

Evaluation on Innovation of Emotional Marketing in Network Live Broadcasting Based on New Media Environment

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Abstract. With the increase of per capita disposable income of residents and the improvement of social and economic development, people's demand for entertainment has surged, and the online live broadcasting industry has ushered in a golden age of vigorous development. Traditional webcast has the shortcomings of poor user experience, low interactivity and low content quality, which makes it difficult to meet the diversified and personalized consumption requirements of the audience. In this context, the live broadcast system based on social media platform has become one of the effective means to solve these problems. The new media online live emotional marketing has a strong transmissibility, which can provide consumers with more rich and interesting ways to obtain information, and can also improve the effect of brand promotion and word of mouth promotion. Based on the theory of multimodal learning, this paper analyzed the characteristics of user behavior among different types of social networking sites, and explored the emotional interaction mode on social networking sites from the visual and voice dimensions, and provided a basis for the formulation of emotional marketing strategies for webcasting and business decision-making. The article also compared the traditional live broadcast marketing mode with the online live broadcast emotional marketing under the new media environment. The results showed that the live broadcast marketing under the new media environment has a better effect, and the sales volume has also increased by 3.87%. It can effectively control costs and audience satisfaction is also higher. The computer vision multimodal learning technology based on Human Computer Interaction (HCI) can dynamically identify the live content, and use intelligent voice assistants to help users achieve personalized interactive communication, bringing consumers a more intuitive experience.

Key Words: New Media, Webcast Emotional Marketing, Human-computer Interaction, Multimodal Learning, Computer Vision

1. Introduction

Since the outbreak of COVID-19, many traditional industries have been impacted, and some small and medium-sized enterprises are even facing the crisis of bankruptcy or transformation and upgrading. In order to solve these problems, many enterprises have begun to use the new way of live broadcast to carry out e-commerce business. Online consumption has become the mainstream. More and more enterprises and businesses have launched various online and offline integrated service models to respond to market changes. They have carried out marketing promotion and product sales in the form of live broadcast with goods. The development of HCI based computer vision and Artificial Intelligence (AI) technology provides users with more intuitive and effective product information and purchase behavior, and attracts more users to pay attention to brands and commodities, and improves consumer shopping experience.

Emotional marketing in webcast is one of the mainstream trends in the future, which many scholars have explored. Jingting Felisa Zhang analyzed consumer sentiment and emotional politics in the digital economy, and verified the effectiveness of online live broadcast emotional marketing in consumer behavior decision-making by building an indicator system containing two parts of "perception response", and found that people showed more emotional tendencies in online live broadcast (Zhang, 2019). Zhou Xiaowen developed and promoted the live network service model from the perspective of low-carbon economy, and analyzed the influencing factors of consumers' impulsive purchase intention from the two aspects of consumers' sense of pleasure and arousal, and found that strengthening the multiple stimuli of visual marketing can grasp consumers' emotional state, and is conducive to the formation of impulsive purchase intention (Zhou et al., 2021). Oluwatofunmi Akinwamide David investigated the relationship between digital marketing performance and organizational behavior of real estate agents, and found that webcast is the main mode of communication for real estate agents at present, bringing more potential customers and new business opportunities to enterprises (Oluwatofunmi & Bello, 2019). Zhang Panpan discussed whether quality is the key factor affecting consumers' purchase intention when watching live broadcast. Through regression analysis, he found that commodity quality is positively related to consumers' purchase intention, and the impact is most obvious, providing a reference basis for live broadcast platform, anchor and government control (Zhang et al., 2022). Yuan Chenfei studied the copyright infringement of online short video and live broadcast, and analyzed the main risks of online live broadcast marketing from the aspects of content production, user behavior and social responsibility, taking the Internet communication field as an entry point, which is helpful to standardize the management and operation of the platform (Yuan, 2022). Huang Qifan discussed the innovative path of digital marketing of time-honored brands in the new media era. Through marketing on different webcast platforms, he explored consumers' needs and concerns for brand cultural connotation, product value and other aspects, and realized a new experience brought by the combination of traditional enterprises and Internet technology, providing opportunities for digital transformation and upgrading of traditional enterprises (Huang, 2022). Network live broadcast is a new form of communication, with strong interaction, large information capacity and rich content.

Network live broadcasting under the digital new media environment is a hot topic in the industry, and many scholars have studied such issues. Li Bing studied the impact of webcast on consumers' impulsive purchase, and found that using goods and service information can improve consumers' purchase rate during webcast, but also reduce their purchase decision-making level (Li, 2021). Fu X. I. A. O combed the development of webcast industry, discussed the marketing strategy of webcast content based on social media, established an interactive communication mechanism with the audience, and maximized the communication effect (Fu, 2022). Na Li summarized the characteristics of mainstream webcast platforms and the obstacles facing the industry at present, and helped enterprises find a business model suitable for their own development in the new media environment by analyzing the two most influential video game streaming media (Na & Surng, 2019). Luo Mei analyzed the influencing factors of user consumption under the e-commerce live broadcast mode, and built a consumer shopping behavior model from product attributes, purchase frequency, payment methods and marketing strategies, and combined with promotional activities to improve the conversion rate of users' online shopping (Mei et al., 2018). Wang HongQian explored the impact of mobile online live shopping environment on consumers' purchase behavior, and proposed a mobile online live shopping evaluation model based on user experience and perceived quality, which has good effectiveness and practicality in improving

product display effect and online shopping satisfaction (Wang & Zheng, 2022). Weibin Chen, based on the perspective of opinion leaders on the presentation of product recommendation information in the mobile network community, investigated the impact of webcast on the consumer purchase process, which has certain practical significance in marketing for companies and individuals currently conducting business activities. By analyzing users' shopping behaviors and interests on different platforms, it is found that webcast is an important way to effectively improve the consumption experience, purchase conversion rate and sales success rate (Chen, 2022). Live network marketing under the new media environment has brought users a richer and more diverse experience.

Although the development of the online live broadcasting industry has brought more convenience to people, the live broadcasting marketing in the new media environment is not a simple thing, which requires some technical support. HCI based computer vision multimodal learning can improve users' ability to identify video content, achieve rapid switching of complex scenes, effectively improve user experience, improve user stickiness and product conversion rate, and achieve good marketing results.

2. Webcast in the New Media Environment

(1) Network live broadcast marketing mode

Live broadcast, a new form of social media, is known as the most dynamic and promising network communication mode at the moment because of its fast transmission speed, strong immersion experience and other significant advantages. It can close the relationship between people, stimulate deeper emotional exchanges, enrich people's spiritual and cultural life, and mobilize the enthusiasm of the whole people. Therefore, it is gradually accepted and liked by more young people, and has changed people's ideas and behavior to a certain extent, providing a strong impetus for promoting economic growth. The common live broadcast marketing model is shown in Figure 1.

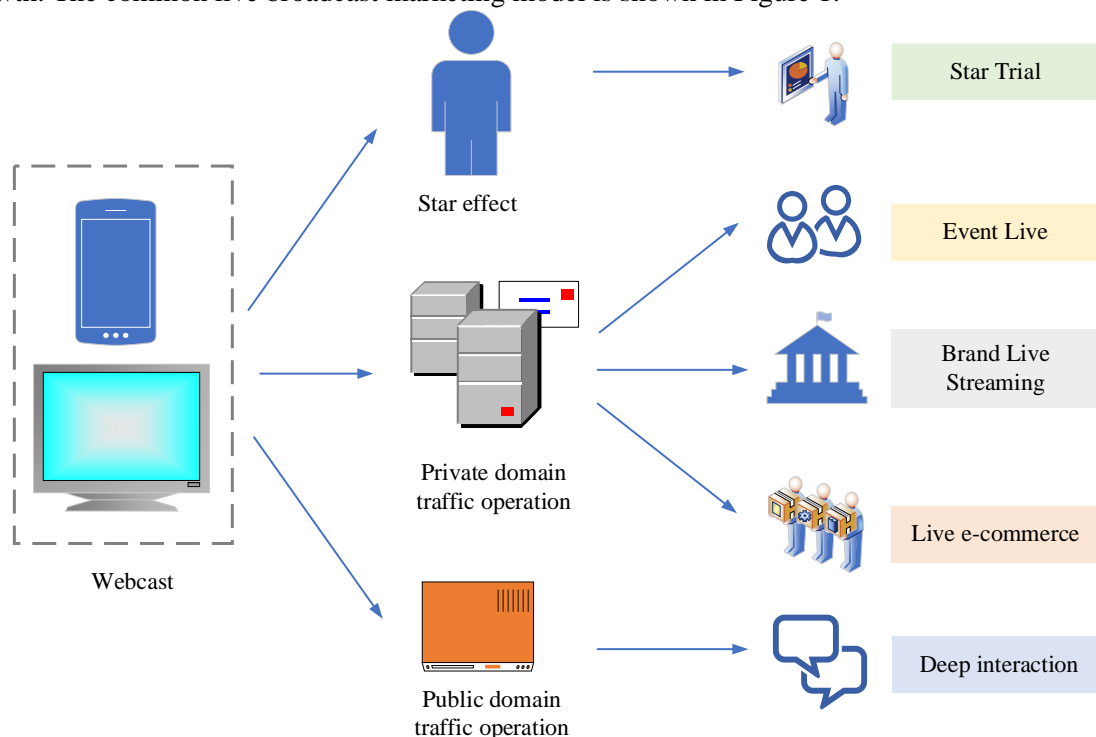


Fig 1. Common webcast marketing model

As shown in the figure, there are three main ways of online live broadcast marketing, namely, star delivery based on "fan economy", private domain traffic operation based on brand side and e-commerce platform, and public domain traffic operation centered on social media content marketing such as Tiktok. Among them, the most typical one is the star anchor bringing goods. In recent years, the star bringing goods has become a trend. More and more enterprises have cooperated with stars to improve their awareness of their products in the minds of consumers. However, with the change of market environment, stars also face some problems, such as improper operation due to lack of professional quality, insufficient understanding of relevant laws and regulations or lack of corresponding knowledge,

which would bring certain risks to businesses. Private domain traffic operation includes live broadcast of events such as press conferences and concerts, brand live broadcast and e-commerce live broadcast. For brands, private domain traffic can make it easier for users to find the goods they want to buy; for businesses, private domain traffic can be used to promote product sales. For individuals, private domain traffic can help them quickly master new information, so that they can make better decisions. The live broadcast mode dominated by deep interaction has strong appeal. It enhances the emotional resonance among users through real-time interaction and question and answer, and attracts the attention of target groups and realizes consumption transformation, and also helps stimulate people's curiosity (Lu, 2020).

(2) Advantages and disadvantages of online live emotional marketing

With the advent of the Internet era, people are more eager to obtain deeper emotional exchanges, thus promoting the further upgrading of online live broadcasting. This new media form has a great impact and impact on traditional TV media. With the popularity of mobile devices in public life and the development of network technology, live broadcast promotion based on mobile terminals has become the most common new mode in the field of marketing communication. The advantages of online live emotional marketing are shown in Figure 2.

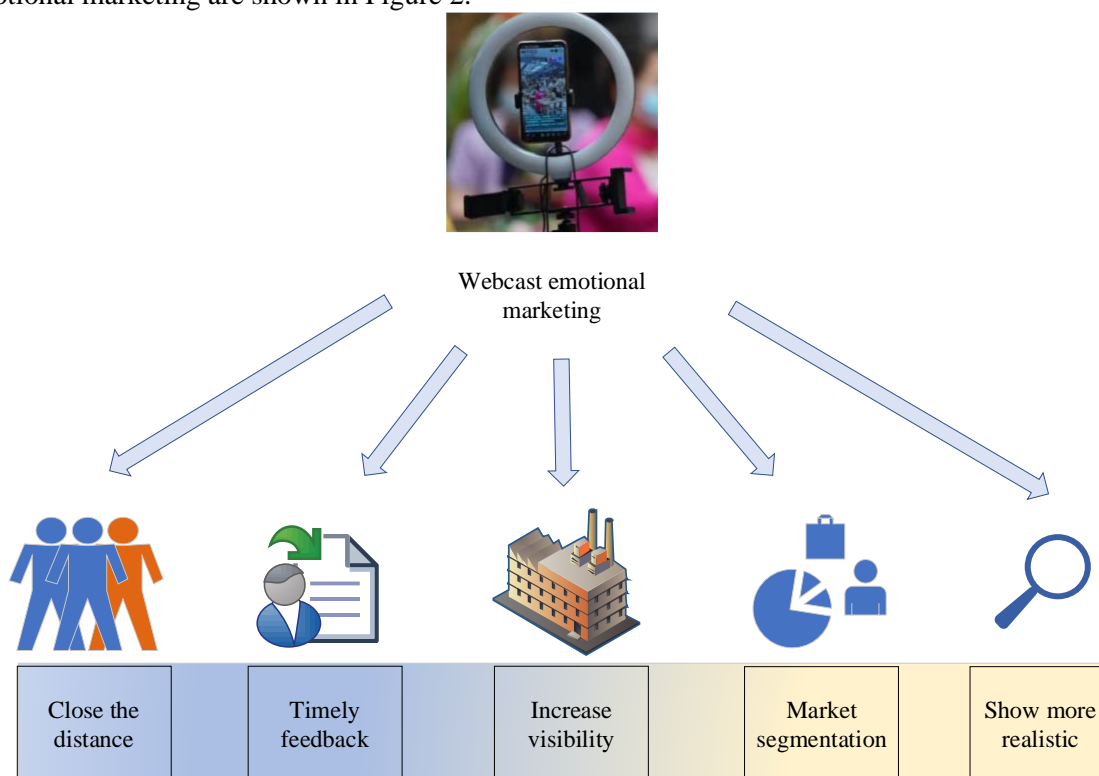


Fig 2. Advantages of webcast emotional marketing

The advantages of online live emotional marketing are as follows: first, it shortens the distance between people through online interactive communication, and improves users' understanding of products or services through mutual communication between users, so that more people can understand and participate in the activities. Second, the feedback is stronger, because users can directly talk with the anchor and get feedback in the chat process, which helps to enhance consumers' trust in products or services, and thus stimulate their desire to buy. Third, it can effectively enhance brand influence and popularity, and attract more traffic resources to enter the enterprise website, and increase the publicity effect. Fourth, it is conducive to market segmentation and accurate positioning of enterprises, and accurately grasp the demand characteristics and consumption habits of target audience groups. Fifth, presenting real information can minimize false advertising and fraud, and provide a more intuitive, visual and vivid shopping experience, and gain consumer trust, so as to achieve better publicity effect. Therefore, online live emotional marketing not only has a good development prospect, but also has high commercial value. It is also a good choice to introduce it into the modern commercial field (Jun et al., 2020).

The webcast platform is a brand new marketing method, which to a large extent meets the growing spiritual and cultural needs of consumers, and can achieve deeper communication and interaction

between enterprises and users. However, due to the lack of systematic and standardized operation mode and relevant legal system, webcast has not only brought people a convenient lifestyle, but also had a certain impact on the business development and society, as shown in Table 1.

Table 1. Deficiencies of webcast emotional marketing

Disadvantages	Recommendation
Single mode, similar content	Discover new demand points and promote them effectively
Lack of innovation awareness	Shaping corporate image and improving consumer experience
Lack of effective interaction	Improve fun and interactivity
Low quality of online anchors	Establishing the right values and improving professional ethics

It can be seen from Table 1 that there are four main factors that affect the effect of emotional marketing of traditional webcast, among which the similarity of content and single mode are the most obvious. In this context, the new media marketing model of "live+social" has become a new trend. It attracts more and more consumers' attention with its high interactivity, high participation and high experience, and has become an important channel for enterprises to obtain traffic and user information, bringing new opportunities and challenges to the online live broadcast industry. Secondly, the lack of innovation awareness is also a major bottleneck that hinders the development of webcast. Only by building a new emotional marketing model based on the perspective of brand reform and innovation can people achieve the organic combination between its target market positioning and product promotion through the shaping of corporate image and consumer experience. Due to the lack of effective interaction in the traditional way of live broadcast, the new media platform represented by WeChat official account has become a new "traffic portal". This channel is characterized by strong interaction and wide communication range, and is favored by more and more advertisers, especially brand advertising, and is also an important means for enterprises to carry out brand marketing promotion. Finally, the quality of the anchorman is closely related to the quality of emotional marketing. In order to improve the professional level and comprehensive ability of the anchorman, people must strengthen the learning of relevant knowledge in the training process of the anchorman, and improve their psychological quality by enriching their own cultural accomplishments, and also pay attention to training methods to meet the needs of modern social development. To sum up, as a new and potential Internet application form, online live broadcast marketing is in a high-speed development period, but there are still many problems to be solved (Ruston, 2021).

(3) Emotional marketing of online live broadcasting in the new media environment

With the continuous maturity and popularization of Internet technology, more and more people begin to try to understand news information through the network, which brings opportunities and challenges to the traditional broadcasting industry. For example, the rapid rise of short video applications such as Tiktok and Kwai has brought great changes to the industry. In this case, many traditional retail channels have begun to seek transformation. They use live streaming to sell products and expand their market share. At present, new media live streaming based on social media is a relatively common form of business. Based on Internet technology and big data technology, it is an emerging commercial format that transforms user behavior into specific goods or services to be displayed on mobile terminals, realizing online transactions and real-time interaction. The online live emotional marketing model under the new media environment is shown in Figure 3.

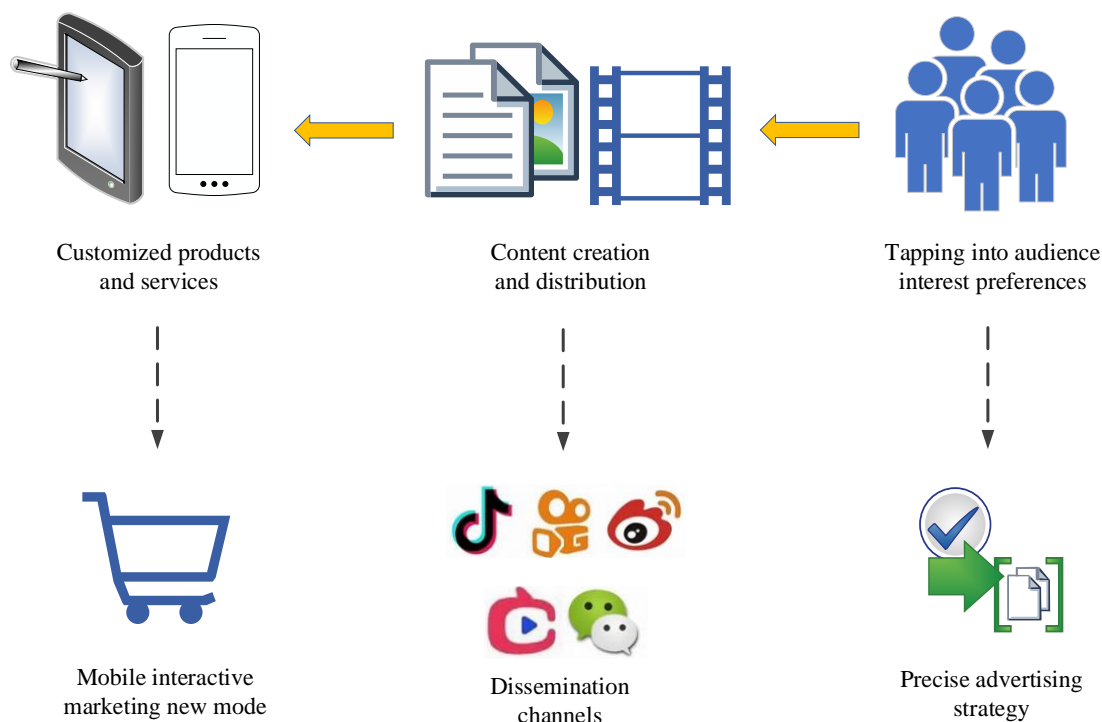


Fig 3. Emotional marketing model of webcasting in the new media environment

First of all, from the perspective of the audience, the interest preference of the target audience is mined through data analysis to understand their preference characteristics and possible consumption behavior, and then a targeted promotion plan is designed to form a precise advertising strategy that meets the preferences of specific groups. Secondly, it uses Internet technology to create and disseminate content, such as establishing a short video works display library based on WeChat public platform and social media such as Weibo, Tiktok, Red. Combined with the intelligent hardware terminal, it is produced and released; finally, customized products are developed according to user needs to provide one-stop shopping services for consumers, including advertising planning, launching, monitoring and later operation. Advertisements are implanted into mobile applications or other mobile devices to create a new mode of mobile interactive marketing and achieve effective management of live broadcast marketing effects and consumer loyalty. In this process, user portraits, fans' behavior analysis and other links can be used as the basic guarantee for data driven precise launch, and also the basis for subsequent marketing activities (Lv, 2020).

(4) The influence of HCI computer vision multimodal learning on network live broadcasting

Live broadcast can help consumers obtain the latest product information, reduce time consumption, enable users to complete all activities they need in life without leaving home, and better meet users' needs for content sharing and product information exchange with strong sociability. HCI based computer vision multimodal learning is a technology that can improve user experience and improve the efficiency of shopping decisions. This algorithm realizes intelligent matching and prediction by analyzing user behavior data, so that businesses can better understand customer needs and provide corresponding services. This new business model has been adopted by many e-commerce enterprises. For example, Taobao and Pinduoduo are trying to develop a new business ecosystem similar to "live+social+product recommendation". In the future, the "live+social" model is expected to become the mainstream consumption pattern. The role of HCI in webcast is shown in Figure 4.

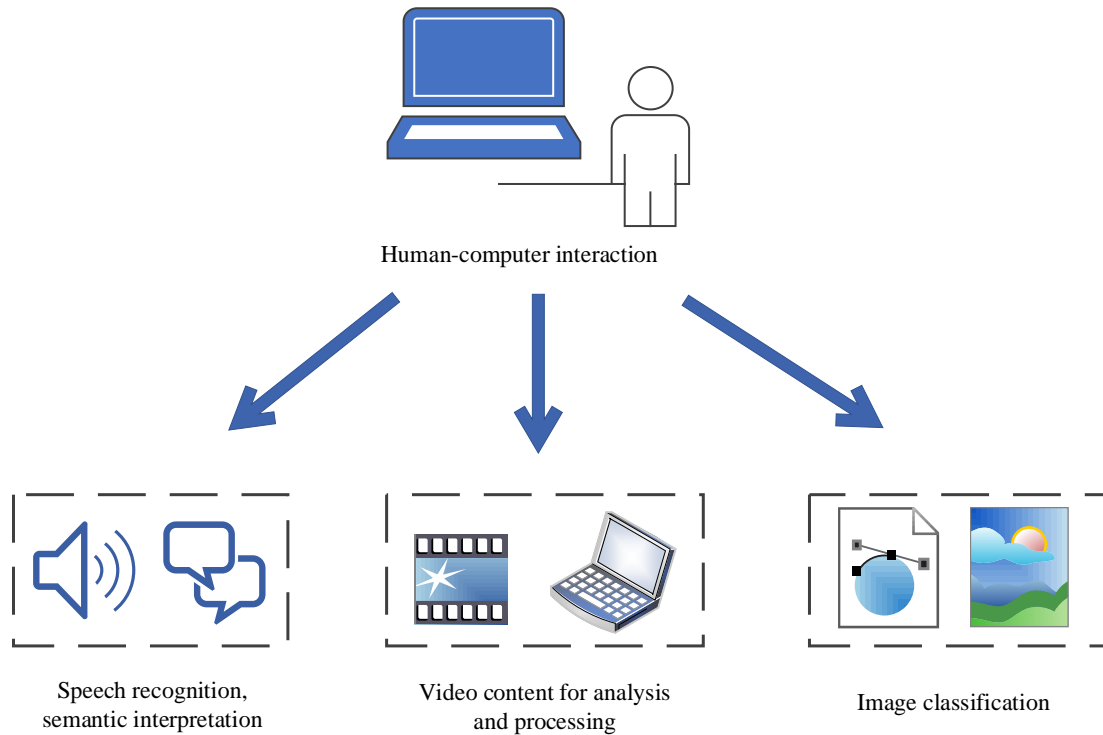


Fig 4. Impact of multimodal learning of computer vision for HCI on webcasting

As shown in the figure, HCI based computer vision multimodal learning has three main functions in webcast. Among them, voice recognition based multitask interaction is a relatively mature interaction method at present. As an auxiliary means of information acquisition, voice recognition mainly uses voice synthesis, natural corpus construction, intelligent recommendation algorithm and other methods, which can effectively improve the user experience; in terms of semantic understanding, there are also many strategies such as text mining and topic search, which can improve the system performance through machine learning, such as automatically generating corresponding word phrases or word lists for target words. Secondly, people can analyze and process the video content, and extract the text information needed in a specific scene from the visual perspective, such as facial expressions, vehicle features, weather changes, etc., provide data support for live marketing, and enhance the user's immersion. At last, the deep neural network and other artificial intelligence technologies are used to realize image classification, so as to assist the anchor to complete the advertising planning and effect evaluation, and improve the advertising efficiency. For webcast, the purpose of computer vision multimodal learning is to enable the audience to get a more intuitive and vivid viewing experience, so that they can focus more on the topics they are interested in rather than other issues, and better participate in the interaction, ultimately achieving the goal of increasing income, expanding influence and promoting development (Sarna, 2018).

3. HCI Based Multimodal Network Live Broadcast Emotional Feature Learning Model

If there are n training sample pairs, $A = (a_1, a_2, \dots, a_n)$ and $B = (b_1, b_2, \dots, b_n)$ represent visual and speech features respectively, and the first stage of shared emotional feature learning is to obtain correlation coefficients Q_a and Q_b by maximizing and minimizing inter class correlation, and then the objective function can be expressed as:

$$Q = \max \frac{Q_a^T S_{ab} Q_b^T}{\sqrt{Q_a^T W_{aa} Q_a \times Q_b^T W_{bb} Q_b}} \quad (1)$$

W_{aa} and W_{bb} represent the covariance matrix of visual and speech modes respectively, and their expressions are:

$$W_{aa} = \alpha R + (1 - \alpha) S_{aa} \quad (2)$$

$$W_{bb} = \alpha R + (1 - \alpha) S_{bb} \quad (3)$$

In the formula, α is the eigenvalue parameter.

S_{aa} and S_{bb} are defined as follows:

$$S_{aa} = A(1 - P)(1 - P)^T A^T \quad (4)$$

$$S_{bb} = B(1 - S)(1 - S)^T B^T \quad (5)$$

The sparse reconstruction matrix of visual and speech features is:

$$P = (p_1, p_2, \dots, p_n) \quad (6)$$

$$S = (s_1, s_2, \dots, s_n) \quad (7)$$

The contraction algorithm can be used to obtain the parameter α , and then:

$$\alpha = \min \frac{(1 - \frac{2}{h})tr(S^2) + tr^2(S)}{(n + 1 - \frac{2}{h})(tr(S^2) - \frac{tr^2(S)}{h})} \quad (8)$$

In the formula, h is the matrix dimension.

The S_{ab} in Formula (1) is converted into matrix form, and the following result is obtained:

$$S_{ab} = S_e - \lambda S_v \quad (9)$$

Among them, S_e represents local intra class matrix, and S_v represents local inter class matrix, and λ represents matrix coefficient.

Then Formula (1) can be expressed as:

$$\begin{cases} (AB^T)W_{bb}^{-1}(AB^T)Q_a = \partial^2 W_{aa} Q_a \\ (AB^T)W_{aa}^{-1}(AB^T)Q_b = \partial^2 W_{bb} Q_b \end{cases} \quad (10)$$

Therefore, the emotional feature K of multimodal webcast can be expressed as:

$$K = Q_a \times A + Q_b \times B \quad (11)$$

In the formula, Q_a and Q_b represent the correlation coefficients of the two matrices respectively.

The algorithm has good prediction ability and robustness. According to the above learning process of multimodal shared emotional features of webcast, different users can be classified and scored. Building a multimodal learning emotional model can effectively improve the content quality and advertising conversion rate of social networking sites (Su & Chiu, 2021).

4. Comparative Experiment of Online Live Emotional Marketing in the New Media Environment

(1) Experimental methods

A questionnaire survey was conducted among 30 anchors randomly selected from a certain type of purpose. According to the different live broadcast modes, they were divided into two groups, namely, traditional online live emotional marketing Group A and live broadcast marketing Group B under the new media environment. It is known that each group has 15 people, and the live broadcast time and marketing products are the same. A comparative experiment was designed from three aspects of efficiency, cost and satisfaction. The experimental data were recorded and the marketing effects under the two environments were analyzed.

(2) Data analysis

1) Sales

The number of goods sold by the two groups within three hours of the live broadcast is recorded, as shown in Figure 5.

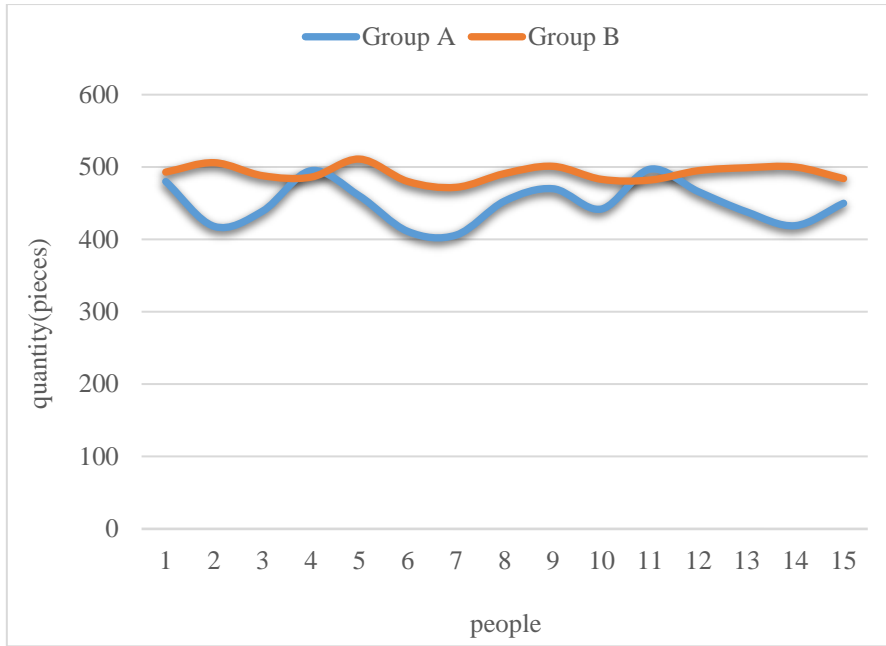


Fig 5. Comparison of webcast marketing sales between the two groups

As shown in the figure, the sales volume of Group A and Group B is more than 400 pieces. The live broadcasts of both groups have achieved good results, but a closer look shows that the trend of the curve of Group B is relatively stable, whereas the fluctuation of the curve of Group A is relatively large, and the sales volume of members of Group B is basically kept at about 500 pieces. However, Group A is in the range of 400-500, and most of them are lower than Group B. This shows that Group B is more competitive in the whole industry. However, it can be seen from the figure that the sales volume of two anchors in Group A exceeds that of Group B. Therefore, There is still room for improvement in online live broadcast marketing under the new media environment.

2) Cost

The comparison of decoration cost, labor cost and marketing cost is shown in Figure 6.

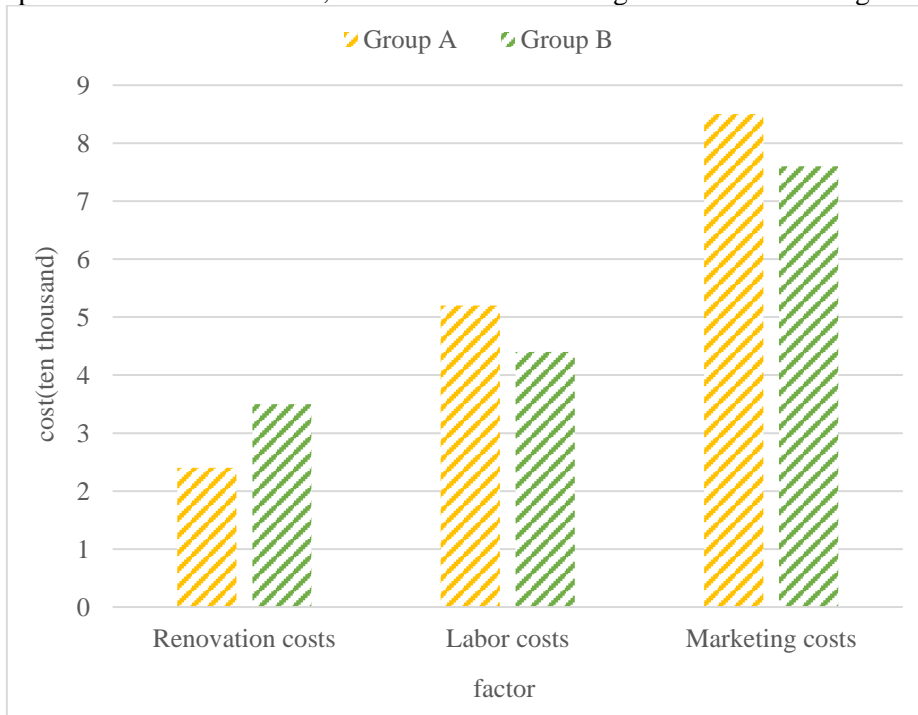


Fig 6. Comparison of webcast marketing cost between the two groups

It can be seen from the figure that from the perspective of decoration cost, the cost of Group B is much higher than that of Group A, which indicates that the quality of decoration of Group B's live

broadcasting room is higher, and it can also attract more fans. From the perspective of staffing, the salary of Group B's employees is lower than that of Group A. This is because the webcast innovation team in the new media environment needs to have a high level of professionalism and technology rather than extra manpower. Therefore, Group A may have more employees, but Group B's employees are more professional. From the perspective of marketing costs, the expenses of both groups account for a relatively high proportion. This is because webcast, as a new industry, has not yet formed a mature operating system and needs a lot of financial support to develop, so it would be difficult to promote. In general, the cost input of Group A is slightly higher than that of Group B. After calculation, the cost of Group B is reduced by 3.87% compared with Group A.

3) Satisfaction

The audience satisfaction of the two groups of live broadcast rooms with the live broadcast is calculated respectively, and the results are shown in Figure 7.

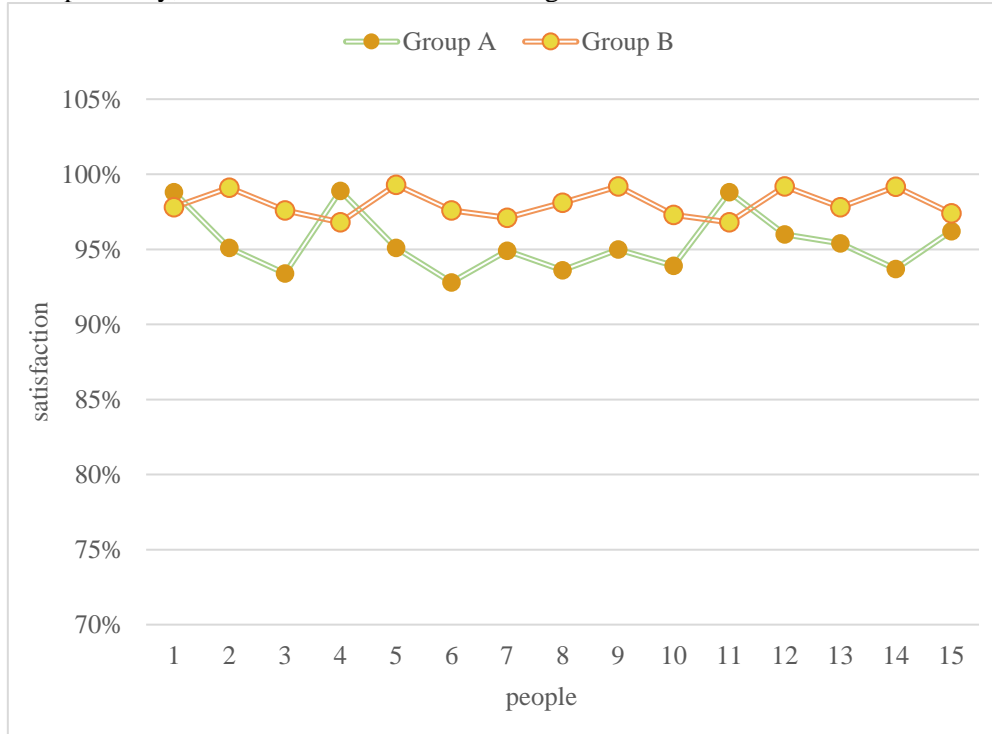


Fig 7. Comparison of satisfaction between the two groups

As shown in Figure 7, the satisfaction of both groups is more than 90%, so people can be sure that these two projects are relatively successful, but only Group B has the satisfaction of more than 95%. This shows that the online live broadcast marketing model supported by new media tools has great advantages, and because the audience of online live broadcast ads is mainly young people, the conversion rate is also relatively high. Therefore, Group B can get better results.

Based on the above three aspects, this paper compares the sales volume, cost and satisfaction under the two live broadcast modes. To facilitate the comparison, the satisfaction data is converted to a number within 10, and the Group A data is about 9.54, and the Group B data is about 9.8. The sales volume data is reduced by 100 times, and the Group A data is 4.5, and the Group B data is 4.89. The results are shown in Figure 8.

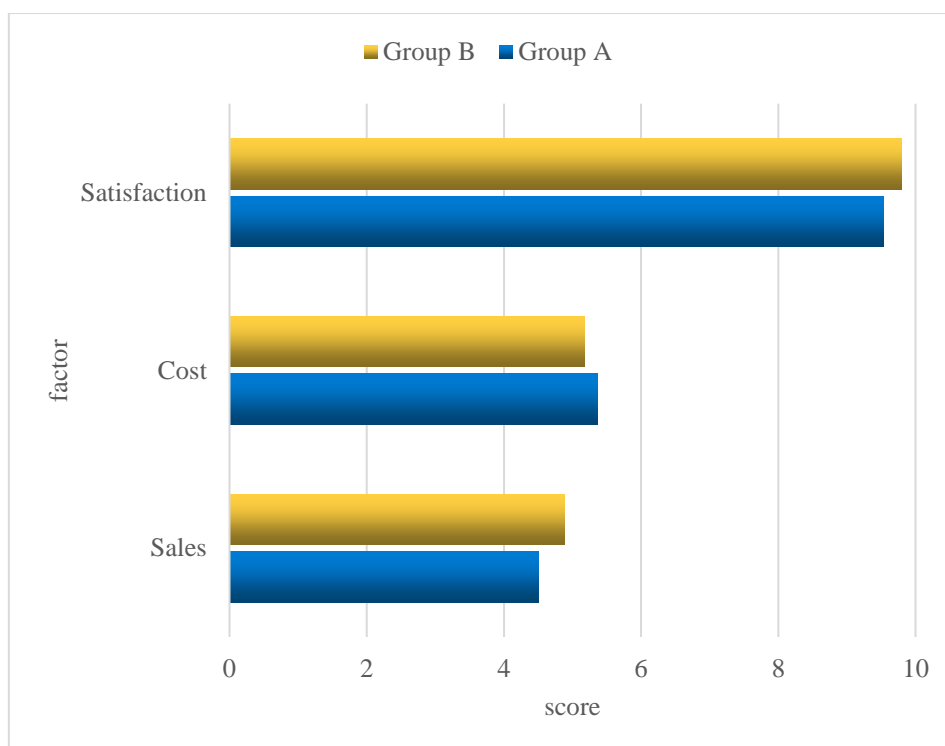


Fig 8. Comparison of the overall marketing effectiveness of the two groups

It can be seen from Figure 8 that in terms of sales volume and satisfaction, Group B's data performance is better than that of Group A, and in terms of cost, Group B's cost is also lower than that of Group A, which is exactly the goal that the enterprise wants to achieve. Therefore, the online live broadcast marketing from the perspective of new media is more attractive to users, and more influential to enterprises, and relatively low in cost. Therefore, if people can make good use of new media technology and integrate it with webcast, they can bring greater benefits to enterprises.

5. Conclusion

Online live broadcasting breaks the time and space limit, and changes people's lifestyle and thinking mode, and brings new development opportunities to traditional industries. The online live emotional marketing under the new media environment is a new business model based on user data and social relations. It has a strong sense of interaction and immersion, and can provide people with a richer and better commodity experience, and attract more consumers to participate, help merchants improve conversion rate and enhance market competitiveness. The article started with the mode of network live broadcast marketing, and analyzed the problems existing in network live broadcast and put forward corresponding countermeasures. At the same time, it optimized and innovated the existing technology deficiencies and its own characteristics, in order to lay a solid foundation for enterprises to better realize product promotion, brand promotion and precise positioning, and achieve good economic and social benefits. HCI's computer vision multimodal learning, as an effective means of information acquisition and processing, would help to solve the problem of information asymmetry that is prevalent in online live broadcasting, and promote the improvement of online live broadcasting advertising effect.

References

- Chen, W. B. (2022). The Impact of Live Webcast Product Recommendation on Consumers' Purchase Intention." *International Journal of Science and Business* 6.1: 58-72.
- Fu, X. I. A. O. (2022). Research and Analysis Report on the Development of Webcast in China. *Journal of Literature and Art Studies* 12.2: 160-166.

- Huang, Q. F. (2022). Research on Digital Marketing Intelligence Innovation of Guangzhou's Time-Honored Brands in the Era of Big Data. *Proceedings of Business and Economic Studies* 5.4: 40-50.
- Jun, L., Huang, G. M., and Zhou, Y. (2020). A sentiment classification approach of sentences clustering in wecast barrages." *Journal of Information Processing Systems* 16.3: 718-732.
- Li, B. (2021). Research on the Impact of Webcast on Consumers' Impulsive Purchase." *Frontiers in Economics and Management* 2.11: 538-544.
- Lu, C. Y. (2020). An exploratory study on consumer purchase behavior from live webcasting e-commerce: A means-end chain analysis using facebook live webcasting." *International Journal of Online Marketing (IJOM)* 10.3: 1-20.
- Lv, X. Q. (2020). Generate Football News from Live Webcast Scripts Based on Character-CNN with Five Strokes." *Journal of Computers* 31.1: 232-241.
- Mei, L., Jiang, J. H., and Lv, Q. H. (2018). Research on the Influencing Factors of User Consumption in E-commerce Webcast Mode." *International journal of science* 5.7: 242-246.
- Na, L., and Surng, G. J. (2019). Current Situation and Future Prospects of China's Game Webcast Industry. *TECHART: Journal of Arts and Imaging Science* 6.2: 9-13.
- Oluwatofunmi, A. D., and Bello, V. A. (2019). Relationship between digital emotional intelligence and performance of real estate digital marketing in Nigeria. *International Journal of Psychology and Cognitive Science* 5.2: 70-78.
- Ruston, C. R. (2021). Development and Improvement of an International Webcast Series to Expand the Accessibility of Swine Medicine Resources. *Journal of Veterinary Medical Education* 48.1: 21-26.
- Sarna, L. (2018). Impact of a webcast on nurses' delivery of tobacco dependence treatment. *Journal of clinical nursing* 27.1-2: e91-e99.
- Su, C. Y., and Chiu, C. H. (2021). Perceived enjoyment and attractiveness influence Taiwanese elementary school students' intention to use interactive video learning." *International Journal of Human-Computer Interaction* 37.6: 574-583.
- Wang, H. Q., and Zheng, Z. (2022). Exploring how consumers' purchasing behaviour is influenced in mobile webcast shopping context. *International Journal of Mobile Communications* 20.4: 462-482.
- Yuan, C. F. (2022). Research on Copyright Infringement of Network Short Video and Webcast. *Law and Economy* 1.1: 51-54.
- Zhang, J. T. (2019). Emotions and consumption of the netizens in China's digital economy. *Revista Latinoamericana de Estudios sobre Cuerpos, Emociones y Sociedad (RELACES)* 11.30: 89-98.
- Zhang, P. P., Wang, J. C., and Liu Y. J. (2022). Research on the Influence of Commodity Quality on Purchasing Intention under the Background of Live Broadcast with Goods." *Frontiers in Business, Economics and Management* 4.3 (2022): 137-140.
- Zhou, X. W., Feng, X., and Yue, Y. (2021). Research of the Impact of Low-Carbon Network Development on the Impulsive Purchase Intention: Empirical Evidence based on SOR Model. *International Core Journal of Engineering* 7.8: 478-487.