

## Off-site Library Book Circulation Service from a C2C Perspective: Research and Practice (Post-print)

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### Abstract

[Purpose/Significance] Book circulation service represents a fundamental function of libraries. With the advancement of digital reading, the borrowing volume of physical books has experienced a year-over-year decline. Simultaneously, constrained by spatial and financial limitations, the number of book copies has decreased, leading to a diminished user experience in the book circulation process. This study aims to streamline certain aspects of the circulation process, thereby reducing patrons' waiting time for borrowing and improving book circulation rates. [Method/Process] Based on an investigation of relevant domestic and international research and practices, this study proposes an extra-library book circulation service from a C2C (Consumer to Consumer) perspective. Through this service, patrons can transfer books among themselves outside the physical library without going through the library's circulation system or staff. Proceeding from concrete practice and incorporating questionnaire surveys, this research identifies issues with the service and proposes corresponding solutions. [Results/Conclusion] Practice demonstrates that the C2C-based extra-library book circulation service reduces the traditional "one-return-one-borrow" process, and particularly when library collection copies are limited, it can save patrons' time, enhance their reading willingness and satisfaction, while also revitalizing collection resources and improving book circulation rates. To a certain extent, it promotes innovation in book circulation services and transformation of book circulation service models.

## Full Text

### Research and Practice of Book Circulation Service Outside the Library from a C2C Perspective

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#### Abstract:

**[Purpose/Significance]** Book circulation is a fundamental library service. With the rise of digital reading, paper book borrowing has declined year by year. Simultaneously, limited by space and funding, libraries have reduced book copies, resulting in diminished user experience during circulation. This study aims to simplify certain circulation processes, shorten waiting times for borrowers, and increase book circulation rates. **[Method/Process]** Based on investigations of relevant research and practices at home and abroad, this paper proposes a library-external book circulation service from a C2C (Consumer-to-Consumer) perspective. Through this service, readers can transfer books directly between themselves outside physical libraries without using the library's circulation system or staff. Drawing from practical implementation and combined with questionnaire surveys, this study identifies existing problems and proposes corresponding solutions. **[Result/Conclusion]** Practice demonstrates that the C2C perspective on external book circulation eliminates the traditional "one-return-one-borrow" process. Particularly when collection copies are limited, this approach saves readers time, enhances reading willingness and satisfaction, revitalizes collection resources, and increases circulation rates, thereby promoting innovation and transformation of book circulation service models.

**Keywords:** C2C model; external circulation; interlibrary loan

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While digital reading has become mainstream, especially among younger readers, the *18th National Reading Survey Report* reveals that in 2020, China's adult national book reading rate reached 59.5%, a 0.2% increase from 2019. The average number of paper books read per capita was 4.70, higher than the 3.29 e-books per capita, indicating that paper book reading remains dominant and book circulation services continue to be vital library work.

Book circulation constitutes a foundational library service and the cornerstone of libraries. However, insufficient funding and collection pressures have led to significant reductions in paper book copies. Moreover, as society develops, urban expansion has increased the geographic area that physical libraries must serve, necessitating branch construction to shorten distances to readers. In universities, multi-campus operations have become common, requiring branch

libraries to ensure adequate resource access for faculty and students, which inadvertently increases demand for book copies. Libraries consequently face issues of either idle resources or insufficient distribution. Revitalizing collection resources and improving resource utilization while enhancing borrowing rates and reader satisfaction within limited budgets are crucial pathways to improving circulation service quality.

In recent years, library circulation services have transformed from “passive” to “active” models, making library use more convenient through initiatives such as community libraries, home delivery, and 24-hour self-service systems. Nevertheless, these measures remain tied to physical libraries, maintaining a model where the library connects with individual readers without facilitating connections between readers themselves. When a book is already borrowed, the next reader must wait for its return and subsequent shelving before borrowing, extending waiting periods—especially for titles with limited copies—and reducing borrowing enthusiasm. Drawing from C2C (Consumer-to-Consumer) e-commerce concepts, this study proposes reducing the “one-return-one-borrow” process, enabling readers to transfer books outside libraries without visiting to return or borrow.

## 2 Current Status of Research and Practice on External Book Circulation Services

External circulation services emerged in the late 1980s and have since matured with increasingly diverse service models. Current external circulation services primarily fall into three categories: community bookhouses as circulation points, bookmobiles for home delivery, and 24-hour self-service libraries.

### 2.1 Community Bookhouse-Based Circulation Point Model

Early circulation points involved libraries delivering collections to densely populated areas like communities, enabling nearby borrowing. This model gradually evolved into community bookhouses with spatial services and comprehensive cultural station functions. For example, Changde City Library collaborated with urban communities to establish community bookhouses, building a community reading service system. Similarly, Chongqing University Library established four dormitory-area bookhouses—Tingsong Studio, Longcui Studio, Jiaolin Studio, and Huifeng Studio—based on student majors, providing nearby learning spaces and professional books.

### 2.2 Bookmobile-Based Home Delivery Model

Bookmobiles use specialized vehicles to transport books to areas without libraries. Since late 2016, Haidian District Library in Beijing has consistently provided bookmobile services. With modern logistics development, delivery services have partially replaced bookmobile functions. Hangzhou Library’s “Yuejie” service and Foshan City Library’s “Zhishudali” online borrowing service

both leverage information technology and modern logistics through online ordering and offline delivery/return, truly achieving home delivery. During the 2020 pandemic, many libraries adopted this model, revitalizing collection resources to some extent.

### **2.3 Urban Smart Library-Based 24-Hour Self-Service Model**

Self-service borrowing enables readers to borrow or return books independently using RFID technology and equipment, expanding service space and extending operating hours. Currently, cities like Sanya and Shenzhen have established 24-hour self-service libraries, while numerous university libraries including Beihang University, Jimei University Chengyi College, Dalian Medical University, and Central China Normal University have extended service hours through self-service systems.

### **2.4 Current Problems in External Circulation**

Although community bookhouses, home delivery, and 24-hour self-service bring books conveniently to readers, they face several issues. First, book turnover between sites and readers takes considerable time, and limited copies—especially for popular titles—cannot satisfy most readers promptly, while delivery requires substantial manpower for book location and information processing. Second, establishing 24-hour self-service systems demands significant human and financial resources but offers limited book variety, with some titles unsuitable for self-service and potential equipment failures resulting in low usage rates. Overall, these three models fail to truly alleviate the contradiction between library funding pressures and reader demands, nor do they shorten waiting times for scarce bestsellers or classics, accelerate circulation speed, or enhance reading willingness and experience.

## **3 External Book Circulation Service from a C2C Perspective**

### **3.1 Conceptual Basis for C2C External Book Circulation**

With internet development and smart library technology maturation, library resource construction models have shifted to B2C (Business-to-Consumer) organization patterns, where libraries function as supermarkets and readers as consumers. In this B2C model, Reader C1 first returns a book to the library (B), which then shelves it before Reader C2 can borrow from the library (B). This conventional circulation process lacks flexibility. As e-commerce developed, B2C limitations became apparent and C2C models emerged, enabling consumers to conduct business transactions directly with each other via web technology, breaking traditional fixed merchant-consumer patterns and demonstrating greater flexibility. Applying this C2C concept, readers can use web technology to connect directly and transfer books without library mediation,

eliminating the crucial  $C1 \rightarrow B$  return and  $B \rightarrow C2$  lending stages [Figure 1: see original paper].

As early as 2001, foreign nonprofit teams proposed similar concepts, circulating socially donated idle books through a “drifting book” model and establishing the global BookCrossing network. Domestic scholars Lin Yishan and Yin Mingzhang et al. discussed theoretical feasibility and successfully developed mini-programs. Jinan City Library built the “Shulaishuwang” idle book drifting platform to facilitate resource sharing, demonstrating the operational viability of C2C external book circulation.

### 3.2 Process Design for C2C External Book Circulation

For libraries, book sorting and shelving tasks are heavy, trivial, and time-consuming, requiring substantial manpower. With current staffing shortages, optimizing borrowing/returning processes to liberate librarians from simple, repetitive tasks for higher-quality knowledge services is essential. For Reader C2, prolonged waiting for C1’s return and library shelving gradually diminishes reading enthusiasm and library satisfaction. Both libraries and readers strongly demand reduced circulation links.

In C2C external circulation, when C2 needs a book already on loan, they can submit a request through the external circulation system. Without other pending reservations, the system automatically contacts C1, who holds the book. If C1 agrees to transfer, they need not return it to the library, and C2 need not visit to borrow, completing the transfer privately [Figure 2: see original paper]. The entire process bypasses the library circulation system and staff.

C2C external book circulation reduces the “one-return-one-borrow” link, serving as an important optimization method. It alleviates circulation department pressure, accelerates book flow, mitigates limited-copy pressures, and extends service time and space. Simultaneously, it saves reader time, improves satisfaction and loyalty, and potentially integrates readers’ personal books into the library circulation system.

## 4 Practical Application of C2C External Book Circulation

The C2C external book circulation service launched at Chongqing University in late August 2015 and has operated for six years. As of December 31, 2020, it accumulated over 30,000 requests from more than 10,000 users, with an average of 2.67 books per user. Figure 3 [Figure 3: see original paper] shows application volumes from 2016-2020. Although 2020 saw a pandemic-related decline, the service’s proportion of total circulation increased, indicating its growing importance.

Since launch, the most circulated book was *MATLAB Mastery (3rd Edition)*, with 19 transfers. This demonstrates effective resource revitalization. Most top-circulating books relate to coursework, suggesting libraries should prioritize

course-related acquisitions and establish circulation thresholds triggering copy increases to optimize resource allocation.

## 5 Problems in C2C External Book Circulation

Despite achievements, over half of 30,000+ requests failed, revealing several issues. A survey of 200 recent users (58 responses) showed 84.48% overall satisfaction, but identified problems including low participation, process design flaws, and inadequate regulations.

### 5.1 Low Application Share and Participation

Although application volumes increased annually, the overall share remains low, with service users representing a small fraction of total faculty and students. This likely stems from insufficient promotion during launch, as 79.31% of respondents learned about the service through personal or social channels. Since readers are central to C2C success, their enthusiasm and participation are crucial guarantees. Enhanced promotion is therefore necessary.

As shown in Figure 4 [Figure 4: see original paper], request expiration is a major failure cause. While borrowing demand ensures applicant engagement, it cannot guarantee transferor participation. Unfulfilled requests reduce applicants' future enthusiasm, creating a vicious cycle that diminishes both parties' motivation. Nearly 46.55% of readers reported experiencing unresponsive requests. Boosting transferor enthusiasm is therefore critical.

### 5.2 Unfriendly User Experience and Process Design

The circulation system is the implementation backbone. Imperfect functions directly affect engagement and satisfaction. Currently, as a smart library subsystem, the external circulation system is intentionally simple, resulting in limited functionality. For instance, readers cannot communicate during initial requests, only contacting each other after transfer approval via SMS or email, causing inconvenience. Some reported system bugs like email delivery failures due to sending limits. Additionally, 46.55% found communication time-consuming and 53.45% found transfer processes inconvenient. Future improvements could include logistics integration for safer, more convenient transfers and instant messaging functions for real-time status updates.

### 5.3 Privacy Concerns and Institutional Gaps

C2C external circulation remains exploratory, with inadequate consideration of privacy and credit issues. Survey data show 22.41% worry about privacy leakage, with 6.9% having experienced it. Libraries must protect reader privacy during service delivery. Additionally, some reported transferors canceling after agreeing, with no current regulations addressing such breaches. After six years

of operation, the service urgently needs comprehensive policies including usage guidelines, privacy protection, and credit management systems.

## 6 Improvement Measures for C2C External Book Circulation

### 6.1 Incentive Mechanisms and System Improvement

Incentives can boost participation. Libraries should intensify promotion and rewards, such as virtual currency for first-time users and leaderboards for frequent transferors. However, virtual rewards alone cannot sustain long-term engagement, requiring integration with tangible benefits. Effective management systems are also needed, including basic usage procedures, daily transfer limits, time regulations, reward mechanisms, and privacy protection policies.

### 6.2 Social Features and Expanded Circulation Scope

Given declining paper circulation and shifting reading habits, libraries should breakthrough in circulation services. Survey data show 32.79% of readers consider expanded social scope an influencing factor. Considering libraries cannot fully meet reading demands within limited budgets while readers own many titles not in collections, libraries could catalog and index readers' personal books for inclusion in the overall circulation system. An overwhelming 87.93% of surveyed readers are willing to include personal books in library circulation. This approach enhances social interaction, revitalizes idle books, benefits more readers, and alleviates library funding and space pressures.

## Conclusion

As institutions collecting, organizing, preserving, and disseminating literature, libraries play vital roles in enriching cultural life and building cultural confidence. Despite thriving digital reading, paper book demand remains strong. Limited by space and acquisition funds, libraries have reduced copy purchases, extending borrowing wait times. With overall paper book borrowing rates declining, libraries should emphasize foundational work and breakthroughs in traditional services like external circulation. The C2C external book circulation model reduces the conventional "one-return-one-borrow" process, minimizing waiting times with limited copies, improving reading willingness and satisfaction, revitalizing collection resources, and increasing circulation rates. Future integration of readers' personal books into library circulation systems could further transform circulation service models and promote innovation.

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**Author Contributions:**

Tu Jiaqi: Literature collection, paper writing;

Yang Xinya: Paper structure, revision;

Chen Xiong: Data processing.

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**Abstract:**

[**Purpose/Significance**] Book circulation is one of the fundamental services of libraries. With the development of digital reading, the circulation of paper books has been declining year by year. At the same time, limited by space and funding, the number of book copies has decreased, leading to a reduction in readers’ experience during the circulation process. This study aims to simplify certain links in the book circulation process, shorten the waiting time for readers to borrow books, and improve the book circulation rate. [**Method/Process**] Based on the investigation of relevant research and practices at home and abroad, this paper proposes a library-external book circulation service from the perspective of C2C (Consumer to Consumer). Through this service, readers can complete the transfer of books outside the physical library without going through the library’s circulation system and staff. This study starts from specific practice and combines questionnaire surveys to understand the problems existing in this service and propose corresponding solutions. [**Result/Conclusion**] Practice shows that the C2C perspective on library-external book circulation service reduces the “one-return-one-borrow” process in traditional book circulation, especially when the collection resources have limited copies. It can save readers’ time to the greatest extent, improve readers’ reading willingness and satisfaction, revitalize collection resources, and increase the book circulation rate. To a certain extent, it promotes the innovation of book circulation services and changes the model of book circulation services.

**Keywords:** C2C model; circulation outside the library; interlibrary loan

*Note: Figure translations are in progress. See original paper for figures.*

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