Inheritance pattern recognition method of national traditional sports culture in e-commerce platform

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Abstract

An E-commerce platform is a new network platform in which information push can improve the speed of information analysis. The traditional pattern recognition ability of cultural heritage recognition is poor, and the amount of recognition data is too small. To solve this problem, the e-commerce platform is used to realize the feature recognition of national traditional sports culture. Through the analysis of national culture data, online information feature extraction is completed to identify the lifestyle, religious belief, ethics and festival customs of national traditional sports culture, and determine the inheritance mode of National Traditional Sports culture in the e-commerce platform. The experimental results show that the recognition method of e-commerce platform has strong recognition ability, and can better identify the inheritance pattern

Keywords. National Culture; Traditional Sports; e-Commerce; Business Platform; Inheritance Mode; Pattern Recognition

Introduction

There are many ways to inherit the national traditional sports culture, which can be divided into the material way, spiritual way and behavior way. From the first day of its birth, e-commerce has brought a huge impact on traditional business activities. Its outstanding sign is to increase trade opportunities, reduce trade costs, simplify trade processes and improve trade efficiency. E-commerce has greatly changed the business model and led to the change of economic structure. In developed countries, the development of e-commerce is unprecedented, and trading through the Internet has become a trend. With the development of information network technology, e-commerce is becoming more and more mature. It expands from the Internet to the enterprise internal network and value-added network. It is becoming more and more networked, information-based and electronic. It has become an upgraded version of traditional business activities. After entering the 21st century, the Internet is becoming more and more open. Buyers and sellers can exchange various kinds of trade on the Internet without meeting. E-commerce has become an indispensable way of people's life. Whether it is commercial activity, financial activity or transaction activity, it must involve e-commerce (Diwandari & Hidayat, 2021).

For e-commerce,

scholars from different countries have conducted different studies and given different definitions. At present, the typical forms of e-commerce are ABC, B2B, B2C, C2A (C2G), O2O, etc. E-commerce platform is one of the products of e-commerce, and it is also the hardware component of e-commerce. The seller can set the network marketing scheme on the platform, and the buyer can search the information needed through the platform.

The use of e-commerce can be a good heritage of national sports culture, so this paper makes an in-depth study on the inheritance pattern recognition method of national traditional sports culture in e-commerce platform.

Feature extraction of national traditional sports culture by e-commerce platform

At present, almost all e-commerce companies have their own feature extraction methods, which can be divided into simple and complex. The simple way is the e-commerce platform in the analysis of national traditional sports culture, according to the information of sports culture, targeted feature extraction. Complex extraction means that the system records the contents and websites of all national

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traditional sports culture, and selects the websites with obvious characteristics, which are screened in the database, so as to extract the characteristics of national traditional sports culture. Both single feature extraction method and complex feature extraction method have the problem of insufficient precision and breadth (Alsaad & Taamneh, 2019) . Therefore, this paper studies the feature extraction method of a new e-commerce platform for national traditional culture, and identifies the national traditional culture by analyzing the website data, and judges which type of culture it belongs to (Heijnen et al., 2020). The workflow of e-commerce platform for feature extraction of national traditional sports culture can be divided into three steps: (1) national culture data analysis, (2) online extraction, (3) extraction process implementation.

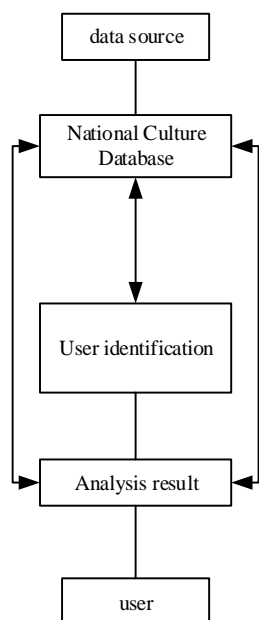### Data analysis of national culture

Figure 1 Flow chart of national cultural data analysis

As shown in Figure 1, for the general national traditional sports culture, the data flow can be analyzed, and the processing process is completed within the website platform (Thành & Công, 2019) The final feature extraction result is not a single recognition method to achieve (Lobacheva & Yadova, 2020).

The extraction process has the following steps: ① find the clustering results; ② obtain the commodity set; ③ find the relevant rules; ④ list the clustering result table; ⑤ select the push content (Vera-Baquero et al., 2021).
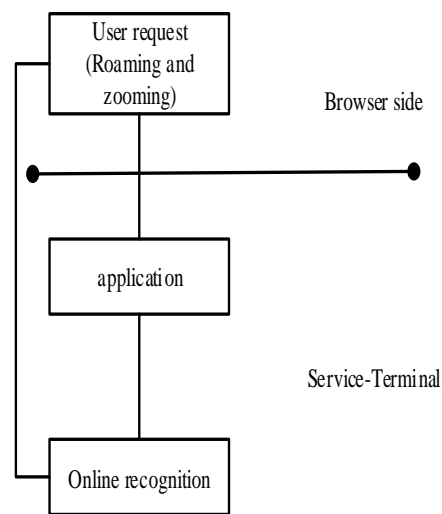
Online extraction

Figure 2 Online extraction process

As shown in Figure 2, online extraction mainly judges whether the extracted content of national traditional sports culture meets the requirements. Due to the convenience of online extraction, there are a lot of extracted content and data, and each page needs to reach a fixed number (Abumalloh et al., 2020). The output data should be integrated with the content of the association table, and the appropriate results can be output to the client. In the design of the system, multiple standards will be set, but the time is limited, so it is necessary to quickly transmit the extracted content and display different feature recognition results on different clients (Hidayatno et al., 2019).
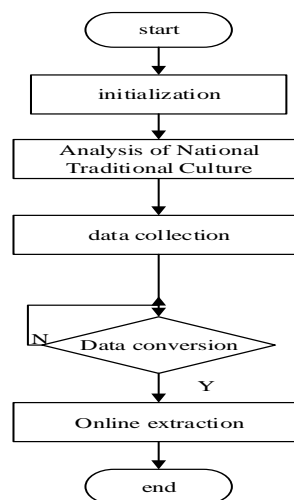
Extraction process implementation

Figure 3 Implementation of extraction process

As shown in Figure 3, the extraction process is an

extension of the data analysis and online recommendation of national traditional sports culture. At the beginning of inheritance pattern recognition, when searching the content and browsing the page, the e-commerce platform will automatically establish the data set, unify the searched national traditional culture patterns, and extract the features online and offline in different ways (Fei et al., 2021). If there is no automatic extraction technology, the content of national traditional sports culture is too much, and the amount of data is too large, it is difficult to achieve effective inheritance. Targeted extraction can not only reduce the problem of information overload in the center, but also improve the search efficiency of extraction.

Using e-commerce platform to extract national traditional sports culture has the following characteristics

(1) Openness. The extracted content is completely open, all browsers and publishers can understand the extracted content, and evaluate the extracted content effectively.

(2) Convenience. The e-commerce platform based on collaborative filtering is very convenient to use, and can be extracted from any place that can be connected to the wireless network.

(3) Scale. E-commerce platform for feature extraction of national traditional sports culture is not a small system, but a large-scale system. In order to continuously calculate the storage space and cost space, e-commerce platform has a certain scale. It selectively extracts cultural features from two aspects of management and content(Fei et al., 2021).

(4) Concealment. Although the content of the extraction process is completely open, once the user receives the extracted content, it can be encrypted to prohibit other people from understanding the content and extraction process of national traditional sports culture (Fandiyanto et al., 2020).

Pattern recognition of national traditional sports culture inheritance based on e-commerce platform

After the feature extraction, the inheritance mode of national traditional sports culture is identified. The data interface of e-commerce platform identification process is shown in Figure 4 below：
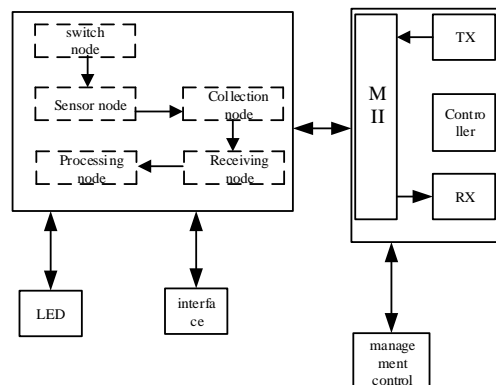

Figure 4 E-commerce platform identification process data interface

According to figure 4, the use of e-commerce platform can well identify the characteristics of traditional culture. In this paper, the characteristics of the above national traditional sports culture are extracted to lay the foundation for identification (Shahrel et al., 2021).

The recognition patterns mainly include lifestyle, religious belief, ethics and festival customs. Lifestyle mainly involves the content and aspects of a nation's traditional sports activities and daily life, which can be divided into material lifestyle and spiritual lifestyle, etc. Lifestyle mainly includes the traditional forms of sports activities, including various national customs, which are embodied in people's production, living activities and related behavior patterns. The life style reflecting traditional sports activities is a kind of life and cultural habit with great stability naturally formed by a nation for a long time. It is directly inherited by a nation through the way of passing on from generation to generation, showing rich cultural connotation (Dong, 2021).

The role of religion in the inheritance of national traditional sports culture cannot be ignored. The development of religion records the history of the development of human sports culture. Some scholars pointed out: "the history of religious development is synchronized with the evolution of human beings and the development of civilization and culture, so its significance cannot be underestimated. Early human cultural forms are inseparable from religion. Whether it is material culture, such as production and labor, clothing, food, housing and transportation, or spiritual culture, literary language, education, primitive art, cosmology, etc., all depend on the content of religion. "

The cultural inheritance function of religion is mainly manifested in the following aspects: first, it is an encyclopedia of human social development, with the unique role of transmitting culture and promoting cultural development. "Primitive religion contains primitive philosophy, primitive myth, primitive education, primitive music and dance, primitive medicine, primitive astronomy and calendar, primitive ethics and morality, primitive laws and regulations, primitive customs and customs and so on. In the primitive society, all the contents of the consciousness, behavior, spirit and material of the primitive ancestors are contained in the primitive religion. Primitive religion is an ideology, a social life, a cultural phenomenon, a historical and realistic life phenomenon.

The concept of ethics and morality is a kind of behavior standard expressed through daily life. Although it has the nature of individual, it reflects the common will and interests of some social groups. Because of this, in the ethical behavior, it is also a way to express the national traditional sports culture. Different ethical concepts reflect the connotation of different national traditional sports culture. The inheritance of ethics and morality to the national traditional sports culture is often latent and intangible, which has a specific effect on people's daily sports activities. Its main performance is as follows: it acts on each individual's behavior pattern in the way of heteronomy, standardizes, guides and restricts his behavior. Therefore, the function of ethics lies in that it is a convention of national traditional sports culture, which can show the values of each nation's traditional sports culture through people's moral behavior, and become the common criterion for people to abide by. In this way, ethics and morality have the function of inheriting national traditional sports culture, and different ethics and morality reflect different contents of national traditional sports culture (Cui et al., 2021).

As a unique way of cultural transmission, festival celebration plays an important role. The rich and colorful festival activities of all ethnic groups constitute a profound and unique expression of traditional national sports culture. From the festival activities, we can see the ancient and rich sports cultural tradition of a nation, reflecting the social history and sports cultural changes of different nationalities. It can be said that festival activities are a living miniature of the traditional sports culture formed by a nation for a long time.

This paper uses PCP feature recognition method to identify data, also known as data feature recognition

method. The recognition method is based on the theory of different cultures. The core of feature recognition method is to analyze the characteristics of national traditional sports culture, and then analyze according to the types represented by different sports culture to complete the refinement. The key of PCP feature recognition method is the primary feature culture mapping. This mapping process not only reduces the time of feature recognition, but also simplifies the cultural data frame, retains the key information of culture, and eliminates the redundant information. This process will not change the internal pattern of culture. The identification process is shown in Figure 5 below：
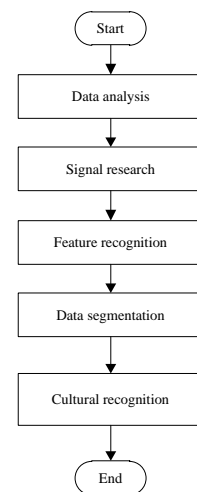

Figure 5 Identification process

According to figure 5, the specific cultural feature recognition methods are as follows:

(1) Firstly, the overlapped frame signals of cultural features are eliminated by PCP feature recognition method. The specific auxiliary formula is as follows:

$$S = \sum_{n-1}^{m=0} x * (n-m) * w(m) \tag{1}$$

In the formula, X is the frequency coordinate; n is the center of short time Fourier transform window; m is the length of data frame;

$w(m)$ is Hamming window.

(2) Then, spectrum mapping is performed on the data after framing processing to differentiate the specific feature types of each cultural data frame. The calculation formula is as follows:

$$P = \left\{ 12 \log_2 \left(\frac{k}{N} * F \right) \right\} \mod 12 \tag{2}$$

In the formula, k is the reference frequency; N is the sampling rate of data; F is the data mapping coefficient.

(3) Finally, according to the PCP feature recognition method, the feature recognition is carried out according to each frequency in turn, and the calculation formula is as follows:

$$L = \Sigma K :: F = P \mid D(P) \mid \tag{3}$$

In the formula, the value range of P is (0, 1, ... 11). The above unknowns have the same meaning as the previous formula.

The intelligent segmentation and recognition technology of feature data is a recent recognition method in the field of culture. Mainly through the analysis of the characteristics of traditional sports culture, complete the information cutting. Every small process of this cutting process is very important, once there are errors, the accuracy of the segmentation results will be reduced. In this paper, the segmentation and recognition method of feature technology is used to complete the cutting of national traditional culture data (Zhang & Dong, 2020).
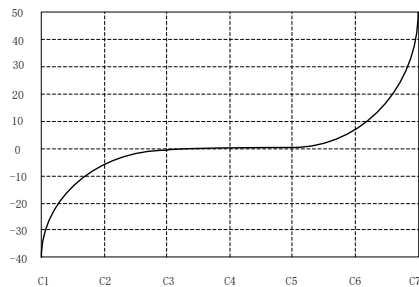
The data after cutting is shown in Figure 6 below:

Figure 6 National culture data after cutting

It can be seen from Figure 6 that the key of twice segmentation in this paper is to determine the amount and type of national cultural feature data. The maximum value max of all identified short-time energy is calculated, and min is the minimum value. The maximum value and the minimum value interval are randomly divided into z equal parts, and z is determined randomly according to the amount of identification data. The calculation formula is as follows:

$$W = \frac{max - min}{z} \tag{4}$$

When $|z_{i+1} - z_i| < 1$, the threshold value is $B = min + (i+1)^*$ step. Otherwise, i=i+1, repeatedly calculate the step size of the amount of data until the appropriate threshold of cultural characteristics is calculated. At this time, the step corresponding to the threshold is the accurate characteristics of traditional national sports culture (Li, 2020).

In the process of intelligent segmentation and recognition of national traditional sports culture, once the energy of sports culture characteristics is too small, it will be ignored. At this time, if the recognition data of a certain amount of data is ignored in the segmentation and recognition results, it can be cut again to improve the data intelligent segmentation results and improve the accuracy of segmentation (Liu et al., 2019).

Based on the above research on the feature analysis of national traditional culture, sound feature extraction method and intelligent segmentation recognition process, this paper summarizes the process of national traditional sports culture inheritance pattern recognition based on e-commerce platform. The specific process is as follows:
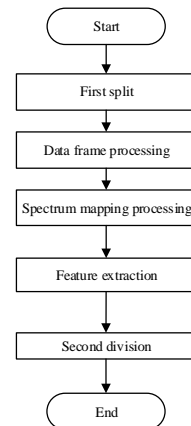

Figure 7 Pattern recognition of national traditional sports culture inheritance based on e-commerce platform

According to figure 7, the identification process designed in this paper is as follows:

(1) Firstly, the selected characteristics of national traditional sports culture are identified for the first time to reduce the workflow for the later

identification;

(2) Then, according to the PCP feature extraction method, the first segmented feature data is processed by frame division, spectrum mapping, and the feature extraction is completed according to the 12 average law mapping principle.

(3) Finally, according to the formula (4) of this paper,

we determine the cutting step and the threshold value between different cultures. After determining the key data, we complete the intelligent segmentation and recognition operation of national traditional culture.

Experimental research

In order to test the recognition effect of the traditional sports culture inheritance pattern recognition based on e-commerce platform, this paper compares with the traditional recognition method, and designs a comparative experiment.

The experimental parameters are set as shown in Table 1.

Table 1 Experimental parameters

Project	Parameter
Working voltage	220V
Working current	150A
Operating system	Windows10
Working frequency	20Hz
Programing language	Java language
Number of experiments	10 times

According to the above experimental parameters, e-commerce platform recognition method and traditional recognition method are selected for recognition, and the experimental results of recognition time are as follows:
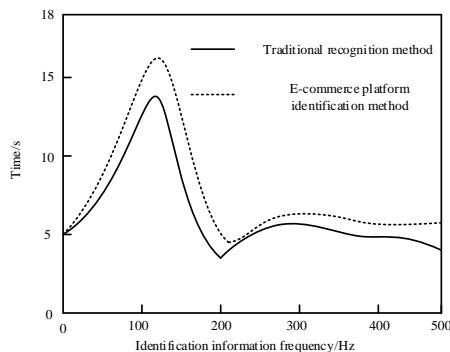

Figure 8 Experimental results of recognition time

According to figure 8, the recognition time of the

proposed method is less than that of the traditional system.

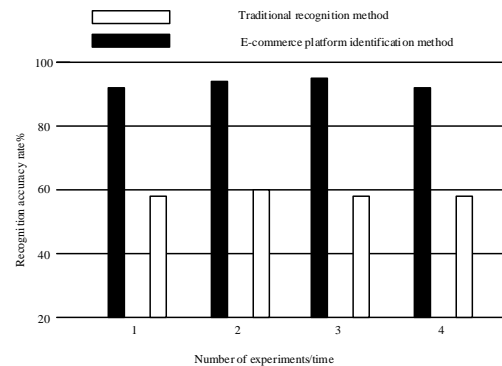The experimental results of recognition accuracy are as follows:

Figure 9 Experimental results of recognition accuracy

According to figure 9, in the same time, the recognition accuracy of the proposed method is higher than that of the traditional method. This paper shows that the e-commerce platform has the ability of information analysis, and can explore the characteristics of national traditional sports culture from multiple angles. Generally speaking, after the PLC is put into use, the working process of PLC can be divided into three stages: input sampling, user program execution and output refresh. The realization of the above three stages is called "scan cycle". The CPU of PLC repeats the above three steps at a certain scanning speed in the whole running process, so the recognition accuracy is higher.

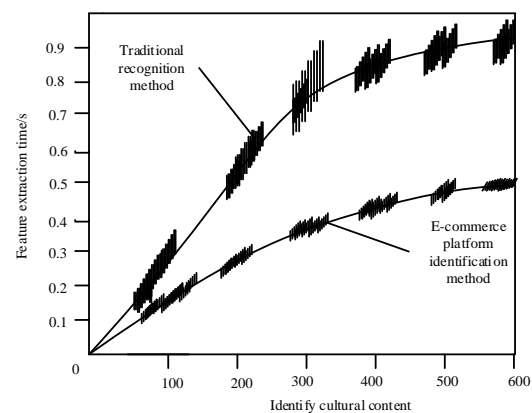Feature extraction time comparison results:

Figure 10 Experimental results of feature extraction time

It can be seen from Figure 10 that the e-commerce

platform takes less time to extract the same content. When the amount of feature extraction information is 100, the traditional method takes 0.25ms, and the e-commerce platform takes 0.13ms. When the amount of feature extraction information is 300, the traditional method takes 0.72ms, and the e-commerce platform takes 0.40ms. When the amount of feature extraction information is 500, the traditional model takes 0.87ms, and the e-commerce platform takes 0.43ms.
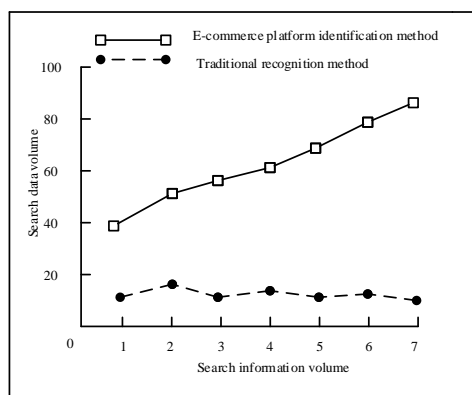

Figure 11 Experimental results of identifying data volume

From Figure 11, the recognition method designed in this paper can identify more data and has better recognition effect.

According to the above experimental results, the following experimental conclusions are obtained: the traditional identification method and the identification method studied in this paper can take a long time, but the effect of the traditional identification method is very poor, the identification content of this paper has real-time, which can strengthen the number of product transactions and promote enterprise profitability. in summary, the recognition ability of the proposed e-commerce platform is better than that of the traditional algorithm, and the practical application effect is better.

6 Conclusion

E-commerce platform has become an essential way of transaction in people's life, which is simple and convenient, and can be identified as long as there is Internet. In this paper, based on e-commerce platform of traditional sports culture inheritance pattern recognition method can effectively achieve information recognition, for the inheritance of Chinese sports culture has positive significance.

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