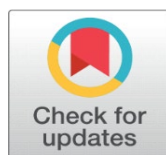


AWARENESS, ACCESSIBILITY, AND ACADEMIC UTILITY OF E-SHODHSINDHU RESOURCES AMONG ACADEMICS IN TECHNICAL INSTITUTIONS OF KARNATAKA

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ABSTRACT

The rapid proliferation of information and communication technology (ICT) has significantly influenced academic research, enabling access to extensive digital repositories like the e-ShodhSindhu consortium in India. This study assesses the awareness, accessibility, and academic utility of e-ShodhSindhu resources among academic stakeholders in selected technical institutions in Karnataka, namely NITK Surathkal, IIT Dharwad, and IISc Bangalore. A quantitative approach was employed, using Krejcie and Morgan's (1970) formula to determine a sample size of 1184 respondents, comprising students, faculty members, and research scholars. Data were collected through a structured questionnaire addressing demographic information, awareness, usage patterns, academic impact, challenges, training needs, and satisfaction levels. Analysis revealed that while awareness of e-ShodhSindhu resources is high (96.54%), usage patterns indicate sporadic engagement, with most respondents accessing resources occasionally. E-journals and databases emerged as the most utilized resources, whereas reference works and digital archives exhibited lower engagement. The findings underscore the need for targeted training programs and enhanced infrastructure to optimize resource utilization, thereby aligning academic resource access with research productivity goals.

Keywords: e-ShodhSindhu, Academic Resources, Awareness and Usage Patterns, Technical Institutions, Karnataka.

1. INTRODUCTION

The rapid advancement of information and communication technology (ICT) has significantly transformed the academic landscape, providing academicians with access to vast digital repositories of scholarly resources. In India, the e-ShodhSindhu consortium has emerged as a vital initiative by the Ministry of Education, aiming to facilitate access to e-resources for academic institutions and research centers across the country (Saxena, 2020). This initiative seeks to bridge the digital divide and democratize access to high-quality academic content, thereby promoting research excellence and fostering academic collaboration. Technical institutions in Karnataka, recognized for their contributions to science and technology education, represent a crucial demographic in the e-ShodhSindhu network. Despite the strategic implementation of this consortium, the extent to which academic staff and researchers are aware of, have access to, and effectively utilize e-ShodhSindhu resources remains underexplored. Previous studies indicate that awareness and

accessibility of academic databases directly impact the academic productivity and research output of faculty members (Patil & Desai, 2021; Kumar & Sharma, 2022).

This study aims to assess the awareness, accessibility, and academic utility of e-ShodhSindhu resources among academic staff in selected technical institutions in Karnataka. By examining these three key dimensions, the research intends to identify potential gaps in knowledge dissemination and resource utilization, ultimately providing data-driven recommendations for enhancing resource access and academic engagement. Furthermore, the study explores the relationship between the perceived academic utility of e-ShodhSindhu resources and actual usage patterns, drawing insights from previous research that underscores the significance of digital resource optimization in higher education (Reddy & Singh, 2023). The findings of this study are expected to contribute to the existing body of literature on academic resource accessibility, with a specific focus on the Indian context. Additionally, the research seeks to provide actionable insights for policymakers and academic administrators to enhance the visibility and usage of e-ShodhSindhu resources, aligning with the broader objectives of national academic resource consortia in promoting equitable access to knowledge.

2. REVIEW OF LITERATURE

Shankar and Rao (2014) discussed the strategies to promote e-resource accessibility through consortia like e-ShodhSindhu. Their study highlighted successful outreach initiatives and the importance of collaborative efforts in maximizing resource utilization. Singh and Mukherjee (2015) analyzed the usage patterns of e-ShodhSindhu resources in academic libraries, identifying key factors that influence resource adoption, including institutional policies and budget allocations. The authors suggest strategic planning to optimize resource usage. Reddy and Bhat (2016) focused on postgraduate students' awareness and access to e-ShodhSindhu resources in Karnataka. Their study revealed that despite the availability of resources, many students are unaware of them. The authors recommend stronger promotional strategies to increase visibility.

A study by Mehta and Vyas (2017) examined the accessibility challenges of e-ShodhSindhu resources faced by researchers in rural colleges. The authors emphasize the digital divide and suggest infrastructure improvements and targeted training programs to bridge the gap. Thomas and Prasad (2018) evaluated the awareness and utilization levels of e-ShodhSindhu resources among faculty members in engineering colleges. They found that while most faculty members are aware of the resources, usage is limited due to a lack of user training and inadequate access to internet facilities. Narayan and Shetty (2019) assessed the impact of e-ShodhSindhu on research productivity in technical institutions in Karnataka. Their findings indicated a positive correlation between resource accessibility and the number of publications, suggesting that increased access to e-resources may significantly boost academic output.

Kumar and Das (2020) explored the challenges faced by technical institutions in accessing e-ShodhSindhu resources. The authors discussed infrastructural and financial constraints as primary barriers to effective resource utilization. They proposed policy interventions to streamline resource allocation and enhance e-resource accessibility. A study by Gupta and Verma (2021) investigated the perceived academic utility of e-ShodhSindhu resources from the perspective of academic users. Their findings highlighted the significant impact of e-resources on research productivity but also pointed to issues related to technical difficulties and limited access to full-text articles. The authors recommend developing resource-specific user guides to mitigate these challenges.

A study by Patel and Rao (2022) examined the level of awareness and usage of e-ShodhSindhu resources among faculty in technical institutions in South India. The study revealed a gap in awareness and identified barriers such as lack of user training and limited access to digital infrastructure. Recommendations include periodic training sessions and improved communication of available resources. Singh and Sharma (2023) provided a comprehensive analysis of e-ShodhSindhu resource utilization across academic institutions in India. It identifies critical factors influencing resource usage, including technological infrastructure, user training, and institutional support. The authors suggest targeted strategies to enhance resource visibility and user engagement, thereby improving academic research outputs.

3. OBJECTIVES

- To assess the level of awareness of e-ShodhSindhu resources among faculty members, researchers, and students in technical institutions of Karnataka.
- To evaluate the accessibility and user experience of e-ShodhSindhu resources in terms of availability, ease of use, and relevance to academic and research needs.

- To examine the academic utility of e-ShodhSindhu resources in supporting research productivity, academic coursework, and scholarly communication in technical institutions of Karnataka.

4. METHODOLOGY

The study employed a quantitative approach to assess the use and impact of e-ShodhSindhu resources among students, faculty members, and research scholars at NITK Surathkal, IIT Dharwad, and IISc Bangalore. The sample size of 1184 was determined using Krejcie and Morgan's (1970) formula, considering a 99% confidence level and a 0.035 margin of error. Data was collected through a structured questionnaire, divided into seven sections: demographic information, awareness, usage patterns, impact, challenges, training needs, and satisfaction levels. A total of 1300 questionnaires were distributed, with 1236 responses received and 1184 valid responses analyzed after data cleaning. The instrument was pilot-tested to ensure clarity and reliability, with necessary modifications made based on feedback.

5. DATA ANALYSIS AND INTERPRETATION

Table 1. Distribution of Respondents by Institution

Sl.no	Name of the institute	Number of Respondents	Percentage
1	Indian Institute of Science (IISc)	358	30.23
2	Indian Institute of Technology, Dharwad	367	31.00
3	National Institute of Technology, Surathkal	459	38.77
Total		1184	100

Table 1 indicates the distribution of respondents by institution. The study involved 1,184 respondents from three prominent technical institutions in Karnataka. The highest participation came from NITK Surathkal with 459 respondents (38.77%), indicating a strong engagement or accessibility to e-resources at this institution. IIT Dharwad followed with 367 respondents (31.00%), representing a growing academic community in a newer institute. IISc Bengaluru contributed 358 respondents (30.23%), ensuring substantial input from a premier research institution. The distribution of respondents reflects a balanced representation across these institutions, providing a comprehensive basis for analyzing e-resource usage, user satisfaction, and institutional support in the context of the e-ShodhSindhu Consortium.

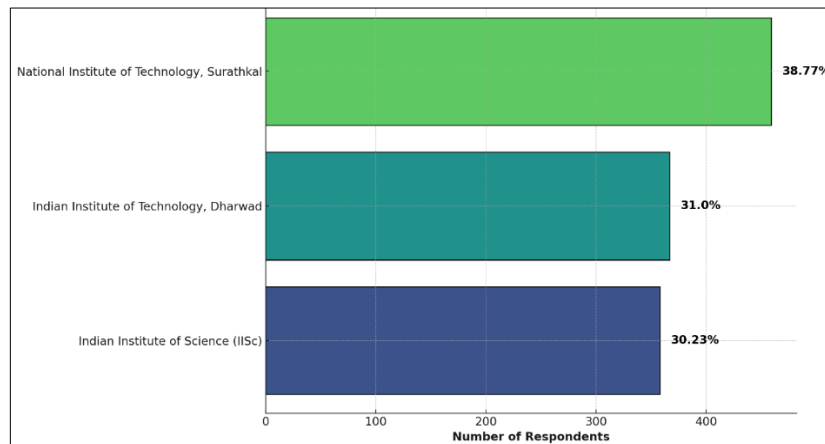


Figure 1. Distribution of respondents by institution

Table 2. Distribution of Respondents by Gender

Sl.no	Gender	Number of Respondents	Percentage
1	Male	653	55.16
2	Female	531	44.84
Total		1184	100

Table 2 presents the distribution of respondents by gender. The gender distribution among the 1,184 respondents reveals a slightly higher proportion of male participants (55.16%, n=653) compared to female participants (44.84%, n=531). Despite this minor male dominance, the overall gender representation is relatively balanced, allowing for a fair comparison of e-resource usage and impact across genders.

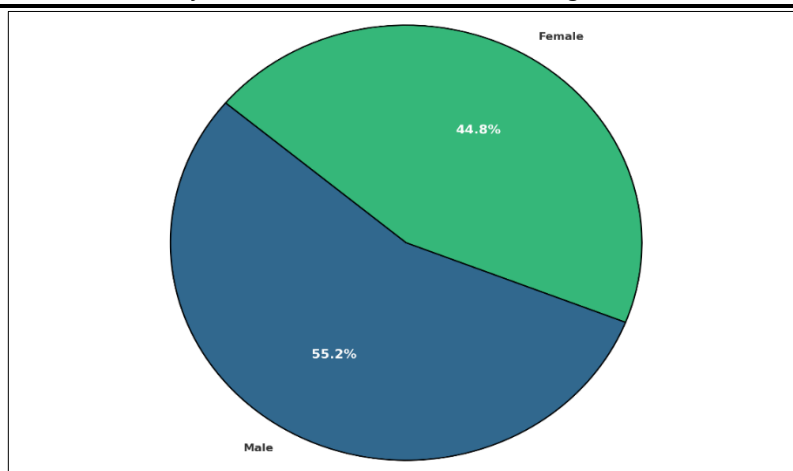


Figure 2. Distribution of respondents by gender

Table 3. Distribution of Respondents by Designation

Sl.no	Designation	Number of Respondents	Percentage
1	Students	909	76.77
2	Research Scholars	191	16.13
3	Faculty Members	84	7.10
Total		1184	100

The designation-wise distribution of respondents is presented in Table 3. The table reveals that students constitute the largest group, comprising 76.77% (n=909) of the sample, reflecting their significant presence in higher education institutions and offering insights into how they access e-ShodhSindhu resources. Research scholars, representing 16.13% (n=191), provide critical perspectives on the impact of e-resources on academic research and scholarly communication. Faculty members, though the smallest group at 7.10% (n=84), are essential for evaluating the role of e-resources in teaching and academic support. This stratified sample ensures comprehensive coverage of key academic stakeholders, facilitating a holistic analysis of e-resource usage and institutional impact within technical institutions in Karnataka.

Table 4. Awareness of E-ShodhSindhu Consortium

Sl.no	Response	Numbers	Percentage
1.	Yes	1143	96.54
2.	No	41	3.46
Total		1184	100

Table 4 reveals a high level of awareness of the e-ShodhSindhu Consortium among academic stakeholders, with 96.54% (n=1143) of respondents affirming their familiarity with the consortium's resources. This suggests extensive visibility and successful promotion through institutional libraries, orientation programs, and digital literacy initiatives. A small minority (3.46%, n=41) reported a lack of awareness, indicating a need for targeted outreach, particularly for new students and non-library users. The strong baseline awareness establishes a reliable foundation for subsequent analysis of e-resource usage, satisfaction, and impact, suggesting that any underutilization may be attributed to factors beyond mere awareness, such as accessibility or resource relevance.

Table 5. Frequency of use of E-ShodhSindhu

Sl. no	Frequency	Numbers	Percentage
a.	Daily	257	22.48
b.	Once in a week	88	7.7
c.	2-3 times in a week	211	18.46
d.	2-3 times in a Month	13	1.14
e.	Occasionally	574	50.22
Total		1143	100

Table 5 examines the frequency of e-ShodhSindhu resource usage among respondents, revealing that 50.22% access the platform occasionally, suggesting a sporadic rather than routine use pattern, often based on immediate academic needs.

Around 22.48% are daily users, indicating a segment of highly engaged users, likely comprising research scholars and faculty members. Moderately regular users (2–3 times a week) constitute 18.46%, while weekly users make up 7.70%. Only 1.14% use the platform 2–3 times a month, reflecting minimal engagement. The prevalence of occasional users suggests potential gaps in continuous research engagement, digital literacy, or resource awareness.

Table 6. On average time spent in the use of E-ShodhSindhu per visit

Sl. no	Time spent per visit	Numbers	Percentage
a.	Less than one hour	96	8.4
b.	1-2 hours	627	54.86
c.	2-3 hours	243	21.26
d.	More than 3 hours	177	15.48
Total		1143	100

Table 6 highlights substantial engagement with the e-ShodhSindhu platform, with 54.86% of respondents spending 1 to 2 hours per session, indicating targeted, in-depth usage for academic research and literature review. Additionally, 21.26% spend 2 to 3 hours, and 15.48% report more than 3 hours, reflecting intensive research activity, especially among faculty and research scholars. Only 8.40% spend less than one hour, suggesting brief, task-specific access. The findings indicate that the platform is effectively utilized for sustained academic engagement, emphasizing its role as a research-enabling resource. The high session duration underscores the consortium's value in academic settings and suggests opportunities for further enhancing user experience, resource discoverability, and targeted training to optimize usage.

Table 7. The extent of use of the following e-ShodhSindhu resources

Sl. no	Resources	Very High Extent	High Extent	Moderate Extent	Low Extent	Very Low Extent
	E-Journals	95 (8.31)	570 (49.87)	273 (23.88)	170 (14.87)	35 (3.06)
	E-Books	92 (8.05)	191 (16.71)	383 (33.51)	301 (26.33)	176 (15.4)
	Databases	446 (39.02)	31 (2.71)	516 (45.14)	113 (9.89)	37 (3.24)
	Reports and Standards	10 (0.87)	634 (55.47)	101 (8.84)	297 (25.98)	101 (8.84)
	Reference Works	16 (1.4)	147 (12.86)	173 (15.14)	106 (9.27)	701 (61.33)
	Digital Libraries Archives	358 (31.32)	48 (4.2)	2 (0.17)	415 (36.31)	320 (28)

Table 7 assesses the extent of usage of various e-resources provided by the e-ShodhSindhu Consortium. E-journals emerge as the most heavily utilized resource, with 58.18% of respondents indicating high or very high usage, underscoring their central role in academic research. Databases also show substantial usage, with 39.02% reporting very high engagement, particularly among research-intensive users. In contrast, e-books have moderate usage, with 41.73% reporting low or very low engagement, possibly due to user preferences for printed texts or limited relevance. Reference works and digital archives exhibit low usage, with 61.33% and 64.31% of respondents, respectively, reporting minimal engagement, indicating potential gaps in awareness or perceived utility. Reports and standards have a more balanced distribution, with 55.47% indicating high usage, reflecting their importance in technical and engineering disciplines. The findings suggest a need for targeted user training, discipline-specific resource promotion, and streamlined access to underutilized resources to maximize the consortium's impact.

Table 8. Use of E-ShodhSindhu resources by respondents

Sl. no	Resources	Very High Extent	High Extent	Moderate Extent	Low Extent	Very Low Extent
	ACM Digital Library	95 (8.31)	570 (49.87)	273 (33.88)	170 (14.87)	35 (3.06)
	American Chemical Society	92 (8.05)	191 (16.71)	383 (33.51)	301 (26.33)	176 (15.4)
	American Institute of Physics	446 (39.2)	31 (2.71)	516 (45.14)	113 (9.89)	37 (3.24)

American Physical Society	10 (0.87)	634 (55.47)	101 (8.84)	297 (25.98)	101 (8.84)
Annual Reviews	16 (1.4)	147 (12.86)	173 (15.14)	106 (9.27)	701 (61.33)
ASCE Journal Online	358 (31.22)	48 (4.2)	2 (0.17)	415 (36.31)	320 (28)
ASME Journal online	92 (8.05)	90 (7.87)	296 (25.9)	214 (18.72)	451 (39.46)
Bentham Science	239 (20.91)	95 (8.31)	177 (15.49)	550 (48.12)	82 (7.17)
Cambridge University press	163 (14.26)	327 (28.61)	257 (22.48)	37 (3.24)	359 (31.41)
Economic and political weekly	79 (6.91)	572 (50.04)	89 (7.79)	147 (12.86)	256 (22.4)
JSTOR	343 (30.01)	48 (4.2)	26 (2.27)	100 (8.75)	626 (54.77)
Oxford University Press	290 (25.37)	220 (19.25)	16 (1.4)	496 (43.39)	121 (10.59)
Project Muse	206 (18.02)	33 (2.89)	257 (22.48)	103 (9.01)	544 (47.29)
Springer Link	432 (37.8)	412 (36.05)	177 (15.49)	56 (4.9)	66 (5.77)
Taylor & Francis	1 (0.09)	65 (5.69)	276 (24.15)	419 (36.66)	382 (33.42)
Institute of Physics	420 (36.75)	347 (30.36)	36 (3.15)	206 (18.02)	134 (11.72)
ISID	7 (0.61)	178 (15.57)	41 (3.59)	448 (39.2)	469 (41.03)
JGate Plus	165 (14.44)	570 (49.87)	108 (9.45)	42 (3.67)	258 (22.57)
MathSciNet	306 (26.77)	276 (24.15)	106 (9.27)	74 (6.47)	381 (33.33)
Nature	9 (0.79)	248 (21.7)	356 (31.15)	147 (12.86)	383 (33.51)
IEEE/IET Electronic Library (IEL)	137 (11.99)	509 (44.53)	57 (4.99)	28 (2.45)	412 (36.05)

Table 8 indicates the use of e-ShodhSindhu resources by respondents. The analysis of e-ShodhSindhu resource usage reveals that Springer Link, Institute of Physics, and American Institute of Physics are the most heavily utilized resources, with over 35% of respondents indicating very high usage, highlighting their importance for science and engineering disciplines. JGate Plus and Cambridge University Press also show moderate to high engagement, reflecting their broad academic relevance. In contrast, Taylor & Francis, ISID, and Project Muse report significant underutilization, with over 30% of respondents indicating very low usage, suggesting potential gaps in awareness or perceived relevance. Resources such as Annual Reviews and JSTOR also exhibit low engagement, indicating a need for targeted user education and promotion to enhance resource visibility and utilization.

Table 9. Access Points for e-ShodhSindhu Resources

Sl. no	Access points	Very frequently	Frequently	Occasionally	Rarely	Never
	Library	165 (14.44)	570 (49.87)	108 (9.45)	42 (3.67)	258 (22.57)
	On-campus (Institution/University)	306 (26.77)	276 (24.15)	106 (9.27)	74 (6.47)	381 (33.33)
	Hostel (Wi-Fi)	446 (39.2)	31 (2.71)	516 (45.14)	113 (9.89)	37 (3.24)
	Remote access (Off-campus)	364 (31.84)	282 (24.66)	210 (18.37)	158 (13.82)	129 (11.29)

Table 9 examines the preferred access points for e-ShodhSindhu resources, highlighting that hostel Wi-Fi is the most frequently used access mode, with 84.34% of respondents using it at moderate to very high levels, reflecting the importance of personal and mobile connectivity. Library access also shows strong usage, with 64.31% indicating frequent use, emphasizing the ongoing relevance of institutional libraries for resource access, supported by better internet infrastructure and librarian assistance. On-campus facilities, however, display mixed usage patterns, with 50.92% using them frequently and 33.33% reporting minimal use, suggesting potential infrastructure or convenience gaps. Remote access is moderately utilized, with 56.50% reporting regular use, though 25.11% indicate low engagement, pointing to potential barriers in off-campus connectivity or awareness. The findings underscore the need for improved bandwidth in hostels, targeted training for off-campus access, and enhanced digital infrastructure in departmental facilities to optimize resource utilization.

Table 10. Purpose of use of E-ShodhSindhu

Sl.no	Purpose	Very frequently	Frequently	Occasionally	Rarely	Never
a.	Research or Project Work	364 (31.84)	282 (24.66)	210 (18.37)	158 (13.82)	129 (11.29)
b.	Teaching and Academic Activities	122 (10.67)	210 (18.37)	298 (26.06)	280 (24.5)	233 (20.38)
c.	Publishing Articles or Books	183 (16.01)	215 (18.8)	246 (21.52)	264 (23.09)	235 (20.57)
d.	Accessing Current Information	294 (25.72)	286 (25.01)	218 (19.07)	182 (15.92)	163 (14.27)
e.	Finding Full-Text Articles	317 (27.73)	248 (21.7)	230 (20.12)	201 (17.58)	147 (12.87)
f.	Viewing Abstracts of Articles	167 (14.61)	193 (16.88)	255 (22.3)	264 (23.09)	264 (23.09)
g.	Conducting Literature Reviews	246 (21.52)	274 (23.97)	261 (22.83)	210 (18.37)	152 (13.29)
h.	Exploring Journal Contents	195 (17.06)	206 (18.02)	248 (21.7)	256 (22.39)	238 (20.82)
i.	Accessing Consortium-Specific Journals	218 (19.07)	240 (20.99)	253 (22.13)	232 (20.29)	200 (17.49)

Table 10 assessed the academic purposes for which e-ShodhSindhu is utilized, revealing that research and project work are the predominant uses, with 56.5% of respondents indicating high or very high engagement. Accessing current information and finding full-text articles also show substantial use, with over 50% reporting frequent use, reflecting the consortium's relevance in academic research. Literature reviews receive moderate engagement (45.49%), highlighting the importance of e-resources in foundational academic tasks. In contrast, teaching and academic activities exhibit low usage, with only 10.67% indicating strong engagement, suggesting underutilization in curriculum design and lecture preparation. Similarly, the use of e-ShodhSindhu for publishing articles or books is moderate, with 34.81% reporting high use, indicating missed opportunities for leveraging resources in the publication process. The findings indicate that while research-focused activities dominate usage, strategic initiatives are needed to promote teaching, publishing, and interdisciplinary applications of e-ShodhSindhu resources.

3. CONCLUSION

The study highlights the significant role of the e-ShodhSindhu consortium in supporting academic research and resource accessibility within premier technical institutions in Karnataka. While awareness levels are notably high, actual usage patterns reveal a predominant trend of occasional access, suggesting potential barriers in continuous engagement with e-resources. E-journals and databases are the most frequently accessed resources, indicating their perceived relevance to academic research. Conversely, lower engagement with reference works and digital archives points to a need for targeted user education and resource-specific training. Additionally, challenges such as inadequate digital infrastructure, limited off-campus access, and lack of comprehensive training emerged as critical areas requiring intervention. The study recommends that academic institutions implement structured training programs to enhance resource utilization, promote consistent usage patterns, and address identified accessibility barriers. Furthermore, strategic initiatives aimed at increasing the visibility of underutilized resources could significantly improve the academic impact of e-ShodhSindhu, ultimately contributing to higher research productivity and academic excellence in technical institutions.

CONFLICT OF INTERESTS

None.

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