

# Exploring the Acceptance of the Metaverse among International Fans of the Entertainment Industry: A Case Study of the Aespa Fandom in Taiwan

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## ABSTRACT

*This study examines the acceptance of metaverse-based Korean cultural content in Taiwan, a key market for Korean cultural exports. We analyze Taiwanese fans' reactions to Aespa, a metaverse-based Korean idol group, identifying two distinct fan groups with differing views on virtual members. While both groups accept Aespa's content, they don't equate virtual members with real singers or see the metaverse as reality. Our findings suggest growth potential for metaverse-based entertainment content and offer insights for exporting Korean culture to Taiwan. Future research could explore changes in fan perceptions post-Aespa's activities and compare reactions across metaverse settings.*

**KEYWORDS:** *Metaverse, Virtual world, Fan culture, Culture export, New technology Acceptance*

## I. INTRODUCTION

Nowadays, many industries apply the metaverse concept, and the entertainment industry is no exception. There have been numerous attempts to integrate the metaverse into entertainment, with Aespa being one notable example. In late 2020, Korea's SM Entertainment debuted a metaverse concept K-pop girl group named "Aespa," known as K-pop's first group with their own AI avatars, known as the æs.

Aespa consists of eight members, including four singers and four virtual avatars in the metaverse. The singer members - Karina, Winter, Giselle, and Ning-Ning - each have their own AI avatar. Furthermore, these AI avatar members are also considered as official team members. In their worldview, those AI avatar members live in the "Kwangya," Kwangya is the futuristic metaverse space described by SM. (Weeraya Kungwanjerdasuk et al, 2022) The fact that Aespa includes metaverse-based members has helped them to gain fame more quickly than other K-pop girl groups. As a result, their success has prompted other entertainment companies to create metaverse-based girl groups. However, what makes metaverse-based idol groups so appealing to entertainment companies? Why do they continue to be interested in creating metaverse-based groups?

Metaverse-based idols do not age, so they do not require plastic surgery to fight aging. Moreover, since they are not human, they cannot experience emotions and therefore do not suffer from depression. Consequently, suicide, which is more prevalent among K-pop idols than before, never occurs among metaverse-based idols. Even without discussing the tragedy of suicide, it is clear that it is one of the most significant risks that the K-pop industry faces. While suicide is one of the most

extreme examples, metaverse-based idols are free from this risk altogether. If fans can derive the same level of satisfaction from metaverse-based idols, it could create a fantastic blue ocean of profitability for the entertainment industry. This is because the profit from the traditional idol industry always had a deadline. The main product of the entertainment industry, idols, are limited by their productivity and profitability, which decline geometrically over time. However, if these finite beings become valuable entities in the metaverse where they can enjoy infinite youth, the profitability of the idol business can also become infinite. Despite all these benefits, the most tremendous appeal of metaverse-based idols is that their fans can experience them without any physical barriers. This attraction is particularly amplified for foreign fans. For instance, when Aespa's singer members have a concert in Seoul, fans from Bangkok can interact with Aespa's AI members in the metaverse simultaneously. This allows fans to multiply their "experience" of the idol stars beyond physical barriers. The question we must address is whether idol fans, especially those overseas, are interested in the expanded experience that metaverse-based idols can offer. Before seeking to maximize consumption through metaverse idols, it is necessary to determine whether this type of idol is appealing to overseas K-pop fans. Therefore, this study aims to investigate whether overseas fans are seeking K-pop idols based on the metaverse, despite the disappearance of physical barriers due to the metaverse, but the persistence of language barriers. To explore this question, this study focuses on Aespa, a representative of metaverse-based idols. Specifically, the study aims to determine whether the expansion of fan experience through metaverse-based idols provides satisfaction for real Aespa fans. The study also investigates whether fans can experience Aespa in a new way through the group's metaverse and derive satisfaction from it.

## II. LITERATURE REVIEW

### 2.1 Concept of Metaverse

The Metaverse is called the next version of the internet. (Hal Koss, 2022) The term "metaverse" is a combination of the prefix "meta" (which means beyond) and "universe," and it is commonly used to refer to a future version of the internet that is composed of interconnected, persistent, and shared 3D virtual spaces, forming a perceived virtual universe.(Hackl, 2021) This concept goes beyond the traditional internet experience and offers users a new and immersive way of engaging with digital content and each other. The Metaverse represents a new frontier of the internet that has the potential to revolutionize the way we interact with technology and each other. In his book *The Metaverse: And How It Will Revolutionize Everything*, author and investor Matthew Ball clearly defines the Metaverse, from which we can understand its power. He defines it as a massively scaled and interoperable network of real-time rendered 3D virtual worlds that can be experienced synchronously and persistently by an effectively unlimited number of users with an individual sense of presence, and with continuity of data, such as identity, history, entitlements, objects, communications, and payments..(Ball, 2022) The Metaverse offers more than just chatting and gaming; it allows us to do everything we can in the real world. However, it is hard to define the Metaverse as one concept. It is because this concept is continual evolution over time, and the development and related technology and environment changes.(Soo-Hyun Kim & Ji-Yun Yoo, 2021) Nevertheless, even though we cannot find a perfect definition for Metaverse, it is clear that it will give us numerous business opportunities.

In practice the Metaverse offers a new way to be online, with new market and production.(Stackpole, 2022) And numerous industry are try to adapt it to their business. The COVID-19 pandemic has forced people around the world to limit their face-to-face interactions, leading to a surge in non-face-to-face interactions. In this context, the Metaverse is emerging as a highly utilized platform for various content fields, including games, education, marketing, and entertainment. This technology allows users to enter a 3D virtual world where they can interact with others and digital objects in a seamless and immersive way. The Metaverse's potential is being recognized by many, and the number of Metaverse users is increasing. Meta Platforms CEO Mark Zuckerberg is one of the most prominent advocates of this technology. He envisions a future where a billion people will spend significant time and money in the Metaverse. In an interview with CNBC, he expressed his belief that the Metaverse's economy could become massive.(Novet, 2022)

## **2.2 Global and Korean Cases of Attempts to Introduce Virtual Idols in the Entertainment Industry**

### **2.2.1 Attempt to introduce virtual idol in Korean entertainment industry.**

In the Korean entertainment industry, there have been attempts to monetize virtual idols for a long time, even before the metaverse concept gained the attention it has now. In 1998, the cyber singer Adam debuted in the Korean music industry but suddenly disappeared because he failed to achieve great results. Big Hit Entertainment, the agency of BTS, the current K-pop stars, also attempted to introduce virtual idols to the stage. 11 years ago, in 2012, Big Hit Entertainment had the virtual Vocaloid member 'SeeU' and its girl group, Glam, perform together on public TV broadcasts. The public's reaction to SeeU in 2012 was as cold as the reaction to Adam in 1998. Of course, SeeU was not an official member of GLAM, and they needed a solid worldview based on the metaverse like Aespa, so there are differences in essential planning from Aespa. However, attempts to attract attention through virtual members and content creation can be seen as continuing long before Aespa's debut.

### **Star pop application**

There have been attempts to recreate the characteristics of existing K-pop idols to enhance the fan experience and generate additional revenue. In 2015, SM Entertainment, the agency of Aespa, created virtual characters based on its existing idols' intellectual property (IP) and launched an online game called 'Star Pop' that allowed fans to interact with their favorite idols. Star Pop was an online game that could nurture idols of SM Entertainment. The faces and voices of idols belonging to SM Entertainment were used as they were, and their unique tone was also utilized. Fans could experience activities similar to dating in real life within the game.

However, Star Pop wasn't successful in the mobile game market. Despite utilizing the IP of an SM Entertainment idol, an article published three years after its release described Starpop as "unfamiliar services in Korea."(Lee Jongmin, 2018) .

### **2.2.2 Global Cases of Attempts to Introduce Virtual Idols in the Entertainment Industry**

Interest in virtual idols is not limited to Korea, as many other countries around the world are also interested in virtual idols due to their potential. There are numerous cases of virtual idols globally, with Japan and China being notable examples. Japan has Hatsune Miku, while China has Luo

Tianyi. Both cases have achieved significant success, with Hatsune Miku even gaining international recognition.

### **Hatsune Miku**

Hatsune Miku is a VOCALOID (virtual singer) developed by YAMAHA in 2007. Initially, Hatsune Miku was just music synthesis software, but soon after the software was released, it became very popular and gradually evolved into a virtual idol.

Since then, many derivative products, including original songs produced by professional creators on the internet, have appeared. Various derivative products using Hatsune Miku have caused a sensation to the point where netizens who used to make music through Hatsune Miku have debuted as singers and gained great popularity. Hatsune Miku is an early pioneer and representative of the virtual idol industry, (DUOXIAOWEI & Yang, 2021) which has caused a global craze for virtual idols.

### **Luo Tianyi(洛天依)**

Luo Tianyi (洛天依) is a Chinese VOCALOID formerly developed under the YAMAHA Corporation's software VOCALOID and was created in collaboration with Shanghai HENIAN. Its image was first released in March 2012. At that time in China, Hatsune Miku was already famous, but because it did not support Chinese, it was limited to making Chinese songs with Hatsune Miku. However, Luo Tianyi supported the Chinese language and became popular in China due to her Chinese cultural aspect and function.

Although many virtual idols similar to Hatsune Miku were released in China after Hatsune Miku became famous in China, they were not able to achieve significant success. However, with her Chinese style, Luo Tianyi became the most successful Chinese VOCALOID. This is the reason why she is being used for research in Chinese music and culture. (Xing, Ying & No, Seung Kwan, 2022)

Virtual idols like Hatsune Miku and Luo Tianyi have gained popularity and play the role of idols. However, there are significant differences between them and Aespa.

First, Hatsune Miku and Luo Tianyi are subcultures that target specific audiences, while Aespa is part of general popular culture. Second, Aespa was initially designed as an idol group with a solid worldview that uses metaverse and AI technology, whereas Hatsune Miku and Luo Tianyi were released as Vocaloid programs with simple character settings and no specific worldview.

Therefore, the analysis of Aespa can provide insight into the public's perception of virtual idols and metaverse-based culture, highlighting the differences between Aespa and existing virtual idols. This study offers significant value in understanding this emerging phenomenon.

### **2.3 Korean Culture in Taiwan**

This study focuses on analyzing overseas K-pop fandom in Taiwan due to its significant role in exporting Korean culture, its acceptance of Korean culture, and its high purchasing power.

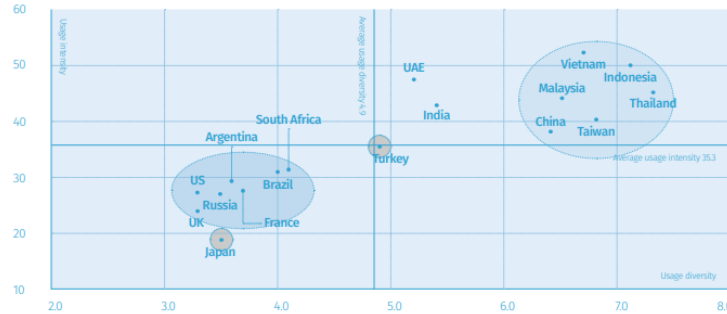


Figure 1. Distribution of Hallyu usage expansion indicators by country<sup>5</sup>

According to a 2021 study by the Korean Foundation for International Cultural Exchange (KOFICE), Taiwan has both high usage diversity and intensity, indicating that Korean culture has become prevalent in Taiwan. The graph shows that Vietnam, Indonesia, Malaysia, Thailand, China, and Taiwan have high usage diversity and intensity, and among these countries, Taiwan has the highest Gross National Income (GNI) despite its relatively small population. Although China has significant purchasing power, it was excluded from this study due to its government's current ban on the import of Korean culture, which is beyond the scope of this study.

For these reasons, Taiwan was chosen as the target country for analysis in this study.

### III. METHODOLOGY

#### 3.1 Internet ethnographic

This study utilized the Internet ethnographic research method to explore Taiwanese fandom's perception and acceptance of Aespa's AI members. Data was collected by observing posts on PTT, one of Taiwan's representative media platforms. *Internet ethnography* is a qualitative research method that analyzes phenomena occurring online by directly observing the subject in the online community where the research subject is active. Media audience research has applied ethnographic research methods since the 1970s to overcome the limitations of quantitative research methods (Morley, 1992). Ethnographic methodology is used to study problems in the changing environment and new technology. Audience research, fan group research, and social discourse generation through the Internet have been developed, and various studies using online spaces are being conducted. The mainstream of internet ethnography research focuses on the ideology of a specific text, the interpretation process of its recipients or fans, and their activeness or passivity. (Young-Han Cho, 2012) Similar to previous studies conducted through the Internet ethnographic research method, this study attempted to examine the acceptance patterns of Taiwanese fandoms for Aespa by interpreting texts uploaded to PTT without revealing the researcher's identity.

#### 3.2 PTT

PTT is one of the most famous social media platforms in Taiwan. It is currently the largest terminal-based bulletin board system (BBS) in Taiwan and is managed by the Electronic BBS Research Society. (Chen, 2014) With an estimated 1.5 million registered users, PTT attracts over 150,000 users during peak hours. The platform has more than 20,000 discussion boards covering

diverse topics, including entertainment,(Wang & Tsai, 2023) with a particular focus on Aespa. Given its large user base and traffic, we believe that PTT is an ideal social media platform for our study. Therefore, we have selected PTT as our target platform for this research.

### 3.3 Period of study

The period covered in this study is from February 22, 2021, to July 24, 2022, which spans from the creation date of Aespa's PTT board to the end date of their most recent activity album, "Girls".(topstarnews, 2022)

However, due to the dispute over management rights within their agency, SM Entertainment, the group has not made a comeback since promoting the "Girls" album(Carmen Chin, n.d.), and the agency has stopped providing metaverse-related content. As a result, the most recent period after July 24, 2022, was excluded from this study.

## IV. RESEARCH RESULT

During the research period, we analyzed posts on the PTT Aespa bulletin board that mentioned metaverse-based AI members (Ae members). The results of the analysis revealed that Taiwanese Aespa fans could be categorized into two distinct groups based on their perception of Aespa's metaverse members. The first group completely separates the real world from the virtual world and considers the virtual world to be subordinate to reality. As a result, fans in this group view the metaverse world implemented by Aespa negatively. On the other hand, the second group also completely separates the real and virtual worlds but has a positive view of the virtual reality implemented through the metaverse. To elaborate further, the analysis for each group is as follows: For fans in the **first group**, they completely separate the natural and virtual worlds and have a negative perception of the virtual reality implemented through the metaverse. As a result, the metaverse world that Aespa aims to create does not hold much significance to them.

(A) Perceives the metaverse concept as excessive and does not recognize Aespa's metaverse members as part of the group.

They consider the concept of Aespa's metaverse members as resource-exhausting and express pity for the attention or resources going to them rather than Aespa's singer members.

*連AI的新聞都比她們多XD(Even AI has more news than them(Aespa) XD)*

Type A's negative perception of Aespa's metaverse-based members is reflected in their low immersion and negative attitudes towards the members' activities. However, the existence of Aespa's metaverse members did not affect their decision to become fans of Aespa

*ae跳的很好耶 這樣算打工嗎XD (Ae dances very well, Does this count as a part-time job? XD)*

They expressed their negative perception of metaverse-based members by observing how they were talked down to during performances with the singer members. Although the group's official setup considers metaverse-based members as official members of Aespa, like the singer members, this group did not recognize them as official members and instead regarded their performances as being on par with 'part-timers.'

The Coachella Music Festival provides a notable example of heightened awareness of Aespa's metaverse-based members. On April 24, 2022, Aespa performed at the Coachella Music Festival in the United States, which was a monumental move for the girl group targeting overseas. Regarding the Coachella performance, fans reacted as proud and fantastic that Aespa is expanding its activities worldwide while promoting abroad.

*Naevis真的好好笑(Naevis is really funny)*

However, when Navis (who is not a member of Aespa but a metaverse-based character appearing in their metaverse worldview) made an appearance at Coachella, the fans left comments such as "Navis is really funny," unlike the response to the Aespa singer members. This demonstrated a significant difference in the fandom's perception between singer members and metaverse-based members of Aespa.

(B) Dissatisfied with the low quality of metaverse-based members and cannot immerse themselves in the concept due to this quality problem

*我覺得吉的ae好像臉有點怪怪的 比例怪怪的*

*(I think Gissel ae seems to have a weird face and weird proportions)*

It was easy to find Aespa fans who were dissatisfied with the character design of the metaverse-based members. They are dissatisfied with the character design, which prevents them from immersing themselves in Aespa's metaverse concept. In addition, the metaverse-based character's costume also was an element that hindered immersion in the concept of Aespa's Metaverse. For idols, clothes are an essential material to describe their concept. The costumes that each idol wears for every activity become a hot topic in the fandom, becoming an essential topic of discussion for the fandom. Even in the Aespa fandom, discussions about costumes are continued.

*但還是不喜歡鞋子哈哈(But still don't like the shoes lol)*

*服裝不錯啦(Nice clothes)*

However, Aespa's metaverse members were excluded from these discussions. This is because the Metaverse-based members did not change their costumes from the beginning of their activities until the last active album <Girls>, which is the end of this study.

*結果æ沒有換衣服(In the end, æ did not change clothes)*

Of course, Aespa's singer members came out wearing new concept outfits for each album, but Aespa's metaverse-based members who kept their costumes the same resulted in the aespa fandom's immersion rate dropping. Every time Aespa released new content related to the members of the metaverse, despite the new content, the costumes were the same so we could see dissatisfied comments related to this.

For fans in the **Second group**, they also completely separate the real and virtual worlds but has a positive view of the virtual reality implemented through the metaverse.

(A) Members based on the metaverse have lower importance than singer members but are also members of Aespa.

Although very few, there were some who recognized Aespa as an 8-member group. In a post discussing Aespa's worldview, a comment appeared for the first time recognizing Aespa as "eight people," including the metaverse-based members.

八人完整體!!! (Eight people as a whole team!!!)

At The Kelly Clarkson Show in the United States on October 16, 2021, Aespa performed on an 8-member stage, including the metaverse-based members. Since most of Aespa's stages only feature the singer members, it was rare to see an 8-member stage on a music show. Therefore, many fans welcomed the 8-member stage in the comments on that day. Looking at these comments, it seems that fans recognize Aespa as an 8-member girl group consisting of four equal singer members and four metaverse members. Nevertheless, their perception of the metaverse members differs from that of the singer members. Calling Aespa "eight people" is regarded as a meme among fans who find Aespa's metaverse concept fun and use some sarcasm. However, the fact that they recognize Aespa as an 8-member group, even if there is a difference in the importance of each member, is still an important issue in understanding their metaverse-related perceptions.

(B) Members based on the metaverse are considered as official member of Aespa

Such fans do not consider Metaverse-based members official members of Aespa. However, they acknowledge their presence, think they create a unique Aespa atmosphere and feel attracted to them.

*好喜歡這組 ~ ~ 果然沒ae就不是aespa(I really like this group~~ Without ae; it is not aespa)*

Fans with an interest in the metaverse continued to discuss the topic beyond Aespa. For instance, when Karina, an Aespa member, attended an event to discuss internet ethics in the metaverse world, Aespa fans expressed their satisfaction that the event was consistent with the Aespa concept and engaged in discussions on the topic of internet ethics in the metaverse. Notably, the interest in the metaverse that originated from the entertainment industry could extend beyond the entertainment domain.

覺得是很棒的活動 一直覺得虛擬世界能談的面向很多 網路暴力就是其中一個大問題

(It is a great event. The virtual world can talk about many aspects, and Cyber violence is one of the big problems.)

The distinctive point is that both the first and second fandoms recognize Metaverse-based and singer members separately. This perception is revealed through comments made by Aespa fans during Aespa's inactive period. Even when Aespa is not promoting, singer members of Aespa are still mentioned by fans through PTT BBS, and they continue to be objects of curiosity for the Aespa fandom. However, fans show no curiosity about the metaverse-based members during the inactive period. Of course, the agency, SM Entertainment, also prepared settings for this, and they explain that Metaverse-based members are taking a break during the inactive period. However, more than the setting of such a solid worldview is needed to arouse fans' interest in the members based on the metaverse during the inactive period. There were no comments from fans about Metaverse-based members during Aespa's inactive period, but their mentions increased again while Aespa prepared for a comeback and provided content related to the worldview. This shows that fans did not pay as much attention to Metaverse-based members as they do to singer members, and for the Aespa



fandom, Metaverse-based members exist in a distinctly separate worldview from Aespa's singer members. Additionally, even when Aespa singer members interviewed ae members, most fans were more interested in the singer members' outfits and makeup than the contents of the interview. During the press conference held by Aespa with the release of their new album "Next Level," the singer members of Aespa gave a detailed explanation of the concept and ae members shown through this Next Level activity. However, fans only posted comments that had nothing to do with the metaverse-based members. Looking at the red hair that the singer members showed off, they did not show much interest in the metaverse-based members, even though they were worried that it would be difficult to dye it every day. In other words, to fans, the metaverse-based members were less important than the concept of singer members.

## V. CONCLUSION

As a result of analyzing the reactions of Taiwanese fans after Aespa's debut, the perspectives on understanding AI members of Aespa are categorized into two groups: (1) Those who recognize the real world and the virtual world separately but positively recognize the virtual member, still they are regarded as an avatar or concept, not a genuine member. (2) Those who recognize virtual worlds separately from reality and negatively recognize the virtual world concept. Both types of Taiwanese fans accepted the content provided by Aespa in the way they wanted. However, they did not perceive Aespa's metaverse-based members as equivalent to the singer members, nor did they view the metaverse implemented by Aespa as a substitute for the existing reality. As the popularity of metaverse content continues to grow, the fact that the implementation of the metaverse concept by Aespa was not fully accepted implies implications for future metaverse content implementation. Therefore, identifying and analyzing the factors that reduced their immersion in the metaverse will be critical to exporting metaverse content in the future.

Nevertheless, the metaverse concept is widely recognized as attractive, indicating potential for future growth in entertainment content based on the metaverse in the Taiwanese market. Additionally, the fact that Aespa's fandom discussed ethics on the metaverse with the group after encountering it through Aespa presents an opportunity for metaverse-related business. This highlights the possibility that the interest in the metaverse that began in entertainment can extend to topics beyond the industry, such as ethics.

### 4.1 Limitation of study

This study analyzed Aespa-related data between February 22, 2021, and July 24, 2022, which coincides with the official end of their latest album, "Girls." No additional metaverse-related content was released after this period, and as such, we selected July 24, 2022, as the final date of our study.

However, recent developments have emerged since then. Aespa will make a sudden comeback on May 8, 2023. Moreover, Aespa singer members have become more vocal about being metaverse-based members of Aespa, reversing their earlier stance. Some singer members have expressed dissatisfaction with the metaverse-based members, who continue to wear the same debut outfit without any changes, while singer members are trying to develop themselves as better idols. Therefore, it is necessary to conduct further research that includes the latest data after the conclusion of Aespa's new album's domestic and international activities to account for these

changes and their potential impact on the reaction of the Taiwanese Aespa fandom towards the metaverse-based members.

#### 4.2 Contribution

This study contributes to understanding acceptance patterns of metaverse-based Korean cultural content in the Taiwanese market, an important market for Korean cultural exports. While there have been relatively few studies on Taiwanese consumers' Korean cultural acceptance patterns compared to other countries, this study specifically focused on the Taiwanese market and fandom. Although this study used Aespa (a metaverse-based Korean idol) as an example, its findings can be applied to other metaverse-based settings beyond the entertainment industry. With the increasing exports of Korean content to Taiwan using the metaverse, this study's results will be helpful for future efforts to export Korean cultural content to Taiwan. Additional research based on this study will be conducted to provide more insights and value.

#### 4.3 Future study

As mentioned earlier, it is necessary to investigate whether fans' perceptions of the metaverse change in response to Aespa's post-release activities. Additionally, a comparative study of fans' perceptions and reactions to the metaverse in different countries can be conducted by analyzing Aespa's metaverse content reception in each country. For example, our study observed some differences between Korean Aespa fans and foreign (Taiwanese) fans. A study by Soo Hyun Kim (2021) suggests that some Korean Aespa fans accept Aespa's metaverse concept by "equating and accepting the real and the virtual world." However, our study did not find such a tendency among Taiwanese fans. Furthermore, our findings indicate that Taiwanese fans have a relatively low level of immersion in the metaverse content provided by Aespa. The differences in the level of immersion in Aespa's metaverse content observed between Korean and Taiwanese fans are noteworthy, and a comparative study of fans' perceptions and reactions to the metaverse across different countries would shed light on the factors that shape such differences.

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