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An Analysis On The Level Of Scientific Attitude Among Undergraduate Students

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Abstract

Education is the instrument of social change and the scientific attitude plays an important role in any educational system. The present study tries to investigate the level of scientific attitude among the undergraduate students. The main objective of the study is to assess the level of scientific attitude of undergraduate students comparing on the basis of gender, location, stream and caste categories. In this study total of 200 undergraduate students were selected from Tihu college of Nalbari district in Assam as a sample through a simple random sampling method. The data was collected through an adapted version of the Scientific Attitude Scale (SAS) developed by Shailaja Bhagwat in 2004. The results were statistically analysed using Mean Standard Deviation and 't-test. The findings of the study reveal that there is a significant difference among undergraduate students with regard to gender and stream of study. Male undergraduate students were found to be a higher level of scientific attitude than female undergraduate students and similarly arts stream undergraduate students were found to be a higher level of scientific attitude than the science stream undergraduate students. No significant difference is observed in the level of scientific attitude of undergraduate students in respect of Location and Caste categories. From this study, it is also found that the level of the scientific attitude of undergraduate students is average.

Keywords— Scientific Attitude, Undergraduate Students

INTRODUCTION

Scientific attitude, as the term indicates, is an attitude having a scientific base. Scientific attitude is the most important quality of human beings which enables us to think rationally. It leads to logical systematic and planned actions regarding It is the combination of many qualities and virtues which is reflected through the behaviour and action of the person. According to the Grinnell "Scientific attitude is not an approach to solve the problems of the world, but a way of viewing the world". Scientific attitude is important for critical thinking and reasoning. Almost all the commissions and committees on school education which were formed after independence have stated the importance of the development of scientific attitude among the students. This paper concerns undergraduate students and their scientific attitude.

A nation's progress, welfare and prosperity also depend upon the education and the research done in the field of science and technology. Scientific attitude can contribute to national development through the eradication of superstitions developing objectivity, developing curiosity, critical thinking, decision making etc.

REVIEW OF RELATED LITERATURE:

Govindarajan S.(2014) conducted a study of scientific attitudes among secondary school students in Namakkal District. The purpose of this study is to find out the level of scientific

attitude of the secondary school students on the basis of gender, management of the school, location of the school and the medium of instruction of the secondary school students.350 sample has been collected through the scale of attitude towards science learning(SATSL) constructed and standardized by Likert. The findings of the study reveal that male and female students have no significant difference in respect of their scientific attitudes. Government and Private school students, and rural and urban area students differ significantly in their scientific attitudes.

Revati N and Meena K.P.(2017) conducted an investigation of scientific attitudes among secondary school students in Kottayam district of Kerala. The objective of the study is to find out the scientific attitude of secondary school students on the basis of gender, type of management of the school and locality. The findings of the study reveal that secondary school students are identically distributed among each group based on specific attitudes. No significant deterrence was found in the scientific attitude of secondary school students on the basis of gender, management of the school and locality.

Rajendran P. and Anandarasu R (2020) in their research paper intended to find out the level of scientific attitude of B.Ed. trainees in the Perambalur district of Tamilnadu. A total of 941 teacher trainees were selected as a sample through a simple random sampling method to find out the scientific attitude of B.Ed. trainees concerning the demographic variables such as gender, year of study, locality of college, type of family etc. The major findings of the studies were the level of scientific attitude of B.Ed. trainees is average. Female B.Ed. trainees were a significantly higher level of scientific attitude than the male B.Ed. trainees as well as Urban B.Ed. trainees were a significantly higher level of scientific attitude than the rural B.Ed. trainees. Nuclear family and joint family of B.Ed. Trainees were having a similar level of scientific attitude.

Venkataraman S. (2021) conducted a review on scientific attitude among Higher secondary students. The objective of the studies is to record briefly the findings of a few research studies conducted in India and abroad on the topic of scientific attitude. The investigator found that twenty-five studies have been reviewed by researchers conducted on scientific attitudes in the last decade.

NEED AND SIGNIFICANCE OF THE STUDY

The destiny of a nation is being shaped by her classroom. Today's youth is the future of the nation. Building a scientific attitude in the mind of the students is also a prime duty of a teacher which would make them capable to build a harmonious and prosperous nation. Classrooms are the first learning point outside the home which provides them to build a positive scientific attitude. Scientific attitudes eradicate superstition and irrational beliefs and build a society which follows harmonious values and a scientific outlook. One of the major aims of education is to develop a scientific attitude and scientific temper among students. Everyone should develop a scientific attitude through which the people can enjoy real freedom and can contribute to the progress of the nation. Scientific attitude is most important for our day-to-day life which enables us to critical thinking and makes individuals rational instead of emotional. It is the combination of many qualities which is reflected through the action, reactions and behaviours of the person. This paper mainly focuses on the analysed of the level of scientific attitude of undergraduate college students. This type of study help to build a healthy attitude among the undergraduate students which contributes to national development through reduces superstitious beliefs, developing critical thinking and building strong decision-making capacity of the individual

STATEMENT OF THE PROBLEM

The present study is entitled An analysis the level of scientific attitude among undergraduate students.

OBJECTIVES

1. To assess the level of scientific attitude of undergraduate students.
2. To make a comparison of the scientific attitude among undergraduate students on the basis of gender, location, stream and caste categories.

HYPOTHESIS:

1. There exists no significant difference in scientific attitude among male and female undergraduate students.
2. There exists no significant difference in scientific attitude among urban and rural undergraduate students.
3. There exists no significant difference in scientific attitude among arts and science undergraduate students.
4. There exists no significant difference in scientific attitude among general and reserved category undergraduate students.

METHODOLOGY

Research methods are of utmost importance in the research process. In this present study, the Descriptive survey method was implemented to find out the level of scientific attitude of undergraduate students.

TOOL

In the present study, the investigator used the adopted version of the Scientific Attitude Scale developed and standardised by Shailaja Bhagwat (2004) for collecting the data. The scale consisted of 24 items. Out of these 24 item, 12 items are favourable and 12 are unfavourable scientism with five alternative responses i.e. strongly agree, Agree, Undecided, Disagree and Strongly disagree. For favourable items, the score of 5.4.3.2.1 was assigned and the score of 1,2,3,4 and 5 was assigned for unfavourable items. The total scores for each individual should be determined by summing his responses to all items. The reliability coefficient was 0.87 as per the Split-half method and 0.94 as per the Test-retest method.

POPULATION AND SAMPLE

In this present study, all undergraduate students of Tihu college in the session 2021-22 are considered as a sample. A total of 2100 students were enrolled in the undergraduate level in the session 2021-22. Out of 2100 undergraduate students, the investigator has taken 10% of the total population as a sample (Total Sample=210) through a stratified random sampling method. The sample was chosen on the basis of Gender, Location, Stream and Caste categories. The data was collected in the last part of 2021.

PROCEDURE

In the present study to obtain the data, official permission was taken from the Principal of Tihu College, Tihu, Nalbari, Assam. Data were collected from a total number of 210 undergraduate students on the basis of Gender, Location, Stream and Caste categories. The investigator explained the tool and the way to answer the questionnaire. The questionnaire was administered individually by all undergraduate students. The data was collected during the month of December 2021. The investigator collects the data individually through the Scientific Attitude Scale developed and standardised by Shailaja Bhagwati (2004). Scoring was done as per the manual and the results were statistically analysed with the help of mean standard deviation and students 't-test.

ANALYSIS AND INTERPRETATION OF DATA:

The collected data were analysed through the use of mean and standard deviation for a score on different variables. Further, the student's 't' test was used to find out the ignificance of the difference in Scientific Attitude between undergraduate students in relation to their gender, location, stream and caste categories.

The level of Scientific Attitude among Undergraduate students

Table-1: Level of Scientific Attitude among undergraduate students

Level of Scientific Attitude	Frequency	Percentage
High	52	24.76
Average	97	46.19
Low	61	29.05
Total	210	100

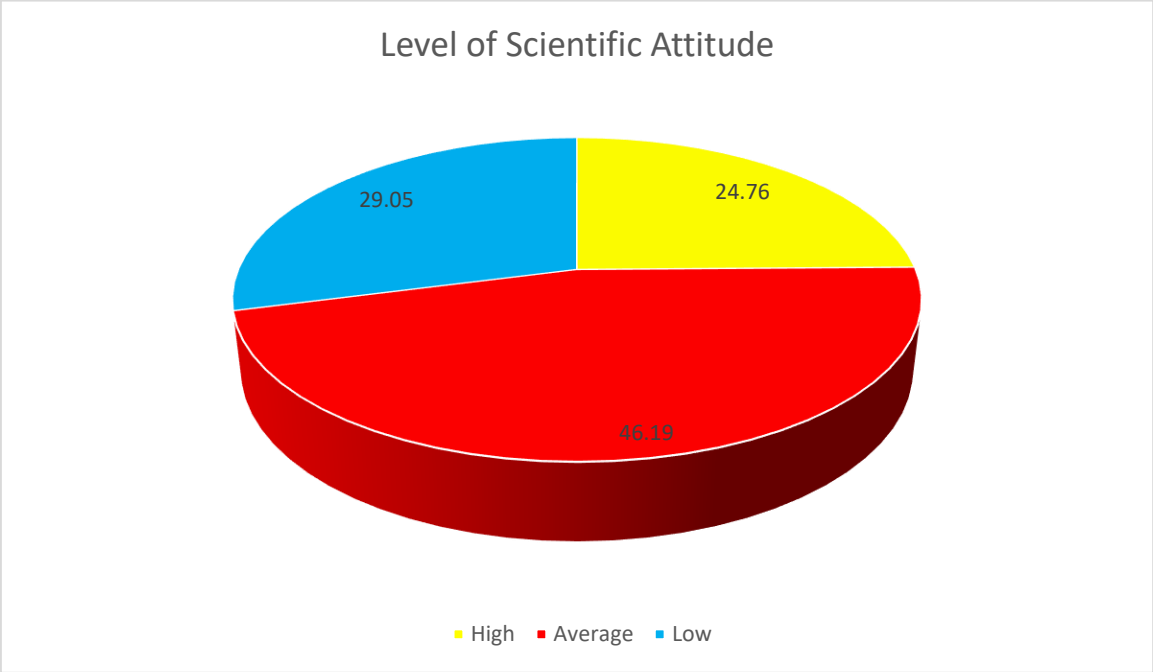


Fig-A: Pie-diagram showing the % distribution of undergraduate students according to their Scientific Attitude

From table 1 and its corresponding figure A it is observed that out of 210 undergraduate students, 52 (i.e., 24,76%) undergraduate students possessed a high Scientific Attitude, 97 (i.e., 46.19%) undergraduate students possessed an average Scientific Attitude and 61(i.e., 29.05%) undergraduate students has possessed a low level of Scientific Attitude.

To make a comparison of the scientific attitude among the undergraduate students on the basis of Gender(Male/Female), Location(Urban/Rural), Stream(Arts/Science) and Caste category(General/Reserved)

Ho1: There exists no significant difference in scientific attitude among the Male and Female undergraduate students.

Table-2: Showing the 't' value among Male and Female Undergraduate students regarding their Scientific Attitude

Gender	N	Mean	S.D.	t-value	Level of significance
Male	100	136.53	12.22	2.20	Significant at 0.05% level
Female	110	132.42	14.62		

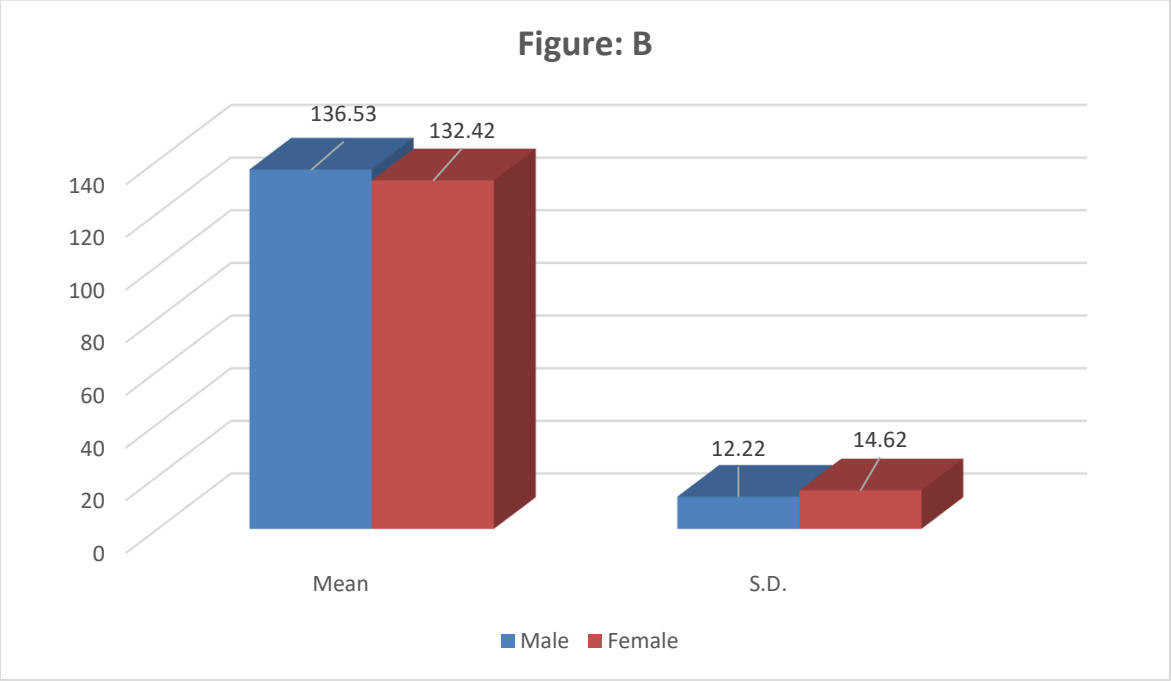
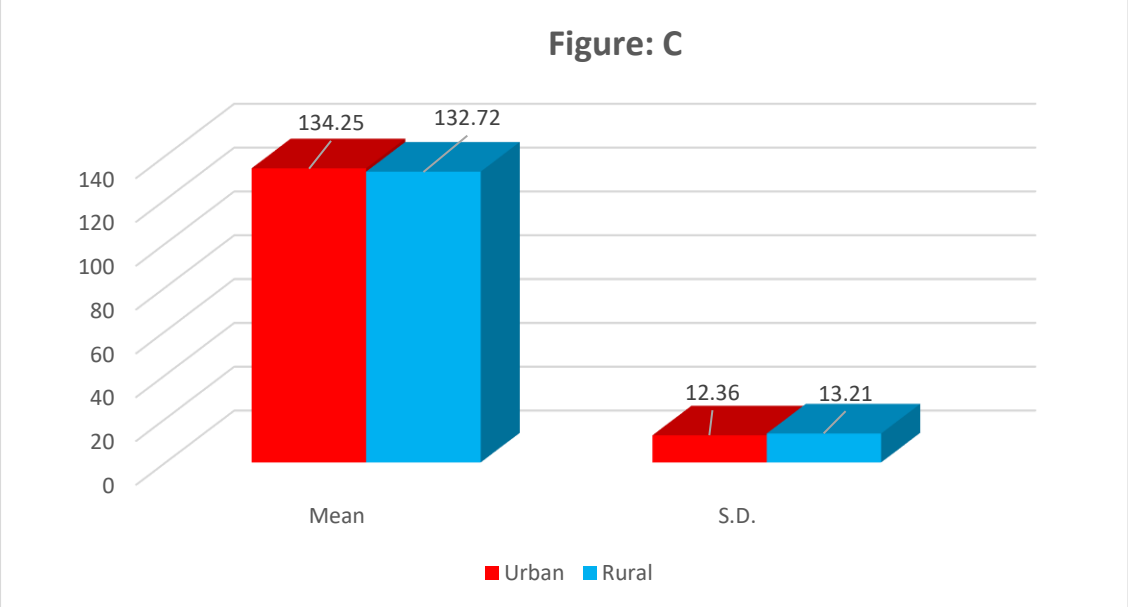


Table 2 and its corresponding figure B show that the calculated 't' value of 2,20 is greater than the table value at a 0.05 level of significance. Hence the null hypothesis is rejected. It is understood from the result that there is a significant difference in the level of scientific attitude of undergraduate students concerning their Gender. Moreover, the Male undergraduate students (Mean=136.53) are found to be a higher level of scientific attitude than the Female undergraduate students (Mean=132.42)

Ho2: There exists no significant difference in scientific attitude among urban and rural undergraduate students.

Table-3: Showing the 't' value among Urban and Rural Undergraduate students regarding their Scientific Attitude

Location	N	Mean	S.D.	t-value	Level of significance
Urban	90	134.25	12.36	0.86	Not Significant
Rural	120	132.72	13.21		



From table 3 and its corresponding figure c show that the calculated 't' value of 0.86 is smaller than the table value at both0.01 and 0.05 levels of significance. Hence the null hypothesis is found to be accepted. It is understood from the result that there is no significant difference in the level of scientific attitude of undergraduate students concerning their Locations. It is found that both Urban and Rural undergraduate Students possessed a similar level of scientific attitude.

Ho3: There exists no significant difference in scientific attitude among arts and science undergraduate students.

Table-4: Showing the 't' value among Arts and Science Undergraduate students regarding their Scientific Attitude

Stream	N	Mean	S.D.	t-value	Level of significance
Arts	105	137.81	12.27	2.34	Significant at 0.05% level
Science	105	133.26	15.72		

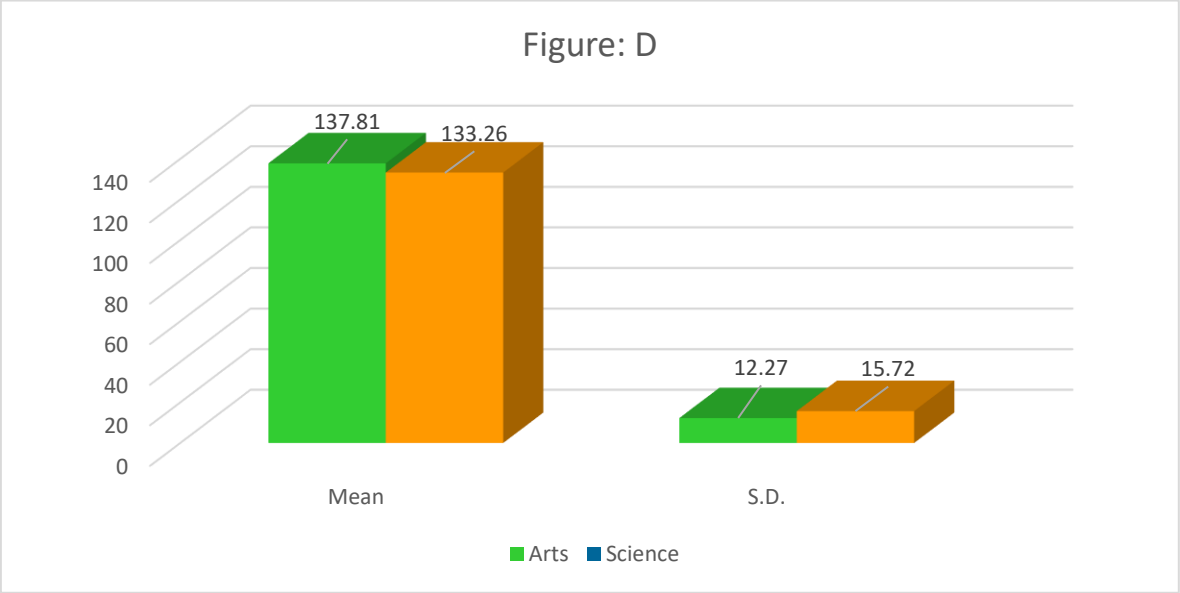


Table 3 and its corresponding figure D show that the calculated 't' value of 2,34 is greater than the table value at a 0.05 level of significance. Hence the null hypothesis is rejected. It is understood from the result that there is a significant difference in the level of scientific attitude of undergraduate students concerning their Stream of study. Moreover, the Arts undergraduate students (Mean=137.81) are found to be a higher level of scientific attitude than the Science undergraduate students (Mean=133.26).

Ho4: There exists no significant difference in scientific attitude among General and Reserved category undergraduate student

Table-5: Showing the't' value among General and Reserved category Undergraduate students regarding their Scientific Attitude

Category	N	Mean	S.D.	t-value	Level of significance
General	110	135.87	12.17	1.19	Not Significant
Reserved	100	133.76	13.34		

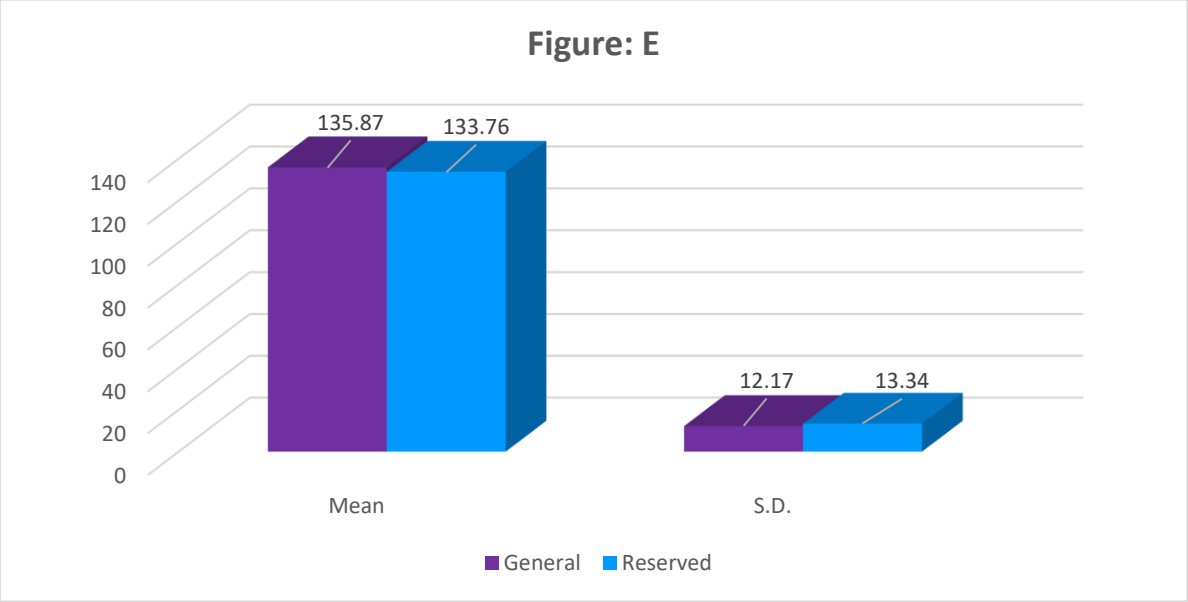


Table 5 and its corresponding figure E show that the calculated 't' value of 1.19 is smaller than the table value at both 0.01 and 0.05 levels of significance. Hence the null hypothesis is found to be accepted. It is understood from the result that there is no significant difference in the level of scientific attitude of undergraduate students concerning their Caste categories. It is found that both General caste and Reserved caste categories undergraduate Students possess a similar level of scientific attitude.

MAJOR FINDINGS OF THE STUDY

1. The level of Scientific attitude of undergraduate students is average.
2. Out of 210 undergraduate students, 52 (i.e., 24,76%) undergraduate students possessed a higher level of Scientific Attitude, 97 (i.e., 46.19%) undergraduate students possessed an average level of Scientific Attitude and 61(i.e., 29.05%) undergraduate students has possessed a lower level of Scientific Attitude.
3. Significant difference is observed in the level of Scientific attitude of undergraduate students with respect to gender. Male undergraduate students are found to be a higher level of scientific attitude than Female undergraduate students.
4. No significant difference is found in the level of scientific attitude of undergraduate students concerning their Locations. It is found that both Urban and Rural undergraduate Students possess a similar level of scientific attitude.
5. Significant difference is observed in the level of scientific attitude of undergraduate students concerning their Stream of study. The Arts undergraduate students are found to be a higher level of scientific attitude than the Science undergraduate students.
6. No significant difference is found in the level of scientific attitude of undergraduate students concerning their Caste categories. Both General caste and Reserved caste categories undergraduate Students have possessed a similar level of scientific attitude.

CONCLUSION

In this study, the investigator tries to examine the level of scientific attitude of undergraduate students. And to make a comparative analysis of the scientific attitude among undergraduate students on the basis of gender, location, stream and caste categories. The findings of the study reveal that there is a significant difference among undergraduate students with regard to gender and stream of study. Male undergraduate students were found to be a higher level of

scientific attitude than female undergraduate students and similarly arts stream undergraduate students were found to be a higher level of scientific attitude than the science stream undergraduate students. No significant difference is observed in the level of scientific attitude of undergraduate students in respect of Location and Caste categories. From this study, it is also found that the level of the scientific attitude of undergraduate students is average.

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