

Jeong, Minju; Kim, Seongcheol

Conference Paper

What makes 'aespa', the first metaverse girl group in the K-pop universe, succeed in the global entertainment industry?

32nd European Conference of the International Telecommunications Society (ITS): "Realising the digital decade in the European Union – Easier said than done?", Madrid, Spain, 19th - 20th June 2023

Provided in Cooperation with:

International Telecommunications Society (ITS)

Suggested Citation: Jeong, Minju; Kim, Seongcheol (2023) : What makes 'aespa', the first metaverse girl group in the K-pop universe, succeed in the global entertainment industry?, 32nd European Conference of the International Telecommunications Society (ITS): "Realising the digital decade in the European Union – Easier said than done?", Madrid, Spain, 19th - 20th June 2023, International Telecommunications Society (ITS), Calgary

This Version is available at:

<https://hdl.handle.net/10419/277980>

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What makes ‘aespa’, the first metaverse girl group in the K-pop universe, succeed in the global entertainment industry?

Minju Jeong, Seongcheol Kim*

Media and Communication, Korea University

Abstract

An illustrative example of technological advancement in the K-pop industry is SM Entertainment's metaverse girl group, aespa. Aespa, including four virtual members and four real-world members, distinguishes itself by adopting a metaverse-focused worldview and integrating virtual technology. By incorporating technology into their idol concept and delivering a distinctive "metaverse girl group" experience, aespa endeavors to set itself apart from other idol groups. Prior research in the realm of K-pop and idols has predominantly focused on success factors, the idols' working environment, and fashion trends, placing greater emphasis on environmental and contextual elements rather than the individual characteristics and strategies of specific idols. This study aims to investigate the success factors driving aespa's accomplishments in the global entertainment industry. We employ actor-network theory, which recognizes not only humans but also non-human entities as active participants within networks. This theoretical framework is deemed suitable for elucidating intricate social phenomena. This study utilizes actor-network theory as a analytical framework to investigate the implementation of new technologies in the K-pop industry. To achieve this, ten experts from the K-pop industry participated in the interviews. This study employs a case study approach to comprehensively analyze the dynamics and interactions within the network. Specifically, the case study centers around aespa, a metaverse K-pop girl group that achieved remarkable success during the COVID-19 pandemic. The findings of this study indicate that the global success of aespa was significantly influenced by the roles of A&R and executive producer prior to their debut. Furthermore, subsequent to their debut, technology, social networking services (SNS), and portals emerged as critical determinants. Moreover, the individual ability, appearance, personality of the idol and the agency's involvement played pivotal roles both before and after the debut stage. This study has contributed significant insights by applying Actor-Network Theory (ANT) to the idol industry. It highlights the important factors that K-pop idols need to consider for global industry expansion. The use of ANT provides a valuable framework for understanding the complex dynamics and interactions within the industry, shedding light on

¹ This work was supported by MSIT (Ministry of Science and ICT) Korea, under the ITRC (Information Technology Research Center) support program (IITP-2022-0-01749) supervised by the IITP (Institute of Information & Communications Technology Planning & Evaluation) and the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2019S1A3A2099973).

the key considerations for successful global ventures in the K-pop idol market.

Keyword: K-pop, Success Factors, Actor-Network Theory, Metaverse, Aespa, Technology, Virtual Idol

1. Introduction

The contemporary definition of entertainment, as provided by the Oxford English Dictionary (2008), encompasses the notion of delivering interest or amusement. Among the various sectors within the entertainment industry, music holds a prominent position as it pervades every facet of our lives and remains highly accessible. The prevalence of music streaming technology and the establishment of music platforms have led to a significant surge in music consumption, with audio streaming subscriptions accounting for approximately 24% of global music consumption (IFPI, 2022). This exponential growth in music streaming services has primarily been dominated by Western pop, as evidenced by its dominance on the Billboard chart. Over the past few decades, the music industry has experienced remarkable expansion, primarily driven by the digitalization of music and the rapid proliferation of music streaming services, solidifying its status as a pervasive form of media. Concurrently, the K-pop market has gained substantial popularity and evolved into a global industry, facilitated by technological advancements in idol activities and the introduction of new idol concepts. Notably, BTS (Bang-Tan) secured a position on the Billboard Hot 100 chart, while BLACKPINK became the first K-pop girl group to top the Billboard Global 200. Given the challenges posed by the COVID-19 pandemic, such as the limitations on offline concerts, the integration of technology into the K-pop idol market has seen increased activity, particularly through the development of online concerts and virtual fan meetings. This incorporation of technology into the idol market has witnessed significant growth during the COVID-19 era. A noteworthy case within the K-pop industry during this period is aespa, a metaverse girl group affiliated with SM Entertainment, the largest K-pop entertainment agency. aespa distinguishes itself through its metaverse-oriented worldview, comprising four virtual world members and four real-world members, with a strong emphasis on the integration of virtual technology. Their debut song, "Black Mamba," followed by "Next Level," achieved consecutive mega-hits, illustrating a successful fusion of technology and the idol market. Given the substantial impact of COVID-19 on the music industry, leading to a shift in music consumption from offline to online, future developments in the idol market should pay close attention to successful

instances of combining offline and online elements. Thus, while prior efforts have primarily focused on enhancing the convenience of idol consumption, aespa represents a novel venture that leverages metaverse technology in the idol market. By incorporating virtual technology into the global idol market within the entertainment industry, aespa serves as an apt case study for this research. Consequently, the aim of this study is to examine the factors that contribute to the success of a K-pop metaverse girl group within the global entertainment industry, employing actor-network theory as the analytical framework. The study focuses on aespa as the subject of the case study, intending to identify the factors underlying their success in the post-COVID-19 era by exploring the convergence of virtual technology and conventional idol groups.

2. Literature review and Research Questions

2.1 K-pop and Idols

K-pop is a term used to refer to Korean popular music, although it predominantly encompasses idol music. The top 100 charts of most mainstream music streaming platforms in Korea primarily consist of idol music. It is important to note that K-pop specifically denotes the "latest trend in Korean mainstream popular music that is attracting attention overseas, particularly the pop music of idol groups," rather than encompassing all forms of Korean popular music (Kim, 2012). The "K" in K-pop originates from the attachment of the first initial of the national anthem, similar to the abbreviation of Japanese popular music as "J-pop" (Jung, 2020). The emergence of idol groups can be traced back to the first generation with H.O.T, followed by the idol boom during the second generation, and subsequently the third generation. In the present day, the terms "third" and "fourth" generations are used interchangeably (Kim, 2011). "Idol groups" are defined by Kim (2011) as "visually-oriented groups that pursue teen-oriented dance music" and gained prominence with the introduction of the systematic star system in the 1990s. The Hallyu boom, which actively promoted K-pop overseas, coincided with the second generation of idols. Following the third and a half generation, the fourth generation of idols emerged between 2018 and 2020, represented by groups such as aespa, STAYC, IVE, and NewJins.

A significant portion of existing research on K-pop in Korea has focused on analyzing the factors that have contributed to its success in the global market. This research began with the emergence of the Korean Wave phenomenon, which included second-generation idols such as Dongbang Shin-Ki, and continued with the impact of Psy's "Gangnam Style" and BTS. Cho

and Shim (2013) conducted an analysis to identify the success factors behind the K-pop hallyu and assess its sustainability. Shin et al. (2015) explored the factors that facilitated K-pop's entry into the global market using the VRIO model. Due to BTS's immense popularity worldwide, numerous studies have been conducted on the group. Jung (2021) investigated the success strategy of Big Hit, the agency managing BTS, as well as the dynamics among Big Hit, BTS, and their fan base (ARMY). Kim and Kim (2018) examined the success factors underlying BTS's entry into the U.S. market, scrutinizing their distinct strategies and identifying the contributing factors to their achievement as a new K-pop idol group in the U.S. market. This particular study focused on BTS's endeavor to penetrate the world's largest music market, the United States. Lee et al. (2021) analyzed the growth trajectory and success factors of BTS from a global perspective. As BTS, a K-pop group that has reached the pinnacle of the Billboard Hot 100 and Billboard 200 charts, and ignited a global K-pop phenomenon, has become a subject of extensive research. Previous studies on K-pop and idols have primarily examined success factors, the work environment of idols, and fashion trends. Moreover, marketing strategies and business models of major entertainment agencies have been analyzed as crucial elements contributing to the success of idols.

2.2 Aespa

Aespa is a Korean girl idol group that made their debut in November 2020 under SM Entertainment, the largest entertainment company in Korea. The group's name combines the first letter of "Avatar" and "Experience" (æ) with "aspect," signifying the coexistence of virtual and real elements. Aespa stands out among other idol groups by integrating technology with the idol concept, presenting a unique "Metaverse Girl Group" that incorporates virtual members alongside real-life members on stage. Comprising four real-life members and four metaverse avatar members, aespa has captivated the public with their distinct worldview. Their virtual member, named æ (æ), frequently appears in song lyrics, music videos, and talk shows on their official YouTube channel. Aespa is an exemplar of third-generation idols, and in the current fourth-generation era, many idol groups have developed their own worldviews as a means of surviving intense competition and distinguishing themselves, often utilizing trilogy albums with interconnected storylines.

Prior to aespa, there was a previous instance of an idol group utilizing metaverse technology known as Nazca. Created by Nazca Incorporation, a video venture company, Nazca debuted in March 2001 with five real-life members and a cyber singer named Nazca. While the virtual member made brief appearances in music videos, only the real-life members performed

on televised stages. Despite making some appearances on music broadcasts, Nazca failed to gain significant traction and naturally disbanded (Park, 2022). In a classification of virtual idols presented by Lee et al. (2022), aespa falls into the category of a virtual sub-character singer with real-world members, wherein a virtual member is modeled after a real member using technology.

The incorporation of a metaverse worldview has been identified as a "success factor" for K-pop groups in recent years, with collaborations between filmmakers, poets, novelists, and major agencies to create intricate idol worldviews (Yoon, 2022). Furthermore, fandoms not only contribute to the creation and dissemination of meaning associated with the worldview but also play an active role in shaping the future success of such content (Kim, 2022). In the realm of aespa-related research in Korea, focus has been placed on the adoption of technology and the aespa worldview. Being labeled as a "Metaverse Girl Group," aespa's metaverse-oriented worldview positions them as a pioneering group within the K-pop industry. Kang (2021) draws a comparison between K/DA and aespa, highlighting the significance of idols that blend virtuality and reality in ongoing discussions within the idol industry. Kang suggests that future research should center on imaginative manifestations of pop culture that evolve alongside technological advancements. Heo and Lee (2022) analyze various visual elements employed by aespa, including fashion, to comprehend how the narrative characteristics of aespa's worldview influence the visual implementation process. Kim (2022) examines the phenomenon of adopting a worldview in K-pop, with a specific focus on aespa's worldview, aiming to understand the experience of acceptance and the perceived significance of such worldviews. Thus, the idol market has witnessed a continual influx of endeavors to leverage technology as a means of differentiation from other idols.

2.3 Actor-network theory

The actor-network theory, introduced by sociologists Latour (1987) and Law and Callon (1992), provides an explanation of the formation, development, and growth of social networks. This theory asserts that society can be comprehended and elucidated when both humans and non-humans, such as animals, institutions, and electronics, are equally considered as part of the network (Law, 1992). Actors within the network can be attracted from other networks or remain continuously within their own network. As a theory that intricately traces the structure of society, it is well-suited for understanding a world composed of numerous humans and non-human entities (Latour, 2007). For example, Park et al. (2015) utilized the

actor-network theory to explain the failure of Korean communication technology in a WiBro case study. Central to translation is the actor's ability to establish a frame that allows other actors to accept their understanding. The core actor persuades other actors to depart from their network, join their own network, and exert control over them to prevent them from leaving the network (Kim & Kim, 2018).

The actor-network theory revolves around the translation of the actor and consists of four stages: problematization, interessement, enrollment, and mobilization. Problematization occurs when an actor proposes to address a problem using their own resources through rhetorical means. If the constructed network proves successful, the actor obtains an obligatory passage point (OPP) within the network. The OPP serves as a crucial element in constructing the actor-network (Latour, 1990). In the next stage, interessement, actors experiencing the problem are separated from competing networks, and the identities of the actors and OPP are defined through the process of problematization. Enrollment contributes to stabilizing the network by assigning appropriate roles to various actors, necessitating negotiations among the actors involved. Mobilization involves the representation of minority actors, justifying the collective as a whole, and conferring authority upon the minority to represent the majority. It is crucial for critical actors to continue acting as spokespersons for the actors involved, representing and controlling them, and ensuring their continuous presence within the network (Callon, 1986). Actor-network theory considers certain commonly accepted "facts" as "black boxes." As a theory that demands meticulous analysis of how society is structured, it is highly suitable for comprehending a world comprising numerous humans and non-human entities in a hybrid manner (Choi, 2017).

Analyzing standardization cases from the perspective of actor-network theory (ANT) offers several advantages. Firstly, ANT's interdisciplinary approach allows for a departure from the dichotomy of technological determinism and market determinism, enabling a description of actors and networks as processes and outcomes of interactions (Bengtsson, 2011). Previous research has also applied actor-network theory to the music industry, examining its main phenomena through an ethnographic lens (Beekhuyzen, J., 2010). Additionally, studies have analyzed the shared discourse surrounding electric guitars online, demonstrating how video technology has transformed the ontology of musical material (Bigham II, D. J., 2013). In the context of the Korean popular music industry, researchers have identified the network structure through a study (Park & Lee, 2012). The application of actor-network theory has gained popularity in various fields in Korea, encompassing science-related disciplines, humanities, and social sciences. For example, Park and Shin (2015) analyzed discourse on socio-cultural

phenomena, investigating disasters, risk phenomena, and the bird flu controversy through the lens of translation. Similarly, Lee (2014) examined the role of locality and local broadcasting using actor-network theory. Recently, Lee and Lim (2022) utilized actor-network theory to analyze the aesthetic representation of posthuman non-humans in the works of 'Anika Lee.' While the application of actor-network theory in the entertainment field has been relatively limited, Joo et al. (2021) employed big data analysis and actor-network theory to examine the success factors of the program "I Am a Natural Person," focusing on content and formal aspects and identifying the key factors from the program's main theme. Furthermore, Jung and Oh (2016) applied actor-network theory to explore new trends in popular music research, proposing potential contributions of this method to contemporary popular music research. Prior research incorporating actor-network theory in the music industry has primarily utilized methodologies that focus on identifying formal aspects and emerging trends. Similarly, this study builds upon the existing literature by exploring the research question of how the introduction of new technologies in the K-pop industry has facilitated its expansion into the global entertainment market.

Accordingly, this study presents the research question as follows:

RQ: What factors affect the success of the metaverse girl group 'aespa' in the global entertainment industry?

3. Methodology

This study employs actor-network theory as a analytical framework to examine the phenomenon of the introduction of new technologies in the K-pop industry. To achieve this, a case study approach was adopted in order to gain a comprehensive understanding of the dynamics and interactions within the network. This case study focuses on aespa, a metaverse K-pop girl group that emerged during the COVID-19 era and attained notable success. Aespa is a fitting subject for this study due to its distinct technological features. To investigate the factors contributing to aespa's success, an in-depth interview approach was employed as the primary research methodology. Ten experts from the K-pop industry participated in the interviews.

3.1. Case study standard

The primary objective of this study is to analyze the factors that have contributed to the success of aespa, a metaverse K-pop girl group, and to identify key success factors within the global entertainment industry. In order to investigate this, a case study methodology was deemed appropriate as it is well-suited for examining unique and representative subjects (Yin, 2003; Kim, 2010; Jang, Lim & Kim, 2022). Aespa was specifically chosen as the subject of this case study.

Aespa made their debut in November 2020 with a groundbreaking concept that combined metaverse and real-world members. They quickly achieved notable success, particularly due to their distinctive metaverse worldview. Their debut single, "Black Mamba", not only achieved their first victory on terrestrial broadcasting platforms, but also gained rapid popularity and recognition. Aespa solidified their position as an unrivaled idol star with the subsequent release of "Next Level", which earned them the coveted Song of the Year award at the Korean Music Awards. Additionally, at the 13th Melon Music Awards, aespa became the first group to win both the Rookie of the Year and Grand Prize categories. Their accomplishments have garnered significant attention, with Forbes recognizing aespa as "one of the fastest-growing Korean girl group albums in American history" and the only K-pop artist listed among the 30 under 30 leaders in Asian entertainment and sports (Forbes, 2022). As aespa is a metaverse girl group that has captured not only domestic but also global attention, and has achieved remarkable success through effective utilization of technology, it is deemed an appropriate subject for this research case study.

3.2. Data collection method

This study employed an in-depth interview method to investigate the success factors of aespa. Ten experts in the K-pop industry were selected as interviewees based on their current or previous involvement in the idol industry. The selection of interviewees for each factor was based on purposive sampling, guided by the main factors explored in previous studies. An in-depth interview is characterized by interactive conversations between the researcher and interviewee, where the interviewer maintains an overall framework for the questions while allowing flexibility in the specific questions and order (Kvale and Brinkmann, 2009; Ingvild Kvale Sørenssen, 2016).

To analyze the interview data, an abductive approach was adopted, involving the examination of interview transcripts (Alvesson and Sköldberg, 2009; Ingvild Kvale Sørenssen, 2016). Drawing from the literature review and the identification of focal actors, a set of questions pertaining to actor-networks was formulated for human actors. These

questions included inquiries about changes in the idol industry before and after COVID-19, the characteristics of successful idols, and the factors contributing to aespa's success. Furthermore, the specific role of metaverse technology in aespa's success was also explored. These questions were designed to elicit open-ended responses. Through the process of verifying focal actors in the network via in-depth interviews, the reliability of the actors' perspectives could be ensured. Table 1 provides basic information on the participants involved in the in-depth interview.

Interviewees	Occupation	Career duration	Interview Date	Interview type
A	K-pop Idol (Previous occupation)	More than 5 years	2022. 9.	Face-to-Face
B	Journalist (The culture desk)	More than 5 years	2022. 9.	Face-to-Face
C	Affiliated artist staff (One of the 4 major agencies)	3~5 years	2022. 10.	Face-to-Face
D	KBS Music Bank PD (Previous occupation)	More than 5 years	2022. 10.	Face-to-Face
E	HYBE EDU staff (Abroad department)	3~5 years	2022. 11.	Online
F	HYBE EDU staff (Abroad department)	1~2 years	2022. 11.	Online
G	K-pop Idol	3~5 years	2022. 11.	Face-to-Face
H	Agency A&R team	Private	2022. 12.	Document
	(One of the 4 major agencies)	More than 5 years	2023. 1.	Face-to-Face
I	Beyond Live	More than 5 years	2023. 2.	Face-to-Face
J	Songwriter			

Table 1. Information of the interviewees

4. Result

The analysis of the results was conducted in accordance with the translation process proposed by actor-network theory. The findings were categorized into distinct sections corresponding to the four stages of the translation process.

4.1. Key factors in the success of K-pop idols

In order to examine the success of aespa in the global entertainment market, this study initially identified key actors by reviewing relevant literature, including research papers and articles focused on K-pop and idol phenomena. Subsequently, a series of expert interviews was conducted to validate the focal factors associated with the success of K-pop idols. Aespa strategically employed innovative technology as a means of distinguishing themselves from other groups within the fiercely competitive K-pop industry. This approach sought to introduce novel elements to the K-pop market, with the objective of enhancing aespa's popularity through enhanced interaction between the group and their fans, as well as fostering connections among

fans themselves. Ultimately, this strategy aimed to cultivate a thriving and passionate fanbase for aespa. The translation here is the need for popularity through fans, which means to fulfill popularity and amplify fandom in the interactions between aespa and fans and fans and aespa. Figure 1 summarizes the influence of non-human actors and human actors on aespa's success network. The direction of the arrow indicates the direction of influence. The factors influencing aespa's success are categorized into four non-human actors, four human actors, and one environmental actor. The following provides a description of each actor:

COVID-19. The COVID-19 pandemic has emerged as a global health crisis, prompting the implementation of measures aimed at curbing its spread, such as social distancing and travel restrictions. These measures have had a profound impact on various industries, including the music market. As a consequence, numerous live shows and events have been cancelled, leading to significant disruptions in the plans of K-pop idols preparing for comebacks. Faced with concerns over the potential transmission of the virus to their fans, idol groups have made the difficult decision to either cancel or postpone concerts and other scheduled activities. In response to this unprecedented situation, idol groups have sought alternative methods to engage with their audiences. One approach has been the organization of concerts without physical audiences, utilizing platforms such as Naver's V Live to livestream their performances. This transition to online platforms has brought about a systemic shift in the idol industry, transforming the traditional model of in-person events and prompting a greater reliance on virtual means of interaction.

Entertainment (Agency; Scale). Korean entertainment agencies can be viewed as companies that enter into contracts with idols and singers, overseeing their management and revenue generation processes (Choi et al., 2019). Previous research has demonstrated that the duration of an idol's career varies depending on the size of the agency they debut under (Kim et al., 2020). Specifically, idol groups associated with larger agencies tend to have a higher likelihood of longevity (Lee & Lee, 2019). The landscape of major entertainment companies has undergone changes due to the immense popularity of BTS, expanding the list from three to four prominent agencies, namely SM Entertainment, JYP Entertainment, YG Entertainment, and HYBE. Trainees and idols affiliated with these larger agencies typically undergo a structured training process, which may contribute to differences in their ability sets when compared to those from smaller or medium-sized agencies. Notably, production conditions and financial resources emerge as influential factors in the phenomenon of idol singer bias (Kim, 2011).

A&R Team (Artists & Repertoire). A&R, which stands for "artist and repertoire," represents

the division within a record label that holds the responsibility for talent scouting and nurturing (Carrer in music, 2022). This term, originally used by American record labels to describe the process of identifying fresh talent, has been adopted in the context of the Korean idol market (Yoon, 2020). The primary duties of the A&R team encompass procuring songs aligned with the artistic concept of the team, formulating and implementing a budget for album production, promoting the album, and strategizing artist development.

Executive Producer (Big four agency). SM Entertainment, JYP Entertainment, YG Entertainment, and HYBE, led by Lee Soo Man, Park Jin Young, Yang Hyun Suk, and executive producer Bang Shi Hyuk, have all had active careers as singers, with the exception of Bang Shi Hyuk, who has also contributed as a composer and lyricist. It is notable that a majority of entertainment representatives in the idol industry have previously served as managers, given the crucial role played by traditional managers in overseeing celebrity affairs and broadcast engagements. However, representatives who have direct experience as singers and songwriters in the entertainment industry offer a distinct perspective on idol production compared to those who have solely functioned as managers. Nurturing singers from an artist's standpoint can be regarded as a differentiating factor in idol planning, which necessitates artistic sensibilities. Building upon this foundation, the representative producers of the four major agencies have attained success in idol planning, propelling their agencies to become major players with achievements spanning multiple idol groups. It has been established that planning facilitated by a large agency confers a certain level of guaranteed success, and the influence of the head producer further shapes the trajectory of the idol's success, in addition to the agency's reputation and scale.

Idol (Appearance, Personality, Ability). When planning an idol group, the emphasis is placed on an idol's appearance, personality, and ability. Particularly, the visual aspect takes precedence over singing ability, leading to substantial investments in enhancing the singers' visual appeal (Kim & Park, 2011). Consequently, if a member responsible for visuals stands out prominently within an idol group, they are typically given priority in participating in entertainment programs and dramas, significantly influencing the team's visibility and recognition. While being an idol entails showcasing singing and dancing abilities on television, initial attention is invariably drawn to their physical appearance. Idols who possess exceptional visual qualities often experience rapid popularity, which in turn is leveraged to enhance their public image through endorsements, appearances on entertainment programs, and involvement in dramas.

According to Kim and Park's (2011) study, interviewees emphasized the significance of "Personality" as the foremost factor for an idol singer. This emphasis stems from the

understanding that a product carefully cultivated over an extended period can be swiftly tarnished by engaging in socially problematic behavior. In certain instances, controversies surrounding an idol's character can lead to the suspension of their activities or, in the most severe cases, their withdrawal or retirement. Public figures are expected to exhibit impeccable character, and these expectations are considerably more stringent than those imposed on the general public. Consequently, agencies place great emphasis on character education for their trainees and consistently prioritize the development of positive character traits.

Kim's (2017) study revealed that the active participation of idol members in songwriting significantly contributes to enhancing their competitiveness. The success of K-pop idols globally can be attributed to the refined training systems that underlie the development of their unique artistic capabilities, referred to as "Kalgunmu" (Cho, 2019). While the composition and structure of an idol's agency hold importance, their performance remains the key determinant of their success.

Fan (Domestic Fan & Foreigner Fan). The term "fan" refers to an individual who ardently admires and deeply engages with a particular person or field (Hong, 2014; Woo & Jeon, 2021). With the advent of the internet, the nature of idol fandom is undergoing transformation, evolving beyond mere adoration to become a phenomenon that can be actively cultivated and nurtured (Na, 2020; Han & Na, 2022). Fandom plays a crucial role in determining an idol's popularity. In the domestic context, the presence of fans serves as an indicator of an idol's popularity, with initial album sales and music streaming figures often used as performance metrics during debuts or comebacks.

Driven by the Korean Wave, overseas fans have attained a level of influence comparable to their domestic counterparts. They offer support to idols even in foreign countries and actively participate in their domestic activities. To cater to overseas fans, idols frequently embark on world tours, traversing various countries to hold concerts. BTS's popularity in the United States, for instance, has naturally heightened their recognition within Korea.

SNS (Social network service) & Portal. Social media encompasses various platforms that facilitate users, subscribed to social networking services like Twitter, Facebook, Instagram, and others, to share information, express opinions, and expand their interpersonal networks. Within the 10-30 age demographic, stories pertaining to idols gain significant traction on social media. Additionally, numerous portals actively cover K-pop, with certain platforms, such as Nate's "Pann," prominently engaging in discussions related to idols. Likewise, sites like "DCinside" have cultivated fan communities through dedicated "galleries" for each idol group. While the content on these platforms may range from positive to negative, it serves as an indicative

measure of an idol's short-term popularity.

Broadcasting & Journal. Idols consider music broadcasting to be an indispensable aspect of their album promotion activities. Typically, they make appearances on various television stations, often on a daily basis throughout the week. Journals possess specialized entertainment departments that consistently receive a deluge of information pertaining to the entertainment industry on a daily basis.

Technology. In 2020, the idol market witnessed a significant integration of technology. While the concept of holographic concerts had been previously explored, the novel introduction of metaverse technology to embody group members marked a significant development. Notably, the emergence of the metaverse girl group, Mave, exemplified the active adoption of this innovation within the industry. Utilizing advanced technology, Mave made appearances on music broadcasts, effectively showcasing their talents as a girl group. The music released by this metaverse group garnered considerable popularity, with their songs even charting within the top 100 on music charts.

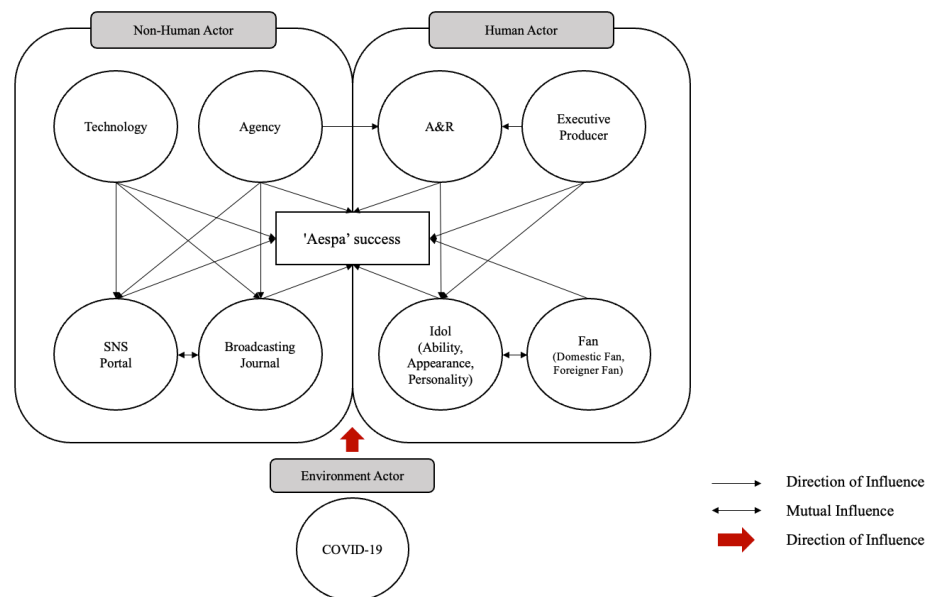


Figure 1. Factors affecting aespa success

4.2. The first metaverse girl group appears in the K-pop industry: ANT Translation process of 'Problematization'

According to actor-network theory, the translation process involves a key actor employing a tangible resource to gather other actors and form a new network, a concept known

as intersement (Callon, 1986). The pre-debut process was significantly influenced by the environmental factor of the COVID-19 pandemic. The agency and executive producer interacted with each other, indirectly influencing the A&R department, and ultimately exerting a direct impact on the idols. The agency and executive producer play vital roles in the production of idol groups through their interdependent relationship. When a new idol group is preparing for debut, the agency's financial capacity, coupled with the executive producer's expertise in producing, lays the foundation for the preparatory stage. During this phase, the A&R department, responsible for the idol's image-making and practical production, is developed to differentiate the group from other idol groups. If the A&R department is unable to form a suitable debut group from existing trainees, they actively recruit trainees who align with the desired concept and directly participate in the formation of idol members alongside the executive producer. Subsequently, songs, choreography, and group's concepts are planned according to the A&R department's creative direction. The K-pop market in 2020 faced significant disruptions due to the COVID-19 pandemic. Traditional in-person performances became challenging to conduct, leading to the emergence of alternative formats such as metaverse concerts and online concerts. During this period, aespa made their debut with metaverse members, capitalizing on the distinctive concept and the environmental factor of COVID-19. This synergy brought about positive effects for the aespa.

Interviewee A: I think the fact that aespa was able to succeed as an eight-member team is unique because it's different from other teams, and I think it's the perfect image because it's different from other teams and has real AI-like members.

Interviewee C: I think the concept of aespa is very promising, even though it could have gotten more attention because of COVID-19. The worldview makes me really curious. Aespa has a feeling of being real and not real, and their appearance is really AI-like, but when I hear that they are AI singers, I think they are idols who really utilize the features of the metaverse that are slightly confused with reality.

The utilization of metaverse as a replacement for offline experiences has garnered attention across the entertainment industry. Within the idol market, the use of metaverse and virtual spaces has gained significant traction. While previous technological applications were limited to providing diverse screen experiences at concert venues, aespa took a different approach by incorporating metaverse-generated members alongside real members, effectively utilizing the metaverse space. The interaction between aespa's appearance and the use of technology was noteworthy, as the actual member, 'karina', bore a resemblance to the virtual members, attracting attention. Furthermore, technological advancements have brought about

changes in the media landscape within the idol market, with the prominent example being the utilization of social media platforms like TikTok. Aespa actively embraced the trend of short-form content by leveraging evolving SNS and portals, consistently demonstrating their presence. This transition to online platforms led to a surge in idol-related content, and aespa strategically utilized the technological environment to captivate fans' interest through media platforms.

Interviewee C: I think there's been a lot of buzz around technologies like XR, AR, and VR, and there was an online concert that made a lot of noise.

Interviewee E: I think groups that utilize social media like TikTok well can keep their fans, because they are basically doing everything they need to do on social media.

Interviewee F: SM singers used to do a lot of entertainment and public exposure, but with COVID-19, they seem to have moved to the outside world, and I think this has a lot to do with it because they appear in a lot of videos on Twitter and the web.

Paid communication platforms that facilitate interaction between idols and fans have begun to emerge. Notably, the utilization of platforms such as Weverse and Bubble has increased. Additionally, there has been a noticeable rise in self-produced content by idols on popular platforms like YouTube and TikTok. These media platforms not only provide streaming environments for concerts but also extend the limitations on idol activities. The influence of fandom plays a significant role in measuring the popularity of K-pop artists. To gain recognition and reputation both domestically and internationally, factors beyond the Korean idol market need to be considered. Aespa, leveraging technological advancements, attracted a fan base by incorporating a unique concept that could appeal to a global audience. The following figure 3 shows the problematization and interesstement of the aespa Global Success Network translation process. Figure 2 presents the problematization stage of aespa's success in the ANT translation process. During this period, the environmental impact of COVID-19 was evident, and it influenced the process of idol influence within A&R, based on the agency's planning and the executive producer's initiatives.

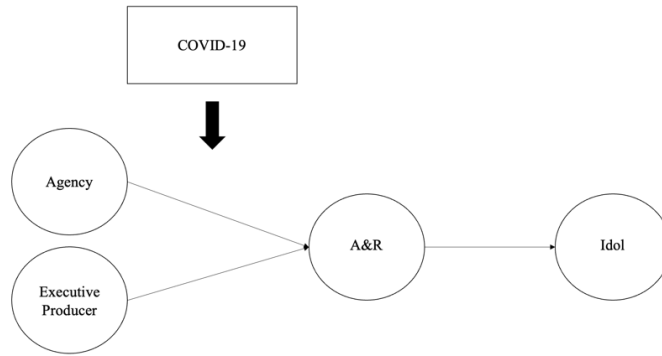


Figure 2. Problematization of the Translation Process in aespa's Success

4.3. What is the success of K-pop's criteria?: ANT Translation process of 'Interessement'

Achieving success in the idol industry requires effectively addressing the challenges posed by problematization, thereby surpassing the threshold of obligation. This implies that the necessary resources to accomplish the desired goals are secured and effectively managed. It is important to note that the definition of idol success may vary among individuals. However, for the purpose of this study, idol success is defined as the attainment of a mega-hit song. Maintaining a prominent presence on music streaming platforms and music charts, and even reaching the number one position, is indicative of the idol's popularity and recognition. While the consumption of music by dedicated fandoms can exert influence, in the competitive and highly saturated idol market, achieving the top rank on music streaming platforms and music charts serves as a clear indication of both the song's success and the idol's overall achievement.

Interviewee B: I would say they're successful when they have a hit song, a mega hit song.

Interviewee G: In Korea, popularity is proven by the fact that a lot of people know the group, they know all the members, and the hit song goes to the top of the music platform, and aespa did it all.

Increasing the impact of music is an effective approach to establishing connections with audiences and fans. Attaining the top position on music streaming platforms serves as a significant indicator of public consumption, making it a crucial milestone for success. In the case of aespa, their second song, 'Next Level', emerged as a mega-hit. It is noteworthy that achieving the number one spot immediately with a debut song is uncommon in the idol market. Typically, this accomplishment is associated with groups managed by large agencies, whose established fan base exhibits interest and affection towards the new group. Additionally, pre-

debut promotions orchestrated by the agency contribute to generating interest, which directly influences the group's performance following their debut. 'Next Level' is a remade version of the original soundtrack from the film 'Fast & Furious: Hobbs & Shaw'. By adapting the pre-existing movie OST to suit aespa's concept, the group leveraged the familiarity of the original melody to capture public attention. This strategic decision effectively increased the level of interest surrounding aespa's music. Figure 3 presents the interessement stage of aespa's success in the ANT translation process. In this process, the combination of A&R and technology was utilized to materialize the idol. The materialized idol achieved first place on the music charts, attaining OPP.

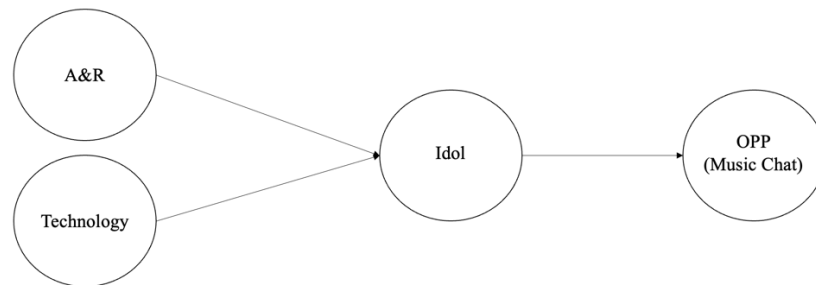


Figure 3. Interessement of the Translation Process in aespa's Success

4.4. What makes aespa successful in the global entertainment industry?: ANT Translation process of 'Enrollment'

The focal actor within the actor-network plays a crucial role in enrollment and mobilization various actors within the network, including both recruiting and trapping them. During the enrollment phase, it is essential to employ mechanisms that effectively maintain actors within the network. Aespa enhanced their visibility and accessibility to the public through a focus on SNS and portals. In this phase, actors recognize newly assigned roles and allocate subsequent roles within the network. The content produced through the A&R department process undergoes organic dissemination through fan efforts, including reprocessing and reproducing. While original content itself garners popularity, the exposure through social media platforms and online portals often takes the form of fan-generated secondary creations. These fan-made works can raise copyright issues but also serve as marketing elements that increase awareness, popularity, and visibility for aespa and their songs.



Figure 4. Aespa ep2. Next Level SM Culture Universe

<https://www.youtube.com/watch?v=i8fRCkg5tbw>



Figure 5. Aespa ep2. Next Level SM Culture Universe

<https://www.youtube.com/watch?v=i8fRCkg5tbw>

In addition to their relationship with the metaverse worldwide, aespa is executing a transmedia strategy through collaboration with the Epic Seven game world. The agency demonstrates a proactive approach in nurturing aespa's functionality as actors in the idol market by creating a unified world and effectively utilizing their transmedia strategy through A&R department. This includes building a collaborative network encompassing games and comics to generate and expand content in which fans can participate. Furthermore, aespa seamlessly integrates offline and online concert experiences, offering diverse options to their fan base. The Beyond Live concert held on February 26, 2023, serves as a noteworthy example of an innovative concert format. In this concert, aespa integrated a stage screen showcasing virtual reality members alongside various special effects. The combination of cutting-edge technology and visual enhancements enhances the immersive concert experience, increasing overall engagement for both the group and the fans. This highlights the strong support and enthusiasm demonstrated by the agency's devoted fan base, emphasizing the significant impact of the agency's pre-debut promotion strategies on the group's post-debut achievements. Figure 7 presents the enrollment stage of aespa's success in the ANT translation process. In this process refer to the expansion of the idol through the agency and A&R. It involves directly reflecting this expansion in the idol's presence on SNS and portals. Additionally, the idol themselves utilize SNS to extend their worldview. Within two years of their debut, aespa transcended the simple enrollment stage and entered the mobilization phase.



Figure 6. 2023 aespa 1st Concert 'SYNK: HYPER LINE'
(Provided by SM Entertainment)

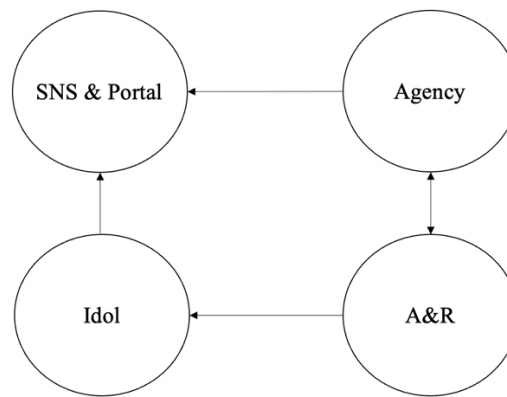


Figure 7. Enrollment of the Translation Process in aespa's Success

4.5. SM succeed the management rights, Is the metaverse concept sustainable?: ANT Translation process of 'Mobilization'

The transfer of management control from the executive producer to another agency has emerged as a factor in reducing actors within aespa's successful network. While the executive producer played a crucial role in strengthening aespa's existing global success network expansion, the transfer of agency control has diminished the influence of aespa's metaverse technology actor within the network. The brand expansion of aespa was built upon the foundation of the SM Culture Universe, where effective planning and management on a technological level emerged as pivotal human actors. HYBE and Kakao engaged in a competition to dominate SM Entertainment after Lee Soo-man stepped down from his position as the overall producer in February 2023. Ultimately, Kakao won the bid through its public stock acquisition of SM entertainment, surpassing HYBE. This development indicates that despite SM entertainment's reputation as the largest planning agency in the Korean music

market, the potential incorporation of SM entertainment into Kakao entertainment label could potentially impact the existing identities of artists represented by the agency. When pursuing network expansion, aespa must exercise cautious consideration in terms of mobilizing actors within the network, particularly in relation to transitions that may occur during the mobilization process. The concept here is that actors utilize transitions to leverage aespa's technological network and further expand connections with other actors in the new network.

Interviewee D: The way of promotion is actually not only offline promotion, but the revenue structure income itself has disappeared. They have to promote and monetize almost 100% digitally. There is no other way to perform other than the existing digital music.

Interviewee F: As a member of the public, it's hard to accept the worldview. When "Next Level" was released, I think that even if I wanted to like aespa in the future or learn more about the individual members, I lost interest because it was difficult to consume the songs. Therefore, my interest was directed towards idol groups with other popular concepts.

Interviewee G: I think the group is receiving less and less attention than it did in the beginning. The popularity is not distributed evenly among the members, and there is a phenomenon where it is focused on certain members.

One notable characteristic of aespa is the utilization of the metaverse, which can present challenges in interpreting the expanding metaverse worldview for fans or result in fan disengagement due to a lack of authentic experiences in the virtual realm. In 2023, the K-pop market continues to explore the possibilities of the metaverse, including some groups composed solely of virtual reality members. This demonstrates that the introduction of technology is not merely a choice but a necessity in the K-pop market. However, it is important to acknowledge that the metaverse and related worldviews are not always perceived positively by fans. Therefore, for aespa to further develop and expand globally in the fiercely competitive K-pop market, it requires a continuous mobilization process to mitigate actor attrition and ensure sustainable success, as the current network configuration is achieved through the realization of existing role allocations. As the influence of the executive producer within the network diminishes, the decrease in technological utilization is evident. Aespa's release of "Spicy" in May 2023 temporarily set aside the existing metaverse worldview and maintained the typical concept of a K-pop girl group. As a result, previously disengaged fan actors re-entered the network as the metaverse technology actor's influence diminished. Aespa demonstrates a continuous process of mobilization, constantly bringing in actors within the network and forming new networks to maintain their success as a K-pop girl group. Figure 8

presents the mobilization stage of aespa's success in the ANT translation process. In this process, the roles of A&R and executive producer actors have been separated. This stage reflects the incorporation of their respective perspectives into the idol, which can result in the disengagement of certain fan actors from the network. Therefore, new fan actors are generally introduced to replace those who have disengaged from the network.

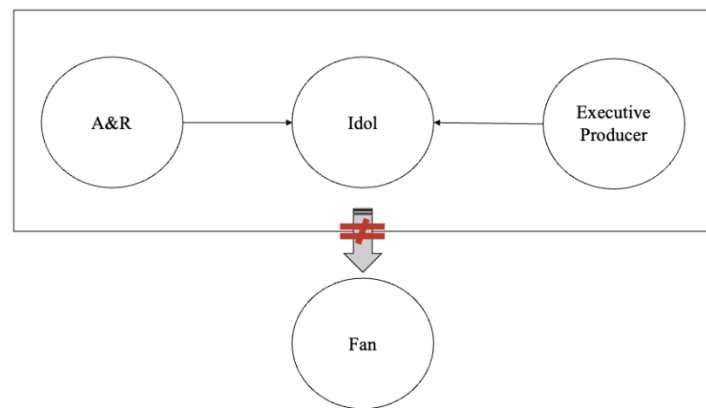


Figure 8. Mobilization of the Translation Process in aespa's Success

Figure 9 presents a summary of the research findings, illustrating aespa's global success network. It distinguishes between the pre-debut and post-debut phases of aespa's global success network to shed light on the common actors that have influenced aespa's success. The identified key actors include aespa themselves and the influential roles performed by the agency. While the pre-debut phase saw the A&R department and the executive producer influencing aespa's planning, the post-debut phase highlighted the significant role played by metaverse technology, SNS and portals in driving aespa's success.

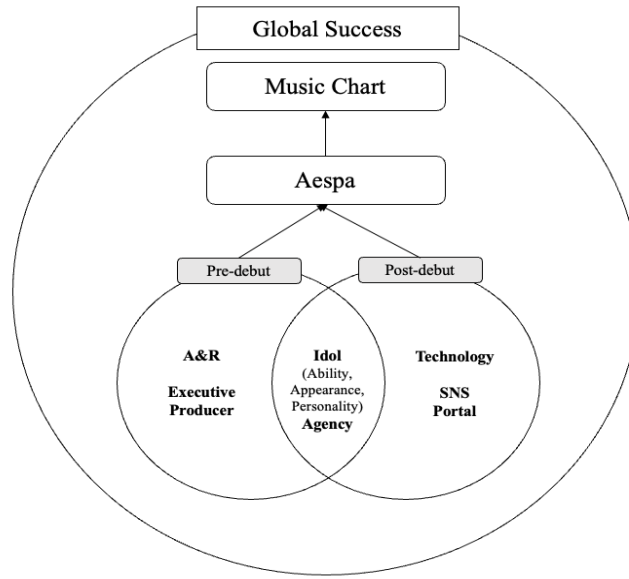


Figure 9. Global success network

5. Conclusion

This study examines the success of aespa, a prominent global K-pop idol group, through the lens of actor-network theory and its translation process. The translation process analyzed across four stages: problematization, interessement, enrollment, and mobilization. The analysis reveals the involvement of diverse human and non-human actors in each stage, aiming to attract, engage, and mobilize fans to establish a success network centered around fan support. In essence, the idol success network is comprised of a multifaceted network of human and non-human actors, with the agency and the idol at its core. Actor-network theory offers a unique perspective on social phenomena by emphasizing the interplay between human and non-human actors. Within industries, this perspective unveils a multitude of hybrid actors that shape and influence the industry's dynamics. By employing actor-network theory, we can gain insights into the translation process and objective success within a specific industry, shedding light on the composition and mechanisms between human and non-human actors. In this study, we apply the translation process of actor-network theory to examine the roles and presence of human and non-human actors that contributed to the global success of aespa in the K-pop industry. The findings highlight the significant influence of idols, agencies, technology, executive producers, and SNS and portals on the success of aespa. Notably, idols and agencies emerge as crucial factors for achieving global recognition and triumph in the industry. The appearance and ability of SM entertainment idols are to some extent guaranteed in the K-pop industry. The success of an idol is determined by how they transform into an idol through the

agency's capabilities and resources, facilitated by the executive producer and the A&R department. In contrast to the traditional idol industry, aespa's success is built upon the technological factor of metaverse, which has garnered attention on SNS and portals, laying a crucial foundation for achieving success in the global entertainment industry.

This study interviews aimed to capture the perspectives and opinions of individuals with expertise and experience in the field. By engaging with these industry insiders, we sought to uncover valuable insights and identify the critical factors that have contributed to aespa's remarkable achievements on a global scale. The COVID-19 pandemic necessitated the diversification of media platforms for idol exposure, leading to the proliferation of online activities and channels. Aespa, known for their emphasis on technology, capitalized on the environmental effects of COVID-19, leveraging an array of online content and employing idol storytelling within the metaverse world to enhance fan engagement. The financial strength of an entertainment agency plays a crucial role in fostering idol development, with stronger companies attracting more competitive trainees. Effective idol production planning involves the organization of songwriting camps, such as Songwriting, to ensure the creation of top-notch songs. These camps feature not only Korean composers but also international composers, aiming to achieve global recognition. The agency's marketing efforts are pivotal in garnering public recognition for a well-crafted idol. By strategically exposing the idol to broadcast media and generating compelling content on social platforms, opportunities for public exposure can be created. In recent times, fan-generated short-form content has gained prominence and shared secondary works have been shown to impact idol success. In terms of music, the strategy of remaking successful movie OSTs with aespa's concept proved effective in gaining initial popularity. While these remakes achieved significant success, particularly among global audiences familiar with the original OSTs, comprehending aespa's metaverse world has posed challenges for non-fans. Additionally, the metaverse-themed concept of their songs has acted as a barrier for general audiences to fully engage with aespa's content.

This study's findings are anticipated to offer valuable insights into critical considerations for agencies in the idol industry, characterized by a high-risk, high-return model. The implications extend beyond the Korean market to encompass global success. Practical implications lie in providing guidance on the success factors that agencies should incorporate into their strategies for producing idols. Given that idol production entails substantial costs, averaging 100 million won per album, agencies must carefully weigh various factors during the production process. The identified success factors from this study can serve as practical guidelines for agencies in their idol production endeavors. In the context of the expanding K-

pop industry, the focus on idols exclusively tailored for the Korean market has become increasingly rare. Instead, the success of K-pop as a global phenomenon relies on the involvement of diverse actors. These focal actors play crucial roles in driving the growth and impact of the K-pop industry on a global scale. BTS and BLACKPINK stand as the most renowned K-pop idols worldwide. However, BTS faces challenges concerning military service obligations and temporary suspension of group activities, while BLACKPINK confronts contract expiration issues. Hence, it is imperative to continually cultivate global idols to advance the globalization of K-pop idols. The case of aespa, with its introduction of metaverse technology, serves as an example of Korean idols striving to penetrate the global market, representing a progressive initiative by the Korean entertainment industry.

This study contributes to academic implications by expanding the theoretical scope through the utilization of actor-network theory to analyze the composition of idol success networks within the existing K-pop entertainment industry. While previous studies employing actor-network theory as a methodology have primarily focused on analyzing specific phenomena, this study holds significance as it presents a network of success stories through its analysis, despite examining a limited number of cases. Previous studies in the idol market have primarily focused on aspects such as the globalization of K-pop and the global success factors of renowned groups like BTS. Likewise, existing applications of actor-network theory in the entertainment industry have centered around analyzing emerging trends in popular music research (Jung & Oh, 2016) and instances of streaming abuse on online music platforms (Lee & Lee, 2023). In contrast, this study examines the success of metaverse idols in the global entertainment market and employs actor-network theory to analyze the underlying success network. Consequently, it demonstrates the potential for expanding the application of actor-network theory and broadens the field of its utilization within a new domain.

However, this study has certain limitations that should be acknowledged. Firstly, the sample size consists of only 10 interviewees, and their occupations and affiliations lack diversity. In this study, the interviewees consisted solely of providers within the idol industry, and the analysis focused on their perspectives. However, it would be beneficial for future studies to include interviews from a user perspective, particularly from the fans' point of view, in order to provide a more comprehensive understanding of the subject matter. Conducting future research with a larger sample of stakeholders from various organizations could potentially reveal additional actors or factors that were not captured in this study. Despite the limited number of subjects, it should be noted that they are representative given the relatively small size of the workforce in the K-pop entertainment market and the challenges associated

with disclosing interviewee identities. Additionally, this study did not explicitly mention the role of fan actors. The interviews were conducted exclusively with industry practitioners, and fan perspectives were not captured. In the K-pop idol market, the role of fans plays a significant role; however, in this study, the role of fans was regarded as a fundamental aspect within the network, and the analysis focused on actors that play a crucial role in facilitating fan network influx. As a result, this study has limitations in terms of not capturing various perspectives related to this phenomenon.

Secondly, this study focused solely on the global success of aespa as a single case of a K-pop idol group. While analyzing aespa as a case study holds significance due to its status as the first metaverse girl group in Korea, conducting a comparative study with Mave, another metaverse girl group that debuted in 2023, could provide valuable insights into technology adoption in the idol market. As more idols embracing the metaverse emerge in the industry, further exploration of the changes brought about by technological advancements in the idol market is necessary in future studies. Additionally, future research could examine idol success networks in Korea and other countries to provide implications for global idol success. Furthermore, considering the recent comeback of aespa with a concept slightly different from the metaverse, it is crucial to analyze the potential impact of such changes on the group's success. Additionally, it is important to investigate whether the sustained success of aespa requires the continuous presence of the metaverse concept, despite any potential deviations or influences. This analysis will provide valuable insights into the dynamic nature of the group's concept and its implications for long-term success in the industry.

Lastly, it is important to note that this study solely relied on qualitative data for analysis. Incorporating quantitative data in future studies would enhance the reliability of the findings. While actor-network theory offers a useful framework for analyzing the phenomenon, employing alternative methodologies to examine the impact of technology on the resulting idol market could enrich future research endeavors.

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