratio of 114 subjects in this survey is 43.86:56.14, with an error of 0.08. In terms of age, 81.73% of e-commerce livestreaming users are younger than 30 years old, and 81.58% of the total number of people tested in this survey is younger than 30 years old. Therefore, non-response bias has no significant impact on this survey.

**Table 1** Respondent information

Gender	Age		Total People
	Under 30	30-50	
Male	42	8	50
Female	51	13	64
Total	93	21	114

## 5 RESULTS AND DISCUSSION

The research results show that the four related variables (Emotional trust, Interactive ritual, Cognitive trust and Low-priced products) based on the 4Rs marketing strategy all directly or indirectly promote the emotional communication and irrational consumption. In addition, 100% of the respondents believe that the emotional communication can promote their irrational consumption.

Table 2 shows the respondents' data on 4 related variables. The numbers in the table indicate the absolute value of the average score of the item in the questionnaire (full score is 5). This means that the value indicates the degree of recognition by respondents that the variable can promote emotional communication or irrational consumption. Since the number of respondents over the age of 30 is relatively small, it is calculated together with respondents of other ages.

**Table 2** Survey results

4 Variables Based on 4Rs	Emotional Communication		Irrational Consumption	
	Male	Female	Male	Female
Emotional trust	4.16	4.36	4.32	4.34
Interactive ritual	4.72	4.58	4.43	4.63
Cognitive trust	4.34	4.66	3.79	4.28
Low-priced products	4.26	4.67	4.48	4.56



The above data shows that e-commerce livestreaming marketing methods based on 4Rs can promote emotional communication and irrational consumption. It is worth noting that the scores of female respondents are higher than those of males in most cases. A reasonable explanation is that women have stronger empathy ability than men. Rob's medical interpretation of empathy is that "empathy has three steps: the first is to recognize emotions, the second is to recognize the source of emotions, and the third is to make corresponding emotional responses." People mainly rely on the mirror neurons in brain to recognize emotions [26]. Studies have shown that there are overall gender differences in the movement of the human mirror neuron system, and female subjects show stronger motor resonance than male subjects [27]. This means that women are more likely to recognize emotions than men. This makes it easier for emotional communication and irrational consumption to occur among women.

In addition, contrary to our expectations, cognitive trust does not have a great impact on promoting irrational consumption. This may be because the current e-commerce livestreaming business environment is more complicated, with uneven professionalism and reputation [1]. This means that when e-commerce livestreaming audiences are consuming, the main driving factor is still emotions. Although cognitive trust can promote emotional communication, it cannot directly promote irrational consumption. In other words, when people are exposed to increasingly complex Internet emotions, their media literacy will gradually improve [28]. This means that the effect of cognitive trust in promoting irrational consumption by the audience will become less and less obvious.

## **6 CONCLUSION**

Although emotional communication is an objective phenomenon, it is not incapable of being influenced. In the marketing practice of e-commerce livestreaming, as the main body of marketing behavior, the 4Rs marketing strategy of the influencer team can effectively regulate emotional communication. And emotional communication can be used as an intermediary to promote the irrational consumption of the audience. It is worth noting that female audiences are more likely to be influenced than male audiences. This means that influencer team should pay more attention to stimulating the emotions of female audiences. On the other hand, the impact of cognitive trust has a lower score than other variables. This may be related to the media literacy of the audience. In this context, influencer team should continue to try new emotional marketing methods to strengthen the emotional trust of the audience.

This research developed a theoretical model of emotional communication and irrational consumption in e-commerce livestreaming. This model starts from the perspective of the relationship between influencer teams, audiences, and clients in e-commerce livestreaming, and combines the mediating role of 4Rs marketing strategy and emotional communication. Through empirical research, it further analyzes the influence of the influencer team's marketing methods based on 4Rs on the promotion of audience irrational consumption. This can not only provide useful insights for e-commerce livestreaming practitioners, but also deeply explore the influencing factors of the emotional communication phenomenon. It provides new ideas for perfecting the theory of emotional communication.

However, the limitation of this study is the small number of study samples. This may affect the general applicability of the conclusions. On the other hand, the model is based on the information of China's e-commerce livestreaming industry. If you want to extend it to other regions, you may need to consider the emotional perception factors in the cross-cultural context. These shortcomings can provide some ideas for future research.

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