

# INVESTIGATING ELECTRONIC RESOURCE ADOPTION IN MAHARANA PARTAP AND SWAMI KESHWAND AGRICULTURAL UNIVERSITIES OF RAJASTHAN (INDIA): A STUDENT-CENTRIC APPROACH

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**Abstract:** This study examined the adoption of electronic resources by students at the Agricultural University Library of Maharana Partap (MPUAT) and Swami Keshwand (SKRAU) Agricultural Universities of Rajasthan. The present study employed a descriptive survey method, covering 174 randomly selected students. Majority of the students was belonged to the Department of Agriculture, 67.16% in MPUAT, Udaipur, compared to 56.32% in SKRAU. At MPUAT students rely on library staff and colleagues to learn about electronic resources, followed by (76.92%) and (40%), in SKRAU comparison i.e. 64.95% and 47.42%. The main reasons for adopting electronic resources are multiple access facility, round-the-clock availability and time-saving quality reported by the both university students. 79% students are satisfied with electronic books in MPUAT compare to SKRAU i.e. 82%. Majority of the students reported that lack of guidance and training and slow internet speed are the major problems while the used electronic resources.

**Keywords:** User Satisfaction, Electronic Resources, Agricultural Library, MPUAT & SKRAU Rajasthan

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## 1.0 Introduction

This study explores how students engage with digital resources, aiming to unveil trends that are crucial for aligning library offerings with the evolving needs of the agricultural education landscape. The goal is to keep agricultural education current with modern practices, particularly considering the significant changes introduced by electronic resources to how the students obtain and utilize information. Over the past two decades, the Internet has undergone significant development. The use of the Internet and its applications, such as the World Wide Web, has become as common. The Internet is the fastest-growing mass media globally and naturally attracted the attention of a diverse group of researchers (Mani and Padma, 2019). Only in India, with over 71 percent, i.e., 1.2 billion mobile phone users and 600 million smartphone users, stands at the forefront of internet accessibility. Of these, 1.05 billion smartphone users access the internet via their smartphones (Statista). The transformation of printed resources into digital format has significantly increased the accessibility of books and journals. Providing access to electronic resources serves as a means to assist students in finding electronic resources (Chanda, 2021). Universities subscribe to various types of electronic library resources, including e-journals, e-data archives, e-manuscripts, e-maps, e-books, e-magazines, e-theses and dissertations, e-newspapers, e-research reports, and e-bibliographic content (Moyo, 2017). Electronic library resources are systems within libraries designed to meet the information needs of users (Omotaya and Haliru, 2020). These resources are available in an electronic format over the Internet, allowing users to access remotely. Electronic resources are regularly updated to ensure the information remains relevant, enabling users to access information from various locations at any time of the day (Anyim, 2018). This study examines the both agricultural university library, focusing on how students utilize electronic resources and the factors influencing their choices.

## 2.0 Review of Literature

Kumar and Singh (2023) conducted a study on undergraduate, postgraduate, and research scholars at the National Dairy Research Institute, Karnal and found that the majority of research scholars and postgraduate students utilized library electronic resources and databases for their academic work. Uwandu (2022) identified that the primary benefit of using e-information resources lies in accessing a wider range of information, offering hyperlink features for further study. The major challenges associated with electronic content, such as funding constraints and poor internet connectivity continue to persist. A study conducted by Mashaba and Pretorius (2023) on the use of electronic resources by postgraduate students and revealed that 49% of students held a positive view of library electronic resources, finding them to be beneficial and effective for their studies and academic activities. Another study by Kumar and Singh (2023a) explored the reasons for adopting electronic resources among students at NDRI Karnal and the College of Agriculture, Kaul, Haryana. Kakar and Manjula (2022) explored the utilization of ICT tools by teaching staff in agricultural education activities and found that 92% of teachers used the internet for knowledge acquisition due to its time-saving quality. Murthy et al., (2021) found that there is no significant relation in user satisfaction levels concerning various physical facilities and services except for the CD-ROM search facilities. Further, Sivakami and Rajendran (2021) investigated the use of online resources among faculty members in an Arts and Science college in Erode district, revealing that 35% of Arts Group faculty members frequently used internet tools, while Science group faculty members utilized e-Databases. Common challenges faced by faculty members when accessing online resources included slow internet speed and lack of time. Arumugam et al., (2019) discovered in their study that half of the students were satisfied with the library collection, with major barrier library inadequate resources. In the same vein Das and Maharana (2013) conducted a survey on the awareness and utilization of electronic information resources by Sciences research scholars at Berhampur University. They faced challenges such as unavailability of information materials in the library, difficulty in searching for relevant information, slow internet access, information overload, and a lack of cooperative attitudes from library staff. Similarly Bhatt and Rana (2011) identified common problems with electronic resources, including low-speed connectivity, lack of awareness about statutory provisions for accessing e-resources by institutions, technical problems, insufficient electronic resources, high purchase prices, and lack of legal provisions. Madhusudhan (2010) emphasized that slow internet access was the most common problem. The study also found that it took too long to view or download pages, making it difficult to obtain relevant information. Additionally, an excess of information was retrieved, and students struggled to effectively utilize e-resources due to a lack of proper IT knowledge.

### **MAHARANA PRATAP UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, UDAIPUR, RAJASTHAN (MPUAT)**

Maharana Pratap University of Agriculture and Technology, Udaipur, came into existence on November 1, 1999. This was done to address wide physiographic variations, encompassing crops, cropping patterns, climate, soil parameters, etc. Central library (Dr. Amar Singh Rathore) was established at Rajasthan College of Agriculture, Udaipur and facilitates the information needs of students, faculty, researchers, scientists, trainees, and agricultural officers. The library information system at MPUAT was partially automated, barcoded, and digitized.

### **SWAMI KESHWANAND RAJASTHAN AGRICULTURAL UNIVERSITY, BIKANER, RAJASTHAN (SKRAU)**

Swami Keshwanand Rajasthan Agricultural University (SKRAU), located in Bikaner, Rajasthan, was established on August 1, 1987. The university is authorized to oversee academic institutions focused on Agriculture, Home Science, Agri-Business Management, and more. The Central Library, situated on the main SKRAU campus, offers various services, including Internet access, reprography, bibliographical services, CD-ROM/online database services, and OPAC facilities.

### **RESEARCH METHODOLOGY**

Data was gathered through questionnaires in both print and online formats, which were created using Google Forms. These questionnaires were distributed among undergraduate, postgraduate, and research scholars at two State Agricultural Universities in Rajasthan, namely, Swami Keshwanand University of Agriculture Science and Technology, Bikaner, and Maharana Pratap University of Agriculture Science and Technology, Udaipur. This study employed a descriptive survey method that involved 174 randomly selected students. The data was analyzed with the help of SPSS Statistical Software and Microsoft Office to create and format the necessary tables.

**3.0 Statement of the Problem**

Even though there are a lot of electronic resources available, we don't know much about how students at the agricultural university library actually use them. The research has two main goals: first, to understand how students use electronic resources, second to find out the satisfaction and difficulties faced by the students in using electronic resources.

**3.1 Objectives of the Study**

To know the frequency of library visits by the students of Maharana Partap and Swami Keshwand Agricultural Universities of Rajasthan.

1. To find the sources consulted to access the electronic resources by students under study.
2. To know the frequency of using electronic resources by the students under study.
3. To know the reasons of using electronic resources by the students under study.
4. To know the satisfaction level with electronic resources among the students under study.
5. To know the problems faced by the students under study.

**3.2 Research Question**

- RQ1: There is no significant relation in frequency of library visits by the students of Maharana Partap and Swami Keshwand Agricultural Universities of Rajasthan.
- RQ2: There is no significant relation in frequency of using electronic resources by the students under study.
- RQ3: There is no significant relation in sources consulted to access the electronic resources by the students under study.
- RQ4: There is no significant relation in reasons of adopting electronic resources by the students under study.
- RQ5: There is no significant relation in student's satisfaction level with different electronic resources under study.
- RQ6: There is no significant relation in problems during the access of electronic resources by the university students under study.

**4.0 Data Analysis and Findings**

The present study employs a descriptive survey method, covering 174 randomly selected students. Further collected data was presented in tabular format.

**4.1 Demographic Information**

This part provided demographic information of the student's from MPUAT and SKRAU universities in Rajasthan. MPUAT has a majority of male students, constituting 53 (79.10%) compared to SKRAU, which has 71 (66.36%). Conversely, SKRAU has a higher number of female students, accounting for 35 (32.71%) compared to MPUAT's 14 (20.90%). Further this study presents a comparison of the educational levels of students from MPUAT and SKRAU universities in Rajasthan. SKRAU has the majority of postgraduate and research scholar students, accounting for 30 (44.78%) and 16 (23.88%), respectively, compared to MPUAT, which has 36 (33.64%) and 21 (19.63%). Conversely, SKRAU has a higher number of undergraduate students, totalling 50 (46.73%) compared to MPUAT 21 (31.34%).

**4.2 Department Wise Distribution**

This section presents the departmental distribution of students from both universities, namely SKRAU and MPUAT. In both universities, more than half of the students belonged to the Department of Agriculture, with 45 (67.16%) in MPUAT, compared to 53 (49.53%) in SKRAU. The remaining students at MPUAT, were belonged Animal Husbandry & Veterinary Science, and Horticulture, collectively accounting for 4 (5.97%), and Biotechnology 1 (1.49%). Additionally, 13 (19.40%) students did not mention their department. In comparison, at SKRAU 36 (33.64%) students were associated with the Department of Food Nutrition & Diet, Community Science 13 (12.15%), Horticulture 1 (0.93%), and 4 (3.74%) did not specify their department.

**Table 1: Frequency of Library Visits**

Frequency	MPUAT (n=67)		SKRAU (n=107)		$\chi^2$	df	P
Daily	36	53.73%	14	13.08%	39.589	4	.000
2-3 times in a week	26	38.81%	53	49.53%			

<b>Weekly</b>	03	04.48%	14	13.08%
<b>Monthly</b>	00	00.00%	04	03.74%
<b>Occasionally</b>	02	02.99%	22	20.56%

This table reveals the frequency of library visits by students at MPUAT, and the results indicate that 36 (53.73%) of the students visit the library daily. Additionally, 26 (38.81%) students visit 2-3 times a week, 3 (4.48%) visit weekly and 2 (2.99%) visit occasionally at the MPUAT university library. In comparison, at SKRAU university, the maximum number of students, 53 (49.53%), visit the library 2-3 times a week, 22 (20.56%) visit occasionally, 14 (13.08%) visit daily and weekly, and the remaining 4 (3.74%) students visit monthly.

RQ1: There is no significant relationship in the frequency of library visits by students of Maharana Partap and Swami Keshwand Agricultural Universities of Rajasthan.

The p-value of .000 was significantly less than the commonly accepted level of .05. Therefore, we concluded that there was a significant relation in frequency of library visits among agricultural students in both universities of Rajasthan.

**Table 2: Sources Consulted to Access the Electronic Resources**

Sources	MPUAT (n=67)		SKRAU (n=107)		$\chi^2$	df	P
<b>Library Staff</b>	50	76.92%	63	64.95%	4.488	1	<b>.034</b>
<b>Teachers</b>	18	27.69%	24	24.74%	.443		.506
<b>Colleagues</b>	26	40.00%	46	47.42%	.297		.585
<b>Internet</b>	04	06.15%	03	03.09%	1.070		.431

Table 2 illustrates the sources consulted to access electronic resources. The majority of students at MPUAT primarily rely on library staff and colleagues to learn about electronic resources, followed by 50 (76.92%) and 26 (40%). In comparison, at SKRAU, response was 63 (64.95%) and 46 (47.42%). Notably, teachers, who are expected to hold the top position, do not seem to provide significant awareness about electronic resources; only ¼ of the total students from both universities obtain information from teachers. Additionally, a minimal number of students, 4 (6.15%) from MPUAT and 3 (4.32%) from SKRAU, resort to the internet for obtaining information about electronic resources.

RQ2: There is no significant relation in sources consulted (Library staff, teachers, colleagues and internet) to access the electronic resources by the students under study.

In case of variable library staff, the calculated p-value .034 was less than .05 at the significant level 95% and concluded that there was significant relation in library staff in both universities while we measure the variables teachers, colleagues and internet we enable to find a significant relation.

**Table 3: Frequency of using library electronic resources**

Frequency	Mpuat (n=67)		Skrau (n=107)		X2	Df	P
<b>Always</b>	11	16.42%	25	23.36%	3.546	3	.315
<b>Frequently</b>	16	23.88%	27	25.23%			
<b>Seldom</b>	22	32.84%	38	35.51%			
<b>Rarely</b>	18	26.87%	17	15.89%			

Table 3 presents a comparison of the frequency of using library electronic resources by students from MPUAT and SKRAU universities in Rajasthan. The majority of students at MPUAT used electronic resources seldom 22 (32.84%), rarely 18 (26.87%), and 16 (23.88%) frequently, and only a few students i.e. 11 (16.42%) used always. Additionally, the table indicates that the majority of SKRAU students used electronic resources seldom 38 (35.51%), frequently 27 (25.23%), and occasionally 25 (23.36%), while a smaller number of students, 17 (15.89%), used electronic resources rarely. Overall, the table suggests that the majority of the students from both universities generally do not used electronic resources frequently.

RQ3: There is no significant relationship in the frequency of using electronic resources among students of Maharana Partap and Swami Keshwand Agricultural Universities in Rajasthan.

The p-value of .315 was considerably higher than the commonly accepted level of .05. Therefore, we concluded that there was no significant relationship between the frequencies of using library electronic resources by the

students of both agricultural universities in Rajasthan.

**Table 4: Reasons of Adopting Electronic Resources**

Reasons for adopting	MPUAT (n=67)		SKRAU (n=107)		$\chi^2$	df	P
Round the clock availability	16	69.57%	34	62.96%	3.663	1	.160
Time saver	16	69.57%	35	64.81%	3.596		.166
Multiple access facility	17	73.91%	24	44.44%	7.748		<b>.021</b>
Reliability	08	34.78%	12	22.22%	4.541		.103
Provides qualitative contents	10	43.48%	07	12.96%	10.799		.005
Easy to get a copy	12	52.17%	24	44.44%	3.759		.153
Economical than print	14	60.87%	15	27.78%	9.549		<b>.008</b>
Easy in sharing	13	56.52%	32	59.26%	3.732		.155

Note. N= 174. p <.05

This table highlights the reasons for the study, which aims to investigate how students engage with digital resources. It closely examines the Agricultural University Library, focusing on how students use electronic resources and what influences their choices.

In terms of the reasons provided by the students, multiple access facility 17 (73.91%), round-the-clock availability and time-saving 16 (69.57%), economics compared to print 14 (60.87%), ease in sharing 13 (56.52%), and easy access to copies 12 (52.17%) were the most frequently mentioned. Some drawbacks were also indicated, with students at MPUAT mentioning that e-resources provide qualitative content 10 (43.48%) and reliability 8 (34.78%). In comparison, at SKRAU University, the majority of students mentioned time-saving 35 (64.81%), round-the-clock availability 34 (62.96%), ease in sharing 32 (59.26%), easy access to copies and multiple access facilities 24 (44.44%), and economics compared to print 15 (27.78%) as the most common reasons for using e-resources. Some drawbacks were also indicated, with students mentioning that e-resources are reliable 12 (22.22%) and provide qualitative content 7 (12.96%).

RQ4: There is no significant relation in reasons of adopting electronic resources by the students under study.

The calculated p value .021 and .008 was <.05 in case of variables multiple access facility and economic than print found significantly related while in case of other variable calculated p value >.05. At the significant level 95% results shows that round-the-clock availability, time-saving, ease in sharing easy access to copies, reliable and provide qualitative content have no significant relation.

**Table 5: Students Satisfaction with Library Electronic Resources**

Electronic Resources	MPUAT(n=67)		SKRAU (n=107)		$\chi^2$	df	P
E-Books	27	79.41%	62	81.58%	5.134	1	<b>0.023</b>
E-Journals	21	61.76%	27	35.53%	0.770		0.380
CD-ROM Databases	03	08.82%	05	06.58%	0.004		1.000 <sup>a</sup>
E-Thesis & Dissertations	08	23.53%	16	21.05%	0.315		0.575
Online Databases	07	20.65%	34	44.74%	10.406		<b>0.001</b>
E-magazines & newspapers	14	41.30%	23	30.27%	0.009		0.925
List of website links	09	26.55%	19	25.01%	0.571		0.425

Note. N= 174. \*P <.05. a= used Fisher exact test.

As observed in table 5, the majority of students at MPUAT expressed satisfaction with e-books and e-journals followed by 27 (79.41%) and 21 (61.76%) respectively. However, other resources such as CD-ROMs, online databases, e-theses and dissertations, lists of website links, and e-magazines & newspapers were deemed unsatisfactory in the students' opinion. Conversely, in the case of SKRAU, students were satisfied with only one item e-books, with a satisfaction score of 62 (81.58%). Apart from e-books, other types of electronic resources in the library were not found to be satisfactory. The majority of students in both university libraries expressed dissatisfaction with the electronic collection.

RQ5: There is no significant relation in the level of satisfaction with various electronic resources (e-books, online databases, e-journals, CD-ROM databases, e-theses and dissertations, e-magazines & newspapers, and lists of websites) among the students of Maharana Partap and Swami Keshwand Agricultural Universities in Rajasthan.

The calculated p value .023 and .001 was <.05 in case of variables e-books and online databases significantly related while in case of other variable calculated p value >.05. At the significant level 95% results shows that e-journals, CD-ROM databases, e-thesis & dissertations, e-magazines & newspapers, and list of website links

have no significant relation.

**Table 6: Problems Faced While Using Electronic Resources**

Electronic Resources	MPUAT	SKRAU	$\chi^2$	Df	P	
<b>Lack of guidance and training</b>	49	75.38%	56	60.22%	7.447	<b>.006</b>
<b>Slow internet speed</b>	50	76.92%	41	44.09%	21.773	<b>.000</b>
<b>Unavailability of full text document</b>	26	40.00%	21	22.58%	7.688	<b>.006</b>
<b>Digital divide</b>	32	49.23%	15	16.13%	23.794	<b>.000</b>
<b>Less PC to access e-resources</b>	37	56.92%	28	30.11%	14.864	<b>.000</b>
<b>Authenticity problems</b>	25	38.46%	19	20.43%	8.340	<b>.004</b>

Note. N= 174. p <.05

The study sheds light on various access challenges associated with electronic resources. A multiple-choice question with six option representing major problems was administered, and responses were tabulated in Table-12. Results indicated that the most significant problems faced by the students at MPUAT were slow internet speed 50 (76.92%), lack of guidance and training 49 (75.38%), and a shortage of PCs to access e-resources 37 (56.92%), ranking first, second, and third, respectively. Conversely, students at MPUAT identified issues such as the digital divide 32 (49.23%), unavailability of full-text documents 26 (40%), and authenticity problems 25 (38.46%). In comparison, the table for SKRAU highlighted that the most frequently encountered problems were lack of guidance and training 56 (60.22%), slow internet speed 41 (44.09%), and a shortage of PCs to access e-resources 28 (30.11%), occupying the second and third positions. Other issues mentioned by SKRAU students included unavailability of full-text documents 21 (22.58%), authenticity problems 19 (20.43%), and the digital divide 15 (16.13%).

RQ6: There is no significant relation in problems during the access of electronic resources by the university students under study.

In case of all variables i.e. mentioned in table 7, the calculated P value was < .05. So, we concluded that there was a significant relation in problems faced by the both agricultural universities students in Rajasthan.

### 5.0 Suggestions

The findings suggest that both libraries were equipped with Wi-Fi connectivity, providing access to electronic resources on mobile devices and other electronic equipment; however, the internet connectivity was notably slow. To improve the learning environment, libraries should be equipped with modern technical equipment and consider acquiring more and more electronic resources. It is suggested that periodic awareness programs and training sessions be conducted for all students to educate them about the available resources. Improvement measures to enhance the effective utilization of electronic information sources by students should include providing additional support for using electronic resources and improving ICT skills through specialized programs.

### 6.0 Conclusion

Electronic resources are gaining popularity due to their numerous benefits, leading libraries to invest significantly in subscriptions. Evaluating user attitudes towards e-resources becomes essential. Libraries, historically receptive to evolving services and meeting clientele’s needs, must adapt to efficiently deliver this technology to students and staff (Al-Khateeb 2021; Mawere & Sai 2018), especially given the increasing availability of digital resources. Traditional university libraries must undergo significant transformations to keep pace with technological advancements. Improving access to e-library resources is crucial, as the lack of access has become a major concern, particularly among student users (Mashaba & Pretorius, 2023). Understanding the integration of technology and traditional methods in agricultural education is crucial, and the study aims to provide valuable insights for teachers, curriculum planners, and policymakers. By unravelling how students utilize electronic resources, the study seeks to facilitate informed decision-making for enhancing educational tools in agricultural university libraries. The most common reasons cited by students for embracing electronic resources include multiple access facilities, round-the-clock availability, time-saving, economic benefits compared to print, ease in sharing, and ease of obtaining copies. In MPUAT, only e-books and e-journals scored satisfactory levels, while in SKRAU, only e-books garnered satisfactory feedback from students. Notably, students faced significant challenges, with slow internet speed, lack of guidance and training, and a shortage of PCs for accessing e-resources ranking as the most significant problems, reported in the first, second, and third positions, respectively.

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