User-Demand-Based Research on Information Services for Senior Users in Provincial Public Libraries: A Case Study of Shaanxi Provincial Library (Postprint)

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Abstract

Thoroughly investigating the information needs of elderly users and proposing corresponding improvement strategies can help public libraries enhance the quality of information services for elderly users and safeguard the public rights and interests of silver-haired users. This study takes the Shaanxi Provincial Library as a case study, employing semi-structured interviews and literature surveys to extract the elements of elderly users' information needs, utilizing questionnaires to understand their information requirements, and conducting field research and online surveys to comprehend the current status and problems of information services for elderly users at the Shaanxi Provincial Library, thereby proposing improvement strategies. The results indicate that elderly users particularly value library information literacy training services, diverse information activity services, activity promotion services, and feedback services. Different types of elderly users exhibit demand differences regarding librarian competencies and resources & access. The quality of information services for elderly users at provincial public libraries can be enhanced through improvements in librarian competencies, information resources and access, service methods, and environment & facilities.

Full Text

Research on Elderly User Information Services in Provincial Public Libraries Based on User Needs: A Case Study of Shaanxi Provincial Library

Abstract

This study investigates the information needs of elderly users in public libraries to propose targeted improvement strategies for enhancing service quality and safeguarding the cultural rights of senior citizens. Taking Shaanxi Provincial Library as a case study, the research employs semi-structured interviews and literature review to extract key elements of elderly users' information needs, utilizes questionnaire surveys to understand their specific requirements, and conducts field investigations and online surveys to examine the current state of services and identify existing problems. The findings reveal that elderly users particularly value information literacy training, diverse information activity services, event promotion, and feedback mechanisms. Different types of elderly users exhibit varying demands regarding librarian competence and resource accessibility. Improvements should focus on enhancing librarian professionalism, optimizing information resources and access channels, diversifying service methods, and upgrading environmental facilities.

Keywords: user needs; elderly user information services; provincial public library

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1. Literature Review

China has entered a moderately aging society, with the population aged 60 and above reaching significant proportions. The improvement of living standards and cultural expectations has led to increasingly diverse needs among elderly citizens, including heightened pursuits of social engagement and self-development. Public libraries, as public cultural institutions serving the people, bear the social responsibility to enrich the spiritual lives of older adults by providing appropriate cultural products and services.

Existing research on elderly user information services in public libraries primarily focuses on two aspects: information needs analysis and service provision. Regarding information needs, studies have identified four categories: content needs, channel needs, and consultation needs. Research shows that elderly users require information across multiple disciplines including literature, history, and health sciences. They emphasize the importance of full-text access formats and professional databases. In terms of information consultation, scholars have demonstrated the significance of providing specialized advisory services for elderly users, including reading salons, volunteer activities, and other diversified services to meet psychological needs. Studies have also revealed the technological learning needs of elderly library users, particularly among "baby boomers" who require training in digital skills. Additionally, research has uncovered demand heterogeneity within elderly populations due to educational differences.

Studies on service provision mainly cover service content, models, and current conditions. Existing literature suggests that service content should encompass resource construction, reading promotion, reader activities, health maintenance, and innovation incubation. Service models have evolved toward smart library

services based on intelligent spaces and information services. However, current services still face challenges including uneven service quality, information resource gaps, and inadequate service methods. While international research has explored health information services, domestic studies require further development in top-level design, differentiated services, and guarantee mechanisms.

Despite these contributions, existing research has limitations. Most studies adopt the library's perspective rather than centering on elderly users' needs, resulting in incomplete understanding of diverse and deep-seated information requirements. Research often focuses on specific domains like health information, lacking comprehensive, user-centered investigation. Furthermore, few studies examine demand differences among various elderly subgroups, making it difficult to meet their diversified and multi-layered information needs. This study addresses these gaps by employing semi-structured interviews and questionnaire surveys to comprehensively uncover genuine elderly user needs, analyzing problems in current services at Shaanxi Provincial Library, and proposing targeted improvement strategies to enhance the precision and effectiveness of elderly user information services in provincial public libraries.

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2. Extraction of Elderly User Information Needs Elements

Based on the literature review, this study initially extracted key elements of elderly user information needs. To ensure comprehensiveness, semi-structured interviews were conducted as a supplement. The interview protocol covered three aspects: basic respondent information, library usage patterns, and user needs. Using convenience sampling, 12 elderly users were selected from Xi'an public libraries, including Shaanxi Provincial Library. All participants had at least primary school education, experienced no communication barriers, and had visited libraries within the past six months. The interviews were conducted via Tencent Meeting audio calls.

The study employed grounded theory methodology, conducting open coding and axial coding on interview transcripts. Open coding generated 18 initial concepts, which were summarized into 5 sub-categories. Axial coding further refined these into 4 main categories. The coding process reached saturation, with no new concepts emerging from subsequent interviews.

Based on literature review and coding results, the study initially identified 18 elderly user information needs elements. To validate these elements, expert consultation was conducted with 5 domain experts, including professors in user information behavior and associate professors in library reader services. Based on expert feedback, elements with high cognitive difficulty, semantic duplication, or excessive specialization were removed, resulting in a streamlined framework of 13 core elements.

The final framework comprises four dimensions: (1) **Librarian Competence**

(professional ability, educational background, service attitude), (2) **Information Resources and Access** (resource variety, quantity, reliability, accessibility), (3) **Service Methods** (diverse activities, information literacy training, feedback mechanisms), and (4) **Environment and Facilities** (reading environment, barrier-free facilities, auxiliary equipment).

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3. Survey of Elderly User Information Needs at Shaanxi Provincial Library

3.1 Questionnaire Design and Distribution

Based on the extracted needs elements, a questionnaire was designed to survey elderly users at Shaanxi Provincial Library. The questionnaire comprised three sections: basic demographics, library usage characteristics, and specific needs across four dimensions (librarian competence, resources and access, service methods, environment and facilities). The survey targeted elderly users at Shaanxi Provincial Library's two main branches: Gaoxin and Chang'an Road. Paper questionnaires were primarily used, supplemented by online distribution. A total of 350 questionnaires were collected, with 312 valid responses (89.1% validity rate).

3.2 Reliability and Validity

The questionnaire demonstrated strong reliability (Cronbach's $\alpha = 0.941$) and validity (KMO = 0.933, Bartlett's test $p < 0.001$). Exploratory factor analysis extracted 4 factor dimensions with cumulative variance explanation of 78.2%, confirming good construct validity.

3.3 Descriptive Statistics

The sample showed balanced gender distribution (51.3% male, 48.7% female). Users aged 61-70 comprised the largest group (58.3%), while those aged 80+ represented only 4.2%. Educational attainment varied, with 32.4% having completed junior high school and 28.5% holding college degrees or higher. Former occupations included enterprise staff (42.3%), education and healthcare professionals (18.6%), and individual business owners (12.8%).

3.4 Library Usage Patterns

Visit Frequency: 67.3% of elderly users visited the library at least once weekly, indicating strong engagement.

Visit Purposes: 58.7% came primarily for knowledge learning, 23.4% for accompanying family, and 15.9% for leisure and social activities.

Information Preferences: Historical and cultural information (72.4%) and current affairs news (68.6%) were most popular, followed by health information (54.3%).

Resource Utilization: Book resources were most frequently used (78.2%), followed by periodicals (45.6%). Borrowing services were the primary utilized service (82.1%).

Activity Awareness: 61.5% of elderly users were unaware of library activities, indicating ineffective promotion channels.

Information Channels: 76.3% obtained activity information through posters, 45.2% via library websites, showing preference for traditional, direct methods.

Difficulties Encountered: 38.5% experienced physical limitations affecting reading, 31.4% struggled with digital devices, and 28.2% had difficulty locating resources.

3.5 Information Needs Analysis

Librarian Competence: 78.2% emphasized service attitude, while 65.4% prioritized service capability over educational credentials. Many complained about staff impatience and perfunctory responses.

Resources and Access: 82.1% demanded easy resource access, 76.9% required abundant resource variety, and 71.8% emphasized reliable sources. Digital resource access remained challenging for many.

Service Methods: 84.6% desired diverse information activities, 73.1% requested regular information literacy training, and 68.6% emphasized offline promotion channels. 71.2% supported extended borrowing periods and increased loan quotas.

Environment and Facilities: 86.5% valued comfortable reading environments, 72.4% required barrier-free facilities, and 61.5% needed reading aids like magnifying glasses.

3.6 Demand Differences Analysis

One-way ANOVA revealed significant differences ($p < 0.05$) in needs across different visit purposes:

- **Knowledge Learners** showed highest demand for librarian competence and resource reliability.
- **Social-Leisure Users** prioritized diverse activities and comfortable environments.
- **Family Companions** had moderate needs across all dimensions.

No significant differences were found in service methods or environmental needs across visit purposes.

4. Problems in Shaanxi Provincial Library's Elderly User Information Services

Based on the survey findings, field investigations and online surveys identified four major problems:

4.1 Weak Librarian Competence and Poor Service Attitude

Survey results indicate that librarian service capacity fails to meet elderly users' knowledge acquisition needs. The library suffers from a shortage of high-level professional staff, with many low-level personnel unable to provide specialized services. Security staff's harsh attitudes and staff impatience reflect professional burnout. While volunteer services provide supplementary support, they cannot substitute for professional competence. Elderly users, particularly knowledge learners, require professional guidance in resource navigation and deep information interpretation, which current staff cannot adequately provide.

4.2 Insufficient Resources and Limited Access

Shaanxi Provincial Library faces both quantitative shortages and operational maintenance gaps. The library's total collection corresponds to a ratio far below developed regions' standards. The resource gap is exacerbated by inadequate maintenance mechanisms, causing problems like mis-shelved or delayed shelving of materials. Elderly users with weak digital literacy struggle to access digital resources effectively, creating a significant digital divide. The library's resource procurement lacks targeted expansion based on elderly users' high-interest topics, and quality control of resources for elderly users remains insufficient.

4.3 Limited Service Models and Ineffective Feedback Mechanisms

Elderly user activity services suffer from monotonous themes and mismatched promotion channels. Activities remain limited to health knowledge lectures, lacking the diversity seen in children's programs. While elderly users prefer offline promotion, the library relies heavily on social media, causing information disconnect. The feedback mechanism is ineffective, with narrow feedback channels and delayed responses. Although online feedback boxes exist, their digital interfaces pose barriers for elderly users. Physical suggestion boxes are scarce, leaving elderly users with no channel to voice concerns. Some reported receiving 消极 treatment of their feedback, leading to accumulated dissatisfaction.

4.4 Improper Space Design and Incomplete Elderly-Friendly Facilities

Elderly users pursue comfortable, quiet reading environments, but the library's space design presents challenges. Lighting and temperature cannot be freely adjusted to meet differentiated needs. The absence of dedicated silent reading

areas forces elderly users to compete with younger users for public spaces, while digital reservation systems create additional barriers. Although basic facilities like magnifying glasses are provided, retrieval machines have overly small fonts, lack audio guidance, and have outdated equipment. The overall elderly-friendly configuration remains inadequate.

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5. Demand-Driven Improvement Strategies for Provincial Public Libraries

Addressing these problems, this study proposes improvement strategies across four dimensions to enhance service quality for elderly users:

5.1 Empowering Service Providers to Enhance Service Warmth

The diversity of elderly user demands requires flexible, professional service responses. Provincial public libraries should prioritize user needs, particularly for knowledge learners who depend heavily on librarian support. To address professional limitations and service quality fluctuations, libraries should:

- **Deploy tiered service teams**: Introduce professionals with composite backgrounds in gerontology, information science, and related fields to provide precise knowledge navigation and deep information interpretation for knowledge learners.
- **Leverage technology**: Implement emotion-perceiving robots at the technical skill level and virtual librarians to assist elderly users.
- **Build intergenerational platforms**: Create mutual assistance platforms engaging younger users in digital skill coaching.
- **Enhance staff wellbeing**: Establish psychological counseling rooms for frontline staff, utilizing mindfulness training and narrative therapy to alleviate professional burnout. Implement composite incentive mechanisms combining material rewards and honorary recognition based on elderly user satisfaction.

5.2 Enriching Silver-Age Resources to Enhance Accessibility

To meet elderly users' demands for resource abundance and reliability, provincial public libraries should transcend traditional resource supply models:

- **Build silver-age resource databases**: Collaborate with aging associations, universities for the elderly, and star databases like CNKI to achieve targeted expansion of high-frequency topic resources.
- **Ensure resource quality**: Develop recommended reading lists for elderly knowledge learners, regularly review frequently borrowed books, and eliminate pseudoscientific materials.
- **Bridge digital divide**: Construct a digital literacy cultivation chain to help elderly users learn digital skills and smoothly access digital resources.

Develop an "elderly-friendly version" of library interfaces with voice functions to enhance digital device usability.

- **Refine auxiliary facilities**: Provide intelligent anti-loss devices, voice memo recorders, and other memory-aid tools at service desks to prevent loss of belongings.

5.3 Expanding Service Models and Improving Feedback Channels

Diversified activities and appropriate promotion can attract more elderly users. To address activity monotony and promotion channel mismatch:

- **Develop tiered themes**: While maintaining health knowledge lectures, add technology workshops, innovative oral history collection activities, and other diverse programs.
- **Build multi-layer promotion system**: Use electronic interactive screens in libraries as information hubs, establish community information transfer rooms as information stations, and organize messenger volunteer groups as information deliverers.
- **Perfect feedback mechanisms**: Install feedback boxes supporting voice and handwriting input, visualize feedback processing progress on electronic screens and management systems, and conduct regular inspections to prevent feedback accumulation.

5.4 Optimizing Space Design and Adding Barrier-Free Facilities

Comfortable reading spaces enhance elderly users' experience, while poor design increases usage difficulty. To address limited space adjustment and absence of dedicated reading areas:

- **Create dedicated elderly zones**: Establish elderly-user specialized libraries or set up mobile soundproof screens in public reading areas for temporary independent spaces, reducing noise interference.
- **Enable environmental control**: Install QR codes in reading spaces allowing elderly users to independently adjust lighting, temperature, and other environmental parameters.
- **Upgrade barrier-free facilities**: Beyond basic aids like magnifying glasses and hearing aids, extend care to detailed elderly-friendly equipment design, such as adding voice functions and developing elderly-friendly digital interfaces.

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6. Research Limitations and Future Outlook

This study focuses on elderly user needs to address core problems in provincial public library services. While providing valuable references for service improvement, the research has limitations due to its single-case design (Shaanxi Provincial Library only), which may restrict generalizability. Future research should

expand investigation scope to include municipal and community-level libraries, explore pathways for service quality improvement across different library levels, and examine collaborative service mechanisms among libraries at various levels.

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

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