# Scientific Attitude and Knowledge of College Students in Physical Chemistry

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**Abstract**

*The aim of this study is to find out if there is any significant difference in the scientific attitude and knowledge of college students in Physical chemistry based on religion and locality. The present study consists of 123 College students of the chemistry department from 4 colleges in Thoothukudi district; the sample had been selected by using simple random sampling technique. Findings shows, there is no significant difference between the mean scores of scientific attitude and Knowledge in the Physical chemistry of religion and locality of Students. The present study reveals that religion and locality did not influence the attainment of Scientific Attitude and Knowledge of college Students in Physical Chemistry.*

**Keywords: Knowledge in Physical chemistry, Scientific Attitude**

## Introduction

Chemicals are being made by an atom. Chemistry is one of the basic sciences. Knowledge of chemistry is indispensable for the pursuit of any of the other sciences. We observe many of the changes in the world around. Everyone can and should understand basic chemistry because it helps us to know the composition, structure, and changes of matter. But it may be used to take a course in chemistry or even make a career out of it. In our everyday life like varies chemical being used in varies field.

## Physical Chemistry

Physical chemistry combines chemistry with physics. Physical Chemistry is a branch of chemistry that studies the physical and material properties of a chemical system or chemical process. The focus of physical chemistry generally revolves around the energy and thermodynamic properties of a system. The most important sub-branches of physical chemistry are chemical kinetics, chemical spectroscopy, electrochemistry, and thermochemistry. The application of physical chemistry in daily life is the phenomenon whereas the law of physics and chemistry applied in things that happening every day in our life.

## Need for the Study

Chemistry gives valuable mind- training. It helps to train good citizens.W e live in the world which is changing rapidly. The pupil needs some knowledge of physical chemistry. The earth originated in chemistry also began to play its important role in this world. Because Chemistry applies in every field of over life. It is fascinating and an exercise to our brain. We decided to conduct a study to find out the scientific attitude and knowledge in Physical chemistry.

**Objectives**

1. To find out if there is any significant difference between the scientific attitude and knowledge of college students in Physical chemistry with Hindu and Non-Hindu.
2. To find out if there is any significant difference between the scientific attitude and knowledge of college students in Physical chemistry concerning rural and urban
3. To find out whether there is any significant relationship between the scientific attitude and knowledge of college students in Physical chemistry concerning Hindu and Non-Hindu.
4. To find out whether there is any significant relationship between the scientific attitude and knowledge of college students in Physical chemistry concerning rural and urban.

**Hypothesis**

The following hypotheses formulated were tested by the objectives

1. There is no significant difference between the scientific attitude and knowledge of college students in Physical chemistry with Hindu and Non-Hindu.
2. There is no significant difference between the scientific attitude and knowledge of college students in Physical chemistry concerning rural and urban
3. There is no significant relationship between the scientific attitude and knowledge of college students in Physical chemistry concerning Hindu and Non-Hindu.
4. There is no significant relationship between the scientific attitude and knowledge of college students in Physical chemistry concerning rural and urban.

**Methodology**

The present investigation was undertaken by using the normative survey method

**The sample of the Study**

The present study consists of 123 college students. The sample was selected by using simple random sampling technique.

**Tools Used**

1. Scientific attitude and
2. Knowledge in physical chemistry tool

**Statistical analysis**

Mean, Standard Deviation, Differential analysis and Correlation analysis

**The Mean Scores of Scientific attitude and knowledge in the Physical chemistry of Hindu and Non-Hindu of Students**

| Variable | Religion | N | Mean | S.D | T | Remarks |
|---|---|---|---|---|---|---|
| Attitude | Hindu | 84 | 162.90 | 171.82 | 0.52 | NS |
| | Non-Hindu | 39 | 163.33 | 170.74 | | |
| Knowledge in Physical chemistry | Hindu | 84 | 10.12 | 1.76 | 1.13 | NS |
| | Non-Hindu | 39 | 9.74 | 1.69 | | |

The above-calculated t values are lesser than the table value, the null hypothesis; there is no significant difference between the mean scores of scientific attitude and Knowledge in the Physical chemistry of Hindu and Non-Hindu is accepted by Student.

**The Mean Scores of Scientific Attitude and Knowledge in the Physical chemistry of Rural and Urban students**

| Variables | Locality | N | Mean | S.D | t | Remarks |
|---|---|---|---|---|---|---|
| Attitude | Rural | 92 | 170.80 | 11.05 | 1.27 | NS |
| | Urban | 31 | 173.48 | 9.87 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Knowledge in Physical chemistry | Rural | 92 | 10.14 | 1.75 | 1.60 | NS |
| | Urban | 31 | 9.58 | 1.66 | | |

The above-calculated t values are lesser than the table value, the null hypothesis; there is no significant difference between the mean scores of scientific attitude and Knowledge in the Physical chemistry of Hindu and Non-Hindu is accepted by Students.

**Correlation between Scientific Attitude and Knowledge in the Physical chemistry of college students concerning Religion**

| Variable | Number | S.D | r-value | | Remarks at 0.05 level |
|---|---|---|---|---|---|
| | | | Calculated | Table | |
| Hindu | 84 | 82 | -0.095 | 0.217 | NS |
| Non-Hindu | 39 | 37 | -0.125 | 0.304 | NS |

As the calculated r values are lesser than the table values, the null hypothesis, There is no significant and negative relationship between scientific attitude and Knowledge in the Physical chemistry of Hindu and Non-Hindu is accepted by Students.

**Correlation between Scientific Attitude and Knowledge in the Physical chemistry of College Students concerning Locality**

| Variable | Number | S.D | r-value | | Remarks at 0.05 level |
|---|---|---|---|---|---|
| | | | Calculated | Table | |
| Rural | 92 | 90 | -0.091 | 0.205 | NS |
| Urban | 31 | 29 | -0.068 | 0.355 | NS |

As the calculated r values are lesser than the table values, the null hypothesis, There is no significant and negative relationship between scientific attitude and Knowledge in the Physical chemistry of rural and urban is accepted by Students.

**Findings**

1. The above-calculated t values are lesser than the table value, the null hypothesis; there is no significant difference between the mean scores of scientific attitude and Knowledge in the Physical chemistry of Hindu and Non-Hindu of Students is accepted.
2. The above-calculated t values are lesser than the table value, the null hypothesis; there is no significant difference between the mean scores of scientific attitude and Knowledge in the Physical chemistry of Hindu and Non-Hindu of Students is accepted
3. As the calculated r values are lesser than the table values, the null hypothesis, There is no significant and negative relationship between scientific attitude and Knowledge in the Physical chemistry of Hindu and Non-Hindu of Students is accepted
4. As the calculated r values are lesser than the table values, the null hypothesis, There is no significant and negative relationship between scientific attitude and Knowledge in the Physical chemistry of rural and urban of Students are accepted.

**Conclusion**

The present study reveals that religion and locality did not influence the attainment of Scientific Attitude and Knowledge of college Students in Physical Chemistry. This study shows that rural students also achieved better like that of urban students. There was no significant and negative relationship between scientific attitude and Knowledge in Physical chemistry concerning religion and locality. This study shows that the attainment of student's knowledge in Physical chemistry is not related to scientific attitude.

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