

# Online Concert Audience Experience and Experiential Value: Scale Development and Validation

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## Abstract

Internet communication has the characteristics of flexible form and wide range. This feature makes online concert activities no longer a marginalized performance mode. The combination of Internet technology and art has promoted the essential transformation of the traditional concert form. This study developed the Online Concert Audience Experience Scale (OCAES) and the Online Concert Audience Experiential Value Scale (OCAEVS). The purpose is to measure the emotional, spiritual, social, and other aspects of the audience's perception of participating in the concert through the scale, and to explore the value of the audience's inner perception of participating in the concert. This study first sorts out the key factors affecting audience experience and experiential value through literature review collection and expert interviews. Design a measurement scale for audience experience and experiential value of online concerts. A questionnaire survey was conducted among 461 audiences who had participated in online concerts. Verify the four dimensions of online concert audience experience (authenticity, collective participation, knowledge, risk) and the four dimensions of experiential value (economic value, social value, hedonic value, altruistic value).

**Key Words:** Online concert, audience experience, experiential value, audience participation behavior.

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## INTRODUCTION

Under the influence of the rapid popularization of the Internet and the global health crisis, online concerts have gained a huge opportunity for development. In order to promote and protect cultural diversity, UNESCO supports people's behavior of shifting their cultural consumption to digital platforms and encourages people to share content in the digital field (The United Nations Educational Scientific and Cultural

Organization, 2020). Musicians from all over the world have begun to try to adapt and display their music creations on the Internet. It has become a "popular phenomenon" for musicians to transfer their works to online platforms, which has led to a sharp increase in the number of online concerts (Fraser, Crooke, & Davidson, 2021). Because of this, this opened up the online concert participation experience for many audiences. In the absence of face-to-face contact between the performer and the audience, the experience uses Internet technology as a medium. Online concerts have been exploring technologies and ways to enhance audience interaction, communication, immersion, social presence, and social experience (Fancourt & Steptoe, 2019). Therefore, promoting the audience experience of online concerts has become a topic that scholars and musicians in the field of concert research have focused on in recent years.

The advent of the experience economy era means a fundamental change in the structure of the global economy. Experience goes beyond the place goods and services sit in the minds of consumers. It becomes a distinct form of economic output. The rapid development of more and more industries is closely related to experience. But experience is not a product of the economy. Attending concerts, watching sporting events, visiting museum exhibits, and attending art galleries are all part of the experience economy. These experiences allow everyone to be personally involved in an unforgettable experience. Although the experience itself lacks a tangible form, consumers are still exploring the connotation of the experience (Yeoman & McMahon-Beattie, 2019). The online concert experience is not only a service provided by the concert platform for online audiences but also a unique experience and experience for the audience. This experience is one of the results of co-creation between the audience and the performers, between the audience and the

music, between the audience and the audience, and between the audience and the online concert event. More and more art institutions are beginning to think about a problem as marketers in the field of concerts. How to design a concert experience suitable for online audiences. And strengthen the audience's exploration of self-needs and experiential value when participating in online concerts. As time goes by, let participating in online concerts becomes a living habit or a preferred choice of the audience.

Regarding the research on audience experience, Boerner and Jobst (2008) conducted extensive research on theater and opera experience. The Arts Audience Experience Index (AAEI) developed by Radbourne, Johanson, Glow, and White (2009) is a measure of the psychological characteristics of audiences attending live music and theater performances. Most of the research on experiential value focuses on retailers (Babin, Darden, & Griffin, 1994), department stores (Rintamäki, Kanto, Kuusela, & Spence, 2006), travel (Yu, 2019), online shopping (Mathwick, Malhotra, & Rigdon, 2001; Trevinal, & Stenger, 2014), theme parks (Wu, Li, & Li, 2018), etc. Few studies have explored the measurement of online concert audience experience and the evaluation of the online concert audience experiential value. Therefore, this study defines the concepts of audience experience and experiential value from the perspective of online concert audiences, and supplements related research fields. Designing an online concert audience experience and experiential value scale to understand the expectations and needs of online concert audiences. It also provides a standard for arts organizations and other researchers to measure audience participation experience. This study delves into the factors that influence the audience experience and the experiential value. This helps the art organization improve concert services and plan corresponding marketing strategies in a timely manner based on audience feedback. It can also provide the audience with necessary experience services and the realization of self-worth.

Based on the above research background, the purpose of this research: (1) Review the previous literature to discuss the connotation of audience experience and experiential value, and define the concepts of audience experience and experiential

value in online concerts. (2) Conduct expert interviews, combine literature review, and develop online concert audience experience and experiential value scale. (3) Perform data analysis on the scale. Verify whether the data of online concert audience experience and experiential value are reasonable, and explore the feasibility of the scale.

## LITERATURE REVIEW

### Audience experience

The audience experience is not a passive experience for the audience. This experience is the result of the interaction between the performer and the audience during the performance art process. It also provides opportunities for the audience to engage with the content of the performance on a deeper level. Arts organizations or concert planners consider audience experience as the audience's feedback on the quality of the concert. Feedback is used by arts organizations to assess whether performance events fit the theme of the concert. Then make the audience gets a good event experience (Radbourne et al., 2009). Music event planners do not just treat audiences as consumers of culture. They evaluate the attributes and depth of audience experience through audience feedback, which is one of the important indicators to measure the quality of the art. At the same time, music event planners use ways to enhance the audience experience. Engaging audiences in concerts through the emotional, spiritual, and social experiences of performing arts events (Boerner, Moser, & Jobst, 2011).

With the gradual increase of online concert activities, concert audiences participate in different forms of online concerts through various channels and platforms. The audience experience becomes an emotional connection between performers and audiences in online concert events. Radbourne et al. (2009) proposed the Arts Audience Experience Index (AAEI) and believed that the audience experience in performing arts consists of four parts: authenticity, collective engagement, and knowledge and risk. Audience experience in this study refers to the authenticity, immersion, interaction, and immersive personal feelings of the audience when they participate in the online concert through

Internet technology. Therefore, the structural division of audience experience in Radbourne et al. Art Audience Experience Index provides a theoretical framework for this study on the audience experience dimensions of online concert audiences.

## AUTHENTICITY

Leigh, Peters, and Shelton (2006) argue that the authenticity of art in concerts is an authentic form of performing arts activity. It is also the emotional perception that the audience gets from it. This perception is related to the quality presented by the concert. Audiences perceive more authenticity when musical performances present matching artistic achievements. The audience feels that they are getting closer to the truth being described and feel connected to the action in the performance. The audience can gain a profound perception from this process (Grayson & Martinec, 2004). This study examines the dimension of authenticity in audience experience. It refers to the degree to which the audience obtains real perception during the online concert. For example, the concert is very in line with the promotion of them in the media, or the performance of the orchestra and musicians fully restores the work itself. The concert will stimulate the real perception of the audience through online channels, and promote the emotional connection between the audience and the performers.

## COLLECTIVE PARTICIPATION

The depth of user participation is the subjective awareness of user participation. During the engagement process, the length of time a user spends on a product or service can increase the user's perception of value. The degree to which a user invests in a product or service can enhance the user's perception (Haumann, Güntürkün, Schons, & Wieseke, 2015). Collective participation in this study is the interactive experience between the audience and concert performers. When the audience shares their feelings during the music event, it can increase the audience's sense of being included. It also enhances the audience's perception of the concert (Brown & Novak, 2007). This study examines the dimension of collective participation in the audience experience. It refers to the degree to which the audience participates in the online concert and interacts with the performers

and other audiences. For example, before and after the online concert, or during the intermission, exchange performance experience with the audience. This design can effectively shorten the distance between the audience and the performers. The concert platform also has the function of real-time communication. Participants from all over the world can chat and comment in real-time, allowing the audience to experience a social environment of joint participation. McCarthy, Ondaatje, Zakaras, and Brooks (2004) believe that the core of audience participation in concerts is to experience the close relationship between social interaction and music during the concert. Audiences gain great value in participating in concerts by expressing their personal emotions and opinions about music and empathizing with others.

## KNOWLEDGE

The content of the concert to the audience arouses the audience's thinking and understanding, helping the audience to better invest in the concert performance. This experience that stimulates the audience to think will increase the possibility of the audience participating in the concert (Kawashima, 2006). Boerner, Jobst, and Wiemann (2010) considered the knowledge dimension of the audience experience, covering the information that the event and the organization want to convey, such as concert events, and theater events. This information aids the audience's understanding of performing arts, deepens the interpretation of the content of the performance, and stimulates the audience to generate their own insights after watching the performance. This study examines the knowledge dimension in audience experience. It refers to the degree to which audiences gain cognitive growth in online concerts. Knowledge consists of the audience's rational processing of specific genres and styles expressed by concert themes. It also includes stimulation of the online concert format to the audience, which makes the audience a special view of the new concert format. This kind of experience can promote the audience's active learning and thinking, and let the audience's cognition be developed, all belonging to the knowledge dimension of the concert audience experience.

## RISK

The risk perception of the audience as consumers to participate in the concert will affect the audience's decision to choose to participate in the concert (Radbourne et al., 2009). If the standard, quality, and price of the product or service do not meet the user's expectations, it will be difficult for the user to evaluate the user experience. Users even think that their time and money are wasted. When they are dissatisfied, it will affect the important factors of consumers' choice of repurchase (Zheng, Favier, Huang, & Coat, 2012). The dimension of risk in audience experience in this study refers to the extent to which audiences expect losses when participating in online concerts. For example, the functions of the online concert platform are relatively simple, and the audience's participation experience is not good, so the audience cannot meet the needs of online interaction. Or some online concerts need to keep registering and filling in personal information when logging in, which makes the audience worry about their privacy being leaked. If the audience cannot watch a high-quality concert due to playback technology or equipment reasons. Even if the audience does not have to pay for the financial travel costs and concert tickets, they still feel that their time is wasted. The audience's perceptions of the functional risks, time risks, economic risks, and privacy risks of online concerts are all part of the risk assessment in the audience experience.

## Experiential value

The advent of the experience economy era means a fundamental shift in the structure of the global economy. The importance of experience goes beyond the status of products and services in consumers' hearts. What people really want is not a product, but a satisfying experience. The experience becomes a distinct form of economic output (Yeoman & McMahan-Beattie, 2019). Mathwick, Malhotra, and Rigdon (2001) believed that experiential value is the value obtained by consumers in the interactive experience of products or services. Through consumers' direct or indirect use, observation, purchase, and participation. In other words, experiential value is the perceived preference of consumers for product performance and service attributes. This preference can affect the purpose of consumer choice. Experiential value focuses

more on the value consumers retain from these experiences (Verhagen, Feldberg, van den Hooff, Meents, & Merikivi, 2011). Audiences are consumers and participants of online concerts. Their experiential value can be regarded as the audience's evaluation of the quality and value of participating in online concerts, and it is also an overall evaluation of the concert experience perception.

Based on experiential value theory, Holbrook (2006) divides experience value into four parts: economic value, social value, hedonic value, and altruistic value. He believed that the activities that people carry out are the bridge between the inner world of emotional perception and the outer world of economic activity. People want more value from participating in an activity than the activity itself. The experiential value in this study refers to the value that the audience obtains from the experience of the concert quality, influence, and entertainment. Therefore, Holbrooke's theory provides a theoretical framework for the research on the dimension of online concert audience experiential value.

## Economic Value

Rintamäki, Kanto, Kuusela, and Spence (2006) believe that the original economic value refers to the ratio of product or service in quality and price. But now the economic value has been transformed into a generalization of consumers' value of product use and service experience, which includes intrinsic value and extrinsic value. The economic value defined by Holbrook (2006) refers to the product or service experience obtained by consumers, which is the key means to achieving the goal. Such as improving efficiency, increasing convenience, improving performance, and optimizing quality. Some researchers argue that music festivals can be viewed as a cultural commodity that enhances urban tourism. The attractiveness, influence, traffic, and benefits brought by the music culture festival belong to the economic value generated by the music culture festival (Herrero, Sanz, & Devesa, 2011). The economic value in this study refers to the audience's online concert experience meeting the audience's needs. And it can improve and enhance the efficiency of online concert audiences' life, social interaction, emotion, and professional learning.

## Social value

Kassin, Fein, and Markus (2011) believe that people tend to show behaviors that are praised by others to gain recognition, social influence can map most people's intentions and behaviors, and can explain some people's choices and behaviors. Holbrook (2006) believes that when a person creates a good image through his usage behavior, to gain more attractiveness, prestige, admiration, etc., when the user is oriented by status and reputation, social value begins to emerge. Bhattacharjee (2000) defined social value as the recognition and approval of other people in the process of user participation or use in the study of music streaming services, and regarded social value as an important factor affecting audience choice and intention behavior. Some studies have also shown that social value is a sufficient condition for audience behavior and intention, which can guide audience behavior to a certain extent (Ovčjak, Heričko, & Polančič, 2015). The social value in this study refers to the behavior of audiences participating in online concerts, gaining praise from certain groups of people, the favor of art organizations, media promotion, and more recognition.

## Hedonic value

Holbrook (2006) believes that hedonic value is the fun that users experience in using or participating. Such as the pleasure gained from various social activities. When looking at a work of art or appreciating the scenery, the aesthetic enjoyment that users feel is the embodiment of the value of enjoyment. Hedonic value is that users hope to gain value in the fun of participation, and it is a process of self-realization for users. To obtain a pleasant experience, people often seek sensations in many aspects, such as content, picture, color, sound, and dynamics (Van der Heijden, 2004). Chen, Leon, and Nakayama (2018) found in their research that users expect to have fun while using music streaming media. The researchers believe that music streaming is not just a program that allows users to obtain a multi-sensory experience during use. The hedonic value in this study refers to the experience of fun, enjoyment, and joy that audiences get from participating in online concerts.

## Altruistic value

Holbrook (2006) believes that altruistic value refers to a value experience that users value their behavior because of the reactions of others. Consumers are concerned about how their behavior affects others, and this experience is more like an behavior based on morality. The value dimension of consumers' impact on others by reflecting on the intrinsic value of their own experience. In the study of consumer behavior, consumer behavior is other-oriented behavior. From a macro perspective, this behavior is related to the morality and responsibility of consumers. It is a selfless act performed to benefit the reactions and feelings of others (Mustelier-Puig, Anjum, & Ming, 2019). The altruistic value of this study refers to the fact that concert organizers help audiences find relief from stressful lives. When the audience regards participating in online concerts as a meaningful activity, it can meet the audience's aesthetic and music appreciation expectations. When music organizations consider audience needs through various methods, improve the quality of concerts. And enrich the audience's participation experience and improve the audience's satisfaction. The audience can get more altruistic value in the process of participating in the online concert.

## RESEARCH METHODS

### Expert Interview

Through expert interviews, this research asks experts for their views on the audience experience and experiential value of online concerts. With the help of experts' knowledge and experience, through expert feedback. Improve the items in the audience experience scale and experiential value scale, and design the online concert audience experience and experiential value survey questionnaire.

This expert interview mainly focuses on the audience experience and experiential value of online concerts. Interview each expert's evaluation of the online concerts they have attended before, and summarize the key factors that the experts believe affect the audience experience and experiential value. Through interviews with experts, the items of the online concert audience experience scale and the online concert audience experiential value scale are improved. The content of the interview mainly includes the real experience of participating in online

concerts, the gap between experience and expectations, the satisfaction of self-awareness, and the value and significance of participation. The interviews focused on audience experience and experiential value. For example: What is your ideal online concert experience? What needs were met during your participation in the online concert? What aspects of online concerts do you think are still lacking? Which experiences do you think did not meet your expectations for online concerts? Which experience of participating in online concerts gave you a sense of self-actualization? What do you think is the future direction of online concerts? The content of the interview is to understand experts' views on the experience of online concerts from various aspects, and the core elements that the audience cares about during the participation process. Analyze the existing problems of online concerts from the perspective of experts, and how the audience can achieve self-realization during the participation process. It provides reference significance for the development and verification of the online concert audience experience scale and experiential value scale. The outline of the interview is in Appendix I. The participation method of online concerts has the characteristics of being able to break through the limitations of physical distance. Therefore, this study selects those who have rich experience in participating in online concerts. 15 experts with a music major education background and non-music education background were interviewed. See Appendix II for the interviewed experts.

### Questionnaire Generation

According to the results of expert interviews, some experts believe, "In the past participation experience, whether the online concert has a stable network signal. Whether the concert platform has customer service to deal with problems that arise at any time will affect the audience's participation in the online concert. If the audience is forced to interrupt due to signal or concert platform problems, it will bring a very bad experience to the audience." An online concert is a form of artistic performance realized with the help of Internet technology. The performances of musicians and orchestras the live broadcast, as well as the communication and interaction of the audience on the online

platform, all need to be done online. Therefore, the smoothness of online concert performances has a lot to do with network technology. At the same time, some experts believe that the global health crisis has greatly promoted the development of online concerts in recent years. This form of concert participation not only allows people to continue to participate in the performances of orchestras they are interested in when they cannot travel. And to a certain extent, participating in online concerts can save the time and money costs that had to be paid for participating in live concerts. Some experts also talked about the future development trend of online concerts. They believe that a series of important on-site experiences, such as the aesthetics of live concerts and the acoustic design of concert halls, service experience, and performance viewing atmosphere, are difficult to replicate. But online concerts are more than a form of performance that replaces live concerts. Online concerts are an option for audiences. And online concerts can provide an effective way to facilitate participation. Therefore, the development trend of online concerts is generally good.

This study is based on reviewing the past literature related to the audience experience and experiential value theory and organizing the views of previous scholars. Interviews with 15 experts summarize their relevant experience of participation and provide their insights on the audience experience and experiential value of virtual concert audiences. This study designed an online concert audience experience scale, see Appendix III. and Online Concert Audience Experiential Value Scale, see Appendix IV. The two scales contain 19 audience experience items and 22 experience value items respectively. This questionnaire will use the 5-point Likert scoring method, and five options are designed from 1 to 5: "strongly disagree", "disagree", "no opinion", "agree" and "strongly agree". It also collected the respondents' gender, age, education level, occupation, income, and the number of times they participated in online concerts within half a year.

### Methods of data collection and analysis

#### Data collection

The target population of this study consists of audiences who have participated in online

concerts and audiences who pay attention to online concerts. Online concerts have the property of breaking through the limitations of physical distance. And anyone can log in to the concert platform and choose their favorite concert theme. Therefore, the subjects of this questionnaire are not restricted in terms of age, gender, occupation, and identity, so that the objects of the questionnaire are diverse. To make the interviewees more targeted, this study is first based on the "2021 National Performance Market Annual Report" of the China Performance Industry Association. Cross-contrast the provincial and municipal ranking data of performances, provincial and municipal ranking data of box office revenue, and ranking data of popular cities for concerts in the report. Beijing appears in the 2021 performance rankings, box office revenue rankings, and concert performance rankings. Therefore, this study decided to draw samples from Beijing. Through the recommendation of professors, colleagues, and friends, this study found 9 music and art exchange groups spontaneously formed by music lovers with more than 300 people in the Beijing area. After communicating with the group owners, the initiators of 5 communication groups agreed to distribute questionnaires to the groups. Conduct an online concert audience experience and experience value survey on the people in the communication group.

The data collection time for this study was from May 15 to May 30, 2023, and a total of 574 questionnaires were returned. There were 461 valid questionnaires, and the recovery rate of valid samples was 80.3%. The ratio of sample to audience experience items is 24.2:1, and the ratio to experience value items is 20.9:1. The sample profile is shown in Table 1. There is no significant gender difference among the interviewees, and there is no deviation in the sample size of male and female. Interviewees were mostly aged between 21-30 (25.4%), 31-40 (25.2%), and 41-50 (24.7%); most of the interviewees had a bachelor's degree (50.3%). Most of them are students (23.9%) or the music industry (21.9%). Most interviewees participated in 4-6 online concerts within half a year (40.6%).

**Tab.1.** The sample's profile—from online concert audience (n=461).

Variable	Items	Number (%)	Variable	Items	Number (%)
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Gender	Male	237 (51.4%)	Monthly income (RMB)	3000-5000	179 (38.8%)
	Female	224 (48.6%)		5001-7000	127 (27.5%)
Age	Under 20 years old	38 (8.2%)		7001-9000	108 (23.4%)
	21-30 years old	117 (25.4%)		More than 9001	47 (10.2%)
	31-40 years old	116 (25.2%)	Education level	Senior high school	175 (38.0%)
	41-50 years old	114 (24.7%)		College/University	232 (50.3%)
	51-60 years old	59 (12.8%)		Master	42 (9.1%)
	More than 61 years old	17 (3.7%)		Doctor	12 (2.6%)
	Career	Student	110 (23.9%)	Participation times	1-3 times
Education		42 (9.1%)	4-6 times		187 (40.6%)
Music industry		101 (21.9%)	7-9 times		123 (26.7%)
Service industry		76 (16.5%)	More than 10 times		43 (9.3%)
Business industry		47 (10.2%)			
Government-industry		33 (7.2%)			
Freelance		37 (8.0%)			
Other		15 (3.3%)			

### Confirmatory Factor Analysis

Bland and Altman (1997) considered the calculation of items in the questionnaire Cornbrash's  $\alpha$ . When Cornbrash's  $\alpha$  is higher than 0.7, it represents general reliability. In this survey, Cornbrash's  $\alpha$  of each dimension of the online concert audience experience scale and the online concert audience experiential value scale is greater than 0.7. It shows that each measurement item of the two scales has good reliability. The SMC values of the 19 items of the Online Concert Audience Experience Scale are between 0.615 to 0.857. The SMC values of the 22 measurement items of the Online Concert Audience Experiential Value Scale are between 0.635 and 0.861. As shown in Table 2 and Table 3. It shows that each

measurement item of the two scales has strong explanatory power.

**Tab.2.** CFA results of OCAES—sample from online concert audience (n = 461).

Factors/Items	SFL	t-value	SMC	CR	AVE
<b>Factor 1: Authenticity</b>				0.817	0.473
1. The performance effect of the online concert is consistent with the previous media publicity.	0.688	12.599	0.473		
2. Musicians and orchestras demonstrate professional performance skills in online concerts.	0.73	11.892	0.533		
3. The performance of the online concert gave me an immersive feeling.	0.615	13.433	0.378		
4. The popularity of musicians and orchestras matches the quality of online concerts.	0.663	12.922	0.44		
5. The online concert can completely present the stage scene during the music performance.	0.736	11.778	0.542		
<b>Factor 2: Collective Participation</b>				0.885	0.608
1. I can have an interactive discussion with the musicians before or after the online concert.	0.79	12.321	0.624		
2. I know that I need to pay attention to personal behavior when participating in online concerts, and not interfere with the order of the concert.	0.795	12.224	0.632		
3. The host of the online concert can deepen my understanding of the content of the concert.	0.766	12.739	0.587		
4. Communicating online with other audience members can increase my sense of participation in online concerts.	0.679	13.721	0.461		

5. The chat function of the online concert platform can increase my participation experience.	0.857	10.439	0.734		
<b>Factor 3: Knowledge</b>				0.832	0.498
1. Participating in online music has given me a new way of thinking about music performances with the help of Internet technology.	0.786	10.731	0.618		
2. Participating in online concerts with different music themes can deepen my appreciation of different music styles.	0.725	12.133	0.526		
3. I can learn more new music works and genres through online concerts.	0.654	13.138	0.428		
4. Participating in online concert activities gave me a new understanding of modern music and art performance methods.	0.65	13.174	0.423		
5. The broadcast function of the online concert platform can provide the opportunity to participate in concerts in different countries.	0.706	12.455	0.498		
<b>Factor 4: Risk</b>				0.845	0.579
1. The performance quality of the online concert was not in line with my initial expectation.	0.709	12.727	0.503		
2. It takes me a lot of time to search and login to the online concert platform.	0.852	8.733	0.726		
3. Registering an account on the online concert platform may reveal my personal information.	0.687	13.028	0.472		



4. The problems of stuttering and delays in the process of participating in online concerts make me anxious and irritable.	0.784	11.216	0.615		
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Note: SFL is the standard factor load, SMC is the square of multiple correlations, CR is the combined reliability, and AVE is the average variation extracted.

**Tab.3.** CFA results of OCAEVS—sample from online concert audience (n = 461).

Factors/Items	SFL	t-value	SMC	CR	AVE
<b>Factor 1: Economic Value</b>				0.903	0.609
1. Participating in online concerts can save time and money spent on attending live concerts in other places.	0.694	13.766	0.482		
2. Participating in the interactive part of the online concert process can improve my social feelings.	0.771	12.949	0.594		
3. Participating in online concerts can improve and broaden my music appreciation.	0.8	12.464	0.64		
4. Participating in online concerts allows me to enjoy the performance of my favorite musicians or orchestras at any time.	0.805	12.376	0.648		
5. Participating in online concerts can relieve my anxiety and tension in my daily life.	0.781	12.793	0.61		
6. The convenience of my participation in concerts can be greatly improved through the online concert format.	0.826	11.909	0.682		
<b>Factor 2: Social Value</b>				0.872	0.533

1. People who often participate in online concerts will leave the impression on others that they have high musical literacy.	0.787	12.067	0.619		
2. People who often participate in online concerts have better music taste.	0.795	11.888	0.632		
3. The act of participating in online concerts can create an impression in other people's minds that I enjoy life.	0.758	12.591	0.575		
4. Participating in online concerts will help me form a positive image among my friends with a high level of music appreciation.	0.65	13.789	0.423		
5. I think my tolerant attitude towards new art performance forms is very suitable for participating in activities such as online concerts.	0.635	13.894	0.403		
6. Actively trying online concert activities with different themes will make friends think I am a very interesting person.	0.738	12.9	0.545		
<b>Factor 3: Hedonic Value</b>				0.924	0.708
1. Listening to online concerts is an enjoyable process.	0.861	11.657	0.741		
2. It is very interesting to interact with musicians at online concerts.	0.845	12.121	0.714		
3. Participating in online concerts can enrich my leisure and entertainment methods.	0.848	12.021	0.719		

4. When participating in an online concert, it is interesting to discuss the topic of the concert with audiences from all over the world.	0.818	12.702	0.669		
5. It is a very special thing to change the audio-visual experience of traditional concerts through Internet technology.	0.835	12.344	0.697		
<b>Factor 4: Altruistic Value</b>				0.873	0.578
1. Participating in online music allows me to get some spiritual relaxation in the intense study and work.	0.767	12.257	0.588		
2. Participating in online music makes me enjoy the time alone more.	0.797	11.614	0.635		
3. In the process of communicating and interacting with the online concert, I feel that my views have been recognized by many audiences.	0.739	12.72	0.546		
4. Different series of online concerts can meet my different music aesthetic needs.	0.722	12.96	0.521		
5. Online concerts continue to improve network technology to enhance audience participation experience.	0.775	12.103	0.601		

Note: SFL is the standard factor load, SMC is the square of multiple correlations, CR is the combined reliability, and AVE is the average variation extracted.

### Convergence Validity and Discriminatory Validity

Fornell & Larcker (1981) believed that the minimum standard of CR value reached 0.7, and the minimum requirement of AVE value reached 0.5, indicating that the research model has good convergent validity. In this study, the CR value of each dimension of the online concert audience experience scale and

experiential value scale is greater than 0.7. Among them, the AVE value of authenticity in the audience experience scale is 0.473, and the AVE value of knowledge is 0.498, which is close to 0.5. The AVE values of other dimensions are all greater than 0.5. It shows that in the online concert audience experience scale and the experiential value scale, the connotations of the items in each dimension are correlated. It is consistent with the dimension connotation and has good convergent validity. These items can reflect the representative characteristics measured by the dimensions of audience experience and experiential value.

According to the criteria suggested by Hair et al. (1998), the correlation coefficients between different dimensions should be less than the square root of the average variance extraction value (AVE) of all dimensions. As shown in Table 4, the square root of the average variance extraction value (AVE) of each dimension is greater than the standardized correlation coefficient between this dimension and other dimensions, indicating that there is a good distinction between the dimensions of online concert audience experience and experiential value. There is a sufficient distinction between variables.

Tab.4. Discriminant validity of audience experience and experiential value.

Constructs	Audience Experience				Experiential Value			
	A	B	C	D	E	F	G	H
Authenticity	<b>0.688</b>							
Collective participation	0.453*	<b>0.78</b>						
Knowledge	0.326*	0.585*	<b>0.706</b>					
Risk	0.287*	0.405*	0.395*	<b>0.761</b>				
Economic value					<b>0.78</b>			
Social value					0.420*	<b>0.73</b>		
Hedonic value					0.394*	0.479*	<b>0.841</b>	
Altruistic value					0.355*	0.550*	0.433*	<b>0.76</b>

### Competing Models

This study also examined two competing models for the Online Concert Audience Experience Scale and the Online Concert Audience Experiential Value Scale separately. One is a first-order model, in which there is an online concert audience experience with four main factors including authenticity, collective participation, knowledge, and risk. And online concert audience experiential value with four main factors including economic value, social value, hedonic value, and altruistic value. The other one is a second-order model. The online concert audience experience scale showed audience experience as the main factor as well as the four sub-factors. And the online concert audience experiential value showed experiential value as the main factor as well as the four sub-factors. The fit indices for all four models are separately presented in Table 5.

Tab.5. Comparison of competitive models.

Indexes	Online Concert Audience Experience Scale		Online Concert Audience Experiential Value Scale	
	The First-Order Model with Four Factors	The Second-Order Model with a Audience Experience Factor and Four	The First-Order	The Second-Order
		Sub-Factors	Model with Four	Model with a
			Factors	Experiential Value
				Factor and Four
			Sub-Factors	
<b>absolute fit indices</b>				
CMIN	433.963	440.65	277.248	281.64
DF	146	148	203	205
CMIN/DF	2.97	2.98	1.37	1.37
GFI	0.91	0.91	0.95	0.95
AGFI	0.89	0.88	0.94	0.94
SRMR	0.06	0.07	0.05	0.05
RMSEA	0.06	0.07	0.03	0.03
<b>relative fit indices</b>				
NFI	0.9	0.9	0.96	0.96
CFI	0.93	0.93	0.99	0.99

IFI	0.93	0.93	0.99	0.99
RFI	0.88	0.88	0.95	0.95
<b>parsimony fit indices</b>				
NCP	287.96	292.65	74.25	76.64
AIC	521.96	524.65	377.25	377.64
ECVI	1.14	1.14	0.82	0.82

As shown in Table 5, it can be seen from the model fitting test results of the four models. The fitting indices of the first-order model and the second-order model of the online concert audience experience model and the online concert experiential value model are quite close. All four models have a good fit, and the first-order model is slightly better than the second-order model. Pan, Lu and Zhang (2021) believed that when the fit index of the model is good, the high-order model has the principle of simplification. Therefore, this study chooses the second-order model as the best model for the online concert audience experience scale and the online concert audience experiential value scale. As shown in Figure 1 and Figure 2.

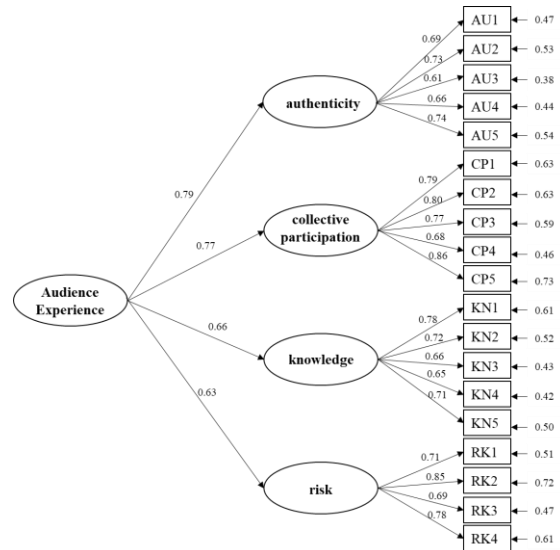


Fig.1. The second-order model of OCAES.

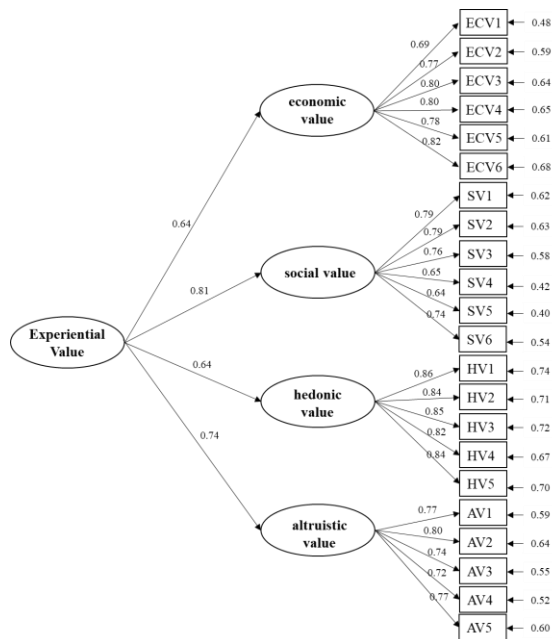


Fig.2. The second-order model of OCAEVS.

## CONCLUSION

### Research Results

This study investigates the audience experience and experiential value of audience participation in online concerts. The reliability and validity of the Online Concert Audience Experience Scale and the Online Concert Audience Experiential Value Scale were evaluated. The second-order single-factor form of audience experience with four possible constructs and the second-order single-factor form of experiential value is verified. This study measures the audience experience of audience participation in online concerts through four dimensions: authenticity, collective participation, knowledge, and risk. Through the four dimensions of economic value, social value, hedonic value, and altruistic value, the audience's experiential value of participating in online concerts is measured. This study uses data to verify the feasibility of the online concert audience experience scale and the online concert audience experiential value scale. The data results show that the audience's expectations and self-needs for participating in online concerts can be assessed through the measurement items of audience experience and experiential value of online concert audiences.

Arts organizations and musicians are gradually moving concerts and musical productions to online platforms. Audiences

are exposed to more and more online concert events on Internet platforms (Fraser, Crooke, & Davidson, 2021). This study argues that an in-depth understanding of audience experience and experiential value can provide arts organizations with indicators for measuring audience expectations and audience needs. Put forward targeted improvement plans according to the audience's needs for online concerts. By improving the audience experience of audience participation in online concerts, and enhancing the experiential value of online concert audiences. Therefore, this study emphasizes the importance of the era of the experience economy, placing the audience experience at the heart of music performance. Explore the factors that affect the audience experience and experiential value of online concerts. In addition, this research uses expert interviews to collect key indicators that affect the audience experience and experiential value of online concerts. A questionnaire was used to measure the attitudes and perceptions of audiences who participated in online concerts about their previous experiences. Compared with past studies, this study provides the necessary concepts and measurements of audience experience and experiential value in the context of online concerts. Both the online concert audience experience scale and the online concert experiential value scale highlight the perspective of online concert audiences.

To sum up, the practical significance of this study are (1) to provide data support for testing audience experience in the process of digital intelligence development of online concerts. (2) To provide art organizations with measurement indicators of audience expectations and audience needs for online concerts. (3) Assist art organizations to formulate corresponding optimization plans when planning online concerts in the future. The theoretical significance of this study are (1) to compile the researchers' definitions of audience experience and experiential value. (2) Based on the background of online concerts combining Internet technology and performing arts, develop audience experience scales and online concert experiential value scales suitable for online concert audiences. (3) Provide online concert audiences, art organizations, and researchers with evaluation tools suitable for online concerts.

## Research Limitations and Suggestions

First of all, the online concert audience experience scale and the online concert experiential value scale designed in this study are both from the audience perspective of online concert activities. These two scales do not apply to other online activities, such as online art galleries, online museums, and online travel. Participants have different requirements for different online activities, and this study did not consider the participation experience of participants in other online activities. In the future, expert interviews and hierarchical analysis can be used to explore the participation experience and experiential value of online activities with different themes.

Secondly, the sample objects in this study include online concert audiences who have participated in the questionnaire survey. The sample object does not cover audiences from other countries or regions, and audiences who have participated in live concerts but not online concerts. Therefore, this study did not test the external validity of the Online Concert Audience Experience Scale and the Online Concert Experiential Value Scale.

Third, this study uses the Online Concert Audience Experience Scale and the Online Concert Experiential Value Scale to test the relationship between audience experience, experiential value, audience satisfaction, audience willingness, and audience behavior in future research. Strengthen the theoretical basis of related research on online concert audiences.

Finally, further research can be done from the perspective of art organizations, using Kansei Engineering to collect the audience's perceptual needs for online concerts. Combining TRIZ theory to optimize the service process of concert planning, performing, and organizing according to the audience's perceptual needs.

## Appendix I

### Expert Interview Outline

1. Basic information of interviewed experts: Occupation, educational background, usual free time, time to participate in online concerts, frequency of participation in online concerts, viewing channels, and what type of online concerts to watch.

2. Expert opinions on the audience experience of participating in online concerts.

What would your ideal online concert experience be like?

Do you have speakers and equipment in your home specifically for participating in online concerts?

Did you get a good audio-visual experience in participating in the online concert?

Have you gained a good social feeling from participating in online concerts?

Do you feel that participating in online concerts has broadened your range of music appreciation?

Which functions of the online concert platform have caused you trouble in using security?

What aspects of the online concert do you think are still lacking, and it does not meet your expectations for the online concert?

3. Expert opinion on the value of audience experiential in participating in online concerts.

Which audience needs can be met in the process of your participation in online concerts?

Which experience of participating in online concerts gave you a sense of self-actualization?

Did you feel responded and recognized during the interactive communication of the online concert?

Do you think it is convenient for you to participate in the form of online concert?

Do you think that online concert can play a role in soothing emotions during special times?

What is your impression of those who often participate in online concerts?

4. The development environment of online concerts.

What do you think the future direction of online concerts will be?

Do you think that online concerts can replace live concerts?

Do you think that online concerts can become a "new normal" for public participation in concerts?

What aspects of online concerts do you think need to be improved?

## Appendix II

The situation of the interviewed experts

Number	Gender	Profession	Major	Age	Academic qualifications	Years of participation in online concerts
1	male	teacher	Human Resources	41 years old	Master degree	3 years
2	male	musician	Music	32 years old	Bachelor degree	6 years
3	female	teacher	Art	31 years old	Master degree	2 years
4	female	counselor	Psychoeducation	37 years old	Master degree	3 years
5	male	singer	Vocal Music Education	32 years old	Bachelor degree	7 years
6	male	music production	Music	36 years old	Master degree	5 years
7	female	teacher	Dance	31 years old	Bachelor degree	2 years
8	male	flight attendant	Aviation Management	30 years old	Bachelor degree	2 years
9	female	teacher	Solfeggio Ear Training	33 years old	Master degree	4 years
10	female	programmer	Software Engineering	34 years old	Bachelor degree	3 years
11	male	accounting	Financial Management	37 years old	Bachelor degree	2 years
12	female	civil servant	Chinese Language and Literature	36 years old	Bachelor degree	2 years
13	male	teacher	Music Therapy	31 years old	Master degree	3 years

14	male	doctor	Recovery Treatment	46 years old	Master degree	3 years
15	female	freelance	Business English	34 years old	Master degree	4 years

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