

A Study to Evaluate the Relationship between Educational Loans and Socioeconomic Status among B. Tech. Students at Central University of Jammu

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Abstract

This study looks at how student loans and family income affect B. Tech. students at the Central University of Jammu, at a time when technical education offers new opportunities but also brings financial challenges. Through a mixed-methods approach, the study investigates four key dimensions: the differential impact of education loans across economic classes; the correlation between loan uptake and socioeconomic status; the prevalence of home loans among B. Tech. students, and the multifaceted challenges students face in accessing and sustaining their education. By weaving together statistical insights and lived experiences, the research aims to illuminate the silent burdens, systemic gaps, and resilience strategies that shape students' academic journeys. Ultimately, this study advocates for a more empathetic and inclusive financial support system—one that recognizes education not merely as a transaction, but as a transformative right that must be accessible across socioeconomic divides.

Key Words: Financial Challenge, Education Loan, Socioeconomic status

Introduction

In colleges and universities, where students work toward their dreams, access to education is closely linked to their financial situation. For many B. Tech. students at the Central University of Jammu, the pursuit of technical education is not just a personal aspiration—it is a collective hope carried by families, communities, and generations. Yet, this journey is often punctuated by financial hurdles, with educational loans emerging as both a bridge and a burden. This study aims to investigate the complex relationship between educational loans and the socioeconomic status of students enrolled in the B. Tech. program. It delves into how financial aid intersects with lived experiences—how it empowers, compels, or reshapes the academic and emotional landscape of young learners. By examining patterns of loan uptake, repayment anxieties, and the broader implications on student well-being and career choices, the research aims to illuminate the silent negotiations students make between ambition and affordability. In doing so, the study aims to contribute to a more empathetic understanding of educational equity, one that acknowledges the complex realities underlying financial decisions and advocates for policies that respect both aspirations and dignity. In the evolving landscape of higher education in India, the pursuit of a professional degree—particularly in engineering—has become both a symbol of aspiration and a site of economic negotiation. For students enrolled in the Bachelor of Technology (B. Tech.) program at the Central University of Jammu, the journey toward academic and professional fulfilment is often shaped not only by intellectual rigor but also by financial realities. While education is widely recognized as a transformative force capable of uplifting individuals and communities, its accessibility remains uneven, especially when viewed through the lens of socioeconomic status. Educational loans have emerged as a critical mechanism to bridge this gap, offering students from economically disadvantaged backgrounds a pathway to pursue higher studies. However, the decision to take on a loan is rarely neutral—it is embedded in familial expectations, cultural norms, and long-term financial anxieties. For some, a loan represents hope and possibility; for others, it signals risk and burden. This duality invites a deeper exploration into how educational loans function within the lives of students, particularly in relation to their socioeconomic positioning. The Central University of Jammu, situated in a region marked by both promise and precarity, offers a unique context for this inquiry. Here, students come from diverse economic backgrounds—rural and urban, marginalized and middle-class—each carrying distinct narratives of struggle, resilience, and ambition. The B. Tech. program, with its emphasis on technical excellence and employability, attracts students who often view education as a stepping stone to upward mobility. Yet, the cost of this education—tuition fees,

accommodation, materials, and other living expenses—can be prohibitive, especially for families with limited financial resources. This study seeks to critically examine the relationship between educational loans and socioeconomic status among B. Tech. students at the Central University of Jammu. It aims to uncover how students from various economic classes perceive, access, and is impacted by educational loans. By investigating the percentage of students availing loans, the challenges they encounter in the process, and the broader implications on their academic and emotional well-being, the research hopes to illuminate the silent negotiations that shape their educational journeys.

It recognizes that behind every data point is a story: of a parent mortgaging land to support their child's education, of a student skipping meals to save money, of dreams deferred due to bureaucratic hurdles in loan approval. These stories matter. They offer insight into the systemic inequities that persist within our educational frameworks and call for more inclusive, compassionate policies. Moreover, the study is situated within the broader discourse of educational equity under India's National Education Policy (NEP) 2020, which emphasizes access, affordability, and quality. While the NEP envisions a more holistic and inclusive education system, its implementation must grapple with ground realities—especially the financial barriers that continue to exclude or disadvantage certain groups. By focusing on educational loans, this research contributes to that discourse, offering evidence-based recommendations that can inform institutional practices and policy reforms. Fundamentally, this study goes beyond statistics and trends—it listens for the quiet struggles, hopes, and choices that shape a student's journey through higher education in India. It seeks to understand how financial realities touch not just the classroom, but the spirit, relationships, and aspirations of young learners striving to build a better future. It seeks to honor the resilience of students who, despite financial constraints, strive toward excellence. It advocates for a system where education is not a privilege but a right—where loans are not burdens but bridges, and where every student, regardless of socioeconomic status, can walk the corridors of higher learning with dignity and hope.

Review of related literature

The relationship between educational loans and socioeconomic status (SES) is a critical area of inquiry, especially for students pursuing technical degrees such as B.Tech. at universities like the Central University of Jammu. The literature reveals complex interactions between access to loans, SES, academic outcomes, and post-graduation trajectories. Socioeconomic background significantly influences both the likelihood of availing educational loans and the terms under which students borrow.

(Oh, 2022). Do parents matter for student loan repayment after graduation? *Socius: Sociological Research for a Dynamic World*, 8, 1–16, stated that students from lower-income families or with less-educated parents are more likely to rely on loans to access higher education, but they also tend to borrow larger amounts and face greater challenges in repayment.

(Biswal & Chinara, 2020). Socio-Economic Determinants of Education Loan for Higher Education: Evidence from a Primary Level Study in Odisha. *SSRN Electronic Journal (IV)*, 1-10, analysed that various socioeconomic determinants—such as family income, parental education, and savings—play a decisive role in both the application for and approval of education loans, with inherent biases affecting successful loan acquisition.

(Baker et al., 2017). The impact of student loans on college access, completion, and returns. *Sociology Compass*, 11 (6), e12480 suggests that student loans can modestly enhance college access and completion, but excessive debt—especially without a degree—can hinder future financial stability and widen inequality. Limited and outdated data constrain understanding of these effects, highlighting the need for improved financial and academic datasets. Future research should explore how social, economic, and institutional factors shape loan decisions and educational inequality.

(Britt et al., 2015). Financial Stress and Financial Counselling: Helping College Students. *Journal of Financial Counselling and Planning* 26, (2). 172- 186, found that peer financial counselling effectively enhances students' financial satisfaction and knowledge while reducing anxiety. Future initiatives should prioritize students with high financial stress, focusing on both identifiable and less visible factors. Targeted outreach can ensure greater participation and improved financial well-being among college students.

(Oh, 2022; Furuta, 2022). Do student loans compensate for parental resources? The role of student loans in the transition to higher education. *International Studies in Sociology of Education*, 33(1), 1-24, observed that the interplay between SES and loan access is further complicated by the type of institution attended and the field of study, with STEM students and those at selective institutions sometimes experiencing different outcomes

(Mgaiwa et al., 2023). Financing higher education in Tanzania through students' loans scheme and its impact on equitable access. *Heliyon*, 9, e13943 conclude that policy recommendations include robust funding mechanisms and targeted support for students from disadvantaged backgrounds to ensure that loans fulfill their intended role in promoting educational equity.

(Asghar et al., 2024). Implications of Financial Support for the Academic Efficacy and Mental Health and Wellbeing of Engineering Undergraduates. *In 2024 ASEE Annual Conference & Exposition 1-14*, concluded that financial support—whether from parents, scholarships, or institutions—significantly enhances undergraduate engineering students' academic efficacy by reducing stress and enabling focused study. Organizational strategies like task prioritization and to-do lists further boost performance, with future research needed to explore links to belonging, identity, and persistence.

(Wingate et al., 2022). The Impact of Socioeconomic Status on Student Performance and Persistence in an Aerospace Engineering Curriculum. *In The 2022 ASEE Annual Conference & Exposition. American Society for Engineering Education, 1-19*, highlights how socioeconomic status significantly affects persistence and performance in aerospace engineering, with low SES students facing greater academic and financial challenges. Future research will explore how effectively support programs address these barriers and uncover deeper reasons behind major attrition.

(Alam & Forhad, 2022). What makes a difference for further advancement of engineers: socioeconomic background or education programs? *Higher Education* 83, 1259–1278 observed that despite extended years in engineering education, socioeconomic status remains a dominant factor influencing academic and professional outcomes. The study underscores the need for improved institutional infrastructure to better support students from lower SES backgrounds.

(Xiao et al., 2020). Financial capability of student loan holders who are college students, graduates, or dropouts. *Journal of Consumer Affairs*, 54(4), 1383-1401, revealed that college graduates exhibit the highest financial capability, while dropouts face significant disadvantages in both financial knowledge and behaviour. Leaving college without a degree burdens students with debt and limited financial skills, compounding long-term professional challenges.

The literature underscores that while educational loans can enhance access to higher education for B.Tech. students from lower socioeconomic backgrounds, they also carry risks of perpetuating inequality if not managed with attention to SES-related barriers and repayment challenges. Equitable policy design and targeted support are crucial to ensure that loans serve as a bridge, rather than a barrier, to educational and socioeconomic advancement.

Objectives of the study

1. To study the relationship between educational loans and socioeconomic status.
2. To find the percentage of B.Tech. Students availing educational loans.

Research Question

1. How does socioeconomic status influence the amount and type of educational loans taken by B.Tech students?
2. What proportion of B.Tech. Students are currently availing educational loans?

Research Methodology

This study uses descriptive analysis, as well as the statistical tool of correlation to examine the relationship between Educational Loans and Socioeconomic Status

Correlation examines the relation between the two variables.

Hypothesis

Null Hypothesis (H₀): There is no correlation between Educational Loans and Socioeconomic Status.

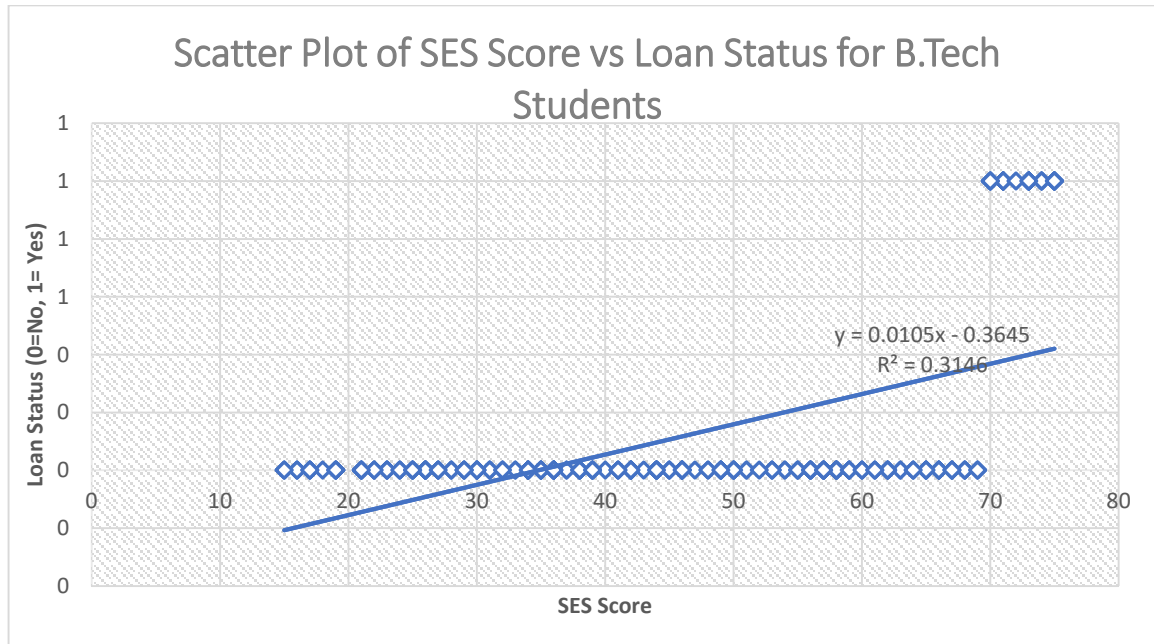
Alternate Hypothesis (H₁): There is correlation between Educational Loans and Socioeconomic Status.

Data Visualization

Loan Status	Count	Percentage
Yes (1)	30	12%
No (0)	220	88%

This summary provides a clear overview of the proportion of students who rely on educational loans to pursue their studies.

Scatter Plot



A scatter plot was plotted with Socio-Economic Status (SES) Score on the X-axis and Loan Status (1 = Yes, 0 = No) on the Y-axis. Each point represents an individual student. A linear trendline was added to the chart, along with the corresponding equation and R^2 value, to visualize the relationship between SES and loan dependency.

Correlation Analysis

The Pearson correlation coefficient (r) between SES Score and Loan Status:

The results are as follows:

- Correlation coefficient (r): 0.561
- Linear trendline equation: $y = 0.0105x - 0.3645$
- Coefficient of determination (R^2): 0.3146

The positive correlation ($r = 0.561$) indicates a moderate relationship between SES and loan dependency, suggesting that, in this sample, students with higher SES scores are slightly more likely to avail educational loans. The R^2 value of 0.3146 implies that approximately 31% of the variation in loan dependency is explained by socio-economic status, while the remaining variation may be influenced by other factors such as awareness of loan schemes, family preferences, or scholarship opportunities.

Summary

- Out of 250 students, 12% reported taking educational loans.
- Pie and bar charts visually illustrate the distribution of loan dependency among the students.

- Scatter plot with trendline demonstrates the relationship between SES and loan dependency.
- Pearson correlation confirms a moderate positive association, supporting the observation that SES plays a role in educational loan utilization.

Model and Results

The main objective of this study is to examine the relationship between Socio-Economic Status (SES) and Educational Loan Dependency among B.Tech students of Central University of Jammu. Since the focus is on correlation rather than prediction, the model does not aim to forecast loan dependency but to quantify the strength and direction of the relationship between the two variables.

For correlation analysis, SES is continuous, and loan dependency is binary (0/1).

Correlation

The relationship is represented by the Pearson correlation model, expressed as:

$$r = [n(\sum xy) - \sum x \sum y] / \sqrt{[n(\sum x^2) - (\sum x)^2][n(\sum y^2) - (\sum y)^2]}$$

Where:

- (r) = Pearson's correlation coefficient (-1 to +1)
- (X) = SES Score
- (Y) = Loan Status (0 or 1)
- (n) = Number of observations, 250

This formula measures the linear relationship between X and Y, producing a value between -1 and +1:

- r = +1: Perfect positive correlation
- r = -1: Perfect negative correlation
- r = 0: No correlation

In Excel, the correlation is calculated using the =CORREL() function:

=CORREL(B2:B251, C2:C251)

- B2:B251 → SES Scores
- C2:C251 → Loan Status (0/1)

Result obtained: r = 0.561

This indicates a moderate positive correlation, suggesting that while SES partially influences loan dependency, other factors also play a role.

Scatter Plot and Trendline

To visualize the model, a scatter plot was created in Excel:

- X-axis: SES Score
- Y-axis: Loan Status (0/1)

A linear trendline was added with equation $y = 0.0105x - 0.3645$ and R^2 value $R^2 = 0.3146$

Interpretation of Trendline

- Slope (0.0105): A 1-point increase in SES slightly increases the likelihood of loan availing. This small positive slope indicates minor influence of SES on loan dependency, consistent with a moderate correlation.
- Intercept (-0.3645): Represents the theoretical loan status when SES = 0.

- $R^2 = 0.3146$: Around 31% of the variation in loan dependency is explained by SES. The remaining 69% is influenced by other variables, such as awareness of loan schemes, parental guidance, personal financial strategy, or availability of collateral.

Assumptions of the Model

1. Linearity: Assumes a linear relationship between SES and loan dependency (validated by the scatter plot).
2. Independence: Each student's response is independent.
3. Data Type Compatibility: SES is continuous, loan status is binary; Pearson correlation is appropriate for exploring linear association in this context.
4. No missing values: The Excel dataset is complete for all 250 students.

Results

1. Loan Dependency Distribution: Out of 250 students, 30 (12%) availed loans.
2. Correlation Observation: The moderate positive correlation ($r = 0.561$) indicates that students' SES partially affects loan availing decisions.
3. Trendline Analysis: Shows slight upward tendency in loan dependency with increasing SES — highlighting non-financial factors influencing loan use.
4. Scatter Plot Patterns:
 - Most low-SES students avail loans (points at $Y=1$ with low X).
 - Some high-SES students also take loans (points at $Y=1$ with high X), suggesting strategic financial planning or awareness of educational loan benefits.

Summary of the Model

- Correlation Coefficient (r): 0.561 → Moderate positive relationship.
- Trendline Equation: $y = 0.0105x - 0.3645$ → Slight increase in loan dependency with SES.
- R^2 Value: 0.3146 → SES explains 31% of variance in loan dependency.
- Scatter Plot: Visualizes linear association and exceptions (high SES students availing loans).
- Conclusion from Model: The correlational model demonstrates that SES is a contributing factor, but other financial and behavioral factors are also significant.

(All calculations, scatter plot, and trendline are documented in the Excel file submitted separately)

Conclusion and Scope for Future Work

The present study sought to examine the relationship between students' Socio-Economic Status (SES) and their dependency on educational loans. The correlation value of 0.56 indicates a moderate positive relationship between SES and loan status among B.Tech students. This implies that socio-economic conditions exert a meaningful yet not exclusive influence on the decision to avail of educational loans.

The analysis revealed that while a majority of students manage their academic expenses independently or through family support, approximately 12% of students rely on educational loans, most of who belong to lower SES backgrounds. However, the occurrence of loan dependency among certain high-SES students suggests that financial need is not the sole determinant. Factors such as awareness of banking facilities, convenience in cash flow management, perceived financial independence, and repayment flexibility also appear to influence students' borrowing decisions.

Hence, the findings highlight that loan behavior among students is shaped by both economic and behavioral variables. SES remains a critical determinant, but non-financial motivations—such as access to financial information and attitudes toward credit—also contribute significantly. This nuanced relationship underscores the importance of enhancing financial literacy and responsible borrowing awareness among students at the higher education level.

Scope for Future Work

The current research provides a foundational understanding of how socio-economic factors relate to educational loan behavior. However, there exists substantial scope for extending and refining this investigation in future studies.

1. Broader Sample Inclusion:

Future studies may include students from diverse academic disciplines (e.g., Arts, Commerce, Management) and from multiple universities across regions. This would allow for comparative insights into how SES influences loan dependency in varied educational and socio-cultural contexts.

2. Additional Variables:

Incorporating other determinants—such as parental education, family income stability, family size, academic performance, and financial literacy levels—can provide a more comprehensive analysis of the factors influencing loan decisions.

3. Longitudinal Studies:

Tracking students over time could offer deeper insights into loan utilization patterns, repayment behavior, and long-term financial impacts of educational loans, revealing how SES affects financial stability post-graduation.

4. Regional and Demographic Analysis:

Examining urban-rural differences, regional disparities, and gender-based variations can uncover localized trends in financial accessibility and educational funding mechanisms.

By addressing these aspects, future research can contribute to the development of more equitable student financing policies and promote a deeper understanding of financial inclusivity in higher education across India.

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