Library Management Practices in Autonomous Engineering Colleges in North Andhra Pradesh Affiliated to JNTU Kakinada: A Case Study Approach

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Abstract

This paper examines the library management practices prevailing in ten reputed autonomous engineering colleges in North Andhra Pradesh affiliated to Jawaharlal Nehru Technological University Kakinada (JNTUK) as of 2023. Focusing on the districts of Srikakulam, Vizianagaram, and Visakhapatnam, the study adopts a descriptive survey method with a structured questionnaire administered to college librarians and library professionals of selected institutions. The investigation covers key dimensions of library management, including collection development, library automation, digital resource access, staffing, user services, and compliance with AICTE norms. The findings reveal that while leading institutions such as MVGRCE, GMRIT, AITAM, GVP, and VIIT demonstrate commendably mature library management practices particularly in automation, digital services, and professional staffing smaller and recently established colleges lag significantly in these areas. The study underscores the need for a unified, region-specific policy framework for library management in JNTUK-affiliated autonomous engineering institutions. Recommendations include mandatory adoption of open-source integrated library systems (ILS) such as KOHA, participation in consortium-based e-resource subscriptions, and appointment of qualified library professionals in conformity with AICTE norms.

Keywords:

Library Management Practices; Autonomous Engineering Colleges; JNTU Kakinada; North Andhra Pradesh; Library Automation; Academic Libraries; AICTE Norms.

I. Introduction

The library is universally recognised as the intellectual heart of any academic institution. In the context of engineering colleges, whose curricula demand sustained engagement with rapidly evolving technical knowledge, an efficiently managed library assumes critical importance. Library managementencompassing collection development, organisation of resources, automation, user services, and human resource administration determines the extent to which a library can support teaching, learning, and research. The quality of library management in an institution often reflects the broader institutional commitment to academic excellence.

North Andhra Pradesh, comprising the districts of Srikakulam, Vizianagaram, and Visakhapatnam, houses a significant concentration of engineering colleges affiliated to Jawaharlal Nehru Technological University Kakinada (JNTUK). Among these, a number have received autonomous status from the University Grants Commission (UGC), signifying a higher degree of academic and administrative independence. The library management practices of such autonomous institutions merit systematic investigation, as they serve a substantial student and faculty population and are expected to maintain standards consistent with their accreditation and autonomous status.

1.1 Library Management Practices – Concept

Library management refers to the systematic application of management principles to the administration and operation of libraries. It is a sub-discipline of institutional management that encompasses a wide spectrum of activities, including policy formulation, collection development and management, technical services (cataloguing and classification), circulation services, digital and electronic resource management, user education, staff management, budgeting and financial management, physical facilities management, and quality assurance. According to Sharma and Singh (2005), library management involves overseeing all library operations, managing the library budget, and ensuring the delivery of quality information services to users.

In the Indian context, academic library management has undergone a significant transformation since the late 1990s, driven by the introduction of information and communication technology (ICT). Library automation the use of integrated library management systems (ILS) for functions such as cataloguing, circulation, serial management, and OPAC has replaced many manual processes. The adoption of open-source ILS platforms such as KOHA and SOUL 2.0 has made automation feasible even for resource-constrained institutions. Beyond automation, the digital revolution has introduced e-resources, e-journals, online databases, institutional repositories, and digital libraries, all of which require new competencies in library management.

For engineering college libraries affiliated to JNTUK, the All-India Council for Technical Education (AICTE) prescribes minimum standards for library resources, infrastructure, and staffing. These norms form a regulatory baseline against which library management practices can be evaluated. However, compliance varies considerably across institutions, and autonomous status does not by itself guarantee superior library management.

1.2 Autonomous Engineering Colleges in North Andhra Pradesh Affiliated to JNTU Kakinada

The following ten reputed engineering colleges in the North Andhra Pradesh region (Srikakulam, Vizianagaram, and Visakhapatnam districts) were affiliated to JNTUK and recognised/active as autonomous institutions or leading affiliates by 2019. Their institutional profiles are presented below.

S. No.	College Name & Abbreviation	Location	Est.	Autonomous (Year)	Accreditation
1	MVGR College of Engineering (Autonomous) [MVGRCE]	Chinthalavalasa, Vizianagaram – 535 005	1997	Yes (2015)	NAAC A+, NBA
2	GMR Institute of Technology (GMRIT)	GMR Nagar, Rajam, Srikakulam – 532 127	1997	Yes (2012)	NAAC A, NBA
3	Aditya Institute of Technology &Mgmt (AITAM)	Tekkali, Srikakulam – 532 201	1998	Yes (2013)	NAAC A, NBA
4	Gayatri Vidya Parishad College of Engg (GVP)	Kommadi, Visakhapatnam – 530 048	1996	Yes (2008)	NAAC A, NBA
5	Raghu Engineering College (REC)	Dakamarri, Bheemunipatnam, Visakhapatnam – 531 162	2001	Yes (2017)	NAAC A, NBA
6	Raghu Institute of Technology (RIT)	Dakamarri, Bheemunipatnam, Visakhapatnam – 531 162	2005	Yes (2018)	NAAC B+, NBA
7	Vignan's Inst. of Information Technology (VIIT)	Beside VSEZ, Duvvada, Visakhapatnam – 530 049	2001	Yes (2017)	NAAC A, NBA
8	ANITS	Tagarapuvalalsa Visakhapatnam – 531162	2001	Yes (2015)	NAAC B+
9	JNTUK University College of Engineering, Vizianagaram	Dwarapudi, Vizianagaram – 535 003	2007	Constituent	AICTE Approved

1.3 Need and Scope of the Study

Despite the growing importance of engineering education in North Andhra Pradesh, systematic studies on library management practices in this specific sub-region particularly within JNTUK-affiliated autonomous colleges are notably sparse. Existing studies on engineering college libraries in Andhra Pradesh have largely focused on either the Rayalaseema region (under JNTU Anantapur jurisdiction) or the Godavari region, leaving the northern coastal districts comparatively understudied. The escalating autonomy granted to these institutions under UGC guidelines creates both opportunities and obligations for higher library management standards.

The present study is therefore both timely and relevant. It fills a geographical and thematic gap in the literature by investigating library management practices across ten JNTUK-affiliated autonomous engineering colleges in North Andhra Pradesh. The scope of the study is deliberately focused on library management as a whole encompassing physical, digital, human, and service dimensions rather than on isolated aspects such as automation alone. Data were collected as of the academic year 2018–2019, providing a pre-COVID baseline for future longitudinal comparisons.

1.4 Objectives of the Study

The present study was conducted with the following three specific objectives:

1. To examine the current library management practices including collection development, automation, digital resources, staffing, and user services in the selected autonomous engineering colleges in North Andhra Pradesh affiliated to JNTUK.
2. To compare and analyse the level of compliance with AICTE norms and standards among the surveyed college libraries.
3. To identify the strengths, weaknesses, and priority areas for improvement, and to offer evidence-based suggestions for upgrading library management practices in the study area.

II. Review of Literature

The following section surveys eight significant published studies directly relevant to the themes of library management, academic library services, ICT application in libraries, and engineering college libraries in India, all published prior to 2019.

1. Kumar, K. (2015)

In a comprehensive empirical study, Kumar examined the information and communication technology (ICT) facilities and services in engineering college libraries in the Rayalaseema region of Andhra Pradesh. The study found that DELNET was the most preferred information network service and VSAT the most widely used communication service. The study highlighted significant

disparities in ICT adoption between older and newer institutions, and called for regional policy intervention to ensure uniform library development. The relevance of this study to the present investigation lies in the parallel regional focus on engineering college libraries under JNTUK jurisdiction in Andhra Pradesh.

2. Srinivasa Raju, C., Pulla Reddy, V., & Surendra Babu, K. (2016)

This study evaluated the libraries of engineering colleges affiliated to JNTU Anantapur against AICTE norms. Questionnaires were administered to librarians of 119 engineering colleges. The findings revealed that a majority of the surveyed college libraries did not meet AICTE standards for books, journals, seating accommodation, RFID systems, and library staff. The study recommended that AICTE and JNTU Anantapur strictly enforce norms at the time of affiliation, permission, and inspection. This study provides a critical benchmarking framework that has been adapted in the present study to evaluate JNTUK-affiliated libraries in North Andhra Pradesh.

3. Kona, R., Chagari, S., & Rudraksha, G. (2017)

This study investigated the use of library resources and services in selected deemed university libraries in Andhra Pradesh, covering institutions such as GITAM, K L University, Vignan University, and Rashtriya Sanskrit Vidya Peetha. A total of 914 questionnaires were collected from 1,000 distributed across the four universities. The study examined collection development, library automation, staffing, working hours, and online resource availability. Findings showed significant variation in resource availability and management practices across institutions. This study is directly relevant to the present work as it surveys library management in Andhra Pradesh's autonomous higher education institutions.

4. Sahu, M.K. (2016)

Sahu examined the extent to which social media tools impacted the libraries of engineering colleges in Odisha. The study found that Web 2.0 technologies including blogs, wikis, RSS feeds, and social networks had begun to supplement traditional library services in technically oriented colleges. However, adoption remained uneven, with urban and better-resourced institutions ahead of rural colleges. This study is relevant to the present investigation as it highlights the digital dimension of library management in Indian engineering education contexts, a factor that has become increasingly significant by 2019.

5. Ramakrishna, K. (2016)

This study investigated the library resources and services of selected deemed university libraries in Andhra Pradesh from the perspective of Information and Knowledge Management. The paper documented the operational aspects, collection development practices, automation status, and

online resource availability of libraries in South Andhra Pradesh. The study found that library automation was advancing but that e-resource access remained limited in smaller institutions due to budget constraints. It recommended greater participation in UGC-INFLIBNET's N-LIST and INDEST consortium to bridge the digital divide in academic libraries.

6. Mushtaq, M., & Tausif, A. (2020). The study on collection management of electronic resources in engineering college libraries emphasized the importance of effective digital resource management, user-oriented services, and strategic budgeting practices in academic libraries. The authors observed that engineering college libraries increasingly depend on e-journals, databases, and automated systems to satisfy research and teaching requirements. The research highlighted issues such as inadequate funding, lack of trained staff, and technological barriers. It concluded that autonomous engineering college libraries should strengthen ICT infrastructure and adopt modern management practices to improve accessibility, resource utilization, and service quality for students and faculty.

7. Subaveerapandiyan, A., Rajitha, A., Dar, M. A., & Natarajan, R. (2022). researched on e-resource management examined the management challenges faced by library professionals in Indian academic institutions, including engineering colleges. The study revealed that libraries increasingly subscribed to e-journals and digital learning resources to support teaching and research. It identified significant barriers such as lack of professional ICT skills, insufficient training opportunities, and administrative difficulties in managing digital collections. The findings stressed that autonomous engineering college libraries require skilled manpower, updated technologies, and effective management policies to ensure sustainable digital library services and enhanced information access for users.

8. Jaganbabu, J., et al. (2023). Studied on integrated library management systems in engineering college libraries of Tamil Nadu investigated the adoption of modern library technologies and management practices. The study found that many autonomous engineering college libraries implemented software solutions such as Koha and other ILMS platforms for cataloguing, circulation, and digital access services. Despite technological progress, libraries faced challenges including inadequate infrastructure, lack of trained professionals, and budget constraints. The authors suggested strengthening institutional policies, ICT training, and digital service strategies to improve operational efficiency and user satisfaction in engineering college libraries.

III. Methodology

3.1 Type of Study

The present study is a descriptive, institutional case-study-based survey research. It adopts a comparative design, examining library management practices across ten selected autonomous engineering colleges affiliated to JNTUK in North Andhra Pradesh as of the academic year 2018-2019. The case study approach was chosen because it allows an in-depth, institution-specific analysis while simultaneously enabling cross-institutional comparison.

3.2 Research Method

The survey method of research was employed. Primary data were collected through a structured questionnaire administered directly to the librarian or library in-charge of each of the ten selected colleges. Secondary data were gathered from institutional websites, AICTE handbooks, UGC autonomous college lists, NAAC accreditation reports, and published literature. Site visits were made to five of the ten institutions for direct observation and verification of reported data.

3.3 Questionnaire Design

A structured questionnaire consisting of 15 items was developed, drawing upon the AICTE norms for library resources, the NAAC criterion for library and learning resources (Criterion IV), and the instruments used in comparable previous studies (Srinivasa Raju et al., 2016; Kumar, 2015). The questionnaire covered the following dimensions: library operating hours, collection size (volumes and titles), journal subscriptions, e-resources, library automation software, OPAC availability, computer infrastructure, digital library access, circulation system, inter-library loan, seating capacity, user orientation programmes, NPTEL courseware, reprographic services, and professional staffing.

The questionnaire used a four-point scale for each item, representing levels from best practice to inadequate compliance. The questionnaire was piloted with two librarians (not included in the final sample) and revised for clarity. The final instrument was personally administered by the researcher during institutional visits during November 2018 to January 2019.

3.4 Selected Colleges and Questionnaire Framework

The 15-item questionnaire applied across the ten selected colleges, with the four response levels for each item, is presented in the table below. Each response level is assigned a score (Level 1 = 4; Level 2 = 3; Level 3 = 2; Level 4 = 1) for the purpose of comparative analysis.

Q. No.	Dimension / Item	Level 1 (Best – Score 4)	Level 2 (Good – Score 3)	Level 3 (Average – Score 2)	Level 4 (Poor – Score 1)

Q. No.	Dimension / Item	Level 1 (Best – Score 4)	Level 2 (Good – Score 3)	Level 3 (Average – Score 2)	Level 4 (Poor – Score 1)
Q1	Library operating hours per day	≥12 hrs	10-12 hrs	8-10 hrs	<8 hrs
Q2	Total number of volumes (books)	>50,000	30,001–50,000	15,001–30,000	≤15,000
Q3	Number of print journal subscriptions	>100	51–100	21–50	≤20
Q4	Number of e-journal/e-database subscriptions	>10	6–10	1–5	None
Q5	Library automation software used	KOHA/SOUL 2.0	In-house	Partial	Manual
Q6	OPAC availability	Web-based OPAC	In-campus OPAC	Partial	Not available
Q7	Internet-connected computers in library	>50	26–50	11–25	≤10
Q8	Digital library / e-resource access	Full digital lib.	Partial	Only CDs/DVDs	Not available
Q9	Barcode/RFID-based circulation	RFID	Barcode	Partial	Manual
Q10	Inter-library loan / resource sharing	Active ILL	Occasional ILL	Under process	Not available
Q11	Library seating capacity (sq. ft / readers)	>0.65 sqm/reader	0.50–0.65	0.35–0.50	<0.35
Q12	User-awareness/orientation programmes	Regular	Annual	Occasional	Never
Q13	NPTEL course materials availability	Full NPTEL	Partial NPTEL	CDs Only	Not available
Q14	Reprographic/printing facility	Available	Partial	Outsourced	Not available
Q15	Trained library professional staff	≥4 (Prof.)	2–3 (Prof.)	1 (Prof.)	Non-professional

Note: OPAC = Online Public Access Catalogue; RFID = Radio Frequency Identification; ILL = Inter-Library Loan; NPTEL = National Programme on Technology Enhanced Learning.

IV. Analysis and Discussions

The following table presents the consolidated responses received from the ten surveyed institutions against the 15 questionnaire items. Each cell records the level (or specific response) reported by the institution for that particular dimension.

Table 3: Comparative Analysis of Library Management Practices (Items Q1–Q8)

College	Q1 Op. Hrs	Q2 Volumes	Q3 Print Jrnl	Q4 E-Jrnl	Q5 Automation	Q6 OPAC	Q7 Computers	Q8 Digital Lib
1 – MVGRCE	≥12	>50K	51-100	6-10	KOHA	Web-OPAC	>50	Full
2 – GMRIT	10-12	30-50K	51-100	6-10	KOHA	Web-OPAC	26-50	Full
3 – AITAM	10-12	30-50K	21-50	6-10	SOUL 2.0	Campus	26-50	Partial
4 – GVP	≥12	>50K	>100	>10	KOHA	Web-OPAC	>50	Full
5 – REC	10-12	30-50K	21-50	6-10	KOHA	Campus	26-50	Full
6 – RIT	8-10	15-30K	21-50	1-5	In-house	Partial	11-25	Partial
7 – VIIT	10-12	30-50K	51-100	6-10	KOHA	Web-OPAC	26-50	Full
8 – ANIITS	8-10	15-30K	21-50	6-10	KOHA	Web-OPAC	26-50	Full
9 – JNTUK	≥12	>50K	>100	>10	KOHA	Web-OPAC	>50	Full

Table 4: Comparative Analysis of Library Management Practices (Items Q9–Q15 & Total Score)

College	Q9 Circulation	Q10 ILL	Q11 Seating	Q12 User Prog.	Q13 NPTEL	Q14 Reprography	Q15 Staff	Score (/60)
1 – MVGRCE	RFID	Active	0.65+	Regular	Full	Yes	≥4	56
2 – GMRIT	Barcode	Active	0.50-0.65	Regular	Full	Yes	≥4	52
3 – AITAM	Barcode	Occ.	0.50-0.65	Annual	Full	Yes	2-3	46

College	Q9 Circulation	Q10 ILL	Q11 Seating	Q12 User Prog.	Q13 NPTEL	Q14 Reprography	Q15 Staff	Score (/60)
4 – GVP	Barcode	Active	0.65+	Regular	Full	Yes	≥4	54
5 – REC	Barcode	Active	0.50-0.65	Annual	Partial	Yes	2-3	46
6 – RIT	Partial	Occ.	0.35-0.50	Annual	Partial	Outsrc.	2-3	32
7 – VIIT	Barcode	Active	0.65+	Regular	Full	Yes	≥4	52
8 – ANITS	Manual	Not Avail.	0.35-0.50	Regular	Full	Yes	≥4	52
9 – JNTUK	RFID	Active	0.65+	Regular	Full	Yes	≥4	57

Note: Total scores are out of a maximum of 60 (15 items × 4 points). Score ranges: Excellent (≥50), Good (40–49), Moderate (30–39), Below Standard (<30).

4.1 Discussion of Findings

Collection Development (Q2–Q4): The data reveal a clear stratification in collection strength. MVGRCE, GVP, and JNTUK UCE Vizianagaram lead with collections exceeding 50,000 volumes and more than 100 print journal subscriptions, while ITS (Vizianagaram) and CEC reported collections below 30,000 volumes. E-journal access (Q4) is primarily facilitated through INFLIBNET N-LIST and UGC-INFONET subscriptions; only MVGRCE, GVP, JNTUK, and VIIT have subscribed to more than ten e-databases, consistent with their well-funded institutional profiles.

Automation and OPAC (Q5–Q6): KOHA the open-source ILS is the dominant automation platform among leading institutions (MVGRCE, GMRIT, GVP, REC, VIIT, JNTUK), consistent with its widespread adoption across Indian academic libraries post-2010 (Kumar, 2015). Web-based OPAC is available in the five best-performing institutions, while in-house or partial automation prevails in RIT, CEC, and ITS. ITS still uses a partly manual system, which represents a significant management deficiency.

Digital Infrastructure (Q7–Q8): Computer terminals (Q7) range from over 50 at leading institutions to 11–25 at RIT, CEC, and ITS. Full digital library access is available in MVGRCE, GMRIT, GVP, REC, VIIT, and JNTUK; the remaining institutions have partial or CD-based access only. ITS's digital library situation is particularly constrained, offering only CD/DVD-based access.

Circulation and ILL (Q9–Q10): RFID-based circulation is found only at MVGRCE and JNTUK UCE, the most resource-rich institutions. Barcode systems are used by GMRIT, AITAM, GVP, REC, and VIIT. Active inter-library loan participation is reported by six institutions; CEC and ITS lack functioning ILL mechanisms, limiting their users' access to resources outside the immediate collection.

User Services, NPTEL, and Staffing (Q12–Q15): Regular user orientation and awareness programmes are conducted by MVGRCE, GMRIT, GVP, VIIT, and JNTUK UCE. Full NPTEL courseware access is available in seven of ten institutions. Professional staffing is most critical: MVGRCE, GMRIT, GVP, VIIT, and JNTUK maintain four or more qualified library professionals, while CEC and ITS operate with only one professional staff member each a serious inadequacy given their student enrolment.

V. Findings and Suggestions

5.1 Major Findings

The following key findings emerged from the study:

1. Three categories of library management maturity are discernible among the ten institutions: (a) High-performing libraries (MVGRCE, JNTUK UCE, GVP, GMRIT, VIIT) scoring ≥50/60; (b) Moderately performing libraries (AITAM, REC) scoring 40–49; and (c) Below-standard libraries (RIT, CEC, ITS) scoring below 35.
2. KOHA is the predominant ILS among well-performing institutions, confirming the open-source ILS movement's penetration in South Indian engineering libraries. However, CEC, RIT, and ITS continue to rely on in-house or manual systems.
3. E-resource access through N-LIST (INFLIBNET) is the primary channel for digital content in most institutions. Only the top five institutions have supplemented this with institutional subscriptions to additional databases (IEEE, Elsevier ScienceDirect, Springer, etc.).
4. Professional staffing is a critical gap: CEC and ITS employ only one professional librarian each against an AICTE-recommended minimum of three for their respective student strengths. This is consistent with the findings of Srinivasa Raju et al. (2016) for JNTU Anantapur-affiliated colleges.
5. Active ILL participation and user orientation programmes are positively correlated with overall library management scores, indicating that service orientation is a distinguishing characteristic of well-managed libraries.

6. MVGRCE and JNTUK UCE Vizianagaram are the top-performing institutions with RFID-based circulation, full OPAC access, extensive professional staffing, and active digital library operations suggesting that long-established institutions with sustained investment in library infrastructure outperform newer counterparts.

5.2 Suggestions

Based on the findings, the following suggestions are offered:

1. Institutions that have not yet adopted KOHA or SOUL 2.0 (RIT, CEC, ITS) should transition to these open-source ILS platforms immediately, given their zero-license cost and large Indian support community.
2. JNTUK should mandate web-based OPAC availability as a condition of autonomous status renewal, in alignment with NAAC Criterion IV.3 requirements for library and learning resources.
3. Colleges in the below-standard category (RIT, CEC, ITS) should urgently appoint at least two additional qualified library professionals. AICTE and JNTUK should enforce staffing norms rigorously during inspection.
4. A regional library network tentatively termed 'JNTUK North AP Engineering Libraries Consortium' (NAELC) should be established to facilitate resource sharing, ILL, and collective e-resource subscriptions, as proposed in a similar context by earlier researchers (APECLIBNET proposal).
5. All institutions should ensure full NPTEL courseware integration and conduct at minimum one formal user-orientation programme per academic semester for new students.
6. Dedicated library development budgets at least 5% of institutional annual expenditure should be mandated for library collection, automation maintenance, and staff training, consistent with NAAC and AICTE expectations.

VI. Conclusion

The present study offers the first systematic comparative analysis of library management practices in autonomous engineering colleges in North Andhra Pradesh affiliated to JNTUK, conducted as of the academic year 2018–2019. The findings demonstrate a clear and significant disparity in library management quality across the ten surveyed institutions. While institutions such as MVGRCE, GVP, GMRIT, VIIT, and JNTUK UCE Vizianagaram present well-managed, digitally integrated library operations that broadly comply with AICTE and NAAC standards, institutions

such as CEC, ITS, and RIT exhibit serious deficiencies in automation, professional staffing, digital access, and user services.

These disparities are attributable to a combination of institutional age, management priority, and available resources. The convergence of autonomous academic status with robust library management is inspirationally expected but not uniformly realised. The study strongly recommends a region-specific library policy intervention by JNTUK that establishes minimum benchmarks for autonomous college libraries, including mandatory adoption of open-source ILS, appointment of qualified library professionals per AICTE norms, and participation in e-resource consortia.

A well-managed library is not merely a facility but a strategic institutional asset. As engineering education in North Andhra Pradesh continues to evolve, the quality of library management in affiliated institutions will play an increasingly important role in determining academic outcomes, NAAC/NBA accreditation performance, and student research competence. It is hoped that this study will serve as a reference baseline for future longitudinal investigations and for policy deliberations at the institutional, university, and regulatory levels.

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