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Case Analysis and Implications of U.S. Public Libraries' Response to Major Emergencies: Post-print

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Abstract

[Purpose/Significance] This study investigates the experiences of U.S. public libraries with varying service scopes in responding to different categories of major emergencies across diverse contexts, derives corresponding insights, and provides references for Chinese public libraries in addressing similar events. [Method/Process] The work undertaken by public libraries in the face of major social emergencies is comprehensively reviewed and categorized into two major types: internal business operations and external social services. Specifically regarding social service work, cases are classified according to the source of emergencies, and the model and content of social services provided by U.S. public libraries are examined in both physical and online environments following different types of major emergencies. [Results/Conclusion] The study reveals that, from the perspective of emergency sources, social services under both natural disasters and social issues exhibit compensatory characteristics for losses; however, social services addressing social issues additionally demonstrate containment of adverse post-disaster consequences in short-term emergency response. From the perspective of service environments, public libraries gradually exhibit a trend of shifting their operational focus from physical to online contexts when confronting major emergencies. Furthermore, from the perspective of library types, large public libraries display characteristics of macro-level coordination, whereas small and medium-sized public libraries exhibit features of targeted services for local communities. Finally, based on the aforementioned analysis, implications for Chinese public libraries in responding to major emergencies are derived.

Full Text

Case Study of American Public Libraries' Response to Major Emergencies and Its Implications

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Abstract

[Purpose/Significance] This study examines the experiences of American public libraries of different service scopes in responding to various types of major emergencies across different contexts, aiming to derive relevant insights to inform Chinese public libraries' preparedness for similar incidents. **[Method/Process]** The work of public libraries in the face of major social emergencies was comprehensively reviewed and categorized into two broad areas: internal business operations and external social services. For social services specifically, cases were classified according to the source of emergency, and the patterns and content of American public libraries' social services were analyzed across both physical and online environments following different types of major emergencies. **[Result/Conclusion]** The findings reveal that, from the perspective of emergency sources, social services provided during both natural disasters and social problems exhibit compensatory characteristics for losses, while social services during social problems also demonstrate containment effects on adverse post-disaster consequences in short-term emergency responses. From the service environment perspective, public libraries show a gradual trend of shifting their work focus from physical to online environments when facing major emergencies. Furthermore, from the perspective of library types, large public libraries exhibit characteristics of macro-level coordination, whereas small and medium-sized public libraries demonstrate more targeted services for local populations. Based on these analytical results, the paper concludes with implications for Chinese public libraries in responding to major emergencies.

Keywords: public library; emergency; social service; coping mechanism

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1. Introduction

As COVID-19 spreads globally, examining public libraries' emergency response mechanisms for major incidents helps us re-examine crisis management in public libraries, strengthen their social position in online environments, and better serve the public. According to the EM-DAT International Disaster Database's definition of recordable events [1], an emergency escalates to a major emergency when it meets any of four conditions: ten or more deaths, affects one hundred

or more people (with affected individuals requiring immediate assistance and potentially being displaced or evacuated), a state of emergency is declared, or international assistance is requested. EM-DAT data reveals the variability of major emergencies in America's social and natural environments. Through numerous events, the country has developed reference-worthy approaches to major emergencies, making its public libraries' social service provision during such events instructive for Chinese public libraries seeking to establish robust response mechanisms for pandemics and other emergencies.

The literature search strategy for the review section was conducted on March 20, 2020. For foreign literature, the Taylor & Francis SSH database was searched using keyword fields with terms like "crisis & library" and "pandemics & library." For domestic literature, CNKI was searched using keyword fields with "American library" and "crisis management." Through reviewing the associated literature from these searches, target documents were obtained.

Classification of major emergencies faced by American public libraries in recent years by event nature reveals two primary categories: social problems and natural disasters. Social problems mainly include social pandemics, violent attacks, regional war disasters, and building collapses. Natural disasters include tsunamis, floods, storms, droughts, lightning strikes, fires, dust storms, hurricanes, earthquakes, and nuclear leaks [2]. Historically, many major emergencies (such as natural disasters, social riots, and viral outbreaks) are unavoidable for public libraries as social institutions. Regardless of how social events change, when they endanger collection resources, damage typically occurs through fire, flooding, or looting, while digital resource damage occurs through network intrusion, carrier destruction, or backup destruction. Domestic scholar Wang Jinru [3] and others propose that library internal issues could constitute a third crisis category, including information security for print and electronic resources. However, this paper argues that, first, security issues alone do not constitute major emergencies as defined herein; second, the causes of library internal problems still fall within the scope of human social problems and natural disasters. Therefore, this third category is not discussed further.

2. Literature Review

Historical literature shows that public libraries did not historically claim a direct and unique social disaster relief role for the general public during major emergencies. Many librarians believed that even with extra effort and excellent emergency social service work, if crisis response was defined as "providing essential social supplies," libraries' contributions were auxiliary rather than critical. However, with advances in network technology, the rise of social media platforms, and the increasing variability of social emergencies, public libraries, as reliable information providers [16], can provide increasingly diverse social services, with growing importance and attention.

Academic and professional publications have long discussed post-disaster col-

lection preservation, but comprehensive emergency management involves far more. In practice, public libraries face numerous issues that can be divided into at least two categories from a work content perspective: internal business operations and external social services. Internal business includes business continuity, collection preservation, and staff shelter, while external social services focus on existing information dissemination functions, serving as information hubs both online and offline. From a work stage perspective, domestic scholar Zhu Bei [4] divides responses into three phases: prevention, response, and recovery. The prevention phase emphasizes pre-event awareness, early warning capability, and management planning. The response phase emphasizes post-event analysis, response, communication, and evaluation. The recovery phase emphasizes post-event restoration and reflection. Regardless of aspect or stage, expanding the functional scope of public libraries and updating work methods to meet social needs is essential.

Publications on public libraries' internal business operations during emergencies are numerous and long-standing, covering two main themes: business continuity and resource preservation. Business continuity involves both pre-event prevention and post-event emergency response and recovery, including staff emergency training [5], personnel organization and liaison [6], supplier communication [7], and crisis evaluation [8]. Collection preservation literature focuses more on post-event response and recovery, such as detailed salvage measures for specific resources [6], priority lists and off-site safety inventories [9], and temporary relocation funding [10].

Discussion of public libraries' external social services during crises began during World War I in the early 20th century [11], with social services primarily involving post-event emergency response and recovery. This was when libraries first became socially conscious organizations. Over the past century, service scope has gradually expanded from offline to online. Offline services include building belief and positive images for people in war [9], providing targeted assistance to disaster victims [12-14], joining local community working groups or contacting local emergency management government agencies to join emergency command chains, and inviting third-party organizations for information promotion or business recovery. Online services include health consultation, reading promotion, disseminating updates on major emergencies, gathering volunteer information, and maintaining social media accounts for effective communication and interaction during disasters [15].

3. Research Methods

3.1 Case Selection For historical major emergencies, selected cases were drawn from Taylor & Francis using the same search strategy as the literature review. For COVID-19-related public library news events, the ProQuest database was searched with keywords "COVID-19 & public library," language set to "English," location to "United States," and publication type to "magazines, trade magazines, blogs, podcasts, and websites" to obtain target cases.

To study how American public libraries provide social services during major emergencies, libraries must first be distinguished by scale. Public libraries are typically classified by construction scale and service population into large public libraries and small/medium public libraries. Referencing China's Public Library Construction Standards, this paper classifies state-level and national public libraries as large, and city-level, district-level, and below as small/medium. The libraries involved are listed in Table 1 .

Table 1. List of Public Library Cases

Scale	Library	URL
Large	Library of Congress	https://www.loc.gov/collections/
	Louisiana State Library	https://www.state.lib.la.us/
	Tennessee State Library	https://sos.tn.gov/
	South Carolina State Library	http://www.statelibrary.sc.gov/
Small/Medium	Small/medium public libraries along Gulf Coast	
	Small/medium public libraries along Mississippi River	
	Ferguson Municipal Public Library	https://fergusonlibrary.org/
	Richland Library	https://www.richlandlibrary.com/
	Vail Public Library	https://vaillibrary.com/
	Prince George's County Memorial Library System	https://www.pgcmls.info/
	Maplewood Library	https://www.maplewoodlibrary.org/

Selected cases of different-level public libraries providing social services were based on availability principles. Some have developed systematic response models that functioned during major emergencies and serve as representative samples for professional and academic reference.

3.1.1 Large Public Libraries Large public libraries, primarily funded by government public finance, occupy central positions in regional public library systems in terms of hardware/software construction, information resource reserves, and talent/technology/funding. They lead in resource procurement, industry standards, and information resource sharing.

During major emergencies, large public libraries' social services relate to their penetration and radiation in physical and online communities. In physical communities, while they serve surrounding residents, they show little advantage over small/medium libraries in sheltering on-site visitors. Their main functional advantage lies in macro-level coordination of regional library system disaster reduction measures. In online environments, large public libraries can initiate numerous public welfare activities based on relatively abundant digital resources and financial support, and their information interactions with the public carry higher credibility due to their influence.

3.1.2 Small and Medium-Sized Public Libraries American small and medium-sized public libraries include both government-funded libraries and community libraries built by individuals or groups to serve local residents. Together, they form the small/medium public library network, centered around large public libraries and scattered throughout the region. In terms of penetration and radiation, they have geographic advantages in serving on-site visitors and can better tailor services to public needs during emergencies. However, due to limited operational capacity, their digital resource construction and online information interaction are often constrained by personnel, funding, and influence.

3.2 Classification Standards

3.2.1 Major Emergencies In domestic government early warning management research, major emergencies [18] are defined as sudden, malignant events in national political, economic, and cultural life that trigger social chain reactions and serious consequences, potentially destabilizing society, with characteristics of being catastrophic, comprehensive, and sudden. Based on the literature review, major emergencies can be fundamentally divided into social problems and natural disasters.

Social problem emergencies originate from human actions, including terrorist attacks by criminal forces in public places, mass confrontation caused by internal political instability, economic collapse from external wars, and social pandemics spread through human contact. Natural disaster emergencies stem from natural phenomena causing severe damage under specific conditions, such as earthquakes, storms, floods, and hurricanes. Although some natural disasters (like nuclear accidents) result from human production activities violating ecological balance, this paper classifies them by direct cause rather than root cause.

3.2.2 Types of Social Services American public libraries' social services during major emergencies can be categorized from different perspectives, such as duration (long-term/short-term), personnel/funding investment (low-cost/high-cost), and disaster reduction effects and service environments.

(1) By Disaster Reduction Effect: Services can be divided into compensatory and containment types. Natural disasters primarily elicit compensatory services, while social problems may require both. Compensatory services focus on remedying losses after disasters, while containment services aim to stop and control disaster expansion during evolving social problems.

(2) By Service Environment: Services can be divided into physical community and online environments. Physical community services target on-site visitors, while online services target all internet users. The expansion of service scope depends on technological progress. When emergencies affect library buildings, service focus gradually shifts online for both safety and cost considerations.

4. Case Analysis

4.1 Compensatory Social Services During Natural Disasters Disasters can be divided by frequency into frequent (storms, heavy rain/snow) and occasional (earthquakes, floods, fires, mudslides) [19]. The former provides accumulated experience for the library profession and academia, making responses to the latter also reference-worthy. Natural disasters are unavoidable, and damage is immediate. Though disaster chains may follow (e.g., floods after storms, landslides after earthquakes), libraries lack professional disaster mitigation functions, making post-event services more compensatory than containment.

4.1.1 Physical Community In physical communities after natural disasters, public libraries of all sizes provide services according to their capacity. Almost all documented libraries that provided physical community services during natural disasters maintained well-preserved buildings that didn't require closure, providing crucial foundations for offline services. Small/medium libraries' work better reflects micro-level service to individual citizens, 主要体现在主动受理本地社区居民事务, 配合当地政府进行具体办事导览等方面。

(1) Small and Medium-Sized Public Libraries. These libraries have limited service scope and resources but occupy unique advantages in local communities. They interact frequently with residents, enabling more detailed and locally relevant understanding of public needs after natural disasters. They also collaborate closely with local recovery agencies to provide targeted aid.

Taking small/medium public libraries along the Gulf Coast during 2004-2005 [12] as examples, their services targeted local communities within hurricane impact zones, including both direct services and collaborative services with government departments.

Short-term emergency response included: providing shelter for displaced residents, issuing temporary library cards, distributing food and supplies; offering safe internet/social media access and charging facilities for those without network access; establishing community liaison centers to connect police, fire, and public works departments; using bulletin boards to help find missing persons; providing collection resources and printing/faxing services to evacuees in shelters; and offering meeting spaces for government agencies, Red Cross, and military personnel.

Long-term recovery included: establishing partnerships with local transportation, water/sanitation, fire departments, and schools; setting up banks and unemployment guidance offices in library meeting rooms; creating reference contact lists by municipal governments or experts for targeted knowledge recommendations on rebuilding life; providing e-government assistance to residents lacking external power, network connectivity, or digital literacy skills, including helping users set up email accounts and navigate unfamiliar e-government websites to complete FEMA insurance claims and other paperwork.

(2) Large Public Libraries. Large public libraries serve broader physical communities. Even with limited financial resources for disaster relief, they can leverage their reputation and status to mobilize multi-sector resources to support community library systems, further enhancing social prestige.

For example, the Louisiana State Library [20], serving the entire state, demonstrated macro-level coordination characteristics in physical community services, emphasizing library social status through practical measures: personnel and material coordination, information and knowledge support, economic promotion, and public reassurance.

Short-term emergency response included: continuously reminding state and local officials of public libraries' role in assisting evacuees, solidifying their position as first responders to secure government funding; managing and distributing donations, books, and computers; donating mobile shelving as temporary facilities for destroyed libraries.

Long-term recovery included: establishing foundations for libraries unable to directly accept donations to receive targeted contributions; partnering with the American Library Association (ALA) to provide critical recovery information; ensuring ALA annual conferences were held locally to bring over 15,000 visitors within five days to boost post-disaster economy; offering discounts from various suppliers to affected libraries; and compiling reading lists on mental health themes for children affected by hurricanes.

4.1.2 Network Environment Over time, the types of online resources public libraries can provide have diversified. Based on historical experience, online services can be divided into one-way and two-way information flow periods. In both periods, responses to natural disasters remain primarily compensatory.

(1) Small and Medium-Sized Public Libraries. Analysis of selected cases shows these libraries remain in the one-way information flow period, providing network services through website announcements and link guidance only. They don't dominate online service provision. Research shows few small/medium libraries post emergency notifications on their websites after emergencies. Even in 2011 Mississippi River floods [21], among nearly 50 affected small/medium public libraries, only 14 embedded links to emergency resources in deep web structures requiring keyword searches to access. When social media emerged, libraries tended to provide unilateral information about themselves rather than engage in dialogue, with two-way interaction remaining exceptional until social problems (rather than natural disasters) increased staff communication frequency.

(2) Large Public Libraries. Large libraries show a trend from one-way to two-way information flow. During the one-way period, they were the primary responders using networks for natural disasters, serving larger audiences with more resources. By publishing integrated resource links, they provided universal reference value, typically linking to shelter guides, recovery plans, and

open database access. In the 2011 Mississippi River floods, only the Tennessee State Library (a large public library) mentioned the disaster on its homepage with links to local disaster prevention offices. A typical case is the 2005 hurricane response, where the Louisiana State Library established effective links for evacuees and libraries within three days, covering short-term emergency information (shelter lists, evacuation routes, road closures) and long-term recovery resources (food stamps, FEMA assistance, people-finding websites, rebuilding information). The State Library also collaborated with Gale and EBSCO to provide database access during emergencies.

In the two-way information flow period, improved urban infrastructure for power and communications enabled libraries to interact with the public via social platforms even when natural disasters affected infrastructure. Interaction modes included real-time question response, information screening, and survey research. After 2015 South Carolina floods [22], South Carolina State Library staff used social media to identify, filter, and regularly update flood information and emergency resources (e.g., water quality testing). They also responded to false health information posts in forums, with data showing average response times of about nine minutes to community questions via social media. The State Library also distributed surveys to understand real-time needs.

4.2 Dual-Type Social Services During Social Problems Social environment issues, including political/violent events and pandemics, are occasional disasters uncommon in China's context but typical for studying library responses. Because human-caused emergencies generally involve gradual evolution, public libraries inevitably participate in these processes, making their responses important for reducing disaster impact. Post-event measures demonstrate both compensatory effects (in short-term emergency response and long-term recovery) and containment effects (in short-term emergency response, such as using neutral positions to calm public emotions during protests or shifting operations online during pandemics).

4.2.1 Physical Community During major social emergencies in physical communities, libraries decide whether to close based on building impact and staff safety.

(1) Small and Medium-Sized Public Libraries. When social events don't affect normal operations, small/medium libraries providing physical community services mainly include those that can offer non-collaborative services using their own resources and those relying on partnerships. These libraries maintain close community ties, easily joining community working groups or emergency management command chains through local emergency managers. Specific services fall into two scenarios:

—**Normal Operations.** When social events don't affect building operations, small/medium libraries' social services overlap significantly with natural disaster

services, including proactively handling local community affairs and guiding specific procedures in coordination with local government.

For example, after the September 11 attacks, Arlington County Public Library in Virginia served communities around the Pentagon, focusing on independently provided services. Short-term emergency response included: editing and broadcasting police/fire department briefings twice daily; real-time local traffic updates; special information postings for firefighters; and collecting potential volunteer lists for distribution to organizations in need. Long-term recovery included: building websites with local community information linking to reliable news sources and emergency numbers; establishing hotlines; providing stress counseling or referrals; offering insurance forms in multiple languages; compiling health and safety tips; creating demonstrations for salvaging and cleaning household items; hosting blood drives; accepting relief funds and supplies; and implementing cultural sensitivity training programs to enhance cross-cultural communication and understanding.

—**Suspended Operations.** When social problems like pandemics seriously affect physical community services, libraries must close, making physical services quite limited. Without clear cures, services generally contract.

In responding to the highly transmissible COVID-19, American public libraries at all levels shared a consensus on short-term emergency building closure with remote work for staff. Additionally, loan periods were extended and outdoor self-service borrowing/returning devices were installed. For example, Richland Library [24] remained open when local cases were mild, increasing disinfection and providing hand sanitizer, but gradually closed all spaces as severity increased, eventually shutting completely. For long-term services, the building remained closed for safety, with staff regularly meeting to evaluate reopening plans and outdoor self-service reading facilities installed for community use.

(2) **Large Public Libraries.** When social emergencies don't affect normal operations, large libraries' macro-level coordination work aligns with natural disaster responses. However, during building-closure emergencies like pandemics, besides maintaining classic services (self-service borrowing/returning), they cannot continue other on-site services. For example, the Library of Congress [25] postponed or canceled public programs and tours after COVID-19, closed all buildings to the public, increased cleaning frequency in public areas, and installed additional hand sanitizing stations. Essential on-site work like contract negotiations was handled by staff visiting weekly or as briefly as possible.

4.2.2 Network Environment Historical experience shows public library responses to social problems in online environments belong to the two-way information flow period. During pandemics, communication between libraries, the public, and third-party organizations in virtual communities, plus additional digital resource access, constitutes relatively high-cost services. As pandemics persist, limited budgets may lead to rapid rollout followed by gradual cancella-

tion, as seen with Vail Public Library [28].

However, studying small/medium libraries' positive measures during their optimistic operational phase remains instructive. These libraries rely more on social media for online interaction, using feedback to identify public information needs and post requested information on their websites for local relevance. For example, Prince George's County Memorial Library System in Maryland [29] produced multilingual pandemic education posters and notification collections, organized conventional resource links by seven themes (food/essentials, culture/entertainment, health/wellness, adult online learning/reading, children's activities/educational resources, internet/utilities, business resources), compiled video resources for different ability groups (including sign language) for pandemic education, and rapidly added real-time dynamic visualization maps of confirmed cases.

Maplewood Library [30] provided virtual story times for children, opened e-books, TV shows, magazines, movies, and language learning programs to cardholders, provided links and phone lists for New Jersey residents to contact local officials, and offered fact-checking websites for users to verify information.

Richland Library [31] established a coronavirus misinformation tracking center to monitor false and dangerous information, compiled emergency service guides for free/low-cost medical assistance locations, provided online nursing consultations from the Medical University of South Carolina (MUSC), offered links to disinfectant product lists, travel advisories, and school closure information. Long-term recovery included aggregating support policies for small businesses, guiding them to green funding channels, and compiling extensive job information [32] with income/financial advice during the pandemic.

4.3 Summary Regardless of whether emergencies are natural disasters or social problems, public libraries' social services are always based on their own capacities. Summarized content includes: providing disaster shelter and service spaces for affected people; providing information guidance and screening for recovery; providing psychological counseling for mental health recovery; coordinating and communicating with partners; coordinating human and material resources; thematic reading promotion; obtaining and opening external resources.

5. Implications

5.1 Strengthen External Cooperation Public libraries' social services during major emergencies are fragmented and unstructured. Therefore, when signing cooperation contracts or establishing friendly relations with external organizations, responsibilities and contact lists during emergencies should be clarified, work priorities systematically planned, and integration into emergency command chains better achieved. However, small/medium libraries with less social prestige may lack support for external cooperation negotiations and should ac-

tively seek help from superior libraries. Large libraries should focus on providing policy and funding guarantees for subordinate libraries' external cooperation or play leading roles in such cooperation, such as representing the regional system in negotiating and allocating responsibilities with government, enterprise, nonprofit, and institutional partners.

5.2 Focus on Staff Needs Librarians also have social attributes as ordinary citizens. When facing direct conflict from emergencies while experiencing budget cuts and layoff pressures, public libraries have obligations to address staff information needs, work emotions, and physical/mental health. For example, libraries with capacity can open more promotion channels, while those with financial pressure can organize no-cost team-building activities (like online games) to enhance staff self-identity and job belonging. Further consideration is needed on how to ensure staff safety, identify which external services undermine staff morale, and ensure equal concern for staff and public welfare.

5.3 Establish Internal Emergency Networks Different-level public libraries can build internal emergency networks to provide social services through vertical collaboration during emergencies. For natural disasters like earthquakes and floods requiring immediate short-term response, public libraries can serve as organized public disaster relief facilities and shelters, with provincial libraries as central coordinators accepting regional resources and subordinate libraries responding by receiving supplies and sheltering local/evacuated victims. During longer-term recovery, large libraries can serve as regional policy makers for library emergency development strategies, while small/medium libraries act as implementers, adapting measures to local conditions to better serve local populations.

Small/medium and large libraries can also attempt to form internal network alliances to provide time-limited open access services with knowledge base suppliers during special periods, ensure electronic resource access interoperability across public library internal networks to share more e-resource usage rights, collaborate with specialized libraries like health libraries to verify health information for users, and partner with government agencies to obtain official dataset usage authorization for dynamic disaster visualization maps.

5.4 Focus on Social and Humanistic Care As society increases emphasis on public mental health, public libraries should serve as reliable information centers responsible for identifying user information needs and negative emotion sources during long-term community recovery. For a long time, even as information centers, libraries only unilaterally released information to the public, with actions like publishing psychological healing kits and creating thematic reading lists based on librarians' own experience in judging public psychological needs. With social network technology development, libraries can now conduct real-time two-way communication with the public. Based on feedback from this two-way communication, libraries can timely detect social opinion trends,

rapidly identify issues of public concern, and more effectively guide public emotions.

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Huang Lian: Material collection and organization, initial draft writing.

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