



# A Study on Social Perception and Acceptance of AI Music-Taking JJ Lin's Fans as an Example

Qionglin Li<sup>1,\*</sup>, Yumeng Ma<sup>2</sup>

<sup>1</sup>School of Cultural Industrise Management, Communication University of China, Beijing 100024, China

<sup>2</sup>School of Economics and Management, Communication University of China, Beijing 100024, China

Li Qionglin and Ma Yumeng contributed the same amount to the article and were both the first authors

\*Corresponding author's e-mail: 18201603250@163.com

**Abstract.** With the rapid development of Artificial Intelligence Generated Content(AIGC) technology, its application in the music industry has become a new frontier in the fusion of technology and art. This study aims to explore how AIGC technology affects the innovation of the music industry, to analyse the public's, especially the fans', social cognition and acceptance of AI music, and to predict its potential impact on the development of the music industry. This paper adopts a questionnaire survey method to collect data quantitatively and qualitatively from the fan base of singer *JJ Lin*. The innovation of this study is to combine the application of AIGC technology in music with the fan economy, to analyse in depth how fan feedback drives the innovation of AI music technology, and to explore the impact of cross-cultural factors on the global acceptance of AI music. In addition, the study focuses on the importance of copyright protection and talent development for the development of AI music. The findings suggest that while AI music technology is widely recognized by fans for its innovation and diversity, it still faces challenges in terms of emotional expression and copyright issues. Through continuous technology iteration, improvement of the legal system and talent cultivation, AI music is expected to play a more crucial role in the future music industry, opening a new chapter for music creation and appreciation.

**Keywords:** AIGC; AI music; social cognition; JJ Lin; fan economy.

## 1 Introduction

Technological advances have given rise to the rapid development of Artificial Intelligence Generated Content (AIGC), which has become an important symbol of technological innovation. AIGC technology generates new content through model training, and its widespread use in social media has had a profound impact on the dissemination of information and the ecosystem of the music industry. In March 2023, *Sandee Chan's* AI musical composition *Teach Me How to Be Your Lover* triggered a

wide-ranging discussion in different fields. In addition, the Washington Post reported an AI synthesized song called *Heart On My Sleeve*, which was synthesized by TikTok user @Ghostwriter977 using Drake and *The Weekend's* voice samples and musical styles, yet was not a real collaboration<sup>[1]</sup>. In May of the same year, AI *Stefanie Sun's Love Before the Western Era* received 2 million plays and frequently appeared on the Hot 100 list, showing the disruptive role of AI technology in music production<sup>[2]</sup>.

In the academic field, the phenomenon of AI-generated music has inspired interdisciplinary discussions and controversies. Much of the existing literature focuses on topics such as originality, morality, ethics, laws and regulations, and the potential impact on real artists<sup>[3]</sup>. However, there is a dearth of academic exploration on the attitudes and reactions of consumers, especially fans, towards AI music. This study aims to fill this gap by taking *JJ Lin's* fans as an example to explore the awareness and acceptance of AI music among the fan-base, and to gain an in-depth understanding of their attitudes and expectations, so as to provide a reference for the sustainable development of the music industry.

## 2 AIGC Technology and its Application in the Field of Music

### 2.1 Theoretical Foundation and Evolution of AIGC Technology

Artificial Intelligence Generated Content (AIGC) technology, based on the principles of machine learning and deep learning, achieves the ability to learn and create new content from data by simulating human intelligence<sup>[4]</sup>. The development of AIGC has evolved from early symbolic reasoning, to data-driven statistical learning, to the current widespread use of deep learning, demonstrating the continuous evolution and maturity of the technology. It incorporates multi-modal techniques such as natural language processing and computer vision, enabling machines to generate contextualized text, realistic images and videos. With the development of large-scale pre-trained models, AIGC shows great potential and application prospects in many fields such as artistic and literary creation, media publicity, automatic driving, financial risk control, health care, Internet of Things, security monitoring, etc. in China<sup>[3]</sup>.

### 2.2 Innovative Applications and Cutting-Edge Practices of AIGC Music Technology

The rise of AI music is based on the open-source project "So-VITS SVC", which enables the conversion of acoustic works from existing tones to target songs by means of a timbre conversion algorithm. "SO-VITS-SVC", a modified version of "VITS", has been released in June 2021, and significantly improves the efficiency of timbre conversion with its low threshold, low data requirements and fast conversion speed<sup>[5]</sup>.

In the international AI music development and application field, Sony Computer Science Laboratory (Sony CSL) has launched Flow Machines software, an AI-based music production service, which is capable of automatically generating music clips that meet the user's stylistic requirements; the "Muse Net" system developed by Open AI is capable of generating new music works by learning a large number of works and

imitating the creative styles of different musicians; Google's "Magenta" project provides a wealth of AI music creation tools to help musicians carry out their work. The "Muse Net" system developed by Open AI is able to generate new music by learning a large number of works and mimicking the creative styles of different musicians; Google's "Magenta" project provides a wealth of AI music creation tools to help musicians create and experiment<sup>[6]</sup>.

In China, NetEase CloudMusic, QQ Music and other music platforms have launched functions based on AI technology. For example, QQ Music's "AI helps you sing" feature allows the AI to generate unique tones by humming a few lines or uploading a song recording, and then you can choose your favourite tune for an AI cover. In addition, QQ Music has also launched the "Suno AI Zone", which allows users to listen to music generated by Suno AI technology for a brand new music experience. In the "AI Assistant" function of QQ Music version 13.3, users of the beta version can click on the left button of the search box to wake up the AI avatar and have a simple dialogue with it, unlocking the functions of finding a new song, music knowledge quiz, playback control, function jumping and chatting with the user at a time<sup>[7]</sup>.

### 3 Research on Social Perception and Acceptance of AI Music

#### 3.1 Questionnaire Design and Implementation

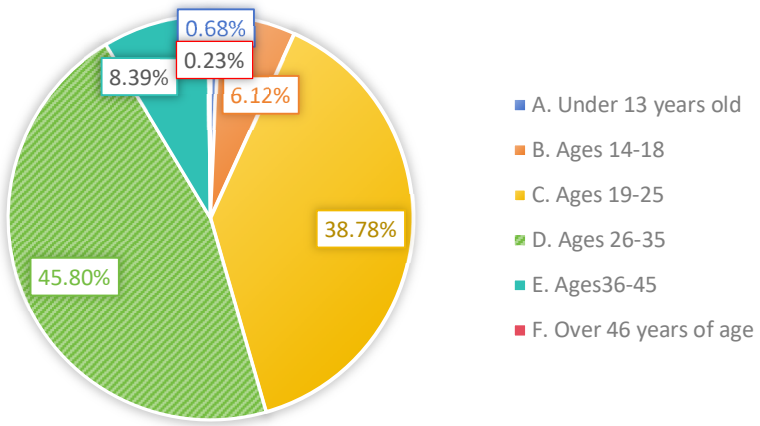
**Research Methodology.** This study used a questionnaire to quantitatively and qualitatively explore the social perception and acceptance of AI music among a specific fan group-*JJ Lin's* fans. The questionnaire design followed the principles of science and systematize, covering multiple dimensions such as fans' demographic characteristics, music preferences, and technology acceptance. Using social media channels such as *JJ Lin's Super Talk* and *JJ Lin's* fan clubs on the Weibo platform, this study successfully collected 441 valid questionnaires during the period of 27 July to 8 August 2024, ensuring a broad and representative sample.

#### 3.2 Analysis of Findings

**Sample Characterization.** As shown in Figure 1, the 26-35 age group has the highest percentage of fans, reaching 45.8% while the 19-25 age group has 38.78%, indicating that *JJ Lin's* music has a high popularity among the younger group. As the figure 2 shown the gender distribution shows that female fans make up the majority with 60.32%, reflecting the activeness of women in *JJ Lin's* fan base.

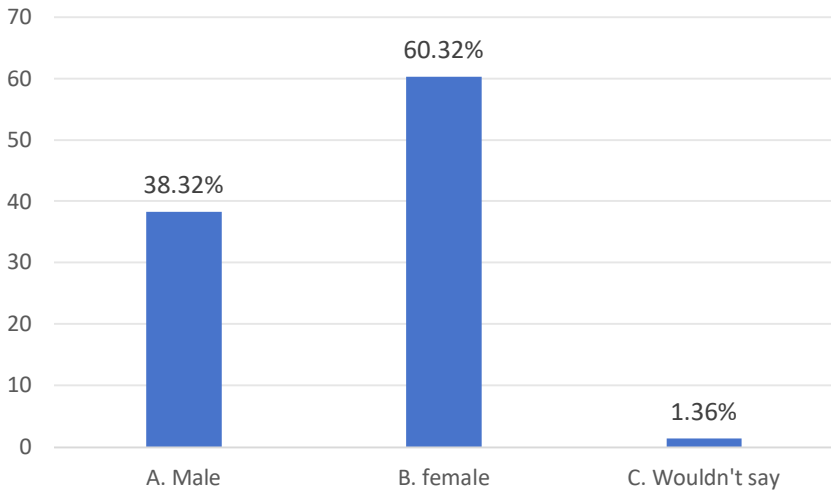
**Supporter's Perspective.** As shown in Figure 3, among the group of fans who support AI music, 54.88% of respondents believe that technological innovation has injected new vitality into music creation. 58.05% of respondents agree that AI music can meet diversified listening needs, and 53.51% value AI's potential to save on labour costs. In addition, 14.97% of respondents believe that AI music is comparable

to real people in terms of sound quality and expressiveness, while 4.08% value AI music's role in facilitating global music sharing and exchange.



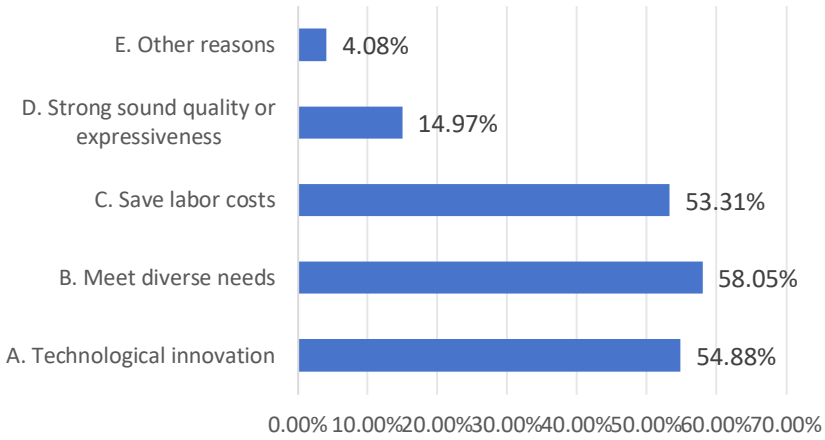
**Fig. 1.** Age ratio of respondents

Source: Questionnaire results



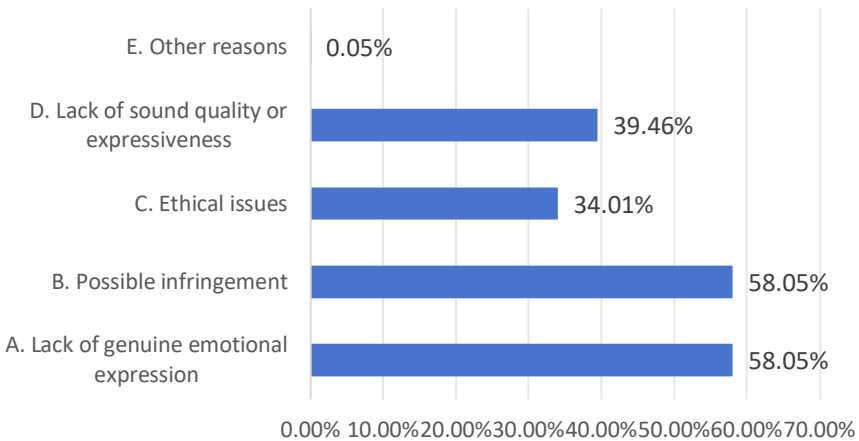
**Fig. 2.** Gender proportion of respondents

Source: Questionnaire results



**Fig. 3.** The percentage of supporters' reasons  
*Source: Questionnaire results*

**The Opposer's Perspective.** As shown in Figure 4, the main views of the opponents centred on the sound authenticity and emotional expression of AI music, which was questioned by 58.05% of the respondents. The same proportion of respondents were concerned about possible copyright infringement issues arising from AI music. 39.46% of respondents believed that AI music was deficient in sound quality and expression, while 34.01% of respondents were concerned about the ethical and moral issues of AI music.



**Fig. 4.** The percentage of objectors' reasons  
*Source: Questionnaire results*

### 3.3 Comprehensive Perception and Stance Analysis of the Fan Base

According to the sample results, *JJ Lin's* music is highly influential among the youth and young-middle-aged groups, a finding that matches the results of the big data analysis described in the *AI Crowd Insight Report* released by *Daily Interactive*, whose results show that AI enthusiasts are relatively young, with 39.70% of the millennials between the ages of 18-24, and college students with an AI Fever Index of 9.22, the most popular use of AI crowd<sup>[8]</sup>.

Comprehensive analyses show that supporters place more importance on the innovation potential and efficiency enhancement brought about by AI technology, while opponents are more concerned about the humanistic value and social responsibility of music art. This divergence reveals the complexity of society's views on the application of AI music technology, suggesting the need to balance innovation with the protection of the essential value of music art while promoting technological development.

## 4 Convergence Innovation and Prospect of AI Music

### 4.1 Fan Economy and AI Music Industry

**Fan Economy Empowers AI Music Industry Innovation.** In recent years, the rapid rise of fan culture in China has introduced an economic model centred on fan demand to the music industry. Fan groups have demonstrated significant influence in promoting idols, consuming music products, and pushing the industry forward, effectively accelerating the industrialization of music culture and the flourishing development of the digital music industry<sup>[9]</sup>.

The application of AIGC technology makes AI music gradually receive extensive attention from the fan community, and the positive attitude of fans can promote the dissemination of AI music through sharing, recommendation and other forms. For example, the AI *David Zee Tao's* song *Bridge of Tears* created by *Dawn9* has gained a very high number of plays and likes on social media platforms such as Tiktok and applications such as NetEase Cloud Music. During the song ordering session of *David Zee Tao's* Nanchang concert in August 2024, *David Zee Tao* himself took the initiative to mention and tease the AI version of the song *Bridge of Tears*, a move that not only triggered enthusiastic reactions from his fans, but also caused extensive discussions on the internet. Based on the positive feedback from *David Zee Tao's* and his fans, as well as the wide impact of the AI song, *David Zee Tao* may incorporate this song into his concert repertoire in the future, a move that is also an innovative attempt at music production for him personally. This virtuous cycle of technological innovation and market feedback is not only conducive to the sustainable development of the AI song market, but also promotes the diversification of music styles, injects new vitality into the music market, and inspires creators to produce more impactful works of art<sup>[10]</sup>.

**Fan Feedback Incorporates AI Music Technology Development.** The development of AIGC technology not only provides creators with tools to deeply analyse fans' needs and promotes a two-way communication mechanism for music creation, but also opens up new paths for singers to combine fans' feedback for song singing and creation. For example, based on the feedback from fans, Tiktok blogger *AI Spotlight* used the DDSP-SVC sound model to train the sound model for the ending theme song *Cage* of the film *Vanished She* sung by AI *Stefanie Sun* more than 5,000 times, striving to be as close as possible to the original voice of *Stefanie Sun* herself. It can be seen that AI music creators can capture these subtle emotional veins with unprecedented efficiency and precision through AIGC technology, and combine it with real-time feedback that optimises the creative direction to quickly adjust the creative style.

In addition, *Na Ying* sang singer *JJ Lin's* song *Light Wrapped Around the Heart* in the 10th episode of 2024's *I am a Singer* programme. In an interview on the programme, *Na Ying* mentioned that her arranger had seen on the internet that a netizen had produced an AI *Na Ying* version of *Light Wrapped Around the Heart* and received comments from fans who wanted her to sing the song in her own style. *Na Ying*, having learnt of this fan demand, specially sang the song in that episode. This example further proves the importance of fan feedback in AI music creation, which not only influences the creative direction of creators, but also promotes the diversification and individualisation of musical works.

In summary, the integration of fan feedback and AI music technology brings a new innovation path and community building mode to the music industry. By accurately capturing fans' demands and adjusting the direction of creation in real time, this fusion mode not only promotes the diversified development of music works, but also enhances the fans' sense of participation and sense of belonging, laying a solid foundation for the construction of a close and harmonious fan community<sup>[11]</sup>.

## 4.2 Socio-Cultural Factors and AI Music Development

The judgement criteria of socio-cultural factors are mainly based on the general situation of the development of the whole society in a certain period of time, which includes many aspects such as social morals and customs, cultural traditions, demographic trends, cultural education, values, social structure, and so on[12]. Under the general background of society and culture, people's cognition and acceptance of music are profoundly influenced by cultural traditions and aesthetic preferences, and the acceptance and influence of music traditions and styles in different cultural backgrounds on AI music show significant differences. At the same time, the trend of population change and the level of culture and education also influence people's acceptance of new technology, which in turn affects the promotion and application of AI music in different cultures. Values and social structure, on the other hand, determine to a certain extent the degree of social support for the AI music industry and the direction of development.

This paper breaks down the judgement criteria of socio-cultural factors and focuses on three key points, namely cross-cultural research, copyright protection mechanism

and talent training system, which occupy a central position in the influence of socio-cultural factors on the development of AI music. Cross-cultural research helps us to deeply understand the differences in the acceptance, influence and aesthetic preference of AI music in different socio-cultural contexts, thus revealing its global dissemination trend. The copyright protection mechanism is a key factor in safeguarding creators' rights and interests, incentivising innovation, and promoting the healthy development of the AI music industry. The talent cultivation system is an important cornerstone to ensure the sustainable development of the AI music industry, injecting new vitality into the industry by cultivating talents with interdisciplinary knowledge and practical abilities. By exploring these aspects in depth, we can gain a more comprehensive understanding of how socio-cultural factors affect the development of AI music and provide useful references for the future development of the industry.

### **Comparative Cross-Cultural Research Stimulates AI Technology Applications.**

Cross-cultural studies, also known as comparative cultural studies. It refers to a method and activity that reveals the similarities and differences of people's social behaviour and psychological characteristics and their developmental patterns under different social conditions through the comparison of different cultures, so as to provide a basis for understanding the universality of psychosocial phenomena<sup>[13]</sup>.

Cross-cultural research is seen as a key way to gain a deeper understanding of the global acceptance and influence of AIGC techno-generated music. It specifically involves a systematic comparative study of the acceptance, influence, and aesthetic preferences of AI music in different cultural contexts. Through extensive collection and in-depth analysis of audience feedback and data on AI music in different cultural environments, this study is expected to reveal the differences in the performance of AI music in different cultural contexts, e.g., some cultures may be more inclined to accept and appreciate AI-generated traditional music styles, whereas other cultures may be more inclined to favour innovative music forms. This process is not only expected to help us explore in depth the underlying reasons for the different perceptions and attitudes towards AI music held by listeners in different cultural contexts, but can also provide an important basis for predicting the trends in the global diffusion of AI music. To this end, a variety of scientific research methods are proposed: firstly, through questionnaire surveys, social media feedback analyses, and music platform playback statistics, the responses of listeners to AI music in different cultures are comprehensively collected and deeply analysed; Secondly, successful and failed cases in different cultures are carefully selected for in-depth case studies to analyse the cultural, social and technological factors behind them; Finally, based on the existing data and case studies, and taking into account the cultural development trend, a scientific prediction is made on the global dissemination trend and market potential of AI music. This outlook signals that such a study is expected to provide a useful reference for the AI music industry, helping it to better grasp the global market dynamics and formulate more targeted market strategies.

**Improvement of the Legal System to Regulate the Development of AI music.** The legal system plays a crucial role in the development of AI music, especially the legal regulation of cover singing behaviour. Under the current legal framework, from the perspective of performer's rights, AI covers do not violate the rights of singers, because performer's rights do not include the right to prohibit other subjects from imitating performers<sup>[14]</sup>. However, impersonation or intentional distortion in a cover violates both the performer's rights and the personality rights of the singer. The core difference between imitation and impersonation lies in whether the actor attempts to mislead others and cause confusion.

Given that AI covers may be extremely close to the singer being imitated in terms of timbre and other aspects due to technological advantages and growth, making it difficult to distinguish whether a song is an AI cover by human perception alone in the absence of technological detection means. Therefore, the improvement of the legal system is particularly important. In August 2023, the *National Information Security Standardisation Technical Committee* issued the *Network Security Standard Practice Guidelines - Generative Artificial Intelligence Service Content Marking Methods (Exposure Draft)*, which explicitly stipulates that AI-generated content must be compliantly labelled with watermarking information, such as This content is generated by AI and AI service provider information, etc<sup>[15]</sup>. This provides a referential legal basis for judging whether AI covers constitute impostor behaviour, and also promotes the standardised development of AI music. Through such legal improvement, the rights and interests of singers can be effectively protected, while promoting the healthy development of the AI music industry.

**Talent Training System to Promote AI Technology Exchange and Sharing.** The music industry needs to pay attention to the issues of industry change and talent transformation, establish a talent training mechanism that conforms to the market and trend, and mitigate the impact of AIGC technology on the traditional music industry, including the changes in all aspects of music creation, production, and dissemination. Talent cultivation mechanism is the cornerstone to promote the exchange and sharing of AIGC technology, accelerating the incubation of AI music industry talents through the combination of interdisciplinary cultivation and practical projects<sup>[16]</sup>. From professional colleges and universities such as the *Central Conservatory of Music* setting up music AI disciplines and implementing interdisciplinary training, to school-enterprise co-operation such as *Xiao Ye music education* and the *People's Music Publishing House* jointly launching the '*Piano Teacher Talent Cultivation Programme in the AI Era*', to the public welfare courses introducing AI technology into the music classrooms of remote areas, and extensive cooperation among the international community in the area of AI A diversified and all-round talent cultivation mechanism is gradually being constructed through extensive cooperation in music education and scientific research. This mechanism not only cultivates composite talents who know both music and AI technology for the AI music industry, but also broadens the horizons and channels of talent cultivation, providing a steady stream of intellectual support for the sustainable and healthy development of the industry.

## 5 Conclusion

### 5.1 Summary of the Current State of AI Music Research

This study delves into the rapid development of generative artificial intelligence (AIGC) technology in the field of music and its social impact. The case studies of Sandee Chan's AI song *Teach Me How to Be Your Lover*, AI-synthesized *Heart On My Sleeve*, and AI Stefanie Sun's *Love Before the Western Era* reveal the disruptive role of AI technology in music production. While much of the discussion of AI-generated music in the academic field has focused on topics such as originality, morality and ethics, laws and regulations, there has been insufficient research on the attitudes and reactions of consumers, especially fans. This study fills this gap by exploring the awareness and acceptance of AI music among the fan base and gaining an in-depth understanding of their attitudes and expectations, using JJ Lin's fans as an example. The findings show that proponents value the innovative potential and efficiency gains brought by AI technology, while opponents are more concerned with the humanistic value and social responsibility of the art of music. This divergence reveals the complexity of society's views on the application of AI music technology. In addition, this study analyses the impact of sociocultural factors, the legal system and the talent training system on the development of AI music, emphasizing the importance of cross-cultural research, copyright protection mechanisms and talent training mechanisms.

### 5.2 Suggestions for Future Prospects

Although this study has achieved certain results, there are still some shortcomings and remaining problems. For example, this study mainly focuses on specific groups of fans, and in the future, it can be further expanded to different types of music lovers and wider social groups to obtain a more comprehensive perception. In addition, as AI technology continues to develop, its impact on the music industry will continue to evolve, thus requiring sustained attention and in-depth research. For future research, this study puts forward the following suggestions: deepening cross-cultural research in the field of AI music, improving the legal system of AI music, optimizing the talent training system of AIGC technology, and expanding related research fields.

In summary, this study provides a useful reference for understanding the social cognition and acceptance of AI music, and provides certain directions and suggestions for future research. With the continuous development of AI technology and the continuous change of the music industry, research in this field will have more important theoretical and practical value.

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