

Impact of Academic Library Services on Postgraduate Student Performance at the Central University of Punjab, Bathinda, India

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ABSTRACT

This study investigates the relationship between the utilisation of university library resources and the academic performance of postgraduate students at the Central University of Punjab. A total of 815 postgraduate students enrolled in various disciplines during their fourth semester participated in this research. The study aimed to identify the most preferred and effective information sources available, library usage and academic performance of the students. A survey method was employed using a structured questionnaire comprising both closed- and open-ended questions, distributed via Google Forms. Data were analysed using MS Excel and SPSS. Findings revealed that journal and research articles, as well as electronic databases, were the most frequently used and effective information sources among respondents. The analysis depicted a positive association between library usage and academic performance, particularly among students in their second and third semesters. Overall, the study highlights the significant role of university libraries in enhancing students' academic achievement and promoting quality education within higher education institutions (HEIs).

Keywords: Library Resources, Academic Performance, Information Seeking Behaviour, Information Literacy Skills, Central University of Punjab, India.

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1. INTRODUCTION

Libraries serve as repositories of knowledge, offering access to vast information resources. These resources include books, journals, databases, and digital materials supporting research, teaching, and learning. By curating this relevant information,

libraries empower students, researchers and educators alike. Quality education is an all-encompassing and accessible system that equips students with the necessary knowledge and skills for success. Libraries play a crucial role in quality education by serving as vital resources that grant access to knowledge, facilitate research, encourage literacy, create a favourable learning atmosphere, and advocate for continuous learning among

students and educators. In higher education, libraries play a crucial role in shaping the academic career of students, and the teaching fraternity (Ullah and Usman, 2023). Due to the information technology and communication (ITC) revolution the libraries are transformed from traditional to modern where users were offered a range of online resources and digital collections. With technology adaptation today's libraries are also providing remote access to their stakeholders. Technology increases the accessibility of library services which helps in development of research strategies, and critical thinking abilities of students, and faculties (Griffiths & Brophy, 2005)

The Central Library of the Central University of Punjab is a fully automated facility housing over 57,095 books, subscribed to 11 International and national journals, and provides access to 7,231 fully texted online journals through the e-Shodh Sindhu consortium. Databases, such as JSTOR, ISID, SciFinder, Scopus, Web of Science, Sage, Taylor and Francis, are accessible through the University Library. The library provides access to a diverse collection of theses, dissertations, newspapers, magazines, CD-ROMs and DVDs. This complete repository ensures that users can access Digital and Print formats to meet their learning needs. For increasing accessibility, satisfaction with ease of doing, the library has adopted automated self-service and high-end security systems, which include RFID technology and an electromagnetic security system. To keep users up to date with relevant library information, reference system libraries are using an OPAC system for book searches, current awareness (CAS), and selected dissemination of information (SDI). The library offers plagiarism prevention and writing assistance to help users maintain the originality of their work and receive strong academic support (CUPB, 2024). The current study examines the relationship between the use of the university's central library information resources and their academic performance in end-of-semester exams of post-graduate students.

2. REVIEW OF LITERATURE:

Researchers have conducted considerable literature reviews and studied the relationship between library use and students' academic performance. Some studies revealed that no significant relationship was found between the use of the library and students'

academic performance. However, numerous studies have supported and proven a positive relationship between library use and students' academic performance. Whitmire (2002) examined academic library performance measures, undergraduate students' library use, and educational outcomes, with a specific focus on students' critical thinking. The study found that the use of libraries by students was well related to the progress of several third- and fourth-year students in critical thinking. Similar findings were seen in the study of Soria et al. (2013), where the authors found that first-year students who frequently used the library during their first semester had a better CGPA compared to those who did not use it and found there was a strong correlation between retention and Library usage with patrons. Gaona and Gonzalez (2011) studied the relationship between reading habits, university library, and academic performance in a sample of Psychology students, and the findings assured that there was a statistically significant relationship between academic achievement and two aspects of reading habits, which include attitudes towards reading and the frequency of Library search strategies. Banleman and Adjoa (2017) also found that higher academic performance is positively connected with library use, especially digital resources and research services. Descriptive statistics and thematic analysis were used to study the data.

However, some studies say the academic performance of the studies may not necessarily depend on the library use, but on various other factors such as the use of technology, as seen in the study of Kuh and Gonyea (2003), where the study suggests that technologies help students to evaluate information quality and in future to focus on information literacy skills. Wells (1995) studied the Influence of Library Usage on Undergraduates' academic success at the University of Western Sydney and found less obvious, significant associations between Library usage and academic success, as academic grades were not differentiated. Alharbi and Middleton (2011) explored the connection between Academic library usage and students' educational performance in Kuwait. The study indicated that while there is a favourable correlation between academic performance and library use, only a small percentage of library users

reported significant improvement in their educational outcomes. The research suggested that universities should enhance their libraries and services to meet students' needs and improve the technologies provided by libraries to enhance students' success.

Ferrer's (2024) study on the association of students' information literacy and library engagement with their academic performance revealed that the students who possessed a high level of information literacy and a high level of library engagement exhibited a good academic performance. Similarly, Gurgur (2025) studied 370 students' library use and their academic performance from four public polytechnics in Benue State, Nigeria. The findings of the study depicted that library use has a significant positive influence on the academic performance of students. Library usage improved the students' reading skills, secured high grades, and encouraged them to participate in academic discourse. Gurguro pinioned that libraries should be more proactive in raising awareness of library resources among the students. Bloom et al. (2025) also investigated the relationship of 3340 students' frequency of library visit and their academic performance. The findings showed that the higher the frequency of visits to the library, the higher the academic achievements. These studies highlighted the crucial role of libraries in the students' success.

3. SIGNIFICANCE OF THE STUDY

Libraries have transformed into spaces where students engage in active learning by utilising computer tools, databases, e-books, and other resources that enhance students' digital literacy levels (Nkamnebe et al., 2014). Academic libraries play a significant role in increasing student involvement in learning and providing a visible manifestation of the fundamental principles and pursuits of academic life (Kuh & Goneyea, 2003).

Academic libraries play a crucial role in promoting active student engagement in learning and providing a clear manifestation of the fundamental principles and pursuits of academic life (Kuh & Goneyea, 2003). So, investigating the impact of libraries on students' academic performance would be worthwhile. The internet revolution has transformed traditional libraries into modern libraries where students engage in active learning by utilising computer tools, online databases, e-books, e-journals, and other resources that enhance students' digital literacy levels (Nkamnebe et al., 2014).

The present study aims to investigate whether there is a relationship between post-graduate students' use of the university's central library and their academic performance. The findings will help us understand the role a university library can play in shaping students' careers. The study findings will also help identify the preferred and effective information sources and services for students.

4. OBJECTIVES OF THE STUDY

The objectives of the study are:

- To know the purpose of seeking information by the Postgraduate students of Central University of Punjab.
- To find out the most preferred and most effective information sources of Postgraduate students of the Central University of Punjab.
- To examine the library use and academic performance of the Postgraduate students of the Central University of Punjab.

Research Question:

- Is there any relationship between library usage and academic performance?

5. RESEARCH METHODOLOGY

5.1 Study Area

The Central University of Punjab is located in Bathinda, Punjab, India. It was established in 2009 under the Central Universities Act, 2009, which received the assent of the President of India on 20th March 2009. Its territorial jurisdiction extends to the whole State of Punjab. When the university started in 2009, CUPB had only ten students enrolled in four programmes. Currently, the university has 31 departments and 11 schools in the Social sciences. The Technology, Education, Humanities, Science, and Law programs have 1,595 master's students, 366 PhD scholars, and 21 international students. The curriculum of the CUPB primarily focuses on research and skill development, following the Choice-Based Credit System (CBCS).

5.2 Population of the study

The population in this study consists of second-year (4th Semester) postgraduate students from the 2021-2023 Batch across all departments at the Central University of Punjab. The total number of students is 815, and the whole population is considered for the study.

5.3 Tools used in the study

The researcher employed the questionnaire method, utilising both closed-ended and open-ended questions, which were framed and distributed via Google Forms. Google Form, MS Excel, and SPSS were used to analyse and interpret the results to fulfil the objectives of the present study.

5.4 Data collection

The research employed a survey method to investigate the nature and extent of information resource utilisation in the university central library among final-year postgraduate students of the Central University of Punjab (Bathinda) and to determine its contribution to their academic performance. The questionnaire for the present study, which comprises a set of closed-ended and open-ended questions on awareness of library resources, library usage, and information-seeking behaviour, has been distributed via a Google form among postgraduate students. The questionnaire also included questions about the CGPA scores of students in the first, second, and third semesters. The entire questionnaire was designed to answer the study's research questions and fulfil the study's aim and objectives, namely, to determine whether there is a relationship between post-graduate students' utilisation of library resources and their respective academic performance. The collected data are then tabulated and analysed using appropriate statistical tools, such as SPSS, and simple descriptive statistics. The results are presented in tables and figures, and their interpretation is provided accordingly.

5.5 Limitations of the study

This study is limited to post-graduate students of the Central University of Punjab, and the findings will be specific to these students.

Another limitation is that only 519 responses were received among the 815 respondents. Therefore, the analysis of this study is based on data collected from 519 respondents.

6. DATA ANALYSIS AND INTERPRETATION

For the present study, data analysis and interpretation were conducted to determine the contribution of library resources to the academic performance of postgraduate students at the Central University of Punjab, Bathinda. The study was conducted among 4th-semester students of the 2021-23 batch, who had completed the first three semesters of the Master's degree at the university. The total population of all 4th-semester students in the said batch was 815. The whole population, i.e. 815 students, was considered for the study. However, a total of 519 responses were received. Therefore, the analysis of the study was carried out based on the data collected from the 519 respondents to fulfil the study's objectives.

6.1 Gender-Wise Distribution of the Respondents

The gender-wise distribution of the respondents, i.e., postgraduate students of the Central University of Punjab, Bathinda, is shown in Table 1. Out of the total 519 respondents, 327 (63%) were male and 192 (37%) were female students.

Table 1: Gender-wise distribution of the respondents (n-519)

Sl. No	Respondents	Frequency	Percentage
1.	Male	327	63
2.	Female	192	37
Total		519	100

Source: Author's own work.

6.2 Purpose of the study

The primary purposes of using the library by post-graduate students of the Central University of Punjab are listed below in Table 2. The students visit the library for various purposes. 456 (87.90%)

students use the library to seek information for academic purposes, such as assignments, reading materials, and studying for exams. A significant number of students, 437 (84.20%), reported using the library to seek information regarding General Knowledge. Moreover, 265 (51.10%) students have said that they used the library for seeking information related to entertainment purposes, and 77 (15%) of them used the library for seeking information for various other reasons like latest development on technology, fitness, news updates, finance, job openings, and politics.

Table 2: Purpose of seeking information (n=519)

Sl. No	Purpose	Frequency	Percentage
1.	Academic Related	456	87.90
2.	General Knowledge	437	84.20
3.	Entertainment	265	51.10
4.	Others (latest development on technology, fitness, news updates, finance, jobs, etc.)	77	15.00

Source: Author's own work.

6.3 Most preferred information sources of respondents

Data were collected from the preferred and effective information sources of postgraduate students, and the collected data were tabulated, with percentages calculated. The results are presented in Table 3.

Table 3: Most preferred information sources of respondents (n=519)

Sl. No.	Preferred information source	On Preference (Freq./Percentage)	On Effectiveness (Freq./percentage)
1.	Journals/ Research articles	379/72.70	312/59.90
2.	Online/ e-Databases	348/66.80	386/74.10
3.	Textbooks	328/63.00	280/53.70
4.	Digital Repositories	168/32.20	248/47.60
5.	Others (YouTube, other online platforms)	03/0.60	00

Source: Author's own work.

The study has shown that Journals/research articles were chosen as the most preferred information sources by 379 (72.70%) students of the university, and almost 60 per cent (312) of the students also chose journals/Research articles as the most effective information sources in the library, scoring the second spot in effectiveness. The most effective sources of information were e-databases in the library, chosen by 386 (74.10%) students. The e-databases were also found to be the second most preferred information sources chosen by 348 (66.80%) students. Textbooks come third in preference and effectiveness, with 328 (63.00%) and 280 (53.70%) students choosing textbooks as their preferred and effective information sources, respectively. This was followed by Digital repositories with 168 (32.20%) and 248 (47.60%) students choosing them as preferred and effective information sources, respectively. Three (0.60%) students preferred other resources, such as YouTube and online platforms.

6.4 Library use and academic performance

Data has been collected to determine the relationship between library usage and academic performance among the 519 post-graduate students. The collected data have been tabulated, and the percentages have been worked out and presented in the tables below.

Table 4: Library use and academic performance in 1st Semester

CGPA_1 (%)	< 1 hour (%)	1-2 hours (%)	2-5 hours (%)	> 5 hours (%)	Total (%)
4-5 (6)	1 (17)	1 (17)	2 (33)	2 (33)	6 (100)
5.1-6 (49)	15 (31)	17 (35)	11 (22)	6 (12)	49 (100)
6.1-7 (165)	50 (30)	45 (27)	42 (26)	28 (17)	165 (100)
7.1-8 (237)	75 (32)	76 (32)	49 (21)	37 (16)	237 (100)
Above 8 (62)	18 (29)	17 (27)	14 (23)	13 (21)	62 (100)
Total	159 (30)	156 (30)	118 (23)	86 (17)	519 (100)

Source: Author's own work.

Table 4 shows that the time spent by post-graduate students in the library to utilize library resources is negatively correlated with their academic score in the 1st semester exam. The

results of the data are presented by keeping the actual number alongside the percentage in brackets for clearer understanding.

Table -5: Library use and Academic performance in 2nd Semester

CGPA_2 (%)	< 1 hour (%)	1-2 hours (%)	2-5 hours (%)	> 5 hours (%)	Total (%)
4-5 (1)	0	0	1 (100)	0	1 (100)
5.1-6 (82)	26 (32)	23 (28)	17 (21)	16 (19)	82 (100)
6.1-7 (208)	67 (32)	66 (32)	44 (21)	31 (15)	208 (100)
7.1-8 (186)	60 (32)	50 (26)	44 (24)	32 (17)	186 (100)
Above 8 (37)	6 (16)	15 (40)	9 (24)	7 (20)	37 (100)
Total	159 (31)	154 (30)	115 (22)	90 (17)	519 (100)

Source: Author's own work.

Table 5 shows that the time spent by post-graduate students in the library to utilise library resources is negatively correlated with their academic score in the 2nd-semester exam. The results of the data are presented by keeping the actual number alongside the percentage in brackets for clearer understanding.

Table 6: Library use and Academic performance in 3rd Semester

CGPA_3 (%)	< 1 hour (%)	1-2 hours (%)	2-5 hours (%)	> 5 hours (%)	Total (%)
4-5 (3)	2 (67)	1 (33)	0	0	3 (100)
5.1-6 (49)	15 (31)	14 (29)	8 (16)	12 (24)	49 (100)
6.1-7 (176)	55 (31)	61 (35)	33 (19)	27 (15)	176 (100)
7.1-8 (229)	74 (32)	66 (29)	56 (24)	33 (15)	229 (100)
Above 8 (57)	13 (23)	13 (23)	19 (33)	12 (21)	57 (100)
Total	159 (31)	155 (30)	116 (22)	88 (17)	519 (100)

Source: Author's own work.

Table 6 shows that the time post-graduate students spend in the library to utilise library resources is negatively correlated with their academic score in the 3rd semester exam. The results of the data are presented by keeping the actual number alongside the percentage in brackets for clearer understanding.

To investigate the association between Library usage and the academic performance of post-graduate students, a Chi-Square test for independence was conducted using SPSS 27 software.

Table 7: Academic performance and Library usage

Sl. no	Semesters	Chi-Square and P-value
1.	1 st Semester	Pearson Chi-Square value = 11.731 $p = .467$, $df = 12$ Cramer's V = .087
2.	2 nd Semester	Pearson Chi-Square value = 25.225 $p = .014$, $df = 12$ Cramer's V = .128
3.	3 rd Semester	Pearson Chi-Square value = 39.323 $p = .000$, $df = 12$ Cramer's V = .161

Source: Author's own work.

The Chi-Square test for independence was conducted to find the relationship between respondents' academic performance and Library usage. The Chi-Square test result (Table 7) revealed that in 1st Semester, there was no significant association between academic performance and the amount of time utilised in the library. The Cramer's V value is 0.087, indicating that the effect size of library utilisation on academic performance was very small. The students' academic performance in the second and third semesters exhibited a significant association with their library utilisation time. The Cramer's V value for the 2nd semester is .128, indicating a small effect size. The Cramer's V value for the 3rd semester is .161, showing a nearly moderate effect size. The association effect size between academic performance and library utilisation has significantly increased from the first to the third semester.

The analysis of the study (Table 7) shows that in 1st Semester, there was no significant association between the students' academic performance and library usage or the duration of time spent in the library. However, the post-graduate students' Academic performance in the 2nd semester and 3rd semester exhibited a significant association with their library usage. The Cramer's V value for the 2nd semester is .128, which indicates a small effect size, which also means that the post-graduate students who spend more time in the library or those who utilise the library resources more are

found to score higher and perform better in the 2nd Semester examination than those students who use the library less. This same trend was also observed in the 3rd semester. The Cramer's V value for the 3rd semester is .161, even higher than the 2nd Semester, showing a nearly moderate effect size. This indicates a more significant positive association between library usage and the academic performance of post-graduate students in the 3rd-semester examination. The association between library usage and academic performance shows an increasing trend from the first to the third semester.

7. RESULTS AND DISCUSSION

Most post-graduate students, 456 (87.90%), use the library to seek information for academic purposes, such as assignments, reading materials, and studying for exams. Journals/research articles, as well as online and e-databases, were chosen as the most preferred (72.70%) and most effective (66.80%) sources of information by postgraduate students of the university. This indicates that scholarly publications from the journals and e-databases available to and subscribed to by the library are highly valued by the students, as these sources provide reliable, authentic, reputable, and authoritative information. This also suggests how access to digital databases plays a significant role in the academic work of post-graduate students.

Regarding the relationship between the library use and academic performance of the post-graduate students, the result of the Chi-Square test shows that there was no positive relationship between the amount of time spent in the library utilizing the library resources by the post-graduate students and their academic performance in the first semester but showed a slight significant positive relationship in the 2nd semester and even more significant relationship in the 3rd semester. There is no significant relationship between library usage by post-graduate students and their academic performance in the 1st semester, as the students have recently joined the university and were not well-acquainted with the library and its information resources and services. In the 2nd and 3rd Semesters, the students were already oriented to the library services. In the second and third semesters, they became familiar with the library resources. Eventually, they became more aware and acquainted with the available information resources and services provided in the library. This resulted in better utilisation of the library

resources, leading to improved performance in the exams for these two semesters. Another reason could be that the library initially lacks proper resources to meet the students' information needs. Still, the resources were improved over time, so there was no positive correlation between academic performance and library use in the 1st semester. Still, eventually, a positive relationship emerged between academic performance and library use in the second and third semesters. The real reason can only be ascertained by conducting more studies focusing on the matter. Overall, the study reveals a positive correlation between academic performance and library use among postgraduate students at the Central University of Punjab.

To answer the research question, *RQ: Is there a relationship between library usage and academic performance?*, the Chi-Square Test results indicate a positive relationship between library usage and the academic performance of postgraduate students at the Central University of Punjab. Therefore, the library plays a vital role in students' academic lives by providing access to information resources, including specialised databases and research materials, which are helpful in their academic work.

8. CONCLUSION

According to the present study, a positive relationship exists between the use of the library and the academic performance of postgraduate students at the Central University of Punjab in the second and third semesters. The findings show that approximately 88% (456) of the students use the library to seek information for academic purposes, such as assignments, reading materials, and studying for exams. Moreover, more than 65 per cent of the students find journals/research articles and online/e-databases to be their most preferred and most effective sources of information. The results of these findings demonstrate the library's vital role in contributing to students' academic achievement and ensuring quality education in higher education institutions (HEIs). In the words of Tait and Reid (2016), "the dire predictions of the death of the physical library have not come to pass; however, while visits to public libraries have declined, visits to academic libraries have remained steady". The increasing number of students at higher education institutions has led to a

corresponding increase in foot falls in academic libraries. However, user behaviour, including borrowing patterns, has changed significantly over the last 10 years (SCONUL, 2015; Tait & Reid, 2016). Therefore, the study emphasises the importance of maintaining the university library properly by continually improving library services to serve the student community best.

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