

A Review and Prospect of Research on Service Quality, Effectiveness, and Service Innovation Drivers of China's University Libraries Since the 21st Century (Postprint)

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Abstract

[Purpose/Significance] To provide theoretical reference and guidance for university libraries in continuously improving service quality and effectiveness, maintaining vigorous vitality, and embarking on a new journey of development. [Method/Process] This study adopts a combined approach of bibliometric analysis and critical review of key literature to delineate research stages of service quality/effectiveness and service innovation since the 21st century, trace the evolution of research themes, and clarify the key influencing factors and evaluation index systems of service quality/effectiveness, as well as the driving forces and mechanisms of service innovation. [Results/Conclusion] Based on literature research, service innovation and quality/effectiveness evaluation in China's university libraries represent not only practical hotspots but also important directions for theoretical research. The summarized three aspects of research characteristics and three research deficiencies provide reference and guidance for enhancing service quality/effectiveness and exploring service innovation drivers in China's university libraries during the new development stage.

Full Text

A Retrospective and Prospective Study on Service Quality, Benefit, and Innovation Impetus in Chinese Academic Libraries Since the 21st Century

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Abstract: [Purpose/Significance] This study provides theoretical reference for academic libraries to continuously improve service quality and benefit, maintain vigorous vitality, and embark on a new journey of development.

[**Method/Process**] Through a combination of bibliometric analysis and critical literature review, this paper divides the research stages of service quality, benefit, and innovation since the 21st century, examines the evolution of research topics, and clarifies the key influencing factors and evaluation indicator systems for service quality and benefit, as well as the sources and mechanisms of service innovation impetus. [**Results/Conclusion**] From the perspective of literature research, service innovation and quality-benefit evaluation in Chinese academic libraries have been not only practical hotspots but also important directions for theoretical research. This paper summarizes three research characteristics and three research deficiencies, offering references for enhancing service quality and benefit and exploring service innovation impetus in Chinese academic libraries under the new development stage.

Keywords: academic libraries; service quality; service benefit; innovation impetus; retrospective

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The first two decades of the 21st century spanned four “Five-Year Development Plans,” during which China’s library sector advanced triumphantly into a new era. With the rapid development of information technology and smart campuses, paradigms in higher education teaching, research, and talent cultivation have undergone accelerated transformation. In the process of transitioning toward smart libraries centered on knowledge innovation services, academic libraries are entering a stage of high-quality development. Since the 18th National Congress of the Communist Party of China, the country has explicitly proposed “shifting the foundation of development to improving quality and benefit,” incorporating “centered on improving development quality and benefit” into the guiding ideology for the 13th Five-Year Plan period. The 19th National Congress further emphasized “prioritizing quality first and benefit priority,” making quality and benefit key concepts for societal development. These principles also represent eternal themes for library development. In 2015, the Ministry of Education’s third revision of the *Regulations on Libraries in Regular Institutions of Higher Education* clearly positioned academic libraries as the university’s literature and information resource center, imposing new requirements on their roles in talent cultivation, scientific research, social service, and cultural inheritance and innovation. Innovation is the primary driving force for development, while quality and benefit serve as both the goals pursued by service innovation and important sources of impetus for service innovation under the high-quality development context. Through systematic literature review and analysis, this paper examines the theoretical research and practical achievements in service quality, benefit, and innovation in Chinese academic libraries since the 21st century, clarifies the key influencing factors and evaluation indicators for library service quality and benefit, and explores the sources and mechanisms of service innovation impetus. Combined with analysis of typical practical cases, this study provides theoretical reference for academic libraries to continuously enhance service quality and

benefit, maintain innovative vitality, and pioneer new development journeys.

2. Research History of Service Quality, Benefit, and Innovation Impetus in Academic Libraries

2.1 Research Methodology

This study first decomposed relevant concepts and adopted a step-by-step, phased retrieval strategy. Using CNKI Academic Journal Database and Duxiu Database as data sources, we selected “subject” as the retrieval field and constructed the search formula: $SU = \text{“academic libraries OR university libraries”}$ AND $SU = \text{“quality OR benefit OR effectiveness OR efficiency OR innovation.”}$ Literature sources were limited to “Peking University Core” and “CSSCI” journals, with the retrieval period spanning 2000–2020. After deduplication and refinement, we obtained 3,912 Chinese documents. We employed EXCEL and CiteSpace 5.7.R2 to conduct bibliometric analysis of the retrieved literature, revealing research characteristics and development trends, and performed critical analysis of key documents to summarize the current state of research. Based on the literature review, we expanded our research perspective to industry practices while paying attention to developments in higher education and technological environments, providing analysis against this backdrop.

2.2 Division of Research Stages

Statistical analysis of the literature revealed the annual distribution of papers on service quality, benefit, and innovation impetus in academic libraries from 2000 to 2020, as shown in [Figure 1: see original paper]. In terms of publication trends, the period can be roughly divided into two phases using a 10-year demarcation: a rapid development phase (2000–2010) and a maturation phase (2011–2020). Entering the new century, the modern information environment characterized by networking and digitization brought new opportunities and challenges to libraries. Previously, librarians faced the question of “how to serve vast numbers of users with limited resources,” whereas now they must confront “how to retain users and serve them with limited resources” [?]. In the information age, libraries face challenges from various sources, including the internet and information service providers. Against this backdrop, service innovation has become an inevitable path for the development and self-improvement of academic libraries. During the same period, the introduction of foreign quality evaluation systems also made library service quality a research hotspot, leading to rapid growth in related studies. After a decade of research and practice in service innovation, around 2010, with the rise of the “smart city” concept, smart libraries emerged as an innovative concept and practical guide for library transformation and development. Wang Shiwei elaborated in detail on the concept, core elements, main features, and characteristics of smart libraries [?, ?, ?], triggering enthusiastic responses in the profession. In the subsequent decade, academic libraries continuously deepened and expanded their services in response to uni-

versity development policies and industry needs, gradually maturing theoretical research on service quality, benefit, and innovation.

2.3 Evolution of Research Topics

Using CiteSpace 5.7.R2 to process and analyze the retrieved literature, we employed high-frequency keyword clustering to identify research hotspots and generated a chronological evolution map of research topics, as shown in [Figure 2: see original paper]. The map reveals that research hotspot topics have continuously changed over time. Further detailed analysis of the above mapping was conducted using CiteSpace's burst detection technology to analyze terms whose frequency suddenly increased or emerged within a short period, as shown in [Figure 3: see original paper]. The analysis shows that in the early 21st century, with the rise of the knowledge economy and development of information technology, knowledge management became a research hotspot during this period. Around 2010, against the backdrop of vigorous discipline construction in universities, subject librarians and subject services became the mainstream direction of academic library services, with libraries beginning to explore ways to continuously improve service quality and effectiveness by providing professional and personalized information services to departments. Around 2015, with the construction of scholarly campuses and the rise of WeChat public platforms, especially after nationwide reading was first written into the government work report in 2014, reading promotion became a research focus. In 2017, with the introduction of the "Double First-Class" construction plan, research on service innovation in academic libraries supporting this initiative emerged like mushrooms after rain, becoming a new round of research hotspots.

Through analysis of the evolution of research topics, we can see that research on service quality, benefit, and innovation impetus in academic libraries can be divided into two categories: (1) externally driven, exploring how changes in the external social environment affect academic library services and how libraries should respond; and (2) internally driven self-reform, from knowledge management and subject librarians to knowledge services, information commons, reading promotion, smart libraries, and patent information services, representing continuous self-innovation by librarians to expand service content and deepen service connotation, aiming to achieve sustainable development of academic libraries.

3. Literature Review on Service Quality, Benefit, and Innovation Impetus in Academic Libraries

Research on library service quality and benefit in China has a history of 40 years. Since the late 1970s and early 1980s, scholars have begun to pay attention to library service quality, service standards, and service benefit [?]. Professor Ke Ping distilled the service spirit of Ranganathan's Five Laws and Gorman's New Five Laws, combined with the development requirements of li-

brary services in the current information age, and proposed establishing new five laws for library services, which mention that “service is the wholehearted unity of efficiency, quality, and utility” [?]. Professor Cheng Huanwen proposed that quality and benefit are the yardsticks for measuring library development, that quantity without quality is ineffective, and undertakings without benefit are futile—the greater the low-quality quantity, the lower the benefit, while one-sided benefit, low benefit, or negative benefit can ruin undertakings [?].

The key to improving service quality and benefit lies in libraries’ service innovation capabilities. At the 2015 Sino-American University Library Directors Symposium, Sarah Thomas, Director of Harvard University Library, made a brilliant statement that whether libraries innovate in services will determine whether the future of academic libraries will be “endangered dinosaurs” or “phoenixes reborn from ashes” [?]. Service innovation requires breaking original mindsets, adapting to changes in the external environment, transforming service concepts, and adjusting service strategies. The process of service innovation is a rich and complex one, resulting from the interaction between internal and external factors. This paper reviews domestic literature on service quality, benefit, and innovation impetus in academic libraries since the 21st century, and provides a critical review from the perspectives of conceptual definitions, key influencing factors of service quality and benefit, service innovation impetus models, evaluation indicator systems and measurement methods, and case studies of service innovation under quality and benefit improvement.

3.1 Conceptual Definitions and Attributes

Library service refers to the activities and behaviors of meeting users’ literature and information needs by providing them with collection resources [?]. Service quality refers to the sum of characteristics and features that enable a service to meet specified and potential needs, representing the degree to which service work satisfies user requirements [?]. Service benefit can be divided into social benefit and economic benefit. The social benefit of academic libraries refers to the positive externalities or effects brought to the entire university, society, or local regions through library services. According to different scopes of beneficiaries, social benefit can be internal or external. Internal social benefit mainly manifests as academic libraries meeting the literature and information needs of faculty and students, providing rich and diverse literature resources and services, and positively promoting teaching, research, and decision-making within the university. External social benefit refers to the beneficial impacts of academic library operations on society, primarily reflected in libraries opening to readers beyond their own faculty and students and providing various forms of literature and information services to social groups [?].

From an economic perspective, economic benefit is the ratio of input to output. The economic benefit of academic libraries refers to the ratio between resources consumed and achievements obtained during library operation and management, specifically the ratio between human, material, and financial investments in li-

library construction, use, and maintenance, and the value generated by library services for faculty and students. Economic benefit can be explicit or implicit. Explicit economic benefit is mainly reflected in two aspects: first, with limited human, material, and financial inputs, academic libraries maximize the fulfillment of users' literature and information needs through rational layout of collection resources, deep development of literature resources, and provision of diversified information services, thus maximizing the core functions of libraries. As the famous librarian Dewey stated, "Libraries should provide the best reading for the most readers at the least cost" [?]. Second, libraries obtain certain economic income by providing fee-based services such as sci-tech novelty searches, SDI services, and document reproduction. Implicit economic benefit mainly refers to the benefits generated when library users utilize library resources and services to conduct scientific research, technology development, and innovation activities [?]. Quality and benefit serve as action guidelines for service innovation and important indicators for measuring it. Quality and benefit are like "two sides of the same coin"—independent yet interdependent, with a positive correlation where high quality leads to high benefit.

Innovation is an important source of power for academic libraries to adapt to social needs, discipline construction, and their own development. Service innovation refers to the application of new ideas and technologies in library services to improve and transform existing service processes and products, enhance existing service quality and efficiency, expand service scope, update service content, add new service items, create new knowledge value for readers, and ultimately form competitive advantages for libraries [?]. The impetus for service innovation is mainly divided into two types: internal impetus and external impetus.

3.2 Key Influencing Factors of Service Quality and Benefit in Academic Libraries

Through investigation of domestic literature on service quality and benefit in academic libraries, we found that influencing factors mainly concentrate in five aspects: users, resources, technology, services, and librarians, as shown in . Ranganathan's famous "Five Laws of Library Science" states that a library is a growing organism [?], and these five elements are precisely the "nutrients" for this organism's continuous growth. Users are the main body of library use, resources are the foundation of library existence, services are the core value of libraries, technology is the innovative driving force, and librarians are the service providers. The close coordination and interaction among these five elements are the fundamental driving forces for improving library service quality and benefit. The service innovation activities of academic libraries are completed through the combination and interaction of these elements.

3.2.1 Users Users are the consumers of library resources and services. The level of library service quality and the effectiveness of service benefit largely depend on the service level subjectively perceived by users. Therefore, service

quality and benefit are not unilaterally determined by library managers but must be approached from the user's perspective to adapt to and meet user needs and expectations. Regarding how users' subjective perceptions affect service quality, there are two representative theoretical models: the "expectation-performance" model (also called the "perception-value" model) and the "need-satisfaction" model [?], as shown in . Users' subjective perception of service quality mainly includes two aspects: technical and functional. The technical aspect refers to whether users receive the services they expect or need during library use, focusing on service outcomes. The functional aspect refers to how users receive these services, such as library work efficiency and staff attitudes and behaviors, focusing on service processes [?]. The "user-centered" service philosophy means that library service quality is determined by users' subjective perceptions. How then can these perceptions be measured? Wu Dongman et al. organized small-scale user questionnaires, asking users to identify key indicators affecting their satisfaction with library services, and summarized them into four dimensions: literature resources, accessibility and usability of literature resources, environment and facilities, and service and emotion [?]. Cao Shujin et al. approached the issue from the perspective of user needs, dividing factors affecting library user satisfaction into three major categories: information resources, information services, and information systems. Empirical results showed that information service satisfaction had the greatest impact coefficient on overall library satisfaction, followed by information resource satisfaction, with information system satisfaction having the smallest impact coefficient [?].

3.2.2 Collections Collection resources are the most basic guarantee for the construction and development of academic libraries. The quality of collection resources directly determines the degree to which libraries can meet user needs. According to different carrier types, collections can be divided into print collections and electronic collections, with different factors affecting the quality and construction benefit of each, as shown in .

- (1) **Print Collections.** The quality of traditional print collections mainly includes three elements: content quality, structural quality, and use quality [?]. Content quality mainly reflects the knowledge and information value contained in the print books themselves [?]. Structural quality refers to whether the collection structure matches the university's disciplinary programs and whether it facilitates the construction and development of key disciplines [?]. Use quality depends on whether the collection books have strong practicality and high use benefit [?].
- (2) **Electronic Collections.** With the rapid development of information technology, the structure of library collection resources has undergone tremendous changes, shifting from traditional print-based collections supplemented by digital resources to a balance between print and digital collections. In some academic libraries, the proportion of digital collections has exceeded that of print collections. According to statistics, in 2019,

electronic resource procurement expenses accounted for more than half of the total literature resource procurement expenses in university libraries, with both the average value and proportion showing an upward trend since 2006 [?]. The allocation and utilization levels of electronic resources are key factors affecting the quality and benefit of electronic resource services. In 2001, Xiao Long et al. pioneered the systematic elaboration of the evaluation system methodology and content for electronic resources, proposing that content, retrieval system and functionality, usage, value and cost accounting, and publisher/database provider service are the five major elements for measuring electronic resource service quality and benefit [?]. During the 10th Five-Year Plan period, CALIS established the “Digital Resources and Services Assessment” sub-project, and Xiao Long et al. summarized a complete set of digital resource evaluation indicators and proposed application guidelines [?]. Subsequently, many scholars studied the quality evaluation of electronic resources, but often focused on specific types. Tang Qiong et al. explored the quality evaluation of overall electronic resource construction in academic libraries from a macro perspective, summarizing six variables affecting electronic resource quality: electronic resource system status, library website disclosure of electronic resources, electronic resource training activities, communication channels for electronic resource construction feedback, user perceived value, and user satisfaction [?]. Additionally, Yan An et al. proposed that whether electronic resources in academic libraries can maximize their effectiveness depends on the number of users who continuously use them [?].

3.2.3 Services Services are the reason for libraries’ existence [?]. The life and death of the library cause ultimately depends on whether library services still have value. Over the past two decades, the service methods, content, and capabilities of academic libraries have changed with each passing day. From traditional offline book lending and blended online-offline reference 咨询服务, they have gradually expanded to form a service system supporting teaching, research, and management across the university. Through literature review, we found that service quality and benefit are closely related to three aspects: service methods, service content, and service capability.

- (1) **Service Methods.** In the digital age, traditional single offline services and in-library services cannot meet changing user needs, giving rise to diversified service methods. Hao Zhonglu summarized the diversification trends of modern service methods as interactive cooperation, one-stop service, proactive service, and relatively large back-end service [?]. Chen Yongling summarized service method innovations in the digital age as transforming from closed to open services, static to dynamic services, receptive to proactive services, generalized lending to diversified and specialized services, and single-level superficial services to multi-level comprehensive services [?].

- (2) **Service Content.** In terms of service content, subject services, reading promotion, and space services have been research hotspots in academic libraries over the past two decades. Chu Jingli et al. pioneered detailed elaborations on the service locations, logical starting points, service depth, service content, responsibilities, role positioning, and service methods of first-generation and second-generation subject librarians [?], providing important theoretical support for research and practice on subject librarians and subject services in Chinese academic libraries. Fan Bingsi explained the definition of reading promotion and its relationship with library services and core library values from the perspective of library science theory, becoming a foundational work for reading promotion theory [?]. Wu Gao et al. analyzed the practical characteristics and existing problems of reading promotion in Chinese academic libraries and proposed strategies for implementing reading promotion services from five major aspects [?]. Xiao Long discussed the core functional composition of library space in the post-digital library era, as well as the basic principles of spatial organization and layout and the main requirements for spatial environment design [?]. Maker spaces represent an extension and expansion of library space services. Tao Lei analyzed the relationship between maker spaces and libraries and explored the elements and steps for libraries to build maker spaces [?]. Yang Xinya et al. took alumni services as a breakthrough for the social services of academic libraries, discussing paradigms for alumni services to enhance social service levels and influence [?].
- (3) **Service Capability.** Whether library services can be effective depends to a certain extent on the level of service capability. Chu Jingli et al. proposed that to meet users' continuously evolving needs, libraries should build a new service capability system and complete transformations from resource construction to knowledge organization, from in-library services to embedded services, from reference consultation to knowledge consultation, from literature retrieval to intelligence analysis, from reading promotion to knowledge discovery, from information literacy education to innovation literacy education, from literature services to publishing services, from literature management to data management, from library services to think tank services, and from human services to smart services [?]. Luo Zeyu argued that library service capability construction should focus on improving service efficiency and ensuring fairness, justice, and equality in library resource sharing [?].

3.2.4 Technology After entering the new century, the rapid development of information technology has brought tremendous changes to the production, dissemination, and service forms of literature and information. Technological innovation is an inevitable choice for libraries to continuously adapt to the times. With the rise of the smart library concept, academic libraries have begun to integrate modern high-tech technologies such as sensor technology, augmented reality, and intelligent processing into their development systems. However,

technology is a double-edged sword. The International Federation of Library Associations and Institutions (IFLA) stated in its 2015 trends report that “new technologies will expand people’s access to information, but they will also hinder access” [?]. Therefore, will technological investment and transformation necessarily positively affect library quality and benefit? How can we ensure that new technologies play their proper role in libraries and truly become an important driving force for library service innovation? Yang Jiulong et al. constructed a library technology performance evaluation index system and model from the perspective of the technology life cycle, using an input-output model framework. They divided indicators affecting technology performance into four categories: internal input, external input, internal output, and external output, as shown in . Internal input elements include financial, material, human, and management aspects. External input elements mainly refer to the external environment faced by library technology application, including macro and micro aspects. Internal output mainly includes various performance metrics generated during library technology application. External output mainly includes the positive impacts of library technology application on library-society interactions [?, ?].

3.2.5 Librarians Lenin once wrote that “librarians are the soul of the library cause” [?]. In the United States, there is a saying that in the role played by library services, library buildings account for 5%, information materials for 20%, and librarians for 75% [?], demonstrating the crucial role of librarians. Fan Xiuping proposed that librarian quality is the main factor restricting the development of academic libraries, which can be divided into ideological quality, knowledge structure, professional skills, and foreign language proficiency [?]. Han Yi et al. divided librarian quality affecting library service quality into information awareness, service attitude, service capability, and ethical behavior [?]. Shen Jinhua et al. proposed that librarian performance assessment and incentive mechanisms should aim to improve librarians’ capability levels and library performance, with all aspects of librarian assessment focusing on the goal of “completing work according to quality, improving service image in traditional service areas, enhancing service levels for discipline construction, and encouraging exploration and innovation” [?].

3.3 Service Innovation Impetus Mechanisms in Academic Libraries

Impetus is the force that drives the movement and development of things, while an impetus mechanism is the process, principle, and manner through which impetus is generated and takes effect. The service innovation impetus mechanism is the mechanism through which service innovation impetus is generated and acts upon innovation subjects to produce innovative behaviors. Wang Tian et al., from the perspective of innovation subjects, believed that innovation driving forces can be divided into external and internal driving forces. Internal driving forces mainly refer to the drive from internal behavioral subjects within enterprises, while external driving forces result from the external environment and related behavioral subjects, with interactions between the two [?].

3.3.1 Types of Service Innovation Impetus Mechanisms Research on library service innovation impetus mechanisms is relatively limited. Zhao Hui pioneered research on the theories and types of library service innovation impetus mechanisms, pointing out that the library service innovation impetus mechanism is an organic combination of internal and external factors that promotes continuous improvement in library service quality and efficiency. It centers on enhancing core library service capabilities, aims to meet users' information needs and solve practical problems, and is formed by reorganizing library service innovation factors. Zhao identified four types: service interest-driven, social need-pulled, technology advancement-pushed, and government support-promoted [?]. Chen Jianlong, from the perspective of academic libraries as information service providers, elaborated on the methodological foundations of university library information service innovation. He proposed that information service innovation is the process of developing and changing relevant elements and their relationships through original, integrated, or introduced methods to seek scientific development of information services. Academic library information service innovation can be guided by reductionism, holism, meta-synthesis, and informatization ecology theory [?].

3.3.2 Sources of Service Innovation Impetus Regarding the sources of library service innovation impetus, scholars mostly approach from the perspective of innovation subjects, dividing service innovation impetus into internal and external sources. Chen Sanbao believed that internal impetus for library service innovation refers to the generation of higher-quality service innovation theories, content, and models under the influence of new technologies, making libraries' development advantages more apparent. External impetus is the force exerted by the external environment on which library construction and development depend, mainly derived from the interaction between libraries and social needs, as well as government planning and actions for the cultural industry. Social needs and government behavior are important factors affecting libraries' external competitive advantages, along with socio-economic development and cultural progress, whose derived social relationships form the external impetus for library service innovation [?]. Wang Xincan et al., from a systems theory perspective, divided the sources of service innovation impetus into readers, literature, and social environment. They pointed out that libraries exist within an ecosystem, and changes in system elements such as readers and literature often "affect the whole body by pulling one hair." When external environmental changes are perceived by librarians, the combination of librarians' subjective intentions and objective environmental situations forms a force that drives service innovation [?].

3.4 Evaluation Indicator Systems for Service Quality and Benefit in Academic Libraries

3.4.1 Service Quality Evaluation Indicator Systems (1) SERVQUAL. SERVQUAL is a service quality assessment tool born in the marketing field in

the 1980s based on “Total Quality Management” theory. Its core idea is that service quality evaluation should be based on user perception, focusing on user expectations to measure service quality. Under the influence of the “user-centered” service concept, the library field began to pay attention to SERVQUAL applications in the 1990s [?]. In 1998, Chu Jingli [?] first introduced the SERVQUAL method based on total quality management to China. Subsequently, scholars such as Jin Gengda [?], Zhang Jianlan et al. [?], Qian Jiaping [?], and Song Xiumei [?] conducted theoretical discussions on the localization of SERVQUAL. Xu Ling et al. [?] were the first to use the SERVQUAL model for empirical research on service quality evaluation. Yu Liangzhi et al. reviewed the applicability and limitations of SERVQUAL in the library field [?] and used statistical reliability, validity, and variance of quality values to quantitatively measure SERVQUAL’s applicability in Chinese academic libraries. The results showed that although SERVQUAL had high reliability, it lacked sufficient content validity. In response, Shi Guohong et al. modified SERVQUAL by absorbing some unique factors of Chinese academic libraries to construct a library service quality evaluation system applicable to the local Chinese context and conducted empirical research [?].

(2) LibQUAL+TM. Due to SERVQUAL’s limitations in the library field, the Association of Research Libraries proposed seeking a new method to evaluate library service quality that adapts to modern libraries—LibQUAL+TM. Scholars such as Ren Xin et al. [?], Chang Wei [?], and Yuan Lin et al. [?] pioneered introductions to the origin and application of LibQUAL+. Subsequently, Sun Jing et al. [?] and Wu Dongman et al. [?] borrowed LibQUAL+TM indicators and conducted empirical research based on localized modifications. Xia Yougen et al. [?] and Shi Jihong [?] further discussed LibQUAL+TM’s limitations and proposed combining LibQUAL+TM with other evaluation methods for service quality assessment.

(3) ClimateQUALTM. As librarians are the main body implementing library services, their leading role in library service quality cannot be ignored. This gave rise to the ClimateQUALTM library service quality evaluation system, whose distinctive feature is evaluating library service quality from the librarian’s perspective by assessing how the work environment and atmosphere created by library policies and regulations motivate librarians [?]. Bao Ping et al. [?] and Jiang Xin [?] conducted localized adaptive modifications to the original ClimateQUALTM indicator system to construct an evaluation system suitable for Chinese academic libraries and carried out empirical research.

Early evaluation methods focused on measuring libraries’ own hard or objective service indicators, such as input and output. In a sense, these methods treated libraries as service systems and evaluated service quality and benefit by statistically analyzing the input and output performance of these systems. The evaluation process was not subjectively influenced by people (including librarians and users), which can be seen as a “library-centered” evaluation model. By the late 20th century, as the “people-oriented” concept gradually deepened, the

evaluation model gradually shifted to a “user-centered” approach.

3.4.2 Service Quality and Benefit Evaluation Methods In terms of evaluation methods, many scholars have applied theories and methods from other disciplines to evaluate library service quality and benefit, which can be roughly summarized as operational research methods, uncertain system research methods, statistical analysis methods, and other multi-indicator comprehensive evaluation methods [?]. Operational research methods mainly include Analytic Hierarchy Process (AHP) [?], Analytic Network Process (ANP) [?], and Data Envelopment Analysis (DEA) [?]. Uncertain system research methods mainly include fuzzy comprehensive evaluation [?] and Grey Relational Analysis (GRA) [?]. Statistical analysis methods mainly include Principal Component Analysis [?], factor analysis, and regression analysis [?]. Other multi-indicator comprehensive evaluation methods include BP neural network-based evaluation [?], Balanced Scorecard (BSC) [?], and cost-benefit analysis [?].

Due to the complexity of library service quality evaluation, each method has its advantages and limitations. Therefore, some scholars have comprehensively applied multiple methods to evaluate library service quality. Wang Ping et al. used Critical Incident Technique and Principal Component Analysis to analyze key points in library service quality management and construction through a combination of qualitative and quantitative research [?]. Shi Guohong et al. built an evaluation index system for academic library service quality based on SERVQUAL and Lib models, using focus group interviews, and employed the Kano model to modify evaluation indicators [?].

3.5 Case Studies on Service Innovation in Academic Libraries

Service is the eternal theme of library work, and innovation is the soul of library development. Beyond theoretical analysis, research on service innovation focuses more on how to innovate services in specific contexts. Over the past two decades, academic libraries have always taken serving university talent cultivation and scientific research as their mission, continuously innovating in borrowing services, reading promotion, digital resource services, and space resource services, leading the development trend of Chinese libraries. Against this backdrop, the Reader Service Innovation and Promotion Working Group of the Ministry of Education’s University Libraries Steering Committee held two consecutive “National University Library Service Innovation Case Competitions” in 2014 and 2016, producing a batch of typical service innovation cases, as shown in . These cases summarize service innovation practices from universities nationwide. The award-winning cases underwent rigorous expert review and have high reference value. Meng Xiangbao et al. comprehensively analyzed the first competition’s cases from six aspects: innovation subject, innovation type, innovation impetus, innovation performance, innovation cycle, and innovation guarantee. In these cases, research services, reading promotion, and user education were the three main content themes, while deep user participation and data services were two

major highlights of innovative cases [?].

Additionally, some academic libraries have pursued their own transformation and development through service innovation. For example, Fudan University Library effectively improved service quality by implementing a series of “user-centered” service innovation practices, such as service promotion activities, freshman knowledge training, establishing a user feedback system, and implementing flexible services [?]. Shanghai Jiao Tong University Library has made significant achievements in subject services, comprehensively implementing the “subject service” main strategy since 2007 [?], launching the IC2 innovative service model in 2008 with subject services as the main line, and gradually forming a “pan-subject service” system [?]. Tsinghua University Library has conducted comprehensive exploration and practice in discipline-oriented resource construction [?], intelligent reference consultation [?], and ubiquitous networked services [?]. Peking University Library has actively explored open research data management [?] and think tank-type services [?], carrying out a series of effective services to provide strong support for the university’s disciplinary development and management decision-making. Nanjing University Library has improved library service awareness and reputation by creating reading culture activity brands and conducting online-offline integrated new media marketing [?].

4. Summary and Outlook

Through collation, summarization, and review of literature on service quality, benefit, and innovation impetus in Chinese academic libraries over the past two decades, research mainly presents the following characteristics: (1) Combining theoretical research with practical cases, showing diversified trends. Research on service quality, benefit, and innovation involves all aspects of academic library services, demonstrating the vigorous development of Chinese academic libraries. Main research contents include influencing factors of service quality and benefit, evaluation indicator systems, evaluation methods, and innovative measures and practical cases. (2) Continuous refinement of research. Although research covers many aspects, with deepening research, precise understanding of user needs and provision of personalized services have increasingly become research focuses. (3) Continuous innovation based on inheritance. With changes in the external social environment, various new measures and services continue to emerge and are endowed with new connotations, such as subject services, reading promotion, and patent information services.

Based on the review of service quality, benefit, and innovation impetus research in academic libraries since the new century, future research could further focus on: (1) In service quality and benefit research, more emphasis has been placed on service quality, with less research on service benefit, and no clear analysis of the relationship between quality and benefit. In the future, the dialectical relationship between service quality and benefit can be further studied and demonstrated. (2) In service innovation research, theoretical research on innovation subjects, impetus mechanisms, and innovation performance is rela-

tively limited, with more emphasis on empirical studies. Practice cannot be separated from theoretical guidance. In the future, service innovation system theory, operational mechanisms, and guarantee mechanisms can be further explored. (3) There remains a certain gap in exploring the relationship between service quality/benefit and service innovation.

Research on service quality, benefit, and innovation impetus in academic libraries is a grand topic involving all aspects of library work. Librarians should maintain keen insight into how external environmental changes may affect libraries, continuously adapt and innovate services according to the times, and make service quality and benefit eternal pursuits of academic libraries.

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