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Research on the Mechanism of Integration of Sichuan Rural Music and Culture and Tourism Industry for Rural Revitalization Based on Big Data Analysis

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Abstract With the promotion of rural revitalization strategy, the deep integration of culture and tourism industry has become an important way to promote regional economic development. This study proposes a mechanism to promote rural revitalization through the integration of rural music and cultural and tourism industries based on big data analysis. First, an emotion recognition model combining the bidirectional long and short-term memory network (BiLSTM) and the Self-Attention mechanism (Self-Attention) is adopted to improve the emotion classification accuracy of rural music. The experimental results show that the proposed model achieves a maximum recognition accuracy of RMSE 0.0814 and R^2 0.807 in the emotion recognition task.Secondly, through the analysis of the emotional characteristics of Sichuan country music, combined with the characteristics of the cultural and tourism industry, a specific scheme is proposed to promote the integration of country music and the cultural and tourism industry through music emotion recognition. The program includes measures such as establishing a rural music promotion platform and creating emotional interaction scenes, which aim to enhance the influence of rural music and provide tourists with richer emotional experiences. The study shows that the combination of digital technology and rural music not only promotes the dissemination of Sichuan's rural culture, but also helps the implementation of the rural revitalization strategy and promotes the development of the local economy.

Index Terms Rural music, cultural tourism industry, emotion recognition, bidirectional long and short-term memory network, self-attention mechanism, rural revitalization

I. Introduction

Rural music is an indispensable and important part of rural culture and emotional ties, reflecting the contemporary rural life and urbanization in the context of the strong “nostalgia, rural feelings, rural sounds, rural encounters, rural knowledge, rural nostalgia” [1], [2]. Vigorously developing rural music allows people to find the “green leaves to the roots of affection”, helps to create a strong atmosphere of cultural education, and is conducive to the inheritance of Chinese civilization and the revival of national culture [3].

In the context of the new era, Sichuan, as a province with rich history, culture and natural resources, the development of rural music is of great significance in promoting local cultural heritage, economic development and social progress [4]. Rural music is a part of Sichuan's diverse culture, which carries the region's historical memory and folk wisdom [5]. In today's accelerating globalization and modernization, preserving and developing rural music is not only a respect for traditional culture, but also a reinforcement of local identity [6], [7]. Through the integration with modern pop music elements and digital music technology, country music can also take on a new vitality, attracting more young people to pay attention to and participate in the preservation and innovation of traditional culture [8]-[10].

In addition, compared with the traditional cultural tourism development relying on natural resources and historical landscapes, which has already entered the platform and maturity period, the development of cultural tourism industry with rural music experience as the highlight is still a new thing [11]-[13]. Sichuan in the new era really needs rural music, which is not only a cultural phenomenon, but also an important force to promote the overall development of local economy and society [14], [15]. Through rational planning and effective implementation, it is entirely possible that rural music can become a key to promote the revitalization and sustainable development of Sichuan's countryside [16], [17].

In this paper, based on audio data analysis, the emotional features of music are extracted by using BiLSTM and self-attention mechanism model, and the combination of big data analysis and emotion recognition promotes the deep integration of Sichuan country music and cultural tourism industry. First, the music emotion recognition model is constructed through feature extraction of rural music audio files. Second, the emotion recognition technology is utilized to provide the cultural and tourism industry with accurate emotional interaction solutions for tourists in order to enhance the attractiveness of country music and the sense of participation of tourists. Finally, combining with the local cultural characteristics of Sichuan, we explore the integration paths of music with different emotional characteristics and cultural tourism products to provide strong support for rural revitalization in Sichuan.

II. Integration of Sichuan Rural Music and Culture and Tourism Industry

II. A. Realistic basis for the integration and development of the two

II. A. 1) Development requirements

According to the 2016 China Music Industry Development Report, the total output value of China's music industry in 2016 amounted to 325.322 billion yuan, while the total output value of the rural music industry is relatively low, and thus has a great potential for improvement. The usual concept of rural music industry is generally from the perspective of the geographical area where the music appears, comparing the rural music industry with the urban music industry of music books, music publishing, music performances, digital music, music copyright, economic management, music education and training, music programs on radio and television, and music animation and games. However, from the perspective of application scenarios of works, in addition to the possibility of rural music appearing in music performances, digital music paid downloads and other scenarios, there can also be new imaginations and new thinking, such as the integration and development of rural music culture and cultural tourism industry is a new way.

II. A. 2) Development potential

As an important part of rural culture, Sichuan country music is recognized by the rural culture as a whole and by the audience, and is generally of a high level and has a strong dissemination power. As early as the beginning of the reform and opening-up period, there was no lack of high-level, high-quality Sichuan country music. The use of country music as a pilot marketing of rural culture, and its inclusion in the overall promotion of rural culture in the overall planning, has become more and more a standard for the promotion of rural culture in Sichuan. Country music as a “sucker” of the vanguard, so that the countryside cultural publicity more powerful and favorable at the same time with the countryside culture and mutual achievement, to achieve a “win-win”. Good music gives rural culture a greater charm, music more directly and centrally to strengthen the emotions and temperament of rural culture; at the same time, famous singers singing country music itself brings traffic, and then with the help of the music platform will be able to make the rural culture publicity to cover a larger number of people. Country music has become a very important part of Sichuan's rural culture promotion. Through the music of this more core expression, for the countryside culture to open up a very good publicity channels, which also means that the Sichuan country music recognition is very high.

II. B. Country Music Emotion Recognition Model

II. B. 1) Music file preprocessing

The country music files covered in this paper are mainly categorized into two formats, Mp3 and Midi.Mp3, as a digital audio compression format, is popular for its ability to significantly reduce file size while maintaining higher sound quality. For audio files, the preprocessing process used in this study contains steps such as resampling, pre-emphasis, frame-splitting, and windowing, etc. These preprocessing measures help to improve the quality and usability of the audio data, which makes the subsequently extracted music features more effective and reliable.

II. B. 2) Audio Feature Extraction

(1) Time Domain Characterization

Short time domain characterization of audio refers to the method of segmenting a signal over a period of time and extracting features in each time period. This method is usually applied to non-smooth signals or when the changes of the signal in different time periods need to be considered. In practical application, the commonly used short-time domain features include short-time energy, short-time over-zero rate, short-time autocorrelation function, short-time average amplitude difference, etc.

(2) Frequency domain features

The frequency domain features of music refer to the characteristics of music signals in the frequency domain, which are used to describe the spectral and frequency distribution of music. Common frequency domain features include spectral center of mass, spectral roll-off point, spectral flux, and so on.

(3) Cepstrum feature

The cepstrum feature is based on the principle that the human ear has different auditory sensitivity to sound waves of different frequencies. Research shows that the human ear is most sensitive to audio signals within the range of 200Hz to 5000Hz, and these frequencies play a crucial role in the clarity of audio. In order to more accurately simulate the auditory properties of the human ear, the characteristic parameter of cepstrum is introduced. The cepstrum is characterized by the Mel frequency cepstrum coefficient, which is closer to the auditory perception of the human ear and provides a powerful tool for the analysis and processing of audio signals.

II. B. 3) Bidirectional long and short-term memory networks

(1) Forgetting gate: f_t is used to control the amount of information that needs to be forgotten in the next moment about the internal state c_{t-1} in the previous moment, and is calculated as shown in equation (1):

$$f_t = \sigma\left(W_f x_t + U_f h_{t-1} + b_f\right) \tag{1}$$

(2) Input gate: i_t is used to control how much new information is saved into the candidate state c_t' at the current moment. The computation of the input gate consists of two main parts, the first part is how much information is saved in h_{t-1} and x_t under the action of the Sigmoid function, which is computed as shown in Eq. (2) [18], [19]. The second part is to carry all the information of h_{t-1} and x_t under the action of tanh function to get the candidate state c_t', which is calculated as shown in Eq. (3). For:

$$i_t = \sigma\left(W_i x_t + U_i h_{t-1} + b_i\right) \tag{2}$$

$$c_t' = \tanh\left(W_c x_t + U_c h_{t-1} + b_c\right) \tag{3}$$

(3) Output gate: o_t is used to control the amount of information that the external state h_t obtains from the internal state c_t at the current moment. The computation of the output gate is divided into three main parts. The first part is to determine the information retained by the internal state in the previous moment under the action of f_t and c_{t-1}; to determine the information that needs to be retained by the candidate state under the action of i_t and c_t', and the two are added together to get the internal state c_t in the current moment, the specific calculation is shown in equation (4). The second part is how much information of h_{t-1} and x_t is output under the action of Sigmoid function, and the output calculation is shown in equation (5). In the third part, the output gate o_t is used to control the internal state c_t that has been activated by the tanh function to get the external state h_t at the current moment, which is calculated as shown in equation (6). For:

$$c_t = f_t \odot c_{t-1} + i_t \odot c_t' \tag{4}$$

$$o_t = \sigma(W_o x_t + U_o h_{t-1} + b_o) \tag{5}$$

$$h_t = o_t \odot \tanh(c_t) \tag{6}$$

In Eq. (1) to Eq. (6) W_x, U_x, b_x within $x \in \{i, f, o, c\}$, W_x is the weight matrix of the current moment, U_x is the weight matrix of the previous moment, b_x is the bias vector, σ is the Sigmoid function, and $\tanh$ is the function of $\tanh$.

Assuming that the current moment is t, the input of the current moment is x_t, the forward layer and the backward layer denote the order and reverse order of time, and the hidden layer states are h_t^1 and h_t^2, respectively, and the output r_t of the BiLSTM network layer is computed based on the hidden layer states of the two directions, and the specific formulas of the computation process are shown in the following equations (7) to (9). For:

$$h_t^1 = f(U^1 h_{t-1}^1 + W^1 x_t + b^1) \tag{7}$$

$$h_t^2 = f(U^2 h_{t-1}^2 + W^2 x_t + b^2) \tag{8}$$

$$r_t = W^{t-1} h_t^1 + W^{t2} h_t^2 + b^0 \tag{9}$$

where $W^x (x \in \{1,2\})$ is the current moment weight matrix, U^1 is the previous moment weight matrix, U^2 is the next moment weight matrix, $W^{tx} (x \in \{1,2\})$ is the current moment state weight matrix of the hidden layer, $b^x (x \in \{0,1,2\})$ is the bias vector, $f(\cdot)$ is the activation function used by the hidden layer.

II. B. 4) Self-attention mechanisms

Self-attentive models often use the Query-Key-Value, or QKV (Query-Key-Value), model, as shown above, where the labeling outside each box is the number of rows and columns of the matrix [20], [21]. Assuming that the input two-bit feature data is $S^{D\times H}=\{s_1,\dots,s_D\}$, and the output is $A^{V\times H}=\{a_1,\dots,a_V\}$, the specific computation process is as follows.

(1) Firstly, the Q, K, V matrices are obtained from the input matrix S by linear mapping, and the computation process is shown in Eq. (10) to Eq. (12). For:

$$Q^{K\times H}=W_q^{K\times D}S \tag{10}$$

$$K^{K\times H}=W_k^{K\times D}S \tag{11}$$

$$V^{V\times H}=W_v^{V\times D}S \tag{12}$$

where W_q, W_k, W_v are linear mapping parameter matrices, and Q, K, V are query, key and value vector matrices, respectively.

(2) Q and K transpose matrix dot product to get the two-dimensional feature data similarity score matrix Score. the specific formula is shown in equation (13). For:

$$Score=\frac{K^TQ}{\sqrt{D}} \tag{13}$$

In this case, in order to prevent the problem of too small gradient caused by uneven SoftMax distribution when the dot product result is very large, the square root of the row scale of matrix Q, $\sqrt{D}$, is used to scale the dot product result to smooth the gradient.

(3) Use SoftMax to normalize the Score into a probability distribution matrix, and dot-multiply the probability distribution matrix with V to obtain the global feature matrix of music sentiment $A^{V\times H}$, which is calculated as shown in equation (14). For:

$$A=VSoftMax(Score) \tag{14}$$

II. B. 5) Identification process

BiLSTM+Self-Attention learning model is more suitable for tasks that require global modeling of input sequences and focus on important information, and the use of this model can meet the needs of the overall sentiment classification of music clips in this paper. The specific operation process is as follows:

(1) Word embedding representation: in order to retain the semantic and contextual information in the music file, reduce the data dimension and improve the modeling efficiency, firstly, the symbolic data obtained from the transcription of the audio slice data is mapped into the word embedding representation of the corresponding dimension.

(2) Extraction of temporal information: temporal information is extracted for the input word embedding sequence.

(3) Dynamically assigning weights: the BiLSTM output is weighted using SelfAttention to focus on important information at different locations in the input sequence.

(4) Obtaining emotion labels through the classification layer for music emotion recognition and classification of the overall vector.

II. C.Recognition model-based fusion scheme

II. C. 1) Building outreach platforms

Through the emotion recognition model of country music, the brand identity is constructed according to the emotional characteristics of different country music to avoid homogeneous competition. Organize experts, scholars, and musicians to deeply explore the emotional characteristics of characteristic rural music in various parts of Sichuan, and create a Sichuan music database, such as "Three Kingdoms", "Sichuan Opera", "Sichuan Folk Opera", "Sichuan Tibetan, Qiang, and Yi Music", "Southern Sichuan Miao Music", etc., to enhance the awareness, recognition and attractiveness of music brands, and the government shall encourage the creation and inheritance of local music culture through subsidies, incentive policies, project bidding, etc., and support the development of rural musicians and music groups. Establish a diversified promotion platform, including cooperating with the media, creating short music videos, launching online music exhibitions, etc., to enhance the influence of country music. The emotional needs of tourists can be satisfied, not only to realize the digital inheritance of intangible cultural heritage, but also to improve the level of rural revitalization and development.

II. C. 2) Create an emotional interaction scene for country music

Promote "culture + technology" innovation through rural music emotion recognition models to enhance the emotional interactive experience of tourists. The government can cooperate with technology companies to promote the development of digital culture and tourism content, and with the existing scenic facilities, the combination of Sichuan countryside music, the use of digital technology and virtual reality technology (VR), augmented reality technology (AR) and other means to build the countryside music emotional interactive scene, so that tourists immersed in Sichuan music to feel the unique charm of the (Blue Lotus and the National Highway 318 echo each other to a certain extent, and jointly drive the development of tourism, "Blue Lotus" after many years of singing, has become a cultural symbol, representing a kind of cultural symbols. Tourism development, "Blue Lotus" after years of singing, has become a cultural symbol, representing a kind of uninhibited, brave and the persistent pursuit of ideals, so as to produce a passionate emotional interaction with tourists). . Rural music cultural tourism projects should be encouraged to hold online live broadcasts or digital activities such as short video competitions on high traffic platforms (Tik Tok, Shutterbug, etc.) to enhance online emotional interaction. It also encourages the construction of rural cultural infrastructure, such as music classrooms, open-air stages, performing arts centers, etc., to enhance the reception capacity of cultural tourism. Third, encourage social participation, encourage social capital, private enterprises, public welfare organizations, etc. to participate in the construction of rural music cultural tourism projects, promote multi-party cooperation between the government and the society, form a diversified investment structure, reduce the pressure of government funds, and enhance market vitality. Through the combination with tourism, rural music can be more widely spread, so that more people understand and love Sichuan rural music. Looking ahead, under the leadership of the rural revitalization strategy, with the emotional interaction of rural music as the link and the cultural and tourism industry as the carrier, the prospects for the integrated development of rural music and cultural and tourism industry in Sichuan and even nationwide are full of hope.

III. Example Analysis of the Integration of Country Music and Cultural Tourism Industry

III. A. Analysis of model testing

III. A. 1) Data set and parameterization

(1) Data set

The Sichuan country music was obtained by the method of downloading from the Internet and stored in the form of dataset A according to the pre-processing method described above, which consists of 99 statistical acoustic features obtained by statistical computation from 9 spectral features, 10 frequency-related features and 9 energy/amplitude-related features.

(2) Parameter setting

The experimental settings of the model optimization algorithm are Adam, weight decay coefficient is 0.0005, learning rate is 0.0005 and 8 samples per batch, ReLU is used as the activation function in the process of constructing the model, and the number of training rounds, Epoch, is 200. The root mean square error (RMSE) is used as an indicator of recognition accuracy, and the R^2 coefficient of determination (R^2) is used as an indicator of the goodness-of-fit of the model.

III. A. 2) Analysis of ablation experiments

In order to verify the validity of the model and the role of each part of this paper, the music emotion features with different time distance lengths are extracted from the dataset A, so as to conduct experiments on the model of this paper and its ablation model. Firstly, LSTM is used as the baseline model, secondly, two-dimensional Bi and SA are added to LSTM, and finally the ablation models are obtained as LSTM, BiLSTM, and BiLSTM-SA, respectively. Recognition accuracy RMSE, goodness-of-fit R^2, and training efficiency are evaluated by the ablation experiments on the data with time-distance lengths of 88, 188, and 288. The RMSE and R^2 using the minimum Loss of each model during training are used for comparison, and the training efficiency (TE) is the ratio of the total training time to the total number of training rounds, i.e., the length of one round of training for the model in s. The results of the regression evaluation metrics based on the different distance lengths using each of the ablated models in terms of the potency dimension and arousal dimension are shown in Tables 1 and 2, and the models of the present paper on the data sets at the three different distance lengths The recognition performance of this paper's model in the three different distance length data sets is better than or close to the other three ablation models, and the recognition accuracy improves with the increase of the distance length, which proves that the fusion of SA and Bi is beneficial to improve the overall performance of this paper's model.

Table 1: Regression evaluation index results of each ablation model in valence dimension

Model	Distance Length=88			Distance Length=188			Distance Length=288		
	RMSE	R^2	TE/s	RMSE	R^2	TE/s	RMSE	R^2	TE/s
LSTM	0.0846	0.447	5.25	0.0916	0.494	9.08	0.0934	0.346	12.15
BiLSTM	0.0847	0.433	3.45	0.0844	0.506	4.66	0.0831	0.448	5.44
LSTM-SA	0.0825	0.508	5.44	0.0834	0.526	9.15	0.0819	0.577	12.22
BiLSTM-SA	0.0821	0.807	4.15	0.0816	0.561	5.09	0.0814	0.559	5.62

Table 2: Regression evaluation index results of each ablation model in arousal dimension

Model	Distance Length=88			Distance Length=188			Distance Length=288		
	RMSE	R^2	TE/s	RMSE	R^2	TE/s	RMSE	R^2	TE/s
LSTM	0.0846	0.608	5.25	0.0829	0.616	8.72	0.0846	0.587	12.11
BiLSTM	0.0806	0.626	3.72	0.0776	0.668	6.42	0.0757	0.674	5.72
LSTM-SA	0.0748	0.686	5.45	0.0737	0.708	9.05	0.0724	0.726	12.74
BiLSTM-SA	0.0746	0.638	4.05	0.0735	0.689	5.05	0.018	0.706	6.36

III. A. 3) Comparative analysis of different models

In order to further verify the effectiveness of the model performance, the recognition performance of different models (BiLSTM-SA, MLR, BLSMT-RNN, SVR, GPR, ConvNet_D-SVM) was comparatively analyzed based on the same evaluation indexes, and the results of the comparative analysis of the different models are shown in Table 3. The results show that compared with other methods, the method in the paper has the smallest RMSE and the largest R^2 in the music emotion recognition task, which can improve the music emotion recognition accuracy and the model fit is relatively good. Based on the model in this paper, the music emotion information law can be obtained from a longer distance in continuous time and thus improve the recognition accuracy and training efficiency, effectively realizing the emotion regression of music, providing a new feasible idea for the direction of music emotion recognition, and ensuring that the subsequent program of integration of Sichuan rural music and culture and tourism industry is more in line with the actual situation.

Table 3: Comparative analysis of different models

Model	Arousal		Valence	
	RMSE	R^2	RMSE	R^2
MLR	0.142	0.475	0.142	0
BLSMT-RNN	0.123	0.595	0.107	0.415
SVR	0.105	0.615	0.118	0.346
GPR	0.105	0.545	0.116	0.303
ConvNet_D-SVM	0.105	0.616	0.104	0.406
BiLSTM-SA	0.066	0.706	0.0762	0.559

III. B. User Satisfaction Analysis of KANO-based Convergence Solution

III. B. 1) User requirements

According to its intrinsic relevance, the similar needs are clustered to form a number of groups, and through analysis, a number of groups are re-clustered to form a middle group, and then from a more macro perspective, the similar middle groups are formed into large groups, and the following needs are finally determined through layer by layer clustering: forum exchange (X1), online activities (X2), use occasions (X3), inheritance history (X4), country music teaching video (X5), three-dimensional display of musical instruments (X6), display of musical instrument production technology (X7), introduction of cultural origins (X8) , Cultural Birthplace Travel Guide (X9), Simulated Performance (X10), and the needs are summarized in Table 4.

Table 4: Demand summary

Symbol	Symbol
Forum exchange	X1
Participation in online activities	X2
Introduction to Application scenarios	X3
Introduction to the Inheritance History	X4
Play the teaching video of blowing and fighting	X5
Three-dimensional display of Musical Instruments	X6
Display of musical instrument making techniques	X7
Travel maps and travel guides of cultural birthplaces	X8
Travel maps and travel guides of cultural birthplaces	X9
Simulated performance	X10

III. B. 2) KANO questionnaire design

The questionnaire design of the KANO model mainly focuses on the 10 requirements summarized in the previous article, and then obtains the user's attitude towards whether the requirement is realized or not by asking forward and reverse questions. The questionnaire survey is mainly divided into two parts: the first part is the acquisition of basic information, and at the same time, the question of the type of Jinqiao Blowing WeChat Mini Program expected by users is also set up, so as to analyze the different demand categories and priorities of users with different preference types; The second part is the KANO questionnaire, which asks questions about the realization of requirements from the front and back to obtain the user's feelings, and at the same time reflects its specific feelings in the form of a scale, which is divided into the following five measures: I like it very much, it should be so, it doesn't matter, I reluctantly accept, I don't like it very much, in order to ensure that each user understands its metrics consistently, the author explains the definition of the five metrics, that is, the degree, "I like it very much" means that it will make you satisfied and happy, and "of course" means that you think it should be. A must-have service, "it doesn't matter" means you don't particularly care about it, "reluctantly" means you don't like it, but it's acceptable, and "I don't like it" means it makes you feel dissatisfied and unhappy. Through the reliability and validity test, it can be seen that the KANO questionnaire meets the research requirements.

III. B. 3) KANO questionnaire data analysis

The 500 tourists were taken as the object of this research, and the collected questionnaire data were analyzed through the following methods: the KANO two-dimensional attribute categorization and the Better-worse coefficient analysis. The former is mainly based on the KANO evaluation results respectively against the table (as shown in Table 5, in which A is the charismatic characteristic, Q is the desired characteristic, M is the necessary characteristic, I is the non-differentiated characteristic, and R is the reversed characteristic) to identify the needs collected by the questionnaire and determine their demand attributes, and then the results will be statistically calculated, and the category with the largest percentage will be defined as the attribute category of such needs.

Table 5: Classification Table of Kano Demand

Quantity table	Like	It should be so	It doesn't matter	Be able to endure	Dislike
Like	Q	A	A	A	O
It should be so	R	I	I	I	M
It doesn't matter	R	I	I	I	M
Be able to endure	R	I	I	I	M
Dislike	R	R	R	R	Q

According to the above method, the questionnaire data of the 10 demands were imported into Excel for statistical analysis, and the statistical results are shown in Table 6. Through the data in the table, it can be seen that the 10 needs belong to charismatic characteristics (A) and expected characteristics (O), which provide data support for the calculation of Better-Worse coefficient below.

Table 6: Demand Classification

Demand	O	M	A	I	R	Demand type
X1	123	93	99	77	108	O
X2	127	85	95	74	119	O
X3	116	82	121	66	115	A
X4	127	75	129	61	108	A
X5	104	81	140	64	111	A
X6	113	91	122	60	114	A
X7	122	87	129	60	102	A
X8	114	80	133	59	114	A
X9	108	83	143	65	101	A
X10	123	99	93	65	120	O

III. B. 4) Better-Worse coefficient analysis

Better-Worse coefficient analysis method, mainly through the calculation of coefficients, to quantitatively analyze the satisfaction of each demand point, Better coefficient refers to the increase of a certain demand, the user's satisfaction will be enhanced, the closer the positive value is to 1, the stronger the impact on the user's satisfaction enhancement; Worse coefficient refers to the elimination of a certain demand point, the user's satisfaction will be reduced after the larger the negative value is, and its absolute value is closer to 1, the stronger the impact on the negative emotions of users [22]. The formula is as follows:

$$Better = (A + O) / (A + O + M + I) \tag{15}$$

$$Worse = (M + O) / (A + O + M + I) \tag{16}$$

According to the above method, the author has calculated the Better-Worse coefficient of the 10 requirements summarized earlier, where the Worse coefficient is the absolute value, and the analysis results are shown in Table 7. Then the Better-Worse coefficient analysis results are imported into the data visualization software Tableau to generate a quadratic quadrant diagram (shown in Figure 1). Where the Better value is the vertical coordinate, the Worse value is the horizontal coordinate, and the origin of the coordinate axis is (0.6122, 0.5232), i.e., the average value of the Better-Worse coefficient. Comprehensive data performance in the chart shows that the Q interval includes X7, the A interval includes X3, X5, X9, X8, X4, the I interval does not, and the M interval has X6, X1, X10, X2, which provides guiding references for the mechanism of integrating rural music and cultural tourism industry to promote rural revitalization in Sichuan.

Table 7: Satisfaction Analysis Scale

Demand	Better	Worse
X1	0.5663	0.5510
X2	0.5827	0.5564
X3	0.6156	0.5143
X4	0.6531	0.5153
X5	0.6272	0.4756
X6	0.6088	0.5285
X7	0.6307	0.5251
X8	0.6399	0.5026
X9	0.6291	0.4787
X10	0.5684	0.5842
Mean	0.6122	0.5232

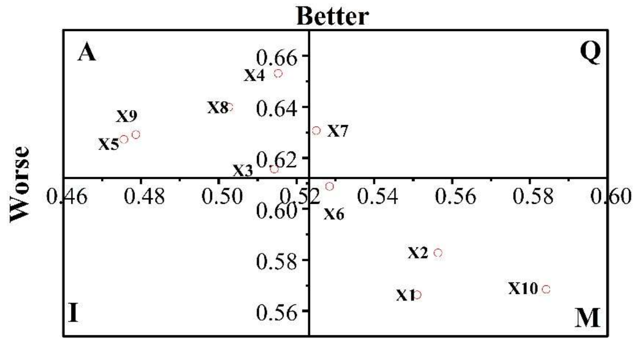

Figure 1: Generate the quarter graph limit

IV. Conclusion

In the integration process of rural music and cultural tourism industry, emotion recognition model plays a key role. By combining BiLSTM with the self-attention mechanism, the accuracy of emotion recognition of rural music can be effectively improved. The experimental results show that the recognition accuracy using this model is significantly improved compared with other traditional models, and in the emotion recognition task, the maximum RMSE is 0.0814, and the R^2 reaches 0.807, which indicates that the model has a high fitting excellence and has a good application value. In addition, the combination of country music and cultural tourism industry can not only enhance the emotional experience of tourists, but also provide a scientific basis for the optimization of cultural content through accurate emotional data analysis.

The promotion program based on the emotion recognition model can effectively promote the application of Sichuan country music in the cultural tourism industry. For example, the development of a rural music promotion platform based on emotional characteristics and the creation of emotional interaction scenes provide feasible paths for promoting rural revitalization. In future research, the application scope of the model can be further expanded and more innovative ways of combining digital technology can be explored, so as to realize the deep integration of the rural music industry and the cultural and tourism industry, and to promote the sustainable development of the rural economy.

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