Research on the Sharing of Book Information Resources from the Perspective of Sharing Economy

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Abstract. With the continuous improvement of the level of Internet technology and intelligent mobile terminal equipment, the sharing economy has been spawned, the sharing and utilization of information resources has been realized, the value of book resources has been maximized, and more convenient services have been provided to readers. Research on shared book information and shared book resources from the perspective of the current sharing economy. From the perspective of sharing economy, this paper adopts the methods of big data analysis and data mining to statistically organize the book information resources from the perspective of sharing economy. Selecting H University and the library as the research object, starting from the perspective of book information resource sharing and using a comparative analysis method to understand the main problems facing its book information resource sharing, and finally put forward a targeted and feasible resource sharing strategy. Finally, the literature research method is used to understand the research plan of the sharing of domestic and foreign related book information resources. Experimental research results show that the library information resource sharing system can realize the free matching of knowledge supply and demand and form several communities based on knowledge needs. In a mobile environment, the integrated access of mobile book information APP can better share resources.

Keywords: Sharing Economy, Resource Sharing, Book Information, Sharing

1. Introduction

From the perspective of the sharing economy, book information resource sharing refers to the realization of book sharing on the basis of equality, voluntariness, mutual assistance, and reciprocity, with the help of cloud computing, big data, and other emerging Internet platforms. And information resources between books and platforms, and other libraries or libraries and users should establish a voluntary, open, cooperative, and collaborative sharing relationship, relying on advanced Internet,
Internet of Things, communication and other information technologies to achieve information resources Common utilization and construction, so as to maximize the needs of diversified users for information resources\textsuperscript{[2-3]}. 

On the one hand, the realization of information resource sharing can not only balance the relationship between supply and demand, promote the effective allocation and integration of library information resources, and improve the efficiency of the use of information resources; on the one hand, the realization of information resource sharing can promote the development of library modernization and intelligence, To provide users with more convenient, accurate and comprehensive information resources to meet the user's decentralized needs, and then improve the service of book resources\textsuperscript{[4-5]}. Sharing as a new economic form, the sharing economy has spawned a supply-side and ownership revolution. Through complementary advantages and voluntary cooperation, the efficiency of social division of labor has been improved\textsuperscript{[6]}. Consumers can realize that the essence of demand is the right to use, and ownership is only an institutional arrangement to guarantee the right to use\textsuperscript{[7]}. In essence, the sharing of books and information resources is the process of renting information property rights. Therefore, the ownership of information resources is no longer important, but the right to use information resources\textsuperscript{[8]}. 

The book information resource sharing model based on resource sharing is based on the national information resource high-efficiency and high-level application strategy. From the perspective of sharing information resources for all, a cross-regional book information alliance led by the national government department is built\textsuperscript{[9]}. At the same time, the book resource alliance needs perfect normative standards, a sound legal system, a scientific and reasonable evaluation system, and multiple integration platforms to support it. In the process of the operation of the book information resource sharing mode, there is a problem of high resource repetition rate, and at the same time, through the construction of library information resource sharing mode under the resource sharing environment \textsuperscript{[10]}. 

\textbf{2. Method}

\textbf{2.1. Statistical analysis of clustering method}

When clustering with pedigree clustering, it is an important question how many clusters are suitable. A good clustering should make the number of clusters as small as possible on the premise that the samples in the cluster are as similar as possible, and the statistics used in pedigree clustering can determine to a certain extent how many clusters are suitable. The statistics in the pedigree clustering method mainly include: R\textsuperscript{2} statistic, semi-partial R\textsuperscript{2} statistic (SPRSQ), pseudo-F statistic (PSF), and pseudo-t\textsuperscript{2} statistic (PST2).

R\textsuperscript{2} statistics: \( R^2 = 1 - P_G/T \)

Among them

\[
P_G = \sum_{K=1}^{G} \sum_{i \in G_K} (X_i - \bar{X}_K)^T (X_i - \bar{X}_K) \tag{1}
\]
The processing separated of such forms, be resources has classification, The

determine is the computer

The emergence of big data plays a key role in the three-dimensional process of book storage, classification, classification, preservation, borrowing and resource sharing. Big data technology itself has huge storage space, can accommodate a large amount of data, and can record the huge database resources of the library. Secondly, big data has many forms, so in the context of big data, the data can be saved in many forms, in addition to the original text, digital form, and video, image and other data forms, which can effectively arrange the number of books And save various resources of the library, such as CD-ROM. These characteristics of big data, such as large capacity and various data forms, can effectively expand the management capacity of the library and improve management efficiency.

The traditional book management work mainly relies on manual operations. In the previous stage of computer management, the storage, borrowing and retrieval managed by the library were also separated and separated. Therefore, in the past, the efficiency of library management was low, data processing was lagging, and the update speed was slow. The emergence of big data can make up for the defects of traditional management. Big data technology follows the law of one second and can
obtain more effective information from different data in a short time. In dealing with complex library work, simplify and merge some procedures, improve management speed, effectively carry out statistical analysis, sorting and collection of library information, and realize the unity of management efficiency and quality.

3. Experiment

3.1. Identify the respondents

This experimental study proves that the questionnaire survey is used. Due to the limitations of ability and time, the focus and subject of the survey are 100 scholars in the H University library. In addition, some questionnaires are distributed to teachers and students of other schools through the Internet. The libraries of all schools have established information sharing space or have already carried out information sharing space-type services. The school library has adopted the advanced library's inspiration concept: the design of the information sharing space to provide teachers and students with "teaching, learning, research" and other services for display. In order to study the impact of knowledge sharing factors on knowledge sharing in college library information sharing space, it is necessary to design indicators and options for measuring knowledge sharing. Knowledge sharing effect refers to the changes of individuals or organizations after knowledge sharing.

3.2. Experimental design ideas

This research uses questionnaires to collect data and conduct empirical research on the influencing factors of knowledge sharing in the information sharing space of college libraries, so as to demonstrate the hypothesis proposed in Chapter III of the article. In order to expand the scope of the survey and strengthen the depth of the survey, the questionnaire is conducted using a combination of online survey and field survey. Online surveys use the Chinese Internet Online First Survey Brand One Questionnaire Star Online Questionnaire Survey Platform to distribute questionnaires and conduct on-site surveys using the discussion rooms of various research groups of the H University Library as the main survey sites for in-depth surveys.

4. Results

4.1. Realization of shared book analysis function
It can be seen from Figure 1 that the two libraries of H University are respectively compared and investigated. The book resource sharing function includes three parts: book selection, reader information selection and submission of borrowing, in which the submission of borrowing sends the information of readers and books to the server-side program verifies that the book is in a borrowable state, and then verifies whether the reader's borrowing frequency is greater than zero. If the above conditions are met, the database can be stored and the borrowing process can be completed. In the database operation, book lending includes three operations: reader information query, book information query, and borrowing information addition. It is implemented by SQL statements such as Insert and Select, and related operations of the database are implemented by adding trigger events to related buttons.

4.2. Clustering data mining of reader data

**Table 1. Clustering result table of some student readers**

| Reader barcode | Types of | Unit | Total borrowed | K-Means |
|---------------|----------|------|----------------|---------|
| 003421        | 1        | 30   | 6              | Clustering-1 |
| 003422        | 1        | 30   | 2              | Clustering-3 |
| 003423        | 2        | 30   | 8              | Clustering-2 |
| 003424        | 2        | 30   | 11             | Clustering-1 |
| 003425        | 1        | 30   | 9              | Clustering-1 |

The clusters to which some student readers belong can be seen in Table 1. According to the clustering results, the readers of the college students can be divided into three groups, the first group is cluster-2, the number of readers is 706, and it is characterized by the largest number of books borrowed, with an average of 34 books per person, using library resources Active; the second group is cluster-3, with 317 readers, characterized by a relatively large number of borrowed books, with an average of 12 books per person, and the use of library resources is relatively active; the third group is cluster-1, readers The
number is 828, which is characterized by a small number of books borrowed. The average person borrows 5.107 books, and the library resources are not very active.

Table 2. Partial graduate student clustering result table

| Reader barcode | Types of | Unit | Total borrowed | K-Means |
|---------------|----------|------|----------------|---------|
| 0034221       | 3        | 4    | 11             | Clustering -1 |
| 0034352       | 3        | 12   | 13             | Clustering -2 |
| 0034233       | 3        | 15   | 8              | Clustering -3 |
| 0034154       | 3        | 8    | 15             | Clustering -3 |
| 0034265       | 3        | 13   | 22             | Clustering -1 |

The clusters of some graduate readers are shown in Table 2. Results analysis: According to the clustering results, graduate readers can be divided into three groups, the first group is cluster-2, the number of readers is 52, and the characteristic is that the number of books borrowed is the largest, average Each person borrows 34.547 volumes, and the most active use of library resources; the second group is cluster-3, with 232 readers, characterized by a relatively large number of borrowed books, with an average of 15.827 volumes per person, and the use of library resources is more active; The third group is cluster-1, with 737 readers. It is characterized by a small number of borrowed books, with an average of 6.597 books per person. The use of library shared resources is not very active.

4.3. Sharing of Book Information Resources under the Sharing Economy

From the perspective of the sharing economy, library information resource sharing refers to the establishment of voluntary, open, and cooperative between libraries, between libraries and other institutions, and between libraries and users on the basis of equality, voluntary, and reciprocity. Collaborative sharing relationship. Mutual assistance and mutual benefit, with the help of cloud computing and big data and other emerging Internet platforms, and relying on advanced Internet, Internet of Things, communication and other information technologies, to achieve the generalization and construction of information resources and maximize the diversified needs of users for information resources. On the one hand, the realization of information resource sharing can not only balance the relationship between supply and demand, promote the effective allocation and integration of library information resources, and improve the efficiency of the use of information resources; on the other hand, the realization of information resource sharing can promote library modernization and intelligent Development, to provide users with more convenient, accurate and comprehensive information resources to meet the user's decentralized needs, thereby improving the quality of library services. As a new economic form, the sharing economy has spawned a supply-side and ownership revolution. Through complementary advantages and voluntary cooperation, the efficiency of social division of labor has been improved. Consumers can realize that the essence of demand is the right to use, and ownership is only an institutional arrangement to guarantee the right to use. In essence, the sharing of
library information resources is the process of renting information property rights. Therefore, the ownership of information resources is no longer important, but the right to use information resources.

4.4. University Library Information Resources Sharing Infrastructure

The knowledge sharing infrastructure of the information sharing space of university libraries mainly includes various paper resources, digital resources, various software (such as office automation software, multimedia production software, webpage production software, reading software, etc.), various librarians to satisfy readers Modern equipment equipped for learning and research needs (such as computers, printers, copiers, scanners, recorders, projectors) and other equipment (such as tables and chairs) equipped to build virtual information sharing spaces. Of course, the various paper resources and digital resources in the information space of university libraries are backed by the information resources of university libraries. But in order to better support the "one-stop service", it is also necessary to provide corresponding paper resources and digital resources for the information sharing space, which depends on the scale of the information sharing space. From the perspective of information resources, various paper resources and digital resources in the information sharing space are also part of the knowledge sharing resources, and these resources in the information sharing space are not as many as possible. If the readers and librarians of the space do not reach the scale matched with these resources, then the huge information resources will make the readers and librarians relatively confused, and it will be difficult to choose and use.

Therefore, no matter which library publishes relevant materials, other libraries can obtain it through query and can also download it. This method greatly improves the efficiency of the use of information resources and reduces the phenomenon of repeated labor. At the same time, the quantity and quality of the literature are greatly improved. In some areas, some libraries often use online collaborative cataloging to control the bibliography in the library. On the one hand, the cost of cataloging is reduced, and on the other hand, the efficiency of cataloging is also improved, which can provide readers with more convenient and comfortable services.

4.5. Shared economy and shared library feasibility study

Taking "Internet+" as an opportunity for development, establish a shared college library service system that complements offline libraries and online libraries to meet the evolving reading needs of readers in the "Internet+" era; on the other hand, college libraries should learn Drawing on the advanced economic concept of the "sharing economy" model and combining its own traditional advantages, it optimizes the service mode of colleges and universities, solves the problems of college library social services, operating costs and time and space limitations, breaks through development bottlenecks, and establishes deeper and more A wide range of service systems, to undertake the social responsibilities of college libraries, to serve more college teachers and students and social readers. To this end, this article will start from the point of convergence of the sharing economy model and the development of services in the information age of college libraries. Through a feasibility analysis of building a "shared library" in colleges and universities, in order to improve the business capabilities and service levels of college libraries Useful exploration. 3 The feasibility analysis of "shared library"
is closely related. The sharing economy model is to temporarily transfer the right to use idle resources and obtain economic benefits. The book sharing under the leadership of the university library is to make the idle books "live", let the books idle in the library or individuals flow into the hands of more people, promote more people to read, and thus achieve the purpose of reading promotion. The organic integration of the sharing economy model with other industries can achieve leapfrog development of the economy. How to extend this economic model to the management and service of the library is worthy of our in-depth exploration. The core of the "sharing economy" is sharing, also known as sharing. The combination of the "sharing economy" and the university library is the "shared library" of the university. In this process, what is shared is knowledge, resources, the spread and sharing of a cultural connotation, and a new type of cultural service model. With the economic development, on the one hand, there are a large number of consumers' resources that are idle or used for a fixed time, on the other hand, there are resources that consumers need but have not been able to own or need to own less frequently.

5. Conclusion

At present, the sharing economy model and concept have become a trend. Book information resource sharing should use its own advantages. With the influence of this trend, build a sharing platform, integrate all resources, and attract more power to participate in the co-building of the library. Come to share, realize book sharing, promote everyone to read, thus forming a good social reading atmosphere. With the rapid development in the era of big data, book information resource sharing technology should speed up the construction of informatization and digitization. In this process, big data technology can be applied reasonably, and the digital resources in the library can be effectively integrated, thereby further improving the service level of the library and satisfying the user's demand for the use of collection resources. The sharing economy has brought a lot of convenience to people. From the perspective of the sharing economy, there are still some problems in understanding the way of sharing book information resources, but it can be solved by related methods. The book information resource sharing model will definitely serve the public better.

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