International Journal of Humanities and Social Science Research
www.socialsciencejournal.in
ISSN: 2455-2070
Received: 07-04-2026, Accepted: 08-05-2026, Published: 23-05-2026
Volume 12, Issue 2, 2026, Page No. 215-219

A study on academic performance of high school students in industrial and non- industrial areas

Swaleha Nisa[1], Soumyalipsita Sahu[2]
[1] Guide, Pragati College, Raipur, Chhattisgarh, India
[2] Pragati College, Raipur, Chhattisgarh, India

Abstract
A Study on Academic Performance of High School Students in Industrial and Non- industrial Areas″ was undertaken to examine and compare the Academic Performance of High Students belonging to Industrial and Non-Industrial areas. Academic Performance is considered an important indicator of Students Educational development and learning achievement. The study aimed to identify whether environmental conditions and locality influence Students academic achievement. The descriptive survey method was used for conducting the study. A sample of 100 High School Students was selected, consisting of 50 students from industrial areas and 50 students from non-industrial areas. The required data were collected through academic records and analyzed using statistical techniques such as Mean, Standard Deviation, and Critical Ratio. The findings of the study revealed that there was no significant difference in the academic performance of high school students from industrial and non-industrial areas. The calculated Critical Ratio was lower than the table value at 0.05 level of significance, which led to the acceptance of the null hypothesis. The study concluded that the area of residence does not significantly affect the academic performance of high school students. The findings of the study may be useful for teachers, parents, educational planners, and policymakers in improving educational facilities and creating a supportive learning environment for students in all areas.

Keywords: Academic performance, high school students, industrial area, non-industrial area

Introduction

Education is the systematic process of facilitating, learning, acquiring knowledge's skills, values, beliefs and habits. It is a lifelong process that begins at birth and continues through formal, non-formal and informal means. In a normal setting education typically takes place in schools and other institutions, where trained teachers guide students through structured curricula.

The academic performance of high school students plays a significant role in determining their prospects, career opportunities and contribution to society. However, academic performance is not shaped by school factors alone; it is also influenced by the social economic and environmental conditions in which students live and learn. One such influencing factor is the locality of students, particularly whether they belong to industrial or non-industrial areas.

Industrial areas often provide greater access to employment opportunities, infrastructure and exposure modern facilities, industrial pollution and economic pressures. On the other hand, students from non-industrial areas may face limitations in terms of resources and exposures, yet benefits from fewer distractions, healthier environments, and stronger communities.

Comparing the academic performance of students in industrial and non-industrial areas provides valuables insights into the role of socio-economic and environmental factors in shaping education.

Students in industrial areas may have different opportunities and pressures compared to those in non-industrial areas. Industrial areas are often linked to specific vocational training and a focus on skills relevant to the local workforce, while non-industrial areas might have different educational priorities and resources.

Context of the Study

Industrial areas may offer better infrastructure or vocational training links, but potentially higher pollution or stress. Conversely, non-industrial areas might offer quieter more focused learning environments, but perhaps less access to modern technical resources.

Education is considered one of the most powerful tools for the development of individuals as well as society. It helps in shaping the personality, skills and intellectual abilities of students. Among the various indicators of educational success, academic performance is regarded as an important measure of students' learning outcomes and achievements in school. Academic performance reflects the level of knowledge, understanding, and skills that students acquire through the teaching-learning process.

Importance of Education

In the context of industrial and non-industrial areas, education becomes even more significant. Students living in industrial areas may face environmental challenges such as noise, pollution, and distraction due to factories and industries. On the other hand, students in non-industrial areas may have fewer facilities or educational resources. Education helps students overcome these challenges and improve their academic performance.

Importance of High School Education

High school education is crucial for building a foundation for future career opportunities, personal development, and critical thinking skills. It provides a diploma necessary for many jobs, fosters social skills and self-confidence, and prepares students for higher education or vocational training.

Academic Performance
Academic performance is the measurable extent to which a student, teacher, or institution has achieved short- or long-term educational goals, typically assessed through examination results, grades, and cumulative GPAs. It represents a student's mastery of knowledge and skills, serving as a key indicator of learning success within educational systems.

Industrial Area
Industrial areas are specifically designated zones within a city or region for manufacturing, industrial production, maintenance, and distribution activities. They are marked by heavy infrastructure, including factory complexes, warehouses, and transport networks.
Characteristics: High noise pollution, environmental pollutants (air and water), high heavy vehicle traffic, and proximity to raw materials.
Impact on Society: They offer high employment opportunities but can reduce residential attractiveness, influencing the demographic and socio-economic status of surrounding communities.

1. Impact on Academic Performance
Vocational Focus vs. Academic: Schools near industrial areas may focus heavily on practical skills and vocational training, with a higher percentage of students planning to enter the industry, sometimes impacting the overall academic rigor compared to schools in academic/non-industrial areas.

Non-industrial Area:
Non-industrial areas in the context of academic studies usually refer to regions lacking heavy manufacturing, specialized industrial training centres, or high-density factory environments. These areas are characterized by:

- **Environmental Factors:** Non-industrial areas are characterized by less air and noise pollution, which can positively affect student health, concentration, and focus, theoretically improving academic environments.

- **Curriculum Focus:** Schools in non-industrial or rural areas often focus on general education and academic streams. Studies show a higher percentage of students in these contexts may aim for further academic education, whereas industrial-area students are more frequently directed toward technical or vocational paths.

1. Impact on Academic Performance:
1. Social & Economic Context: Academic achievement is often tied to family background and the local economic landscape.
2. Curriculum Type: The focus (technical vs. general) strongly correlates to student performance and future career paths.

Effect on environment on Academic Performance:
The physical and emotional environment profoundly impacts academic performance, with optimal) lighting, low noise levels, comfortable temperatures, and good air quality, which enhance concentration and reduce cognitive fatigue. Supportive home environments and structured, safe, and organized school infrastructures further facilitate higher academic success.

Review of Literature
In the present research work literature review has been done in both the categories Indian and foreign:
Preeti Singh, et. al (2015) carried out the survey research study to investigate the impact of socioeconomic status on the academic achievement of secondary school students in Delhi. In which they used government as well as private schools located in Delhi and 15 schools were finalized. Normative survey method used upon 450 samples from class XI. A survey research study used to collect the data. The result of this study that the academic achievement was influenced by the socioeconomic status and those who belonged to middle and high socioeconomic status have shown better performance, also found that the difference between low and high socioeconomic status groups and further
Dr. Amit Kumar Singh (2017) carried out A cross sectional study to identify and analyze factors that affect the students' academic performance in Community Medicine. As a sample 182 students were used. The structured questionnaire was used to collect the data. The Results of this study suggest that 1% of the students reported using computer, smart phones and access to the internet and three fourth of the students, reported that consuming meals before the examination. Demographic factors like gender and age were significantly associated with students' overall academic achievement in multiple linear regression analysis.
John T. E. Richardson (2008) carried out a research study to assess the intellectual ability and academic performance of mature students, the research literature based on the academic performance of mature students includes no good evidence that mature students perform any less well than younger students on duration of study in higher education. The result of the study suggest that oldest mature students can obtain good results when assessed by means of both coursework and examinations, normal ageing alters the capacity for learning in higher education is most questionable.
O. Samdal (2010) conducted an interventional research study to assess relationship between Student's Perceptions of School Environment, their Satisfaction with School and perceived academic the researcher used 11-, 13-, and 15-year-old students from Finland, Latvia, Norway and Slovakia as a sample. It is based on self-reported data from the "Health Behavior in School aged Children Survey" .The result of the research study suggest that the most valuable psychosocial school setting predictors of students' insight of their academic achievement are that they feel satisfied with school, that they feel the teachers do not expect too much of them, and that they have a good relationship with their fellow students & also entail that interventions which improve the students' satisfaction with school are likely to improve their achievement as well.

Research Methodology
1. Operational Definition of Key Terms
Academic Performance
Academic performance refers to the scholastic achievement of High School Students as reflected in their marks/grades obtained in the school examinations or official academic records.

High School Students
High School Students refer to learners studying in secondary-level classes (ix-x). In this study, students selected from high schools are considered as respondents.

Industrial Area
Industrial areas refer to a locality where factories, industries, or manufacturing units are established in large numbers.

Non-Industrial Area
Non-industrial area refers to a locality where there are no industries and the environment is mainly residential, rural or agricultural.

2. Objectives of the Study
1. To assess the academic performance of high school students in industrial areas.
2. To assess the academic performance of High school students in non- industrial areas.
3. To compare the academic performance of High School Students between industrial and non-industrial areas.

3. Hypotheses of the Study
1. There is a significant difference between the academic performance of High school students in industrial and non-industrial areas.
2. II There is a significant difference between the academic performance of High school Boys and Girls in industrial areas.
3. There is a significant difference between the academic performance of high school boys and girls in non-industrial areas.

4. Delimitations of the Study
1. The study is limited to select High School located in both industrial and non-industrial areas of Odisha.
2. The study is limited to 100 Students (50 Boys and 50 Girls) of 4 High school in Odisha.
3. The study's data collection is restricted to one academic year.

5. Conduction of Research
Stage 1: Selection of Research method
- This research is Quantitative research as it is based more on the numerical data.
- In this research Descriptive survey method is used which helps in collecting data about academic performance of High School students in industrial and non- industrial areas.

Stage 2: Preparation of Tools
- For this research the tool selected was Self- Made '3' Point Academic Performance Questionnaire.
- Valid Responses based on:

○ Yes, No, None

Stage 3: Gathering of Data
a. Primary Data Collection
Primary data were collected through Survey Method using questionnaire '3' point Academic Performance Scale'. The data was gathered by the High school students of Government school and Private school situated in both industrial and non- industrial areas. The student took approximately 35 minutes to fill the questionnaire. The student was given adequate instruction before filling out the questionnaire. Proper guidance was provided to all students to ensure that the respondents answer is strictly for research purpose. Then all the students ticked on the questionnaire statements. To achieve the goal of 100 sample, 100 questionnaire were distributed to the students.
For the administration of tools, I have visited four schools, two government schools and two private schools. Out of which one government and one private school in industrial areas and one government and private school in non-industrial areas of Odisha. The Research was undertaken to study the "A study on Academic Performance of High School Students in Industrial and Non- industrial areas in Odisha.

Research School of Study
Researching in industrial landscape of Odisha highlights a distinct contrast between the industrialized hub of Hirakud in the Sambalpur district and the primarily agricultural (non-industrial area of Bargarh.
Hirakud and Bargarh both are the part of Odisha. The present study is conducted on high school students in government and private schools of industrial and non-industrial areas of Odisha state.

Table 1: Area of Study

S. No	Name of school	Type of School	No. of Sample Collected	
1.	Barahagoda High School, Barahagoda	Government School	25	50
2.	P.M. Shri Mahammadpur Govt. High School, Hirakud		25	
3.	Vedic International School, Bargarh	Private School	25	50
4.	Saraswati Shishu Vidya Mandir, Hirakud		25	
		Total		100

b. Secondary Data Collection
Stage 4: Sampling Methods
Sampling is the process of selecting a representative part of a population for the purpose of Research. The Researcher will use Random Sampling Technique for selecting the sample. In this Research a sample of 100 Students from both industrial and non-industrial areas. The Sample comprised 50 Boys and 50 Girls from 4 Govt. and Private High Schools in Odisha.

Sr. No	Types of School	Area of School	Samples
1	Government School	Non-industrial Area	25 Samples
2	Private School	Non-industrial Area	25 Samples
3	Government School	Industrial Area	25 Samples
4	Private School	Industrial Area	25 Samples
Total Population : 100 Sampling			

Sample Collected For this Study

Research Analysis and Interpretation of Data
In accordance with the objective of the present study, the data gathered, tabulated, classified and analysis statistical and objective. This study is intended to study on Academic Performance of High school students in Industrial and Non-Industrial areas. Once have to study deep to come out with the facts more carefully to find the causes of occurrence of the phenomena and concerned with the problem.

The researcher examines the data critically that leads to acceptance or rejection of the hypotheses, which brings the results in addition of knowledge in that particular area. The demographic variables are compared numerically using tables as well as presented graphically using graphs in this chapter.

1. Tabulate and Interpretation: Verification of Hypotheses

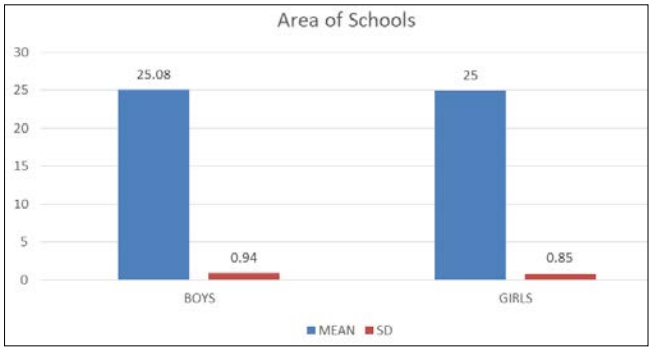
1.1 Hypotheses: 1

Hypotheses 1 There is a significant difference between the academic performance of High School students in Industrial and non-industrial areas.

Table: Tabulation of Areas of School

Group	N	Mean	SD	CR	Significant
Industrial Area	50	25.08	0.94	0.57	Not Significant
Non-Industrial Area	50	25.00	0.85		

- Critical Ratio = 0.57
- Degree of Freedom (df)=50+50-2=98
- Table Value is 1.97
- Result 0.57 < 1.97
- Hypotheses Rejected



Interpretation

The above table shows the academic performance of High school students in Industrial and Non-industrial areas. It is clear that from the above table that the mean score of Industrial areas is 25.08 and non-industrial areas is 25.00 respectively. The Standard Deviations of Industrial area is 0.94 and non-industrial area is 0.85 respectively. To test the significance difference between the two means, Critical ratio was calculated. From the above table the C.R value is 0.57, at 98 Degree of freedom, which is less than the table value 1.97.Hence, the difference between the academic performance of High school students in Industrial and Non-industrial areas is rejected. This indicates there is no significant difference between academic performance of High School students in Industrial and Non-industrial areas.

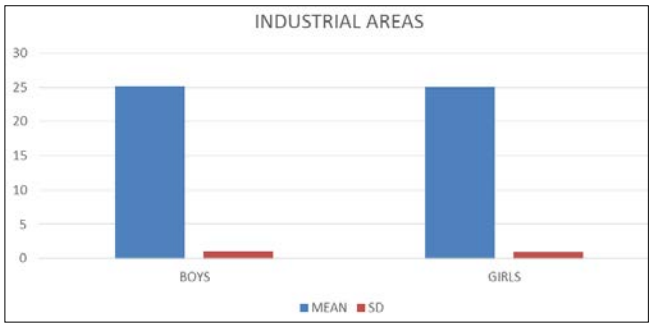
1.2 Hypotheses: 2

There is a significant difference between the academic performance of High School Boys and Girls in industrial areas.

Tabulation of Industrial Area Students

Group	N	Mean	SD	CR	Significant
Boys	25	25.16	1.07	0.64	Not significant
Girls	25	25.00	0.95		

- Critical Ratio =0.64
- Degree of Freedom (df)= 50+50-2=98
- Table value is 1.96
- Result 0.64<1.96
- Hypotheses Rejected



Interpretation

The above data shows the academic performance between boys and girls in industrial areas. It is clear that from the above table that mean score of boys is 25.16 and the mean score of girls is 25.00 respectively. The Standard deviation of boys is 1.07 and Girls is 0.95 respectively. To test the significance between two means, Critical Ratio was calculated. From the above table the C.R value is 0.64, at 98 Degree of freedom, which is less than the table value 1.97. Hence the difference between the academic performance of Boys and Girls is found statistically not significant.

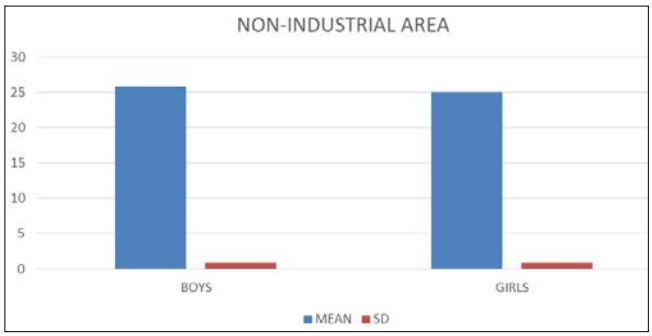
1.3 Hypotheses: 3

There is a significance difference between the academic performance of High school boys and girls in non- industrial areas.

Tabulation of Non-industrial areas Students

Group	N	Mean	SD	C.R	Significant
Boys	25	25.80	0.90	3.20	Significant
Girls	25	25.00	0.85		

- Critical Ratio = 3.20
- Degree of freedom (df)=50+50-2=98
- Table Value is 1.97
- Result 3.20 >1.97
- Hypotheses accepted



Interpretation

The above table shows the comparison of academic performance between Boys and Girls in Non-industrial areas. It is clear that from the above table that the mean score of boys is 25.80 and the mean score of girls is 25.00 respectively. The Standard Deviation of Boys is 0.90 and

Girls is 0.85 respectively. To test the significance of difference between two means, Critical Ratio was calculated. From the above table the C.R value is 3.20, at 98 Degree of freedom, which is greater than the table value 1.97. Hence the difference between the academic performance of Boys and Girls is found to be statistically significant.

Finding and Conclusion

The researcher tested the hypotheses and analysis the finding of the study which is listed below: The study resulted there is no significant difference in academic performance of High school students from industrial and non-industrial areas. The second result of the study shows that there is no significance difference in the academic performance of boys and girls in industrial areas. The third result of the study shows that there is a significant difference in the academic performance of boys and girls in non- industrial areas. The study further indicates that factors such as environmental conditions, availability of educational resources, and home support may influence students' academic performance. Based on findings, it can be concluded that the location of school (industrial and non-industrial area) does not significantly affect the overall academic performance of high school students. Similarly, in industrial areas, boys and girls perform almost equally in their academic performance. In non- industrial areas, a significant difference exists between both boys and girls, which indicate that gender play an important role in influencing academic performance. The findings have implications for research scholar that they can conduct further work related to the topic.

Suggestion and Recommendation

The present study was limited to 100 students only. Hence it is suggested that increase the sample size up to 120 or 200. In this study only four schools are selected. Hence it is suggested that include students from at least 4-5 industrial and non-industrial areas. The present study is limited to only one academic year. So, it is suggested that conduct a survey of 2 to 3 years to changes in academic performance. Equal educational facilities and opportunities should be provided to students in both industrial and non- industrial areas. The present research is limited to Government and Private school only. There are many gaps that can be further study for research. The present research is limited to high school students' class IX and X only. Further research can be done for Class VI-VIII and Class XI-XII also. The present research focused only two variables -area type and gender. Future studies can add more variables like parental education, family income, and study hours.

References

1. Anderson LF. History of Manual and Industrial School Education. New York: D. Appleton and century Company, Inc., 1926, 251.
2. Bawden WT. Some Leader in Industrial Education. Industrial Arts and Vocational Education,1947:36:410-413.
3. Biggs JB, Kember D, Leung DYP. The Revised Two factor study Process Questionnaire. British Journal of Educational Psychology,2001:71:133-147.
4. Marburger DR. Absenteeism and undergraduate Exam performance. Journal of Economic Education,2001:32(2):99-109.
5. Gunboater KA, Rotimi. Man, and his social environment. A textbook of Sociology, Spectrum Book, 2006.
6. Schulman A, Coetzee S. Class Absenteeism: Reasons for non- attendance and the Effect on Academic performance. Accounting Research Journal,2011:24(2):178-194.
7. Husain S, Muhsin ZF, Salal YK, Theodorou P, Turkoglu, Hazarika G. Prediction ion model on students' performance based on internal assessment using deep learning. Int. J. Emerg. Techno. Learn,2019:14(8):4-22.
8. Alyah yan E, Dust Egor D. Predicting academic success in higher education: literature review and best practices. Int. J. Educ. Technol. High,2020:17(1).
9. Balaji P, Alelyani S, Quamash A, Mohana M. Contribution of machine learning models towards students' academic performance prediction: A systematic review. Appl. Sci,2021:11(21).
10. Aigboje DG, O JA, Omoregie EO. Allocation and utilization of resources in schools in Agbenta: Fundamentals of educational management. Agbor: Central Books, 2005.