

The Impact of Virtual Idols on Audience in Today's Society

Tianye Song

University of Nottingham, Nottingham, UK

Abstract: This paper examines how virtual idols influence young audiences' engagement, emotions, and consumption-related attitudes within contemporary digital entertainment and marketing environments. Using a cross-sectional online survey of 168 respondents aged 15–25, the study describes patterns of platform use, acceptance of virtual characters, participation in fan communities, perceived emotional value, and self-reported purchasing and social interaction outcomes. Results indicate that respondents are predominantly young, highly active social media users, with many expressing neutrality or acceptance toward virtual idols, limited fan-group membership, and generally low reported spending on virtual-idol products. While respondents reported mainly positive emotional value from virtual idol content, most did not believe virtual idols would replace human idols. The study contributes descriptive audience evidence and highlights the need for future research using comparative designs and inferential modelling to test mechanisms and subgroup differences.

Keywords: Virtual Idols; Young People; Impact, Entertainment; Marketing; AI Technology; Consumer Behavior; Cultural Production; Social Interaction; Fan Communities

1. Introduction

1.1 Background

Computer-generated performers and influencer avatars, known as virtual idols, have left the ACGN subcultures and entered the mainstream entertainment sector, with Generation Z becoming the digital native consumer generation in the world. These artificial representatives can now be used in music, video games, livestreams, and advertisements to appeal to people born in the mid-1990s through the 2010s. Although they are visible, previous work usually skips to

claims of influence without defining the audience-level questions that are empirically testable. This introduction sets a narrow investigation on how virtual idols can influence the perceptions, emotions, and behaviors of young people in their daily interactions in the digital world.

The broad research question is to find out whether, and how, virtual idols contribute to the perceptions about authenticity and social presence, some sense of belonging and community, and intentions to follow, share, tip, or purchase by young audiences. The issue is of theoretical interest since virtual idols are a combination of technical innovation (AI, CGI, motion capture) and the well-established dynamics of the celebrity (branding, fandom, parasociality), and thereby a hybrid situation that would sharpen the framework of theories of mediated interaction. It is important in practice since it is a decision made by marketers, platforms, educators, and caregivers regarding synthetic endorsers and AI-mediated culture without credible, audience-level information.

The research therefore poses four questions that inform the research work.

RQ1: What are the demographic and platform-use characteristics of young audiences who consume virtual idol content?

RQ2: What are young audiences' levels of acceptance, fandom participation, and perceived emotional value of virtual idols?

RQ3: What self-reported engagement and consumption behaviors (e.g., following, community participation, purchasing) are associated with virtual idol exposure?

In conceptual terms, the paper considers virtual idols as socio-technical objects, and their impacts are the work of three interacting strata, which are design affordances (e.g., the level of realism, voice synthesis, and interactive clues), platform architectures (e.g., recommendation systems, gifting economies, and moderation policies), and audience practices (e.g., fandom norms, remixing, and parasocial engagement). It is based on this framing that the domains of

measurement that are applied here include perceptions (authenticity and identification), socioemotional states (belonging and loneliness), and behavioral indicators (engagement and spending). The framework does not assign influence to one factor, technology or audience disposition, by defining interactions between layers.

The empirical part has a target audience of 15-25-year-olds who have heard or viewed the virtual-idol content in social media, livestreaming, music videos, or a gaming situation. A self-administered questionnaire with structured questions records patterns of exposure, platform behaviors, feelings of authenticity and self-identification, community engagement, and self-reported behavior like sharing, tipping, and buying. Descriptive statistics characterize the sample; multivariate models determine estimations in accordance with the research questions. The design does not purport causal effects but only gives estimates of relationships in a cross-sectional survey and the variables to use in future longitudinal studies.

1.2 Research Gaps and Rationale

Although virtual idols have existed over decades, cumulative knowledge indicates three gaps. To start with, the definitions and measurements are still confused: 2D singers, 3D VTubers, mixed-reality acts, and synthetic influencers are combined in a single category, making it impossible to compare them. This paper uses a functional definition of computer-generated or AI-assisted characters as performers or endorsers and measures the exposure as content forms and interaction types, instead of brand names, which allows constructs to be clean and results to be replicated across platforms. Second, mechanisms are not specified. Previously described accounts make an inference based on the affordances of the platform but do not often test the psychological pathways. We differentiate between authenticity, parasocial identification, perceived novelty, and credibility, simulating the connection between them and belonging and behavioral intentions, converting the results into leverages such as interactive cues, disclosure practices, recommendation logic, and gifting architectures. Third, there is negligence to audience segmentation. Little is explored in heterogeneity in age, gender, time spent online, and intensity of participation. Concentrating on the youths between the ages of fifteen and

twenty-five years allows moderator analyses and encourages audience-based design to explain the boundary conditions and make decisions.

2. Literature Review

The past few years have seen the rise of virtual idols as an important trend in the international entertainment business that is reinventing the interaction with the audience and celebrity culture. Related scholarly research has been growing significantly since about 2018 [1, 2]. The literature mainly covers the technological background of the virtual idols, as well as their implications for the fan culture, socialization, and changes in functions in the entertainment industry [2]. There is also a general agreement that virtual idols are a new media phenomenon, which combines technological breakthrough with cultural and social processes and, therefore, affects various spheres of modern digital life.

2.1 Technological Aspects of Virtual Idols

Works such as Kong, Qi, and Zhao or Kusuma et al. point to the crucial role of high-tech digital technologies in the formation of virtual idols [1,3]. They require advanced technologies like artificial intelligence (AI) and motion capture, and computer-generated imagery (CGI). As an example, Wang, Long, Zeng, Tang, and Wang mention that the digital representatives of the South Korean girl group Aespa use CGI and motion capture technology to make their real-life counterparts perform in sync [4]. This synchronization makes virtual characters more realistic and interactive, and the future progress of technologies is likely to bring even more diversity in the look of the virtual idols and their interactive abilities.

2.2 The Distinction Between Virtual Idols and Traditional Media

Gerlich and VIVE Post-Wave explore numerous aspects of how virtual idols are deviating from the traditional forms of media [5, 6]. With internet applications like social media networks, fans are able to interact and connect with the virtual idols individually, hence a more personalized way of interacting with the celebrities. In addition, virtual idols may be coded to dynamically react to a vast range of interactions with fans, providing an engagement level that conventional media cannot easily match. On the contrary, the traditional media usually works on one way of communication

paradigm. Moreover, as pointed out by iiMedia Research, virtual idols can be carefully crafted much like a particular set of values or other features that they appeal to a specific target audience the most, giving their fans a sense of identity and belonging [7]. This personalized method of audience contact has been pointed out as one of the most essential elements that support the rise in the popularity of virtual idols.

2.3 Virtual idols include several types:

Hatsune Miku and Kizuna AI are 2D virtual idols that are typically animated characters. The former is known to hold concerts by means of holographic images, and the latter has a renowned interactive content on YouTube [8,9]. A 3D virtual idol is a 3D computer-generated character that mainly communicates in a virtual reality (VR) or augmented reality (AR)-style environment. Mixed reality idols are a blend of 2D and 3D elements and are frequently used in AR or VR space to unite both major attributes of these technologies.

2.4 The Characteristics and Societal Impact of Virtual Idols

The personas of virtual idols cut across different genres of entertainment, such as music shows, live stream shows, cartoons, and films. As an example, virtual idols like Hatsune Miku hold international concerts that can draw a significant crowd and cooperate with companies in terms of brand promotion and product advertising [8]. As well, virtual idols actively use advertising and social media, producing content to communicate with the fans via such platforms as YouTube and live-streaming platforms. Concretely, China's virtual idol market was valued at about ¥12.08 billion in 2022 and is projected to reach roughly ¥48.06 billion by 2025 [7]; leading VTuber agency Anycolor has guided for ~¥39 billion revenue with merchandise, digital audio, and promotions as key drivers [11]; and individual VTubers can earn around US\$10,000 in a single day via YouTube Super Chat donations during marquee streams [12]. The wide range of usages of these characters shows how powerful virtual idols may be nowadays in the world of entertainment and online platforms. Virtual idols have a huge part in the promotion of cross-cultural communication around the world, as well as in the process of developing various industries, including music, gaming, and digital marketing. They earn a lot of money with

concerts, merchandise, and online content, and they have led to innovation in animation, artificial intelligence, and interactive technology, as well as the appearance of virtual idols triggered innovation in technologies in this area. Besides, they provide a possibility to be diverse and represented in the media by choosing to design roles on different cultural, background, and identity bases. Virtual idols may also serve to communicate values and ideas and build stronger relationships with consumers, which implies that virtual idols will be playing an even more significant role in modern brand marketing [10].

3. Research Hypothesis

Hypothesis 1:

The aspect of emotional attachment to virtual idols positively affects the perceptions of the audience in regard to authenticity and connectedness in the social environment.

Some studies that have been conducted before revealed that virtual idols can often provoke substantial emotional attachment in their viewers despite their being digital objects [15,16]. Virtual celebrities such as Hatsune Miku have blurred the line between real and imaginary personalities and have prompted some scholars to discuss it as an act of affective labour [17]. This aspect means that despite the virtual idols being digitally fabricated, the adherents still perceive them to be real. Virtual idols can make fans feel more connected since they are usually promoted as idealized personalities, on whom the fans can overlay their desires and emotions on virtual personages [16]. Such affective associations can help to create a sense of social bond, particularly in virtual idol-based virtual communities.

Hypothesis 2:

Viewing of virtual idol content results in increased socialization within the fan communities, fostering a sense of belonging and alleviating loneliness in the audience.

A number of works have investigated the importance of fan communities on the Internet, with the majority of scholars pointing out that the interaction with virtual idols is typically linked to a rise in socialization and feelings of belongingness [14,19]. Specifically, virtual idols have been found to establish a platform through which fans communicate their passion, share content, and establish online friendships, which can alleviate the emotions of social solitude or

loneliness. Live-streams, fan forums, or concerts are also common activities among fans of virtual idols, and such events can help them feel part of a specific group and share a unique experience.

Hypothesis 3:

The performance of virtual idols affects the consumption behaviours of their audience, especially the purchasing of digital products and brand involvement.

The studies have indicated that virtual idols can also be used in the marketing context effectively, besides serving as sources of entertainment [18]. The emotional connection that fans feel towards the virtual idol may influence their consumer behavior, be it purchasing goods, subscribing to paid content, or engaging with the sponsorship and commercials related to the idol [17]. This goes in line with the concept of "parasocial relationships" whereby the viewers develop one-sided emotional attachments to the media celebrities [20]. In the case of virtual idols, the fans tend to be more motivated to consume due to the fact that the relationship often tends to be more immersive.

4. Methodology

This research is intended to examine the impact of virtual idols on the audience in modern culture. Virtual idols or AI-driven and computer-generated imagery (CGI)-based characters have become popular in the entertainment sector, particularly in Japan and other East Asian nations. In this way, this research paper aims to look at how these virtual idols affect the emotional engagement, social behaviour, consumption, and perception of reality among the audiences.

This study used a quantitative, cross-sectional online survey design. A convenience sample of 168 respondents who had previously been exposed to the virtual idol content in social media, livestreaming, music videos, or gaming settings was used. The data were obtained by means of a self-administered questionnaire during one week and living in online fan spaces and social sites. The content analysis was based on the descriptive statistics (frequencies and percentages) to summarize the demographics, platform use tendencies, virtual idol acceptance, the participation of the fan community, and self-reported engagement tendencies and buying habits. Since the study lacked inferential testing or regression modeling, results are perceived as trafficking trends but not predictive or cause and

effect.

In selecting the participants, a non-probability convenience technique was used. The research was shared through online platforms on which virtual idols' content is regularly viewed, such as social media, fan groups, and streaming online platforms. The sample size was determined by the participants' willingness to take part in the study, as they needed strengthened supporters of virtual idols.

Surveys of the audiences were developed through Star Survey. The survey was advertised through internet connections through the fan circles, social media networks, and internet forums dedicated to idols. The survey was opened for one week to allow the participants time to respond. An email reminder was also sent in the middle of the data collection period to encourage participation. The survey tool will have a multiple-choice online questionnaire that can be self-administered and help to collect data on multiple aspects of the audience interaction with virtual idols.

Upon obtaining the survey answers, the data was tabled and sorted to be analyzed. Descriptive statistics, mainly frequencies and percentages, were used in the study to describe the demographic factors, patterns of social media use, levels of acceptance of virtual idols, and other engagement behaviors, namely fan involvement and purchasing behavior. These descriptive statistics were applied to determine the overall trends of interactions of young audiences with virtual idol content on digital platforms. Since no inferential statistical tests and regression models were used in carrying out the study, the results are understood as descriptive information about the perceptions and behaviors of the audience but not as causal relationships.

5. Analysis and Results

The survey data showed that there were 168 valid responses (75.47% of which were women), which is much more than men and non-binary genders. This demonstrates that female viewers are predominant in the marketing market of the virtual idols. The age structure was further broken down with the highest number being those between 19-21 and 39.62. This was trailed by 21-25, and 1518 years old, of 28.3% and 22.64, respectively. On the contrary, the percentage of participants in the age group of 26 years and above was less, as only 3.77%

participants were in the age groups 36-45 and 46-59 years. It is an indication that the virtual idols have a stronger appeal in young people, particularly the 19-21 age group.

Moreover, the proportion of respondents with a college degree was 67.92, and with a high school degree was 26.42; the number of respondents represented in other education levels was relatively low. This also demonstrates that the knowledge and awareness amongst college students of virtual idols is far more than that of those with high school and other educational backgrounds. Combined, the female, young, and highly educated audience is the primary force behind the virtual idol market. The data is shown in Table 1:

Table 1. Demographic Characteristics of Respondents

Category	Project	Proportion(%)
Gender	female	75.47
	Male and non-Binary	24.53
Age	15-18 years old	22.64
	19-21 years old	39.62
	21-25 years old	28.30
	≥26 years old	3.77
Education level	High school	26.42
	University	67.92
	Others	5.66

Note: The proportion is based on a valid sample (N = 168), and some data may have errors due to rounding.

Based on the survey results, 50.94 percent of respondents use social media and entertainment

websites more than 5 hours per day, which is 50.94. Contrary to that, 18.87 and 30.19 percent represent respondents who spend 1-3 hours and 3-5 hours, respectively. This indicates that social media plays a significant role in the day-to-day life of the respondents.

Further interpretation of the usage of social software reveals that the primary uses are entertainment (84.91%), social chat (77.36%), and relaxation (73.58%). Moreover, 47.17 percent of people use them to acquire skills and knowledge, 54.72 percent for online shopping, 43.4 percent to pursue stars, 41.51 percent seeking information and news, 26.42 percent following Internet celebrity brands or stars, 9.43 percent for fitness, and 5.66 percent for interest group participation.

Watching video and playing games are the most preferred online entertainment activities that respondents would spend over one hour a day, with 88.68 and 56.6, respectively. Other popular activities include shopping, streaming music, and communicating with friends and family, with 28.3% and 47.17 and 52.83 of the participants likely to spend over an hour on them, respectively. Conversely, the time spent in the virtual worlds, celebrity or fan websites, and reading takes less time, with only 9.43, 22.64, and 22.64 percent, respectively. In general, social media is not a significant medium that helps the respondents to relax and amuse themselves, but it is an essential element of their lives. As shown in table 2:

Table 2. Social Media Time Allocation

Indicator category	Specific projects	Proportion(%)
Length of use	1-3 hours/day	18.87
	3-5 hours/day	30.19
	>5 hours/day	50.94
Purpose	Entertainment	84.91
	Social Chat	77.36
	Relax	73.58
	Acquire skills and knowledge	47.17
	Online shopping	54.72
	Chasing stars	43.40
	Get information and news	41.51
	Follow internet celebrity brands/stars	26.42
	Fitness	9.43
Main activities (Daily >1hour)	Participate in interest groups	5.66
	Watch video	88.68
	Play games	56.60
	Communicate with friends and family	52.83
	Listen to music	47.17
	Online shopping	28.30

	Virtual world experience	9.43
	Celebrity/fan website	22.64
	Read	22.64

Note: The proportion is the proportion of respondents who chose this item or reached the corresponding duration.

Statistics indicate that 88.68 percent of the population get to know about Internet celebrities by watching them on different video sites, and 54.72 percent of the people interviewed indicated that they did not mind that Internet celebrities are virtual individuals. Nevertheless, approximately half of the population does not tend to follow virtual Internet celebrities, and 35.85% of the people follow virtual idols of the anime genre primarily. It is also revealed in the questionnaire that the most popular are music-related virtual idols, though 39.62% of the people said that they do not like virtual idols, about 60 percent of the respondents prefer to access music and video content with the help of virtual idols, and 60.38 percent of the respondents like the virtual idols because it offers a new method of entertainment.

In terms of emotional value, the positive value that virtual idols introduce is more than the negative value. The majority of people are exposed to virtual idols three or more times per month; 62.26% have never been a member of a fan group of online community as regards virtual idols; 26.42% have been a member of an online

community; 15.09% have been a member of an online and offline community; and 5.66% have just been a member of an offline community.

Most individuals have not bought products of virtual idols in terms of buying behavior. Polaroid photos are the most favored among the purchasers. In general, the majority of the respondents do not spend money on virtual idols, as 56.6% of the respondents hold that virtual idols do not affect their consumption, with only 30.19% saying that virtual idols have slightly influenced their consumption.

Most people state that there is no effect of the virtual idols on their social interaction, some even stated that they are more socially interacting with others because of the virtual idols, and only a little 5% of the people stated that they are less social in their interactions. The majority of individuals assume that the virtual idols act as friends within the culture. Over 50 percent of the respondents feel that the virtual idols should be enhanced in terms of content variety and creativity, then looks, morality and openness, and vocal tone. Notably, 77.36% of the respondents think that virtual idols will not substitute real idols in the future. The data content is shown in table 3:

Table 3. Acceptance and Engagement of Virtual Celebrities and Idols

Aspect	Details	Percentage(%)
Learning about Internet Celebrities	Through Video Platforms	88.68
Acceptance of Virtual Characters	Don't Mind Virtual Characters	54.72
Attention to Virtual Celebrities	Generally Don't Pay Attention	~50
	Focus on Anime-type Idols	35.85
Popularity of Virtual Idols	Music-related Idols	Most Popular
	Don't Like Virtual Idols	39.62
Emotional Value	Positive Value Greater than Negative	Majority
Fan Group Participation	Not in Fan Groups	62.26
Purchasing Behavior	Not Purchased Products	Majority
	Most Purchased Item	Polaroid Photos
	No Impact	56.6
Social Interaction impact	No Impact	Majority
	Increased Interaction	20.75
Future of Virtual Idols	Will Not Replace Real Idols	77.36

6. Discussion and Conclusion

6.1 RQ1: Demographic and Platform-Use Characteristics of Virtual Idol Audiences

The paper outlined a discussion of the impact of

virtual idols on viewers within modern society, specifically on youth involvement, attachment, and consumerism. Our hypothesis, formed on the basis of the literature review, was that virtual idols may affect the perceptions of authenticity, create emotional bonds, and encourage

consumption. A survey method was used in the study; After analyzing the survey data, we found that most of the fans of virtual idols are concentrated in the 18–26 age group, which is the main consumer group of virtual idol content, so we decided to investigate this group.

6.2 RQ2: Acceptance, Fandom Participation, and Emotional Value

Interestingly, the results revealed how a great number of the respondents did not spend hefty sums of money buying products associated with virtual idols. This observation was contrary to some literature, which proposed that online celebrity performances directly affect the purchasing intentions of consumers in a direct emotional way [13]. The most often bought products were instead Polaroid photos, and the majority of the respondents indicated that they had no significant impact of virtual idols on their purchasing patterns. The percentage of those who said that virtual idols increased their spending to a certain level is very low. Moreover, the data showed that virtual idols did not have a significant influence on the social interaction of the participants. Nevertheless, it was found that a significant percentage of respondents noticed that virtual idol communities made them feel more socially attached and active, which supports the hypothesis that virtual idols make people socially engaged and feel like they belong [14]. In general, the emotional importance of virtual idols in the lives of fans seems to be the overwhelmingly positive effect that makes them feel more connected and entertained, although it may not have a great impact on purchasing behavior.

6.3 RQ3: Engagement and Consumption Behaviors Associated with Virtual Idol Exposure

The survey findings also illustrate the engagement patterns and consumption behaviours associated with exposure to virtual idol content. While some respondents reported limited purchasing activity and only occasional engagement with virtual idol products, the data indicate that audiences mainly interact with virtual idols through entertainment content, online platforms, and community discussions rather than through frequent financial consumption.

6.4 Study Limitations

The limitations of our study were an insufficient sample size, which was based on self-report data, a lack of longitudinal data, and the application of sources of data that might change with the passage of time and context. In specific, due to the small number of participants that the study employed, there is a possibility that the diverse population of the wider audience is not reflected. The sample size may be too small to indicate that the findings are sufficient to capture the differences in preferences, behaviours, and psychological impacts that exist across different age groups, cultural groups, and geographical locations. Consequently, there is a possibility that the findings are biased or do not represent the larger population of virtual idol lovers. Since the study is based on self-reported information obtained through questionnaires, there is a risk of bias in the study because of social desirability bias or false self-perception. Participants can be able to express attitudes or behaviours that they believe to be good or socially right, and this may skew the perceptions of people about the actual impact of virtual idols on their attitudes, behaviours, and emotions. The survey is a short-term study, and thus, the study is not able to capture long term trends or effects of virtual idols. As the fandoms and audience dynamics started evolving and technological progress was made, the effect of virtual idols can change over the years, and it is hard to predict whether the effect that virtual idols initially made will last or whether the novelty of the virtual idols will run out without any longitudinal data. Moreover, such a plethora of audience interaction with virtual idols as the involvement in virtual events and concerts, fan-created content, and the activities of social media platforms, may not be fully addressed by using survey data.

6.5 Recommendations and Future Research

Based on our reactions, it is advised that in subsequent surveys, some initiatives should be embraced to ensure more men are brought on board so as to balance the gender ratio. The number of male groups can be drawn to more through surveys promoted on various platforms and male-related subjects in the surveys. To enhance the representativeness and diversity of the survey, it is suggested that further surveys should increase the number of educational categories to gain a better idea about the educational background of the respondents. Moreover, in the case of such popular activities

as watching videos and playing games, user experience can be further enhanced with the help of more interactive features and engaging content. In the case of less popular activities, like accessing virtual worlds, celebrity or fan sites, and reading, greater availability and appeal can be used to boost participation by users. The interplay of AI technology and the youth culture breaks the old paradigms, and it may influence the creation of identity, social relations, and consumer behavior in a transformative way, which should be further discussed by scholars. Altogether, the convergence of young culture with AI-enhanced virtual idols is an indicator of a significant change in the modern entertainment and audience behavior that should be further studied.

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