

Online Library Services In Public and Private University Libraries In Uttar Pradesh a Comparative Investigation

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Abstract: University libraries across India are progressively abandoning purely physical collections in favor of online cataloging, e-journals, digital archives, and virtual reference services. This shift has become particularly evident since the COVID-19 pandemic forced institutions to rethink student and faculty access to information. However, most existing studies on this topic focus on a single institution or a group of similar universities, leaving the gap between the public and private sectors largely unanalyzed. This article presents the design and rationale for a comparative study of online library services in selected public and private university libraries in Uttar Pradesh. Based on a descriptive survey approach grounded in positivist philosophy, the study uses structured questionnaires administered to both librarians and users, supplemented by personal interviews with library professionals. A pilot study has already been conducted with eight academic libraries (four public and four private) to test and refine the research instrument, and the final questionnaire has been validated for content and reliability. This article describes the objectives, hypotheses, sampling strategy, and data collection tools guiding the research, and discusses how the findings, once primary data collection is complete, are expected to inform library administrators and policymakers on how to reduce the digital services gap between the two categories of institutions. The article concludes by identifying the next steps in the research process, including large-scale data collection and statistical analysis of user satisfaction and digital literacy in the sampled institutions.

Keywords: Online library services; University libraries; Public and private universities; Uttar Pradesh; Digital literacy; User satisfaction

1. Introduction

Over the past three decades, the World Wide Web has become the primary channel for locating and consuming information. What began in 1989 as Tim Berners-Lee's proposal for a hypertext system accessible via the internet has transformed into a vast, interconnected space of websites and services that most people consider synonymous with "going online." For libraries, this shift has not been a mere technical adjustment; it has transformed the very essence of a library. Previously, a library was defined by its physical collections and reading rooms; today, a significant portion of its offerings exists solely as a website, portal, or app. University libraries in India have felt this change particularly acutely. Academic libraries are no longer judged solely by the size of their print collections, but by the effectiveness with which they provide access to catalogs, e-journals, digital repositories, and virtual reference services to students and faculty, who increasingly expect 24/7 access from their own devices. Sharma and Sharma (2020) note that these web services (access to catalogs, electronic collections, digital archives, and virtual reference systems) have been specifically created to meet the diverse needs of the academic community. Singh and Bansal (2019) found that Indian university students have adopted these services primarily for the convenience they offer compared to physically visiting the library. The COVID-19 pandemic significantly accelerated this trend: Kumar et al. (2021) observed that institutions were forced to rapidly adopt online delivery models simply to keep library services running during



closures, and much of this shift has persisted even after the resumption of normal operations. What makes Uttar Pradesh a useful setting for studying this transition is the great diversity of its higher education landscape. The state is home to some of India's oldest public universities, such as the University of Allahabad and Banaras Hindu University, both established over a century ago, alongside a large and growing number of private universities that have emerged primarily in the last two decades. These two categories of institutions differ in ways that likely influence how their libraries approach web services: public universities typically operate under government funding cycles and bureaucratic procurement processes, while private universities generally have greater flexibility (and often more recent capital investment) to rapidly adopt new technologies. Whether this translates into a significant difference in the web services offered to students, and in their level of satisfaction and digital confidence when using them, is an empirical question, not something that can be assumed. The existing literature offers helpful but partial answers. Several studies have analyzed web library services within a single institutional category, either public or private, but it is much more difficult to find comparative work that places them side-by-side within the same state, using a common instrument. This gap is important because policy recommendations derived from a study of only private or only public universities may not be generalizable to the other group, and administrators and state education bodies need comparative evidence to make sound decisions about resource allocation in both sectors. This article describes a study designed to directly address this gap, using a structured and validated questionnaire administered to both librarians and users in a purposive set of public and private university libraries in Uttar Pradesh.

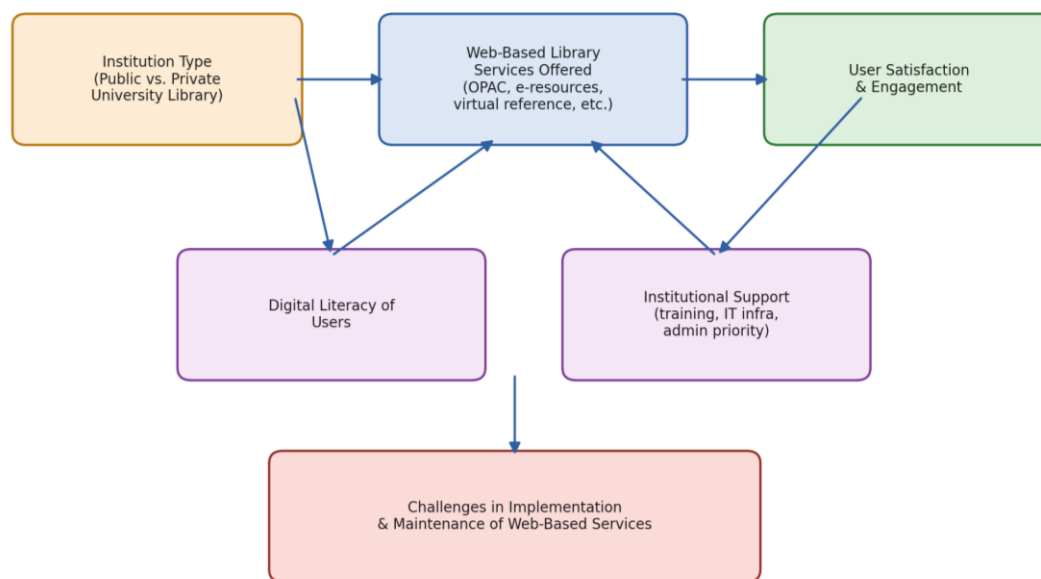


Figure 1. Conceptual framework of the study.

This problem also has a practical dimension that goes beyond academic interest. University libraries operate with budgets that, in most cases, are set well in advance and are difficult to revise mid-cycle. This means that decisions about which web services to invest in—a new discovery layer, a mobile-optimized OPAC, subscription-based remote database access, a chat-based reference service—are often based on the comparative information available at the time, regardless of whether that information is representative of the sector as a whole. If librarians and administrators at public universities assume, without direct evidence, that private universities have already solved the problems they face, they may overinvest to catch up with an assumption rather than a fact, or underinvest because they believe the gap is insurmountable due to funding constraints. A study that measures the difference itself, rather than relying on the general impression that private institutions are more agile, provides both groups with a more solid basis for planning. It is also worth noting that "web library services" are not a single, uniform concept that a library either has or does not have. It encompasses a wide range of distinct functions: the online public access catalog that allows users to search holdings remotely, subscription-based e-journal and e-book platforms, institutional repositories for theses and research results, virtual reference services or chat support, remote authentication systems that allow students to access paid resources from off-campus, and, increasingly, mobile apps or SMS alert systems for due dates and new acquisitions. A library may be strong in one of these areas and weak in another, and a study that treats "web services" as a single binary (yes/no) variable risks overlooking precisely the kinds of nuances that would be useful to an

administrator when deciding where to direct the next round of investment. This is one reason why the questionnaire on which this study is based is divided into distinct sections rather than posing a single, general question about satisfaction.

2. Literature review

Several recent studies provide a useful foundation for this research, both in terms of methodology and substantive findings. Kushwaha and Yadav (2023) examined how private universities in the Delhi National Capital Region made online library services available to their academic communities. Working with four private universities, the study relied on an analysis of university and library websites, using a simple checklist approach that recorded the presence or absence of specific services rather than direct user surveys. Their findings offered a comparative snapshot of the services offered at the four institutions and highlighted that even within a single institutional category (private universities), there was marked variation in what was actually made available online. This underscores a point relevant to the present study: comparisons should not assume that all institutions of a given type behave uniformly, which is part of the reason why a broader sample from different categories is worth investigating. Manglik (2017) took a different approach, surveying graduate science and technology students at three private universities in Uttar Pradesh: Amity University, Galgotia University, and Shiv Nadar University, using a stratified accidental random sample. Of the 250 questionnaires distributed, 203 were received and analyzed. The results showed that while almost all respondents were aware of their library facilities, only 89 percent had used them for academic purposes, and just over 14 percent used them specifically for research. The resource-level findings were similarly instructive: online databases were the most frequently used resource (45.32 percent), followed by electronic journals (40.89 percent) and print journals (36.45 percent), while e-books and CD-ROM databases lagged behind at approximately 29 and 27 percent, respectively. A notable minority of respondents (21.18 percent) felt the library lacked up-to-date books, and 16.75 percent rated the lending service negatively. These figures provide a useful benchmark for the types of resource use questions this study aims to address and suggest that awareness of a service does not automatically translate into regular use—a distinction the present study's questionnaire design (which separately inquires about awareness, frequency of use, and satisfaction) seeks to capture. Sen (2025) focused on a single institution, Tirhut College of Agriculture, examining library resource awareness and use among undergraduate students. Of the 180 students initially contacted, 150 usable responses were collected. While the article focuses on a single college rather than a comparison between different types of institutions, it reinforces a recurring theme in this literature: usage patterns and perceived barriers vary sufficiently across institutions that single-site studies, however well-conducted, cannot be confidently generalized to an entire state or sector. Madhusudhan and Nagabhushanam (2012), in one of the oldest and most directly relevant studies, examined online library services across a broader set of Indian university libraries, specifically analyzing how libraries provided web access to their collections, what user support existed, and what barriers users faced. Their main conclusion—that many university libraries had still not made full or efficient use of their websites—is now more than a decade old, and an open question this current study may help answer is whether that gap has narrowed, particularly for private institutions that have had less legacy infrastructure to contend with. Bala and Vitthalrao (2024), working in a different state (Goa) and at the college level rather than university, surveyed 30 college librarians about the online services their institutions provided, using a descriptive analysis of a structured online questionnaire. Their finding that most colleges in Goa now provide relatively advanced online services suggests that regional context matters, and that findings from one state should not be assumed to be valid in another—a further reason why a comparative study specific to Uttar Pradesh has independent value. Taken together, this literature establishes three points relevant to the design of the present study. First, comparative work between public and private institutions within the same state, using a common instrument applied to both librarians and users, is truly underexplored; most existing studies compare institutions of the same type or examine a single institution in depth. Second, awareness, use, and satisfaction are distinct constructs that should be measured separately, rather than assuming they evolve together, as illustrated by Manglik's (2017) findings. Third, digital literacy and institutional support repeatedly appear as factors contributing to the effectiveness of web service use, which is why this study incorporates them into its own objectives and hypotheses, rather than treating "service availability" as the sole variable to be measured.

3. Study Objectives

Based on the deficiencies identified above, this study is guided by five objectives:

- To study the current state of online library services offered in selected public and private university libraries in Uttar Pradesh.

- To measure user satisfaction and participation with online library services in selected public and private libraries in Uttar Pradesh.
- To compare the impact of digital literacy on the effective use of online library resources among users of the libraries studied.

4. Study Hypothesis

Two hypotheses, formulated in null form, guide the statistical component of the study:

Hypothesis 1: There is no significant relationship between user satisfaction and interaction with online library services in selected public and private university libraries in Uttar Pradesh.

Hypothesis 2: There is no significant difference in the impact of digital literacy on the effective use of web-based library resources among users of the libraries studied.

These hypotheses are directly related to the second and third objectives mentioned above, and will be tested once large-scale data collection is completed, using appropriate statistical techniques to compare satisfaction and utilization rates between public and private groups.

5. Research Methodology

5.1 Research Design

The study follows a descriptive research design, chosen because its objective is to obtain an accurate and detailed picture of how online library services are provided and used, rather than to manipulate or experimentally control any of the variables involved. Descriptive designs are ideal for capturing a comprehensive profile of participants from various institutions and identifying trends and patterns in user behavior, rather than testing a single causal relationship in isolation. The philosophical foundation of the study is positivist and is developed through a deductive approach, moving from general propositions found in the existing literature to specific and testable questions posed to librarians and users at the participating institutions.

5.2 Sample design

Instead of attempting to survey every university library in Uttar Pradesh, the study uses stratified or purposive sampling to select a manageable yet representative set of both public and private institutions. Selection criteria include the institution's age, its NAAC accreditation, the number of enrolled students, and the current state of its technology infrastructure—factors expected to influence how a library approaches online service delivery. This approach prioritizes depth of research over comprehensiveness, which is appropriate given that the study also seeks the perspectives of multiple stakeholder groups (librarians, library assistants, library staff, and users, both students and faculty) rather than a single category of respondents per institution.

5.3 Pilot study

Before finalizing the survey instrument, a pilot study was conducted in eight academic libraries in Uttar Pradesh, divided equally between public and private institutions:

Table 1. Public and private university libraries included in the pilot study ($n = 8$ institutions, 10 respondents each).

Institution	Year of foundation	State
University of Allahabad	1887	Public
Banaras Hindu University	1916	Public
Aligarh Muslim University	1920	Public
Babasaheb Bhimrao Ambedkar University	1996	Public
Integral University	2004	Private
Amity University	2005	Private
Babu Banarasi Das University	2010	Private

GLA University	2010	Private
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Ten responses were collected from each institution, including undergraduate, graduate, and doctoral students, as well as faculty members, without restricting the sample by semester or department. The feedback received during this pilot phase was compared with existing literature, and the resulting suggestions were incorporated into the final questionnaire. Several questions were reformulated or restructured as a direct result. The revised instrument was sent to subject matter experts for content validation, after which reliability was assessed using Cronbach's alpha coefficient, and necessary corrections were made before finalizing the questionnaire for the main survey.

5.4 Tools and techniques

Data collection for the main study is primarily based on structured questionnaires: one designed for librarians and another for users, both specifically developed around the study's five objectives. Each questionnaire is organized into sections that directly correspond to the research objectives: a section on the current state of web services, a section on user satisfaction and engagement, a section on digital literacy and usage, a section on implementation and maintenance challenges, and a section on institutional support. This sectional organization aims to maintain consistency in data collection.

Table 2. Alignment of the study objectives with the corresponding sections of the questionnaires for librarians and users.

Research objective	Questionnaire section
To study the current state of online library services offered in selected public and private university libraries in Uttar Pradesh.	Section B: Current state of online library services (librarian and user)
Measuring user satisfaction and participation with online library services.	Section C: User Satisfaction and Engagement (Librarian and User)
To compare the impact of digital literacy on the effective use of online library resources.	Section D: Digital Literacy and Use (Librarian and User)
Identify the challenges that university libraries face when implementing and maintaining web-based services.	Section E: Challenges in implementation and maintenance (librarian and user)
Explore the role of institutional support in promoting the adoption and improvement of web-based library services.	Section F: Institutional support (librarian and user)

The analysis focuses on the original objectives, rather than generating a loosely organized set of findings that must then be adjusted to fit the research questions. In addition to the questionnaire, the study uses an interview technique —informal, one-on-one conversations with librarians—to gather contextual information about web service delivery that a structured questionnaire alone might miss. This mixed-methods approach reflects the recognition that librarians often possess institutional knowledge (regarding budget constraints, acquisition delays, or internal policies related to technology adoption) that would not be revealed in a multiple-choice survey.

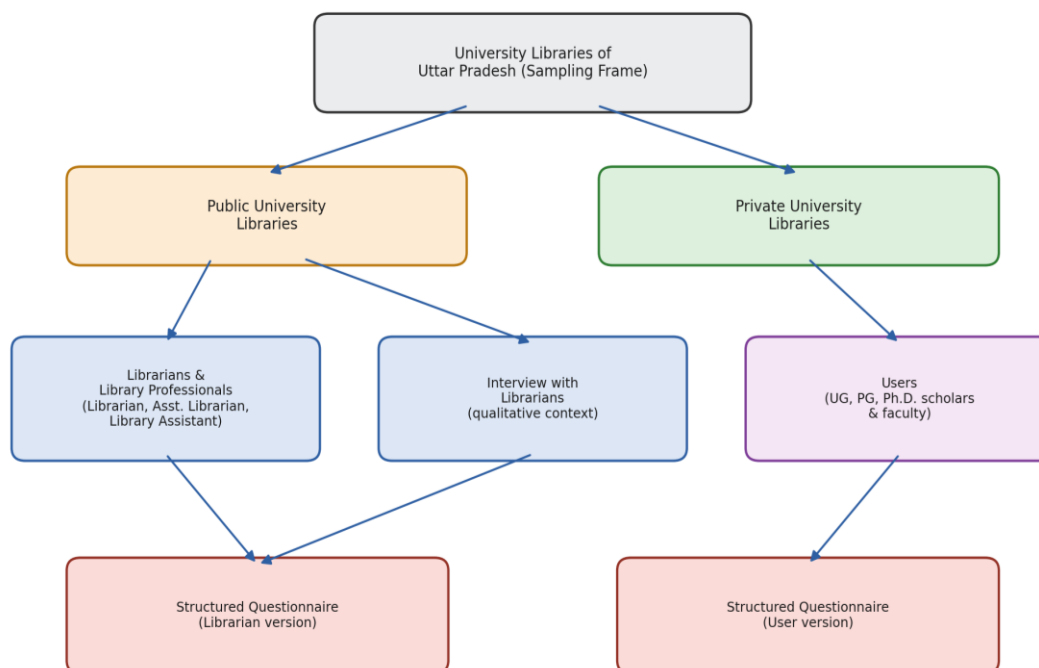


Figure 2: Sampling structure of the study

The decision to survey both librarians and users, rather than just one of them, is itself a methodological choice that deserves explanation. A librarian's description of "what services we offer" and a user's description of "what services I use and find useful" are not the same, and studies based solely on one group tend to offer a partial view: either an inventory of the nominal availability of services that says little about their actual use, or a set of user impressions that cannot be easily compared with what the library believes it is offering. By compiling both perspectives based on the same set of objectives, the study is able to identify not only if there is a gap between public and private institutions, but also whether that gap is due to service provision, user knowledge and digital literacy, or some mismatch between what libraries believe they offer and what users can actually find and use.

5.5 Data Sources

Primary data will be obtained from journals and periodicals, institutional brochures, library websites, annual reports, and responses to questionnaires and interviews collected from librarians and users. Secondary and tertiary sources (reference books, dictionaries, encyclopedias, and directories) support the conceptual and definitional framework of the study but are not considered evidence for the comparative claims themselves.

5.6 Planned data analysis

Once large-scale data collection is complete, user and librarian responses will be structured, tabulated, and analyzed using a combination of descriptive statistics (frequencies, percentages) and appropriate inferential techniques to test the two hypotheses: probable correlation and comparative tests of means and differences. This is because both hypotheses address relationships and differences between groups, rather than simple frequency counts. The findings will be presented in tables and graphs organized around the study's five objectives, allowing for direct comparison between subsamples from public and private universities in each dimension: current service availability, user satisfaction, impact of digital literacy, implementation challenges, and institutional support. It should be noted that, at the stage described in this document, this analysis has not yet been carried out; the pilot phase and instrument validation are complete, but large-scale data collection from the main sample is the next step in the research timeline.

6. Scope of the study

The study has been deliberately delimited to make the research manageable while still capturing significant variations. Geographically, it is limited to Uttar Pradesh, a state chosen both for the size and diversity of its higher

education sector and because the mix of long-established public universities and newer private institutions provides a natural basis for comparison. Within the state, the study does not aim to encompass all university libraries but rather selects a purposive sample that includes both public and private institutions, chosen to differ significantly in their funding structure, administrative priorities regarding digital transformation, user demographics, and pace of technology adoption. The study also considers the perspectives of multiple stakeholders: librarians, assistant librarians, and library staff from the professional perspective, and undergraduate, postgraduate, and doctoral users from the user perspective, so that the resulting picture reflects both how services are designed and delivered and how they are actually experienced.

7. Limitations of the study

It is important to note three limitations. First, the geographical scope is limited to Uttar Pradesh, so the results should not be automatically generalized to other states with different infrastructures or funding systems. Second, the study covers only public and private university libraries and does not include college libraries, research institute libraries, or other categories of academic libraries that may operate under different constraints. Third, the sample is limited to users and librarians; it does not incorporate the perspectives of university administrators or IT departments, who might have relevant information about the budgetary or infrastructure decisions that ultimately determine which web services are possible.

8. Importance of the study

If the comparative pattern this study aims to identify proves to be real and substantial, the findings will have practical value for at least three audiences. For library administrators, a clear picture of the divergences between public and private institutions—whether in service availability, user satisfaction, or the support for digital literacy offered—provides a more solid basis for planning improvements than anecdotes or comparative analyses of individual institutions. For policymakers overseeing state higher education, evidence of a systematic public-private gap (or lack thereof) is directly relevant to funding and infrastructure decisions, especially given that much of India's push toward digital higher education has assumed, rather than verified, that private institutions are at the forefront in this area. For the broader library and information science research community, the study expands a body of literature that has thus far been dominated by studies of individual institutions or sectors, offering a direct comparative dataset collected with an instrument validated across both categories. There is also a methodological contribution that deserves separate mention from the substantive findings. Because the same questionnaire, adapted section by section to the same five objectives, is administered in institutions that differ in their funding model, age, and governance structure, the resulting instrument, once validated through the pilot phase described above, can be adapted by other researchers conducting comparative library studies in other parts of India for their own state or region. Much of the existing literature reviewed in this article is based on instruments designed for a single study and not reused in other contexts, making it difficult to compare results across states over time. A validated and replicable instrument is a modest but valuable contribution in itself, regardless of what the final data reveal about Uttar Pradesh in particular.

9. Conclusion

The study shows that online library services have evolved from a complementary offering to a core component of how university libraries in India serve their academic communities, and the combination of long-established public universities and newer private institutions in Uttar Pradesh makes it an ideal setting to examine whether this shift has occurred uniformly across both sectors. This article presents the rationale, objectives, hypotheses, and methodology of a comparative research project designed to directly answer this question, using a validated, structured questionnaire administered to both librarians and users from a purposive sample of institutions. The pilot phase, which encompassed eight academic libraries and resulted in a refined, peer-validated instrument, has now concluded. The immediate next steps involve expanding the bibliographic base, conducting full-scale data collection from the main sample, and analyzing the resulting data against the study's two hypotheses. The aim is for the completed study to provide university administrators, library professionals, and state education policymakers with a concrete, data-driven view of the current state of online library services in Uttar Pradesh, and where attention is most needed given the existing gap between public and private provision.

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