

User Needs-Driven Service Path Optimization for Beijing Urban Reading Spaces: A Kano Model Perspective

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Abstract

Purpose: The urban reading spaces in Beijing serve as a pivotal component in transforming public libraries and promoting nationwide literacy, focusing on optimizing service delivery to support the high-quality development of public cultural offerings. **Methods:** Methodologically, this study employs literature review, online surveys, field observations, and questionnaire techniques to analyze operational characteristics across nearly 170 urban reading centers within Beijing's 16 districts. Quantitative analysis of over 400 valid questionnaires, based on the Kano model, identifies distinct user demand categories and key issues. **Results:** The findings reveal a multi-stakeholder framework characterized by government leadership and social participation, yet challenges, such as information dissemination gaps, funding shortages, inconsistent service quality, fragmented management, and cultural deficiencies persist. User needs are classified into attractive, expected, must-be, and indifferent types. Accordingly, strategic recommendations include enhancing promotional mechanisms, diversifying funding channels, improving service quality, establishing a unified management system, and strengthening cultural attributes.

Keywords

Urban Reading Space, Public Cultural Space, User Requirements, Kano Model

1. Introduction

Under the influence of demand diversification and technological innovation, public libraries urgently require spatial restructuring to facilitate their transformation. Urban reading spaces, as innovative public cultural spaces, operate on the princi-

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ples of *Government-led & Social Co-governance*, serving as critical strategies to overcome the traditional spatial and temporal limitations of conventional libraries [1]. The 2021 joint policy issued by the Ministry of Culture and Tourism, the National Development and Reform Commission, and the Ministry of Finance explicitly advocates for the *Development of Multifaceted Cultural Scenarios*, providing policy guidance for the expansion of urban reading spaces [2]. As the national cultural hub, Beijing's urban reading space development holds both exemplary and research significance; however, current issues persist in regional distribution, service provision, and user compatibility. Domestic research largely focuses on the Yangtze River Delta region, with limited quantitative analysis [3]-[13], while international studies emphasize technological applications and social inclusion, often overlooking external reading spaces and regional cultural integration [14]-[28]. This study centers on the operational service shortcomings of Beijing's urban reading spaces, employing literature review, online surveys, on-site observations, and questionnaire methods. Combining the Kano model and Better-Worse index analysis, it systematically investigates current service offerings and user needs. The user requirements are categorized into attractive, expected, must-be, and indifferent types, revealing five core issues, such as inadequate information access and insufficient funding security. Based on these findings, five enhancement strategies are proposed: improving publicity mechanisms, diversifying funding channels, optimizing service quality, establishing unified management systems, and strengthening regional cultural characteristics. The results aim to offer theoretical insights and practical references for the sustainable development of Beijing's urban reading spaces and may serve as a reference for other cities' public cultural space initiatives.

2. Current Status of Urban Library Services in Beijing

Urban reading spaces, as a novel form of public cultural space, currently lack a standardized definition within China, and their development and configuration are continually evolving. In 2019, the Zhejiang Provincial Administration for Market Regulation promulgated the "Service Standards for Urban Reading Spaces." This regulation defines urban reading spaces as "venue-based self-service public libraries, led by the government and supported by social forces, leveraging public libraries at all levels, utilizing automated equipment and RFID technology for integrated services, and offering 24-hour accessibility." Scholars Li Guoxin, Song Chunwei, and Jing Haonan concur that urban reading spaces are integral to the library service system, albeit with distinct emphases. Li and Song highlight their standardized operational characteristics within a branch system and their emergent role as community reading spaces, respectively. Jing Haonan, on the other hand, underscores their attribute as spaces that integrate physical and digital resources, offering 24-hour self-service through intelligent technologies. Consequently, this paper, in consideration of the current landscape of urban reading spaces in the Beijing region, defines them as novel public reading spaces, government-led and

socially participated, that are affiliated with public libraries at various tiers. These spaces provide readers with complimentary lending services and a spectrum of diverse functional offerings. The fundamental functions of urban reading spaces remain anchored in public library services, encompassing literature lending, reading promotion, and information consultation. The implementation of other cultural activities complements the existing library service framework. Given Beijing's accelerated urbanization, the scope of urban reading spaces examined herein extends to include certain densely populated townships.

As the political center, cultural hub, forefront of international exchanges, and core driver of technological innovation in China, Beijing bears the significant responsibility of cultural heritage preservation. To meet the increasing cultural demands of its citizens, the development of municipal reading spaces represents an inevitable trajectory for urban cultural advancement. This study aims to comprehensively assess the current state of Beijing's urban reading spaces by utilizing online research, onsite visits to selected facilities, and interviews with staff members. The analysis focuses on the management structures of these municipal reading spaces, their operational models, citizen engagement levels, and service delivery status.

This study systematically enumerated and spatially analyzed urban reading spaces across Beijing's sixteen districts. Data acquisition involved rigorous screening of publicly available lists from the Beijing Municipal Bureau of Culture and Tourism's official website, the digital platforms of sixteen district libraries, and the "Beijing Tong" government mini-program. Geolocation verification was performed utilizing geospatial data from platforms such as Baidu Maps and Dianping. The resultant dataset comprises 169 validated urban reading space instances, providing a comprehensive statistical overview of their quantitative presence and distributional patterns within the city. Field research sampling employed a stratified random sampling methodology. Based on three dimensions—"Geographic Distribution (Urban/Suburban)," "Operational Entity (Library-Led/Public-Private Partnership/Community-Managed)," and "Service Scale (24-Hour Access/Standard Operating Hours)"—30 out of 169 potential sites were selected for on-site observation. This selection aimed to balance sample representativeness with research feasibility, encompassing all districts within Beijing to ensure the inclusion of urban reading rooms with diverse operational models and regional characteristics. Findings indicate that a majority—nearly 90%—of these venues are concentrated in Xicheng, Chaoyang, Daxing, and Tongzhou districts, with the remaining districts accounting for less than 10%, thus reflecting an uneven regional distribution. Based on the research and analysis, the current service landscape of Beijing's urban reading spaces exhibits several prominent characteristics.

1) Basic services encompass book lending, self-study reading, and public amenities; select reading spaces offer specialized services such as cultural activities, family-friendly spaces, and intelligent navigation systems. On-site surveys indicate that among 30 reading facilities, 22 are equipped with automated borrowing and

return kiosks, 18 provide charging stations, 12 operate 24 hours daily, yet 15 lack clearly designated functional zones. Civic engagement remains high, with Daxing District's first 24-hour reading center, in trial operation for two weeks, receiving over 400 visitors, predominantly young adults and seniors, engaging through book borrowing and cultural events. The study further reveals that urban reading centers primarily serve four functional purposes: party and community propaganda, corporate culture promotion, thematic cultural exhibitions, and self-study spaces.

2) The managing entities exhibit characteristics of diversity and decentralization. Diversity is reflected in the participation of multiple stakeholders such as public libraries, government-private sector collaborations, and community organizations, each leveraging their strengths to ensure service delivery. Decentralization is evidenced by the varying management authorities across districts—responsible agencies include the Cultural and Tourism Bureau for Xicheng District, while Chaoyang and Daxing districts are overseen by their respective district libraries. The dissemination channels for information are dispersed, which complicates access for readers across districts and hampers the integration of promotional resources and the amplification of cultural influence. This decentralization constrains the full potential of efforts aimed at promoting national literacy and reading initiatives.

3) The overall engagement of citizens with urban reading spaces remains high. Taking the 24-hour city reading space in Daxing District as an example, during its two-week trial operation, it attracted over 400 visitors, with nearly 300 borrowing materials, averaging about 30 visitors per day. This indicates that urban reading spaces effectively provide convenient access to literature, meeting diverse temporal literacy demands and garnering positive reception from residents. Citizen participation spans multiple age groups; younger individuals primarily utilize the facilities for reading and study, while seniors focus on leisure reading and cultural exchanges. Nearby commercial districts and cultural innovation parks also attract white-collar professionals. Beyond book borrowing, engagement includes cultural activities such as lectures and salons, which enrich residents' spiritual lives and contribute to establishing cultural heritage and enhancing the appeal of urban reading venues.

4) The development of intelligent technologies is a significant trend in the operation and management of Beijing's urban reading centers. Most facilities have integrated smart access control and automated lending and returning systems to enable 24-hour unmanned service, thereby enhancing operational efficiency and reducing management costs. In districts like Daxing and Tongzhou, 24-hour reading centers support autonomous card access and borrowing operations for patrons. Additionally, resource sharing and integration have demonstrated notable results, such as establishing interlibrary loan and return systems with public libraries (e.g., Liangyue Reading Center) and incorporating online-offline services through apps like *Yuedu Daxing*. Collaborative operational models involving gov-

ernment, enterprises, and social organizations are widely adopted, exemplified by initiatives like Daxing's *Goread Book Club*, which further drives sustainable development in literary engagement.

5) The scope of public cultural service functions continues to expand, aligning with the diverse needs of various readership segments. Beijing City Library emphasizes specialized service provision and multicultural empowerment, consistently broadening the reach of public services to address different demographic demands. In terms of specialized facilities, Daxing Library centers on parent-child reading, featuring dedicated areas and interactive devices; Chenbing Bookhouse is equipped with reading booths to enrich reading formats and enjoyment. Regarding cultural activities, regular conduct of lectures and salons has been implemented, with Liangyue Reading Center's themed event *Exploring the Ancient Canal and Preserving Historical Heritage* facilitating a profound integration of reading and cultural heritage transmission, yielding notable outcomes. Service coverage has been optimized through strategic layout improvements extending into community and commercial districts, enabling Daxing District to preliminarily establish a clustering of reading spaces and effectively bridging the *last mile* of public cultural service delivery.

3. Analysis of User Requirements for Beijing Urban Library

Based on comprehensive analysis of literature review, online and offline survey data, this study distills the core requirements of Beijing urban library users across four key dimensions: service accessibility, spatial experience, basic service quality, and resource-based cultural services. To further explore priority levels and optimization strategies, this research integrates the Kano model framework and develops a structured questionnaire. This approach aligns with the Kano theory's emphasis on *nonlinear demand*, while incorporating contextualized questioning to reduce abstraction, thereby effectively enhancing the validity and reliability of respondent data. The framework of the questionnaire design is shown in **Table 1**.

Table 1. Example of questionnaire design framework.

Questions	Options
What is your stance if the urban library offers this service?	Very Satisfied Expected Indifferent Tolerable Dissatisfied
What is your stance if the urban library does not offer this service?	Very Satisfied Expected Indifferent Tolerable Dissatisfied

This study employs a five-point Likert scale as the primary measurement instrument, facilitating a nuanced capture of users' perceptual variations regarding urban library space services through emotional gradient analysis. The five hierarchical levels of the scale not only reflect the intensity of user satisfaction but also reveal their underlying cognitive logic concerning service value. This comprehensive analytical approach, spanning data collection to strategic development, pro-

vides a scientifically grounded and practically applicable decision-making framework for the refined management of urban library spaces. **Table 2** illustrates the detailed service requirements and content design of urban reading spaces with specific indicators.

Table 2. Table of service requirements and content design for urban reading space.

Dimensions	Primary Indicators	Secondary Indicators	Data Sources	
Service Accessibility	Ease of Reachability	Transportation	Liu Zhiguo, Chen Weili [29]	
		Information Accessibility	Xu Shan [30]	
		Environment	Liang Jiechun, Xu Xin [31]	
	Usability	Regulations & Policies	Jiang Yongfu [32]	
		Self-Service	Bai Lina, Lu Ping [33]	
		Operating Hours	Zhou Yuelian, Wang Yonghua [34]	
Facility Space Experience	Environment & Amenities	Spatial Layout	Liang Jiechun and Xu Xin [31]	
		Functional Service Facilities	Liu Zhiguo, Chen Weili [29]	
		Auxiliary Support Infrastructure	Bai Lina, Lu Ping [33]	
	Entity Servicing	Spatial Characteristics	Chang Hong, Tian Ye [35]	
		Service Types	Jiang Yongfu [32]	
		Equipment Reliability	Zhou Yuelian, Wang Yonghua. [34]	
Fundamental Quality of Service.	Digital Services	Event Planning	Liang Jiechun, Xu Xin [31]	
		Borrowing Equipment	Zhou Yuelian, Wang Yonghua [34]	
		Consultation Responsiveness	Jiang Yongfu [32]	
	Resources & Cultural Services	Resources	Online Consultation	Chang Hong, Tian Ye [35]
			Service Channels	Bai Lina, Lu Ping [33]
			Information Updates	Xu Shan [30]
Resources & Cultural Services	Cultural Services	Cross-Platform Collaboration	Liu Zhiguo, Chen Weili [29]	
		Platform Stability	Bai Lina, Lu Ping [33]	
		Collection Resources	Liu Zhiguo, Chen Weili [29]	
		Cultural Characteristics	Liang Jiechun, Xu Xin [31]	
		Personalized Services	Chang Hong, Tian Ye [35]	
		Communication and Sharing	Jiang Yongfu [32]	

The questionnaire evaluates user requirements for urban libraries across four primary dimensions: service accessibility, spatial experience within the facility, fundamental service quality, and resource and cultural offerings. These dimen-

sions comprehensively encompass key experiential aspects encountered during the interaction and utilization of urban library services, facilitating a multidimensional analysis of user needs. Each dimension is further subdivided into primary and secondary indicators. The primary indicators serve to elaborate on the broader dimension; for example, within the service accessibility dimension, there are two primary indicators—Ease of Access and Convenience of Use—focusing respectively on the ease with which users can reach the service and their experience during usage. Secondary indicators operationalize these primary indicators with specific, measurable criteria, such as transportation modes and information accessibility under Ease of Access, and environmental comfort, regulatory policies, self-service options, and opening hours under Convenience of Use. This structured approach allows for more precise and quantifiable assessments of user experience.

3.1. Distribution of Surveys & Data Processing

This survey was distributed using a hybrid of online and offline methods. A total of 517 questionnaires were collected, with invalid responses—due to incomplete answers or inconsistent logic between positive and negative items—excluded, resulting in 463 valid responses and an effective response rate of 90%.

Of the 463 valid questionnaires, 268 respondents were male, constituting 57.88%, and 195 were female, representing 42.12%. This indicates a relatively balanced gender distribution among participants in this study. In terms of age demographics, the 18 - 25 age bracket comprised the largest proportion of respondents at 40.6%, followed by the 26 - 30 age bracket at 28.94%. This suggests that the respondent pool is predominantly young, specifically individuals between 18 and 30 years of age. Conversely, the 31 - 40 age bracket represented a smaller segment, accounting for only 18.14%, with those aged 41 and above forming the smallest group, totaling 6.77%. Educational attainment analysis reveals a high level of education within the sample, with respondents holding a bachelor's degree or higher accounting for a substantial 74.52%. Geographic distribution within Beijing indicates that Haidian District had the highest concentration of surveyed residents, at 21.81%, followed by Xicheng District at 15.77% and Chaoyang District at 11.02%.

Validity and Reliability Testing

Ensuring data integrity necessitates rigorous examination of questionnaire reliability and validity, fundamental stages in any empirical investigation. Reliability, in essence, quantifies the consistency and stability of measurement outcomes. Within this study, we employed Cronbach's alpha coefficient to ascertain the internal consistency reliability of our instrument. A Cronbach's alpha value exceeding 0.7 is generally accepted as indicative of satisfactory internal consistency. Our survey design is predicated on the Kano model, incorporating both positive and negative item formulations. Acknowledging the distinct psychometric properties of these question types, we segregated the data pertaining to positive and negative items for independent reliability analysis to ensure the robustness of our findings.

Validity, conversely, refers to the degree to which a measurement tool accurately gauges the intended construct. This research specifically targets the assessment of construct validity, evaluating the appropriateness of the selected indicators. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity are pivotal metrics for evaluating the intercorrelations among questionnaire items. The KMO statistic assesses the degree of common variance by comparing observed correlations with partial correlations, thus quantifying the strength of relationships between variables. Bartlett's test of sphericity determines the statistical significance of these correlations, indicating whether the correlation matrix is an identity matrix.

Using SPSS version 26.0, we performed reliability and validity analyses on the collected survey data (as presented in the table below). The Cronbach's alpha coefficients for the positive and negative item sets were 0.979 and 0.982, respectively. Both values significantly surpass the threshold of 0.8, substantiating high internal consistency and affirming the reliability of the survey results. For construct validity, the KMO value for the positive items was 0.985, with a Bartlett's test of sphericity significance of 0.000. Similarly, for the negative items, the KMO value was 0.984, and the Bartlett's test of sphericity significance was 0.000. Both sets of items exhibited a significance value for Bartlett's test below the conventional alpha level of 0.05, satisfying the statistical criteria for validity assessment. These findings collectively indicate that the questionnaire possesses strong validity, permitting subsequent in-depth analyses. **Table 3** presents the reliability and validity of the questionnaire.

Table 3. Reliability and validity of the questionnaire.

	α	KMO	Bartlett Spherical Test Significance
Positive Questions Questionnaire	0.979	0.985	0.000
Negative Questions Questionnaire	0.982	0.984	0.000

3.2. Scale Data Analysis

The study employs the conventional Kano frequency analysis method alongside Berger's modified analytical technique to accurately classify the types of reading space service demands. During the analysis, computational methods are utilized to derive the Better and Worse coefficients. The Better-Worse quadrant diagram is constructed to elucidate the characteristics of service demand types, complemented by data-driven insights and on-site investigations to discuss the prevailing issues faced by urban reading spaces in Beijing.

3.2.1. Kano Model Analysis Results

The analytical process of the traditional Kano model primarily involves data computation, with the most frequently occurring or predominantly proportioned demand attributes identified as the final classification attributes. In this study, SPSS was employed to analyze data from 463 samples, facilitating the categorization of

demand attributes related to urban library services and functionalities, with results presented in a two-dimensional Kano attribute classification matrix. Among these, attributes labeled as A (Attractive quality), O (Expected quality), M (Must-be quality), and I (Indifferent quality) are deemed acceptable within the scope of user requirements. For anomalous findings identified as “Questionable (Q)” or “Reverse (R)” during the survey, the processing protocols are as follows: 1) Questionable responses, arising from logical inconsistencies between forward and reverse item scoring, necessitate the direct exclusion of the respondent’s data for the corresponding metric, thereby omitting it from frequency counts. 2) Reverse responses, characterized by an exceptionally low prevalence (less than 1% across all metrics in this study), are classified as invalid responses and similarly excluded. The ultimate classification for each service metric is determined by identifying the attribute with the highest proportion within the remaining valid frequency counts, which then designates the final demand type for that metric.

The traditional Kano model, based on frequency statistics, classified four service features as attractive attributes, while twenty features were categorized as indifferent. The attractive demand attributes include spatial layout, borrowing equipment, functional service facilities, and device reliability, reflecting users’ primary concerns regarding hardware infrastructure. Enhancing these service qualities is likely to attract more users to urban libraries. The relatively high proportion of indifferent service demands may be attributable to several factors: firstly, the emergence of urban libraries across the country only in recent years, leading to limited in-depth understanding among the public; secondly, the reliance on straightforward frequency counts, which may introduce bias into the results. The summary table of Kano model analysis results is presented in **Table 4**.

Table 4. Summary table of Kano model analysis results.

Features/Services	A	O	M	I	R	Q	Classification
Transportation	23.33%	17.71%	14.90%	30.02%	9.94%	4.10%	I
Environmental Conditions	20.95%	21.81%	15.33%	25.27%	11.66%	4.97%	I
Regulations and Policies	25.27%	20.30%	14.04%	27.43%	9.50%	3.46%	I
Self-Service Options	27.21%	15.77%	12.53%	30.02%	10.80%	3.67%	I
Operating Hours	27.21%	16.63%	12.74%	30.89%	11.45%	1.08%	I
Spatial Configuration	29.16%	18.14%	15.12%	25.27%	9.94%	2.38%	A
Auxiliary Support Facilities	23.11%	19.65%	14.90%	28.94%	11.02%	2.38%	I
Borrowing Equipment	29.16%	16.20%	14.04%	28.08%	9.94%	2.59%	A
Functional Service Facilities	27.21%	18.79%	15.77%	25.49%	10.58%	2.16%	A
Equipment Reliability	28.08%	19.22%	14.25%	26.35%	9.72%	2.38%	A
Service Categories	30.67%	12.10%	11.23%	36.07%	8.64%	1.30%	I

Continued

Book Quality	26.35%	19.44%	14.04%	27.21%	10.37%	2.59%	I
Event Planning and Organization	28.29%	14.47%	12.31%	33.91%	8.42%	2.59%	I
Spatial Characteristics	28.51%	13.61%	14.04%	33.48%	8.42%	1.94%	I
Cultural Distinctiveness	29.59%	15.12%	10.15%	33.69%	9.50%	1.94%	I
Service Delivery Channels	27.21%	14.69%	12.31%	34.13%	8.42%	3.24%	I
Online Consultation	24.62%	16.41%	14.25%	34.34%	8.21%	2.16%	I
Response Time	24.62%	13.61%	14.69%	34.34%	10.15%	2.59%	I
Information Completeness	25.70%	16.41%	14.69%	31.32%	9.94%	1.94%	I
Service Enthusiasm	26.57%	12.53%	11.23%	38.44%	9.07%	2.16%	I
Platform Stability	27.43%	17.93%	11.88%	32.18%	9.50%	1.08%	I
Interactive Communication & Sharing	27.21%	14.04%	12.10%	35.21%	9.07%	2.38%	I
Personalized Services	29.16%	11.66%	13.17%	33.48%	10.37%	2.16%	I
Cross-Platform Collaboration	27.21%	12.53%	14.25%	34.13%	9.07%	2.81%	I

A—Attractiveness Attributes; O—Expected Attributes; M—Essential Attributes; I—Neutral Attributes; R—Detracting Attributes; Q—Uncertain Attributes.

3.2.2. Better-Worse Index Analysis

Building upon the traditional Kano model, this study deepens the theoretical framework by addressing limitations in demand classification. Conventional methods categorize demand types by directly counting positive and negative responses, yet fail to adequately account for classification ambiguity when frequency distributions overlap. To address this, the study introduces a demand sensitivity quadrant analysis. By calculating the two-dimensional coordinate relationship between the Better coefficient (satisfaction gain when the demand is met) and the absolute value of the Worse coefficient (satisfaction loss when the demand is unmet), it constructs a dynamic classification framework. This model optimization not only resolves the traditional method's classification dilemma for borderline cases but also achieves a gradient characterization of demand sensitivity through quantitative coefficients. This provides a more flexible basis for resource allocation decisions. **Table 5** presents the Better-Worse analysis table.

As shown in **Figure 1**, a demand distribution map was constructed based on the Better-Worse two-dimensional coordinate matrix, with the horizontal and vertical axes representing the satisfaction gain coefficient and decay coefficient of service attributes, respectively. This map enables the intuitive identification of the quadrant affiliation and sensitivity differences of each functional item. Guided by Kano's demand hierarchy theory, optimizing urban library services should follow a progressive logic: *Basic Guarantee-Experience Enhancement—Value Innovation*.

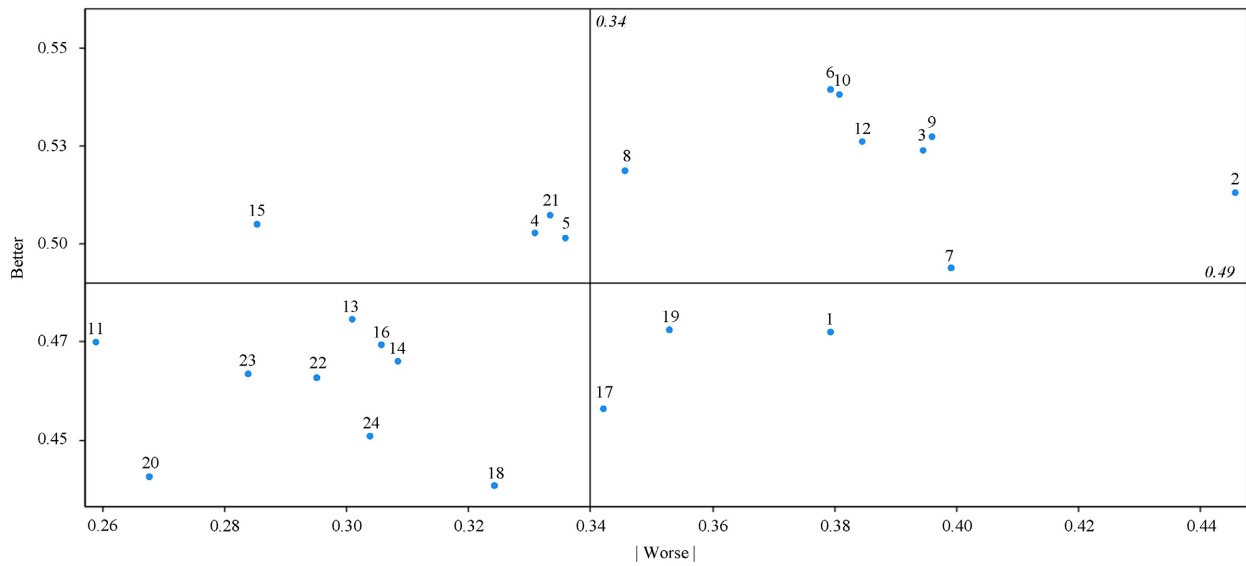


Figure 1. Better-worse coefficient chart.

Table 5. Better-worse analysis table.

No.	Function/Service	Better	Worse
1	Transportation	47.74%	-37.94%
2	Environment	51.30%	-44.56%
3	Regulations	52.36%	-39.45%
4	Self-Service	50.25%	-33.08%
5	Hours of Operation	50.12%	-33.58%
6	Space Layout	53.94%	-37.93%
7	Supportive Facilities	49.38%	-39.90%
8	Borrowing Equipment	51.85%	-34.57%
9	Functional Service Facilities	52.72%	-39.60%
10	Equipment Reliability	53.81%	-38.08%
11	Service Types	47.48%	-25.90%
12	Book Quality	52.61%	-38.46%
13	Event Planning	48.06%	-30.10%
14	Space Features	46.99%	-30.84%
15	Cultural Features	50.49%	-28.54%
16	Service Channels	47.43%	-30.56%
17	Online Consultation	45.78%	-34.22%
18	Response to Inquiries	43.81%	-32.43%
19	Completeness of Information	47.79%	-35.29%
20	Service Proactivity	44.04%	-26.76%
21	Platform Stability	50.72%	-33.33%
22	Communication & Sharing	46.59%	-29.51%
23	Personalized Services	46.67%	-28.40%
24	Cross-Platform Collaboration	45.10%	-30.39%

This entails prioritizing full coverage of essential needs, systematically planning incremental improvements for expected needs, focusing on unlocking the differentiated potential of delight needs, while dynamically monitoring resource allocation thresholds for indifferent needs.

The quadrant division employs a median cut-off method, utilizing the medians of all indicator “Better” coefficients and “Worse” coefficients as boundaries to categorize requirements into four quadrants:

- 1) High Gain—High Loss (Core Optimization Zone): Better > Median and |Worse| > Median;
- 2) High Gain—Low Loss (Potential Improvement Zone): Better > Median and |Worse| < Median;
- 3) Low Gain—High Loss (Basic Assurance Zone): Better < Median and |Worse| > Median;
- 4) Low Gain—Low Loss (Resource Optimization Zone): Better < Median and |Worse| < Median.

This segmentation protocol is reproducible and verifiable, ensuring the objectivity of sensitivity analysis outcomes.

As shown in **Figure 1**, classifying each item by its corresponding Kano demand type yields the attribute classification table presented in **Table 6**. Transportation accessibility (must-have attribute), environmental cleanliness (expected attribute), spatial layout rationality (expected attribute), and platform stability (delight attribute) are key factors influencing user satisfaction. Specifically, users place high demands on functional service facilities and book quality, with expected attributes accounting for 52.72%. Meanwhile, features like 24-hour access and culturally distinctive settings significantly enhance user delight, with delight attributes comprising 53.81%. Reverse analysis indicates that incomplete information or lack of online consultation directly reduces user willingness to use the service. Urban reading spaces must prioritize meeting *essential attribute* needs and strengthen basic service guarantees. Simultaneously, they should enhance *charm attributes* through technological empowerment and cultural innovation to build differentiated competitive advantages.

Table 6. Classification table of better-worse coefficient attributes.

Quadrant	Attribute	Requirement Content
First Quadrant	Desired Attributes	2 (Environment), 3 (Regulations), 6 (Spatial Layout), 7 (Supportive Facilities), 8 (Borrowing Equipment), 9 (Functional Service Facilities), 10 (Equipment Usage), 12 (Book Quality)
Second Quadrant	Charm Attributes	4 (Self-Service), 5 (Opening Hours), 15 (Cultural Features), 21 (Platform Stability)
Third Quadrant	Indifferent Attributes	11 (Service Type), 13 (Event Planning), 14 (Venue Features), 16 (Service Channels), 18 (Consultation Response), 20 (Service Proactivity), 22 (Communication & Sharing), 23 (Personalized Service), 24 (Cross-Platform Collaboration)
Fourth Quadrant	Essential Attributes	1 (Transportation), 17 (Online Consultation), 19 (Completeness of Information)

3.3. Analysis of User Demand Types for Urban Reading Spaces

The Better-Worse Needs Diagram divides scatter plot values into four quadrants. The first quadrant corresponds to desired attributes, where the presence or absence of a feature positively correlates with increased user satisfaction. The second quadrant represents delight attributes, meaning that while omitting this feature does not decrease satisfaction, its inclusion significantly enhances it. The third quadrant represents non-differentiating attributes, where user satisfaction remains unchanged regardless of whether these features are provided or not, as they are features users do not care about. The fourth quadrant corresponds to essential attributes, meaning that when the product provides this feature, user satisfaction does not increase, but when it is not provided, user satisfaction decreases significantly. This indicates that features falling into this quadrant are the most fundamental features.

3.3.1. Expected Service Needs

Seven of the expected service needs fall under the environmental and infrastructure dimension, indicating that the quality of a city library's environment and infrastructure directly impacts reader satisfaction. Poor environmental and infrastructure standards significantly increase reader dissatisfaction, underscoring the need for city libraries to prioritize improvements in these areas. The overall environment of city libraries should be comfortable and tidy. A clean, quiet, and comfortable reading environment is the fundamental expectation readers have for urban reading spaces. Pleasant indoor temperature and humidity, good ventilation, and a tranquil atmosphere enable readers to immerse themselves in reading. Standardized borrowing guidelines, reasonable operating hours, and clear behavioral codes help readers better understand usage rules and maintain order within the reading spaces.

3.3.2. Essential Service Requirements

Essential service requirements primarily involve readers' preparatory steps before arrival. If urban libraries offer convenient transportation access with clear signage, provide diverse information service channels, and maintain comprehensive and accurate public information on their platforms, this facilitates readers' swift and convenient location of the library, aiding better trip planning.

3.3.3. Non-Differentiating Service Needs

Urban reading spaces may temporarily omit certain services due to resource constraints, as these non-differentiating attributes have minimal impact on user willingness to use the facilities. Readers exhibit indifference toward some service indicators for three core reasons: First, these services are not core user needs. Users prioritize fundamental functions like book borrowing, cultural enrichment, and work/study support. Survey data shows that 64.1% and 53.72% of users primarily use the reading spaces for cultural enrichment and work/study purposes, respectively, while the demand for discussion and exchange accounts for only 24.47%.

Users are more inclined to utilize the reading spaces resources and quiet environment rather than engage in social or value-added activities. Second, such services have limited impact on user satisfaction, with low expectations and established usage habits centered on knowledge acquisition and leisure. Demand for value-added services like personalized offerings, cross-platform collaboration, and diverse information channels remains weak. 42.61% of users learn about reading spaces through new media, while traditional media channels account for only 15.54%. Third, these services are highly substitutable. Needs like social interaction can be met through alternative venues or channels like cafes and online platforms, reducing reliance on urban reading spaces.

The categorization of needs is not static. External environmental factors, adjustments to reading space services, and shifts in individual attitudes can alter reader demands, transforming them into charm needs, expected needs, or essential needs. Therefore, reading spaces should closely monitor these changes and adjust service strategies accordingly.

3.3.4. Charm-Based Service Demand

Charm-based demand represents users' latent needs—those not actively anticipated. Providing such services triggers exceeding expectations and significantly boosts satisfaction, while their absence causes no dissatisfaction. Unmanned self-service (including 24-hour access control and self-service borrowing equipment) eliminates human and time constraints, aligning with modern readers' pursuit of convenience and autonomy. Well-maintained and efficient facilities allow readers to experience technological efficiency, greatly enhancing recognition. The 24-hour access model overcomes time constraints, accommodating reading needs across different hours. For instance, the Urban Reading Space at Anzhenmen Party-Mass Center in Chaoyang District attracts many late-night learners through its flexible and convenient offerings. Cultural specialty services create immersive atmospheres through thematic decor and precise positioning, exceeding expectations of ordinary reading spaces. Examples include Daxing District's S.D Space, which integrates local culture to craft distinctive settings, effectively drawing target audiences and boosting brand influence. The stability and responsiveness of online platforms are critical to digital services. Reliable operation ensures smooth access to functions like searches and reservations, strengthening reader trust in digital services, overall satisfaction, and user dependency. These services collectively deliver value that exceeds expectations, significantly elevating the quality of urban reading space services and user retention.

3.4. Robustness Check Based on User Frequency

To validate the stability of the demand classification, this study segmented the sample into two groups based on usage frequency: "high-frequency users" (≥ 4 times per month, $n = 239$) and "low-frequency users" (< 4 times per month, $n = 224$). A Kano model analysis and Better-Worse index calculation were independently performed for each group to compare the consistency of core demand attributes.

The verification results indicate:

- 1) Must-be requirements remained consistent across both groups, with Better-Worse coefficients falling within the “Basic Assurance Zone”;
- 2) Attractive requirements exhibited a more pronounced gain effect among high-frequency users (Better coefficient was 8.2% higher), though they remained in the “Potential Improvement Zone” for low-frequency users;
- 3) The core composition of indifferent requirements did not undergo significant alteration.

These findings demonstrate the robust nature of the demand classification in this study, suggesting that user needs prioritization is largely consistent across different usage frequencies. Consequently, the service optimization recommendations derived from the overall sample possess broad applicability.

4. Existing Issues and Service Improvement Pathways for Urban Libraries in Beijing

4.1. Existing Issues of Urban Libraries in Beijing

4.1.1. Dual Bottlenecks: Insufficient Communication Empowerment and Imbalanced Service Supply

Barriers exist in user awareness and information access, with the core issue stemming from fragmented information dissemination caused by lagging brand development and the absence of cross-regional information integration mechanisms [36]. Empirical data reveal that 72.33% of respondents rely on new media channels for urban library information, while utilization of authoritative platforms like official websites and government portals remains low, hindering one-stop service access. Insufficient coordination between online and offline information—including ineffective map positioning, inconsistent naming conventions, and lack of visible signage at physical locations—increases user barriers and time costs. Incomplete disclosure of core service details like collection resources and operating hours, coupled with overreliance on offline notices and community group pushes for critical announcements (e.g., holiday closures), often leads to delayed or omitted information, triggering negative user perceptions. Simultaneously, a structural imbalance exists between service supply and user demand. The semi-public nature of these spaces leads to mismatched staffing levels relative to foot traffic. For instance, Lishi Study Room accommodates over 200 visitors daily during peak hours yet employs only 1 - 2 staff members, making it difficult to effectively address diverse service needs like inquiries and equipment maintenance. The professional competence of management staff varies significantly. Some lack systematic training in library science and service skills, making it difficult to accurately address basic service requests such as book searches and event reservations. Issues like delayed responses and detached attitudes frequently occur. These phenomena are directly linked to the failure to meet essential requirements in the Kano model, such as *online inquiry response efficiency* and *information completeness*, thereby weakening user service experience and usage stickiness.

4.1.2. Dual Constraints of Unsustainable Funding and Dysfunctional Management Systems

The singularity and fragility of the funding system constitute the core bottleneck for the sustainable operation of urban reading spaces. Currently, Beijing's urban reading spaces heavily rely on government subsidies for operation. Revenue streams from self-operated activities like cultural and creative product sales and public welfare training courses demonstrate weak profitability. Field research revealed that multiple frontline service staff reported some reading spaces already face operational funding shortages, struggling to sustain high-quality services. Insufficient funding further generates two core issues: First, the absence of a professional talent development mechanism makes it difficult to attract and retain versatile professionals with expertise in library management, event planning, and related fields. Existing managers lack systematic professional training, leading to regional and individual variations in service quality. Second, infrastructure upgrades and maintenance lag significantly, with prominent issues like aging hardware and slow functional upgrades hindering service model innovation. More critically, a unified operational management system remains unestablished. Urban reading spaces with different focuses (e.g., culturally distinctive vs. community-based basic services) fall under separate management entities. Operational models managed by cultural companies versus community trusteeships exhibit significant conflicts regarding opening hours, resource allocation, and assessment criteria [37]. Lagging institutional frameworks and evaluation systems lacking multidimensional support further exacerbate service homogenization, undermining the competitive differentiation and public cultural service effectiveness of urban reading spaces.

4.1.3. Dual Shortcomings: Misaligned Spatial Functionality and Weakened Cultural Substance

The imbalance between functional and cultural aspects in spatial planning fails to fully realize the core value of urban reading spaces as *Third Spaces*. Functionally, most reading spaces lack physical separation between study/reading zones and interactive areas, resulting in significant noise interference and an inability to precisely meet the contextual needs of different user groups (e.g., office workers requiring quiet study spaces, youth needing interactive reading environments). Culturally, the exploration and transformation of local cultural elements remain superficial. Only a few libraries have developed thematic spaces around Peking Opera culture, while most adopt standardized decoration models. There is a lack of deep integration and narrative expression of local cultural symbols like Beijing Central Axis and intangible cultural heritage [38]. Furthermore, cultural experience activities are insufficient. To reduce operational costs, some libraries have drastically cut the frequency of lectures, art exhibitions, and cultural salons, failing to meet users' latent expectations for culturally distinctive services. This not only lowers user revisit rates but also undermines the core function of urban libraries in preserving local culture and building community cultural cohesion.

4.2. Pathways for Enhancing Urban Reading Space Services in Beijing

4.2.1. Building a Multi-Dimensional Communication System to Optimize Service Supply Alignment

Focusing on resolving information bottlenecks and improving service precision, establish an integrated communication matrix combining *Online Empowerment With Offline Outreach* [39]. Online: Leveraging official websites, WeChat Official Accounts, Douyin, Xiaohongshu, and other channels, we foster the distinctive *Book-Loving Beijing* public cultural IP to deliver high-quality promotional content.

Drawing from Wenzhou's *Smart City Reading Spaces* model [40], develop an integrated online platform featuring reading space location queries, VR navigation, and event reservations. Simultaneously deepen collaborations with mainstream map navigation apps to enhance basic information labeling and dynamic updates, improving user accessibility. Offline, strengthen deep community engagement by extending city library services to neighborhoods through reading fairs, themed promotions, and informational brochure distribution. Simultaneously optimize the service delivery system. Based on real-time foot traffic monitoring data, scientifically allocate staffing resources. Specialized training will be conducted in book classification management, user inquiry response, and event planning/execution to elevate staff professionalism. Leveraging demand identification insights from the Kano model [41], tailored service delivery models will be developed for distinct demographics including youth, seniors, adolescents, and working professionals. Concurrently, a dynamic user feedback mechanism will be established through surveys, in-depth interviews, and community forums to continuously refine book procurement lists, borrowing procedures, and signature service offerings. Furthermore, aligning with the integration of culture and tourism, standardized foreign-language signage will be installed in areas with high concentrations of international residents to enhance service internationalization.

4.2.2. Strengthening Diversified Funding Mechanisms and Collaborative Governance

Break through the bottleneck of single-source funding by establishing a diversified funding system characterized by government leadership, corporate collaboration, and community participation. Drawing from the transformation path of rural libraries from linear to composite supply models, as well as Shanghai's experience in building a tiered service system for urban reading spaces [42], we will encourage enterprises to participate in reading space construction and operation through donations and sponsorships via policy guidance. Cultural volunteers will be recruited for daily management and event organization to alleviate labor cost pressures. Expand self-generated revenue channels by collaborating with educational, medical, and cultural institutions to develop value-added services. Deploy compact, specialized urban reading spaces in public spaces like campuses and hospitals. Leverage digital technology to integrate cultural resources, launching new formats such as online cultural products, lightweight cultural services, and com-

pliant light-meal catering to enhance self-sustaining capabilities. Governments should increase dedicated fiscal investment, introduce targeted incentive policies and regulatory guidelines to guide standardized participation by social forces. Simultaneously, address management system irregularities by establishing cross-regional collaborative mechanisms. Standardize information disclosure protocols, operational service norms, and evaluation frameworks. Drawing from national public cultural service demonstration zone experiences [43], strengthen regional coordination of cultural resource allocation. Collaborate with research institutions to optimize reading space site selection and layout planning, adjusting density and thematic positioning based on local population density and user demand characteristics [44]. Construct a multi-dimensional performance evaluation system encompassing economic benefits, operational metrics, social impact, user satisfaction, and public service quality. Clearly define the boundaries of authority and responsibility for each management entity to promote standardized, institutionalized, and scientific operation and management of urban reading spaces.

4.2.3. Optimizing Spatial Function Layout to Shape Regional Cultural Brands

Rooted in the core concept of the *Third Space* theory, achieve dual upgrades in spatial functional layout and cultural expression. At the functional planning level, scientifically divide dedicated functional zones, clearly separating quiet study areas from interactive exchange zones. Supplement with scenario-based spaces such as multi-purpose activity halls, parent-child reading corners, and leisure relaxation areas. Pair these with comfortable furniture, soft lighting, and ecological greenery decorations to create a reading environment that balances practicality and experiential appeal [45]. Culturally, deeply mine Beijing's regional cultural resources, extracting core symbols like the Beijing Central Axis, Peking Opera, and intangible cultural heritage. Leverage new technologies such as AR and digital twins to create immersive cultural experiences, promoting the living inheritance and innovative expression of traditional cultural resources. Avoid homogenization caused by standardized decoration by creating differentiated themed reading spaces, enhancing their cultural distinctiveness. Enrich cultural offerings by regularly hosting lectures, art exhibitions, and reading salons to enhance users' sense of cultural participation and fulfillment. Advance the development of cultural scenarios, scenario-based activities, and themed itineraries to establish an integrated *Study & Culture & Cultural Tourism* model. This transforms urban study spaces from mere physical spaces into cultural ecosystems, fostering users' cultural identity and emotional bonds while supporting the capital's high-quality public cultural service provision and the development of its cultural center function.

5. Conclusions and Outlook

This study examines Beijing's Urban Reading Spaces through the lens of *Third Space Theory* and *New Public Service Theory*. Employing multidimensional research combined with Kano model quantitative analysis, it systematically explores

their operational status, user demand characteristics, and service optimization pathways. Key findings are as follows: First, Beijing Urban Spaces have established a *Government-led & Social Participation* multi-stakeholder operational framework, with functions expanding toward comprehensive cultural services. However, regional imbalances and fragmented management persist. There is an urgent need for essential infrastructure, while distinctive cultural activities significantly enhance user satisfaction. Second, four distinct attributes of user needs were identified, clarifying optimization priorities for each. Third, a *demand stratification-service matching* framework was constructed, proposing solutions such as multi-stakeholder collaboration and technology-enabled empowerment.

Moving forward, efforts should anchor in the goal of high-quality public cultural service development, deepening theoretical application and practical innovation while focusing on green construction, smart upgrades, and regional cultural empowerment. This paper offers theoretical and practical references for optimizing urban libraries. Ongoing attention will be given to the dynamic coupling of technological iteration and cultural demands, supporting the transformation of public cultural services from *Universal Provision* to *Precision Ecosystem*.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Wang, Z.Z. (2017) Rise and Development of Public Reading Spaces in China. *Library & Information Knowledge*, No. 2, 4-12.
- [2] Ministry of Culture and Tourism of the People's Republic of China (2021) Opinions of the Ministry of Culture and Tourism, the National Development and Reform Commission and the Ministry of Finance on Promoting the High-Quality Development of Public Cultural Services. https://www.gov.cn/zhengce/zhengceku/2021-03/23/content_5595153.htm
- [3] Wang, Y.H. (2021) Research on the Construction Strategy of New Reading Spaces in Public Libraries-Taking the Construction of Demonstration Branches and Reading Study Rooms of Changchun Library as an Example. *The Library Journal of Henan*, **41**, 18-20.
- [4] Li, S., Zhang, H.J. and Chen, Y. (2024) Development Status and Future Prospect of New Public Cultural Spaces in China. *Library & Information Knowledge*, **41**, 6-13.
- [5] Wang, L. (2022) Research on User Status and Promotion Strategies of City Study Rooms under the Background of Culture and Tourism Integration. Shanghai Normal University.
- [6] Wu, Q.H. (2023) Research on New Reading Modes Based on City Study Rooms. *The Library Journal of Henan*, **43**, 125-127.
- [7] Liu, Y., Zhang, Z.K. and Wang, Y.F. (2020) Research on the Role of City Study Rooms in Social Governance-Taking Quancheng Study Rooms in Jinan as an Example. *Journal of Hebei Library of Science and Technology*, **33**, 3-7.
- [8] Huang, J. and Fu, B.Z. (2023) Exploration on the Construction Path of New Public Reading Spaces-Taking Ruzi Study Rooms in Nanchang as an Example. *Shandong*

Library Quarterly, No. 5, 54-60.

- [9] Li, X.H. (2024) Practical Research on the Construction of New Reading Spaces-Taking the Construction of City Reading Stations in Dongguan as an Example. *Library*, No. 12, 102-109.
- [10] Xu, J., Xu, M., Song, H.Y., et al. (2024) Stimulating the Vitality of Public Welfare & Market-Oriented Operation and Maintenance-The Construction Path and Development Suggestions of Zhong Study Rooms in Wuxi. *New Century Library*, No. 4, 12-16+72.
- [11] Zhang, X.M. (2024) Practice and Strategy of New Reading Space Construction in Public Libraries-Taking Tianjin Binhai New Area Library as an Example. *Library Work and Study*, No. 4, 70-76.
- [12] Song, C.W. (2023) Research on Spatial Design of City Study Rooms from the Perspective of Experience. China University of Mining and Technology.
- [13] Feng, W. (2024) Construction and Development Strategy of City Study Rooms in China. *Library Work and Study*, No. 5, 108-112.
- [14] Khawaja, P. (2022) Accessibility of Public Library Websites in the United States. *Universal Access in the Information Society*, **22**, 1047-1057. <https://doi.org/10.1007/s10209-022-00866-y>
- [15] Zhang, Y., Chiu, D.K.W., Jiang, T. and Ho, K.K.W. (2022) Patrons' Satisfaction with Self-Service Public Libraries: A Demographic Study. *The Library Quarterly*, **92**, 188-206. <https://doi.org/10.1086/718604>
- [16] Wing, K. (2019) Use of Self-Service Holds in Maine Public Libraries. *Public Library Quarterly*, **38**, 85-102. <https://doi.org/10.1080/01616846.2018.1548895>
- [17] Hu, J., Jiang, H., Liu, D., Xiao, Z., Dustdar, S. and Liu, J. (2024) A Wireless Self-Service System for Library Using Commodity RFID Devices. *IEEE Internet of Things Journal*, **11**, 4998-5010. <https://doi.org/10.1109/jiot.2023.3301462>
- [18] Swist, T., Hendery, R., Magee, L., Ensor, J., Sherman, J., Budge, K., et al. (2022) Co-creating Public Library Futures: An Emergent Manifesto and Participatory Research Agenda. *Journal of the Australian Library and Information Association*, **71**, 71-88. <https://doi.org/10.1080/24750158.2021.2016358>
- [19] Wakeling, S., Shephard, M.T., Hider, P., Jamali, H.R., Coe, M. and Garner, J. (2022) Public Library Building and Development: Understanding Community Consultation and the Design Process. *Journal of the Australian Library and Information Association*, **71**, 308-327. <https://doi.org/10.1080/24750158.2022.2115587>
- [20] Johannsen, C.G. (2017) Open Library Communities, Users, and Usage. In: Johannsen, C.G., Ed., *Staff-Less Libraries*, Elsevier, 113-147. <https://doi.org/10.1016/b978-0-08-101923-8.00004-6>
- [21] Sherman, M. and Oakley, S. (2024) Small and Rural Libraries Transforming Communities: A Discourse Analysis of Media Coverage. *The Library Quarterly*, **94**, 316-336. <https://doi.org/10.1086/730467>
- [22] Adams, C. and Krtalić, M. (2022) I Feel at Home: Perspectives of Homeless Library Customers on Public Library Services and Social Inclusion. *Journal of Librarianship and Information Science*, **54**, 779-790. <https://doi.org/10.1177/09610006211053045>
- [23] Stilts, J., Makepeace, K., Rake, A., Mann, J. and Delahunt, K. (2023) Building Partnerships between the Library and Social Service Providers: An Opportunity to Serve Vulnerable Communities. *Journal of the Australian Library and Information Association*, **72**, 500-504. <https://doi.org/10.1080/24750158.2023.2272333>
- [24] Koizumi, M. and Larsen, H. (2023) Democratic Librarianship in the Nordic Model.

Journal of Librarianship and Information Science, **55**, 208-217.

<https://doi.org/10.1177/09610006211069673>

- [25] Tu, Y. and Hwang, G. (2020) Transformation of Educational Roles of Library-Supported Mobile Learning: A Literature Review from 2009 to 2018. *The Electronic Library*, **38**, 695-710. <https://doi.org/10.1108/el-10-2019-0230>
- [26] Sugeno, Y. and Koizumi, M. (2024) Research Trends in Public Libraries as Public Spheres in Library and Information Science: Topic Modelling with Latent Dirichlet Allocation. *Libri*, **74**, 289-304. <https://doi.org/10.1515/libri-2024-0041>
- [27] Jeong, Y., Na, K. and Lee, J.L. (2024) Convergence of Public Library Spaces in South Korea: User Insights on Motivations and Collaboration. *Malaysian Journal of Library and Information Science*, **29**, 1-18. <https://doi.org/10.22452/mjilis.vol29no3.1>
- [28] Li, Y.N. (2019) Tanaka Inagi's Library Science Thought-Experience of Visiting Europe and America and the Construction of Japan's Library Function System. *Library Tribune*, **39**, 73-80.
- [29] Liu, Z.G., Chen, W.L. and Zhao, Y. (2021) The Third Knowledge Construction Field Service: Cognitive Research on Library Space Service Based on Theoretical Deduction. *Library Theory and Practice*, No. 1, 38-45.
- [30] Xu, S. (2008) Overview of the Theoretical and Practical Development of International Information Equity. *Library*, No. 2, 14-17.
- [31] Liang, J.C. and Xu, X. (2023) Immersive Opening: Construction of Library Third Space from the Perspective of Metaverse. *Library Tribune*, **43**, 98-107.
- [32] Jiang, Y.F. (2008) Two New Growth Points in Basic Theoretical Research: Knowledge Freedom and Information Equity. *Journal of Library Science in China*, No. 2, 80-81+73.
- [33] Bai, L.N., Lu, P. and Qiao, A.L. (2014) Empirical Research on Library Service Quality Based on LibQUAL + TM-Taking the Library of Harbin Engineering University as an Example. *Library Journal*, **33**, 60-65.
- [34] Zhou, Y.L., Wang, Y.H. and Wei, W.X. (2014) Evaluation Research on Service Quality of University Libraries Based on LibQUAL + TM-Taking the Library of Hebei University of Technology as an Example. *Library Work and Study*, No. 2, 109-112.
- [35] Chang, H. and Tian, Y. (2020) Research on Novice Users' Perceived Value of Information Literacy Education—An Exploration Based on Grounded Theory. *Library and Information Service*, **64**, 96-106.
- [36] He, M.X. (2024) Research on Practical Problems and Strategies of Reading Promotion in Public Libraries. *Library*, No. 3, 90-96.
- [37] Shi, J.H. (2024) Analysis and Research on Local Legislation of City Study Rooms in China. *Library Theory and Practice*, No. 2, 25-31.
- [38] Chen, B. and Deng, S. (2024) Research on the Value Expression of Cultural Reproduction in Urban Reading Spaces. *Thinking*, **50**, 146-154.
- [39] Qin, X.Y., Chen, Y. and Zhong, H. (2024) Innovative Exploration and Practice of a New Model of Integrated Culture and Tourism for National Reading in the New Era-Taking the Brand Construction of Reading Guangxi as an Example. *New Century Library*, No. 2, 17-24.
- [40] Gong, J.T., Hong, F.L. and Qiao, B.Q. (2024) Spatial Perception and Evaluation of New Urban Library Buildings—A Mixed Research from the Perspective of Cultural and Tourism Check-In. *Library*, No. 9, 86-95.
- [41] Lou, W.L. and Wang, X.M. (2024) From Linear to Compound: The Shift of Supply Mode of Rural Libraries in China. *Library Work and Study*, No. 2, 81-88.

- [42] Si, W.X., Hou, W.J. and Yao, L.L. (2024) Role Orientation and Value Realization of Social Forces Participating in Public Cultural Services from the Perspective of a Strong Cultural Country. *Library and Information*, No. 5, 137-144.
- [43] Shi, G.H. and Yue, J.J. (2009) Application Research of Kano Model in Library Service Quality Management. *Journal of Intelligence*, **28**, 57-61.
- [44] Chen, H.Y., Chen, Y. and Huang, F.M. (2024) Research on Library Document Digital Narrative Service Strategy for the Integrated Development of Culture and Tourism-Based on Three Dimensions of People, Space and Media. *Library Theory and Practice*, No. 3, 43-53.
- [45] Wang, L.W. (2024) Innovative Ideas and Practical Paths for Empowering the Equalization of Public Cultural Services with New Quality Productive Forces. *Library Development*, No. 4, 74-82.