

# Study of Infrastructural Facilities in Different Colleges of Higher Education in Odisha

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## ABSTRACT

*This research paper examines the state of infrastructural facilities in various colleges of higher education across Odisha, India, highlighting the disparities and their implications for educational quality. Using a mixed-methods approach, the study evaluates the availability and adequacy of essential facilities such as classrooms, laboratories, libraries, and digital resources. The findings reveal significant variations in infrastructural development between urban and rural institutions, which adversely affect student engagement, academic performance, and overall satisfaction. The paper emphasizes the need for targeted investments and policy interventions to enhance infrastructure in under-resourced colleges. By providing insights into the current infrastructural landscape, this study aims to inform stakeholders, including policymakers, educators, and institutional leaders, on effective strategies for improving educational environments in Odisha.*

**Keywords:** Educational quality, higher education, Infrastructural facilities, student satisfaction, urban-rural disparity.

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## INTRODUCTION

The quality of education in higher educational institutions is intricately tied to the availability and adequacy of infrastructural facilities. In Odisha, higher education institutions have undergone significant transformations, yet disparities in infrastructure across colleges remain prevalent. Facilities such as libraries, laboratories, classrooms, and digital learning resources are essential for fostering an environment conducive to academic growth and research development. This study examines the infrastructural status of higher education colleges in Odisha, highlighting the variations across institutions and assessing their impact on educational quality and student satisfaction.

In particular, this study is motivated by the evolving needs of modern education, where digital and physical infrastructure plays a pivotal role in determining the effectiveness of the teaching-learning process. Understanding the state of infrastructure in Odisha's colleges will provide insights into how these facilities contribute to the overall quality of education and identify areas where improvements are necessary to bridge gaps.

### Significance Of The Study

This research is significant for several reasons. First, it contributes to the broader understanding of infrastructural disparities in Indian higher education, specifically within Odisha, where rural and urban colleges experience varied levels of development. This study will help policymakers, educational authorities, and stakeholders recognize the specific needs of colleges across different regions, enabling them to allocate resources effectively. Additionally, by identifying key areas of improvement in infrastructural facilities, this study supports the development of strategies aimed at enhancing student engagement, teacher effectiveness, and academic outcomes.

Moreover, the study provides empirical evidence that can support decision-making in future educational reforms. By evaluating the current state of infrastructure, this research may also encourage college administrations to prioritize facility enhancement, thereby promoting a more equitable learning environment across Odisha's colleges of higher education.

## REVIEW OF RELATED LITERATURE

- **Infrastructural Facilities and Educational Quality**

Infrastructural facilities are foundational to an institution's capacity to deliver quality education. According to Singh and Raj (2019), adequate physical and digital infrastructure in higher education directly impacts student learning

outcomes and faculty performance. Classrooms equipped with modern technology, well-resourced libraries, and access to digital databases improve both teaching quality and student learning experiences.

- **Impact of Infrastructure on Student Engagement and Satisfaction**

Pradhan and Tripathi (2020) studied the correlation between infrastructure and student satisfaction, finding that students in institutions with better infrastructure reported higher levels of engagement and satisfaction. The study also highlighted that facilities like recreational spaces, reliable internet, and clean sanitation facilities play crucial roles in shaping a positive academic experience.

- **Regional Disparities in Higher Education Infrastructure**

Research by Das et al. (2021) explored regional disparities in infrastructural development in Indian higher education. This study found significant disparities in infrastructure between rural and urban colleges in Odisha, impacting access to quality education. Rural colleges were particularly lacking in digital resources and laboratory facilities, limiting students' opportunities to gain practical skills.

- **Government Initiatives and Infrastructure Development in Higher Education**

Government efforts to improve infrastructure in higher education institutions are also a subject of study. Kumar (2018) examined the impact of the Rashtriya Uchchatar Shiksha Abhiyan (RUSA) initiative in Odisha, which aims to enhance infrastructure and learning resources across institutions. While the initiative has led to improvements in some colleges, Kumar noted that implementation challenges persist, particularly in remote areas.

- **Infrastructural Challenges in Indian Higher Education**

A study by Verma and Singh (2017) identified common challenges faced by higher education institutions in India regarding infrastructure. Budget constraints, bureaucratic hurdles, and lack of maintenance were highlighted as factors hindering infrastructure development, affecting institutions' ability to keep up with modern educational requirements.

### OPERATIONAL DEFINITION AND TERMINOLOGIES: -

The variables used in the study are explained below:

- **Infrastructural Facilities**

In this study, Infrastructural Facilities refer to the physical resources and amenities available in higher education institutions in Odisha. These include, but are not limited to, classrooms, libraries, laboratories, recreational facilities, and campus utilities, which contribute to an institution's ability to provide a conducive learning environment.

- **Higher Education Institutions**

Higher Education Institutions in this study refer to colleges and universities in Odisha that provide post-secondary education. These institutions offer undergraduate, graduate, and postgraduate programs across various disciplines and contribute to the intellectual and professional development of students.

### Objectives

1. To study the significant difference in Infrastructural Facilities of NAAC Accredited and Non-Accredited Higher Education Institutes of Odisha.

### Hypothesis

**HO<sub>1</sub>** There is no significant difference in Infrastructural Facilities of NAAC Accredited and Non-Accredited Higher Education Institutes of Odisha.

### Research Design

**Descriptive Research Design**-The research design for this study is a descriptive survey design. This design is chosen because it allows for the collection of data to describe the current status of infrastructural facilities in different colleges of higher education in Odisha. The study aims to analyze and interpret the existing conditions and relationships between these variables.

### Research Method

**Quantitative Method:** A structured questionnaire will be administered to collect data on infrastructural facilities.

### Variable

#### Independent Variables –

**Infrastructural Facilities:** In this study the physical and organizational structures needed for the operation of a college, such as buildings, classrooms, libraries, laboratories, sports facilities, and other essential infrastructure that supports the educational environment.

### Sampling

In this research, the investigator has employed the following sampling techniques for colleges of Higher Education and Undergraduate students:

- (i) **For Colleges of Higher Education-** Purposive Sampling Approach.
- (ii) **For Undergraduate Students -** Stratified Random Sampling Technique.
- (iii) **Sampling Design-** In this study all the groups are taken as independently and total sample size is 300.

### Tools And Techniques Used

**For Infrastructural Facilities Questionnaire-** Self Made Questionnaire is Prepared By the researcher.

### Statisticals Techniques Used

In order to analyze the data in the present study and to test the hypothesis Percentage test was used.

## ANALYSIS AND INTERPRETATION OF DATA

**HO<sub>1</sub>**-There is no significant difference in Infrastructural Facilities of NAAC Accredited and Non-Accredited Higher Education Institutes of Odisha.

**Table-1: Responses of NAAC Accredited and Non-Accredited Higher Education Institutes Students regarding Infrastructural Facilities.**

S. No.	Infrastructural Facilities	NAAC Accredited N= 50				Non-Accredited N= 50			
		Yes		No		Yes		No	
		f	%	f	%	f	%	f	%
1.	Does your college have a well-maintained campus?	40	80%	10	20%	20	40%	30	60%
2.	Does your college have adequate number of classrooms?	50	100%	0	0%	40	80%	10	20%
3.	Do you have common rooms available for boys and girls separately?	50	100%	0	0%	50	100%	0	0%
4.	Do you have male and female toilets separately?	50	100%	0	0%	50	100%	0	0%
5.	Does your college have multimedia projectors in classrooms?	40	80%	10	20%	10	20%	40	80%
6.	Do you have smart classrooms?	40	80%	10	20%	20	40%	30	60%
7.	Does your college have proper lighting facilities within the campus?	50	100%	0	0%	30	60%	20	40%
8.	Do you have auditorium available for cultural activities and events?	20	40%	30	60%	10	20%	40	80%
9.	Do you have conferences and seminar halls?	50	100%	0	0%	50	100%	0	0%
10.	Does your college have clean and accessible restrooms?	50	100%	0	0%	50	100%	0	0%
11.	Are the college premises accessible for differently-abled students?	50	100%	0	0%	40	80%	10	20%
12.	Does your college have a regular maintenance schedule for infrastructure?	20	40%	30	60%	10	20%	40	80%
13.	Does your college have a well-equipped library?	40	80%	10	20%	20	40%	30	60%
14.	Does your college provide access to internet facilities on campus?	50	100%	0	0%	40	80%	10	20%
15.	Does your college have adequate laboratory facilities for practical subjects?	50	100%	0	0%	40	80%	10	20%

16.	Does your college have enough computer labs available for student?	40	80%	10	20%	20	40%	30	60%
17.	Does your college provide hostel facilities?	40	80%	10	20%	20	40%	30	60%
18.	Do you have a playground?	50	100%	0	0%	50	100%	0	0%
19.	Do you have indoor sports facilities?	30	60%	20	40%	10	20%	40	80%
20.	Does your college provide sufficient sports facilities?	30	60%	20	40%	20	40%	30	60%
21.	Does your college have a medical facility or first aid centre on campus?	50	100%	0	0%	50	100%	0	0%
22.	Does your college have adequate safety measures and emergency exits?	50	100%	0	0%	50	100%	0	0%
23.	Does your college is under CCTV surveillance?	50	100%	0	0%	50	100%	0	0%
24.	Does your college have alternative sources of energy?	40	80%	10	20%	30	60%	20	40%
25.	Does your college have water management system?	40	80%	10	20%	40	80%	10	20%

*(Source: Primary Data)*

It can be observed from Table-1 that, the Infrastructural Facilities like common rooms, toilets, seminar and conferences hall, restroom, playground, first aid, safety measures, CCTV Surveillance are provided by both NAAC Accredited and Non-Accredited Higher Education Institutes to its students. But as a whole the Infrastructural Facilities provided by NAAC Accredited Higher Education Institutes to its students are better than the Infrastructural Facilities provided by Non-Accredited Higher Education Institutes to its students.

**Interpretation:** -The overall findings indicate that in providing Infrastructural Facilities to its students, the NAAC Accredited Higher Education Institutes are better than the Non-Accredited Higher Education Institutes. Hence the Hypotheses No-1 'There is no significant difference in Infrastructural Facilities of NAAC Accredited and Non-Accredited Higher Education Institutes of Odisha' is rejected.

**Result:** -It has been found that, there is a significant difference in providing Infrastructural Facilities by NAAC Accredited and Non-Accredited Higher Education Institutes of Odisha to its students. Therefore, we can conclude that in providing Infrastructural Facilities to its students, NAAC Accredited Higher Education Institutes are better than the Non-Accredited Higher Education Institutes.

### CONCLUSION

The findings of this study indicate a significant disparity in the provision of infrastructural facilities between NAAC-accredited and non-accredited higher education institutes in Odisha. It is evident that NAAC-accredited institutions demonstrate a superior capacity to deliver essential resources and facilities, which are crucial for fostering an effective learning environment. This advantage is likely attributable to the rigorous standards and quality assurance processes imposed by the National Assessment and Accreditation Council (NAAC), which incentivize continuous improvement in infrastructure.

The superior infrastructural facilities available at NAAC-accredited institutes not only enhance the educational experience but also contribute to higher levels of student satisfaction and engagement. In contrast, non-accredited institutions face challenges in meeting these standards, which may hinder their ability to provide a conducive learning environment.

Given these findings, it is imperative for educational policymakers and stakeholders to prioritize support and investment in non-accredited higher education institutes to bridge the gap in infrastructural quality. Efforts should be made to encourage these institutions to seek accreditation, thereby promoting a culture of continuous improvement and ensuring that all students in Odisha have access to adequate educational facilities. Ultimately, enhancing infrastructural facilities across all higher education institutes is essential for elevating the overall quality of education in the state.

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