บทความวิจัย

INFLUENCE OF VIRTUAL ANCHOR CHARACTERISTICS ON FANS' REWARD BEHAVIOR: A CASE STUDY OF THE CHINESE MARKET

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ABSTRACT

This article examined how the characteristics of Virtual Anchors affected fans' reward behavior during live broadcasts. It also investigated the live broadcast factors influencing the internal states of Virtual Anchor fans and explored whether emotional attachment and identity served as mediating variables. The study was grounded in SOR Theory, supplemented by Body Consumption Theory, Prototype Theory, the "Three Bodies" Theory, Attachment Theory, and Identity Theory, and constructed a reward behavior model for users who have watched Virtual Anchors' live broadcasts. A quantitative research design was used to collect data and test the hypothetical model. In this survey, 550 questionnaires were distributed, and 507 were successfully recovered. The quantitative data were analyzed using confirmatory factor analysis, path testing, and mediating effect testing. The results showed that the characteristics of Virtual Anchors had a positive impact on fans' reward behavior. The test results confirmed a significant correlation between the independent variables—the external image of the Virtual Anchor ("leather case"), the character setting of the Virtual Anchor, and the personality charm of the Virtual Anchor ("the person in the Virtual Anchor")—the mediating variables of emotional attachment and identity, and the dependent variable of fans' reward behavior. The Bias-Corrected Bootstrap method confirmed the mediating effect of emotional attachment

and identity. This study demonstrated that the characteristics of Virtual Anchors positively influenced fans' reward behavior.

Keywords: Characteristics, Chinese Market, Entertainment Virtual Anchor, Fans' Reward Behavior

INTRODUCTION

Since the 21st century, spurred by the continuous elevation of both material and cultural desires among individuals alongside advancements in internet technology, live streaming has garnered progressively more public attention. Live broadcast is a novel form of social media that enables individuals to record and disseminate content in real time. There are many live broadcast platforms in the new webcast mode. These platforms allow anyone to create live broadcast content, which can be spread and watched at the same time. Anchors, serving as content creators, play a crucial role in live broadcasting.

In recent years, China's Internet technology has achieved significant advancements, surging ahead in various domains. With a rapid rise in the number of netizens, there has been a corresponding increase in traffic and user base for live webcasts.

Recently, a new type of anchor has emerged among network anchors: Virtual Anchor. Gong et al. (2021) think that Virtual Anchor is formed by capturing facial expressions, motion capturing and sound processing for the live broadcaster himself, that is, the "the person in the Virtual Anchor", and presenting it virtually with live2D or 3D model, that is, "leather case". In China, the development of Virtual Anchors is also very rapid.

At present, there is little research on fans' reward behavior consumption of Virtual Anchors; in the existing research, only the influence of live anchors on consumers' reward behavior is analyzed; the research on Virtual Anchor mostly focuses on the technical methods of Virtual Anchor realization, the development background and history of Virtual Anchor industry, the problems existing in Virtual Anchor industry, the interaction between Virtual Anchor and fans, etc., but does not focus on the influence of characteristics of Virtual Anchor on fans' reward behavior. Therefore, this paper focuses on the influence of the characteristics of Virtual Anchors on fans' reward behavior.

RESEARCH OBJECTIVES

RO1: To study how characteristics of Virtual Anchor affect fans' reward behavior in Virtual Anchor live broadcast.

RO2: To study the characteristics of live broadcast factors that affect the internal state of Virtual Anchor fans. To study whether emotional attachment and identity play a mediating variable.

LITERATURE REVIEW

1. Definition of Virtual Anchor

Virtual Anchor is a rising concept in recent years. Shang (2022) believes that Virtual Anchors are content producers who upload videos or broadcast live on online video platforms with virtual digital characters, which are common on Youtube, Bilibili, Facebook, and other platforms. Wang (2020) believes that the significance of virtual live broadcasts is to interact with fans and anchor live broadcast activities on the Internet by virtue of virtual image and personal charm.

2. Body Consumption Theory

Baudrillard (1970) believes that the consumption of body and beauty is not an individual phenomenon but a universal phenomenon that has become a universal ideology. Cassirer (1954) thinks that man is a "symbolic animal" and "lives in a symbolic universe". For the Virtual Anchor industry, Boellstorff (2015) discusses the human experience and social interaction in the virtual world; he thinks people express their interests and aesthetic preferences in art, music, architecture, and other cultural forms through Virtual external images. Liu (2023) thinks that the image of Virtual Anchor is mainly reflected in its unique animation artistic value and strong Two-dimensional atmosphere. In the Virtual Anchor live broadcast, the external image "holster" often exists as a kind of "desire symbol".

3. Prototype Theory

Carl (1912) believes that the personality mask prototype has infiltrated everyone's life almost since the establishment of social culture. Pei (2022) analyzed the importance of character setting and classified the character setting trend of Virtual Anchor as diversification and curiosity. Xie (2019) thinks that character setting originally emerged as a professional term within the realm of animations. It denotes the process of designing the appearance traits, character models, costumes, body proportions, and other visual aspects of characters to convey their personality characteristics. Goffman (1989) shows that in order to achieve the purpose of image management, people will intentionally

show their own language or physical behaviors in the process of daily interaction. And these unique behaviors also reflect various personalities. In the process of creating a Virtual Anchor, the design of external behavior according to its own personality setting can strengthen its image in the eyes of the audience.

4. "Three Bodies" Theory

Japanese critic Tanijima Kunta (2018) put forward the "Three Bodies" Theory of Virtual Anchors. He thinks that the "the person in the Virtual Anchor" behind the screen is the first body of the Virtual Anchor. The virtual characters on the screen constitute the second body of the Virtual Anchor. The image accepted by the audience through live broadcasts and other media forms constitutes the third body of the Virtual Anchor. Guo (2020) believes that Virtual Anchors have the external image of multi-element integration based on Two-dimensional elements, an excellent grasp of character setting, and the composition of "the person in the Virtual Anchor." Feng & Fan (2021) finds that in the Virtual Anchor circle, the real person behind the Virtual Anchor who provides the voice and behavior paradigm for the Virtual Anchor is called "the person in the Virtual Anchor ".

5. Attachment Theory

John Bowlby (1969) thinks that the role of attachment is to provide a balanced and normal social interaction. Belk (1988) shows that the Attachment Theory, which started from interpersonal relationship situations, can be applied to marketing situations.

6. Identity Theory

Erickson (1998) defines identity as a sense of self-familiarity, understanding one's future goals, anticipating recognition, and inner self-confidence from trusted individuals. Bai (2021) found that virtual idol fans have common preferences. In such a group, fans will find a sense of belonging accompanied by the same kind. Tao (2022) thinks that because of the virtuality of virtual idols, their audiences can produce their own meaning and complete the construction of self-identity and group identity.

7. Stimulus-Organism-Response Model Theory

Mehrabian & Russell (1974) put forward the SOR (Stimulus-Organism-Response model) Theory. In the network environment and virtual environment, Luo et al. (2021), based on the SOR theoretical model, found that the identity background, ability to bring goods, preference, and interaction of anchors

have a positive impact on consumers' purchase intention and cognitive and emotional changes play a certain intermediary role in the relationship.

8. Definition of Fans' Reward Behavior

Wan (2017) believes that user reward behavior on social media means that users can reward a content creator or the content created by him through cash or virtual gifts.

CONCEPTUAL FRAMEWORK

This study selected external image of Virtual Anchor, character setting of Virtual Anchor, personality charm of Virtual Anchor, these three dimensions as independent variables. Emotional attachment and identity are selected as the mediating variables, and fans' reward behavior is taken as the dependent variable. The conceptual framework of this article is shown in Figure 1. Therefore, this paper puts forward the following hypothesis

H1: Characteristics of Virtual Anchor have a positive impact on emotional attachment.

H2: Emotional attachment has a positive impact on identity.

H3: Emotional attachment has a positive impact on fans' reward behavior.

H4: Identity has a positive impact on fans' reward behavior.

H5: Characteristics of Virtual Anchor have a positive impact on identity.

H6: Characteristics of Virtual Anchor positively impact fans' reward behavior.

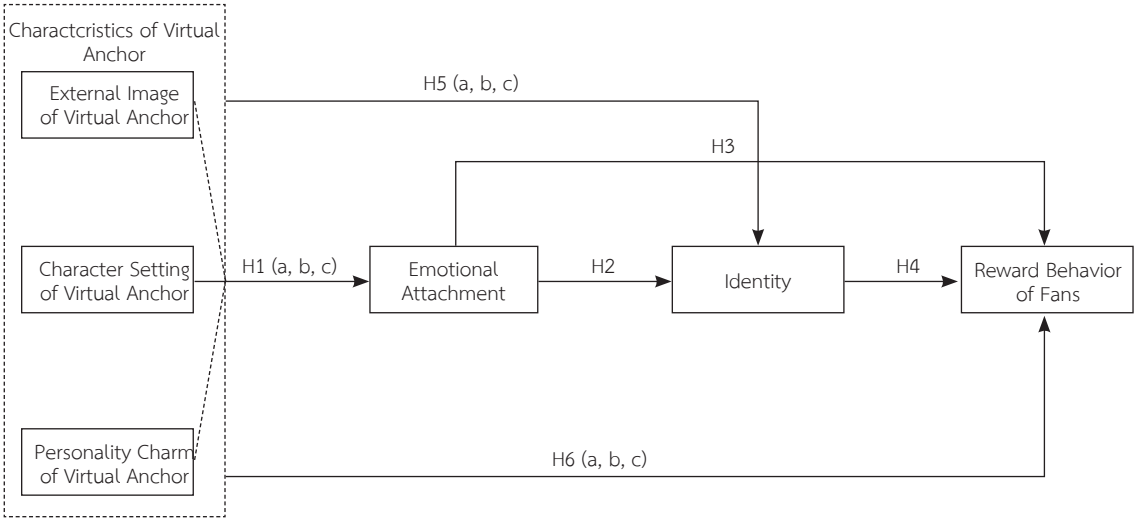

Figure 1 Conceptual Framework

METHODOLOGY

This study adopted the convenient sampling method and distributed questionnaires offline, and distributed questionnaires in the target group, which was composed of people watching the live broadcast of Virtual Anchors. Bilibili World is the largest Virtual Anchor offline event in China. At the scene, more than 300 popular Virtual Anchors gathered here. This exhibition added a lot of content about Virtual Anchor, attracting many people interested in Virtual Anchor. Finally, we distributed 550 questionnaires and successfully recovered 507 questionnaires, with a recovery rate of 92.2%.

The survey comprised two sections. Section one gathered participants' demographic information, including gender, age, and occupation, to effectively control variables and enable researchers to concentrate on the subject. Section two involved comprehensive questions aimed at assessing the constructs in the research model. A 7-point Likert scale was utilized to gauge the items, with values ranging from "1 = Strongly disagree" to "7 = Strongly agree".

RESEARCH RESULTS

1. Demographic Analysis

This section includes the findings of frequency and percentage of the sample data. According to descriptive statistical results, the total number of valid samples is 507. The results of demographic of the respondents are shown in the Table 1.

Table 1 Demographics Distribution of Samples (N = 507)

Demographic Variables	Characteristics	Frequency	Valid Percent
Gender	Male	345	68%
	Female	162	32%
Age	18-24	186	36.7%
	25-30	204	40.3%
	31-40	96	18.9%
	41-50	18	3.6%
	>50	3	0.5%

In terms of gender, the number of males is greater than that of females, respectively accounting for 68% and 32%. This indicates a higher proportion of males in this group, but females also have a significant representation. In some cultural backgrounds, such as Japan's Two-dimensional culture, the acceptance, and love of virtual anchors are relatively high, and the audience of the two-dimensional culture accounts for a relatively large proportion of men, so there are more male audiences. In terms of age, the largest number is 25-30 years old, accounting for 40.3% of the total number, followed by 18-24 years old (36.7%). Young people have a strong ability to accept new things, and virtual anchors usually adopt a two-dimensional style, which is especially popular among young people, so most viewers are under the age of 30.

2. Statistical Analysis Results

2.1 Average Value and Standard Deviation

As can be seen in the Table 2, the average score of each item is above 5, which shows that our questionnaire results are meaningful.

Table 2 Average Value and Standard Deviation

Measurement Item	Average Value	Standard Deviation
EXI1	5.97	.751
EXI2	5.92	.720
EXI3	5.93	.712
CHS1	5.69	.782
CHS2	5.63	.607
CHS3	5.57	.714
PER1	5.79	.815
PER2	5.79	.845
PER3	5.75	.794
EMO1	5.64	.598
EMO2	5.31	.736
EMO3	5.74	.695
IDE1	5.86	.792
IDE2	5.77	.735
IDE3	5.83	.762
IDE4	5.79	.798
IDE5	5.79	.780
REB1	5.77	.682
REB2	6.16	.704
REB3	6.12	.793
REB4	6.23	.690

2.2 Reliability

In order to ensure the consistency of the scale and the credibility of the analyzed data, the reliability of the sample data should be tested. Reliability test that is the same object, using the same method for multiple tests, whether the final results can be consistent. A reliability test is used to discuss the reliability and accuracy of quantitative data. The most commonly used Cronbach's Alpha (Cronbach, 1951).

The Cronbach's Alpha coefficients are shown in Table 4; six variables are all greater than 0.8. It can be seen that all variables have good internal consistency, and the measurement reliability of the components of each variable is high.

2.3 Confirmatory factor analysis

In order to confirm the theoretical model proposed in the research, this research use structural equation modeling analysis method, and used software to test the data about six variables collected from formal questionnaires. The structural equation model of the study is shown in Figure 2, and the fitting index of the structural equation model is shown in Table 3.

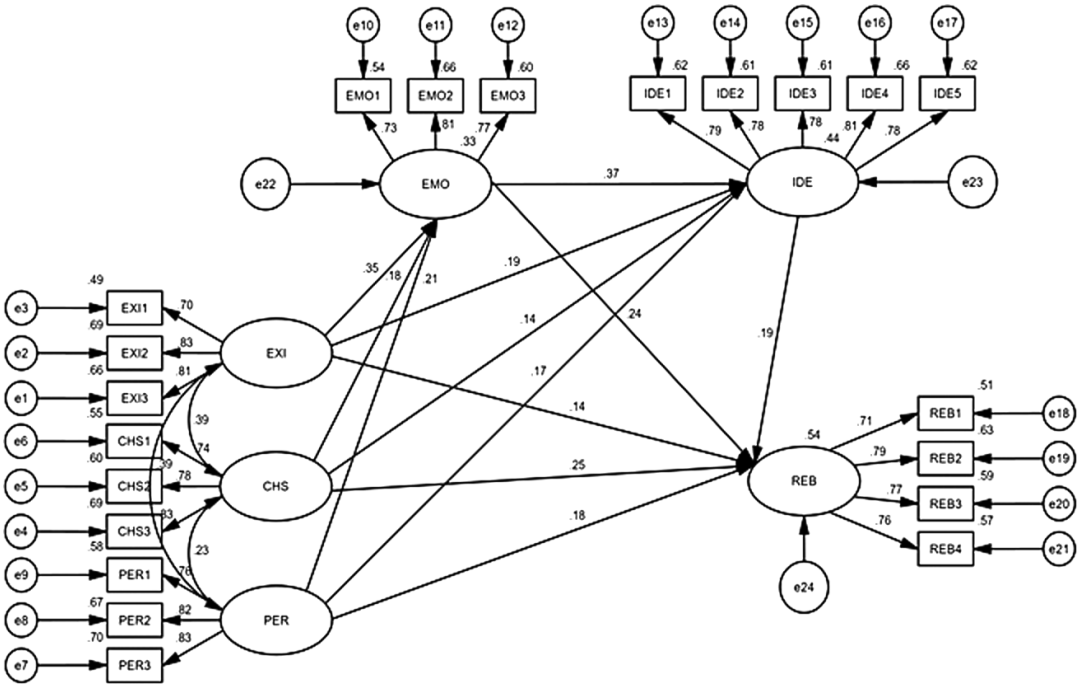

Figure 2 Structural Equation Model

Table 3 Fitting Index of Structural Equation Model

Fit Measure	Acceptable Fit	Result	Support
x^2/df	1.00<x^2/df<3.00	1.324	Acceptable
RMR	<0.05	0.019	Acceptable
SRMR	<0.05	0.332	Acceptable
GFI	>0.90	0.958	Acceptable
AGFI	>0.90	0.944	Acceptable
PGFI	>0.50	0.721	Acceptable
NFI	>0.90	0.958	Acceptable
CFI	>0.90	0.989	Acceptable
RMSEA	<0.05	0.025	Acceptable

Table 3 shows that a series of fitting indexes are in line with the standard, which also shows that the theoretical model fits well with the observation data from different aspects.

According to the value of standardized regression weights, we can find the Composite Reliability (CR) and Average Variance Extracted (AVE) value of each latent variable, and the results are shown in Table 4. And we use Fornell-Larcker criterion to study the Discriminant Validity (Fornell & Larker, 1981). The Discriminant Validity is shown in the following Table 5.

Table 4 Convergent Validity

Relationship	Standardized Estimates	S.E.	C.R.	P	CR	AVE	Cronbach's Alpha
EXI1←EXI	0.698						
EXI2←EXI	0.835	0.073	15.787	***	0.827	0.615	0.823
EXI3←EXI	0.813	0.070	15.627	***			
CHS1←CHS	0.721						
CHS2←CHS	0.775	0.053	15.677	***	0.826	0.614	0.818
CHS3←CHS	0.849	0.063	16.165	***			
PER1←PER	0.752						
PER2←PER	0.821	0.064	17.452	***	0.847	0.650	0.846
PER3←PER	0.842	0.061	17.620	***			
REB1←REB	0.716				0.844	0.575	0.842
REB2←REB	0.787	0.084	16.032	***			
REB3←REB	0.797	0.084	15.566	***			
REB4←REB	0.729	0.082	15.377	***			
IDE1←IDE	0.788						
IDE2←IDE	0.776	0.048	18.66	***			
IDE3←IDE	0.788	0.050	18.762	***	0.893	0.623	0.893
IDE4←IDE	0.810	0.052	19.666	***			
IDE5←IDE	0.792	0.053	18.782	***			
EMO1←EMO	0.692						
EMO2←EMO	0.826	0.067	15.925	***	0.816	0.597	0.811
EMO3←EMO	0.794	0.075	15.497	***			

Notes: ***p<0.001

EXI, External Image; CHS, Character Setting; PER, Personality Charm; EMO, Emotional Attachment; IDE, Identity; REB, Reward Behavio

Table 5 Discriminant Validity

	PER	CHS	EXI	EMO	IDE	REB
PER	0.807					
CHS	0.234	0.784				
EXI	0.394	0.392	0.784			
EMO	0.394	0.372	0.507	0.773		
IDE	0.426	0.393	0.498	0.587	0.789	
REB	0.474	0.510	0.528	0.587	0.579	0.758
AVE	0.650	0.614	0.615	0.597	0.623	0.575

Notes: The diagonal is the square of AVE
EXI, External Image; CHS, Character Setting; PER, Personality Charm; EMO, Emotional Attachment; IDE, Identity; REB, Reward Behavior.

It can be seen from the above table that the Composite Reliability is greater than 0.7, which indicates that there is sufficient internal consistency (Bagozzi & Yi, 1988), and the Average Variance Extracted is greater than 0.5 (Fornell & Larker, 1981). It shows that there is Convergent Validity between dimensions.

It can be seen from Table 5 above that the square root of the Average Variance Extracted from all facets is greater than the correlation coefficient between this facet and other facets, so we think that the structural equation model in this study has Discriminant Validity. So, this study has good Construct Validity.

After the above test, we find that the Convergent Validity and Discriminant Validity of the structural equation model of this study have passed the test, so we think that this study has good Construct Validity.

2.3 Hypothesis Test

The hypotheses are tested by combining the results of the above structural equation model analysis. The hypothesis verification results are shown in Table 6.

Table 6 Results of Hypotheses Test

Relationship	Standardized Estimates	S.E.	C.R.	P	CR
H1a: EXI←EMO	0.351	0.059	5.774	***	Yes
H1b: CHS←EMO	0.184	0.048	3.419	***	Yes
H1c: PER←EMO	0.212	0.043	3.969	***	Yes
H2: EMO←IDE	0.373	0.074	6.399	***	Yes
H3: EMO←REB	0.237	0.047	3.960	***	Yes
H4: IDE←REB	0.193	0.036	3.385	***	Yes
H5a: EXI←IDE	0.186	0.068	3.352	***	Yes
H5b: CHS←IDE	0.142	0.054	2.929	0.003**	Yes
H5c: PER←IDE	0.173	0.050	3.569	***	Yes
H6a: EXI←REB	0.143	0.042	2.622	0.009**	Yes
H6b: CHS←REB	0.246	0.035	4.992	***	Yes
H6c: PER←REB	0.184	0.031	3.812	***	Yes

Notes: ***p<0.001, **p<0.01

From the analysis in Table 6 of the structural equation model hypothesis test, it can be seen that all P values were significant at 0.01 and 0.001, respectively, indicating that H1-H6 is supported.

As can be seen from the structural equation model diagram in Figure 2, the whole model explains 54% variance of the dependent variables of fans' reward behavior for R square. The independent variables, external image of the Virtual Anchor, character setting of the Virtual Anchor, and personality charm of the Virtual Anchor accounted for 33% and 44% variance of the mediating variables of emotional attachment and identity, respectively. Thisshows that the theoretical model of prediction has great explanatory power, so the R square values of this study are acceptable. The variance of all observed variables explained by their latent variables is higher than 50%, which shows that the reliability of observed variables is very good (Fornell & Larker, 1981), and these measured index variables can effectively reflect the factor constructs

contained in their corresponding latent variables.

To sum up, the hypotheses put forward in the design stage of this study have been confirmed by empirical analysis and can be supported, which shows that the structural equation model is more appropriate.

2.4 Mediating Effect Test

In this section, the mediating effects proposed in the study were tested by the Bias-Corrected Bootstrap method. In this study, 5000 Bootstrap samples were selected from the original data (n = 507) by repeated random sampling method, and an approximate sampling distribution was generated. The confidence interval of 95% mediating effect was estimated by the 2.5 percentile and 97.5 percentile. If the 95% confidence interval of the mediating effect does not include 0, it indicates that the mediating effect is meaningful (Efron & Tibshirani, 1993). The results of mediating effect verification are shown in Table 7.

Table 7 Mediating Effect Test

Parameter	Standardized Estimates	S.E.	Bias-Corrected 95%CI	
			Lower	Upper
stdIndEXI1	0.025	0.011	0.009	0.042
stdIndEXI2	0.083	0.030	0.041	0.143
stdIndEXI3	0.036	0.017	0.014	0.078
stdIndCHS1	0.013	0.008	0.004	0.028
stdIndCHS2	0.044	0.015	0.022	0.074
stdIndCHS3	0.027	0.013	0.010	0.057
stdIndPER1	0.015	0.008	0.005	0.033
stdIndPER2	0.050	0.019	0.023	0.089
stdIndPER3	0.033	0.016	0.011	0.066

stdIndEXI1: EXI←EMO←IDE←REB, stdIndEXI2: EXI←EMO←REB,
stdIndEXI3: EXI←IDE←REB, stdIndCHS1: CHS←EMO←IDE←REB,
stdIndCHS2: CHS←EMO←REB, stdIndCHS3: CHS←IDE←REB,
stdIndPER1: PER←EMO←IDE←REB, stdIndPER2: PER←EMO←REB,
stdIndPER3: PER←IDE←REB,

To sum up, the mediating effects have been confirmed by empirical analysis and can be supported.

RESULTS CONCLUSION AND DISCUSSION

This study first finds out that when fans like the characteristics of Virtual Anchors, they will form emotional attachments. Boellstorff (2015) thinks that through the construction of the virtual external image, people seek emotional attachment in the virtual world. Wang (2020) suggests that the external image and character setting of the Virtual Anchor should be adjusted based on fan feedback, aiming for emotional resonance and fan attachment during the adaptation process. This study also finds out that when fans have an emotional attachment to the Virtual Anchor, they will gradually form their self-identity and their identity with the fan group. Liu (2023) argues that fans fulfill their emotional needs for identity through engaging in emotional ceremonies and enhancing their sense of identity.

This study third finds out that when fans have an emotional attachment to the Virtual Anchor, they will reward the Virtual Anchor. Wang (2021) argues that the prevalent sense of alienation in modern society, coupled with the loneliness experienced Internet, necessitates the emergence of virtual characters. Hu (2022) argues that the fan economy fundamentally operates as an affective economy, wherein emotional value is monetized. Through establishing profound emotional bonds between fans and idols, fans engage in consumption behavior, leading to profitability for the platform.

This study fourth finds out that when fans form self-identify and the fan group, they will express their love for the Virtual Anchor and may reward the Virtual Anchor. Huang (2022) thinks that Virtual Anchors not only thrive through commercial and media channels but also uphold their distinctive subcultural styles during evolution.

This study fifth finds out that when fans like the characteristics of Virtual Anchors, they will gradually form their self-identity and their identity with the fan group. Li (2020) believes that virtual idols themselves are constructed by character setting. The emotional resonance among the members of the character-setting fan group. Shang (2022) believes that the audience of Virtual Anchors achieves the functions of external image aesthetics, further realizing the audience's and group's identity toward subcultures.

This study also finds out that when fans like the characteristics of Virtual

Anchors, they will express their love, and may reward the Virtual Anchor. Zhong (2018) argues that the anchor's appearance serves as the initial visual impression presented to users. This fosters feelings of accomplishment and identity and bolsters users' inclination to give gifts.

Furthermore, from Table 6, this study found that the characteristics of Virtual Anchors not only directly and positively affect fans' reward behavior but also indirectly affect fans' reward behavior through the intermediary role of emotional attachment and identity. Song & Qiu (2022) suggests that emotional communication in live broadcasts featuring virtual external images, as members of a subculture group, fans engage in emotional projection onto virtual external images and gradually develop a sense of group identity, then there will be reward behavior.

This study enriches the research perspective of Virtual Anchor's behavior to reward live broadcast: from the characteristics of Virtual Anchor. The contribution of the Virtual Anchor industry in the commercial field is very significant. This study can help consumers understand their recognition of and support for Virtual Anchors. For the Virtual Anchor itself, this study can help the Virtual Anchor understand the influence of characteristics on fans' reward behavior. For the enterprises and companies where Virtual Anchors are located, studying the Virtual Anchor industry can help enterprises understand the potential of Virtual Anchors in marketing. For the Virtual Anchor industry studying the Virtual Anchor industry can promote the development and innovation of the Virtual Anchor industry.

First, future research can explore the factors influencing user behavior for other types of live virtual anchor broadcasts.

Second, in future research, survey participants could be drawn from diverse regions and cultures. The findings of such research might vary based on the backgrounds and perspectives of participants from different regions and cultures.

REFERENCES

Bagozzi, R., & Yi, Y. (1988). On the evaluation of structural equation models. **Journal of the Academy of Marketing Science, 16**(1), 74-94.

Bai, D. H. (2021). **Research on fans of virtual idol**s. (Master dissertation). Xiangtan University, Xiangtan.

Baudrillard, J. (1970). **Material system "M"**. 2016. Shanghai, China: Shanghai People's Publishing House.

Belk, R. W. (1988). Possessions and the Extended Self. **Journal of Consumer Reaearch**, (15), 139-168.

Boellstorff, T. (2015). **Coming of age in second life: an anthropologist explores the virtually human**. Princeton, America: Princeton University Press.

Bowlby, J. (1969). **Attachment and loss: attachment**. New York, America: Hogarth Press.

Carl, G. J. (1912). **Subconscious psychology**. Shanghai, China: Shanghai Literature and Art Publishing House.

Cassirer, Ernst. (1954). **An essay on man: an Introduction to a philosophy of human culture**. New York, America: Doubleday & Company, Inc.

Cronbach, L. J., (1951). Coefficient alpha and the internal structure of tests. **Psychometrika, 16**(3), 297-334.

Efron, B., & Tibshirani, R. J. (1993). **An Introduction to the Bootstrap**. London, England: Chapman and Hall.

Eriksson. (1998). **Identified youth and crisis**. Hangzhou, China: Zhejiang Education Press.

Feng, Z. H., & Fan, Z. L. (2021). Research on the Development Status of Virtual Anchor Industry in China. **Modern Audiovisual, 20**(3), 44-49.

Fornell, C., & Larcker, D. F. (1981). "Evaluating structural equation models with unobservable variables and measurement error," **Journal of Marketing Research, 18**(1), 39-50.

Goffman, E. (1989). **Self-presentation in daily life**. Zhejiang, China: Zhejiang People's Publishing House.

Gong, Z. Y., Shen, W. J., & Li, F. H. (2021) Application and Related Technologies of Virtual Anchor in Various Fields. **Electronic Technology and Software Engineering, 10**(8), 165-166.

Guo, J. N. (2020). **Research on subculture style of network virtual anchor**. (Master dissertation). Xiangtan University, Xiangtan.

Hu, J. N. (2022) Emotional Attachment and Consumer Rationality: A Study on the Phenomenon of "Love Collapse" in the Idol Industry Era. **Contemporary Youth Studies, 41**(5), 49-56.

Huang, S. X. (2022). **Research on consumption behavior of short video users from the perspective of identity**. (Master dissertation). Hubei University for Nationalities, Enshi.

Li, T. R. (2020). **Research on symbol consumption and identity of "people's design" fans**. (Master dissertation). Hunan Normal University, Changsha.

Liu, J. J. (2023). Analysis of Audience Emotional Satisfaction under Virtual Anchor Culture. **Journal of Changjiang Normal University, 27**(1), 70-77.

Luo, C. H., Liang, H., & Zeng, W. (2021). Research on Influencing Factors of Consumers' Purchase Intention under Live Delivery Based on SOR Model. **Modern Shopping Mall,39**(16), 1-4.

Mehrabian, A., & Russell, J. A. (1974). **An approach to environmental psychology**. Cambridge, England: The MIT Press.

Pei, W. X. (2022). **Research on Two-dimensional virtual anchor role design under the background of secondary culture**. (Master dissertation). Jiangnan University, Wuxi.

Shang, Y. W. (2022). Research on Virtual Anchor Culture from the Perspective of Landscape Social Theory. **News Research Guide, 13**(24), 1-4.

Song, C. T. & Qiu, X. K. (2022). Virtual Reality Interaction and Cyber Clusters: Identity Construction in Virtual Image Live Streaming. **Expanding Horizons, 38**(6), 54-61.

Tanijima Kunta. (2018). Virtual YouTuber and Communication Database, **Yurika**.

Tao, Y. C. (2022). **Research on identity of virtual idol fans**. (Master dissertation). Southwest University, Chengdu.

Wan, J. L. (2017). **Reward or purchase: research on different payment models and decision-making behavior**. (Doctoral dissertation). Huazhong University of Science and Technology, Wuhan.

Wang, J. (2021). **Research on college students' self-presentation on mobile short video platform from the perspective of media situation**. (Master dissertation). Central University for Nationalities, Beijing.

Wang, R. X. (2020). Analysis of Virtual Live Broadcasting Phenomenon Based on 5W Mode. **New Media Research**, **6**(8), 27-29.

Xie, M. (2019). **From role to "people's design"**. (Master dissertation). Jilin University, Jilin.

Zhong, Q. (2018). **Research on web-broadcast and gifting behavior——a case study of Feng Timo, a Douyu streamer**. (Master dissertation). Shenzhen University, Shenzhen.