

# *An Example of Sustainable Economy---Shared Library of College Old Book Recycling Program*

Wang Zhenzhen<sup>1,a,\*</sup>

*School of Economics ,Jilin Univercity,Qianjing Street,Changchun,China  
568629099@qq.com*

**Keywords:** old book recycling, incentive mechanism , emission reduction, big data, sharing economy.

**Abstract:** Building an ecological civilization is the millennium of the sustainable development of a nation. The old book recycling and sharing application network big data practice green water and mountain is the concept of saving resources, protecting the environment and forming a green development mode and lifestyle. Based on the background of the recycling of old books, this paper compares the benefits of the two recycling modes existing in the market, and uses questionnaires to accurately locate the needs of students. After exploring the four schemes, this paper proposes to set up the teaching materials as a means of circulation, borrowers to brush the teaching materials, the sellers to obtain the teaching materials, the borrowers and sellers as the main body, and the library as the platform and resource library. Positioning .Manage resources but not all resources, provide trading means but do not limit the transaction content, thus achieving resource optimization configuration. This paper proposes one of the forms of sharing the economy to share the library to effectively recycle old books. This model uses graphs to illustrate the feasibility, present its technical means, database support system, and endorse its operational benefits. This paper adopts the literature method for paper pollution, and adopts the investigation method for the recycling of old books: 1. Questionnaire method 2, field investigation method 3, interview investigation method. According to the statistical conclusions of the survey data, the evaluation of the maximum benefit that can be achieved under the conditions of the establishment of the old textbook recycling library is designed, and the means of recovery, lending means, incentive mechanism, profitability and final energy saving are used in the mathematical model. The shared library of the old book recycling program using the network big data enables the use of new and old textbooks to be transformed and seamlessly connected.

## **1. The current situation of idle research on old books in colleges and universities and the waste of new books**

### **1.1 The status quo and analysis of old books**

#### **1.1.1 The lack of circulation mechanism in old books<sup>[1]</sup>**

Most of these books were treated as waste paper after the course was completed, and they were not used as useful books to continue to flow.

#### **1.1.2 Book life is short**

These books have an average life span of two to three years, and the book is eighty percent new. There is no corresponding institution or mechanism to encourage the recycling of old books.

#### **1.1.3 The incentive for students to buy old books lies in the economic aspect**

The incentive for students to buy old books is mainly in the economic aspect. Old books are cheaper, but not every book appears in the bookstore.

### **1.2 Current economic benefits of selling books**

.A student said," I spent a sack of money to go to college, bought a sack of books, and finally graduated, sold the book, and could only afford a sack."

"Like my hundreds of dollars to buy the postgraduate materials and my postgraduate notes, when the scrap is sold, it makes people feel bad. If you know who needs it, I would prefer to transfer it for free." A senior graduate said It is really wasteful that the next schoolmates will purchase the same new book at the beginning of school.

### **1.3 The urgency of recycling old books**

If the textbooks are not recycled, the following consequences will continue to occur, resource allocation is inefficient, the research and examination materials are circulated, and the pollution caused by the recycling of used paper is even more serious than the waste of remanufacturing paper.

#### **1.3.1 No benefit of resource allocation**

##### **1.3.1.1 Postgraduate materials cannot be effectively circulated**

"A lot of postgraduate materials are very precious." An old bookstore owner told us that some students would like to find a rare master's or doctoral degree in order to obtain a rare reference material. In reality, many students also said, "Let the right books go to the right people to maximize their value."

##### **1.3.1.2 The era of sharing calls for knowledge sharing**

In the interview, many teachers also believe that books are different from other items in carrying knowledge, knowledge will not be devalued because of use, in the era of sharing, whether the books that graduates want to sell can also be shared, is an entrepreneur Questions that we can think about .

## **2. Existing domestic book circulation scheme**

The existing existing book circulation schemes in China are still immature, mainly in the following two types:

### **2.1 Flea market**

In addition to the unfixed and fragmented nature of the market, the diversification of commodities and the diversification of market forms, the college flea market also has the

characteristics of random market prices. The quality of the goods is not high and the variety is small; Also, the market is not standardized;

## **2.2 second-hand book recycling website and app**

Currently existing problems:

1. app only pays attention to the market;
2. The whole book purchase process is not good;
3. There is a phenomenon of pirated books;

## **3. Questionnaire research and data analysis**

In response to the above questions raised by us, we have produced relevant questionnaires to analyze the current status of idle books in colleges and universities.

### **3.1 Questionnaire research and analysis**

This time, 200 questionnaires were distributed, 68 valid questionnaires were collected, and statistical data were analyzed through relevant tools.

### **3.2 Analysis results**

The willingness of the students to use the old textbooks is as follows: 91% of the students are willing to use the old textbooks. This absolutely overwhelming proportion tells us that the old textbooks are the general trend, but there is no mechanism to give them this opportunity. Therefore, we hope to analyze the old book recycling methods, establish an old book rating system, conduct empirical research through quantitative analysis, and draw conclusions, design the old book recycling program.

## **4. Methods and methods for recycling old books**

### **4.1 scenario assumption**

Option 1: You can borrow one copy if you donate one;

Option 2: Set up the textbook bean, borrow a textbook for the price of a semester for the price of the book. For example, Mankiw's Principles of Economics is more expensive, 89 textbooks, and College English is relatively cheap 32 Textbook beans, in this way, if you want to have a higher quality, you need to donate more books;

### **4.2 Project Exploration**

#### **4.2.1 Benefits of Option 1**

In the implementation process, it is easy for students to think that the book they donate is cheaper and the book borrowed is cheaper. It is not a good economic incentive. It will not produce direct economic benefits and increase the usable value of books. It will not produce direct economic benefits, will produce indirect value, and increase the usable value of books. The value that can be used becomes a multiple of the number of people involved in the sharing.

#### **4.2.2 Benefits and feasibility of Option 2**

In Option 2, using invisible hands, price and quality are equal, demand and supply are equal, and the textbook library is completely marketized, avoiding the situation that students flock to grab the same textbook (because they do not need to spend money for free borrowing).

## 5.1 Initial plan for sharing libraries

The sharing economy refers to a business model in which a certain amount of remuneration is used for the main purpose, based on a stranger and the temporary use of the right to use the item.

The essence of shared libraries - the integration of offline idle books or demanders, allowing them to offer old books or services at a lower price. For the old book supplier, a certain amount of money is obtained by transferring the right to use the old book or providing the service within a certain time; for the demand side, not directly owning the ownership of the old book, but sharing by renting, borrowing, etc. The developmental characteristics of shared libraries - the process of de-intermediation and re-intermediation. De-intermediation: The emergence of shared libraries has broken the dependence of the old book demanders and the old book suppliers on commercial bookstores and few second-hand platforms. They can directly provide services or products to the final old book users; then mediation: sharing books

## 5.2 Feasibility inquiry - means of realization

The application of new technology in information construction has created possible conditions for the recycling of old textbooks in colleges and universities: on the one hand, the new financial concept of colleges and universities will return the right to use the textbooks to students, on the other hand, the popularization of high school technology Students can keep abreast of their own textbook reservations, requisitions, and settlement status through the app and their own cards.

### 5.2.1 Popularization of new technologies

In 1997, McKinsey's consultant and assistant to the Clinton Labor Minister, Marty, found out that he was deeply shocked by the function of interlock (an old book information trading website) when he was looking for an out-of-print book. He immediately realized that it was so rich. How much potential does a repository have in the segmented book market.<sup>[3]</sup>

### 5.2.2 Database Construction<sup>[4]</sup>

The overall structure of the system is based on the above analysis of business characteristics and processes, and a system framework structure is obtained, as shown in Figure 12. The system can achieve the following functions:

(1) The borrower can log in to the app, one can obtain the relevant supply information of the required old book; the second can make a convenient online ordering subscription.

(2) The seller provides real-time and accurate old book information through the login app, and obtains the actual demand situation of the product, so that the library can formulate the best replenishment plan in time.

The main relationship patterns are as follows: borrower information, inventory books, seller information, borrowing orders, selling orders, and accounts receivable.

Because libraries use managed inventory, the standardization of inventory management plays an important role in the overall business process. In the database design process, a consistent encoding rule is applied to the old book, and the barcode stores the type, price, and location information of the book.

### 5.2.3 Functional module design

The system is generally divided into a user interface and an internal management system for borrowers. Several major subsystems are designed as follows:

(1) Book seller management subsystem: The role of the seller in this system is very important. It is responsible for updating the inventory information and ensuring the real-time nature of the inventory information of the inventory that the borrower has queried. The seller can log in and update after logging in according to his or her account password .

The specific functions are: you can query the sales of the old books provided by you to grasp the product demand information; the library app generates replenishment plan reports based on the inventory quantity and demand.

(2) Recycling subsystem: The following functional modules are included in the recycling subsystem, such as book seller information management and book order management. The main functions implemented in the recycling department information module are: sellers add, delete, query and other operations;

(3) Circulating subsystem: the functional modules involved in the circulatory subsystem, order management, query and deletion of orders.

### 5.3 Advantages of shared libraries over existing solutions

1. The target subject is clear, mainly college students;
2. The location is rich in resources, and there are many empty classrooms in the school;
3. The quality of service can be guaranteed;

### Conclusion

At present, there are 32 million college students in China, and each person reuses 7 old books. The size of a book is 10 yuan, and the energy-saving benefits will reach 2.24 billion yuan. According to this scale, the development of shared libraries can help China to establish energy-saving emission reduction projects, and run the world's largest number of participants, circulating the largest energy saving and emission reduction project. Not only the economic benefits, the social and green benefits brought by the shared library have become a great weapon for world to build a sustainable economy. Share the library and let the " sustainable economy paradigm" go to the world.

### References

- [1] Jia Mei, Han Li. *Research on how to recycle old college students' old books [a]. Modern Communication, 2016.4 (430).*
- [2] Tang Guomin, Zhao Chaogen, He Beihai. *Pollution characteristics and treatment technology of waste paper deinking wastewater [a]. Yunnan Environmental Science, 2004, 23(4): 55-58.*
- [3] Anderson from the head to the long tail - the mystery of the second-hand book market. *Miscellaneous c, 2008.3: 60.*
- [4] Wang Lixiao. *Analysis and application of online old book sales system based on b/s mode [a]. Computer and Modernization, 2007 (06): 118:122.*