

Original Paper

A Study on Influencing Factors of Audience Satisfaction with Online Concerts

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Abstract

Affected by the COVID-19 epidemic at the end of 2019 and the advancement of technology, the number of audiences of online concert has experienced a surge. With the gradual recovery of offline concerts in past two years, online concerts have not vanished, but have attracted global audiences together with offline concerts. According to researches and surveys, there are multiple factors affecting online concerts' audience satisfaction, not just one factor. This paper uses literature research, questionnaires and empirical analysis to investigate factors affecting online concerts' audience satisfaction today, and then finds that there is a positive correlation, and finds that strengths of influencing from small to large are: adequacy of pre preparation for online concerts, additional services' quality for online concerts, and quality of online concerts' contents. It also finds that usage of live music in online concerts plays a positive moderating role in the relationship between quality of online concerts' contents and online concerts' audience satisfaction. At the end of this paper, some suggestions are provided for online concerts and their organizers in the conclusion part.

Keywords

Online concerts, audience satisfaction, factor analysis

1. Introduction

Over the past five years, the concert industry has undergone a huge transformation. The global pandemic that began in late 2019 has led to a surge in online concert attendance. In 2020, South Korean top entertainment company SM announced that its artist SuperM would embark on its first online concert incorporating AR technology through the Beyond Live platform on April 26, which attracted totaling 75,000 paying audiences from 109 countries, including South Korea, China, Japan and Thailand. In the years since, even with the gradual recovery of offline concerts, a number of artists, including WayV, NCT 127, and Twice, have been meeting their global fans through both online and offline concerts. Unlike traditional offline concerts, which more focus on real-time live experience and interactivity, online concerts are not limited by geographic location and venue capacity, and are more

accessible to allow audiences to watch in their homes. In addition, online concerts can use more special effects and have better post-production which leads to a stronger visual viewing experience than offline concerts.

Regarding the definition of the online concert, it is defined as presenting offline performances to audiences in a live streaming format through real-time communication technology. Currently there are two main types of the online concert, one is free to watch and another is paid to watch (Cai & Hui, 2022). Nowadays, online concerts have three main characteristics: intermittency, spontaneity, and low viscosity. This means that audiences can watch concerts while playing games and eating snacks like watching videos in TikTok. Meanwhile, except for loyal fans, most people only stop what they are doing to watch online concerts when they hear the song they want to hear (Feng, 2020). Now technologies such as MR, AR, and VR are helping to shape the new landscape of online concert development. By combining new technological products, online concerts bring immersive performances to audiences which breaks the pattern of traditional concerts and reshapes the performance industry (Xing, 2020). Profit model of current major online concert platforms is mainly through the establishment of a long-term and close relationship with the platform users, and the main purchasing power of the platform comes from its core users (Chen, 2015).

Audience satisfaction is an important index to measure the satisfaction of products or services in eyes of audiences. The evaluation is mainly based on the feedback and evaluation of audiences and whether they choose to repeat the purchase. The level of satisfaction essentially reflects the extent to which the products or services meet the actual needs of audiences. Therefore, the level of audience satisfaction is not only a measure, but also an important basis for enterprises to optimize products and improve service quality. The influencing factors of audience satisfaction include but not limited to product quality, product performance, price, service quality, delivery speed, brand reputation, additional service. Through the analysis of influencing factors of audience satisfaction, enterprises can improve their existing products and services.

2. Literature Review

2.1 Pain Points of Audience of Online Concerts

Pain points of audience of online concerts refer to what aspects of online concerts' performance is not as good as traditional offline concerts which leads to dissatisfaction of audiences. Scholars have done a lot of researches in this area and basically reached a consensus on this, that is, compared with traditional offline concerts, online concerts perform poorly in terms of immersive experience and emotional resonance. Most of these studies are based on audiences' post-evaluation of watching online concerts.

Digital Concert Experience, one research project, aims to better understand those factors affecting audience experience of watching online classical concerts. Results show that although online western classical concerts can increase audience social satisfaction by providing real-time social interaction

opportunities. However, audiences say that online concerts are not as good as offline concerts in terms of immersive experience and emotional resonance (Kreuzer et al., 2023).

The backstage of online concerts can increase audiences' stickiness by changing the flashing speed of the support stick according to songs with different moods. Online concerts on platforms such as Beyond Live also utilize the function of real-time video chatting and message leaving to increase audiences' participation and strengthen audiences' sense of identity and satisfaction. However, because online concerts lack experiences such as audiences' collective chorus, screaming and shouting which prevents audiences from obtaining the same excellent immersive viewing experience as that of offline concerts (Cai & Hui, 2022)

2.2 Improvement Plans for Online Concerts

To better improve online concerts, scholars have given solutions such as using virtual reality equipment, allowing audiences to vote for performing songs and so on. The following are those specific research results of different scholars.

For an online concert, when audiences can be able to vote for which songs will be performed at the concert, and when audiences can use virtual reality devices, audiences will pay for a stronger sense of presence (Onderdijk et al., 2021).

With the wide application of VR technology, one of the main motivations for audiences to participate in online virtual reality concerts is the unique experience brought by VR technology (Onderdijk et al., 2023).

Under the same conditions, although pre-recorded and modified studio music can bring a better listening experience, most audiences tend to choose real-time live music because audiences don't know how well the singer is singing live in real time which creates a sense of anticipation of the unknown. The study also finds that when audiences learn that the artist uses real-time live singing (Live Music), they will develop a pre-existing admiration for the artist, and this admiration can lead to higher audiences' engagement at concerts (Swarbrick et al., 2019).

2.3 Influencing Factors of Audience Satisfaction with Online Concerts

As for influencing factors of audience satisfaction with online concerts, scholars have given many fragmented influencing factors such as the audience participation, the content of online concert, the integrity of the application of technology equipment, and so on. However, most of these studies only focus on quality of online concerts' contents, and only a few emphasize the importance of online concerts' preparation activities and related additional products or services. Followings are the specific research results of different scholars.

Holding small pre-concert workshops including potential audiences, musicians and composers before the concert can make audiences have a positive emotion to the concert. These small pre-concert workshops increase the participation of audiences and allow audiences to participate in the performance (Toelle & Sloboda, 2021).

For online concerts, technologies such as holograms can create a stronger sense of presence for

audiences. But apart from these technologies, the content of the online concert itself is more important. High-quality online concerts sell not only music and visual effects, but also youth memories of audiences. Selecting elements with the imprint of a particular era can make audiences who grow up at the same time have emotional resonance (Zhang, 2023). Nowadays concerts are often not only selling concerts themselves, but also those concerts' peripherals which can affect consumers' evaluation of a concert (Zhang, 2021).

Result of another research points out that audience satisfaction with online concerts is affected by a variety of factors, such as the integrity of the application of technological equipment and prior publicity activities, but audience participation and contents of online concerts are the most important. When contents of the online concert are richer and more structured, the better use of technology and equipment, and the higher audiences' participation, the more satisfied audiences (Hong & Kim, 2021).

2.4 Relevant Marketing Theories

Customer satisfaction theory, also known as 4C theory, contains four important elements: Customer, Cost, Convenient and Communication. This theory requires enterprises to take customer as the center in the process of serving customers, strive to reduce the total cost of customer purchase, maximize the convenience of consumers, and constantly communicate with consumers (Lai, 2020).

Touch Point Theory refers to any point where customers can interact with the brand. By understanding and improving these touch points, company can establish a good customer relationship and enhance customer loyalty. An enterprise should create unique value for its customers at all its possible touch points (Reed, 2015).

For a product or service, there are three layers: Core Customer Value, Actual Product, and Augmented Product. Customers often buy not only the product or service itself, but also buy the core customer value and additional products or services (Kotler & Armstrong, 2019).

In general, scholars have basically achieved an agreement on pain points of nowadays online concerts' audiences, and have proposed many fragmented factors influencing audience satisfaction with online concerts, but none of them has classified these influencing factors into specific dimensions. Most studies focus only on online concert itself, such as the richness of the concert content, and ignore the importance of online concert preparation activities and additional services. Therefore, this paper will synthesize those influencing factors that have been proposed by scholars, combine with relevant marketing theories, and consider the importance of online concert preparation activities and additional services, and finally categorize them into the following three dimensions: adequacy of pre preparation for online concert, quality of online concerts' contents, and additional services' quality for online concerts. Meanwhile, this paper will explore the correlation between above 3 and online concerts' audience satisfaction. This paper also explores the question of whether usage of live music in online concerts moderates the relationship between quality of online concerts' contents and online concerts' audience satisfaction.

3. Hypothesis Development

3.1 *The Relationship between Adequacy of Pre-Preparation for Online Concerts and Audience Satisfaction*

While the quality of content of an online concert is important to audiences, those pre preparation activities are also important for audiences to judge whether a concert is satisfactory or not. Currently, platforms mainly used for paid online concerts abroad are Beyond Live and YouTube, and some of platforms only support Chinese audiences to pay with VISA instead of WeChat and Alipay which are commonly used by the Chinese people. Moreover, if Chinese audiences don't use VPN to access overseas platforms such as Beyond Live, smoothness of online concerts on Beyond Live will be reduced, which has caused great inconvenience to Chinese audiences, who have complained a lot about it.

At the same time, a study notes that for an online concert, audiences are willing to pay for a stronger sense of presence when they are able to vote on which songs will be performed at the concert and when they have access to virtual reality devices (Onderdijk et al., 2021).

According to Touch Point Theory, online concerts should not only create value for customers in terms of contents of online concerts, but also in terms of the preparatory activities beforehand which are also important for creating customer value and establishing good customer relations and enhancing customer loyalty.

Audiences will have positive feelings about the concert when they hold a small pre-concert workshop including audiences, musicians and composers to absorb the ideas and views of all parties (Toelle & Sloboda, 2019).

Pre-preparation activities of online concerts such as sufficient publicity information, reasonable ticket price and convenience of buying tickets truly affect satisfaction of online concert audiences (Hong & Kim, 2021).

Therefore, this paper makes the following hypothesis:

H1: The better adequacy of pre preparation for online concerts, the more online concerts' audience satisfaction.

3.2 *The Relationship between Quality of Online Concerts' Contents and Audience Satisfaction*

With the popularization of online concerts, quality of contents of online concerts in different platforms and countries varies. However, new technologies such as VR and AR have changed concert industry and enriched online concerts' contents. For example, in 2020, SM's boy group SuperM made a vivid show of tigers, an arena, and waves of support-stick shown by AR on the stage of its new song "Tiger Inside" which created a unique viewing experience for audiences around the world and gained admiration from audiences (Shen & Wu, 2020). By choosing the online concert performance stage on a moving passenger boat, Lay Zhang, a famous singer and dancer in China, successfully organized a unique online concert that combined the natural scenery of the Xiangjiang River (WORLDSHOW Media, 2022).

The use of VR devices in online concerts can create a better sense of scene for audiences (Onderdijk et al., 2021). The unique sense of experience brought by online virtual reality concerts has become one of main motivations for audiences to participate in concerts (Onderdijk et al., 2023).

Meanwhile, contents of online concerts and the use of technological devices as well as the level of audience participation have a direct impact on audience satisfaction. When online concerts are richer in content, better in the use of technological devices, and making audience participation higher, the more satisfied audiences are. In addition, there are also some other influencing factors connected with online concerts' contents such as the smoothness and clarity of online concerts, and the unique visual experience of online concerts (Hong & Kim, 2021).

Therefore, this paper makes the following hypothesis:

H2: The better quality of online concerts' contents, the more online concerts' audience satisfaction.

3.3 The Relationship between Additional services' Quality for Online Concerts and Audience Satisfaction

For an online concert, additional services of a concert are also an important factor to attract audience. Additional services of online concerts include but are not limited to the sale and delivery of peripheral products (services) and the download of concert sound sources. Taking online concerts held by TFBOYS and SuperM in 2020 as an example, online concerts nowadays have gradually shifted to providing differentiated and exclusive services. In addition to online concerts themselves, what attract audiences especially fans of singers to watch online concerts are those additional services provided by online concerts such as one-on-one videos talking and peripheral, which deeply exploits the value of media derivatives (Xing, 2020).

According to the three-level theory of product (service), a product or service itself is important, but additional services are also important for creating value for customers. Quality of additional services or products of one concert, together with the concert itself, affects audiences' satisfaction with one concert (Zhang, 2021).

Therefore, this paper makes the following hypothesis:

H3: The better additional services' quality for online concerts, the more online concerts' audience satisfaction.

3.4 The Moderating Role of Usage of Live Music between Quality of Online Concerts' Contents and Audience Satisfaction

Due to technological advances, online concerts can be more fully prepared beforehand, some online concerts choose to pre-record beforehand as a way to pad the sound of the singing, although it brings a better concert listening experience, but it is also criticized by audiences and causing controversy. Singers, as one of the important elements of online concerts, whether they use real-time live singing (Live Music) also have an impact on audience satisfaction.

Audiences tend to be more satisfied with real-time live singing (Live Music) than with pre-recorded music (Xie, 2024). Real-time live singing (Live Music) attracts audiences more than prerecorded studio

singing. This is due to the fact that audiences don't know how well the singer sings live in real time, which creates a sense of anticipation of the unknown. At the same time, when audiences learn that the singer is using real-time live singing, they develop a pre-existing admiration for the singer, and this admiration can lead to a higher level of audience engagement at the concert (Swarbrick et al., 2019).

The sense of the unknown that comes with real-time live singing is a key motivation for audiences to buy a concert (Brown & Knox, 2017).

Therefore, this paper makes the following hypothesis:

H4: The better usage of live music in online concerts, the stronger the effect of quality of online concerts' contents on online concerts' audience satisfaction.

Therefore, based on H1, H2, H3 and H4 made before, this paper gives proposed research framework shown in Figure 1.

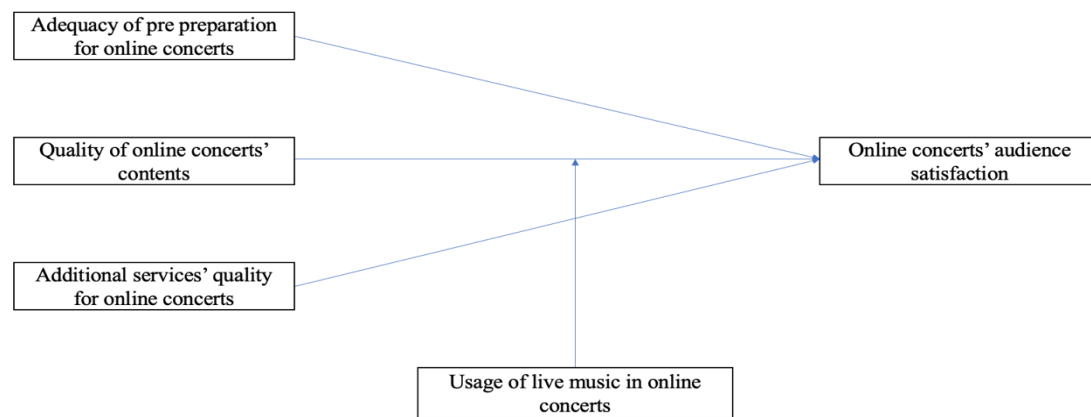


Figure 1. Proposed Research Framework

4. Data and Methodology

4.1 Data Collection

This paper firstly conducted a pre-survey interviews with some of audiences in the Chinese market who had ever watched online concerts. After that, questionnaires were distributed between May 1, 2024 and June 1, 2024, and a total of 153 questionnaires were collected through online channels. Through Question 6: "What is the total number of online concerts you have attended?", this paper deleted 23 invalid questionnaires that chose 0, and a total of 130 valid questionnaires were collected.

4.2 Variables

There are four kinds of variables in this paper: dependent variable, independent variables, moderating variable and control variables. From the research framework of this paper, there are three independent variables: adequacy of pre preparation for online concerts, quality of online concerts' contents, and additional services' quality for online concerts. Online concerts' audience satisfaction is the dependent variable, and usage of live music in online concerts is the moderating variable.

The first purpose is to study the correlation between independent variables and dependent variables,

that is, the correlation between adequacy of pre preparation for online concerts, quality of online concerts' contents, and additional services' quality for online concerts and online concerts' audience satisfaction. The second purpose of this paper is to explore whether usage of live music in online concerts plays a moderating role in the relationship between quality of online concerts' contents and online concerts' audience satisfaction. All above variables need to be put into the regression model for analysis.

In addition, in the process of collecting data, this paper collected some irrelevant factors, in order to improve the accuracy, this paper discussed them as control variables, they are: gender, academic qualification, occupation, monthly income level, age, and total number of attending online concerts.

4.3 Measurement of Variables

As for the measurement of variables, this paper directly measures gender, academic qualification, occupation, monthly income level, age, and total number of attending online concerts through a questionnaire survey. However, for the dependent variables: adequacy of pre preparation for online concerts, quality of online concerts' contents and additional services' quality for online concerts, and the moderating variable: usage of live music in online concerts, as well as the independent variable: online concerts' audience satisfaction, those 5 variables need to be measured by different measurement entries.

4.3.1 Measurement Entries of Adequacy of Pre preparation for Online Concerts

For the measurement of adequacy of pre preparation for online concerts, according to the research focusing on investigating influencing factors of online concert audience satisfaction, this research develops a scale which contains a total of 18 items to measure online concerts' audience satisfaction, including those related to online concert pre-preparation, such as whether it is convenient to purchase tickets, whether there is enough pre-promotional information about the concert and so on (Hong & Kim, 2021).

When small workshops including representatives of audiences and musicians are held to incorporate the views of all parties on how the concert should be organized, audiences will develop positive emotions towards the concert (Toelle & Sloboda, 2019).

According to another research, it says when audiences can be able to choose songs to be performed in the future concert, audiences will pay for a stronger sense of live performance (Onderdijk et al., 2021)

Therefore, this paper deletes some entries of the scale developed by Hyun-Ju Hong and Seung-In Kim and combines some related researches, following measurement entries are now used for measuring adequacy of pre preparation for online concerts: ticket purchase convenience and audience engagement before the start of online concerts.

4.3.2 Measurement Entries of Quality of Online Concerts' Contents

According to the research focusing on investigating influencing factors of online concert audience satisfaction, this research develops a scale which contains a total of 18 items to measure online concerts' audience satisfaction, including those related to the quality of contents of online concerts, such as use

of technological devices, the interaction between singers and audiences and so on (Hong & Kim, 2021). Audiences are more willing to purchase online concerts when VR devices are used in online concerts (Bouckaert et al., 2023). According to another research, VR devices have a contributing role in creating a sense of liveness for audience (Onderdijk et al., 2021).

Therefore, this paper deletes some entries of the scale developed by Hyun-Ju Hong and Seung-In Kim and combines some related researches, following measurement entries are now used for measuring quality of online concerts' contents: the usage of new technologies such as VR and interaction between singer and audience.

4.3.3 Measurement Entries of Additional Services' Quality for Online Concerts

In this part, this paper draws on the SERVQUAL model. The model breaks down service quality into different core dimensions: the physical characteristics of the service (tangibility), the consistency and accuracy of execution (reliability), the swiftness in responding to customer needs (responsiveness), the ability to deliver on promises (assurance), and the service provider's attention to and understanding of customers' individualized needs (empathy) (Parasuraman et al., 1991)

For an online concert, its additional services include, but are not limited to, the sale and delivery of peripheral products (services), and the download of concert audio sources. Nowadays a qualified concert often uses "concert plus concert peripheral" to attract consumers to buy. A concert's peripheral products or services are important to audiences (Zhang, 2021). Nowadays an important part of whether online concerts can attract audiences to buy is the application of the post-industrial chain model including concert peripheral sales, audio downloads and so on (Xing, 2020). Unlike offline concert audiences who can immediately get concert-related peripherals, online concert peripherals need to be mailed to audiences by using delivery services, but actually these peripherals often take a few weeks to reach audiences, and many audiences have expressed their dissatisfaction with this.

Therefore, this paper uses the SERVQUAL scale and combines relevant researches. It now uses the following items for measurement: timeliness of additional services and reliability of additional services. One example of timeliness of additional services is whether or not online concert peripherals are delivered to audiences on time. An example of reliability is whether after-sales services of online concert peripherals are effective.

4.3.4 Measurement Entries of Usage of Live Music in Online Concerts

According to one research before pandemic, this research invited test subjects to listen to several pre-recorded songs in the studio, and then invited them to listen to same songs sung in real time at the venue. Authors found that fans were more attracted to listening to live music than to the use of pre-recorded songs in the studio. While they were listening, audiences were measured for head bobbing in response to the beat, as well as questionnaires about changes of their mood after listening. Authors found that, for fans, head bobbing while listening to live music was faster and more in tune with the beat than listening to pre-recorded studio tracks, suggesting that live music is more appealing to listeners (Swarbrick et al., 2019).

Therefore, this paper uses the measurement method used by Swarbrick et al in their paper, and the following entries are now used to measure usage of live music in online concerts: swaying to the rhythm of music and triggering positive emotions.

4.3.5 Measurement Entries of Online Concerts' Audience Satisfaction

When investigating of factors influencing customer satisfaction in shopping malls, research develops a corresponding scale in which the following three entries are used to measure customer satisfaction: overall satisfaction, relative satisfaction, and repeat purchase (Liu, 2023).

Therefore, this paper adopts the entries used in Liu's paper with deletions. Now following entries are used for the measurement of online concerts' audience satisfaction: overall satisfaction with consuming online concerts, relative satisfaction with consuming online concerts. The relative satisfaction refers to satisfaction with online concerts compared to traditional offline concerts. The overall satisfaction refers to the satisfaction with an online concert itself.

In conclusion, this paper obtains a summary table of variables and their measurement entries which is shown below.

Table 1. Aggregation of Measuring Entries of Variables

Variables	Measurement Entries
Online concerts' audience satisfaction	Overall satisfaction with consuming online concerts
	Relative satisfaction with consuming online concerts
Adequacy of pre preparation for online concerts	Ticket purchase convenience
	Audience engagement before the start of online concerts
Quality of online concerts' contents	The usage of new technologies such as VR
	Interaction between singer and audience
Additional services' quality for online concerts	Timeliness of additional services
	Reliability of additional services
Usage of live music in online concerts	Swaying to the rhythm of music
	Triggering positive emotions

5. Results and Discussion

5.1 Descriptive Statistics Analysis

For the background check part, Table 2 shows sample demographic statistics in detail and accurately describes the population distribution of respondents. Specifically, in terms of gender distribution, female accounted for more than 60% of the respondents, while male accounted for about 30%. In terms of academic qualifications, bachelor degrees account for 77.69%, followed by master's degrees, accounting for 9.23%. In terms of age distribution, there are mainly "18-30" young people, accounting for 82.31%. In the occupation distribution, the "student" group is the most prominent, accounting for

72.31%. As for the monthly income level, most of the respondents' monthly income was concentrated in the range of "2000 to 4000 yuan", accounting for 51.54%, followed by those 2000 yuan and lower, accounting for 21.54%. Finally, in terms of the total number of attending online concerts, the attending frequency of "1-3 times" is the most common, accounting for 79.23%, followed by "4 times and 7 times" with accounting for 13.85%.

The sample distribution of this survey basically meets the requirements of the sampling survey. At the same time, it can also be seen that subjects of this survey are mainly female university students who are 18 to 30 years old, have a bachelor's degree and own 2000 to 4000 yuan monthly income, and have totally watched one to three online concerts. This is consistent with characteristics of the main target audience of the online concert.

Table 2. Sample Demographic Statistics

Sample Demographic Statistics

Items	Categories	Frequency	Percent (%)	Cumulative Percent (%)
Gender:	Male	39	30.00	30.00
	Female	87	66.92	96.92
	Others	4	3.08	100.00
Academic Qualification:	High school and lower	7	5.38	5.38
	Diploma	5	3.85	9.23
	Bachelor	101	77.69	86.92
	Master	12	9.23	96.15
	PhD	5	3.85	100.00
Age:	18-30	107	82.31	82.31
	31-40	14	10.77	93.08
	41-50	4	3.08	96.15
	50 and older	5	3.85	100.00
	Student	94	72.31	72.31
Occupation:	Management	5	3.85	76.15
	Technical	14	10.77	86.92
	Entrepreneur	12	9.23	96.15
	Middle level leadership	5	3.85	100.00
Monthly Income level:	2000 yuan and lower	28	21.54	21.54
	2000 to 4000 yuan	67	51.54	73.08

Sample Demographic Statistics

Items	Categories	Frequency	Percent (%)	Cumulative Percent (%)
Total number of attending online concerts:	4000 to 6000 yuan	10	7.69	80.77
	6000 to 8000 yuan	12	9.23	90.00
	8000 yuan and above	13	10.00	100.00
	1-3	103	79.23	79.23
	4-7	18	13.85	93.08
	7 and Above	9	6.92	100.00
Total		130	100.0	100.0

For post-viewing evaluation survey of online concerts, this paper divides this part into five dimensions, the A dimension includes: A1 Overall satisfaction with consuming online concerts, A2 Relative satisfaction with consuming online concerts. B dimension includes: B1 Ticket purchase convenience, B2 Audience engagement before the start of online concerts. C dimension includes C1 The usage of new technologies such as VR, and C2 Interaction between singer and audience. D dimension includes: D1 Timeliness of additional services and D2 Reliability of additional services. E dimension includes: E1 Swaying to the rhythm of music and E2 Triggering positive emotions. Through the descriptive analysis, there are no abnormal values in the mean, standard deviation, maximum, minimum, skewness and kurtosis, as shown in Table 3.

Table 3. Descriptive Analysis of Scale Data

Descriptive Analysis of Scale Data

Variable	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
A1: Overall satisfaction with consuming online concerts	1	5	3.89	0.828	-0.627	0.524
A2: Relative satisfaction with consuming online concerts	1	5	3.59	1.062	-0.542	-0.283
B1: Ticket purchase convenience	1	5	3.84	0.995	-0.773	0.22
B2: Audience engagement before the start of online concerts	1	5	3.68	0.998	-0.595	0.067
C1: The usage of new technologies such as VR	1	5	3.37	1.05	-0.096	-0.654
C2: Interaction between singer and audience	1	5	3.68	1.08	-0.712	-0.173

D1: Timeliness of additional services	1	5	3.78	0.923	-0.517	-0.203
D2: Reliability of additional services	1	5	3.45	0.973	-0.128	-0.572
E1: Swaying to the rhythm of music	1	5	2.71	1.242	0.352	-0.682
E2: Triggering positive emotions	1	5	2.79	1.192	0.244	-0.496

5.2 Reliability Analysis

Cronbach Alpha coefficient is widely used as a measurement tool to do reliability analysis. When the coefficient exceeds 0.8, the data is considered highly reliable. If the coefficient lies between 0.7 and 0.8, the data reliability performs well. When the coefficient is in the range of 0.6 to 0.7, the data reliability is acceptable. However, when the Alpha is below 0.6, the data reliability is inadequate. In addition to this, Corrected Item-Total Correlation is also an important indicator for assessing data reliability. If the CITC value is more than 0.4, it indicates that there is a significant correlation between analyzed items, thus further confirming the good reliability of the data. However, if the CITC value is below 0.3, corresponding analyzed items may need to be revisited or even considered for elimination to ensure the accuracy of the overall reliability.

Table 4. Reliability Analysis (Cronbach Alpha Coefficient)

Reliability Analysis (Cronbach Alpha Coefficient)

Items	CITC	Cronbach Dimension	α for	Overall Cronbach α
A1: Overall satisfaction with consuming online concerts	0.514	0.665		
A2: Relative satisfaction with consuming online concerts	0.514			
B1: Ticket purchase convenience	0.533	0.695		0.888
B2: Audience engagement before the start of online concerts	0.533			
C1: The usage of new technologies such as VR	0.694	0.819		
C2: Interaction between singer and audience	0.694			
D1: Timeliness of additional services	0.608	0.756		
D2: Reliability of additional services	0.608			
E1: Swaying to the rhythm of music	0.896	0.945		
E2: Triggering positive emotions	0.896			

In assessing the data reliability of the questionnaire, the paper was analyzed exhaustively for each dimension as shown in Table 3.

The Cronbach Alpha coefficient for dimension A was 0.665, which is located in the range of 0.6 to 0.7, showing an acceptable data reliability. Meanwhile, its CITC value of 0.514 is above 0.4, which indicates a significant correlation between the analyzed items. In conclusion, the quality of data reliability for dimension A meets the basic requirements.

The Cronbach Alpha coefficient for dimension B is 0.695, which also lies within the range of 0.6 to 0.7, implying good reliability. The CITC value of 0.533 further indicates the good correlation between the analyzed items. Therefore, the data reliability quality of dimension B is also acceptable and suitable for subsequent analysis.

The Cronbach Alpha coefficient for dimension C is 0.819, which significantly exceeds 0.8, indicating a very high level of data reliability. The CITC value is 0.694, which again shows good correlation between the analyzed items. In conclusion, the quality of data reliability for the C dimension is excellent and fully suitable for further analysis.

The Cronbach Alpha coefficient for dimension D is 0.756, falling within the range of 0.7 to 0.8, showing good data reliability. The CITC value of 0.608 further demonstrates correlation between the analyzed items. To summarize, the data reliability of the D dimension is good and suitable for subsequent studies.

The Cronbach Alpha coefficient of dimension E reaches 0.945, which far exceeds 0.8, showing extremely high data reliability. Its CITC value of 0.896 further confirms the high correlation between the analyzed items.

Finally, in terms of the overall Cronbach Alpha coefficient, its value is 0.888, far exceeding 0.8, which fully demonstrates that the data of the whole questionnaire has a very high degree of reliability, and that the collected data are real and reliable, providing a solid foundation for the subsequent academic research.

5.3 Validity Analysis

The core purpose of validity analysis is to verify the validity of the research item. To achieve this purpose, this paper utilizes KMO value and Bartlett's test of sphericity as the basis of analysis. Among them, the KMO value, as a key indicator, is mainly used to assess whether the sample data are suitable for factor analysis and to judge the appropriateness of extracting information. When the KMO value is higher than 0.8, this strongly indicates that the collected data are very suitable for factor analysis, thus ensuring that the validity of the questionnaire is at an excellent level. If the KMO value falls between 0.7 and 0.8, this indicates that the data is suitable for factor analysis and the validity of the questionnaire performs well. If the value falls within the range of 0.6 to 0.7, although information extraction can still be carried out, the validity of the questionnaire can only be regarded as fair. However, when the KMO value is below 0.6, it suggests that the data are not suitable for factor analysis, implying that the validity of information extraction is seriously compromised. In assessing the validity of the data, in addition to the KMO value, the validity analysis also requires passing the Bartlett's test of sphericity, which means that the p-value should be less than 0.05.

According to Table 5, the KMO value of the scale is 0.833 which significantly exceeds 0.8, thus indicating that the data collected by this scale is extremely suitable for factor analysis, which validates the excellent validity of the questionnaire. It is further observed that p-value tends to be close to 0, which clearly rejects the original hypothesis, thus further reinforcing the conclusion that the questionnaire has good validity.

Table 5. KMO and Bartlett's Test

KMO and Bartlett's Test

KMO		0.833
	Chi-Square	881.473
Bartlett's Test of Sphericity	<i>df</i>	45
	<i>p</i>	0.000

5.4 Normality Test

Before delving into the correlation analysis, the normality test of the data is an indispensable step. For small samples (sample size less than 50), the Shapiro-Wilk (S-W) test is recommended. While for large samples (sample size greater than 50), the Jarque-Bera test is also applicable in addition to the Kolmogorov-Smirnov (K-S) test. Given that the sample size of this paper reaches 130, which significantly exceeds 50, the paper chooses the Jarque-Bera test to assess the normality of the data. If results of the Jarque-Bera test show significance (p-value less than 0.05), it indicates that the data don't conform to a normal distribution. Conversely, if the p-value is greater than 0.05, the data conform to a normal distribution. In this paper, 10 measurement items are categorized into 5 different dimensions which are shown in the Table 6: online concerts' audience satisfaction, adequacy of pre preparation for online concerts, quality of online concerts' contents, additional services' quality for online concerts and usage of live music in online concerts. The value of each dimension is taken as the sum of values of corresponding two measurement items. The results of the normality test in this paper are shown in Table 6:

Table 6. Jarque-Bera Test

Jarque-Bera Test

Items	n	χ^2	<i>df</i>	<i>P</i>
A: Online concerts' audience satisfaction	130	4.461	2	0.107
B: Adequacy of pre preparation for online concerts	130	5.077	2	0.079
C: Quality of online concerts' contents	130	5.471	2	0.065
D: Additional services' quality for online concerts	130	0.561	2	0.756

Jarque-Bera Test

Items	n	χ^2	df	P
E: Usage of live music in online concerts	130	4.845	2	0.089

As can be seen from Table 6, the Jarque-Bera test results for the data show that A, B, C, D and E dimensions all do not show significance ($p > 0.05$), which means that the relevant data conforms to the normal distribution.

5.5 Correlation Analysis

Correlation analysis plays an important role when exploring the applicability of regression analysis. When there is a significant correlation between variables, it is reasonable to further explore the potential regression relationship. In the process of correlation analysis, there are two core step. The first is to verify the normality of the data, and the second is to select an appropriate correlation coefficient.

For choosing correlation coefficients, Pearson and Spearman are two commonly used methods. The Pearson correlation coefficient is preferred under the condition that both dependent and independent variables satisfy normal distribution, while the Spearman correlation coefficient should be chosen when the data do not satisfy the assumption of normality. Considering independent variables and dependent variable in this paper all meet the assumption of the normal distribution, Pearson correlation coefficient is chosen for the analysis.

If an indicator is marked with "*" in the analysis result, it indicates that there is a significant correlation between the dependent variable and that independent variable. Further, when the Pearson correlation coefficient is positive, it indicates that there is a positive correlation between the two. Conversely, if the correlation coefficient is negative, it indicates that there is a negative correlation between the two. Results of the correlation analysis in this paper are shown in Table 7.

Table 7. Pearson Correlation

Pearson Correlation

	A: Online concerts' audience satisfaction	B: Adequacy of pre preparation for online concerts	C: Quality of online concerts' contents	D: Additional services' quality for online concerts	E: Usage of live music in online concerts
A: Online concerts' audience satisfaction	1				
B: Adequacy of pre preparation for online concerts	0.425**	1			
C: Quality of online concerts' contents	0.718**	0.240**	1		

Pearson Correlation

	A: Online concerts' audience satisfaction	B: Adequacy of pre preparation for online concerts	C: Quality of online concerts' contents	D: Additional services' quality for online concerts	E: Usage of live music in online concerts
concerts' contents					
D: Additional services' quality for online concerts	0.601**	0.459**	0.511**	1	
E: Usage of live music in online concerts	0.624**	0.147	0.818**	0.485**	1

* $p < 0.05$ ** $p < 0.01$

According to Table 7, the value of the correlation coefficient between online concerts' audience satisfaction and adequacy of pre preparation for online concerts is 0.425 and significant at the 0.01 level, which indicates a significant positive correlation between online concerts' audience satisfaction and adequacy of pre preparation for online concerts.

The correlation coefficient between audience satisfaction and quality of the online concerts' contents is 0.718 and significant at the 0.01 level, which strongly proves that there is a significant positive correlation between the two.

In addition, audience satisfaction also shows a significant positive correlation with additional services' quality for online concerts, with a correlation coefficient value of 0.601 and significant at the 0.01 level.

Similarly, audience satisfaction is also significantly positively correlated with usage of live music in online concerts, with a correlation coefficient value of 0.624 and significant at the 0.01 level.

These findings suggest that adequacy of pre preparation for online concerts, quality of online concerts' contents, additional services' quality for online concerts, and usage of live music in online concerts are all important factors affecting online concerts' audience satisfaction.

5.6 Linear Regression Analysis

When conducting regression analysis, it is necessary to put the dependent variable and all independent variables into the regression analysis model. The dependent variable in this paper is online concerts' audience satisfaction. Independent variables are adequacy of pre preparation for online concerts, quality of online concerts' contents, additional services' quality for online concerts. The correlation analysis part has proved that there is a correlation relationship between the dependent variable and the three independent variables, and this paper will utilize linear regression to explore the regression relationship between the dependent variable and independent variables. Most of control variables in

this paper are nominal data, and this paper only defaults to their interference in the regression analysis and does not analyze them specifically.

In the process of conducting a linear regression analysis, the first step is to assess the fit of the model. This can be done by analyzing the R-squared value to assess how well the model fits the data. Immediately following this, attention needs to be paid to the VIF value (Variance Inflation Factor) to identify the potential collinearity problem. When the VIF value exceeds 5 or the Tolerance is below 0.2, it indicates that there is a collinearity problem in the model, which may affect the accuracy and reliability of the regression analysis. After confirming that there is no collinearity in the model, the regression model formula needs to be clearly stated. Subsequently if the result of the significance test (p-value) is less than 0.05 or 0.01, this means that the independent variable X has a significant influence on the dependent variable Y. The results of the linear regression analysis in this paper have been shown in Table 8.

Table 8. Result of Linear Regression Analysis

Parameter Estimates ($n=130$)

	Unstandardized		Standardized		Collinearity	
	Coefficients		Coefficients		Diagnosis	
	<i>B</i>	Std. Error	<i>Beta</i>	<i>t</i>	<i>p</i>	VIF Tolerance
Constant	1.2540.488		-		2.5700.011*	- -
B: Adequacy of pre preparation for online concerts	0.1740.059		0.184		2.9710.004**	1.2670.790
C: Quality of online concerts' contents	0.4660.054		0.554		8.6300.000**	1.3530.739
D: Additional services' quality for online concerts	0.2270.068		0.234		3.3370.001**	1.6150.619
R^2	0.616					
Adj R^2	0.607					
<i>F</i>	$F(3,126)=67.500, p=0.000$					
D-W	1.943					

Dependent Variable: A: Online concerts' audience satisfaction

* $p < 0.05$ ** $p < 0.01$

According to Table 8, the R-square value of the model is 0.616, which means that adequacy of pre preparation for online concerts, quality of online concerts' contents, additional services' quality for online concerts can explain 61.6% of the variation in online concerts' audience satisfaction. The model

passes the F-test ($F=67.5$, $p<0.05$), which means that at least one of independent variables will have an effect on dependent variable. In addition, all VIF values in the model are less than 5, which means that there is no collinearity problem. And the D-W value is around the number 2, which means that the model has no autocorrelation.

The regression coefficient of adequacy of pre preparation for online concerts is 0.174 ($t=2.971$, $p=0.004<0.01$), which means that adequacy of pre preparation for online concerts has a significant positive impact on online concerts' audience satisfaction.

The regression coefficient value of quality of online concerts' contents is 0.466 ($t=8.630$, $p=0.000<0.01$), which means that quality of online concerts' contents has a significant positive impact on online concerts' audience satisfaction.

The regression coefficient value of additional services' quality for online concerts is 0.227 ($t=3.337$, $p=0.001<0.01$), which means that additional services' quality for online concerts will have a significant positive impact on online concerts' audience satisfaction. In conclusion, adequacy of pre preparation for online concerts, quality of online concerts' contents, additional services' quality for online concerts, these 3 independent variable all have a significant positive effect on online concerts' audience satisfaction. The formula is: online concerts' audience satisfaction = $1.254 + 0.174 \times \text{adequacy of pre preparation for online concerts} + 0.466 \times \text{quality of online concerts' contents} + 0.227 \times \text{additional services' quality for online concerts}$. The linear regression structure is as follows:

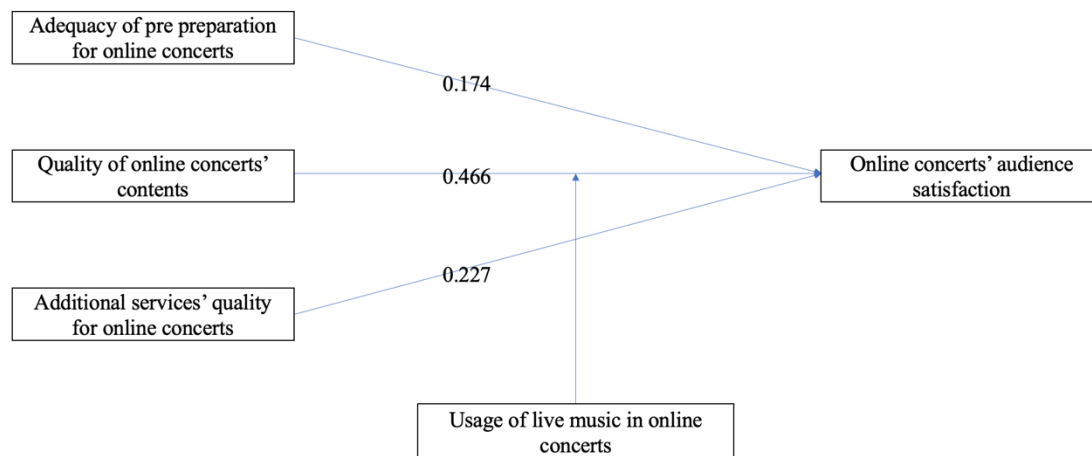


Figure 2. Linear Regression Structure

5.7 Moderation Analysis

Moderation analysis aims to explore how moderating variables affect the strength of the relationship between the independent and dependent variables at different levels. When the independent variable X or the moderating variable Z is nominal data, dummy variable transformation should be used and a reference level should be used. If both are quantitative data, centering or standardization should be used to enhance the accuracy of analysis. As for dependent variable Y and control variables, no special

treatment is usually required.

Moderation analysis contains three main models. Model 1 firstly explores the underlying effect of independent variable X on dependent variable Y, and the role of moderating variable Z is not considered at this time. Model 2 adds the moderating variable Z to model 1 to observe its potential effect on the relationship between the independent and dependent variables. Model 3 then further introduces the interaction term between the independent variable X and the moderating variable Z on the basis of Model 2 to test whether there is a significant moderating effect. If the interaction term in Model 3 shows significance, it indicates that the moderating variable Z plays a moderating role between the independent variable X and the dependent variable Y.

As for control variables, their main roles are to control potential interfering factors and ensure the accuracy of analysis results, which aren't the focus of discussion.

In this paper, the independent variable which is quality of online concerts' contents (X), and the moderating variable which is usage of live music in online concerts (Z), are both quantitative data. Therefore, centering is used for the independent variable and the moderating variable. And the dependent variable (Y) which is online concerts' audience satisfaction, is not processed. Result of the moderation analysis is shown in Table 9.

Table 9. Result of Moderation Analysis

Parameter Estimates ($n=130$)

	Model 1					Model 2					Model 3				
	<i>B</i>	S.E.	<i>t</i>	<i>p</i>	β	<i>B</i>	S.E.	<i>t</i>	<i>p</i>	β	<i>B</i>	S.E.	<i>t</i>	<i>p</i>	β
Constant	8.293	0.740	11.210	0.000**	-	8.308	0.739	11.243	0.000**	-	8.298	0.729	11.385	0.000**	-
Gender	0.033	0.206	0.160	0.873	0.010	0.055	0.206	0.269	0.789	0.017	0.030	0.204	0.148	0.882	0.009
Academic qualification	-0.171	0.159	-1.075	0.284	-0.073	-0.193	0.160	-1.210	0.229	-0.083	-0.210	0.158	-1.330	0.186	-0.090
Age	-0.127	0.176	-0.721	0.472	-0.055	-0.119	0.176	-0.677	0.500	-0.051	-0.169	0.175	-0.966	0.336	-0.073
Occupation	0.057	0.094	0.611	0.542	0.042	0.057	0.094	0.611	0.542	0.042	0.056	0.092	0.602	0.548	0.041
Monthly income level	0.147	0.112	1.315	0.191	0.107	0.149	0.112	1.333	0.185	0.109	0.184	0.111	1.653	0.101	0.135
Total number of attending online concerts	-0.219	0.192	-1.145	0.254	-0.078	-0.223	0.191	-1.166	0.246	-0.079	-0.239	0.189	-1.267	0.208	-0.085
X	0.603	0.059	10.259	0.000**	0.717	0.517	0.096	5.411	0.000**	0.615	0.630	0.109	5.802	0.000**	0.749
Z						0.087	0.076	1.141	0.256	0.124	-0.008	0.088	-0.097	0.923	-0.012

Parameter Estimates ($n=130$)

	Model 1					Model 2					Model 3				
	<i>B</i>	S.E.	<i>t</i>	<i>p</i>	β	<i>B</i>	S.E.	<i>t</i>	<i>p</i>	β	<i>B</i>	S.E.	<i>t</i>	<i>p</i>	β
$X*Z$											0.046	0.0222	0.094	0.038*	0.153
R^2	0.530					0.535					0.551				
Adj. R^2	0.503					0.504					0.518				
<i>F</i>	$F(7,122)=19.640, p=0.000$					$F(8,121)=17.390, p=0.000$					$F(9,120)=16.377, p=0.000$				
ΔR^2	0.530					0.005					0.016				
ΔF	$F(7,122)=19.640, p=0.000$					$F(1,121)=1.302, p=0.256$					$F(1,120)=4.384, p=0.038$				

Dependent Variable: A: Online concerts' audience satisfaction

* $p < 0.05$ ** $p < 0.01$

From Table 9, it can be seen that the independent variable (quality of online concerts' contents) in Model 1 presents significance ($t=10.259$, $p=0.000 < 0.05$), which means that quality of online concerts' contents will have a significant impact on online concerts' audience satisfaction. From Table 9, it can also be seen that the interaction term between the independent variable and the moderating variable shows significance ($t=2.094$, $p=0.038 < 0.05$). It means that when quality of online concerts' contents having an effect on online concerts' audience satisfaction, with moderating variable (usage of live music in online concerts) being at different levels, magnitude of effect is significantly different. This can be viewed in details through the simple slope analysis in Table 10 and as well as the simple slope plot in Figure 3.

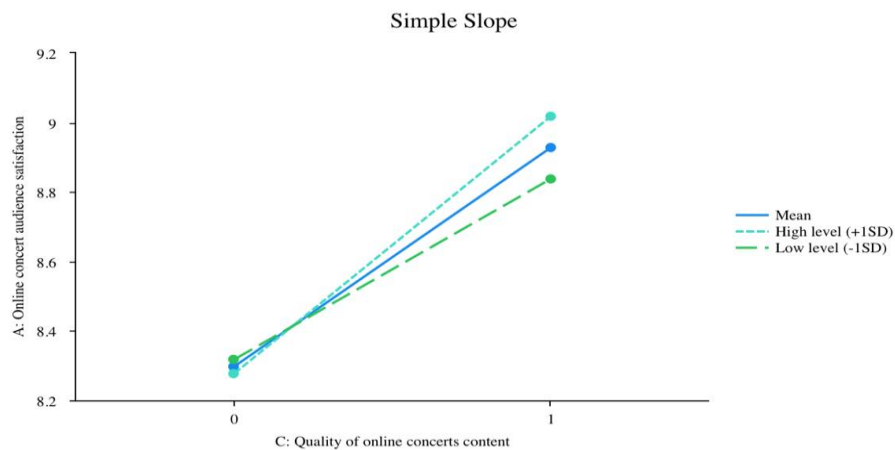
According to Table 10, the regression coefficient of quality of online concerts' contents (independent variable) and online concerts' audience satisfaction (dependent variable) is 0.630 at the mean level of usage of live music in online concerts (moderating variable). Regression coefficient of quality of online concerts' contents (independent variable) and online concerts' audience satisfaction (dependent variable) is 0.740 at the high level of usage of live music in online concerts (moderating variable). Regression coefficient of quality of online concerts' contents (independent variable) and online concerts' audience satisfaction (dependent variable) is 0.520 at the low level of usage of live music in online concerts (moderating variable).

Table 10. Simple Slope Analysis

Simple Slope Analysis

Level	Coef.	S.E.	<i>t</i>	<i>p</i>	95% CI	
Mean	0.630	0.109	5.802	0.000	0.417	0.843
High Level (+1SD)	0.740	0.142	5.204	0.000	0.461	1.019
Low Level (-1SD)	0.520	0.094	5.514	0.000	0.335	0.705

As shown in Figure 3, there are significant differences in slopes of the straight lines corresponding to different levels of moderating variables. Specifically, the slope of the moderating variable at the low level is gentle, while the slope of the moderating variable at the high level is steep. This reveals that the effect of the independent variable on the dependent variable increases as the level of the moderating variable rises. This also indicates that the better usage of live music in online concerts, the stronger the effect of quality of online concerts' contents having on online concerts' audience satisfaction, which is, usage of live music in online concerts positively enhances the effect of quality of online concerts' contents on online concerts' audience satisfaction. So, usage of live music in online concerts positively moderates the relationship between quality of online concerts' contents and online concerts' audience satisfaction.

**Figure 3. Simple Slope Plot**

5.8 Discussion of Results

Through the empirical analysis of this paper, it is found that main target audiences of this survey are those female university students who are between 18 and 30 years old and have a bachelor's degree with a monthly income being between 2,000 and 4,000 yuan, and have watched online concerts one to three times in total. This is consistent with characteristics of main target audiences of online concerts. Through the reliability and validity analysis, it is found that the questionnaire can effectively extract

information with good reliability and validity.

Regarding the hypothesis "H1: The better adequacy of pre preparation for online concerts, the more online concerts' audience satisfaction." In this paper, through correlation analysis, it is found that there is a significant positive correlation between online concerts' audience satisfaction and adequacy of pre preparation for online concerts. And through linear regression analysis, it is found that the regression coefficient value of adequacy of pre preparation for online concerts is 0.174 ($t=2.971$, $p=0.004<0.01$), which means that adequacy of pre preparation for online concerts will have a significant positive effect on online concerts' audience satisfaction. Therefore, H1 is valid.

Regarding the hypothesis "H2: The better quality of online concerts' contents, the more online concerts' audience satisfaction." In this paper, through correlation analysis, it is found that there is a significant positive correlation between online concerts' audience satisfaction and quality of online concerts' contents. Through regression analysis, the regression coefficient of quality of online concerts' contents is 0.466 ($t=8.630$, $p=0.000<0.01$), which indicates that quality of online concerts' contents has a significant positive effect on online concerts' audience satisfaction. Therefore, H2 is valid.

For the hypothesis "H3: The better additional services' quality for online concerts, the more online concerts' audience satisfaction." This paper finds that there is a significant positive correlation between online concerts' audience satisfaction and additional services' quality for online concerts through correlation analysis. And through regression analysis, the regression coefficient value of additional services' quality for online concerts is 0.227 ($t=3.337$, $p=0.001<0.01$), which means that additional services' quality for online concerts will have a significant positive impact on online concerts' audience satisfaction. Therefore, H3 is valid.

For the hypothesis "H4: The better usage of live music in online concerts, the stronger the effect of quality of online concerts' contents on online concerts' audience satisfaction." In this paper, through the moderation analysis and the simple slope analysis, it is found that usage of live music in online concerts positively moderates the relationship between quality of online concerts' contents and online concerts' audience satisfaction. Therefore, H4 is valid.

Overall, results of the empirical analysis in this paper support H1, H2, H3 and H4. All four hypotheses are valid.

6. Conclusion

In this paper, through literature research, questionnaire survey and empirical analysis, it is found that there is a positive correlation between adequacy of pre preparation for online concerts, quality of online concerts' contents, additional services' quality for online concerts, and online concerts' audience satisfaction, and the linear regression formula is: $\text{online concerts' audience satisfaction} = 1.254 + 0.174 \times \text{adequacy of pre preparation for online concerts} + 0.466 \times \text{quality of online concerts' contents} + 0.227 \times \text{additional services' quality for online concerts}$.

At the same time, this paper also found that usage of live music in online concerts positively moderates

the relationship between quality of online concerts' contents and online concerts' audience satisfaction, that is to say, the better usage of live music in online concerts, the stronger the effect of quality of online concerts' contents on online concerts' audience satisfaction.

As a result, some methods can be used to improve nowadays online concerts. As to pre preparation activities of online concerts, for those who need to access overseas websites to purchase tickets, due to the lag caused by using VPN and the fact that some online concert platforms only support Chinese audiences to pay with VISA, many audiences have a poor experience in purchasing tickets, so organizers of online concerts should communicate with those ticketing agents in China to increase the convenience of purchasing tickets for audiences. While ensuring the convenience, it is also important to ensure the reasonableness of the ticket price to prevent scalpers from maliciously inflating the ticket price. In addition, audience participation and anticipation can be increased by inviting audiences to vote for which songs to be performed and by forming a pre-concert workshop including audiences, composers and singers, so that audiences can have a clear understanding of the general composition of the entire concert before it begins.

As to quality of online concerts' contents, nowadays online concerts need to design more interactive parts between singers and audiences, such as inviting fans for one-to-one online video to answer fan questions. In addition, visual enhancement technologies such as VR and AR should be utilized more often to improve audiences' the sense of immersion. According to suggestions made by some respondents in question 12 of the questionnaire, online concerts also need to enhance the quality of special effects, solve the lag caused by network signal problems and so on.

As to additional services' quality for online concerts, richness of peripherals and quality of additional services such as the speed of delivery of these peripherals are those that audiences care about a lot. Organizers of online concerts can attract fans by bundling exclusive peripheral products designed by artists themselves with tickets of online concerts. In addition, posting behind-the-scenes look of productions of online concerts can also increase relevant buzz.

Meanwhile, online concerts need to ask the participating singers to use live music instead of using a lot of pre-recorded music to do lip-synch. This is because live music can let audiences better participate in the atmosphere of the online concert.

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Appendix

1. Research Questionnaire on Influencing Factors of Online Concerts' Audience Satisfaction

Dear Sir or Madam:

In order to improve online concert audience satisfaction, we would now like to ask you to take the time to complete this questionnaire on factors influencing online concerts' audience satisfaction.

Part I: Background Check

1. Your gender is: [Single choice question]

- ☐ Male
- ☐ Female
- ☐ Others

2. Your academic qualification is: [Single choice question]

- ☐ High school and lower
- ☐ Diploma
- ☐ Bachelor
- ☐ Master
- ☐ PhD

3. Your age is: [Multiple Choice]

- ☐ 18-30 years old
- ☐ 31-40 years old
- ☐ 41-50 years old
- ☐ 50 and older

4. What is your occupation: [Single Choice]

- ☐ Student
- ☐ Management
- ☐ Technical
- ☐ Entrepreneur
- ☐ Middle level leadership

5. Your monthly income is: [Single Choice]

- ☐ 2,000 yuan and lower
- ☐ 2,000 to 4,000 yuan
- ☐ 4000 to 6000 yuan
- ☐ 6000 to 8000 yuan
- ☐ 8000 yuan and above

6. What is the total number of online concerts you have attended?

- ☐ 0
- ☐ 1-3
- ☐ 4 - 7
- ☐ 7 and above

Part II: Post-viewing Evaluation Survey of Online Concerts

1. Please rate your satisfaction with online concerts you have attended: [Matrix single choice questions]

	Very Poor	Poor	Average	Good	Very Good
Overall Satisfaction with Consuming Online Concerts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Relative satisfaction with consuming online concerts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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2. Please rate adequacy of pre preparation for online concerts you have attended: [Matrix single choice questions]

	Very Poor	Poor	Average	Good	Very Good
Ticket purchase convenience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Audience engagement before the start of online concerts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. Please rate quality of online concerts' contents you have attended: [Matrix single choice questions]

	Very Poor	Poor	Average	Good	Very Good
The usage of new technologies such as VR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interaction between singer and audience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. Please rate the quality of additional services of online concerts you have attended: [Matrix single choice questions]

	Very Poor	Poor	Average	Good	Very Good
Timeliness of additional services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Reliability of additional services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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5. Please rate the usage of live music in online concerts you have watched: [Matrix single choice questions]

	Very Poor	Poor	Average	Good	Very Good
Swaying to the rhythm of music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Triggering positive emotions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Do you have any suggestions for online concerts nowadays? If yes, please write them down. If no, please ignore them.
