



Research on Digital Communication Mode of National Traditional Sports Culture Based on BP Neural Network

Xiaofei Wang^{1*} 

¹Northwest Minzu University, Lanzhou, Gansu, 730000, China

Corresponding Author: Xiaofei Wang, y210730253@stu.xbmu.edu.cn

Abstract. Promotion of sports culture heavily depends on the strength of traditional national sports culture, which embodies the spirit of the nation. Today's research focuses on determining how to best utilize network technology to spread national traditional sports culture in the Internet era. This study investigates why it's so important to propagate national sports traditions, what's currently impeding the movement, and how the Internet can assist. In addition, it provides a theoretical reference for the design of national traditional sports culture communication mode in the Internet era and enhances the relevance and timeliness of national traditional sports culture communication by analyzing its fundamental principles and implementation strategies in the development of national traditional sports culture via network communication mode. Changing the path data takes to travel through a network can enhance its propagation. In an effort to shed light on how best to disseminate national traditional sports culture, this paper also analyzes and predicts the network hotspots associated with national traditional sports culture using a BP neural network.

Keywords: National Traditional Sports Culture; BP Neural Network; Transmission Mode;

DOI: <https://doi.org/10.14733/cadaps.2024.S16.214-226>

1 INTRODUCTION

China is home to numerous distinct ethnic groups, and over the course of the country's long history, each of these groups has developed and passed down its own distinct sports culture. Wrestling is one of many centuries-old, if not older, traditions. Mongolian wrestling, Tibetan wrestling, Yi wrestling, Zhuang wrestling, Yao wrestling, and Uyghur wrestling are some of these traditions. Using sports as a vehicle for cultural exchange across time and space, China's numerous ethnic minorities eventually created a multicultural fusion of traditional national sports cultures by expanding and integrating Chinese sports culture. Initially, this was accomplished by utilizing sports to communicate across time and space [13],[7],[5],[26],[2].

It is difficult, if not impossible, to capture in other mediums the positive aspect of national culture that is reflected in sports culture. This is because sports culture reflects the national spirit. The spiritual and cultural connotation of related incentives and development is generated by national-level sports competition. This integrates all cultural content into the traditional national culture of sports. The culture of national traditional sports consists of traditions, education, and morals that have been passed down through generations[25],[9],[19]. Good sportsmanship, rigorous physical preparation, and even seeking spiritual guidance in one's activities have been transmitted from one culture to another over many centuries. This has inspired a large number of descendants of Yan and Huang to surpass their parents' and grandparents' athletic accomplishments. This sense of national pride contributed to the development of sports in China and the country's overall growth. Therefore, national traditional sports culture is not only the pinnacle of cultural connotation, but also the conduit of national identity. National spirit is what stimulates national development in each period of history, and it includes tolerance, understanding, and mutual support between various nationalities. Together, these characteristics serve as a conduit for cultural exchange and sports culture. The force that propels and propels society forward[14],[27],[3],[17],[12].

Participation in modern competitive sports has skyrocketed, whereas participation in traditional national sports has decreased. People are gravitating toward more convenient forms of physical activity and entertainment, such as those provided by modern sports, causing traditional national sports to lose some popularity [21],[23]. In addition, it is undeniable that the influence of modern sports culture has hindered and slowed the spread of traditional Chinese national sports culture and contributed to the decline of a large number of traditional folk skills and folk sports.

Due to the fact that the majority of ethnic groups are unaware of their own cultural characteristics in the inheritance and development of their sports, the traditional sports culture of the majority of ethnic groups currently employs assimilation as a method of cultural transmission. It is difficult to pinpoint precisely what about sports culture makes it so entertaining and popular as a pastime and way to spend one's free time among so many individuals. Inadequate processing of the model of cultural communication is inextricably linked to the occurrence of this circumstance[11],[22],[15]. If it is not possible to differentiate the characteristics, content, skills, and styles of all ethnic sports events, the presentation of traditional information regarding cultural aspects of sports played by ethnic groups will be severely hindered. Consequently, the effectiveness of communication in the physical world will continue to inevitably decline over time. The public's declining interest in historically significant national sports has led to a concurrent decline in the evaluation of sports' cultural significance[18]. The general public suffers from a severe lack of discrimination when it comes to traditional national sports, and they also lack an understanding of the sports' characteristics and cultural aspects. Because the methods of cultural presentation have a propensity to assimilate and the specific cultural characteristics have not been effectively stimulated, the majority of non-members of the ethnic group lack a solid understanding of the traditional sports culture. The widespread dissemination of the information prompted a degree of opposition [4].

Due to the lack of available communication channels, traditional national sports cultures lack the large-scale competition events and network communication channels that are present in modern sports cultures. The development of modern sports has been aided by the widespread availability of network technology, which has enabled the rapid dissemination of information. In an effort to speed up the development of Chinese martial arts, the model of growth-oriented network marketing has been implemented[8], [15], [24]. The analysis of the current state of affairs reveals that various forms of competition and the manner in which network channels are utilized for communication have increased their relevance. This has significant implications for the spread of sports culture and the rate at which it is adopted by the general public. If the utilization rate of Chinese traditional national sports culture for online propaganda media is still in its infancy, it will be challenging to use many

ethnic sports as a force for cultural dissemination. Because there are so many different ethnic sports, this is the case. Successful construction[29].

This study investigates why it is so important to widely disseminate national sports traditions, what is preventing the movement from advancing at the moment, and how the Internet can help. In addition, it provides a theoretical reference for the design of the national traditional sports culture communication mode in the Internet era and improves the relevance and timeliness of national traditional sports culture communication by analyzing the fundamental principles and implementation strategies involved in the development of national traditional sports culture through the use of network communication mode. The propagation of a network can be enhanced by modifying the path that data takes through a network when it is sent. In addition, BPNN is recommended for analyzing and forecasting the trend toward the popularization of national traditional culture.

2 THE ADVANTAGES OF INTERNET IN THE DISSEMINATION OF TRADITIONAL NATIONAL SPORTS CULTURE

2.1 Expanding Influence

The proliferation of networks has resulted in an improvement in the infrastructure for information exchange, which has increased the rate at which cultural materials are exchanged. Using network dissemination technology allows traditional national sports cultures to rapidly spread across the globe. Because the general public is paying more attention to online media, such as news and videos, culture will be more effectively disseminated through these channels. Moreover, traditional aspects of the nation's sporting culture are poorly understood and only mastered by a small percentage of the population. If we are serious about elevating the status of our nation's traditional sporting cultures, it is imperative that we utilize the available online communication channels effectively. Once the technical aspects of network communication have been mastered, the media industry will be able to benefit from network communication's advantages. Grow in all directions and continue to multiply indefinitely. It is necessary to utilize network media, such as self-media, communication software, and public platforms, to maximize the benefits of network technology in order to enhance and expand the influence of national traditional sports culture and achieve the desired effect of dissemination. This is required to achieve the desired effect of dissemination[6].

2.2 Contribute to In-Depth Understanding

The structure of sporting competitions limits the scope of the traditional sports cultures of individual countries. In the process of dissemination, the output effect of sports culture will suffer, and the cultural image of each traditional national sporting event will not be fully restored. This will have a negative effect on the culture of sports as a whole. One will not be able to locate easily accessible indicators of cultural identity. Consequently, it is crucial to prioritize the promotion of the cultural aspects of sports in order to identify the distinctive features of each country's traditional sports culture. The essential aspects of traditional sports, such as their purpose, aesthetics, and technical aspects, defy simple communication via text or images alone. , animation, graphic and text collocation, and other modes, comprehensively develop the central content of cultural characteristics of sports projects and create a cultural image that resonates with the senses and sensibilities of contemporary viewers[10]. This can be achieved in the following ways: Consequently, there is a significant technical advantage to promoting the profile of national traditional sports cultures via network technology. This benefit results from the advantageous nature of network technology. This technological advantage enables the portrayal and expression of the defining characteristics of a nation's traditional sports culture and guides the general public in differentiating between these characteristics. It is essential to draw attention to the discrimination that is ingrained in the culture

of national traditional sports so that the message can be disseminated as widely and effectively as possible.

2.3 Expand the Propagation Path

In order for the general public to fully appreciate the allure of traditional sports cultures from their respective countries, cultural exchange must occur on a platform that facilitates high levels of communication and easy communication. As a result, it is more conducive to enhancing the effect of communication to create a platform for information interaction with the aid of Internet technology, in addition to the information interaction that has traditionally been a part of national sports cultures. The information interaction mode that has been developed by a large number of network platforms is not only capable of publishing and retrieving visual data, but also of transmitting video over the internet[1], [30], [20]. To enhance the interactivity of national traditional sports culture, it is necessary to enhance not only the experience of information interaction, but also the speed at which national traditional sports culture can be detected, located, and perceived. Only then will national traditional sports culture's interactivity be enhanced. Video's emergence as a medium has made possible the most potentially fruitful strategy for enhancing these kinds of interactions. The fundamental technical information can be published on the network communication platform using video. This can significantly enhance the audience's understanding of the subject when simple graphic information is insufficient to describe sports. On the interaction platform, audience members are able to pose a variety of questions regarding the ongoing activities. As a result of this information's dissemination, the audience will have a deeper understanding of the training philosophy underlying the sport, as well as a greater capacity for effective communication[28].

3 METHOD

During the process of Internet topic dissemination, the dissemination subject creates and transmits information in a variety of forms. These forms include original creation, forwarding, commenting, liking, collecting, and other similar activities. All of these forms of information transmission can be quantified thanks to the big data characteristics and quantifiability of the Internet. The ease with which information can be distributed via the Internet has repercussions. Therefore, the most important challenge in modeling the law of network topic dissemination is figuring out how to take into account the comprehensive set of factors that can affect the spread of a topic online and determining which variables are the most crucial. To begin, information such as originality and forwarding, which have a direct impact on the degree to which online topics are disseminated, is the primary data used to determine the core variables of online topic dissemination. This is done by looking at the core variables of online topic dissemination. Information from secondary sources is used to determine the most significant contributors to the dissemination of topics across networks. After taking into account all of the information that is currently accessible, which includes data from primary and secondary sources, we are able to define the network topic dissemination volume as

$$F = \sum P(a_i, b_i, c_i) x_i + \sum Q(a_i, b_i, c_i) y_i \quad (1)$$

where x_i and y_i are original and forwarded information, $P(a_i, b_i, c_i)$ and $Q(a_i, b_i, c_i)$ are the corresponding weights

We can then infer the extent to which external factors are at play through data verification, decide whether or not to apply the derivative model, and use this information to study the network topic dissemination stage, the propagation trend prediction, and other mechanical aspects of the research process.

Figure 1 displays the precise classification based on the literature¹² used for the normal model and derivative model in this paper.

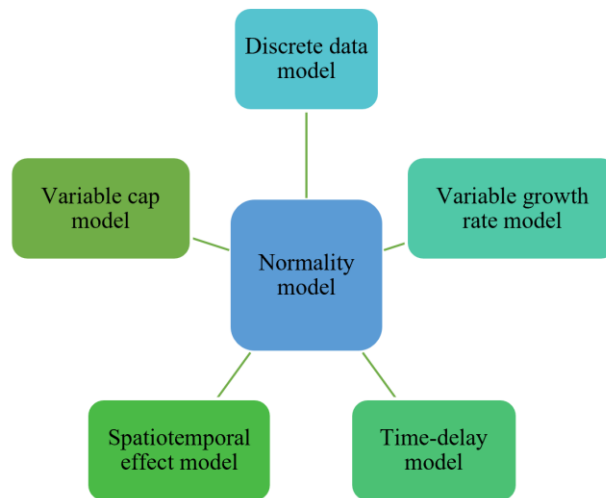


Figure 1: Different demonstrations of national traditional sports culture communication models.

Knowing the communication trend of national traditional sports culture on the Internet is essential to the ability to both predict the future state of Internet topics and interpret the propagation phenomena of various Internet topics. This ability is dependent on having this knowledge. The process of forecasting involves a wide variety of considerations, including the type of forecast, the impact of the forecast, the methodology that is utilized, and many other things. When trying to forecast how topics will spread across networks, the following factors are extremely important to take into account.

The primary problem is that it is challenging to make accurate predictions in the present moment. Because of the lightning-fast rate at which data can be produced and disseminated in the big data environment, accurate and timely predictions of network topic trends are absolutely necessary for the process of disseminating the data. Therefore, after dynamically grabbing the data for the network topics, it is necessary to carry out dynamic data modeling and prediction, and then realize dynamic prediction of network topics. This is done after dynamically grabbing the data for the network topics.

The second approach combines the use of analysis and forecasting. The study of the law of the spread of topics online requires analysis and forecasting as two essential links in the chain of inquiry. The degree of accuracy with which one is able to forecast the trend of online topic propagation is inversely proportional to the amount of convergence error that exists between the analysis model and the prediction model. We use a model of the network topic propagation law and carry out a mechanism analysis in order to analyze and predict the trend of network topic propagation. One example of this type of analysis is the practice of splitting the propagation stage.

Lastly, but by no means least, there is the issue of determining the primary condition. The Internet provides information on a wide variety of subjects. If you want your predictions of future trends to be as accurate as possible, you must select the baseline from which your predictions will be generated with considerable care. On this premise, the occurrence time of the event is chosen as the starting point for the prediction of emergent network topics, such as emergencies. On the other side, the notion of data from less to more is applied to non-emergent network subjects that are often

and persistently discussed by internet users. A time with a lower numerical value should be picked as the forecast's starting point.

To start, we subject the data to a normalization procedure. This normalization approach is useful when dealing with a vast amount of data since it transforms the raw data into a normal distribution with a mean of zero and a variance of one.

$$x = \frac{x_i - E(x)}{s_i}, \quad (2)$$

where $E(x)$ denote the average of x_i , s_i denote the standard deviation of data.

Backpropagation (BP) Neural Network is a supervised learning approach. It's a multilayer, nonlinear feedforward trained error back propagation network. The network has an input, implicit, and output layer. BP learning involves both forward and backward error signal propagation. First, data is forwarded. Figure 2 shows BP neural network forward propagation with back propagation.

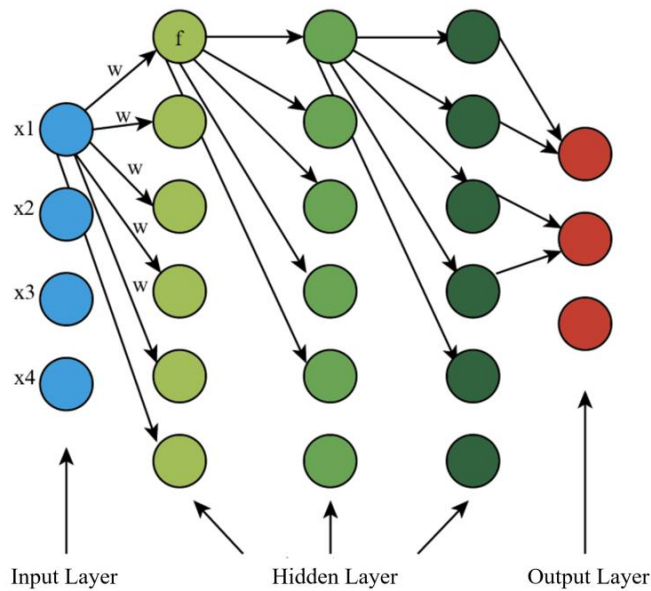


Figure 2: The structure of BP neural network.

Each neuron cell y_i has a corresponding weight w_{ik} . $net1_k$ is the output value, b_i is the threshold b_i , $net1_k$ is obtained by

$$net1_k = \sum_{i=1}^n w_{ik} y_i + w_{nk} y_n + b_k, \quad (3)$$

Sigmoid function is used to act $net1_k$

$$z_k = f(net1_k) = \frac{1}{1 + \exp(-net1_k)}. \quad (4)$$

In the following step, the output layer receives information via the input layer, which is derived from the implicit layer.

$$net2_j = \sum_{k=1}^n v_{kj} z_k + b_j, \quad (5)$$

The final output is similar as Equation (4)

$$z_k = f(net2_j) = \frac{1}{1 + \exp(-net2_j)}. \quad (6)$$

The gradient conduction between different layers is

$$\Delta w_{ik} = -\eta \frac{\partial E}{\partial net1_k} y_i \quad (7)$$

$$w_{ik} = w_{ik} + \Delta w_{ik}. \quad (8)$$

After the network topic propagation law model has been developed, the predictability characteristics of network topics are utilized in an all-encompassing manner in order to forecast the network topic propagation trend. Next, one can utilize the data to create reasonable assumptions about the future trajectory of network topic propagation, which makes it possible to determine the propagation stage in advance. Second, when it comes to newly-emerging network topics like crises, dynamically anticipating the future trend of network topics enables the early detection of phenomena like reversal and derivation in the network's topics. This is important because these topics can have a significant impact. The capacity to foresee the future topic propagation patterns of a network makes it possible to identify a large number of topic cycles.

4 RESULT

The non-emergent online topic of "traditional culture" has been a matter of heated and continuous conversation among netizens ever since 2018, when it first became a topic of interest in this context. It would appear that there is a pattern to the topic of "traditional culture" on the internet. This article does primary research by analyzing recent data from Weibo pertaining to the hashtag "traditional culture" in order to assess the relevance and applicability of the model. The date range for the data selection window is: January 1st to January 31st, 2020, and feedback on the issue dispersion on the internet will not be taken into consideration at this time, likes, favorites, and other information, the change in the quantity of communication is depicted in Figure 2, which only takes into consideration the number of original posts and reposts.

This paper use MSE, MAE and RMSE to judge the physical fitness prediction performance model.

$$MSE = \frac{1}{n} \sum_{i=1}^n (o_{true} - o_{predict})^2 \quad (9)$$

$$MAE = \frac{1}{n} \sum_{i=1}^n |o_{true} - o_{predict}| \quad (10)$$

$$RMSE = \sqrt{\frac{1}{n} \sum_{i=1}^n (o_{true} - o_{predict})^2} \quad (11)$$

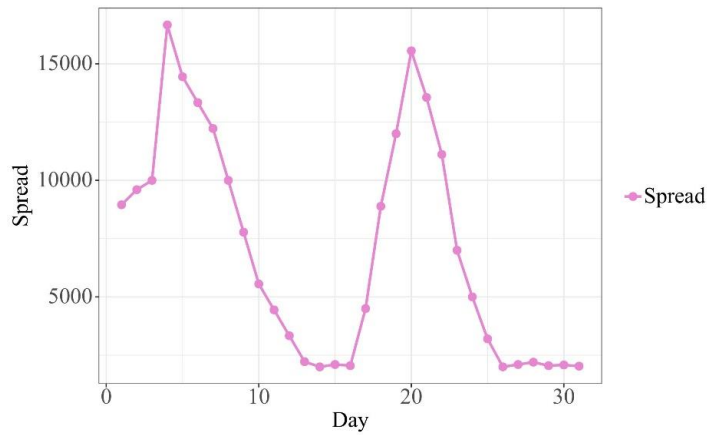


Figure 3: Broadcasting trend of the communication volume of traditional culture-related topics.

Run the model in this paper to get the prediction results, as shown in Figure 4. Obviously, the method in this paper has better prediction performance, and the trend of the predicted topic spread is basically consistent with the original data.

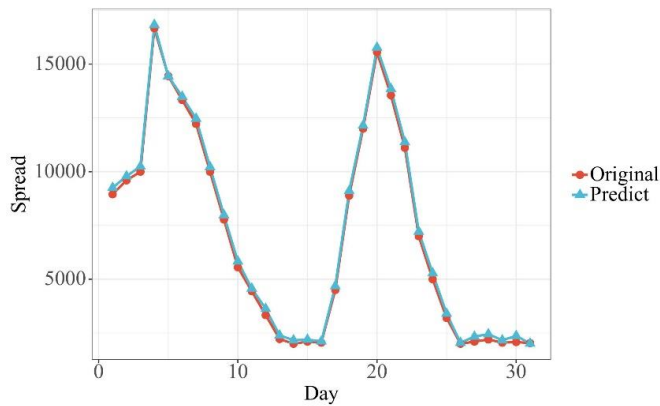


Figure 4: Prediction result graph of BP neural network.

In this paper, ARIMA and GM (1, 1) models are selected for comparison, and the prediction curves of related methods are shown in Figure 5.

Obviously, the prediction curve of the method in this paper is closest to the original curve. Further, we choose the above three indicators to compare the prediction performance of different methods, as shown in Figure 6.

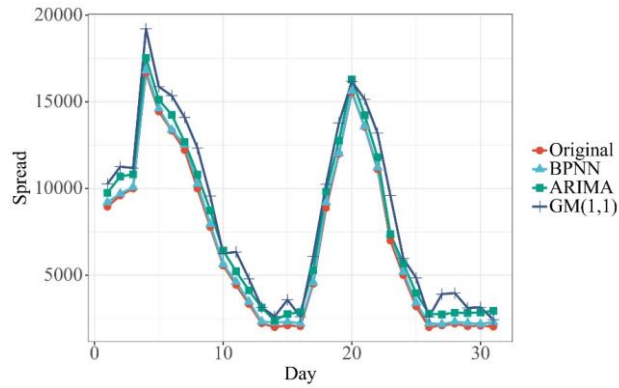


Figure 5: Prediction result graph of BP neural network, ARIMA, and GM(1,1) models.

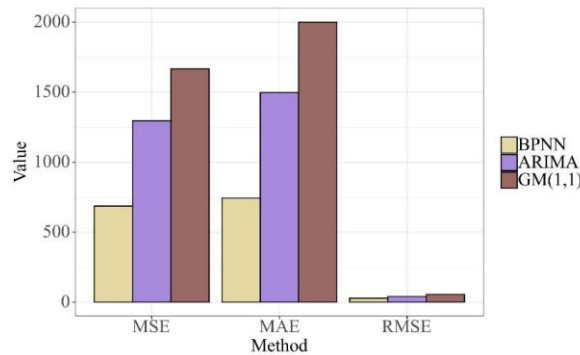


Figure 6: Comparison of different methods on MSE, MAE and RMSE.

As can be seen from Figure 6, on the three indicators, BPNN is due to two comparison algorithms. Since BPNN is affected by parameter initialization, in order to ensure the fairness of the comparison, we run different algorithms 20 times, and compare the RMSE values predicted by different algorithms under 20 times, as shown in Figure 7.

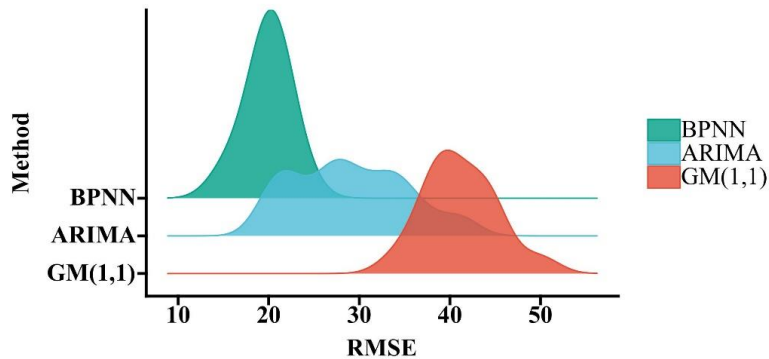


Figure 7: Comparison of different methods on RMSE of 20 trails.

It can be seen that both the median and the average value of BPNN are significantly lower than other algorithms, and the fluctuation of BPNN is small.

5 DISCUSSION AND CONCLUSION

Spam's negative consequences on the digital era of today are attributable to the widespread consumption of cultural goods that reinforce stereotypical views. In order to encourage people to view content online, network technology is required, which needs the incorporation of traditional national sports' novelties and the production of cultural image content that is both original and imaginative. When sensory innovation is insufficient, the traditional national sports culture runs the risk of being watered down; its distinctive image will be greatly watered down, and the influence of the network communication mode will not be fully realized. In order to establish the network communication method of national traditional sports culture, it is required to first consider the network audience's sensory experience. This can be achieved through innovating cultural image packaging, emphasizing the image qualities of national traditional sports culture, and avoiding unwanted information such as spam.

Each movement to revive a national sport has its own unique cultural and historical roots, as do each of the campaigns. Due to the importance of creating the historical propaganda dimension of national traditional sports projects in the era of Internet technology for increasing publicity channels and packaging cultural pictures, this sector requires a great deal of special consideration. Utilizing the cultural backdrop of the project to increase awareness of the sport at hand is one of the most crucial and vital components of establishing the cultural label for a sporting event. We may be able to increase interest in and support for these events by giving them names that reflect their profound cultural roots. This will also improve the positive effects of online communication and reinforce our cultural ties to the past. The rising prominence and visibility of sports in contemporary popular culture.

It cannot be denied that the sports practiced in a country are played for athletic competition, despite the fact that the traditional sports culture of a country can provide a fascinating peek into the larger society. On the other hand, if the major sports techniques and talents of traditional national sports are not widely disseminated owing to a lack of practical direction for the marketing content in the internet channel, the final national traditional sports will also have an effective cultural influence. get harmed In other words, the cultural experience that sports bring in and of itself cannot be overlooked, despite the numerous practical benefits of network connection. One of the most essential factors for evaluating this experience is the degree to which the target audience participates in and can provide an objective explanation for the comprehension of a particular traditional national sport. This information is vital for determining the success and longevity of initiatives to transmit traditional sports from one country to another.

To satisfy the demands of the vast majority of internet users in terms of their sensory experiences, we must construct a novel interpretation of the national traditional sports culture. To bring the culture of national traditional sports to the attention of the public and to ensure that the propaganda content and communication techniques are accepted by the audience, it is essential to employ network technology in order to broaden the communication path and display the culture's brand-new image. In addition, this will ensure that the audience accepts the propaganda's message. To achieve the desired effect of communication and satisfy the sensory needs of the majority of the network audience, one must design a new image of national traditional sports culture with an eye toward new technologies and new models, in accordance with the fundamental principles of innovation and novelty in the network communication process. This is required in order to achieve the intended result.

The success of efforts to promote sports culture is highly reliant on the vitality of traditional national sports cultures, which are representative of the character of the nation. In this day and age, the primary focus of research is on determining how national traditional sports cultures can be disseminated most effectively through the utilization of network technology. This study investigates the reasons why it is so important to spread national sports traditions, the factors that are currently preventing the movement, and the ways in which the Internet can help. In addition to this, it offers a theoretical reference for the design of a national traditional sports culture communication mode in the Internet age. This not only improves the relevance and timeliness of national traditional sports culture communication, but it also provides a theoretical reference for the design of a national traditional sports culture communication mode in the Internet age. Increasing the speed at which data travels through a network by altering the path it takes to get there is one way to improve its propagation. Utilizing a BP neural network, this article not only investigates and provides predictions regarding the network hotspots associated with national traditional sports culture, but it also does so in an effort to shed light on the best way to disseminate national traditional sports culture. National traditional sports can be made more accessible to a global audience, transcending geographical and cultural boundaries. This not only ensures the preservation and celebration of our cultural heritage but also promotes a deeper understanding and appreciation of these traditional sports, fostering a sense of cultural identity and unity

Xiaofei Wang, <https://orcid.org/0000-0002-4571-3050>

REFERENCES

- [1] Chen, D.; Chen, Q.: Research on Inheritance and Education of Traditional Sports Culture of Ethnic Minorities, 2017 International Conference on Innovations in Economic Management and Social Science 2017, Atlantis Press, 2017, 1069-1074. <https://doi.org/10.2991/iemss-17.2017.201>
- [2] Chen, L.; Jagota, V.; Kumar, A.: Research on Optimization of Scientific Research Performance Management Based on BP Neural Network, International Journal of System Assurance Engineering and Management, 2021, 1-10. <https://doi.org/10.1007/s13198-021-01263-z>
- [3] Dai, J.: Predicament and Outlet of Short Video Communication of National Traditional Sports in 5G Era, International Journal of Social Sciences in Universities, 126.
- [4] Deng, K.: Under the background of One Belt And One Road, Chinese Taoist traditional sports and Health Culture studies on International Communication, The Journal of the International Society of Chinese Health Practices, 2021. <https://doi.org/10.1155/2021/5538434>
- [5] Deng, X.; Kim, I.T.; Shen, C.: Research on Convolutional Neural Network-Based Virtual Reality Platform Framework for the Intangible Cultural Heritage Conservation of China Hainan Li Nationality: Boat-Shaped House as an Example, Mathematical Problems in Engineering, 2021, 2021.
- [6] Du, Z.; Luo, M.: Research on Short Video and Communication Innovation of Traditional Ethnic Minority Sports Culture, Forest Chemicals Review, 2022, 913-919.
- [7] He, X.; Tian, S.: Analysis of the Communication Method of National Traditional Sports Culture Based on Deep Learning, Scientific Programming, 2022, 2022. <https://doi.org/10.1155/2022/9697014>
- [8] Hu, Q.: Discussion on the Traditional Sports Teaching Methods in China, 6th International Conference on Social Science, Education and Humanities Research 2017, Atlantis Press, 2018, 200-204. <https://doi.org/10.2991/ssehr-17.2018.48>
- [9] Li, T.; Song, J.: Research on Promotion Methods of Positive Mental Health of College Students Under the Model of Ecological Sports Teaching, Ekoloji, 28(107), 2019, 1861-1868.
- [10] Li, Y.; Yuan, T.; Chen, J.: Inheritance and Development of National Traditional Sports Culture in the Context of Big Data--Take TikTok as an example, 2022 7th International Conference on

Computer-Aided Design & Applications, 21(S16), 2024, 214-226

© 2024 U-turn Press LLC, <http://www.cad-journal.net>

- Financial Innovation and Economic Development 2022, Atlantis Press, 2022, 3249-3252. <https://doi.org/10.2991/aebmr.k.220307.534>
- [11] Li, Y.; Yuan, T.; Yu, K.: Communication Effect of Traditional Minority Sports Based on Artificial Intelligence, 2020 International Conference on Data Processing Techniques and Applications for Cyber-Physical Systems, Springer, Singapore, 2021, 759-765. https://doi.org/10.1007/978-981-16-1726-3_93
- [12] Lv, D.: Network Propagation Model of Chinese Traditional Sports in Globalization Based on Differential Equation, Proceedings of the 2nd International Conference on Green Communications and Networks 2012, 2012, 1, Springer, Berlin, Heidelberg, 2013, 431-437. https://doi.org/10.1007/978-3-642-35419-9_50
- [13] Lv, H.: Martial arts Competitive Decision-Making Algorithm Based on Improved BP Neural Network, Journal of Healthcare Engineering, 2021, 2021. <https://doi.org/10.1155/2021/9920186>
- [14] Ming, Z.: Research on the Transmission Mode of National Traditional Sports Culture from the Perspective of Intangible Cultural Heritage Protection, International Core Journal of Engineering, 6(5), 2020, 84-87.
- [15] Porchet, P.: The Transmission Modes of Taijiquan: Traditional Martial Art, Competitive Sport and the Political Reappropriation of Culture in Modern China, The Routledge Handbook of Sport in Asia, Routledge, 2020, 45-53. <https://doi.org/10.4324/9780429061202-7>
- [16] Porchet, P.: Translating Chinese Traditional Culture into institutional Sport: An ethnographic study of taijiquan in China, Martial Arts Studies, 12, 2022, 33-46. <https://doi.org/10.18573/mas.155>
- [17] Qian, G.: Study on Protection and Inheritance of Traditional Sports Culture, Proceedings of the 2nd International Conference on Green Communications and Networks 2012 GCN 2012, 4. Springer, Berlin, Heidelberg, 2013, 293-299. https://doi.org/10.1007/978-3-642-35440-3_38
- [18] Shen, Y.; kun Ye, L.; Zhang, S.: et al. National Traditional Sports in College Campus Sports Culture Research, 2013 International Conference on Educational Research and Sports Education 2013, Atlantis Press, 2013, 244-246. <https://doi.org/10.2991/erse.2013.70>
- [19] Shi, X.: Tourism culture and demand forecasting based on BP neural network mining algorithms, Personal and Ubiquitous Computing, 24(2), 2020, 299-308. <https://doi.org/10.1007/s00779-019-01325-x>
- [20] Tan, X.: On Interaction between Times Changes and National Inheritance of National Traditional Sports Culture, 3rd International Conference on Management Science, Education Technology, Arts, Social Science and Economics, Atlantis Press, 2015, 292-295. <https://doi.org/10.2991/msetasse-15.2015.66>
- [21] Tan, Z.; Tan, Q.; Nguyen, O.: The Influence of Folk Sports Culture on Rural Governance Based on Computer Sensor Network, Wireless Communications and Mobile Computing, 2022, 2022. <https://doi.org/10.1155/2022/7606174>
- [22] Tie, L.; Ming-Liang, K.; Xin-Hui, N.: Notice of Retraction: The protection and development for traditional sports of Xinjiang minority nationality, 2010 International Conference on Education and Management Technology. IEEE, 2010, 678-681. <https://doi.org/10.1109/ICEMT.2010.5657566>
- [23] Wang, H. S.; Yang, F. J.; Fang, Y. L.: Research on the Development Mode for Ethnic Minority Traditional Sports Cultural Resources, Advanced Materials Research, Trans Tech Publications Ltd, 361, 2012, 1761-1764. <https://doi.org/10.4028/www.scientific.net/AMR.361-363.1761>
- [24] Wang, Y.: Study on the Main Obstacles and Countermeasures of the Inheritance and Development of Chinese Minority in Traditional Sports, 2017 5th International Education, Economics, Social Science, Arts, Sports and Management Engineering Conference 2017, Atlantis Press, 2018, 50-53. <https://doi.org/10.2991/ieesasm-17.2018.11>
- [25] Wang, Z.: Risk Prediction of Sports Events Based on Gray Neural Network Model, Complexity, 2021, 2021. <https://doi.org/10.1155/2021/6214036>

- [26] Xiao-wei, X.: Study on the Intelligent System of Sports Culture Centers by Combining Machine Learning with big Data, *Personal and Ubiquitous Computing*, 24(1), 2020, 151-163. <https://doi.org/10.1007/s00779-019-01307-z>
- [27] Yue, J.; Ye, Y.; Wei, Z.: et al. The Design and Implementation of National Traditional Sports professional Teaching Resources Platform Based on MVC, 2016 International Conference on Intelligent Transportation, Big Data & Smart City IEEE, 2016, 277-280. <https://doi.org/10.1109/ICITBS.2016.111>
- [28] Zhang, J.; Liu, Y.; Zhang, L.: Research on Teaching Materials of National Traditional Sports in School Physical Education, *structure*, 5(4), 2022, 1-4. <https://doi.org/10.25236/FEER.2022.050401>
- [29] Zhang, Y.: The Analysis of the Cultural Changes of National Traditional Sports in the Structure Model of Achievement Motivation, International conference on Big Data Analytics for Cyber-Physical-Systems. Springer, Singapore, 2020, 648-655. https://doi.org/10.1007/978-981-33-4572-0_93
- [30] zhi Zong, Y.; wu Mou, S.: Innovating the Launch Mode of Sunshine Sports & Improving Students' Practice Abilities on PE—A Case Study of Yan'an University, //2013 International Workshop on Computer Science in Sports. Atlantis Press, 2013, 133-135. <https://doi.org/10.2991/iwcss-13.2013.37>