

**A Study of Environmental Science Psychology of Senior
Secondary School Students, with relation to Behavior,
Motivation and Creativity**

A Thesis

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by

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**UNIVERSITY OF KOTA,
KOTA (RAJASTHAN)**

2018

Certificate

I feel great pleasure in certifying that the thesis entitled as “**A Study of Environmental Science psychology of senior secondary school students, with relation to Behaviour, Motivation and Creativity**” by Ms. Krishna Gurjar is an original piece of research work carried out by the candidate under my guidance and supervision. She has fulfilled the following requirements as per Ph.D. regulations of the university

1. She has attended the course work as per the university rules.
2. Residential requirement of the university. (200 days)
3. Regularly submitted annual progress report.
4. Presented her work in departmental committee.
5. Published two research papers in referred research journal.

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Abstract

Environment science and Psychology have been grown up on different sides of mountain and met one day as environment science psychology. Their first contact was awkward and hesitant, their offspring's are twins one is vigorous, skillful, joyous and sustain environmental action, the other is wonder, intimacy, healing expansion and grace of finding ourselves at home in the world, they realized too, that there was much work be done together. Carrying this thought further, the researcher has conducted the present work, entitled as **“A Study of Environmental Science psychology of senior secondary school students, with relation to Behaviour, Motivation and Creativity”**.

This work conducted in five parts. **Part I** deals with conceptual studies of Environment, environmental problems and Environment science psychology and the different variables i.e. Environmental Behavior, Motivation towards environment and Creativity towards Environment. Major Objectives of the study is to investigate the Environmental Behaviour, Creativity and Motivation of Senior Secondary School students towards Environmental Science Psychology. According to the objectives, the corresponding Hypotheses were formulated to assess the influence of independent variables (i.e. Gender, Type of management, Locality, Medium of instruction, and Type of board of school) on dependent variables (i.e. Environmental behavior, Motivation towards environment and Creativity towards environment.) **Part II** deals with the study of related literature, which helps the researcher a lot to know what is known and what still unknown, and the researcher concluded that very few almost none studies included the psychological concept with environment. **Part III** deals with the design of the study, the researcher has selected Survey method for study, sampling is done by the stratified method in which the students of different schools were stratified accordingly, and the sample size was 800 senior secondary students of different schools of Kota. Three tools were used to collect the data, one of which is Environmental Behaviour Scale (**EBS**) a standardized tool and used as it is, the second one is Motivation Towards Environment scale (**MTES**) also standardized but the researcher has made some changes according to the need of study, and third one is Creativity towards environment test, (**CTE-t**) a self made tool, which developed by

researcher on the basis of components of creativity . **Part IV** deals with analysis and interpretation of the influence of independent variables on dependent variables. The statistical techniques used for descriptive analysis is mean, SD and quartile while for inferential analysis is t test and chi square test. and **part V** deals with the Major Findings and Conclusions, which reveals that the variables like Gender and Locality influence the level of Environmental behavior and the variable Locality and Type of management influence the students Motivation towards environment and the variable Gender, Locality and Type of management influence the students Creativity towards environment, the other variables like Medium of Instruction, and Type of board of school does not influence the all the process variables. Descriptive analysis also revealed that major students score average in all three tests, which means there is a need to develop our curriculum and must included the concepts of psychology with environmental science. Recommendations for concerned persons were also mentioned according to findings of the study, the researcher also suggest the areas for further research. References have been given in the end. The tables and figures of data have been incorporated appropriately in the respective chapters of the thesis. The important annexure has been also attached.

The problem of environmental degradation is increasing day by day and can only solved if we use the interdisciplinary approach of education, if the teachers use psychological process of teaching environment science, than only they can inculcate the concern of environmental issues in children and pass this concern, generation to generation and in turn the students will participate in sustainable development, and they will try to conserve our natural resources and Environment.

“We won’t have a society if we destroy the environment”

- Margaret Mead.

Candidate's Declaration

I do hereby declare that the thesis entitled as “**A Study of Environmental Science psychology of senior secondary school students, with relation to Behaviour, Motivation and Creativity**” is my own work conducted under the supervision of **Dr. Sapna Joshi** (Reader, J.L.N.P.G.T.T College Sakatpura, Kota) and submitted to the University Department of education /university J.L.N.P.G.T.T. College Kota /Research center university of Kota, Kota, Rajasthan (India). I further declare that to the best of my knowledge the thesis does not contain any part of any work which has been submitted for the awarded of any degree either in this institute or any other university without proper citation. I also declare that I have adhered to all principles of academic honesty and integrity, and not been misrepresented and falsified any idea/data/fact/source in my submission. I understand that any violation of the above will cause for disciplinary action by the University and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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This is to certify that the above statement made by **Krishna Gurjar** (enrollment no 2012/000181) is correct to the best of my knowledge.

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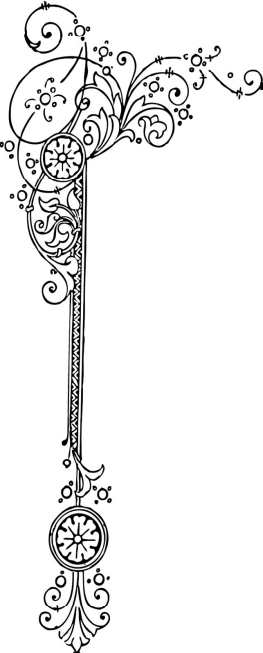
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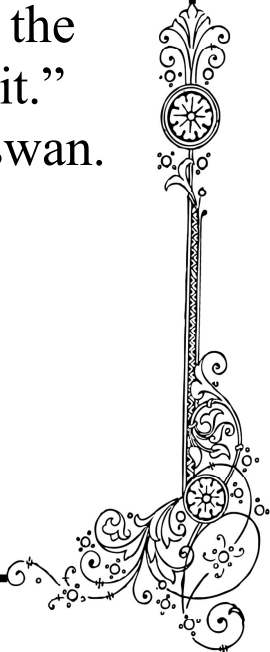
List of Abbreviations

ESP	:	Environmental science Psychology
EBS	:	Environmental Behaviour Scale.
MTES	:	Motivation Towards Environment Scale
CTE-t	:	Creativity Towards Environment test
Govt.	:	Government
Pvt.	:	Private
Sr. Sec.	:	Senior Secondary
CBSE	:	Central Board of Secondary Education
RBSE	:	Rajasthan Board of Secondary Education
RAI	:	Relative Autonomy Index
PPMCC	:	Pearson Product Moment Correlation Coefficient.
M	:	Mean
SD	:	Standard deviation
NS	:	Not Significant
df	:	Degree of freedom
UNESCO	:	United nations Educational, scientific and Cultural Organisation.
UNEP	:	United Nations Environment Programme



*The Problem and its
Conceptual Frame Work*

“The biggest threat to our planet is the
belief that someone else will save it.”
- Robert swan.



CHAPTER 1
THE PROBLEM AND ITS CONCEPTUAL
FRAME WORK

1.1 INTRODUCTION

“We are living on the surface of this planet, with only the resources of this planet, with the fertility of its soil with its mineral wealth and with its climate and atmosphere. It has always been the task of mankind to find the right answer to the problem this condition set us, and even today we cannot think that we have found a sufficient answer.”

- (Adler, 1959)

Environment means the surroundings especially those affecting people’s life as condition of living. Earth, Sky, water and air are the essential factors of life. Environment refers to the sum total of all the conditions and influences that affect the life and development of organisms. Environment indicates, in total, are the peripheral forces, pressures and circumstances, which affect the life, nature, behavior, growth, development and maturation of living beings.

From Vedic period, importance has been given to the nature. Saint preaches that rivers are our sisters and earth is our mother. But today man has moved towards materialism and instant things. The intensive application of science and technology combined with mans greed to overexploit the natural resources, the unprecedented rapid population growth, modern process of production and consumption and change in human life style have in their wake brought serious problems. People want to enjoy every comfort in their life at any cost. Lavish consumption of precious environmental resources by man, either due to the greed of developed countries or for the need of poor people of developing countries, caused a large scale quality deterioration of environment. (**Jayantamente and Paramasamaddar, 2006**).

Due to this lot of environmental problems have created like global warming, ozone layer depletion, climate change, loss of Bio diversity etc. (**Shoberi 2005**).

Definition of Environment

The term environment comes from the medieval French word, “environ” meaning to form a ring around or to surround. A modern Statement is that the environment is concerned with conditions or influences under which any person lives or is developed. Environment Consist of various type of forces like physical intellectual, moral, political, cultural, emotional, social and economic. Thus environment is an aggregate of all the external conditions that influences the development of life of an organism is called as environment. On the planet earth the life supporting system is the biosphere, which consists of atmosphere, lithosphere, and hydrosphere. The environment simply does not confine to the above mentioned facts alone, though it also includes humans, plants, animals and other biotic factors, socio-psychological factors like belief, value, religion etc. some important definition of environment are as follows

“Environment is an external force which influences us.”

E.J Rose.

“Environment is the field of effective stimulation and interaction for any unit of living matter.

T.D. Elliot

“The term environment is used to describe, in the aggregate, all the external forces, influences and conditions which affect the life, nature behavior and the growth, development and maturity of living organisms”.

(Douglass and Holland)

Thus the environment literally means surrounding and everything that affects an organism during its life time, is collectively known as its environment. It includes all the physical and biological surrounding and their interactions. Thus environment is sum total of water air and land interrelationships among themselves and also with human beings, other living organisms and property. So environment is actually global in nature, it is multidisciplinary subject including physics, geology, geography, history, economics, physiology, biotechnology, psychology, remote sensing geophysics, soil science and hydrology etc.

The Concept of Environment May Be Classified As

- a. **Natural Environment** air, water, soil, mountain plants, rivers, forest and the living organisms etc.
- b. **Man Made Environment** such as village, cities, industries and other institutions like buildings, roads, canals, agriculture, transport etc.
- c. **Social Environment** consists of social systems, its economic structures and culture and its influence on the population growth, employment, commerce, values etc.

Man is a part and parcel of his environment and is totally dependent on it for his physical, cognitive, emotional, spiritual, religious and moral development, the qualitative development and quantitative progress of mankind depends on the quality of environment. Therefore, there may not be any doubt about the fact that, it is the primary responsibility of man, not only to preserve the environment but also improve it qualitatively. According to **Khoshoo** there are two major threats to the environment of the globe, these are the possibility of a nuclear war and unprecedented demographic pressure on account of population explosion.

In an analysis Khoshoo listed 10 environmental concerns for India which are as:

1. Population stabilization
2. Land use planning
3. Revegetation
4. Pollution and Control
5. Renewable energy
6. Waste recycling
7. Biological diversity
8. Human settlement
9. Environmental education
10. Ecological Crisis.

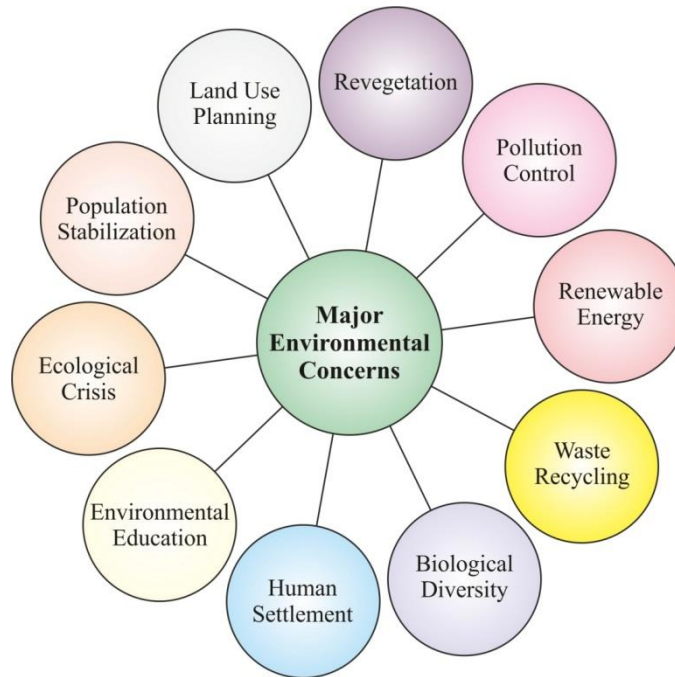


Fig. 1.1: Major Environmental Concerns

The Concern for the environment has thus emerged as prominent social issues, affecting people for all walks of life. Polluted water, air, solid waste, energy crisis, radioactive debris, noise, pollution, improper use of pesticides and fertilizers, unwise management of natural resources and unprecedented population growth have commenced that we encounter serious environmental Crisis.

Not only in India but in other countries too, efforts have been made to deal with environmental problems. To get rid of these problems it is necessary that countries of world should ammend their environment related policies. The education system should also be upgraded. (Gihar, 2006). Subjects like environmental education, environmental science with relation to other subjects like philosophy, psychology, engineering, chemistry, should be taught to solve the environmental problems collectively.

The future of every nation is being shaped in its schools, what is the depth of knowledge of our students relating to environment? What do they know about environmental problems? What are their interests relating to preservation of environment? These are some questions which can only answered by studying the subjects like environmental science.

1.1.1 ENVIRONMENTAL SCIENCE

What would happen if all the trees in the rainforest were cut down or if chemicals were spilled in river, or if snow and rainfall increased drastically?

Answers of these questions can find in study of environmental science. Environmental science is the field of science that studies the interactions of the physical, chemical and biological components of the environment and also the relationship and effects of these components with the organism in the environment field.

Environmental Science has 3 Main Goals i.e.

1. **To learn** how the natural world works.
2. **To understand** how we as human interact with environment.
3. **To determine** how we affect the environment & finding ways to deal with these effects on environment.

Scope of Environmental Science

Environmental science is a multidisciplinary science whose basic aspect has a direct relevance to every section of the society. Its main aspects are

- Conservation of nature and natural resources.
- Conservation of biological diversity.
- Control of environmental pollution.
- Stabilization of human population and environment.
- Social issues in relation to development and environment.
- Development of nonpolluting renewable energy system and providing new dimension to nation's security.

Environmental Conservation is first recorded in India during the third century BC in days of emperor **Ashoka**, his edicts on stone, on nature conservation survive even today thus the Indian tradition of love, respect and reverence for nature goes back to time immemorial, and environmental protection was considered as religious duty. Public statements about the nature and magnitude of environmental problems implicate human being as the principle casual factor. "Since people are causing global

warming; they also have it in their power to prevent it from getting worse” (**Union of concerned scientist Australia 2006**)

The International Environmental Education Programme (**IEEP**) launched by **UNESCO** and **UNEP** in 1975 aimed at promoting exchange of information and experiences, research and experimentation, training and curricula and material development and international co-operation in field of Environmental education. Apart from this many other important programmes are held some of them are mentioned below

Important Reports and Conferences for Environmental Conservation are:

1. **UN Conference on Human Environment** (1972), Stockholm, for the problems of environment and it led to the establishment of **UNEP**.
2. **World Commission on Environment and Development** (1987), entitled as **Our Common Future** developed the theme of Sustainable Development.
3. **UNCED** (1992) Rio de Janeiro also known as **EARTH SUMMIT**. It led to the establishment of the commission on sustainable development. Major agreements adopted are
 - **Rio declaration** on environment and development, a series of principles defining the rights and responsibilities of state.
 - **Agenda 21**, a global plan of action to promote sustainable development.
 - Statement of the forest principles, a set of principles to underpin the sustainable management of forest worldwide.
 - Two multilateral treaties are opened for signature i.e. :
 - **UNFCCC** (United nation framework convention on climate change)
 - **CBD** (Convention on Biological Diversity.)
4. **World Summit on sustainable development** (2002), Held in Johannesburg it reviewed progress in the implementation of agenda 21.
5. **UN Conference on Sustainable development** (2012), known as Rio +20 includes the future we want.
6. **UN Sustainable development summit (2015)** includes “Transforming our world”: The 2030 agenda for sustainable development.

7. **The Parris Agreement** (2015) under UNFCCC dealing with green house gas emissions mitigation.

These are the national and international conferences were arranged to develop concern towards environmental problems India also actively participate in many conferences and also became the signatory in them. NCERT did pioneering work in environmental education by developing modern curriculum and also prepared text book and other instructional material, teaching aid and audiovisual materials. The Hon'ble Supreme Court of India in 2003 directed the UGC to introduce a basic course on environment at every level in college education. India has also signed the latest agreement i.e. Paris agreement for Climate change which intended to lower the rate of emissions of poisonous gases (Green house gases). In spite of all the efforts of minimizing the environmental problems it remains increasing rapidly. Environmental problems/degradation has been viewed as very pressing social issues and societal concerns, as well as environmental issues. (**Oskamp & Shultz 2006**)

The effective management and conservation of natural environment and ecosystem requires an appropriate knowledge base and applied expertise for conserving natural environment, for fostering environmentally sustainable lifestyle and behaviour and for managing and mitigating adverse human impacts on and of the natural environment. (**Reser & Bentrappner baumer, 2001**) To decrease these problems we must develop the interdisciplinary work. Expert from every field must contribute to solve the environmental problem.

1.1.2 INTERDISCIPLINARY FIELD

Environmental Science is an interdisciplinary field because it incorporates information and ideas from multiple disciplines. With in natural science such field as biology, Chemistry and geology etc. But what make environmental science a complex and broad field is that it also included fields from social science (i.e. geography, economics, political science) and humanity (philosophy and ethics) By combining aspects of the natural science, social science and the humanities, the field of environmental Science can cover more concepts and examine problems and topics from different point of view.

Without the study of environmental science and the developments of solutions to environmental problems it would be likely that resources would run out and the existence of human is limited. To study the behavior, mental process of human being towards environmental issues, a new field must developed i.e. Environmental science psychology which is combination of environmental science and psychology.

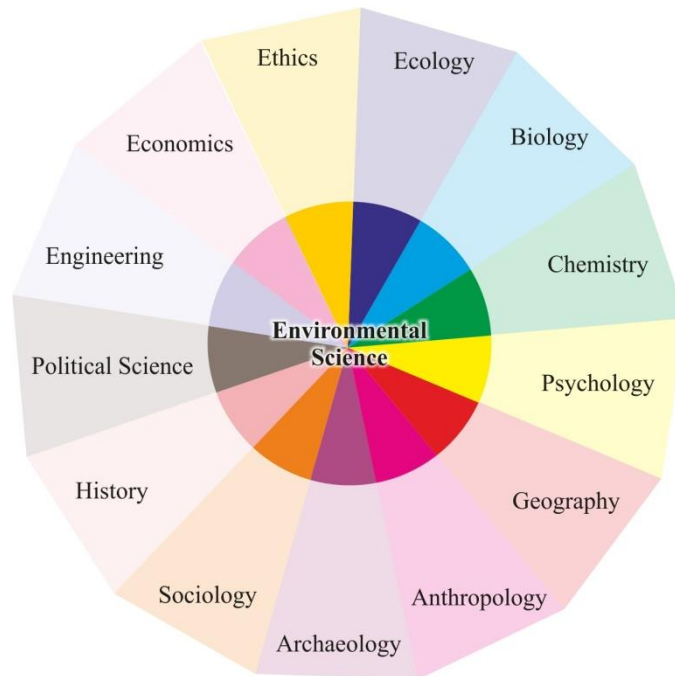


Fig. 1.2: Environmental Science: Interdisciplinary Orientation

1.1.3 ENVIRONMENTAL SCIENCE PSYCHOLOGY

Psychology is the study of mind and mental process, especially in relation to human and animal behavior and environmental psychology studies the effect of physical and social environment on behavior. While Environmental Science Psychology is the study of relationship between human and rest of natural world i.e. physical world, with a particular focus on how to encourage protecting the natural world via psychological processes and principles. To protect our planet from degradation environmental science alone could not sensitize the people to minimize the pollution and environmental hazards. It needs an interdisciplinary approach environmental science and psychology combines to form a new field or area of focus to save environment. Psychology has a special responsibility to be proactively involved in fostering more ecologically sensitive and sustainable behaviours &

lifestyles. Psychology has been a lead discipline in addressing the nature quality and importance of Human-Natural environment transaction, and those mediating individual and system level factors which contribute to natural environment degradation and destruction (**Gifford 2000, Clayton and Brook 2005**).

Individual level psychological factors include Behaviour, value, Knowledge level, Motivation, Attitude creativity and decision making. System level psychological and social factors include social process, consumption patterns, Media representation, environmental monitoring, reporting measures and legislation.

Psychologists have an indispensable role to play in analyzing and addressing linkage between people and environmental problems and finding achievable and effective solutions. (**Oskamp, 2000 a, b**) Psychology address the more immediate determinants & social context of environmentally relevant decisions, involvement & behaviours and the nature of human appraisals and response to risk, threatened resources, environmental degradation and related psychosocial impacts. According to **Protection Motivation theory** (Lazarus 1966) when a threat is perceived the two steps are realized by a person i.e. Threat appraisal (person valued that the threat is high or low) and Coping appraisal (person appraisal to their own ability to respond which results in high or low sense that one can cope with the threat or not). Results of these two appraisal steps determines the persons strategy, if a person feel high threat and high coping they will approach the situation in problem solving fashion, assessing and deploying resources to deal with the threat and making changes as needed. If a person feel high threat and low coping ability they will use emotion focused coping in which a person tries to lesson or tolerate fear, anxiety, and helplessness by emotional means such as avoidance denial and desensitization. (**Clayton & Myers**) People are often cast as a villain in the story of environmental degradation, seen primarily as a threat to healthy ecosystem and an obstacle to conservation. But humans are inseparable from natural ecosystem. Understanding how people think about, experience and interact with in nature is important for promoting environmental sustainability as well as human well being. Environmental threats face humanity on every level from local to global. Human population growth and human activities are negatively affecting the ecological process. **Wackernagel et.al (2002)** – Calculate

humanity load on the biosphere had grown to 120% of earth capacity by 1999 up from 70% in 1961.

Goal of environmental science psychology is not only to understand the interdependence between Human and nature but to promote a healthy and sustainable relationship which means Environmental science psychology has a double goal i.e. the understanding of human behavior and the promotion of human well being. Understanding human behavior means understands how individuals are affected by the setting in which they find themselves which includes natural environment and changes in that environment due to problems like climate change, Over population and loss of wild landscapes. It is well known that environmental toxins can have direct impacts on human health but less visible one are the possible effects on mental functioning. Researches has shown that lead, mercury have detrimental effects on cognitive functioning & sometimes social behavior.

Some environmental problems which show the ways in which humans are implicated, are as:

- **Global Climate Change** is generally agreed to be result of human actions. There is wide range of probable effects on humans; direct effect includes a possible effect of increased temperature on aggression (**Anderson 2001**). Indirect effects may include ecomigration, with concomitant increase in intergroup conflicts.
- **Pollution** of air water, soil is clear by product of human manufacturing process. Its impacts include not only increases susceptibility to cancer and possible effects on reproduction but also more psychological effects such as decrease cognitive functioning due to exposure to lead & mercury etc.
- **Resource Depletion** for example the depletion of water resource and the collapse of fish population results from human overuse, any of these will require a major shift in the way human conducts their lives, such as where they live and how they are employed.
- **Loss of Biodiversity** is a result of above three problems as well as increased development of wilderness to house a rising human population.

Environmental Science psychology is not considered as a sub discipline, but as a field or area of focus. The field on which the intellectuals, policymakers, educationists have to focused deeply and must included it in the curriculum of environmental education. It studies the human place in nature and nature's place in human beings. Regarding environmental issues people must be recognize the ways in which their behavior can affect the environment and the ways in which those environmental changes in turn will affect the things they value. People must feel or experience positive emotions associated with nature and negative ones towards environmental degradation. Therefore Environmental Science Psychology (ESP) is important area to be focused and studied. Environmental science psychological researches are linked to architectural design and planning approaches and on a more enlightened involvement and relationship with the natural world.

Environmental science psychology is concerned with aspects of how people come to experience, understood and behave in their physical and social environment and the nature of their relationship and interactions with natural and human made environment. People often use Defense mechanism to avoid the environmental problems, **Deborah** and **Koger** describes how psychological defenses interfere with rational perception of environmental realities, defensive thinking results when our basic wants such as the desire for comfort and pleasure are incompatible with rationale or moral judgment faced with a conflict between a desire for self gratification through unsustainable behavior and the knowledge that environment is threatened by such behavior, we repress our awareness of the conflict, deny the threats that face us, displace them on to other communities and rationalize our continued unsustainable behavior as having no alternative ,in simple terms that what people want to be true is true and conversely ,the desire not to think about things they do not want to be true. Environmental science psychology works as natural and behavioural science, as well as a social science, brings a particularly helpful and bridging perspective to environmental problems which can often fall between the natural and social science.

Environmental Science Psychology Has Much to Offer

Theoretically – By way of conceptual models and behaviour analytic approaches with which to consider the nature of environmental problems and issues.

Methodologically – With respect to relevant research instruments, measures and findings.

Practically – With respect to evidence based application, strategies and expertise.

Environmental science psychology has made a substantial investment in documenting the multiple benefits of natural environment and setting to individual and community well being and environmental quality.

Environmental Science Psychology is concerned about

1. The current state of the natural environment.
2. The adequacy and effectiveness of current initiatives to address environmental problems at regional, national and international level.
3. Impact of environment degradation and climate change on human communities, quality of life & psychological and physical well being.

Environmental Science psychology includes important psychological constructs i.e. knowledge, Behaviour, value, attitude, motivation creativity and behavior, setting at a system level. It carries forward the distinctive spirit of Adler's (1 Page) insight into today's world of nature and universe of psychology.

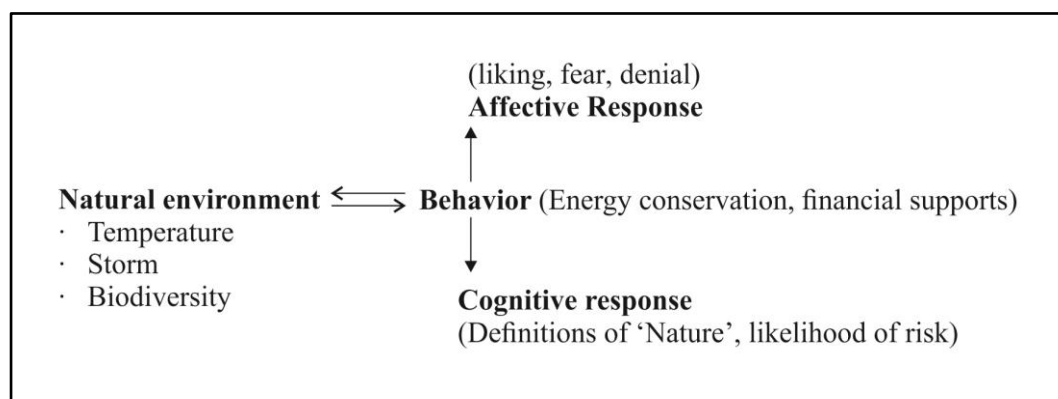


Fig. 1.3: Model for human nature relationship. (Clayton & Myers, 2011.)

The implications for human are not limited to physical health and well being and availability of uncontaminated air, water, food but includes psychological need and benefit considerations relating to a spectrum of development, competency fostering and care eliciting experience in natural environment such as restoration,

recreation and inspiration. Environmental science and psychology play a key role, particularly with respect to problem analysis and effective risk communication and behaviour change strategies (**Lorenzoni, Pidgeon & O' Connor. 2005**) Current films such as *The day after tomorrow*, Al Gore's 'An inconvenient truth', and countless media images, Newspaper articles posed a devastating impacts on particular urgency and concern of environmental problems. Given the urgency and magnitude of environmental issues or problems requires much greater attention, visibility, strategic cross disciplinary collaborations. It has particular insight **expertise**, with respect to environment – linkages relevant to addressing environmental problems.

These include:

- a. **Better understanding** those behaviours which are directed towards protecting and conserving the natural environment or adversely impact on it.
- b. **Effectively changing** awareness, perceptions, attitudes understandings and behaviours relating to the natural environment, adverse natural environment impacts and attributions of cause and responsibility.
- c. **Sensitively**, measuring and monitoring changes in perceptions, Motivations & attitude relating to the natural environment.
- d. The nature and role of media coverage and representations of environmental issues & problems and the nature and implications of social constructions & social representation process with respect to environmental 'problem' and 'solutions'.

Environmental science psychology aims to apply the concepts and techniques of psychological research to environmental conservation areas; it includes:

- Using survey research to assess community attitudes towards particular environment protection initiative.
- Drawing on results of behavior research to encourage sustainable behavior.
- Designing environmental education programme that will promote pro environmental behavior.
- Observing social interactions in order to understand the ways in which environmental values are created and transmitted.

- Designing creative models and test to develop creativity in students and motivate them to develop eco-friendly things.

The field might arouse thinking in peoples towards environmental sustainability and acquire correct knowledge of impact of environmental degradation on human behavior, so it is a important field to be studied and developed.

1.2 JUSTIFICATION OF RESEARCH

A person's environment consists of the sum total of the stimulation which he receives from his conception until his death" (**Boring**).

Environment is a source of happiness to man and his happiness will be heightened, if he learns to love and appreciate nature. There is an immediate need to make man aware about environmental degradation, pollution, ecological imbalance and it's after effects. Advancement in science and technology in an arbitrary way and the rapid growth of urbanization has posed danger to environment. We experience lot of problems due to environmental degradation therefore it is important to create pro-environmental behavior among peoples otherwise we will pay heavy price.

The physical environment with its different aspects stimulates and directs human behavior in many ways. The emergence of environmental psychology has provided many eye opening issues about the environment. Environmental Science psychology is field or focused area of environmental psychology which includes the physical environment & human behavior & their reciprocal relationship. It includes the Behaviour like care, value, morality etc. Human care for nature should be taught to children's as like a friend, if care is not reciprocated the friend soon gone, same condition with Earth, So we should learn to care our earth soon. Human Behaviour is a major source of environmental problem and can be a source of solution as well. Therefore the field environmental science psychology is the need of hour.

People tend to show more fear of technological hazards (hazardous waste & sewage) compared to other environmental risk (global warning, loss of Biodiversity). So by giving knowledge of environmental Science we make people sensitize about global issues. Environmental Science psychology helps in understanding why human

feel the need to help or hurt the environment along with how to promote conservational efforts. According to **Biophilia Hypothesis** of biologist **E.O Wilson**, human beings have an innate instinct to connect emotionally with nature the term Biophilia means “love of life or living systems” which means being attracted to all that is alive and vital. Phillias are the attraction and positive feelings that people have toward organisms, species habitats, Processes and objects in natural surroundings. Therefore we must solve the environmental problems by psychological principle because if we develop emotional connections towards environment in our children from childhood, it makes easier for us to teach them about sustainable environment. Psychological constructs like Behavior, motivation etc must be studied by doing researches in schools and colleges to enhance the Psychological knowledge towards physical environment and environmental protection By the research on these variables we get to know the pattern of positive and negative behavior of person towards environmental issues, and also get the knowledge why people do the particular behaviors, by the study of motivation towards environment. To enhance the ecofriendly ways, creativity must be studied in peoples so that people think in new, unique and original ways to face environmental problems and solve them. This work is important, because if a student posses high level of motivation towards environment protection than only they will encourage to behave positively towards environment and to create environment friendly things and conserve natural resources which are degraded enormously now a days. Most psychologists still think that environmental problems are the concern of environmental scientists but environmental problems are caused primarily by human behaviors, feelings and attitudes, we can't solve these problems without psychology's help and we really need psychologist to go work on them. **(Deborah Winter, 2000.)**

The solution of any problem is the result of investigation and not by assumption. The Study of this research is also based in reference of this. The study aims at arousing consciousness among educationist and psychologist to protect environment. This study also helps in planning for future to raise the level of Creativity and Motivation and to form positive Behavior towards environmental issues. This study will also have to improve upon the curriculum followed in school.

The problem is novel for the Indian conditions in general and for Rajasthan in particular.

It has utility for teachers, text book writers, educationist, administrators, psychologists, teacher educator, researchers and agencies working in the field of environment because the finding of this study will help them in taking correct decisions.

It will stimulate researchers working in the field of environment & psychology which will ultimately help in fighting with the issues related to environmental crisis.

1.3 STATEMENT OF THE PROBLEM

“Ecological issues of people relationship to their environment both natural and human made have assumed crucial importance to our quality of life and even to the survival capacity of humanity”. (Oskamp & Schultz, 1998)

Psychologist now becomes concerned about how environment affect us. Just as toxic chemicals in the air and the ground can damage physical health so other characteristics of the environment can damage mental & social health. Environmental degradation in form of pollution, deforestation etc, Calls for the research in environmental issues by educationists in students to make them behave positively toward environment. Motivation towards environment is necessary to know the importance of keeping environment clean and protecting earth. We are facing various environmental problems like Global warming, acid rain, over population etc. In this situation creating positive behaviour towards environment increases the autonomous motivation/self determined motivation towards environment among the students which help the student in developing creativity about environmental issues and environmental conservation.

Hence the present study has been undertake by the investigator and entitled as **“A Study of Environmental Science psychology of senior secondary school students, with relation to Behaviour, Motivation and Creativity”**.

1.4 OBJECTIVES OF THE STUDY

The major objective of the study is to investigate the Environmental Behaviour, Creativity towards environment and Motivation towards environment of Senior Secondary School students of Kota region. More specifically the objectives of present study are:

- (i) To compare the Environmental Behaviour of Sr. Sec. School Students of Kota region with respect to the following categorical variables:
 - (a) Gender (Male & Female)
 - (b) Type of Management (Govt. and Private)
 - (c) Locality (Rural & Urban)
 - (d) Medium of Instruction. (Hindi and English)
 - (e) Type of Board of School. (CBSE and RBSE)
- (ii) To compare the Motivation towards Environment of Sr. Sec. School Students of Kota region with respect to the following categorical variables:
 - (a) Gender (Male and Female)
 - (b) Type of Management (Govt. and Pvt.)
 - (c) Locality (Rural and Urban)
 - (d) Medium of Instruction. (Hindi and English)
 - (e) Type of Board of School. (CBSE and RBSE)
- (iii) To compare the Creativity towards Environment of Sr. Sec. School students of Kota region with respect to the following categorical variables:
 - (a) Gender (Male and Female)
 - (b) Type of Management (Govt. and Pvt.)
 - (c) Locality. (Rural and Urban)
 - (d) Medium of Instruction. (Hindi and English)
 - (e) Type of Board of School. (CBSE and RBSE)
- (iv) To explore whether there exists any association between Environmental Behaviour, Motivation towards Environment and Creativity towards Environment.

1.5 HYPOTHESES OF STUDY

Hypothesis is made up of two Greek words which mean that it is some sort of “**sub statements**” for it is the presumptive statement of a proposition which the investigation seeks to prove. The word Hypothesis is made up of two words i.e. hypo + thesis = Hypothesis. Hypo means tentative or subject to the verification, thesis means statement about the solution of the problem. The meaning of the term Hypothesis is a tentative statement about the solution of a problem, so Hypothesis offers a solution of a problem that is to be verified empirically and based on some rational. The hypothesis furnishes the general bases of the whole investigation and remains to the end and its corner stone, for the whole research is directed to test it out by facts. A tentative generalization or theory formulated about the characters of phenomena under observation are called Hypothesis, it is a statement temporarily accepted as true in the light of what is known at the time about the phenomena. it is the bases for planning and action in the research for new truth. The term Hypothesis has been defined in several ways.

Some important definitions have been given below

A Hypothesis is a tentative generalization, the validity of which remains to be tested. In its most elementary stage the Hypothesis may be any lunch guess imaginative idea which becomes the bases for further investigation. **-By Lund Berg.**

A Hypothesis states what we are looking for, a Hypothesis took forward. It is a proposition which can be put to a test to determine its validity. It may prove to be correct or incorrect **by Goode and Hatt.**

It is a tentative supposition or provision guess which seems to explain the situation under observation **James Egriengton.**

A Hypothesis is a statement temporarily accepted as true in the light of what is, at the time, known about a phenomenon, and it is employed as a basis for action in the search for new truth, when the Hypothesis is fully established it may take the form of factors, principles and theories **Bars and Scates.**

The researcher formulated the following Hypotheses for the present study

1. There is no significant difference between the mean scores of **Environmental Behaviour** of the subgroups of students of Kota region with respect to following variables
 - (a) Gender (Male & Female)
 - (b) Type of Management (Govt. and Private)
 - (c) Locality (Rural & Urban)
 - (d) Medium of Instruction. (Hindi and English)
 - (e) Type of Board of School. (CBSE and RBSE)
2. There is no significant difference between the mean scores of **Motivation towards Environment** of the subgroups of students of Kota region with respect to following variables
 - (a) Gender (Male and Female)
 - (b) Type of Management (Govt. and Pvt.)
 - (c) Locality (Rural and Urban)
 - (d) Medium of Instruction. (Hindi and English)
 - (e) Type of Board of School. (CBSE and RBSE)
3. There is no significant difference between the mean scores of **Creativity towards Environment** of the subgroups of students of Kota region with respect to following variables
 - (a) Gender (Male and Female)
 - (b) Type of Management (Govt. and Pvt.)
 - (c) Locality. (Rural and Urban)
 - (d) Medium of Instruction. (Hindi and English)
 - (e) Type of Board of School. (CBSE and RBSE)
4. There is no significant association among the level of Environmental Behaviour, level of Creativity towards Environment and Motivation towards Environment in scores of Sr. Sec. school Students of Kota region.

1.6 DELIMITATIONS OF THE STUDY

To avoid an ambition plan, an attempt was made to delimit the study in terms of sample tools and technique and the area of study and keeping in view the time, energy and resources the study is delimited as follows

- The present study deals to only physical environment and environment protection it does not covers the all dimensions of environment (Social, Moral etc.)
- The present study deals with only selective variables like Environmental Behavior, Motivation toward Environment and Creativity towards Environment.
- The study is confined to Kota Region only.
- As far as the Categorical variables the present study select only five variables i.e. Gender, Type of management, Locality, Medium of Instruction and Type of Board of school.
- The research will be completed with survey method.
- The survey selects only 800 students of different schools.

1.7 OPERATIONAL DEFINITIONS OF TERMS

Generally the terms used in the study pertain to their popular connotation but there are some terms used in the study which need clarification. The literature related to concepts of Environmental Behaviour, Motivation towards Environment and Creativity towards Environment has been studied for the conceptualization of the terms.

A. Environmental Behaviour

According to Anastasi “The environment is everything that affects the individual except his genes.”

Behaviour is the range of actions and mannerisms made by individuals, organism, action & systems in conjunction with themselves or their environment, which includes the other systems around as well as the physical environment. It is the response of the system or organism to various stimuli or inputs, whether internal or external, conscious or subconscious, voluntary or involuntary. (**Wikipedia**)

Therefore Environmental Behaviour is an observable movement of the organism generally taken to include verbal behaviour as well as physical movements towards the changes in environment. Focused on this research another definition is often referred as “environmental literacy and requires a transfer of skills and increase in motivation to act in an environmentally responsible manner. (Jacobson et al, 2006)

In simple terms behavior can be regarded as response of any person that shows its relationship to its environment. Environmental behavior provides outputs from the organism to its environment. Simply Environmental Behaviour is **what** they are doing to and for environment.

B. Motivation towards Environment

Motivation is derived from the word “Motive” which means an inner state of our mind that activates and directs our behaviour.

Fred Luthans defined motivation as a “process that starts with a physiological or psychological deficiency or need that activates behaviour or a drive that is aimed at a goal or incentive”.

Gray and stark “Motivation is the result of processes internal or external to the individual that arouses enthusiasm and persistence to pursue a certain course of action.

Therefore motivation is a theoretical construct used to explain a behaviours. It gives a reason for people’s action, desire and need it can also be defined as one’s direction to behaviour.

So motivation towards environment is defined as a desire or internal urge to do things for environment. Simply motivation towards environment is **why** people do things for environment.

C. Creativity toward environment

Creativity is the ability to create or make new things, thinking & ideas. Creativity is the ability to produce original and unusual ideas or to make something new or imaginative.

According to **Pam Slim** – Creativity is expressing your ideas in full contact, full colour way. It is using as many senses as possible to express an idea; it is the zone from which great, useful things are created.

Therefore creativity is an act or idea that novel, good & useful. It involves two process, thinking and then producing. If people only think not produce than they are imaginative not creative & it must be meaningful also.

Creativity towards environment is characterized by the ability to perceive environmental issues in new ways, and to find hidden patterns to make connections seems unrelated phenomena and to generate solutions of environmental problems in a novel way. Creativity towards environment is also defined as the tendency to generate or recognize ideas, alternatives or possibilities that may be useful in solving environmental problems, and entertaining ourselves and other.

In simple terms creativity towards environment describes the diverse thinking process of person towards environment and **what new** ideas they develop for environment and they must be valuable or adaptive.

D. Higher Secondary Students

Students those who are studying in XIth and XIIth standards and to the age group of 16-18 years are considered to be as higher Secondary students.

1.8 CHAPTERIZATION

Chapter I presents the theoretical background of the study focusing on emergence of the field of Environmental Science Psychology. It deals with the concept aim and scope of Environmental Science Psychology, the chapter includes the Justification of research, Statement of the problem, the Objectives and Hypotheses of the study, Definition of terms and Delimitation of the study.

Chapter II focuses on Review of related Literature pertaining to Environmental Attitude, Environmental Awareness and Attitude towards Environmental Education, and studies of different environment related issues, in India, and other countries.

Chapter III deals with the Methodology of the study. This chapter presents the details of the Design and procedure, Variables, Population and Sample, detailed Description of the Tools used and Statistical techniques used for analysis of the data.

Chapter IV presents the details of the Analysis of the data, its classification, tabulation and interpretation and discussion of the result.

Chapter V Gives the Summary of the study, and Conclusion of the results, Educational Implication, Recommendation and Suggestions for further researches.

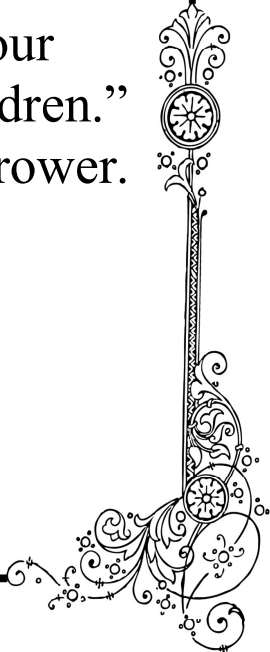
1.9 CONCLUSION

The first chapter highlights the conceptual background of the problem and its statements, objectives and limitations of the study. A review of the related literature, design of the study, analysis and interpretation of the data and summary of the results are dealt in succeeding chapters.



*Review of Related
Literature*

“We don’t inherit the earth from our
ancestors, we borrow it from our children.”
-David Brower.



CHAPTER 2

REVIEW OF RELATED LITERATURE

“The review of literature is the use of ideas in literature to justify the particular approach to the topic, the selection of methods and demonstration that this research contributes something new.” **Hart (1998)**

2.1 INTRODUCTION

This chapter contains the research studies and general literature related to the present research problem. ‘John Dewey’ and other educational philosophers have accepted it as an important scientific method. The survey of related studies implies locating, studying and evaluating reports of relevant researches, study of published articles, going through related positions of encyclopedias and research abstracts, study of pertinent pages out of comprehensive books on the subject and going through related manuscripts if any. For the worthwhile study in any field of knowledge, the research worker needs an adequate familiarity with the work which has already been done in the area of his choices. **Dr. S.N. Dhandiyal** and **Dr. A.B. Phalak** (1972) wrote about surveying the related literature that reobservation of whole literature related to the problem is the primary base of the research and is an important factor at the determination of qualitative level of research.

It provides and understanding in the status of research of the problem, it also gives clues to the procedure of data analysis and estimate probability of success of the contemplated research.

By studying related literature, one learns which procedures and instruments have proved to be useful and which seems less promising. Both success and failure of the past work provide insight for designing one’s own study. This is what **John Best** also says– “The research for reference material is a time consuming but a fruitful phase of graduate programmes. A familiarity with literature in problem helps the students to discover what is already known, what others have attempted to find out, what methods of attack have been promising or disappointing and what problems remain to be solved.”

2.2 MEANING OF REVIEW OF LITERATURE

The phrase “Review of literature consists of two words- Review and literature. As the word literature has conveyed different meanings from the traditional meaning, it includes a subject content, prose, poetry, Dramas, Novels etc. Here in research methodology, the terms “Literature refers to the knowledge of particular areas of investigation of discipline which includes theoretical practical and its research studies.

The term ‘review’ means to organize the knowledge of specific area of research to involve an edifice of knowledge to show that his study would be an addition to this field. The task of Review of Literature is highly creative and tedious because researcher has to systematize the available knowledge of the field in a unique way to provide the rational for this study.

Two major types of review of related literature are

- A. **Conceptual literature**– Contains literature coming from book, journals and other forms of materials, concerning or relevant to study, but are date free or non empirical materials coming from both foreign and local sources.
- B. **Research literature**– These are empirically based, like scientific paper, thesis and dissertations, both published and unpublished.

According to **Mould** (1989) the review of literature promotes a greater understanding of the problem and its crucial aspects. It also provides comparative data on the basis of which to evaluate and interpret the significance of one’s finding.

2.3 IMPORTANCE OF STUDYING THE RELATED LITERATURE

Unlike the other animals, a man builds upon accumulated and recorded knowledge of the past. So survey of related literature is an essential requisite to actual planning and execution of any research project. It is like surveying the aim and gauging the distance first and to formulate a plan. It helps the investigator in avoiding, duplication on one hand and in getting benefit from similar studies on the other hand, for all these reasons, a research worker has to go through the available relevant literature before they actually continue their own work of research.

Importance of Review of Related literature

- a. It gives researcher several ideas on how to select and formulate his own research problem.
- b. It helps the researcher to identify the studies that have been done related to the topic he/she is interested in.
- c. It avoids possible duplication of similar studies.
- d. It guides the researcher on the possible theoretical frame work he can use for his current study
- e. It allows researcher to browse several kinds of research designs, sampling techniques, statistical procedures, questionnaires and processes of presenting, analyzing and interpreting data, from where he could base his own choice for his study.
- f. It gives a picture of a comparative analysis between variables used in reviewed materials and those used in the current study.

M clements Johnsons says “the research reports enable teachers, administrators and others to seek abreast of current findings and improvements relating to education. If educators are to achieve benefits from research, they should be able to read research intelligently”.

For any worthwhile study in any field of knowledge, the researcher needs an adequate familiarity with the work, which has already been done in the area of his choice. It helps researchers to find what is already known, what is still unknown what methods or works have been useful or useless to him/her. It enables him to know the means of getting to the frontiers in the field of his research.

2.4 CLASSIFICATION OF RELATED LITERATURE

A careful review of the related literature for the present study are classified and presented as below:-

- (i) Studies done in India
- (ii) Studies done in Abroad

2.4.1 STUDIES DONE IN INDIA

Rajput, J.S. (1988) carried out a research study for identification of teaching skills and training strategies for implementing the environmental approach at the primary level. The **objectives** of the study were:

- To produce integrated material for Environmental Studies I (Social Studies) and Environmental Studies II (Science) for classes III to V.
- To develop a strategy for teaching environmental studies I and II in classes III and IV through the environmental approach and to test the relative efficacy of the developed strategies in relation to the methods being used, for realization of the objectives of primary education and
- To identify teaching skills for the teaching through the environmental approach.

Major findings

- The mean scores of environmental awareness for the experimental and the control groups at per-test level indicated that out of fourteen comparison groups in seven schools, nine groups had no significant difference, and the remaining five groups had a significant difference as a result of the treatment.
- The results of comparison between the groups and within the groups indicated that out of fourteen groups, five groups had no significant differences in both the cases.
- The significant differences obtained in groups did not follow any uniform pattern.

Devi and Sushila, A. (1990) carried out a critical study of the environmental curriculum in Andhra Pradesh. The major **objectives** of the study were:

- To content-analyze the environmental studies curricula of Grades I-V in terms of stated curriculum
- To assess how for the curricula were suited to the needs and interests of the learners
- To assess whether the curricula had any provisions for gifted learners, and
- To investigate the reactions of science teachers to a need based curriculum.

Major findings of the study revealed that:

- The environmental studies curricula did not cater to the essential needs of the learners for whom they were meant.
- The EVS curricula did not introduce children to the desired scientific skills and attitudes.
- The prescribed curricula did not adequately reflect the stated curriculum objectives,
- The Investigator highlighted that environmental education curricula in order to be more effective, should be comprehensive, sequential and full of experiences that link children's school based learning with their environment and the universe.

Praharaj, B. (1991) in a study attempted to explore the level of environmental knowledge, environmental attitude and perception regarding environmental education among pre-service and in-service secondary school teachers. The major **findings** of this study were

- The level of environmental knowledge was found to be low among pre service teachers although conceptual knowledge was moderate,
- Among the in-service teachers, environmental knowledge was moderate and factual knowledge about the environment was low,
- Both the groups differed significantly in their level of environment knowledge.

Dubey A. and Bishnu C. S. (1998) conducted a study on environmental awareness among women. The **objective** of the study was to study the influence of the residential background, educational status and their interaction on environmental awareness among women. The sample consisted of 100 women of different age groups and educational qualifications and they were from both rural and urban areas. The environmental awareness test developed by the investigator was used as a tool. The major **findings** of the study revealed that the environmental awareness of urban women was significantly higher than the environmental awareness of rural women and the environmental awareness of educated women were significantly higher than the uneducated women.

Dinakara (2000) conducted a study on environmental awareness, attitude and teaching practices of elementary school teachers of Mysore District and the study **revealed** that:

- There was significant difference between urban and rural school teachers in their environmental awareness and environmental attitude. Urban school teachers were superior than rural school teachers in their environmental awareness and environmental attitude.
- There was no significant difference between urban/rural school teachers in their teaching practices.
- There was no relationship between environmental attitude and classroom practices.
- There was no significant difference between (i) the urban and rural school teachers and (ii) Government and private school teachers in their classroom practice.
- There was no significant difference between government and private school teachers in their environmental attitude.
- There was significant difference between government and private school teachers in their environmental awareness. Private school teachers had higher environmental awareness than government school teachers.
- There was a considerable relationship between environmental awareness and environmental attitude.

Mercy Abraham (2000) conducted a study on Environmental Attitude and Pro-environmental Behaviour among secondary school children of Kerala. The following are the major conclusions of the study:

- Gender difference and rural / urban difference was noticed with respect to the environmental attitude of secondary school children towards environment; boys possess better attitude than girls, urban subject's posse's better attitude than rural subjects.
- There is no significant difference between boys and girls; rural and urban students in their pro-environmental behaviour.
- There exist low, but positive significant correlation between environmental attitude and pro-environmental behaviour of the total sample and two sub-

samples, viz., girls and rural subjects of the secondary school children; whereas the degree of relationship was found to be positive and substantial in the sub- samples of boys and urban students.

- There is a significant difference between boys and girls in the degree of relationship between the environmental attitude and pro-environmental behaviour; the relationship being more visible in boys.
- Rural and urban subjects do not differ significantly with regard to the relationship between environmental attitude and pro-environmental behaviour.

Tripathi (2000) study entitled as Comparative Study of Environmental Awareness of Students Studying in Central Schools and Other Schools at 10+ level in Uttar Pradesh, **revealed** that

- The difference between boys and girls students of central schools was found to be significant with respect to their environmental awareness. Boy students were found significantly higher than girl students.
- There was significant difference between environmental awareness of science and arts students of central schools. Arts students were found significantly higher than science students with respect to their environmental awareness.
- There was no significant difference between the students studying in central schools and other schools having same syllabus.
- There was no significant difference in environmental awareness between the students studying in central schools and other schools having different syllabus.

Shaila (2003) conducted a study on effect of background variables on the environmental attitude of secondary school teachers in Bangalore city.

The study **revealed** that

- There is no significant difference in the environmental attitude of male and female, science and arts, rural and urban, married and unmarried secondary school teachers.
- There is no significant difference in the environmental attitude of teachers

belonging to different types of school management, dropout size of secondary schools, joint and nuclear families and different size of families.

- There is a significant difference in the environmental attitude of senior and junior secondary school teachers; junior teachers have more favorable attitude.
- There is a significant difference in the environmental attitude of secondary school teachers who belong to high and low socio-economic status (SES) levels.

Chethana's (2003) study on effect of background variables on the environmental attitude of 9th standard students in Bangarpet and KGF areas and found the following points.

- There is a significant relationship between socio-economic status and environmental attitude.
- There is no significant difference between the background variable such as locality, sex, type of school management each separately and environmental attitude of 9th standard students.
- Different level of socio-economic status does not account for significant difference in the environmental attitude of 9th standard students.

Shobeiri S.M (2005) conducted a comparative study on Environmental Awareness and Environmental Attitude of teachers and students of Secondary schools in India and Iran. A part of this sample is of IX and X standard students of secondary schools in Mysore (India) and Tehran (Iran).

His study revealed that

- In both the countries gender and academic qualification and area of specialization had influence on Environmental Attitude of teachers. In both the countries female teachers showed better Environmental Attitude than male teachers and teachers with master degrees had better Environmental Attitude than other teachers with lower levels of education as well as science teachers exhibited better Environmental Attitude than art teachers.
- In both the countries, type of school management and age and lengths of experience had no influence on Environmental Attitude of teachers.

- Indian teachers had higher levels of Environmental Attitude than Iranian teachers.
- Type of school management had influence on Environmental Attitude of students.
- Iranian government school students showed better Environmental Attitude than private school students. Whereas Indian private school students showed better Environmental Attitude than government school students.
- Gender had influence on Environmental Attitude of students. In both the countries girl students showed better Environmental Attitude than boy students.
- In both the countries students studying in X standard exhibited more favorable Environmental Attitude than IX standard students.
- Iranian students showed more favorable Environmental Attitude than Indian Students.

Sengupta, Madhumala. (2005) study on environmental awareness of environmentally active and passive students in relation to motivation and academic performance. (Ph.d Education, university of Kolkata)

Objective: identify environmentally active and passive students and their possible difference in respect of different variable and to predict environmental action.

Findings: science group students appear to be more active and so are the sub urban students.

- (i) No difference was found in environmental awareness and action due to gender and academic performance.
- (ii) The environmentally active and passive students differ in all level of motivation.

Arjunan, N.K. & Abraham, M. (2005) study on “environmental interest of secondary school students in relation to their environmental attitude” made use of a representative sample of 624 secondary school students of Kerala. The following are the major conclusions of the study.

- Only a small proportion of the secondary school students have high level of interest in environmental matters.
- Gender and locale (rural and urban) difference was noticed with respect to environmental interest of secondary school students, boys are more interested in environmental matters compared to girls and urban subjects having more interest in environmental matters compared to their rural counterparts.
- There existed high, positive and significant correlation between environmental interest and environmental attitude of the total sample as well as the subsamples based on gender and locale.

Dhillon and Sandhu (2005) conducted a study on environmental education awareness among elementary school teachers. A total sample of 1800 elementary school teachers was selected using stratified random sampling technique from five districts namely Amritsar, Jalandhar, Kapurthala, Nawanshahar and Gurdaspur. The important **conclusions** derived from this study are as follows: Male and female elementary school teachers showed no significant variation in environmental education awareness, thereby highlighting that sex was not the factor affecting environmental education awareness among the school teachers. The subject specialization of the school teachers also showed significant variation in environmental education awareness. Science teachers had significantly higher environmental education awareness than their social science and language counterparts.

William D. R., Selvam B. M. and Anto B. G. (2005) conducted a study on 'locale specific study on the environmental awareness of the prospective teachers' The **objective** of the study was to investigate the environmental awareness of the rural and urban teacher trainees in terms of their gender, age, educational qualification, type of school studies and marital status The sample of the study consisted of 360 teacher trainees (147 male and 213 female trainees) The 'environmental awareness ability measure' standardized by Praveen kumar Jha was used as a tool for the study. The major **findings** of the study revealed that in environmental awareness, the teacher trainees from both rural and urban areas had no significant difference between them in terms of the selected variables with an exception of the variables-age in urban area.

Dhawan, Rawat and Sharma (2005) conducted a study of Environmental Education in pre-service teacher education of Garhwal University. This study mainly purposed to compare the Environmental Knowledge, Awareness and Attitude of B.Ed. students of Garhwal University before and after the training and also to investigate the effectiveness of syllabus of Environmental Education in the B.Ed. Course of Garhwal University.

The **findings** of the study were:

- Pupil teachers before the training had less Environmental Knowledge, Awareness and Attitude as compared to the after training.
- Significant positive correlation was observed between the Environmental Knowledge and Awareness of pupil teachers before and after the training.
- There was moderate correlation between Environmental Knowledge and Environmental Attitude before as well as after the training.
- The correlation between Environmental Awareness and Attitude of pupil teachers was very low positive before the training and moderate positive after the training.

Sandhya Gihar (2006) conducted a study on environmental responsibility among students in relation to sex (male/ female), locality (rural/urban) and subject stream (science/arts/commerce). The sample of the study comprised of 300 secondary students. The major **finding** of this study revealed that the male students and the science student were having environmental responsible behaviour than their counterparts.

Rout and Agarwal (2006) conducted a study of environmental awareness and environmental attitude of students at high school level. The **objectives** of the study were: to know the environmental awareness and environmental attitude of the male and female students of science and non-science streams belonging to rural and urban backgrounds studying in class X of different schools of Moradabad city.

The **findings** of the study are:

- The students of science stream have more environmental awareness and

environmental attitude than the students of non-science stream.

- The students belonging to urban background are comparatively better in terms of their environmental awareness and environmental attitude as compared to the students belonging to rural background.
- The male and female students do not differ significantly in terms of their environmental awareness and environmental attitude.

Mathews and Diley (2006) conducted study on ‘environmental awareness and environmental attitude and intentional ecological behaviour among adolescents’ The study was conducted on students of XI and XII standard of Gorakhpur city in Gorakhpur District (U.P.) Two standardized psychological tests and one self-prepared checklist was used for the study. The major **objective** of this study was to analyze the attitude of boys and girls towards environment and their intentional ecological behaviour. The major **finding** of this study revealed that there was a high degree of relationship between environmental attitude and intentional ecological behaviour.

Mishra (2006) conducted a study on Environmental Awareness of secondary school students with reference to their intelligence and school background. The **objectives** of the study were:

- Effect of school background on environmental awareness of secondary school students,
- Effect of intelligence on environmental awareness of secondary school students,
- Interaction effect of school background and intelligence on environmental awareness of secondary school students.

The sample of the study consisted of 297, 10th grade students selected from 15 schools situated in 5 towns of Orissa. From each of the 5 towns, 3 schools, one each affiliated to three bodies i.e. BSE, Orissa, ICSE, New Delhi and CBSE, New Delhi were selected. The technique of random sampling was followed.

The **findings** of the study were

- The average level of awareness of all groups of secondary school students on the four aspects of environment included in the study viz., air, water, soil and

sound and also their overall environmental awareness is not encouraging.

- Intelligence has significant independent effect on the awareness of secondary school students on air, water and soil aspects of environment and on overall environment but not on sound aspect of environment.
- Secondary school students of average intelligence differ significantly in their awareness about air aspect of environment from the low intelligent as well as high intelligent students and they have better awareness.
- High intelligent secondary school students have significantly better awareness about water and soil aspects of environment than the low intelligence students.
- The secondary school students of low intelligent group have less awareness of environment as compared to both high intelligent and average intelligent groups.
- School background of secondary school students has significant independent effect on their awareness of air, water, soil and sound aspects of environment and also an overall environment.
- The students of the secondary schools pursuing the syllabi of CBSE, New Delhi have significantly better awareness on environment as compared to the students pursuing the syllabi of BSE, Orissa and ICSE, New Delhi.
- Intelligence and school background of secondary school students have significant interaction effect on their awareness on air, water, soil and sound aspects of environment and also on overall environmental awareness.

Kalplata Pandey (2007) conducted a study on ‘Inoculation of environmental value among teachers’. The **objective** of the study were to compare the environmental values among pre-service B.Ed. student teachers and in-service teachers teaching in schools as well as among primary school teachers teaching in school and among primary and secondary school teachers teaching in school. The sample of the study consisted of 150 pre-service B.Ed. student teachers of M.G.K Kashi Vidyapeeth Varanasi and 900 in-service teachers teaching in government aided and private (recognized), primary (450teachers) and secondary (450 teachers) school of Varanasi. Values inherent in fundamental duties questionnaire for teachers prepared by the researcher was used as tool. The major **finding** were B.Ed. student teachers had more

environment value in comparison to the primary school teachers teaching in aided schools and the secondary school teachers teaching in government school. Government primary school teachers had more environmental value than the government secondary school teachers.

Kumar and Patil (2007) conducted a study on influence of environmental education on environmental attitude of the postgraduate students. The sample for the study comprised of 120 students studying in Post-Graduation Departments of Karnataka University, Dharwad. The experimental group comprised of 60 students studying environmental course in their respective departments. These students had a standard course on environmental pollution and related issues as a part of their course. In this course they were taught broadly different types of pollutions, causes for pollution, its influence on the physical and mental health of the masses, and strategies to overcome the problem of pollution. The environmental education students were drawn from the department of science such as Botany, Zoology and Geography. The non-environmental education students were drawn from the departments of arts such as Kannada, English and History. These students represented the control group and they had no standard environmental education course as a part of their course.

The **study revealed** that

- Standard Environmental Education course influences the attitude level of the students towards environmental pollution and related issues.
- There is no significant difference between male and female students in their attitude towards environmental pollution and related issues.

Mohini Agarwal (2007) conducted a study on ‘student teacher’s attitudes towards environmental education’. The **objective** of the study were to find out the difference in the attitudes of science student teachers and arts students teachers belonging to general, backward and scheduled caste of village and city origin towards environmental education. The study was conducted on student teachers of Mahatma Gandhi Kashi Vidyapeeth, Varanasi. ‘Environmental education attitude scale’ of Anurag Mishra was used a tool. The major **findings** were that there was no significant

difference between the student teachers of village and city origin and no significant differences between general, backward caste and rural and urban teachers.

Nidhi Srivastava (2007) conducted a study on ‘emotional intelligence in relation to achievement in environmental studies’. The **objectives** of the study were to find out relationship between emotional intelligence and achievement and to compare the emotional intelligence of high and low achievers in environmental studies, 77 students of ninth class from one institution of Allahabad city had been taken as a sample. Emotional intelligence questionnaire developed by K.S. Mishra had been used as a tool. The major **finding** were that there was significant difference in emotional intelligence of high and low achievers in environmental studies Emotionally intelligent students might be more emotionally stable and sensitive to their environmental issues than their less emotionally intelligent counterparts. This could facilitate their learning about the environment.

Suresh, S. and Kadhiravan, S. (2007) conducted a study on ‘Influence of personality on the environmental awareness ability of college students’ The study was conducted among 400 college students to find out relationship between environmental awareness ability and personality The **findings** of the study revealed that the gender of the students did not influence the environmental awareness, the urban students had shown higher environmental awareness than the rural students, children of the illiterate parents and the personality did not affect the environmental awareness of the students.

Singh, S.K. (2008) conducted a study on ‘Attitudes of Primary School Teachers towards Environmental Education’. The **objective** of the study was to ascertain the attitudes towards the environmental education of the Government and Private Primary school teachers. The sample of the study consisted of 500 teachers from primary schools of Imphal East and Imphal West districts of Manipur. The Attitude scale of Environmental Education’, prepared by the investigator was used as the tool for the study. The **findings** of the study revealed that there was significant difference in the attitude towards environmental education between Government and Private School teachers.

Pathak, V., Tripathi, B.D. & Mishra, V. K. (2008). Evaluation of traffic noise pollution and attitudes of exposed individuals in working place, *Atmospheric Environment; Vol. 42 Issue 16*, pp. 3892-3898.

The main **objective** of this paper is to evaluate the noise pollution problem in the Varanasi city and its effect on the exposed people. The study **revealed** the fact that noise levels have reached an alarming level. The result of the study indicated the fact that 85% of the people were disturbed by traffic noise, about 90% of the people reported that traffic noise is the main cause of headache, high BP problem, dizziness, and fatigue. People having higher education and income level are much aware of the health impact due to traffic noise. Marital status was found to be significantly affecting the annoyance level caused by traffic noise. Traffic noise was found to be interfering daily activities such as at resting, reading, communication etc.

Sandhya G. and Manoj K. S., (2008) conducted a study on 'Level of Awareness of Environmental pollution among Rural and Urban women and Educational Implications'. The **objectives** of the study were to survey and compare the level of awareness about environmental pollution among rural and urban women and explore their educational implications. The sample of the study consisted of 124 women (56 rural women and 68 urban women) of Ghaziabad district of U.P State purposive sampling was used. The 'Environmental Awareness scale' developed and standardized by Gihar, kukreti and shah (2002) was used as a tool for the present study. The major **finding** of the study revealed that the awareness of environmental pollution among rural women was lower than that of the urban women.

Chatterjee, Deba Prashad (2008). Oriental Disadvantage versus Occidental Exuberance: Appraising Environmental Concern in India— A Case Study in a Local Context, *International Sociology; Vol. 23 Issue 1*, pp. 5-33.

This exploratory study is an attempt to appraise concern for environmental pollution in India, in a local context. Taking into account a possible East-West difference in conceptualizing environmental concern, it attempts to understand the role of different socio-demographic variables in predicting 'environmental concern' in an Indian context. The much exercised HEP-NEP distinction developed in the West

seems inappropriate in the Indian context due to wide differences in traditions and the dominant worldviews. Collecting data from a purposive household survey of 375 respondents, an understanding of major socio-demographic determinants of environmental concern using correlation and multivariate regression analysis has been attempted. The findings are also compared with results from other studies in the West on the whole along with the Health of the Planet (HOP) Survey, 1993 findings on 'Willingness to Pay' for India, in particular. The study exhibits a significant positive association of environmental concern with residence, education and income, supporting social class analysis based on a post materialism thesis. While age fails to show any significant influence, 'caste', a traditional Indian institution, reflects a positive association supporting the elitist bias hypothesis of environmental concern. The study emphasizes the need for further empirical explorations in this regard in order to examine environmental concern in India in a more effective way.

Jagannath K. D. (2008) conducted a study on 'Effectiveness of computer Assisted Instruction in the Development of Environmental Awareness and Environmental Attitude' the **objectives** of the study were to find out the effectiveness of CAI in development of environmental awareness and environmental attitude. The sample of the study consisted of 30 students (16 boys, 14 girls) of VIII standard in an English medium school of Gulbarga district from rural and urban area. The 'Environmental Awareness Scale' developed by Haseen Taj was used as a tool for the study. The major **findings** of the study revealed that there had been development of environmental awareness and there was improvement in environmental attitudes among the students after the CAI treatment.

Singh, A.P. (2008). Community Participation and Environment: A Symbiotic Interrelation, *The ICFAI Journal of Environmental Law*, Vol. VII, 14 No. 1, pp. 11-26.

The realization on part of the State and Central Government in India that indigenous knowledge and skill of local community plays a pivotal role in understanding the effective management of natural resources though later has paved way for seeking participation of locals in its policy and decision-making process related to the environment. The author in this article highlights the fact that community participation initiatives on earlier occasions had failed due to improper

communication on part of policy makers, and at times due to misconceptions on part of local beneficiaries. Hence, the article is an attempt to identify the lacunae's on part of States and Centre in involving the local community in its decision-making process. The author examines the evolution of this symbiotic relationship between indigenous community and conservation of environment in five different sections beginning with pre-colonial, colonial and post-colonial period and goes on to suggest that creating awareness through environment education is the need of the hour in enhancing the community participation.

Heinen, J. & Shrivastava, R. (2009). An analysis of conservation attitudes and awareness around Kaziranga National Park, Assam, India: implications for conservation and development.

Kaziranga National Park and World Heritage Site, Assam, India, situated in a region with a large and diverse human population was recently expanded due to its global importance for the conservation of many endangered species. Here, they develop detailed demographic and socio-economic profiles of residents around Kaziranga to study conservation attitudes and awareness using a semi-structured survey of 590 households in 37 villages. **Results** show high variation in attitudes and awareness as a function of ethno-religious group, educational level, and socio-economic and immigration status, indicating more and different needs for economic interventions within some communities than others. They found a high degree of conservation awareness, but most people expressed negative conservation attitudes and almost all lost crops to wildlife. They highlight the complexity of conflict in the area and present a basis for electing a microsite planning approach for conservation and development in areas characterized by high ethnic diversity, high human population densities, and land-dependent large mammals that pose economic risks. The findings imply that highly localized development schemes and participatory approaches to resource management at the village level, coupled with greater efforts at education, are especially needed to achieve conservation and development goals in such cases.

Robert, N. S. (2009). Impacts of the National Green Corps Program (Eco-Clubs) on students in India and their participation in environmental education

activities, *Environmental Education Research*; Vol. 15 Issue 4, pp. 443-464.

India's National Green Corps (NGC) Eco-Clubs are a unique opportunity to educate youth about environmental issues. NGC objectives include: (1) educate children about their immediate environment by increasing awareness; (2) impart knowledge about eco-systems, their interdependence and need for survival, through visits and demonstrations; (3) mobilize youth by instilling a spirit of scientific inquiry into environmental problems; and (4) involve youth in active environmental preservation efforts. In 2005-2006, Eco-Clubs existed in nearly 68, 000 schools across India representing 150 Eco-Clubs per district. During the 2007-2008 school year, the number of Eco-Clubs increased to approximately 97, 000 in 519 districts. The purpose of the study reported here was to document and evaluate the effectiveness of Eco-Clubs and assess their organizational framework. An extensive document review of secondary data was employed and focus group interviews were conducted in two locations. Findings show that the partnership programs developed by schools with non-governmental organizations to propel the Eco-Club concept forward have contributed greatly to their ability to provide ongoing, quality programs for students. Recommendations include directing different agencies to work cohesively towards program success, clarifying the future NGC vision, and addressing existing operational shortcomings.

Budruk, M., Thomas. H., & Tyrrell, T. (2009). Urban Green Spaces: A Study of Place Attachment and Environmental Attitudes in India, *Journal of Society and Natural Resources*, Vol. 22, pp. 824-839.

This study **explored** the effect of place attachment on environmental attitudes among urban green space users in India. Data were collected via an on-site survey administered in March 2006. Among the English-speaking sub sample (n=219; adjusted response rate 87.6%), respondents had moderate levels of place identity and place dependence and exhibited a tendency toward pro-environmental attitudes. Additionally, stronger place identity was significantly associated with greater agreement regarding the balance between humans and nature as well as with weaker support for the domination of humans over nature. No significant relationships between place identity and ecological limits or place dependence and environmental

attitudes emerged. **Results** suggest emotional connections with places contribute toward pro-environmental attitudes. Enhancing such connections is therefore, likely to lead to increased environmental care and concern.

Sengupta, M. Debasri B. and Pintu K.M., (2009) conducted a study on 'Effect of sight and gender on environmental awareness and pro-environmental behaviour, among school students' The objective of the study was to find out the effect of sightedness and gender on the scores of environmental awareness and pro-environmental behaviour of the students. The sample of the study consisted of 97 students (50 normally sighted and 47 visually impaired) belonging to secondary stage of education in the state of west Bengal, India. The major findings of the study revealed that the two groups did not differ in environmental awareness and pro-environmental behaviour. The degree of relationship between the environmental awareness and pro-environmental behavior scores in the context of sightedness and gender was also found to be insignificant, thus the sense of sight of the gender does not have impact on the environmentalist.

Majra, J.P, & Gur, A. (2010). School Environment and Sanitation in Rural India, *Journal of Global Infectious Diseases, Vol. 2, No. 2, pp. 109-111.*

To purpose of study was to assess the status of school environment and sanitation in rural India. This was a cross sectional study where twenty schools were randomly selected. A pre tested close-ended questionnaire was used to get the information. The minimum standards for sanitation of the school and its environment in India were used as the guiding principles to evaluate the appropriateness/ adequacy of the various attributes. The Statistical analysis used was percentages and proportions and the result obtained indicated that out of 20 schools selected, one fourth of the schools were located/ sited at inappropriate places. Only half of the schools had appropriate/ adequate structure. Eighteen (90%) of the schools were overcrowded. Ventilation and day light was adequate for 12 (60%) and 14 (70%) of the schools respectively. Cleanliness of school compound/classrooms was adequate in 80% of the schools. There were no separate rooms for serving the midday meals in any of the schools under study. Eighteen (90%) of the schools were having drinking water points.

Liquid and solid waste disposal was unsanitary in six (30%) and eight (40%) of the schools respectively. Only half of the schools had adequate latrines for boys and 60% for girls. Only two (10%) of the schools had adequate hand washing points with soap.

Dave Deeksha (2010)

Her study focuses on comparison of environmental sensitive behavior and sensitivity on general awareness of undergraduate students of Udaipur city and Gautambuddh Nagar who have studied the basic course on environmental studies. The study concluded that Sex and level of education would improve the level of awareness and attitude regarding to environmental issues. It is concluded that since environmental knowledge do not always influences awareness and behavioral intentions, a national strategy is needed for environmental education in higher education, and current curricula should be reconsidered in terms of effectiveness.

Sivakumar, R. (2010) conduct a study on ‘Audio’ Cassette in teaching Environmental Education. The objective of the study was to find out the effectiveness of Audio Cassette over the traditional method in teaching environmental education. The sample consisted of 80 students of IX standard. A well developed and standardized Audio Cassette was used by the investigator. Post-test materials were prepared and validated by the investigator. The Major findings of the study revealed that experimental method of teaching (using Audio Cassette) was more effective than the traditional method of teaching the topics of environmental education.

S. Prakash (2011) A content analysis of environmental education textbooks of primary stage in schools of Rajasthan. **Study revealed** that the text books have not reached the additive stage including key themes and issues as they lack enough important concepts, the study also revealed that the textbooks are not only falling short of themes and subthemes coverage but the way they are presented need refinement in terms of presentation of diagrams, number of examples, nature of content and domain wise distribution of questions in exercise book.

Leela Ganalet. S. (2012) study the Environmental awareness, attitude and behavior of secondary and higher secondary students in Tamil Nadu. The objective of

the study is to explore the level of Environmental Awareness, Environmental Attitude and Environmental behavior with regards to religion, socioeconomic status, and community and findings revealed that:

- There is no significant difference between socioeconomic status with regard to Environmental Awareness, Environmental attitude and significant difference with regard to Environmental Behaviour.
- The Christian students differ with Hindu and Muslim students with regard to Environmental Attitude and Environmental Behaviour and not differ with regard to Environmental Awareness.
- There is significant difference between community with regard to Environmental Awareness, Environmental Attitude and Environmental behavior.
- There is significant correlation between Environmental Awareness, Environmental Attitude and Environmental behavior.

Singhal A and Verma U (2012) Presents an article in Indian Journal of environmental education in April 2012. Their study measured environmental awareness among higher secondary students of Jabalpur, by standard tool (environmental Awareness Ability measure by Jha 1998.) and the **result revealed** that level of environmental awareness was high in most students of disciplines without gender difference. The students of humanities showed minimum awareness; biology or mathematics showed the maximum environmental awareness, which followed the order of mathematics > Biology > commerce > Humanities. The students of central board were better aware than those of state Board.

Gosh. Kumud. (2013) A comparative study on environmental awareness among Assamese and English medium school teachers and students in Jorhat district of Assam and their attitude towards environmental education. The **objective** of the study is:

- To study the influence of settlement, educational qualification, and teaching experience and their interaction on environmental awareness and environmental attitude towards environmental education on Assamese and English medium sec. school teachers of Jorhat district in Assam.

- To study the influence of settlement, academic achievement, and socioeconomic status and their interaction on environmental awareness and environmental attitude towards environmental education on Assamese and English medium sec. school students of Jorhat district in Assam.

The finding revealed that:

- Experience does not influence the environmental awareness and environmental attitude of teachers of Assamese and English medium se. sec. schools of Jorhat dist. Assam
- Educational qualification influence the environmental awareness and environmental attitude of teachers of Assamese and English medium sr. sec. schools of Jorhat dist. Assam
- Settlement does not influence the environmental awareness and environmental attitude of teachers of Assamese and English medium sr. sec. schools of Jorhat dist. Assam
- Reveals that interaction effect between these variables on environmental awareness and attitude of se.sec school teachers are insignificant.
- Socioeconomic status does not influence the environmental awareness and environmental attitude of sr.sec students of Assamese and English medium schools of Jorhat dist. Assam
- Academic achievement influences the environmental awareness and environmental attitude of sr.sec. Students of Assamese and English medium schools of Jorhat dist. Assam
- Settlement does not influence the environmental awareness and environmental attitude of sr.sec. Students of Assamese and English medium schools of Jorhat dist. Assam
- Reveals that interaction effect between the above variables on environmental awareness and attitude of students are insignificant.

2.4.2 STUDIES DONE IN ABROAD

Cartes and Leticia Pojun (1986) inquired into the knowledge comprehension responsibility and interest of secondary school student and teachers about local conditions, natural process and environmental issued and problems as a means of measuring their environmental issues and problems as a means of measuring their environmental consciousness. Some of the **major findings** of the study were as follows:

- The majority of the students were aware of pollution pesticides, typhoons, dams and volcanic areas.
- The student's environmental values were not consistent.
- The high section students were not as interested in learning more about the environment as the low section student.
- The student has difficulty making scientifically correct cause-consequences relationship.
- The teacher knowledge comprehension responsibility and interest were significantly affected by community but not by school and subjects taught.
- The teachers were aware of many events of their environment but could not explain many of them.
- The teacher's environmental values are inconsistent. The teachers were interested in learning about energy, population dynamics, conservation and recycling.

Biddle and Barbara A (1988) carried out a study on the status of environmental education in Taxes Public Schools. If concern for the environmental is to become part of each individual's series of responsibility, the task is to educate people towards environmental awareness' said Biddle (1988). The intent of such education would be help to individuals become capable of responsible judgment about environmental issues which will have long – term applications. The study by Biddle investigated the factors required to develop and implement an environmental education (EE) component in the Taxes public schools curriculum. **Result** indicates that in Taxes. Programs have been implemented by placing selected environmental topics in existing curriculum offerings. Assistance most needed is the identification

of available materials, trained personnel and clearly identified facilities and curricula. Moreover the integration of environmental education must be supported by policy commitment from school personal who recognize environmental education as basis academic information.

Ming Ching (1993) investigates the status of environmental education in elementary schools in eastern Taiwan as perceived by elementary school teachers. A questionnaire was developed by the researcher and administered to six hundred and eighty-six teachers who selected for eighty-four elementary school in Lian, Hualien and Taitung in eastern Taiwan through the stratified random sampling method. Among the returned questionnaires, four hundred and ninety four (Seventy-two present) were complete. The validity and reliability of the questionnaire were established. The major **findings** of the study were

- Approximately one-third of the respondents had attended in-service programs.
- Environmental Education (EE) should be a required part of the elementary school curricula and environmental education content should be incorporated into all school subjects.
- Outdoor education, audio-visual presentations, and inquiry (discovery) approaches were perceived by the teachers as the most important instructional strategies for effective environmental education teaching.
- Most of the teachers perceived the specific environmental education teaching material or resources as important in supporting environmental education teaching, for example, audio-visual equipment; outdoor open areas; on-campus outdoor site resources; newspapers, magazines and journals, museums, zoos and parks, teacher's guide; laboratory facilities; and field equipment.
- Teachers expressed positive attitudes towards teaching environmental education.
- If possible, environmental education and environmental studies should be listed as required courses in teacher preparation programs.
- The major difficulties which teachers perceived concerning the implementation of environmental education were the lack of appropriate

instructional materials; appropriate indoor facilities, in-service opportunities; preparation time, funding, outdoor facilities and learning sites.

Derrah and Richard Floyd (1994) carried out a study to assess the status of environmental education in the secondary schools of the state of Maine. The following **inferences** were at the end of the study.

- Environmental educators believe there is a considerable discrepancy between the desired status of environmental education and the existing status.
- Environmental education should be taught include more problem solving and community action techniques with less emphasis on environmental knowledge awareness.
- More teachers training are necessary both as pre-service and in – service courses in environmental education.
- Money, teacher, time priority and guidelines are the major barriers to teaching environmental education.

Emmons and Katherine M (1994) performed a case study in Belize (Central America). The study tested a proposed model of environmental education to explore the inter – relationship of five environmental education areas (grasp of concepts sensitivity and attitudes action skills and procedures, empowerment and ownership and recreation) and their combined effect on positive environmental action. There were two forms of the model, a “facit” or less intense instruction and an “explicit” or more intense instruction. Both programs form a concentration on positive environmental action in the form of an action project, and for an emphasis on outdoor experiences. Both programs effectively combined elements of recreation to the activities which helped to make the experience a positive one for students. The study concluded with the finding that students develop as they take action, adopt and change as new information, values and skills are acquired.

Li and Huey-Li (1995) in a study, analyzed the concepts of intergenerational equality global economic justice, and the unity of humans and nature, which signify the convergence of rhetoric and ethics in the discourse of sustainable development. The study found that environmental ethics cannot be separated from inter-human

ethics as school education has a significant impact on the cultivation of moral character it is important to recognize and respect students as moral agents in the context of environmental education.

Nelson and William, A. (1996) carried out a study to identify changes in the environmental literacy of sixth grade students who attended the residential outdoor education program. Environmental literacy was measured using 'The Children Attitudes toward the Environment Scale (CATES)' developed by Lynn M. Musser and Amy J Malkus. The study population consisted of four hundred and twenty-nine sixth grade elementary school students from the Orange Country area of California. Data were analyzed using the Mann-Whitney Two Sample Test, Kruskal Wallis Analysis of Variance and Chi-square statistical procedures. The study revealed that students who attended the programme showed significant score increases on affective, cognitive and to some degree, behavioural items. These increases did not appear to be influenced by gender and ethnicity.

Uliana and Karla A (1996) investigated a community environmental education programme called neighborhood green up program. The study focused on the projects which took place in the city of Guelph between January and June 1994, Semi – structured in depth interviews were used to gather information form twenty participants and three program designers and implementer. At the end of the study the Neighborhood Green up program was perceived to be successful in inducing individual behavioural change.

Greene et al. (2000) conducted a study on environmental attitude, knowledge and behaviours of Missouri 6th and 12th grade students. The Missouri Department of Conservation (MDC) produces various environmental materials for preschool, elementary and secondary students and sponsors, outdoor education programs. An MDC-sponsored survey of students in grades 6 and 12 found moderate levels of environmental knowledge, with weaknesses in the areas of biodiversity, wet lands, and prairies. Feelings of responsibility for the environment were related to student participation.

CEDARE (2000) has sponsored in cooperation with the League of Arab States and the Arab League Educational, Cultural and Scientific Organization (ALECSO), a study on Arab Environmental Education survey for University students, to assess the perception of students towards environmental problem and their level of awareness. The questionnaire covered diverse issue ranging from noise and air pollution to environmental protection, and biodiversity. Responses were received from Egypt, Oman, Saudi Arabia, Syria and Yemen covering in total 490 questionnaire sheets. The total average **response** to the questionnaire by gender reflected a higher participation by males (62%) compared to female (34%). Nevertheless, the gender analysis indicated adjoining perceptions and similarities in the level of awareness between males and females in Egypt, Oman, Saudi Arabia, Syria and Yemen.

Badkobi, et al. (2001) conducted a study on Assessment of Primary School Teachers Educational Condition in Different Zones of Tehran Municipality in Environmental subjects and the ways of elevating their awareness. The study

Revealed that the:

- Male teachers have more awareness about environment.
- Level of environmental awareness of science teachers is more than that of other subject teachers.
- Level of environmental awareness of teachers is enhanced with increasing their education level.

Hadipour and Shokravi (2002) study on the public level of environmental awareness and methods of environmental education for housewives and women teachers in the elementary schools of Arak city indicated the necessity of environmental education and revealed a basic weakness in information dissemination. It was found that lack of information and awareness is the vital factor for creating and increasing of environmental problems. More than one-third of teachers are of the opinion that viewing training films and holding training class for students are the most effective methods in environmental education. Lack of sufficient training and proper organizing are the outstanding reasons for the unsatisfactory levels of official organizational activities. In explaining its findings, the research presents suggestions

for increasing environmental awareness.

Sheikh-Khatibi (2002) conducted a study on environmental education to citizens or creating motivation and self-awareness through their participation in local-public activities. Until environmental education in large cities depends on direct training, it will fail to attract citizen's cooperation and also create other negative effects. Encouraging local people to solve their environmental problems in the immediate vicinity would prove very effective. They understand their local situation better and their motivation and participation is stronger; given this level of incentive, their awareness can be raised if proper participatory conditions exist. Research has been conducted in one section in District 2 of Tehran Municipality. Four residential high-rises were covered and considered a study module that housed 712 families. Statistical methods were used to evaluate the buildings' management effectiveness and the impact of public participation in improving management. The results indicated that the following factors hindered the tenants from effectively cooperating with management:

- Personal and individual problems.
- Management difficulties and
- A lack of equipment and facilities to promote a resident –management working relationship.

In this survey, the third element was recognized as the most important factor. It eclipsed the two other factors while negating other choices for successful collaboration between residents and management. These choices included:

- Increasing awareness through neighbours exchanging experiences.
- Creating incentive for participation in residents.
- Increasing their self-awareness at the least expense.

Karimi (2003) carried out a survey study on environmental education needs for students, teachers and housewives in the Khak Sefid district of Tehran. In this **survey**, the degree of awareness of three groups of different social classes of people in this district have been studied and measured by using the Kaufman, Currigan and Johnson's model of needs assessment. **Results** of the research showed that the consciousness of the average housewife on environment issues was very limited. The

relative knowledge of teachers and students on the general concept of environment was greater. In each of the three groups, most of the individuals interviewed were eager to learn more about environmental issues. Yet, very few were willing to pay the cost for such training. Finally, the survey proposed needed training program and appropriate training styles of each group.

Johnson et al. (2003) conducted a study on zoo school for pre-schoolers. Laying the foundation for environmental education in US, Florida, the traditional approach to education in zoo settings operated under the premise that meaningful learning and improved attitudes toward environmental education would occur by simply exposing children to wild animals. This study was a preliminary evaluation of an innovative environmental education program at a medium-sized Florida zoo. The study **explored** the extent to which one of the programs, the Tots program, facilitated the learning of basic environmental education and awareness among preschoolers. The goal of the Tots program is to provide interactive, hands-on learning opportunities for preschoolers in the zoo environment while building child-adult relationships, a mandatory feature of the Tots program is the presence and involvement of parents/guardians during all activities. Activities included circle time, crafts, time in an investigative playroom, and zoo exhibit visits. Observation of the program's activities, along with interviews of the stakeholders, revealed that the Tots program allowed the children to develop knowledge about animals and environmental awareness in a safe environment while fostering the development of social skills.

Loughland et al. (2003) study on factors influencing young people's conceptions of environment in Australia explained the importance of environmental education in schools for achieving environmental protection and improvement; statistically examined the factors that incline students to a 'relation' rather than an 'object' conception of the environment; concluded that development of the former would seem to be an important aim of environmental education and indicates how this might be achieved.

Bartosh. Oksana (2003) studies that environmental education improving student's achievement in the Evergreen state College. He **concluded** that

environmental education can be one of the causes for EE School's success on the achievement test. Investigating environmental topics requires students to apply knowledge and skills from different subjects. Used as a basis for integration environmental education can allow for integration of math, science, language arts, social sciences and other subjects. In addition it asks students to become investigators and to search for the solutions to very multidimensional questions. By doing this student can develop the analytical, problem solving and critical thinking skills valuable in any traditional subjects & emphasize the correlation between student achievement and the role of environment education in the school.

Pruneau, Richard D., Langis J.F., J. Albert, G. and Cormier, M. (2005)

Performed a research on 'The evolution of children's idea on pollution in the frame work of experimental and socio-constructive activities' Samples for the study were nine and ten year old children. Tools used for the study include drawing and semi structural individual interviews were used to identify student's conceptions about pollution in September 2001 and then again in June 2002, following the pedagogical process. The research approach then followed describing the environmental situation of the village of cap- pele. The **finding** of the study revealed that nine and ten year old student conceived pollution as the presence of harmful garbage spotted with one's sense, thirteen and fourteen year olds were able to imagine pollution was invisible to the senses.

Ozden, M. (2008). Environmental Awareness and Attitudes of Student Teachers: An Empirical Research, *International Research in Geographical and Environmental Education Vol. 17, No. 1, pp. 40-55.*

The **purpose** of the study is to assess the awareness and attitudes of student teachers in Turkey. The relationship between the student teachers' attitudes and their gender, academic major, grade level, geographical region and socioeconomic status (level of family income, their parents' education level and occupation, residence) was evaluated with an instrument developed by the researcher. The present descriptive study was carried out at the University of Adiyaman in Turkey, Faculty of Education on 830 Subjects. A 30-item Likert-type questionnaire containing four dimensions

(awareness of environmental issues-AEI, awareness of individual responsibility-AIR, general attitudes towards environmental problems-GAEP and general attitudes towards environmental solutions-GAES) was developed to measure student teachers' environmental attitudes by the researcher. **Results** of T-test and ANOVA showed that the female elementary student teachers in the last year of an instruction programme who have less than three brothers and sisters with high socioeconomic level (student teachers' income level of family, father's job and education, mother's job, living residence) living in Marmara Region had more positive attitudes towards the four dimensions of environmental attitude than the other student teachers.

Guliz Karaarsian, Semra sungur and Hamid Ertepinas (2009) presented an article in international journal of environmental and science education, study in university of turkey their study **aims** in developing pre-service science teacher's self determined motivation towards environment. Before, after and five months following the environmental course activities guided by self determined theory. The **results** of the study illustrated that pre service science teacher's intrinsic motivation increased after the course activities, and suggest that their motivation towards environment was developed thorough out the environmental activities by self determination theory.

Hennie, Smit A.P. (2009). Shaping the Environmental Attitude of Military Geography Students at the South African Military Academy, *Journal of Geography in Higher Education; Vol. 33, No. 2, pp. 225–240.* Globally there is a growing environmental awareness among all segments of society, but research on the effect of environmental education in shaping the attitude of military students is lacking. Tertiary environmental education to officers of the South African Department of Defense is seated in the Department of Military Geography at the South African Military Academy. A structured questionnaire was used in 2002 and 2005 to determine whether a difference in attitude towards environmental issues between geography and non-geography students could be found at the South African Military Academy (Stellenbosch University). The military geography students outperformed their non-geography peers in both surveys.

Norizan Esa, (2010). Environmental knowledge, attitude, and practices of student teachers, *International Research in Geographical and Environmental Education, Vol. 19, No. 1, pp. 39–50.*

This study is a **survey** of the environmental knowledge, attitude, and practices of pre-service secondary teachers enrolled in an undergraduate Biology Teaching Methods course. The **results** suggest the readiness of these teachers to realize the goal of integrating Environmental Studies in the teaching of biology in schools. Results also indicate the need for more concerted effort in teacher education to prepare them for their role in educating for and about the environment.

Sadik, F. & Sari, M. (2010). Student Teacher's Attitudes towards Environmental problems and their Level of Environmental Knowledge. This study primarily **aims** to investigate primary school student teachers environmental knowledge, to find out their attitudes about environmental problems and to see whether their attitudes vary significantly depending on some variables. As data collection tools, the environmental Attitude Inventory and the Environmental Knowledge Test, adapted by Uzun and Sağlam (2006) The data were collected in the 2007–2008 academic year. Five hundred forty-two student teachers from Cukurova University, The Elementary Education Department participated in the study. For the analysis of the data, t-test and variance analysis were used.

The **results** based on the mean values showed that the Environmental Behaviour sub- scale was 37.63 and the Environmental Opinion sub-scale was 29.55. The total score of the Environmental Attitude Inventory was 67.19 and the total score of the Environmental Knowledge test was 17.08. According to the grade variable, the meaningful differences were found in favor of the fourth grade students at the Environmental Behaviour sub-scale and the Environmental Knowledge test. As for gender, the meaningful differences were found in favor of the female students in the Environmental Behaviour sub-scale and in favor of the male students in the Environmental Opinion sub-scale. As for taking the Environment Course or not, the differences among scores were found to be meaningful in favour of the student teachers who took this course at the Environmental Behaviour sub-scale.

Johnson, B. & Manoli, C. (2010). The 2-MEV Scale in the United States: A Measure of Children's Environmental Attitudes Based on the Theory of Ecological Attitude, *Journal of Environmental Education*; Vol. 42 Issue 2, pp. 84- 97. The Environmental (2-MEV) Scale questionnaire was developed in Europe to measure

adolescents' attitudes and gauge the effectiveness of educational programs. It also formed the basis for the Theory of Ecological Attitudes. In the present four-year study, the 2-MEV Scale was modified for use with 9-12-year-old children in the United States. Initial results led to wording revisions and elimination of some items. Confirmatory Factor Analyses indicated that the remaining items fit the Theory of Ecological Attitude well. The Revised 2-MEV Scale was able to measure statistically significant changes in the environmental attitudes of participants in earth education programs but not in a control group. The Revised ENV Scale can be used to evaluate programs and to investigate the relationship between environmental attitudes and other variables.

Lindemann M., Petra & Knecht, S. (2011). Swiss Elementary School Teachers' Attitudes Toward Forest Education, *Journal of Environmental Education*; Vol. 42 Issue 3, pp. 152-167.

This article **investigates** benefits and challenges of forest education in View of 257 Swiss elementary school teachers (1st-3rd grade), by means of a written questionnaire and 15 in-depth interviews. Two thirds of the teachers carried out forest education during normal lesson hours (mean visits = eight per year). Forests were clearly considered as an educational setting, and especially suitable for the enhancement of personal and social skills. Setting rules was seen as indispensable for successful forest education and a must to communicate to 'novice' teachers. Moreover, the didactic of forest education should be implemented in teacher education curricula.

Uitto, A., Juuti, K., Lavonen, J., Byman, R., & Meisalo, V. (2011). Secondary school students' interests, attitudes and values concerning school science related to environmental issues in Finland, *Environmental Education Research*; Vol. 17 Issue 2, pp. 167-186.

This paper **explores** the relationship between students' interests in environmental issues, attitudes to environmental responsibility and biocentric values in school science education. The factors were investigated within the framework of three moderators: gender, school and residential area of the school. The survey was carried out using the international ROSE questionnaire with ninth-grade student

(N = 3626) from 68 schools. Likert-type items were categorized with explorative factor analysis, and multivariate analysis of variance was used to study the importance of the moderators. There were significant correlations between the attitude and value factors. Interest and attitude were also significantly correlated, but the correlation between interest and value was negligible. Girls' attitude was significantly more positive and their biocentric value stronger than those of the boys, while in terms of interest, the gender difference was small. The effect of residential area was negligible, but there were significant differences between schools in all the factors studied. A school's own environmental projects and participation in programmes linked to environmental education or education for sustainable development was suggested to enhance students' interest in environmental issues. The role of interests, attitudes and values in teaching environmental issues are important fields for future research in science, environmental and sustainability education

Cinar, N., Altun, I., & Dede, C. (2011). Knowledge and Attitudes of University Students on Health Effects of Environmental Risk, *Journal of Society for development in new net environment in B&H*, Vol. 5, No. 1, pp.217-222.

The **purpose** of the study was to assess knowledge and attitudes on health effects of environmental risk of university students in the region of Kocaeli as an industrial city. A questionnaire was developed that focused on university students' knowledge and attitudes of environmental risk. The questionnaire was distributed randomly to university students in Kocaeli, and completed and returned anonymously. The highest rate (74.3%) of correct answers was obtained with the question about smoking "tobacco smoking is a risk factor for respiratory disease." The lowest rate of correct answers (30.1%) was obtained with the question "residential exposure to radon gas is a risk factor for lung cancer." When university students were asked to self-rate, "environmental risks and resulting threat to health," 59.1% of answers were indicating, "the most significant threat is water pollution," 15.2% of answers were indicating that "the lowest threat aspect is noise". School education on significant environmental risks is extremely needed for these university students in order to correct misconceptions, provide accurate information and to develop a positive attitude towards environmental risks.

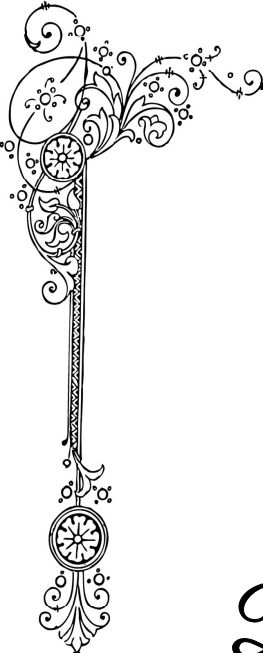
Omer Utku Erzenin and Emine Cetin Teke (2013)

Published an article on “A Study on developing an environmental Behaviour and attitude scale for university students” in WJEIS (Journal of education and instructional studies in the world).volume 3.

The study **concluded** that behaviour has concordance with habits, norms and attitude and there components of Attitude are cognitive, Affective and Behaviour, which shows that behaviour and attitude are concordance with each other and will increase proportionately. There are many behavioural studies that are beneficial for environment but their statistical results of attitude and behaviour are poor, therefore Incoherence or inconsistency of attitude and behaviour could be explained by individual unawareness of how to express attitude.

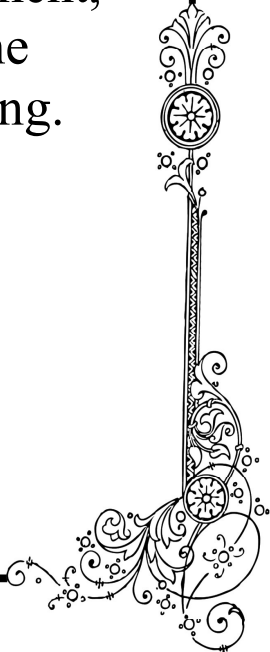
2.5 CONCLUSION

The review of the literature has thrown much light on the interrelationship of the variables like environmental awareness, attitude, responsibility, interest etc. the research work helps the researcher to formulate the relevant hypothesis for the present study. The review of the journals, dissertations, books and other sources of information provide a clear picture of previous work that has been related to the problem. It also provides the proof that the researcher is familiar with what is already known and what is still unknown. The survey of related literature has help the investigator to a certain extent to have clear perspective of the problem chosen.



*Design of the Study and
Methodology*

I Don't want to protect the Environment,
I want to create a world where the
environment doesn't need protecting.



CHAPTER 3

DESIGN OF THE STUDY AND METHODOLOGY

3.1 INTRODUCTION

According to **Wilkinson** (1976) a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to research purpose with economy in procedures. While conducting a research, the researcher follows certain methodology, which is to be implemented in a systematic order. It includes all the planned techniques and strategies followed in carrying out the study. The chapter gives a detailed description of the design of the study and selection of sample. It also gives a brief description of the tools of investigation and criteria of their selection. The procedure adopted for collection of data, their classification and scoring procedure are also discussed. The proposed statistical treatment of the data for testing the hypotheses that were formulated are explained.

3.2 METHOD OF RESEARCH

According to **Anderson, Durston and poole** (1970) choosing a design for a study basically involves selecting the most appropriate methods and techniques to solve the particular problem under investigation. In fact it is the most crucial decision on which depends the success of any research. According to **J.W. Best (1986)** there are three types of research i.e. historical research, descriptive research and experimental research, which describes what was, what is, and what will be respectively. Keeping in mind the nature of the present research problem, survey method was found to be the most suitable method for this study.

Survey method: the term survey has two constituents “sur” or “sor” which means **over** and “veir” means to **see**. Accordingly the word survey means “to look over” or to “oversee”. According to **Kerlinger** (1973) survey research is that branch of social scientific investigation that studies large and small population and discovers the relative incidence, distribution and interrelation of sociological and psychological variable. A survey method is a descriptive research concerned with conditions of relationship that exists, opinions that are held, and processes that are going on, effects

that are evident or trends that are developing although it often considers past events and influences as they relate to current conditions. (**Best & Khan**).

Hence the present investigation is a descriptive study of Environmental Behaviour, Motivation toward Environment and Creativity towards Environment of senior secondary students of Kota region.

3.3 SELECTION OF VARIABLES

In any research the dependent variables are the measured changes in pupil performances attributable to the influence of the independent variables and the independent variables are the conditions or characteristics that the experimenter manipulates in attempt to ascertain their relationship to observed phenomena.

Dependent variable: The investigator selected the following **dependent variables** (process variables) for the study.

- A. Environmental Behaviour.
- B. Motivation towards Environment.
- C. Creativity towards Environment.

Independent Variables: The researcher has taken the following independent variables (Categorical Variables) such as:

- a. Gender (Girls and Boys)
- b. Medium of Instruction (Hindi and English)
- c. Type of Management (Govt. and Pvt.)
- d. Locality (Rural and Urban)
- e. Type of Board of Schools. (CBSE and RBSE)

In order to established a relationship between the dependent and the independent variables the work has been set under following heads

- a. Population
- b. Sampling
- c. Description of the tools used
- d. Data Collection
- e. Statistical Techniques used.

3.4 POPULATION

The whole group of units from which sample is selected is technically termed as population. According to K S Siddhu “population means the aggregate or totality of objects or individuals regarding which inferences are to be made in sampling study” when data is collected from any field the set or group of all units to be covered under inquiry is called population. It is very essential that the population of research study is theoretically defined. If the definition of population is not clear than the researcher can not apply the findings of sample to population. So population should be clearly defined before selecting the sample. In the present research the researcher decided to select Senior Secondary students of Kota region as the population.

3.5 SAMPLING

Sampling is indispensable technique of behavioural research, the study of whole population is not possible and it is also impractical. The concept of sampling has been introduced with a view to make the research findings economical and accurate.

Advantages of sampling are

- (i) Reduced Cost
- (ii) Greater speed
- (iii) Greater scope
- (iv) Greater accuracy.

Goode & Hatt (1952) writes, instead of spending many hours on the analysis to mass of material from one point of view, one may use that time to examine a smaller amount of material from many point of view or in other words to do a more intensive analysis of fewer cases.

Technique of Sampling

Various techniques have been used in obtaining a sample, which will be the representative of its population. There are many methods of the sample selection but in the present study **Stratified sampling** procedure is used. Stratified sampling is a method of sampling that involves the division of population into smaller group known

as stratum. This method is rational and appropriate, because in stratified sampling, units of sampling are taken in proportion to every stratum. Advantage of this method is that schools and students whom the tools were to be administered were selected according to the need of the study. The schools chosen were stratified for the purpose of comparison.

Sample of the Study

A sample is a small proportion of a population selected for observation and analysis. By observing the characteristics of the sample one can make certain inferences about the characteristics of the population. Some practical observations regarding the sample size are as follows:

- (i) The Larger the sample, the smaller the magnitude of sampling error.
- (ii) Survey type studies probably should have larger samples than needed in experimental studies.
- (iii) When sample groups are to be subdivided into smaller groups to be compared, the researcher initially should select large enough samples so that the subgroups are of adequate size for the purpose of research.
- (iv) Subject availability and cost factors are legitimate considerations in determining the appropriate sample size.

In present study the researcher has taken a sample of 800 Senior Secondary students. Out of which 400 Female students and 400 Male students and further they are categorized in Govt. Students and Private school students. Govt. school students are further divided in Rural and Urban students and Private school students are further divided in English and Hindi medium students. English medium students are further divided into students of CBSE and RBSE board schools. The detailed description of the selected sample has been presented in the forthcoming figure.

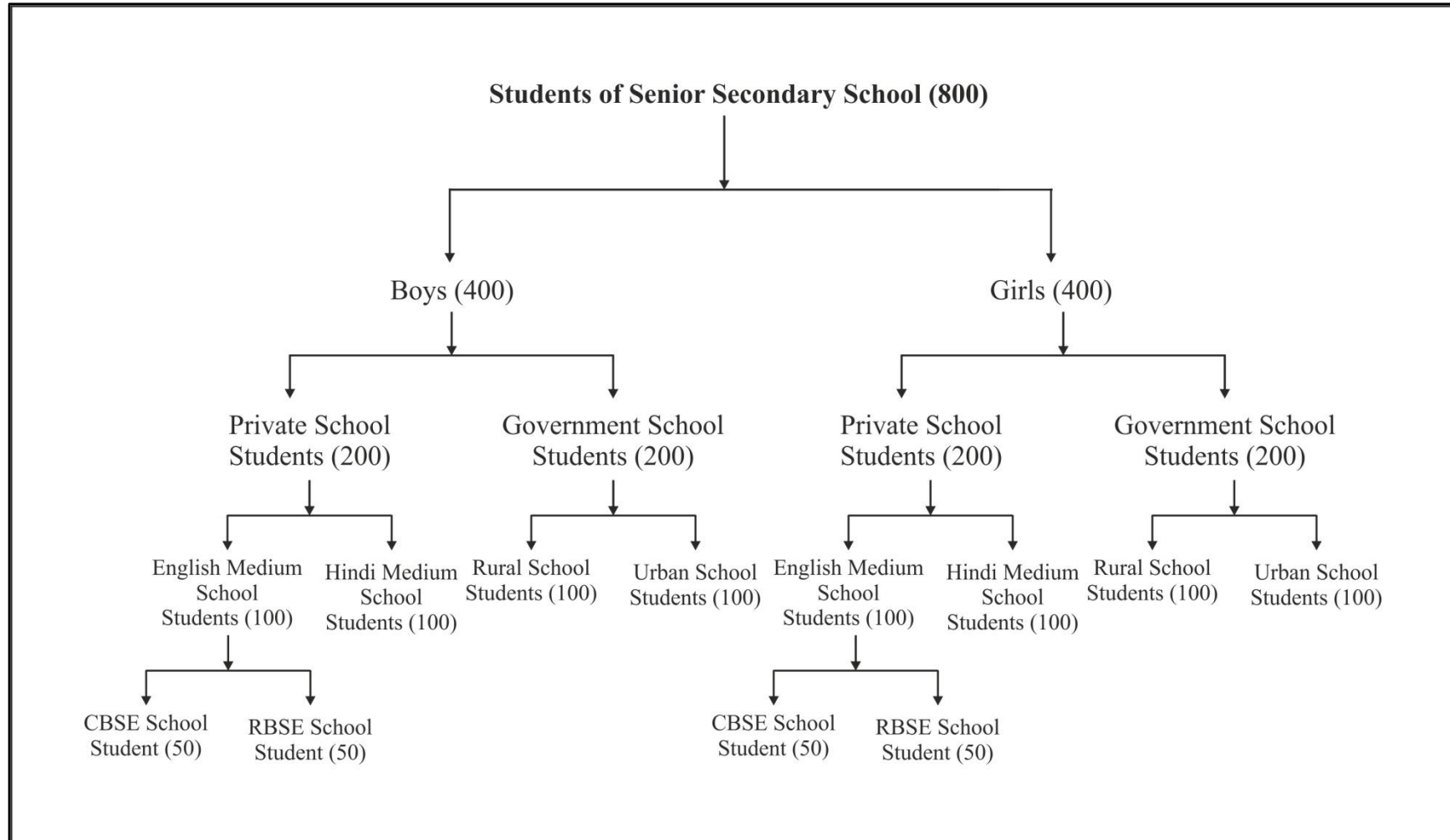


Fig. 3.1: Sample Demography

3.6 DESCRIPTION OF THE TOOLS USED

For any research study, the research worker has to collect data and on the basis of that data, he can draw conclusions and arrives at generalization. The meaningfulness of these conclusions and generalizations depends not only on method and procedure, data analysis or result interpretation but also on the appropriateness of the tools and measures employed in the study. They should be reliable, valid and suitable for the age and ability levels of the sample included in research work. For the present study tools which were used for collecting data were as follows

- (i) Environmental Behaviour Scale (EBS): by Archana Singhal, Urmila Verma and Pradeep K. Singhal.
- (ii) Motivation towards Environment Scale (MTES): by Pelletier, Green Demers, Tuson, Noels and Beaton (1998).modified by researcher.
- (iii) Creativity towards Environment test (CTE-t): developed by researcher herself.

3.6.1 ENVIRONMENTAL BEHAVIOUR SCALE: (EBS)

EBS is a standardized tools developed by **Archana singhal** (Assistant professor, Dpt. of education, St. Aloysius Autonomous college Jabalpur), and **Urmila verma** (Head, Dpt. of Edu. Mata Gujri Mahila Mahavidyalaya Jabalpur) and **Pradeep K. Singhal** (Professor and Head of Dpt. of Biological science Rani Durgavati University Jabalpur M.P.)

Construction of the scale

The EBS was constructed to quantify the environment behaviour of the target student population considering the following dimensions of the environment:

1. Air pollution
2. Water pollution
3. Noise pollution
4. Land pollution
5. Water conservation
6. Forest conservation
7. Biodiversity conservation
8. Human health Management
9. Energy conservation and Management

10. Environment conservation and management

Initially large number of statements on the above mentioned dimensions were made and given to the experts in the field of Environmental Science, education and psychology. The experts evaluate and judged the efficacy of each statement along with clarity of instruction and scoring procedures. The numbers of statements included finally, in the scale are as follows:

Table 3.1: Arrangements of Statements in the EBS

Code	Dimensions	Number of Statements	Serial No. of Statements
A.	Air Pollution	05	1 to 5
B.	Water Pollution	05	6 to 10
C.	Noise Pollution	05	11 to 15
D.	Land Pollution	05	16 to 20
E.	Water Conservation	05	21 to 25
F.	Forest Conservation	05	26 to 30
G.	Biodiversity	05	31 to 35
H.	Human Health Management	05	36 to 40
I.	Energy conservation & Management	10	41 to 50
J.	Environmental conservation & Management	10	51 to 60
Total Statement		60	

The framing of the statements was based on the following components of environmental Behavior

1. Social Desirability
2. Environment Concerns
3. Environment knowledge
4. Environmental Values

Validity

The face and content validity was determined by the well known experts in field of education, environmental sciences, linguistics and psychology, since they were requested to judge relevance of the content and criterion of each statement with respect to environmental Behavior.

Reliability

The reliability coefficient of the scale was measured by the standard statistical procedures. The reliability coefficient by the split-half method was 0.76 and by the Test-Retest method was 0.79.

Scoring

There are 60 statements in the scale, a total of 44 statements are positively worded- eliciting a 'Yes' response and the remaining 16 statements are negatively word eliciting a 'No' response from the students. For positive statement, 1 Mark is to be awarded for a 'Yes' response. For the negative statement, 1 Mark is to be awarded for a 'No' response. A separate answer sheet has been provided for giving the response.

Table 3.2 Serial Number of statements with 'Yes' or 'No' as correct Answer in EBS

Sr. No. of Yes Answer	Sr. No. of No Answer
1, 2, 3, 4, 6, 8, 9, 11, 12	5, 7, 10, 13, 14, 19, 20
15, 16, 17, 18, 21, 22	25, 29, 35, 38, 43
23, 24, 26, 27, 28, 30, 31	44, 46, 55, 58
32, 33, 34, 36, 37, 39	
40, 41, 42, 45, 47, 48	
49, 50, 51, 52, 53, 54, 56	
57, 59, 60	
	44 + 16 = 60

3.6.2 MOTIVATION TOWARDS ENVIRONMENT SCALE (MTES)

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University of Ottawa
Ottawa, Ontario, Canada

Isabelle green-Demers

University of Ottawa
Ottawa, Ontario Canada.

ANN M. BEATON

University de Moncton
Moncton, New Brunswick Canada.

KIM M. Tuson

Northern Telecom
Ottawa, Ontario, Canada.

KIMBEREY NOELS

Unv. of California at Santa Barbara.

The MTES was developed by above authors and was published in *Journal of applied social psychology*. The scale would help to examine why some people are motivated to behave pro-environmentally and why others are not. The test consists of 24 items, which focused on different subtypes of motivation, and is based upon Self Determination theory (SDT) (proposed by **Deci & Ryan** 1985.), as well as the motivation continuum proposed by SDT.

Self Determination theory

According to SDT different types of motivation could be distinguished with respect to the level of self-determination underling the behavior. These motivational subtypes could be classified into three broad categories are as follows

- (1) **Intrinsic Motivation:** is defined as the innate tendency to engage in an activity for the sole pleasure and satisfaction. An intrinsically motivated person acts out of personal choice and interest.
- (2) **Extrinsic Motivation:** Underlies instrumental behaviour (Deci. 1975). The individual is not interested in the activity for its own sake; the goal of the behaviour is to bring about positive consequences or to avoid negative ones. This extrinsic motivation is further subdivided into four categories i.e.
 - A) **Integrated Regulation:** Occurs when an instrumental behaviour has been valued to an extent such that it becomes part of the person's self-definition, such behaviour has been assimilated by the person, and it grows into an integral part of his/her self concept.

- B) **Identified regulation:** When any behaviour gains enough importance in the individual's mind to be valued in itself. The behaviour is still instrumental, but external motives have been sufficiently internalized to induce the individual to identify with the activity, the individual thus performs the activity by personal choice in order to attain his goals.
 - C) **Interojected regulation:** The individual begins to internalize the control of his behaviour, Reinforcement, therefore originates from emotions related to self esteem and punishment from internal pressure, such as guilty or anxiety.
 - D) **External Regulation:** Is governed by source of contest originating from the individuals environment (e.g. reward or punishment).
3. **Amotivation:** is an experience of lack of control and alienation which has been compared to learned helplessness. An amotivated individual unable to perceive the motives underlying it. Amotivated actions are mechanical and meaningless. The individual is thus likely to give up eventually.

Self-Determination continuum: all above types & subtypes of motivation ordered on a continuum with respect to their implied level of self-determination. Intrinsic motivation represents the highest level of self-determination since it underlies behaviour emitted out of pleasure and freedom and Amotivation represents the lowest level of Self Determination since it characterized by loss of personal control.

Integrated motivation sits right below Intrinsic motivation while External regulation sits just above Amotivation finally, Interojected and Identified occupy the middle points of the continuum: Interojected is posited above External regulation; while Identification is posited below Integration.

Table 3.3: A self determination continuum: (Ryan & Deci. 2000)

Behaviour	Non-self determined			Self Determined		
Motivation	Amotivation	Extrinsic				Intrinsic
Regulation	Non-Regulation	External	Interojected	Identified	Integrated	Intrinsic
Perceived locus of control	Impersonal	External	Somewhat external	Somewhat Internal	Internal	Internal
Regulatory processes	Non-intentionally non-valuing, lack of control	Compliance, external reward and punishment	Self-control, ego-involvement internal reward & punishment	Personal importance and conscious valuing	congruence awareness, synthesis with the self	Interest, enjoyment satisfaction

The paper presents four studies which were conducted for the purpose of constructing and validation a new measure of people's motivation for environmental behaviour.

Study 1: The goal of this study was to generate items designed to measure the motivational constructs proposed by Deci & Ryan, Thus intent was to create six subscales apt to measure intrinsic, integration, identification, interjection, external regulation and Amotivation. it comprised initial version of MTES which contained 10 items per subscale totaling 60 items.

Study 2: Goal of 2nd study was to evaluate the pattern of correlations b/w the MTES subscales and also to reassess the internal consistency of the subscales. It also includes interjected regulation subscale. The result shows that the internal consistency to the MTES subscales appears adequate ($.79 < \text{Cronbach alpha} < .89$).

Study 3: Endeavored to further substantiate the construct validity of MTES by assessing relationship between its subscales and various related environmental & psychological constructs. Results of this study shows firstly that psychological variables namely internality of locus of control and self esteem were positively correlated with the self determined motivation types (i.e. intrinsic, integrated and identified) while they were non related or negative related self determined motivational subtypes (i.e. interjected and external regulation & amotivation) Secondly environmental attitudes, perceived importance of environmental issues were positively correlated to self determined motivational types thirdly correlation between MTES subscales and both social desirability subscales, namely self deception and impression management were all non significant ($.05 < r < 0.6$). Thus MTES appears to be independent of these response biases. Fourth self determined forms of motivation (intrinsing, integrated, identified) were generally significantly related to environmental behaviours and insignificant/negative co-related between non self determined motivation subscales.

In short the MTES subscales and related constructs reflected simplex pattern that, high self-determination appears to relate positively to desirable variables and

negatively to undesirable variables. Finally MTES subscales displays adequate internal consistency ($.79 < \text{Alpha} < .89$).

Study 4: Purpose of this is to examine the test retest reliability of the MTES. The test is administered on 66 students and again administered after 5 weeks.

To verify the test-retest reliability of MTES, correlation between mean scores on the MTES subscales for Time 1, & Time 2, were calculated, In addition, internal consistency of the subscale was compared through examination of their Cronbach's alpha value for each testing session. The MTES subscales displayed adequate test retest correlation. The values ranged from .63 to .79. and thus deemed satisfactory more over internal consistency values ranged between .78 and .96 and deemed satisfactory both at time 1 and time 2.

Framing of questionnaire: The three pilot studies narrows down the questions from 60 items to 24 items. Now the scale consist 4 items with in each subscale. The test contains objective items.

Table 3.4: Arrangement of statements in MTES

Motivation	Subscale	Number of statement	Serial No. of Statement
Intrinsic	Intrinsic	04	1 to 4
extrinsic	Integrated	04	5 to 8
	Identified	04	9 to 12
	Interjected	04	13 to 16
	External	04	17 to 20
Amotivation	Amotivation	04	20 to 24

Scoring: The test is formatted in a Likert scale style. The scale ranges from 1 (does not corresponds at all) to 7 (corresponds exactly) with 4 (corresponds moderately) being in the middle.

RAI (Relative autonomy index) RAI is a method of quantifying the influence of different subscales of motivation ,the RAI method is used by different scholars like Connell (1985) & Grolnick (1989) in self regulation questionnaire. The RAI involves

assigning weight to the corresponding construct ranging from the most to the least self-determined. The higher the value of RAI means the person possesses more self-determined motivation towards environment and low value of RAI means the person is less self-determined motivation towards environment or more controlled regulation.

Calculation of RAI: The index score is obtained by applying a weighting to each subscale and then summing these weighted scores or each subscale score is multiplied by its weighting and then these weighted scores are summed. The total summed RAI score of particular student shows the motivational level of student.

Table 3.5: The weightage in RAI for MTES

Subscale of Motivation	Weightage
Intrinsic Motivation	+3
Integrated Regulation	+2
Identified Regulation	+1
Interjected Regulation	-1
External Regulation	-2
Amotivation	-3

Changes made in tool by the researcher

The tool was developed in English language only, and for abroad conditions so the researcher had translated that in Hindi, and to quantify the influence of different subscales of motivation RAI (Relative Autonomy Index) method was used, which is not originally used by the developers of the scale. Because of the above reasons the researcher had calculate the reliability and validity of the scale again.

Validity: to ensure the **content** validity the tool sent to the experts. The experts included were teachers of environment science, psychology, faculty of dept. of education. For the language the tool was sent to the Hindi expert teachers. The final test format was prepared according to their suggestions.

Reliability: The reliability of the test refers to the consistency of scores obtained by the same individuals on different occasions or with different sets of equivalent items. Researcher follows the two methods of reliability.

1. **Test retest reliability:** determines how much error in a test score is due to problems with test administration. (e.g. too much noise distracted the participants) or refers to the degree to which test results are consistent over time. To calculate test retest reliability a group of 30 students was formed it contained equal number of boys and girls. The test is given to the sample students and after a period of 3 months the same students were retested. The score of different dimensions have been calculated by table RAI method. And then calculate the PPMC (Pearson Product Moment Correlation) coefficient of the score of both time i.e. time 1 and time 2. The calculated value of PPMCC is **0.69** which is quite satisfactory on reliability score.
2. **Split half method:** In this method the item of the test was divided into 2 parts for testing the reliability of the scale.
 - (i) Test I having even numbered items
 - (ii) Test II having odd numbered items.

Thereafter calculate the person product moment correlation coefficient between these two tests by following formula.

$$r_{xy} = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2[\sum(y-\bar{y})^2]}}$$

The correlation coefficient denotes the reliability of half test. The self correlation coefficient of the whole test is estimated by using spearman and brown formula

$$r = \frac{2r}{1+r}$$

The calculated value of reliability of the test, **r = 0.73** assures that the test is free from technical defects & can be used for research purpose.

3.6.3 CREATIVITY TOWARDS ENVIRONMENT TEST (CTE-t)

The test is developed by Researcher. Creativity is characterized by originality of thoughts, a creative mind and showing Imagination to create meaningful new ideas, methods, interpretation etc. Creativity is the sum total of fluency, flexibility, originality and elaboration. On the basis of these components the researcher

developed a creativity tool for environment. The tool includes following components of creativity.

1. **Fluency:** Fluency is the property of a person or of a system that delivers information quickly and with expertise. Fluency in creative thinking is seen as the ability to think of many diverse ideas quickly. Therefore fluency is the total number of interpreted Meaningful and relevant ideas generated in responses to the stimulus. Fluency is the ability to think well and effortlessly in order to generate a quantity of ideas, responses, solutions or questions. (**Guilford** in his model of intellect gives four types of fluency i.e. ideational fluency, associational fluency, expressional fluency and word fluency.)

Word fluency – Word fluency is to give more words to stimulus. Words may be synonyms or antonyms. It is more vocabulary test.

Ideational fluency – is generation of more ideas to stimulus, may be word phrases, sentences, story etc.

Expressional fluency –is to produce many ideas to fit a system or logical theories may be in the form of sentences or verbal ideas etc.

Associational fluency – is to produce ideas or words from a restricted area, i.e. a relationship. It requires completion of relations, like production of relations, generation of synonyms, analogies, similarities, problem of likeness etc.

2. **Flexibility** – The ability to easily abandon old way of thinking, adopt new ones, and produced ideas, responses, questions solutions in a variety of categories.
3. **Originality** – The ability to develop ideas that are statistically unusual, novel and unique, it is the ability to think and act independently innovative, new unconventional ideas or method or performance.

4. **Elaboration** – Elaboration is the ability to add details, fill in gaps, and add finishing touches or ability to add details in order to modify or expand upon an idea or a general scheme.

Table 3.6: Different components of creativity and their test Names

Sr. No.	Component of Creativity	Name of the Test
1.	Word fluency	Word production test(WPT)
2.	Association fluency	Similarity test(ST)
3.	Expressional fluency	Sentence construction test(SCT)
4.	Flexibility	use of things test(UTT)
5.	Originality	Title test(TT)
6.	Elaboration	Elaboration test(ET)

From the above table it is clear that three test are based on three abilities of creativity i.e. flexibility, originality and elaboration. However the ability Fluency is divided into 3 sub abilities i.e. word fluency; association fluency and expressional fluency separate test are made to measure them. This test is made in Hindi and English both language.

Description of test items:

Following guidelines has been kept in mind while writing the statements by researcher:

1. Avoid statements which cover those aspects of creativity, which are beyond children's understanding.
2. Avoid the statement that may be interpreted in more than one way.
3. Avoid statements that are irrelevant to measure creativity towards environment.
4. Avoid the statements that are likely to be endorsed by almost everyone or by almost no one.
5. Select the statements that cover all the dimensions of creativity.
6. Keep the language of the statement simple, clear and direct.

Keeping in mind the above guidelines ,total 30 statements were prepared initially and subjected to the experts to examine the relevance, content and appropriate

language. On the basis of expert's evaluation and judgments the items which are high loading were selected for administration. Than some items were deleted and some are reframed, 24 out of initial 30 statements were finally selected for try out.

Pilot study: The test than subjected to pilot study to 30 students which contains equal number of boys and girls students of sr.sec class. After that it has been observed that the test is quite lengthy, according to the observation during pilot study the minor revisions based on the suggestion given by teachers, language experts and statistics experts and then finally the test contains 20 items. The problem of determining the amount of time in which the test is to be administered is inseparable from, determining the length of in terms of number of the items. Therefore a time of 35 minutes is decided so that the students can complete the test carefully.

Final format of scale containing following tests:

1. **Word production test:** It contains two items indicating the subject/student to write more and more words starting with a given letter. There is different letter given in both languages for e.g. O and E letter is given in English and ओ and ए letter is given in Hindi. The word must be related to environment directly or indirectly. For each item short instruction is given that what is to be done by the student.

Scoring: The wrong words were deleted and the total right response words counted which indicate the word fluency score, 1 Marks is given to every right response word.

2. **Sentence construction test:** The test contains 2 items. The subject is asked to write the quotation related to the topic given. The topic in both items is related to environment for e.g. water conservation and pollution control. Clear instruction is given with each item. The total number of appropriate quotation or thought shall indicate the expressional fluency score.

Scoring: one mark is given for appropriate quotation and zero mark is given for inappropriate quotation.

3. **Similarity test:** The test contains four items which contains word in Hindi as well as English which are the name of things or qualities which are related to environment (for e.g. water, pollution, earth, ash). The student is required to

write synonyms or related words as many as he can. The total number of appropriate responses to all the terms shall indicate as Association fluency score.

Scoring: Every correct word given for each item, score one mark.

4. **Use of things test:** The test contains six items in the form of names of waste material, the student is asked to write only more & more diverse use of those waste materials. The total number of appropriate answers for all six items, gives the flexibility score.

Scoring: the answer of the subject must be diverse which means every answer is of different class or train of thought for e.g. if one writes as (1) to make chair. (2) To make table (3) to make board (4) to burn (5) to beat.

The first 3 responses shall be scored as 1 since they all indicate one train of thought wherever the fourth & fifth responses shall also get 1 score each since they are of different ideas. One mark is given to every correct and diverse use of things to every item.

5. **Title Test:** The test contains two short stories. The student is required to give different titles as many as they can to each story. The answer must be unusual, novel, and unique. Every unusual, unique title must count and give total original score.

Scoring: One mark is given to every unique title for each item.

6. **Elaboration Test:** The test contains four items. The first three gives some common problems related to environment and the fourth is the incomplete story. The student is asked to write more and more solutions of the problem and complete the story as long as he can. The incomplete story given in the test is related to burning environmental issues. The total number of relevant solutions suggested for the first three items are counted and the number of the ideas or issues related to environment given in fourth item should also be added to the scores of first three items the total counted score of four items is indicated as elaboration score.

Scoring: One mark is given to every suggested solution of problems to every item and one marks is given to every issue/idea to the forth item.

Creativity Score: Creativity is the sum total of fluency, flexibility, originality and elaboration. The Raw score obtained from all the six test cannot be added directly to get creativity score because of greater variations in the score incomparability because their domains and approaches are different therefore the Raw scores received for all dimensions should be converted into standard scores.

T score: T score is a standard score that has a mean of 50 and standard deviation reported in the intervals of 10.(Neukrug,2014) To compute T score, first the Z score is calculated than the Z score is transformed in T score by following formula:–

$$T = 10 Z + 50$$

Where

50 = mean

10 = SD for the distribution.

Z score: Z score is method of expressing raw score in standard deviation units. This transformation describes the position of a single score in terms of mean and S.D. Z score of zero indicate that the raw score equals the mean. Z score above zero indicates that the raw score is greater than the mean, while negative Z score indicates a raw score that is less than the mean. Formula for Z score

$$Z = \frac{x - \bar{x}}{SD}$$

Where

x = Raw score

\bar{x} = Mean of score

SD = Standard deviation of score

When Raw score below the mean are converted to Z score they becomes negative numbers. In order to do away with the negative signs which was found in Z score, the Z score must be converted to T score. The respective standard score (T score) of raw scores of all the dimensions be added to get **Creativity** score or the mean values of those standard score of all the dimensions be added to get the total creativity score.

Validity of test: Validity of the test is defined as the extent to which the procedure actually accomplish what it seeks to accomplished or the test actually measures uses what it purposes to measure. To ensure content validity the tool sent to the experts. The experts included were the teachers teaching environment science, a psychology teacher and a faculty of department of education. They were asked to mark whether an item would measure the concept with which it was associated and to mark if the statements fall within the selected creativity dimensions. The final test items were prepared according to their suggestion.

Reliability: The reliability of the test refers to the consistency of scores obtained by the same individuals on different occasions or with different sets of equivalent items” (Anastasi, Anne, 1970)

Researcher follows the two methods of reliability.

1. **Test retest reliability:** To calculate test retest reliability a group of 30 students was formed it contained equal number of boys and girls. The test is given to the sample students and after a period of 3 months the same students were retested for creativity score. The score of different dimensions have been calculated and then calculate the PPMC (Pearson Product Moment Correlation) coefficient of different dimension separately which are presented below:

Table 3.7: Test Retest Reliabilities of Creativity towards Environment Test

Name of Test	Reliability
Word production test	.69
Sentence construction test	.71
Similarity test	.74
Use of thing test	.76
Title test	.70
Elaboration	.72

2. **Split half method:** In this method the item of the test was divided into 2 parts for testing the reliability of the scale.

- (i) Test I having even numbered items
- (ii) Test II having odd numbered items.

Thereafter calculate the person product moment correlation coefficient between these two tests by following formula.

$$r_{xy} = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2[\sum(y-\bar{y})^2]}}$$

The correlation coefficient denotes the reliability of half test. The self correlation coefficient of the whole test is estimated by using spearman and brown formula

$$r = \frac{2r}{1+r}$$

The calculated value of reliability of the test, $r = 0.71$ assures that the test is free from technical defects & can be used for research purpose.

3.7 DATA COLLECTION

After preparing and selecting the appropriate tools the researcher set out to collect the data from the sample. The principals of the schools were contacted earlier and permission was taken for administering the tools. The researcher explained the tools and method of filling them to the students. The students were asked to read the instructions of tools carefully and they were requested to give free, unbiased opinions by ticking any one of the categories in the options column and fill the answers legibly, and do not ask others as their scores will be keep confidential. All the three tools were administered separately and collected one, after which another was given to the student. Appropriate time has been given to students to fill the answers of tool according to items of tools, it has also been taken care that all the test were administered to the same students.

After collecting the data a detailed scoring sheet was prepared for MTES and Creativity test (CTE-t), as a separate scoring sheet for EBS has already prepared. Then

the researcher checked the answer sheet of all the 800 respondents and then marks of each student were summed up and written on sheet. The data collected from the sample were analyzed by using online statistical sites. Initially the data were fed in excel worksheet and then transferred to online statistical sites for further calculation.

3.8 STATISTICAL TECHNIQUES USED IN THE STUDY

“Statistics comprises the collection, tabulation, presentation and analysis of an aggregate of facts, collected in methodical manner without lies and related to predetermined purpose” – **H.G. Sactliff**.

Use of statistics in education

- a. Proper presentation of facts.
- b. Makes complicated data simple and easy to understand.
- c. For classification and tabulation of data
- d. For comparison between two results.
- e. For testing hypothesis.

In the present study following statistics is used to give the raw scores a readable form and for the interpretation of data.

1) FOR DESCRIPTIVE ANALYSIS:

A. Mean: the mean is defined as the sum of all the scores in a series and divided by the number of scores in the series. Popularly spoken as the average, technically called the arithmetic mean. Formula of mean is

$$M = \frac{\sum x}{N}$$

M=Mean

$\sum x$ =Sum of Scores of the distribution

N=Number of the scores.

B. Standard deviation: The standard deviation is the root mean square of the deviations from the arithmetic Mean. It is denoted by SD/σ . It is the average difference between the observed values and the Mean. The Standard Deviation measures the absolute dispersion, the greater the standard deviation, the greater will

be the magnitude of deviation of the values from their Mean. A small standard deviation means a high degree of uniformity of the observations as well as homogeneity of a series; the large standard deviation means just the opposite. The SD can be calculated by using the formula:

$$\sigma = \sqrt{\frac{Ed^2}{N}}$$

Where,

σ =Standard deviation

d^2 =Square of the deviation of each square from mean.

N =Total number of the subjects in serious/distribution.

C. Quartile: The quartile divides the set of measurement or data into four equal parts. Twenty five percent of the scores are less than lower quartile, fifty percent of the scores are less than the median and seventy five percent of the scores are less than the upper quartile, so the fifty percent of the scores are between the lower quartile and upper quartile. The lower and upper quartile is denoted as Q1 and Q3 respectively. The calculation of quartile is used to divide the scores into low, average and high group.

2) **FOR INFERENCEAL ANALYSIS:** Used for testing Hypothesis

t test. t test is used to find out the significant difference between different groups. The usual level of significance 0.05 and 0.01 were used to test the significance of the obtained statistics.

The formula used for 'T' test is:-

$$t = \frac{M_1 - M_2}{\sqrt{\frac{N_1\sigma_1^2 + N_2\sigma_2^2}{N_1 + N_2 - 2} \left(\frac{N_1 + N_2}{N_1 + N_2} \right)}}$$

Where

M_1 = Mean of I group

M_2 = Mean of II group

σ_1 = S.D. of I group

σ_2 = S.D. of II group

N_1 = No. of students in I group

N_2 = No. of students in II group.

CHI- Square: the chi-square test is one of the simplest and mostly widely used non parametric test in statistical work.(**Sharma, R.A**) The symbol (χ) is the Greek letter Chi. The test (S.L Gupta, 2003) is used as test of goodness of fit. Chi-Square can be used in normal distribution as a test of independence or association. Test is done whether two or more attributes are associated (G.C Berri, 2008).the test gives the magnitude between theory and observation. It is defined as

$$\chi^2 = \frac{(O_1 - E_1)^2}{E_1}$$

Where O_1 is observed frequency, E_1 is the expected frequency. In general expected frequency is given by:

$$E = \frac{RT \times CT}{N}$$

Where

RT=Raw total of containing cell

CT=column total of containing cell

N=total no. of observations.

Degree of Freedom (V): The chi square test is based on degree of freedom which is obtained as:

1. In case of one dimension (row or column) there are (K-1) degree of freedom where K is number of categories observed frequency.
2. In case of contingency table:

$$V = (r - 1) (c - 1)$$

Here

r = is the total number of rows

c= is the total no. of column.

Characteristics of chi –square test

1. The test is based on frequencies or events as against the Z and the t which based on parameters like Mean and SD.

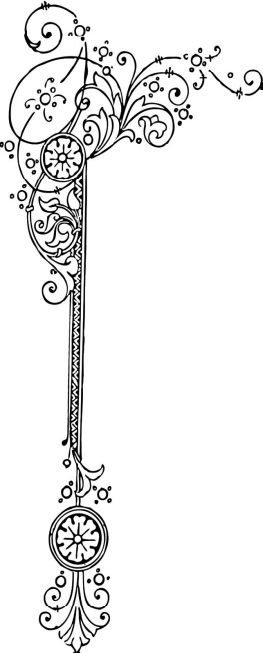
2. This is applied for drawing inferences only.
3. This possesses additive properties so that when $(x_1)^2$ and $(x_2)^2$ are independent and have a chi square distribution with $n_1 + n_2$ degree of freedom.
4. It is a general purpose test and is very useful in research work.

Chi-Square analysis can be used when the data satisfy following four conditions

1. There must be two observed sets of data or one observed set of data and one expected set of data.
2. The two sets of data must be based on the same sample size.
3. Each cell in the data contains an observed or expected count of five or larger.
4. The different cells in row or column must represent categorical variables.

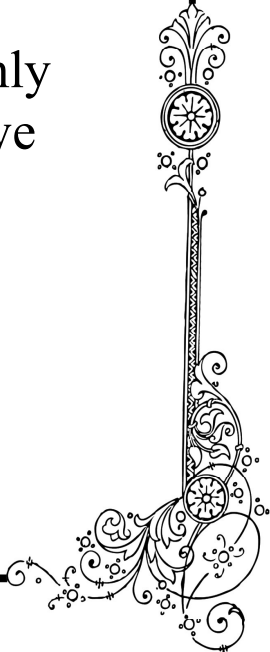
3.9 CONCLUSION

This chapter has outlined the design of the present study, the procedures followed and the nature of sample and tools used is selected and developed and the methods of analysis and interpretation have also been planned.



Analysis and Interpretation of Data

Our society will be defined not only
by what we create, but by what we
refuse to destroy.



CHAPTER 4

ANALYSIS AND INTERPRETATION OF DATA

4.1 INTRODUCTION

The third chapter describes the methodology used for present study. The method employed, the tools used, the chosen sample, statistical techniques etc. were discussed.

This chapter contains the Analysis and interpretation of data. The aim of the analysis is to organize, classify and summarize the collected data so-that they can be better comprehended and interpreted to give answers to the questions that triggered the research. Interpretation is the search for the broader meaning of findings. Analysis is not fulfilled without interpretation; and the interpretation cannot proceed without analysis, so both of these are interdependent. According to **F.L. Whitney**. “Data interpretation means an inadequate exposition of the true meaning of material presented in terms of the purpose of the study being reported and the chapter and section topic involved. Interpretation is thus by no means a mechanical process.”

So the next steps in the process of research, after the collection of data are organization, analysis and interpretation of data and formulation of conclusions and generalization to get a meaningful picture out of the raw information collected. The analysis and interpretation of data studies the objective material in the possession of the researcher and his subjective reactions and desires to determine the inherent facts or meanings. It involves breaking down existing complex factors into parts and putting the parts together in new arrangements for the purpose of interpretation.

The data collected through the use of various tools need to be systematized and organized, i.e. edited, classified and tabulated, Editing implies the checking of collected data for accuracy, utility and completeness, Classifying involves the division of the information into categories of classes, and tabulating refers the recording of the classified material in accurate mathematical terms.

The present chapter includes a study of different techniques adopted for analysis and interpretation of data and the result/outcome of the analysis of data. As

the collection of data was done, it was analyzed, keeping the view of objectives and Hypothesis of the study. The analysis of data was carried out in the following manner;

As mentioned earlier in previous chapters, the study includes four major aspects viz. Environmental behaviour, Motivation towards environment, creativity toward environment and the association among the above three aspects. From the tools, the raw scores were taken separately and were used as basic sources of data for study. These raw data were put to statistical treatment and changed them to standard data accordingly. Each of three different aspects i.e. Environmental Behaviour, Motivation towards Environment and creativity towards environment, were taken first into consideration individually and later these three aspects/variables were tested for their association. The Hypotheses framed under all four aspects were statistically tested and accordingly accepted or rejected. The Categorical variables that were considered were gender, locality, Type of Management, Medium of instruction and the type of Board of schools. The data analysis has been attempted as per the objectives of study. Major objectives have been stated earlier in chapter I.

4.2 SPECIFIC OBJECTIVES OF STUDY ARE AS FOLLOWS:

1. To compare the level of Environmental Behavior of Male and Female Sr. Sec. school students of Kota region.
2. To compare the level of Environmental Behavior of Sr. Sec students of Govt. and Private Schools of Kota region.
3. To compare the level of Environmental Behavior of Sr. Sec students of Rural and Urban Govt. schools of Kota region.
4. To compare the level of Environmental Behavior of Sr. Sec students of English medium and Hindi medium private school of Kota region.
5. To compare the level of Environmental Behavior of Sr. Sec students of CBSE and RBSE English medium private schools of Kota region.
6. To compare the level of Motivation towards Environment of Male and Female Sr. Sec. school students of Kota region.
7. To compare the level of Motivation towards Environment of Sr. Sec students of Govt. and Pvt. Schools of Kota region.

8. To compare the level of Motivation towards Environment of Sr. Sec students of Rural and Urban Govt. schools of Kota region.
9. To compare the level of Motivation towards environment of Sr. Sec students of English medium and Hindi medium private schools of Kota region.
10. To compare the level of Motivation towards Environment of Sr. Sec students of CBSE and RBSE English medium private schools of Kota region.
11. To compare the level of Creativity towards Environment of Male and Female Sr. Sec. school students of Kota region.
12. To compare the level of Creativity towards Environment of Sr. Sec students of Govt. and Private Schools of Kota region.
13. To compare the level of Creativity towards Environment of Sr. Sec students of Rural and Urban Govt. schools of Kota region.
14. To compare the level of Creativity towards Environment of Sr. Sec students of English medium and Hindi medium private schools of Kota region.
15. To compare the level of Creativity towards Environment of Sr. Sec students of CBSE and RBSE English medium private schools of Kota region.
16. To explore whether there exist any association between Environmental Behavior and Motivation towards Environment in Sr. Sec. school students.
17. To explore whether there exist any association between Environmental Behavior and Creativity towards Environment in Sr. Sec school students.
18. To explore whether there exist any association between Motivation towards Environment and Creativity towards Environment in Sr. Sec school students.

Based upon the discussion of variables and also keeping in view the above specific objectives, specific hypotheses are also formulated.

4.3 SPECIFIC HYPOTHESES OF THE STUDY ARE AS FOLLOWING:

1. There is no significant difference between the mean scores of Environmental Behaviour among Male and Female Sr. Sec. Students of different schools of Kota region.
2. There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of Govt. and Pvt. Schools of Kota region.

3. There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of rural and urban government Schools of Kota region.
4. There is no significant difference between mean scores of environmental Behaviour among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.
5. There is no significant difference between mean scores of Environmental Behavior among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.
6. There is no significant difference between the mean scores of Motivation towards Environment among Male and Female Sr. Sec. Students of different schools of Kota region.
7. There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Govt. and Pvt. schools of Kota region.
8. There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Rural and Urban government schools of Kota region.
9. There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.
10. There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.
11. There is no significant difference between the mean scores of Creativity towards Environment among Male and Female Sr. Sec. Students of different schools of Kota region.
12. There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of Govt. and Pvt. Schools of Kota region.

13. There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of Rural and Urban government schools of Kota region.
14. There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.
15. There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.
16. There is no significant association between the level of Environmental Behaviour and the level of Motivation toward Environment in scores of Sr. Sec. Students of Kota region.
17. There is no significant association between the level of Environmental behaviour and the level of Creativity toward Environment in scores of Sr. Sec. Students of Kota region.
18. There is no significant association between the level of motivation towards environment and the level of creativity toward environment in scores of Sr. Sec. Students of Kota region.

This chapter includes the analysis of the data gathered, for the testing of hypotheses formulated. Analysis of data includes Descriptive analysis and Inferential analysis of the data by which interpretation and conclusion are drawn.

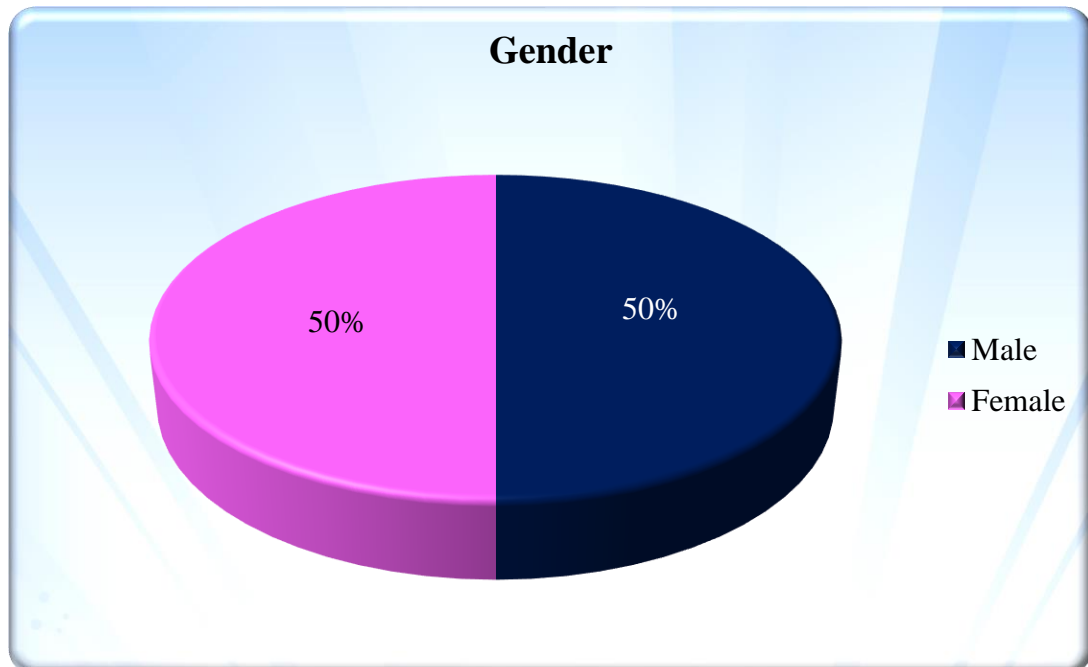
4.4 DESCRIPTIVE ANALYSIS OF THE SAMPLE

Percentage analysis is one of statistical measures used to describe the characteristics of the sample or population in totality. It involves computing measures of variables selected for the study and its finding will give easy interpretation for the readers.

Frequency Distribution of the sample according to the variables.

Table 4.1: Gender Wise Distribution of the Sample

Gender	Frequency	Percentage
Male	400	50%
Female	400	50%
Total	800	100%

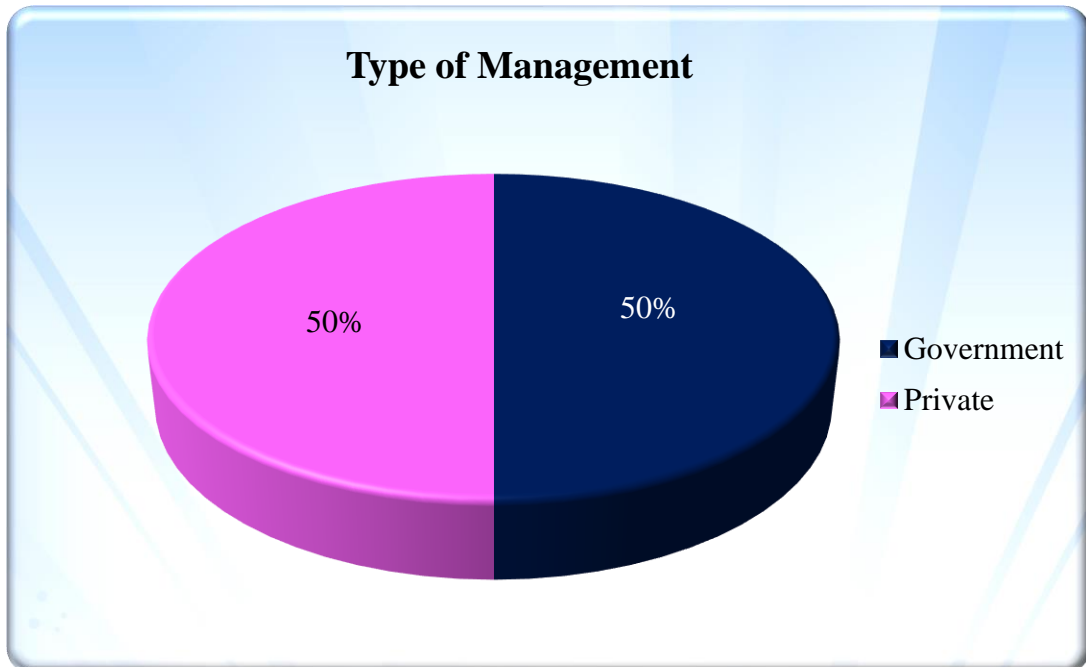


Graph 4.1: Gender Wise Distribution of Sample

From the above table & Graph (4.1) 50% of the students belong to Male and 50% of the students belongs to Female. Hence Male and Females are equally distributed.

Table 4.2: Type of Management wise distribution of the Sample

Type of Management	Frequency	Percentage
Government	400	50%
Private	400	50%
Total	800	100%

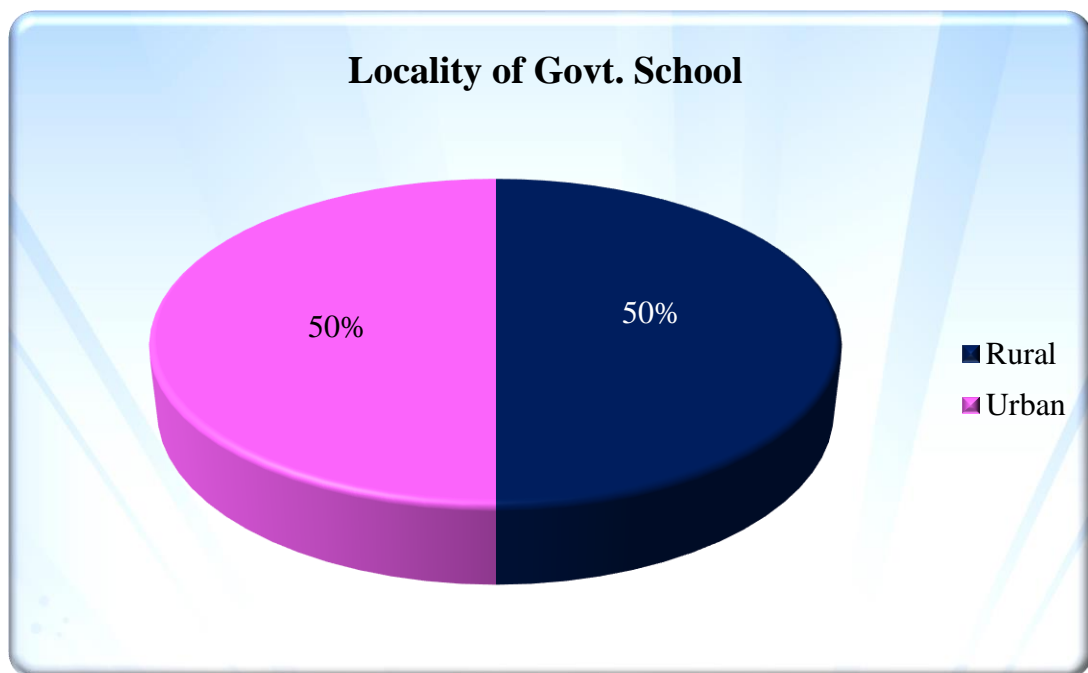
**Graph 4.2: Type of Management wise distribution of the Sample**

From the above table and Graph (4.2) 50% of the students belong to Government schools and 50% of the students belongs to private schools. Hence students of government & Private schools are equally distributed.

- For the convenience of the study the variable Locality has been studied in government school students only, to control/nullify the variable like medium of instructions and board of the school.

Table 4.3: Locality Wise Distribution of the Sample

Locality of Govt. School	Frequency	Percentage	% of Total Sample
Rural	200	50%	25
Urban	200	50%	25
Total	400	100%	50%



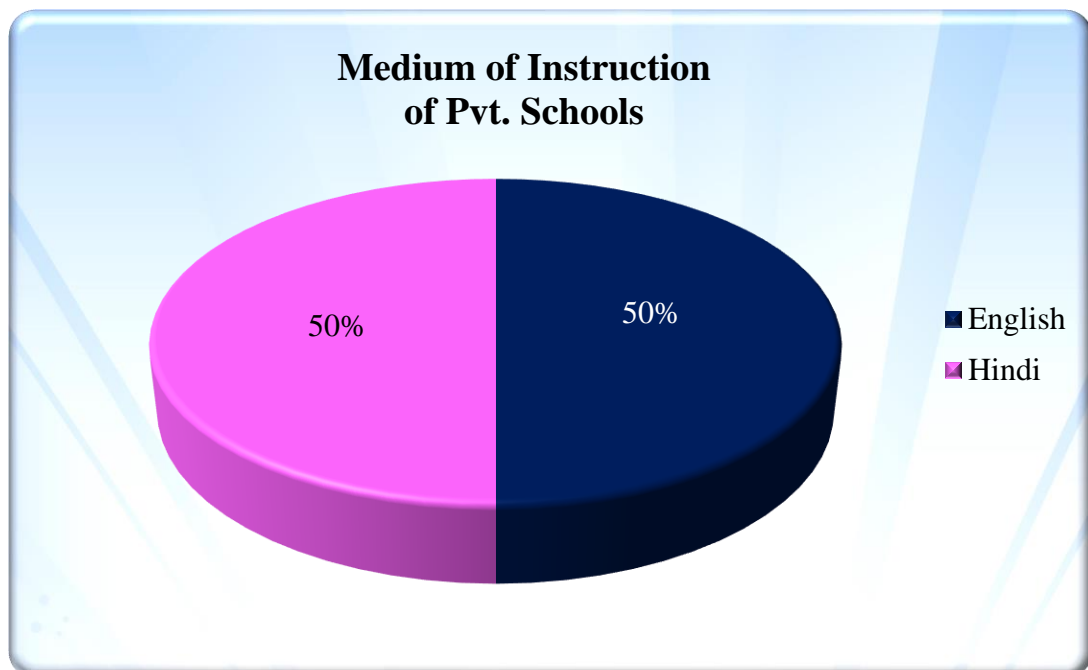
Graph 4.3: Locality Wise Distribution of the Sample

It is clear from the about table & Graph (4.3) that Rural school students and Urban school students are equally distributed among Government school students sample.

- For the convenience of study the variable Medium of Instruction has been studied in private schools only to nullify the effect of variable like locality.

Table 4.4: Medium wise Distribution of the Sample

Medium of Instruction of Pvt. Schools	Frequency	Percentage	% of Total Sample
English	200	50%	25
Hindi	200	50%	25
Total	400	100%	50



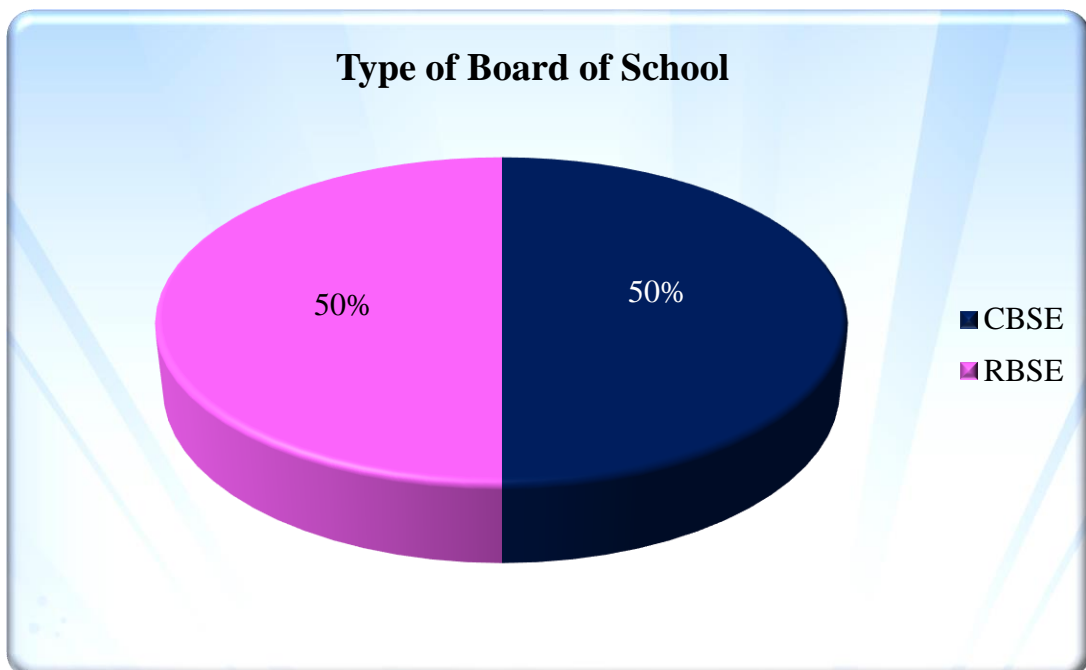
Graph 4.4: Medium wise Distribution of the Sample

If clear from the table & Graph (4.4) that English Medium students and Hindi Medium students are equally distributed among Private school students sample.

- For the convenience of the study the variable, Board of school, has been studied in English Medium Private School students only to nullify/control the effect of variables like locality, and medium of instructions.

Table 4.5: Type of Board of school wise Distribution

Type of Board of School.	Frequency	Percentage	% of total sample
CBSE	100	50%	12.5
RBSE	100	50%	12.5
Total	200	100%	50



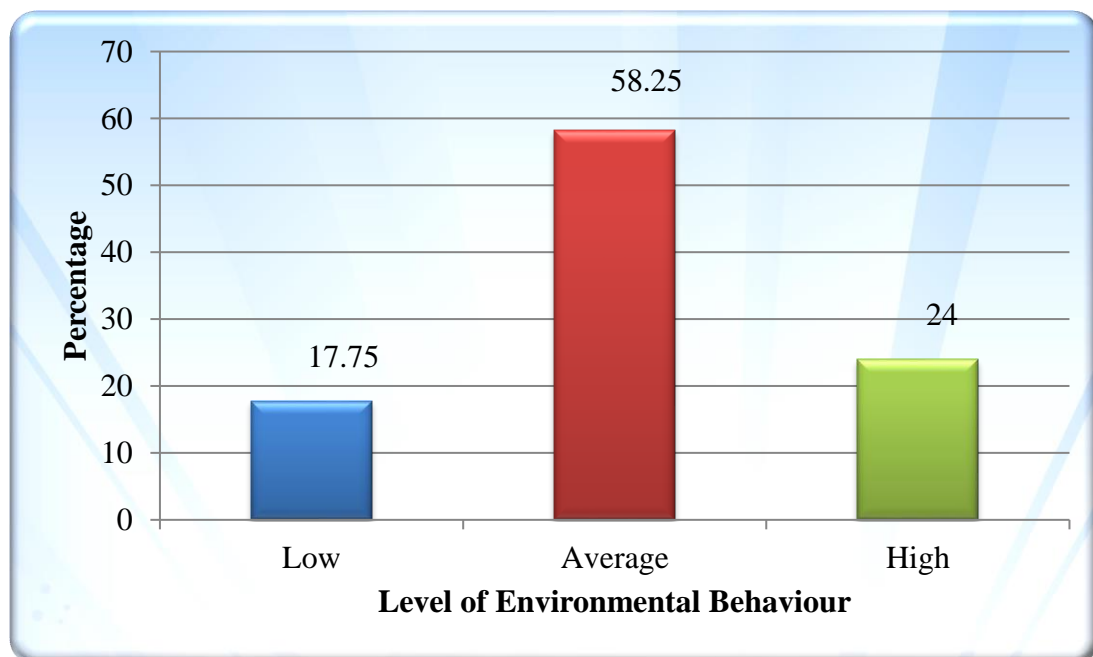
Graph 4.5: Type of Board of School wise Distribution

It is clear from the above table & Graph (4.5) that CBSE board school students and RBSE board school students are equally distributed among English medium Private school students sample.

- Based on **quartile**, the values of Environmental Behaviour, Motivation towards Environment and Creativity towards Environment are converted into low, Average and High scores. If the score is below 1st quartile (Q_1), then it includes in low level, if the score is above 3rd quartile (Q_3) it is of high level. If the score lies between 1st (Q_1) quartile and 3rd quartile (Q_3) it is of Average level.

Table 4.6: Sample Distribution of students based on level of Environmental Behaviour

Level of Environmental Behaviour	Frequency	Percentage
Low	142	17.75
Average	466	58.25
High	192	24
Total	800	100

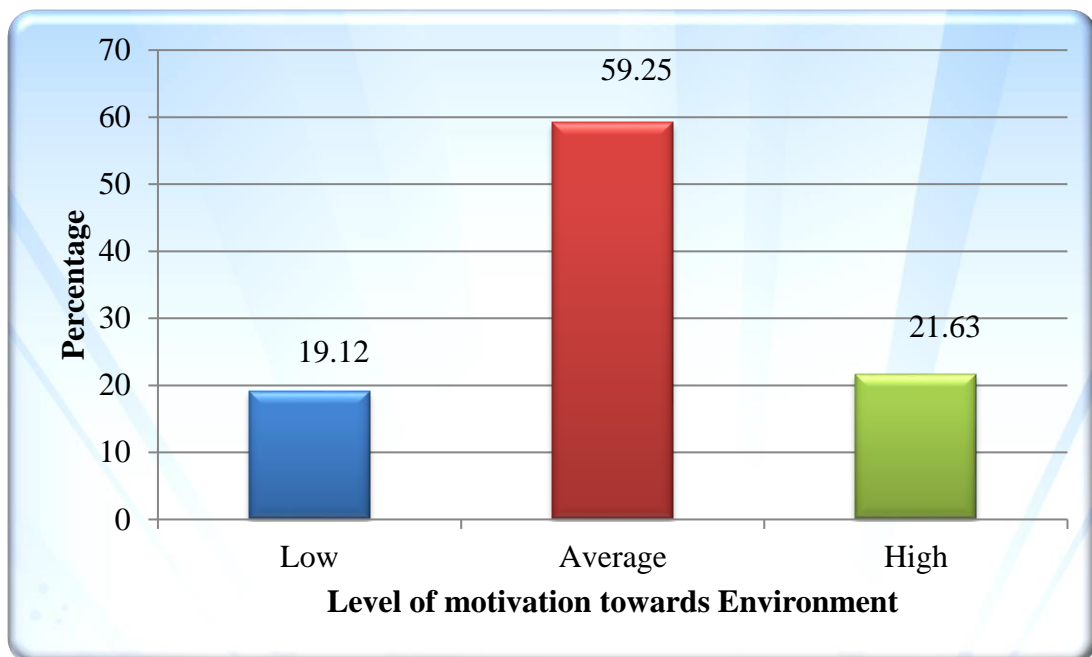


Graph 4.6: Sample Distribution of students based on level of Environmental Behaviour

From the above table & Graph (4.6) 17.75% of students belongs to low level of Environmental Behaviour, 58.25% of students belongs to Average level of Environmental Behaviour and 24% of students belongs to high level of Environmental Behaviour. Hence students having average level of Environmental Behaviour are in higher percentage than those with low and high level of Environmental Behaviour.

**Table 4.7: Sample Distribution of students based on level
Motivation towards Environment**

Level of motivation towards Environment	Frequency	Percentage
Low	153	19.12
Average	474	59.25
High	173	21.63
Total	800	100

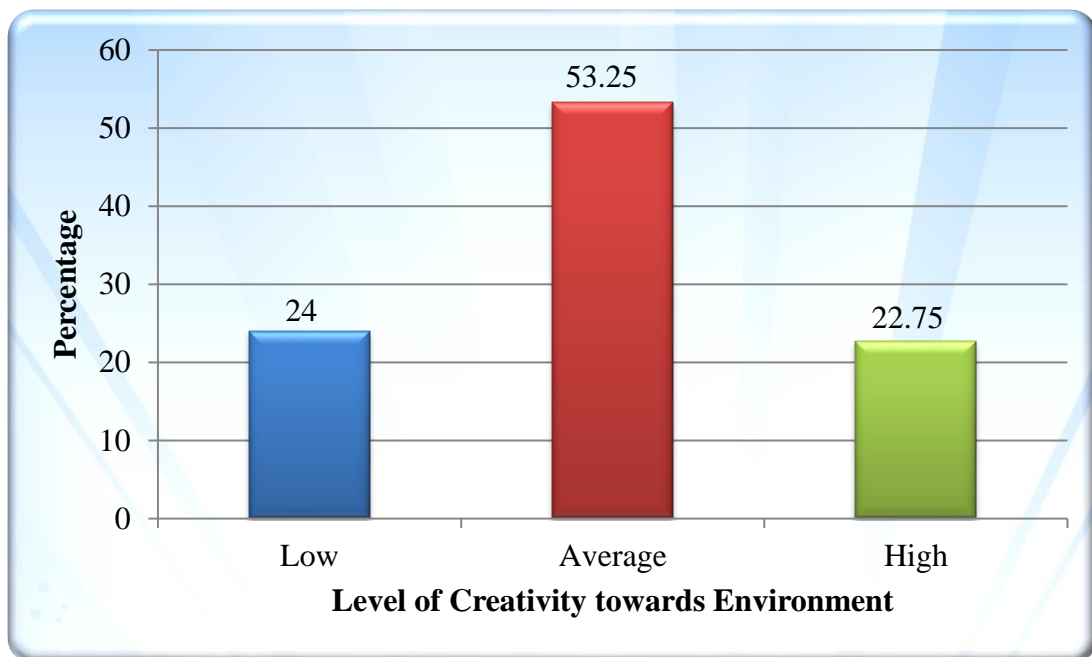


**Graph 4.7: Sample Distribution of students based on level
Motivation towards Environment**

From the above table & Graph (4.7) 19.12% of students belongs to low level of Motivation towards Environment, 59.25% of students belongs to Average level of Motivation towards Environment and 21.63% of students belongs to high level of Motivation towards Environmental. Hence students having average level of Motivation towards Environment are in higher percentage than those with low and high level of Motivation towards Environment.

Table 4.8: Sample Distribution of Students Based on Level of Creativity Towards Environment

Level of Creativity towards Environment	Frequency	Percentage
Low	192	24
Average	426	53.25
High	182	22.75
Total	800	100



Graph 4.8: Sample Distribution of Students Based on Level of Creativity Towards Environment

From the above table and graph (4.8) 24% of students belongs to low level of Creativity towards environment, 53.25% of students belongs to Average level of Creativity towards environment and 22.75% of students belongs to high level of Creativity towards environment. Hence students having average level of Creativity towards Environment are in higher percentage than those with low and high level of Creativity towards Environment.

4.5 INFERENCE ANALYSIS OF THE SAMPLE

Difference between the two groups in the mean scores of variables studied using statistical tests are discussed in this section. 't' test and chi square test are used to verify the Hypotheses stated in first chapter and are discussed in this section:

Hypothesis 1: There is no significant difference between the mean scores of Environmental Behaviour of the subgroups of students with respect to following variables (a) Gender (b) Locality (c) Type of Management (d) Medium of Instruction (E) Type of School Board.

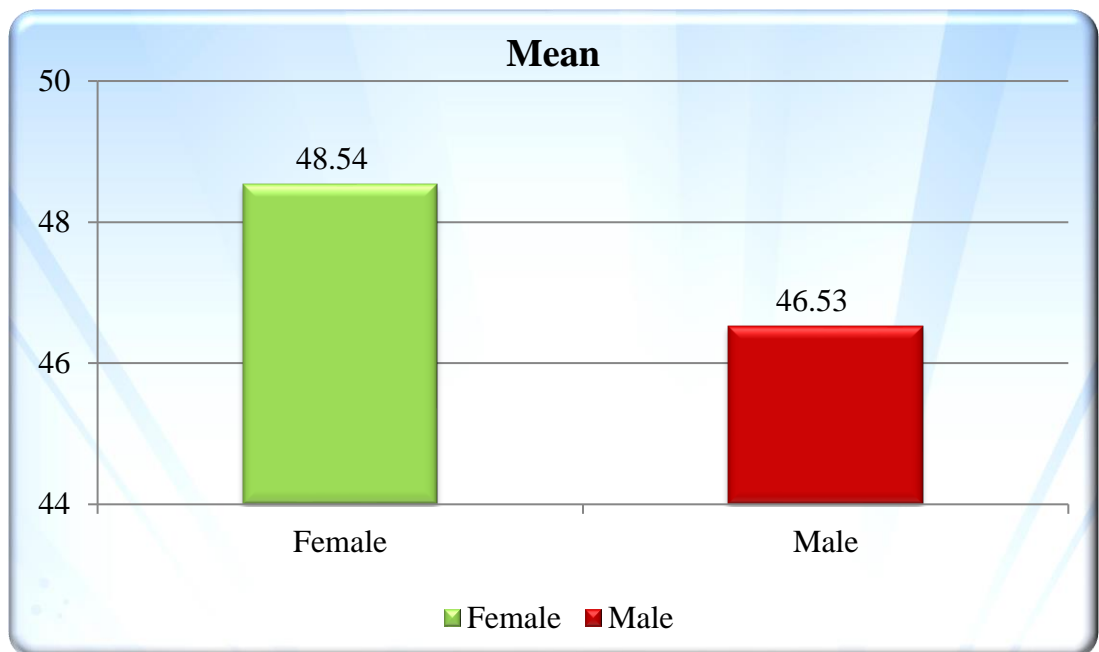
Null Hypothesis 1-a.:

There is no significant difference between the mean scores of Environmental Behaviour among Male and Female Sr. Sec. Students of different schools of Kota region.

Table 4.9: Influence of Gender on level of Environmental Behaviour of Sr. Sec. Students of Kota region.

Gender	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Female	400	48.54	6.3	798	4.6	Significant	Significant
Male	400	46.53	5.9				

It can be noticed from the above table. (4.9) that the females score high on EBS as the mean score of female Sr.sec students is 48.54 and was higher than that of male Sr. Sec. students (M=46.53) and the standard deviation of both of the subgroups shows that the scores are heterogeneous in nature. It is clear from the above table that the computed t value 4.6 was more than the critical value of t for 0.05 level (1.96) and for 0.01 level (2.59) at df 798, so the value is significant at both the levels, which assures the effect of gender on level of Environmental Behaviour. Hence the Hypothesis that "There is no significant difference between the mean scores of Environmental Behaviour among Male and Female Sr. Sec. Students of Different schools of Kota region." is rejected.



Graph 4.9: Influence of Gender on level of Environmental Behaviour of Sr. Sec. Students of Kota region.

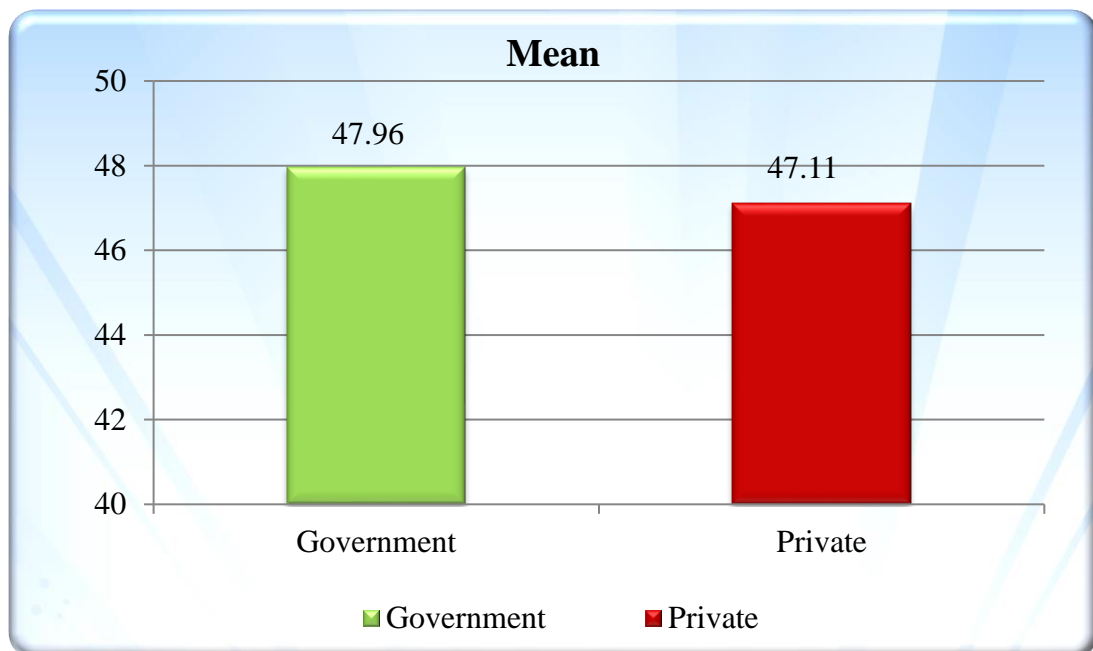
Null Hypothesis 1.b.: There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of Govt. and Pvt. Schools of Kota region.

Table 4.10: Influence of Type of Management on level of Environmental Behaviour of Sr. Sec students of Kota region.

Type of Management	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Government	400	47.96	6.33	798	1.94	NS	NS
Private	400	47.11	6.04				

NS = Not Significant

It can be noticed from the above table (4.10) that the mean score on EBS of Sr. Sec. Students of Govt. schools is 47.96 which is quite more than that of Sr. Sec students of Pvt. Schools (47.11). SD of both the subgroups shows that the scores are heterogeneous in nature. It is clear from the table that the computed t value 1.94 was less than the critical value of t for 0.05 (1.96) level and for 0.01 (2.58) level at df 798. So the value is not significant at both the levels, which assures that there is no influence of type of Management on level of Environmental Behaviour. Hence the Hypothesis that, "There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of Government & Private schools of Kota region." is accepted.



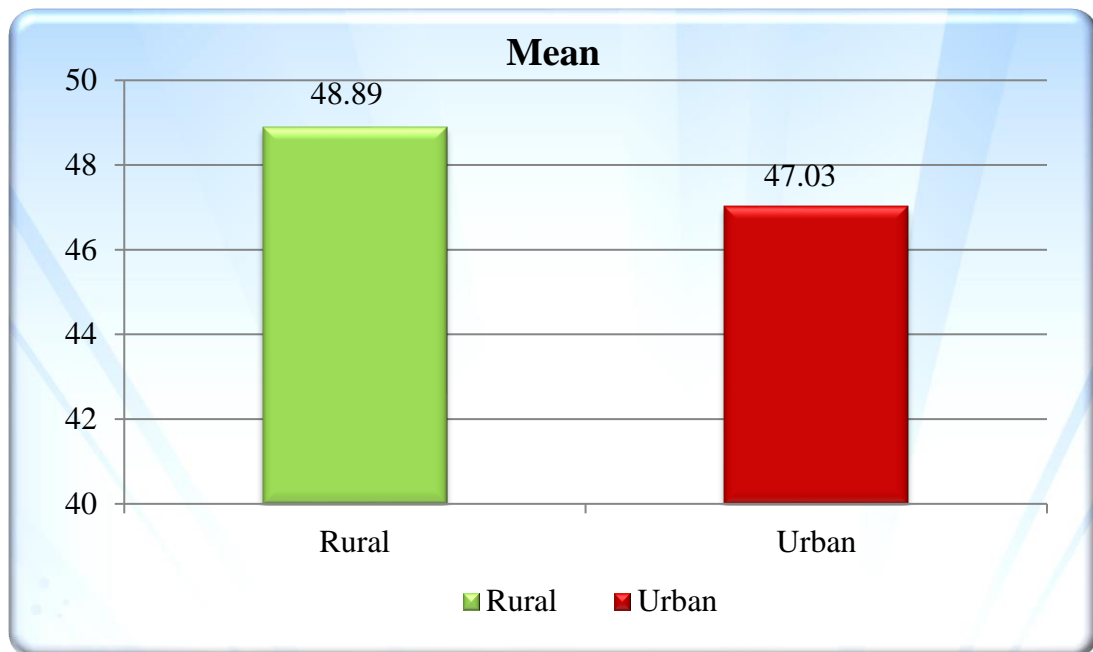
Graph 4.10: Influence of Type of Management on level of Environmental Behaviour of Sr. Sec students of Kota region.

Null Hypothesis 1.C: There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of rural and urban government schools of Kota region.

Table 4.11: Influence of Type of Locality on level of Environmental Behaviour of Sr. Sec students of Kota region.

Type of Management	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Rural	200	48.89	5.6	398	3.01	Significant	Significant
Urban	200	47.03	6.7				

It can be noticed from the above table (4.11) that the mean score on EBS of Sr. Sec students of Rural Govt. School is 48.89 which more than that of Sr. Sec students of Urban Govt. schools (47.03). SD of urban students group is high so their distribution is wide compare to rural students group. It is clear from the above table that the computed t value 3.01 was more than the critical value of t for 0.05 level (1.97) and for 0.01 level (2.59) at df 398, so the value is significant at both the levels, which assures the effect of locality on level of Environmental Behaviour. Hence the Hypothesis that, "There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of rural and urban government schools of Kota region." is rejected.



Graph 4.11: Influence of Type of Locality on level of Environmental Behaviour of Sr. Sec students of Kota region.

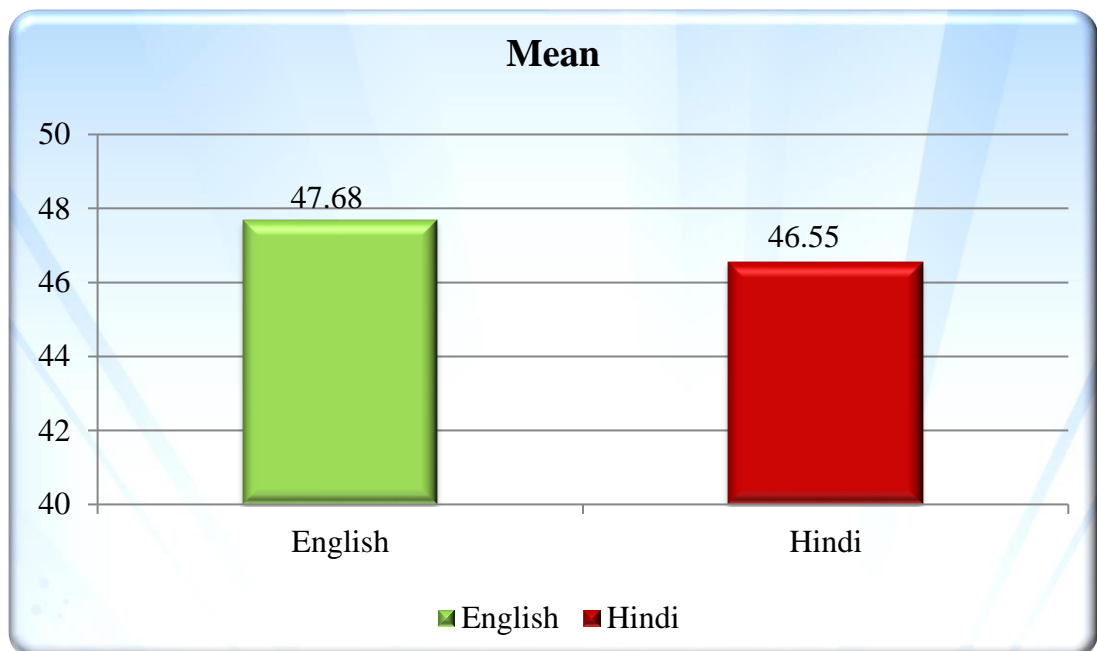
Null Hypothesis 1.d.: There is no significant difference between mean scores of environmental Behaviour among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.

Table 4.12: Influence of Medium of Instruction on level of Environmental Behaviour of Sr. Sec students of Kota region.

Medium of Instruction	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Hindi	200	46.55	5.3	398	1.88	NS	NS
English	200	47.68	6.6				

NS = Not Significant

It can be noticed from the above table (4.12) that the mean score on EBS of Sr. Sec. Students of English Medium schools is 47.68, which is quite more than Sr. Sec students of Hindi medium school (46.55). SD of English medium students is high so their distribution is wide compare to Hindi medium students. It is clear from the above table that the computed t value 1.88 was less than the critical value of t for 0.05 (1.97) level and for 0.01 (2.59) level at df 398. So the value is not significant at both the levels, which assures that there is no influence of type of instruction on level of Environmental Behaviour. Hence the Hypothesis that “There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.” is accepted.



Graph 4.12: Influence of Medium of Instruction on level of Environmental Behaviour of Sr. Sec students of Kota region.

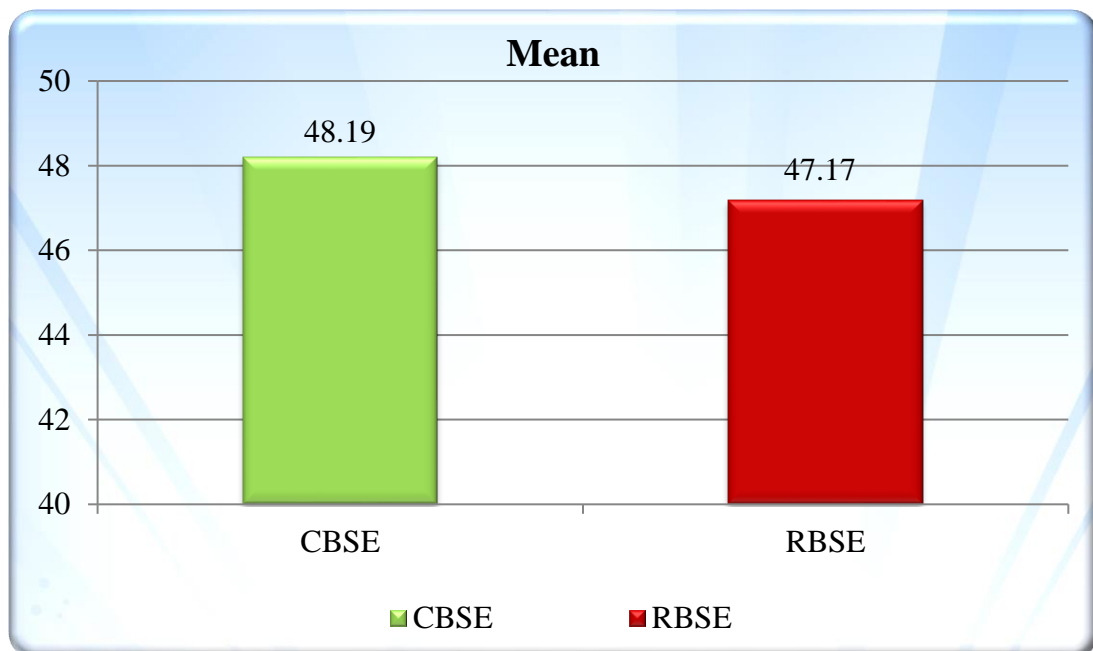
Null Hypothesis 1.e.: There is no significant difference between mean scores of Environmental Behavior among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.

Table 4.13: Influence of type of board of school on level of Environmental Behaviour of Sr. Sec students of Kota

Type of board of schools	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
CBSE	100	48.19	6.8	198	1.08	NS	NS
RBSE	100	47.17	6.52				

NS = Not Significant

It can be noticed from the above table (4.13) that the mean score on EBS of Sr. Sec. Students of CBSE board schools is 48.19, which is quite more than that of RBSE school students (47.17). SD of both the subgroups shows that the scores are heterogeneous in nature. It is clear from the above table that the computed t value 1.08 was less than the critical value of t for 0.05 (1.97) level and for 0.01 (2.60) level at df 198. So the value is not significant at both the levels, which assures that there is no influence of type of board of school on level of Environmental Behaviour. Hence the Hypothesis that, "There is no significant difference between mean scores of Environmental Behavior among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region." is accepted.



Graph 4.13: Influence of type of board of school on level of Environmental Behaviour of Sr. Sec students of Kota region.

Hypothesis 2: There is no significant difference between the mean scores of Motivation towards Environment of the subgroups of students with respect to following variables (a) Gender (b) Locality (c) Type of Management (d) Medium of Instruction (E) Type of School Board.

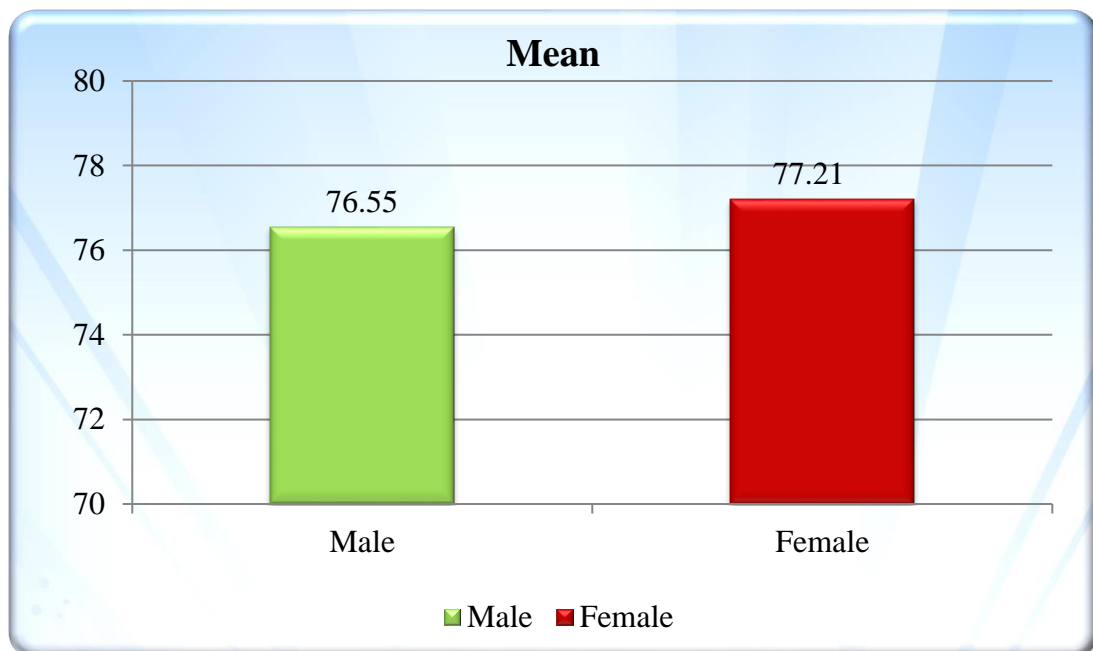
Null Hypothesis 2.a: There is no significant difference between the mean scores of Motivation towards Environment among Male and Female Sr. Sec. Students of different schools of Kota region.

Table 4.14: Influence of Gender on level of Motivation towards Environment of Sr. Sec. students of Kota region.

Gender	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Male	400	76.55	9.3	798	1.05	NS	NS
Female	400	77.21	8.4				

NS = Not Significant

It can be noticed from the above table (4.14) that the mean score of Female Sr. Sec. Students is 77.21 which is quite more than that of male Sr. Sec school students (76.55). SD of both the subgroups shows that the scores are heterogeneous in nature. It is clear from the above table that the computed t value 1.05 was less than the critical value of t for 0.05 (1.96) level and for 0.01 (2.58) level at df 798. So the value is not significant at both the levels, which assures that there is no influence of Gender, on level of Motivation towards Environment. Hence the Hypothesis that. "There is no significant difference between the mean scores of Motivation towards Environment among Male and Female Sr. Sec. Students of Different schools of Kota region." is accepted.



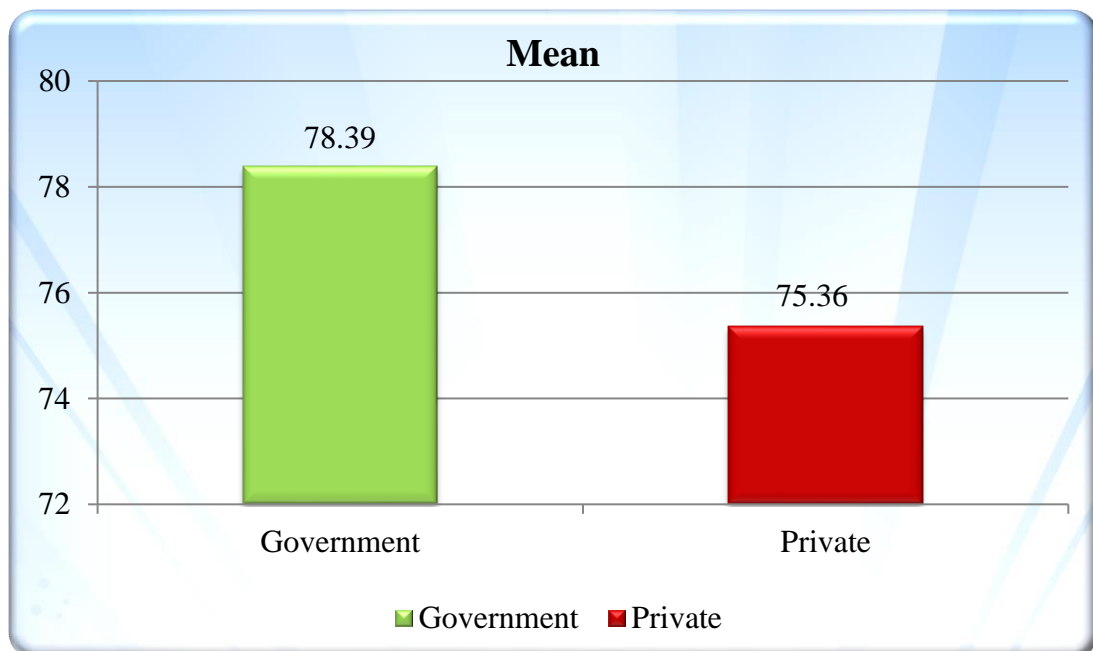
Graph 4.14: Influence of Gender on level of Motivation towards Environment of Sr. Sec. students of Kota region.

Null Hypothesis 2b: There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Govt. and Pvt. schools of Kota region.

Table 4.15: Influence of Type of Management on level of Motivation towards Environment of Sr. Sec students of Kota region.

Type of Management	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Government	400	78.39	8.4	798	4.8	Significant	Significant
Private	400	75.36	9.08				

It can be noticed from the above table (4.15) that the mean score of Sr. Sec. Students of Govt. schools is 78.39 which is more than that of Sr. Sec students of Pvt. School (75.36). SD of both the subgroups shows that the scores are heterogeneous in nature. It is clear from the above table that the computed t value 4.8 was more than the critical value of t for 0.05 (1.96) level and for 0.01 (2.58) level at df 798. So the value is significant at both the levels, which assures the influence of type of Management on level of Motivation towards Environment. Hence the Hypothesis that, "There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Govt. & Pvt. schools of Kota region." is rejected.



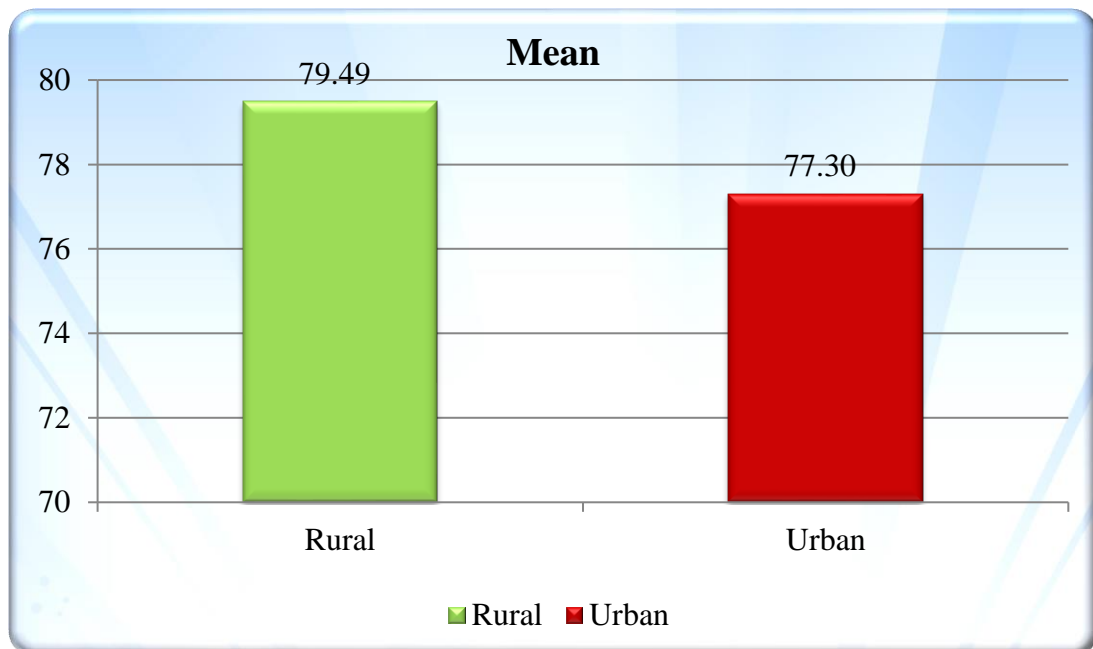
Graph 4.15: Influence of Type of Management on level of Motivation towards Environment of Sr. Sec students of Kota region.

Null Hypothesis 2.C: There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Rural and Urban government schools of Kota region.

Table 4.16: Influence of Type of Locality on level of Motivation towards Environment of Sr. Sec students of Kota region.

Type of locality	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Rural	200	79.49	7.7	398	2.63	Significant	Significant
Urban	200	77.30	8.9				

It can be noticed from the above table (4.16) that the mean score of Sr. Sec students of Rural Govt. Schools is 79.49 which is more than that of Sr. Sec. Students of Urban Govt. Schools (77.30). SD of both the subgroups shows that the scores are heterogeneous in nature. It is clear from the above table that the computed t value 2.63 was more than the critical value of t for 0.05 level (1.97) and for 0.01 level (2.59) at df 398, so the value is significant at both the levels, which assures the effect of locality on level of Motivation towards Environment. Hence the Hypothesis that, "There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Rural and Urban government schools of Kota region." is rejected.



Graph 4.16: Influence of Type of Locality on level of Motivation towards Environment of Sr. Sec students of Kota region.

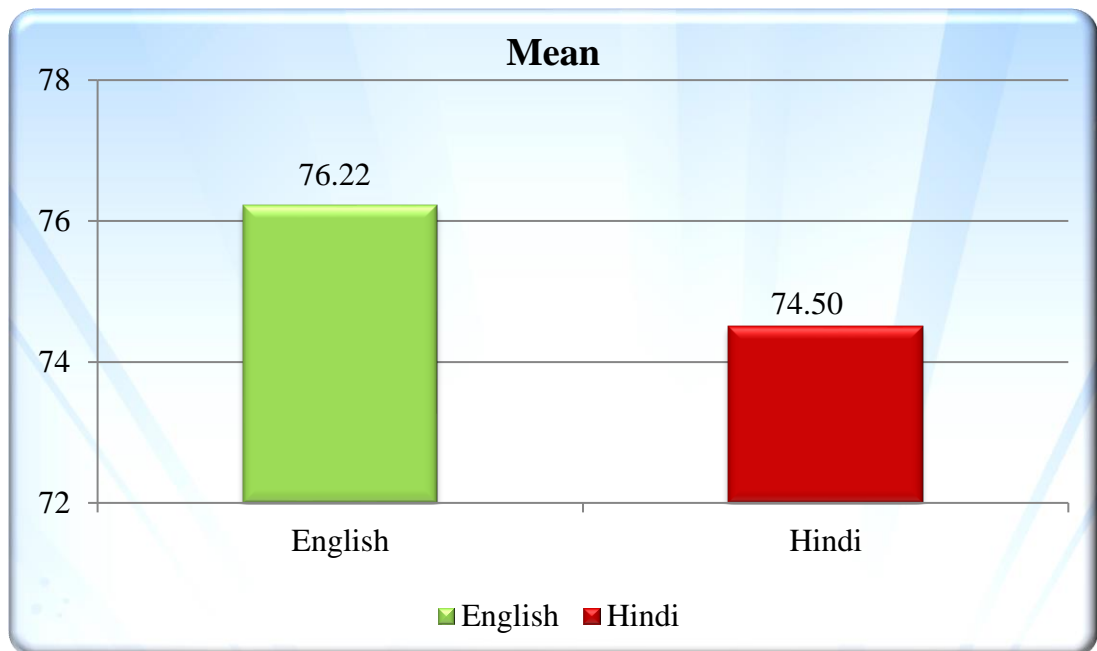
Null Hypothesis 2.d.: There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.

Table 4.17: Influence of Medium of Instruction on level of Motivation towards Environment of Sr. Sec students of Kota region.

Medium of Instruction	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
English	200	76.22	8.8	398	1.90	NS	NS
Hindi	200	74.50	9.2				

NS = Not Significant

It can be noticed from the above table (4.17) that the mean score of Sr. Sec. Students of English medium Pvt. School is 76.22 which is quite more than that of Sr. Sec students of Hindi medium Pvt. School (74.50). SD of both the subgroups shows that the scores are heterogeneous in nature. It is clear from the above table that the computed t value 1.90 was less than the critical value of t for 0.05 (1.97) level and for 0.01 (2.59) level at df 398. So the value is not significant at both the levels, which assures that there is no influence of medium of instruction, on level of Motivation towards Environment. Hence the Hypothesis that “There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.” is accepted.



Graph 4.17: Influence of Medium of Instruction on level of Motivation towards Environment of Sr. Sec students of Kota region.

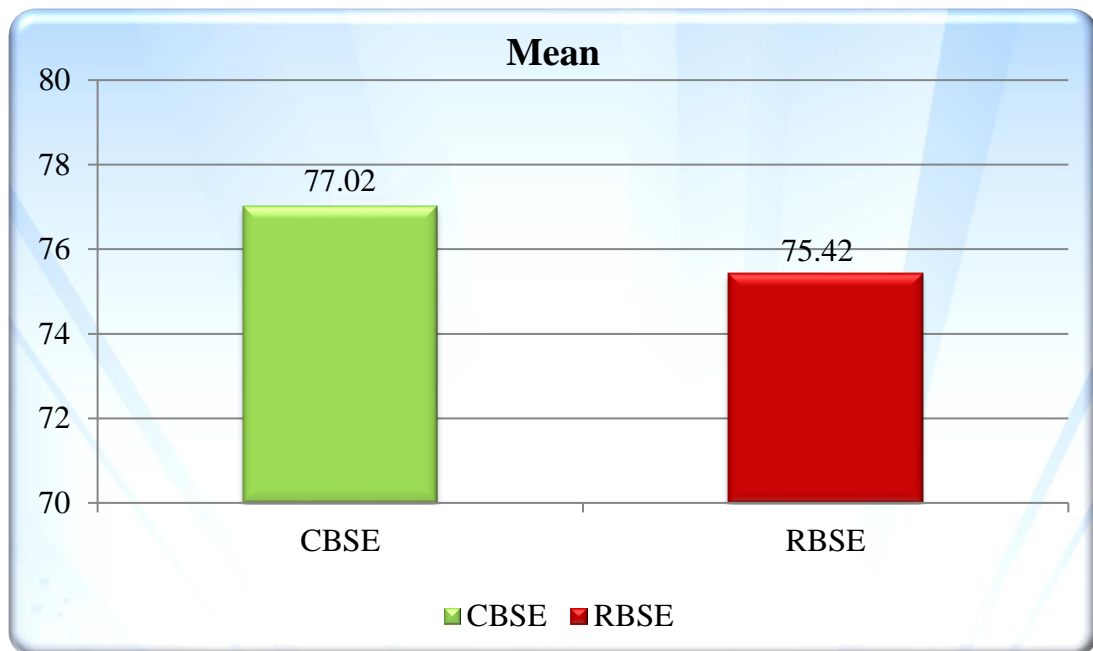
Null Hypothesis 2.e.: There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.

Table 4.18: Influence of Type of Board of school on level of Motivation towards environment of Sr. Sec students of Kota region

Type of Board of schools	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
CBSE	100	77.02	9.4	198	1.28	NS	NS
RBSE	100	75.42	8.26				

NS = Not Significant

It can be noticed from the above table (4.18) that the mean score of Sr. Sec. Students of CBSE Board School is 77.02 which is quite more than that of Sr. Sec students of RBSE Board school (75.42). SD of both the subgroups shows that the scores are heterogeneous in nature. It is clear from the above table that the computed t value 1.28 was less than the critical value of t for 0.05 (1.97) level and for 0.01 (2.60) level at df 198. So the value is not significant at both the levels, which assures that there is no influence of Type of Board on level of Motivation towards Environment. Hence the Hypothesis that, "There is no significant difference between the mean scores of Motivation towards Environment among Sr. Sec. Students of CBSE Board and RBSE Board English medium private schools of Kota region." is accepted.



Graph 4.18: Influence of Type of Board of school on level of Motivation towards environment of Sr. Sec students of Kota region.

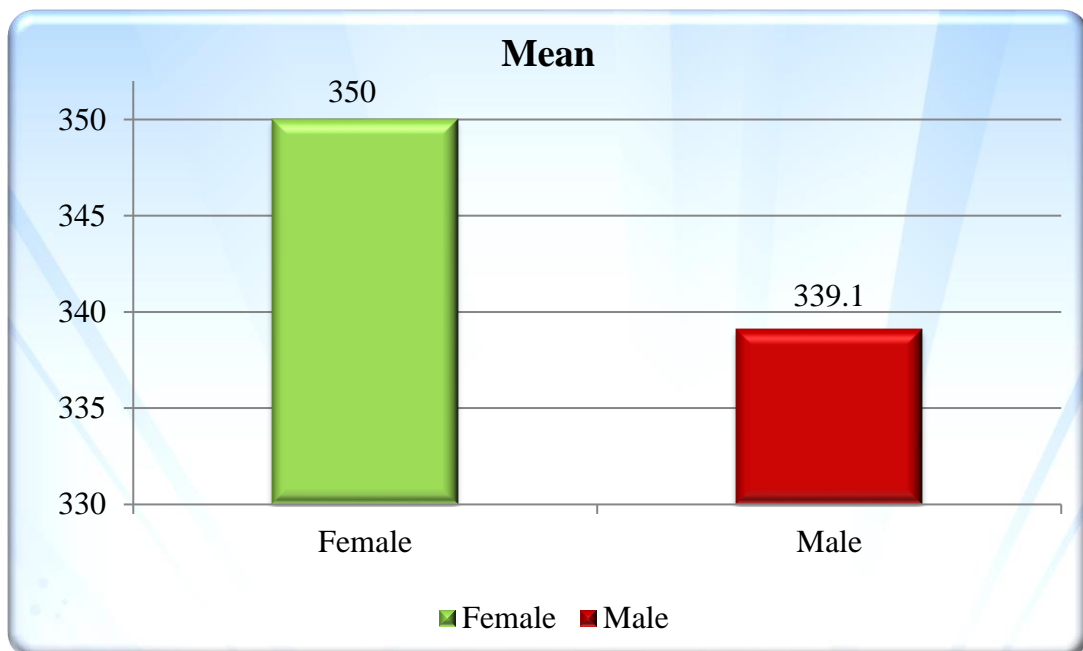
Null Hypothesis 3: There is no significant difference between the mean scores of Creativity towards Environment of the subgroups of students with respect to following variables (a) Gender (b) Locality (c) Type of Management (d) Medium of Instruction (E) Type of School Board.

Hypothesis 3.a There is no significant difference between the mean scores of Creativity towards Environment among Male and Female Sr. Sec. Students of different schools of Kota region.

Table 4.19: Influence of Gender on level of Creativity towards Environment of Sr. Sec. Students of Kota region.

Gender	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Male	400	339.1	24.1	798	6.9	Significant	Significant
Female	400	350	20.3				

It can be noticed from the above table (4.19) that the mean score of Female Sr. Sec. Students is 350 which is more than that of male Sr. Sec school students (339.1). SD of both the subgroups shows that the scores are heterogeneous in nature and the distribution is wide. It is clear from the above table that the computed t value 6.9 was more than the critical value of t for 0.05 (1.96) level and for 0.01 (2.58) level at df 798. So the value is significant at both the levels, which assures the influence of gender, on level of Creativity towards Environment. Hence the Hypothesis that. "There is no significant difference between the mean scores of Creativity towards Environment among Male and Female Sr. Sec. Students of different schools of Kota region." is rejected.



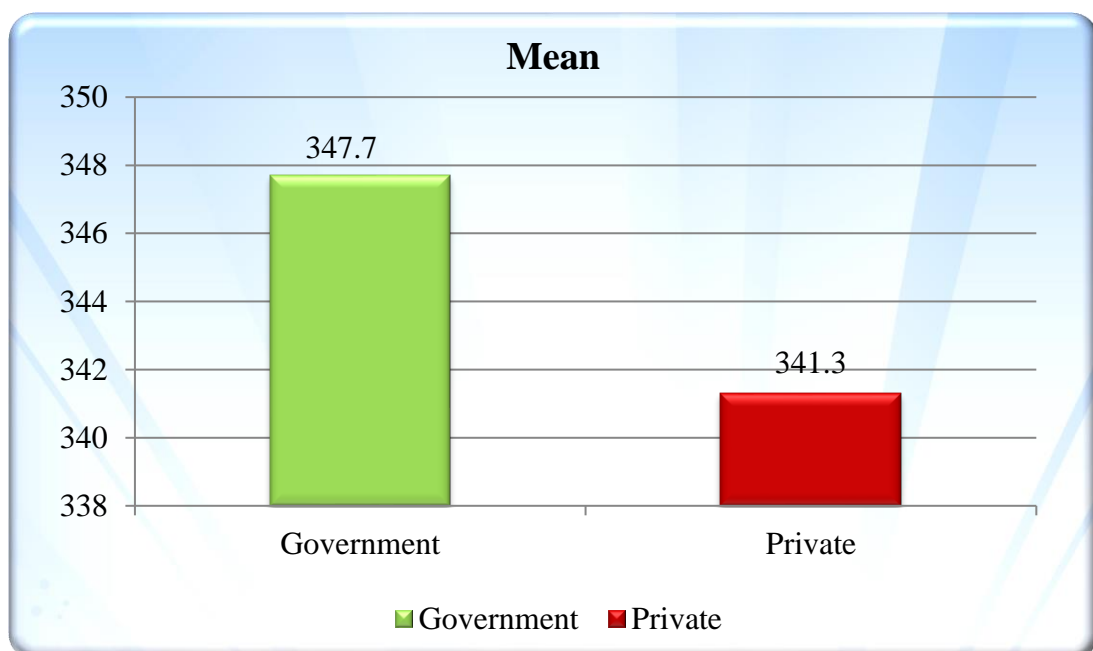
Graph 4.19: Influence of Gender on level of Creativity towards Environment of Sr. Sec. students of Kota region.

Null Hypothesis 3.b.: There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of Govt. and Pvt. Schools of Kota region.

Table 4.20: Influence of Type of Management on level of Creativity towards Environment of Sr. Sec students of Kota region

Type of Management	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Government	400	347.7	22.56	798	3.97	Significant	Significant
Private	400	341.3	22.97				

It can be noticed from the above table (4.20) that the mean score of Sr. Sec. Students of Govt. schools is 347.7 which is more than that of Sr. Sec. Students of Pvt. Schools (341.3). SD of both the subgroups shows that the scores are heterogeneous in nature and the distribution is wide, it is clear from the above table that the computed t value 3.97 was more than the critical value of t for 0.05 (1.96) level and for 0.01 (2.58) level at df 798. So the value is significant at both the levels, which assures the influence of type of Management on level of Creativity towards Environment. Hence the Hypothesis that, “There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. students of Govt. & Pvt. schools of Kota region.” is rejected.



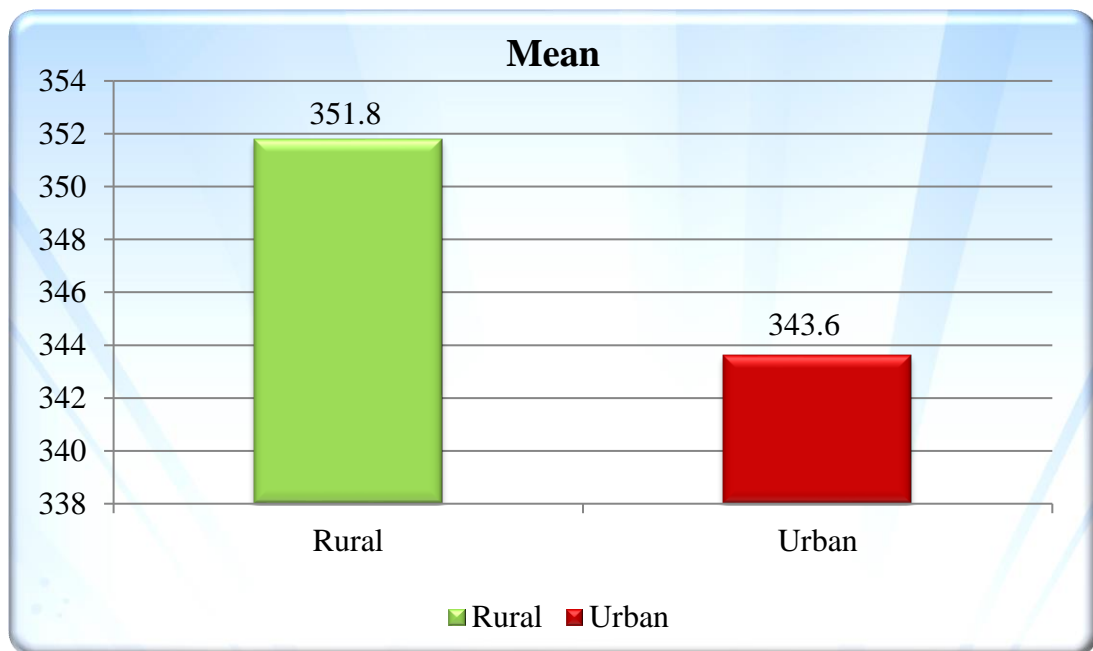
Graph 4.20: Influence of Type of Management on level of Creativity towards Environment of Sr. Sec students of Kota region.

Null Hypothesis 3.C There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of Rural and Urban government schools of Kota region.

Table 4.21: Influence of Type of Locality on level of Creativity towards Environment of Sr. Sec students of Kota region.

Type of Locality	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
Rural	200	351.8	23.15	398	3.64	Significant	Significant
Urban	200	343.6	21.8				

It can be noticed from the above table (4.21) the mean score of Sr. Sec students of Rural Govt. Schools is 351.8 which more than that of Sr. Sec. Students of Urban Govt. Schools (343.6). SD of both the subgroups shows that the scores are heterogeneous in nature and the distribution is wide. It is clear from the above table that the computed t value 3.64 was more than the critical value of t for 0.05 level (1.97) and for 0.01 level (2.59) at df 398, so the value is significant at both the levels, which assures the effect of locality on level of creativity towards environment Hence the Hypothesis that, "There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of Rural and Urban government schools of Kota region." is rejected.



Graph 4.21: Influence of Type of Locality on level of Creativity towards Environment of Sr. Sec students of Kota region.

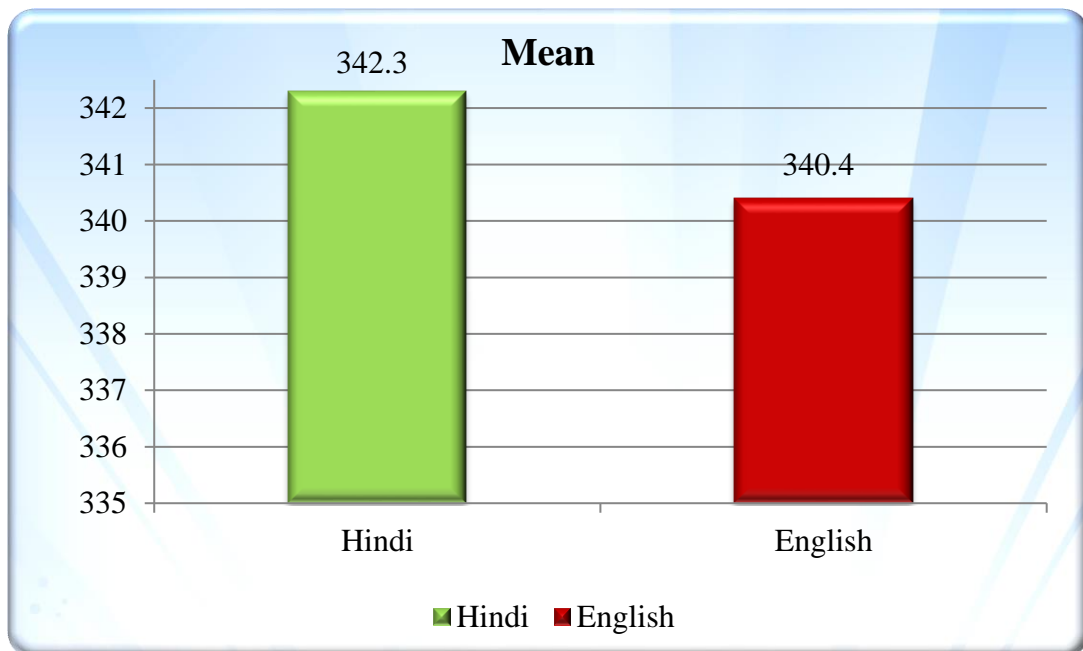
Null Hypothesis 3.d.: There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.

Table 4.22: Influence of Medium of Instruction on level of Creativity towards Environment of Sr. Sec students of Kota region

Medium of Instruction	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
English	200	340.4	22.5	398	0.82	NS	NS
Hindi	200	342.3	23.3				

NS = Not Significant

It can be noticed from the above table (4.22) that the mean score of Sr. Sec. Students of English medium Pvt. School is 340.4 which is quite less than that of Sr. Sec students of Hindi medium Pvt. School (342.3). SD of both the subgroups shows that the scores are heterogeneous in nature and the distribution is wide. It is clear from the above table that the computed t value 0.82 was less than the critical value of t for 0.05 (1.97) level and for 0.01 (2.59) level at df 398. So the value is not significant at both the levels, which assures that there is no influence of Medium of Instruction, on level of Creativity towards Environment. Hence the Hypothesis that. "There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region." is accepted.



Graph 4.22: Influence of Medium of Instruction on level of Creativity towards Environment of Sr. Sec students of Kota region.

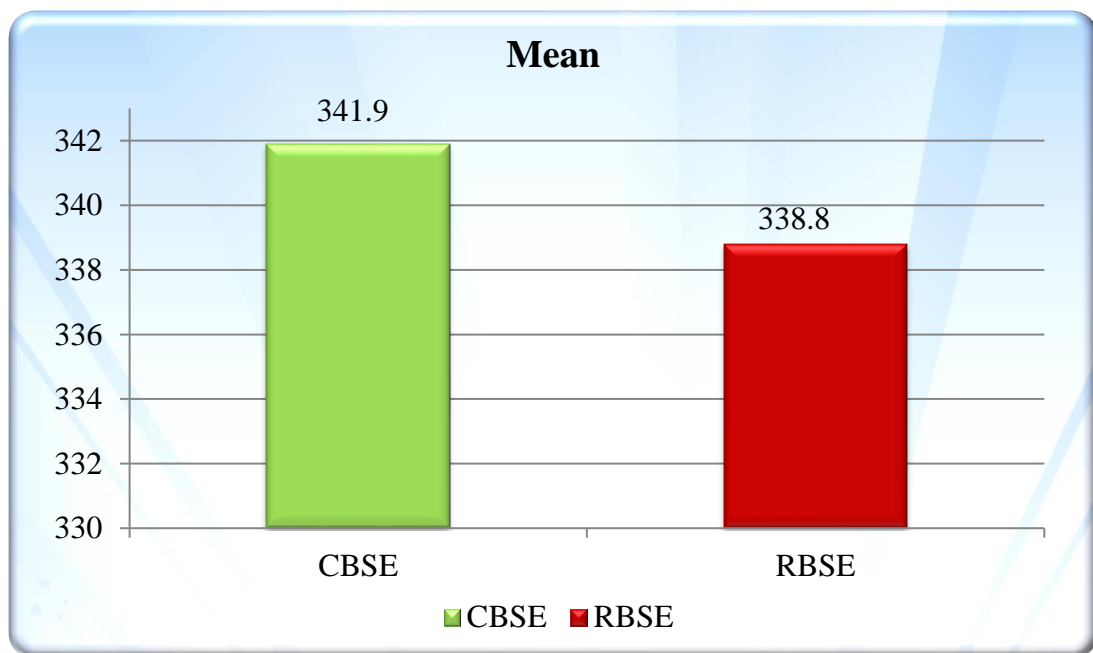
Null Hypothesis 3.e.: There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.

Table 4.23: Influence of type of Board of school on level of Creativity towards Environment of Sr. Sec students of Kota region.

Type of Board of school	N	M	SD	df	t value	Level of Significance	
						0.05	0.01
CBSE	100	341.9	21.1	198	0.97	NS	NS
RBSE	100	338.8	23.9				

NS = Not Significant

It can be noticed from the above table (4.23) that the mean score of Sr. Sec. Students of CBSE Board School is 341.9 which is more than that of Sr. Sec. Students of RBSE Board School (338.8). SD of both the subgroups shows that the scores are heterogeneous in nature and the distribution is wide. It is clear from the above table that the computed t value 0.97 was less than the critical value of t for 0.05 (1.97) level and for 0.01 (2.60) level at df 198. So the value is not significant at both the levels, which assures that there is no influence of Type of Board on level of Creativity towards Environment. Hence the Hypothesis that. "There is no significant difference between the mean scores of Creativity towards Environment among Sr. Sec. Students of CBSE Board and RBSE Board English medium private schools of Kota region." is accepted.



Graph 4.23: Influence of type of Board of school on level of Creativity towards Environment of Sr. Sec students of Kota region.

Hypothesis 4: There is no significant Association among the level of Environmental Behaviour, Creativity towards Environment and Motivation towards Environment in Scores of Sr. Sec. Students of Kota region.

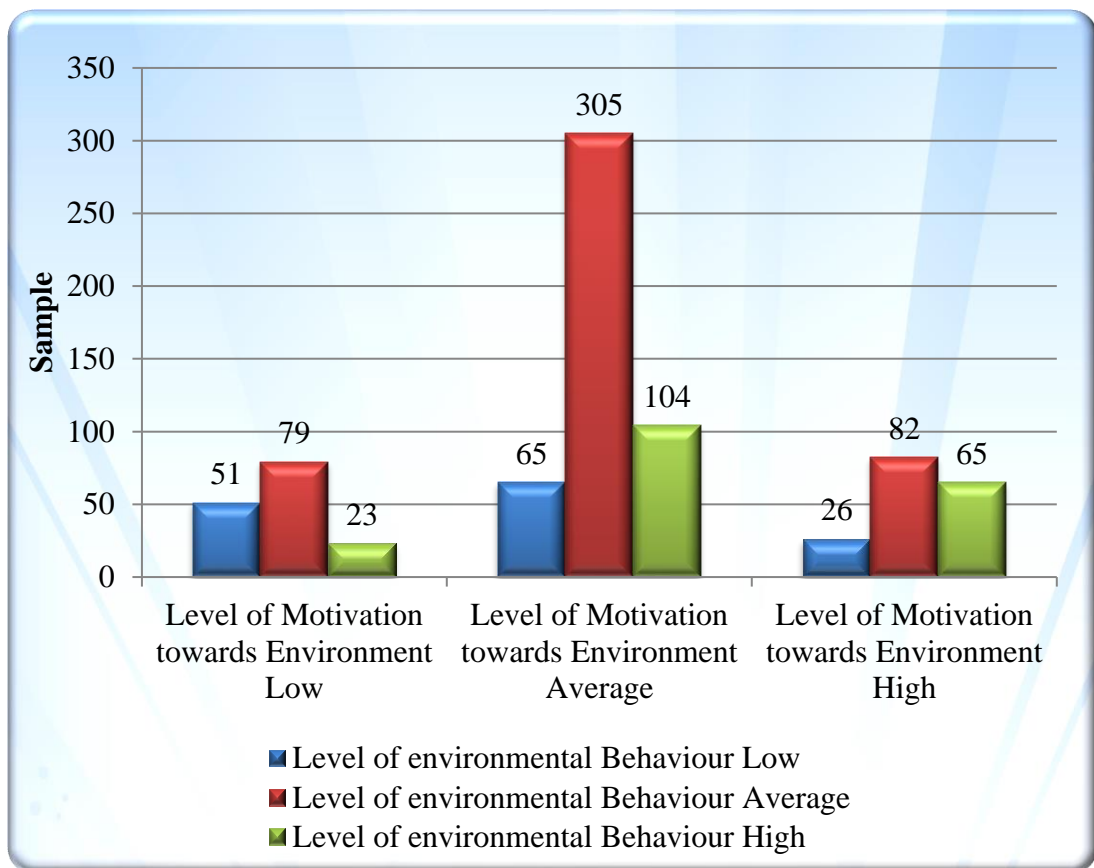
Null Hypothesis 4.a: There is no significant association between the level of Environmental Behaviour and the level of Motivation toward Environment in scores of Sr. Sec. Students of Kota region.

Table 4.24: Chi-square test for Association between level of Environmental behavior and level of Motivation towards Environment

Level of Motivation towards Environment	Level of environmental Behaviour			Total	df	Chi square value	Level of Significance	
	Low	Average	High				0.05	0.01
Low	51 (27.2)	79 (89.1)	23 (36.7)	153	4	52.9	Significant	Significant
Average	65 (84.1)	305 (276)	104 (114)	474				
High	26 (30.7)	82 (101)	65 (41.5)	173				
Total	142	466	192	800				

The value within () refers to expected frequency

Since the computed Chi Square (χ^2) Value 52.9 is significant at both the 0.05 (9.5) and 0.01 level (13.27) at df 4, which reveals that the level of Environmental Behaviour and level of Motivation towards Environment is significantly associated and denotes that the students with high level of Environmental Behaviour are significantly associated with high level of Motivation towards Environment. The students with low level of Environmental behaviour are significantly associated with low level of Motivation towards environment. Hence the Hypothesis that “There is no significant association between the level of Environmental Behaviour and the level of Motivation toward Environment in scores of Sr. Sec. Students of Kota region.” is rejected.



Graph 4.24: Chi-square test for Association between level of Environmental behavior and level of Motivation towards Environment

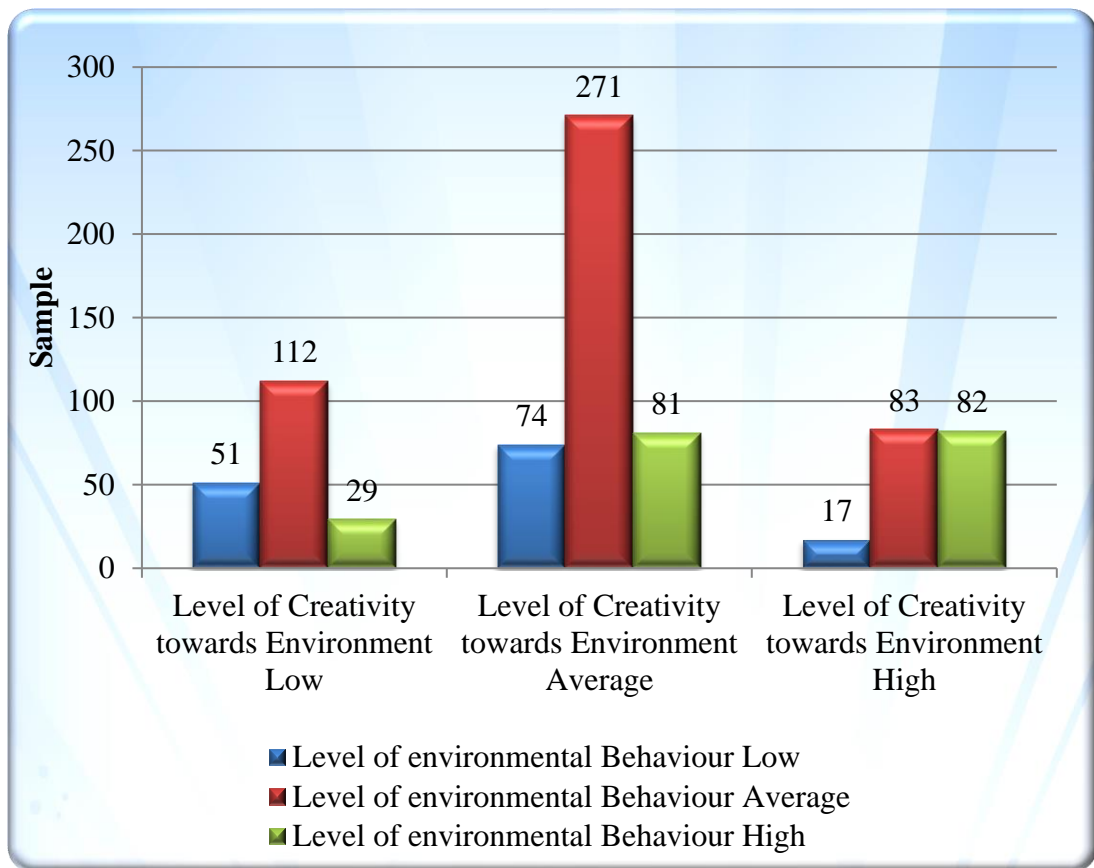
Null Hypothesis 4.b: There is no significant association between the level of Environmental behaviour and the level of Creativity toward Environment in scores of Sr. Sec. Students of Kota region.

Table 4.25: Chi-Square test for level of Environmental Behavior and level of Creativity towards Environment

Level of Creativity towards Environment	Level of Environmental Behaviour			Total	df	Chi square value	Level of Significance	
	Low	Average	High				0.05	0.01
Low	51 (34.1)	112 (112)	29 (46.1)	192	4	67.1	Significant	Significant
Average	74 (75.6)	271 (248)	81 (102)	426				
High	17 (32.3)	83 (106)	82 (43.7)	182				
Total	142	466	192	800				

The value within () refers to expected frequency

Since the computed Chi Square (χ^2) Value 67.1 is significant at both the 0.05 (9.5) and 0.01 (13.27) level at df 4, which reveals that the level of Environmental Behaviour and level of Creativity towards Environment is significantly associated and denotes that the students with high level of Environmental behaviour are significantly associated with high level of Creativity towards Environment. The students with low level of Environmental behaviour are significantly associated with low level of Creativity towards Environment. Hence the Hypothesis that “There is no significant association between the level of Environmental Behaviour and the level of Creativity toward Environment in scores of Sr. Sec. Students of Kota region.” is rejected.



Graph 4.25: Chi-Square test for level of Environmental Behavior and level of Creativity towards Environment

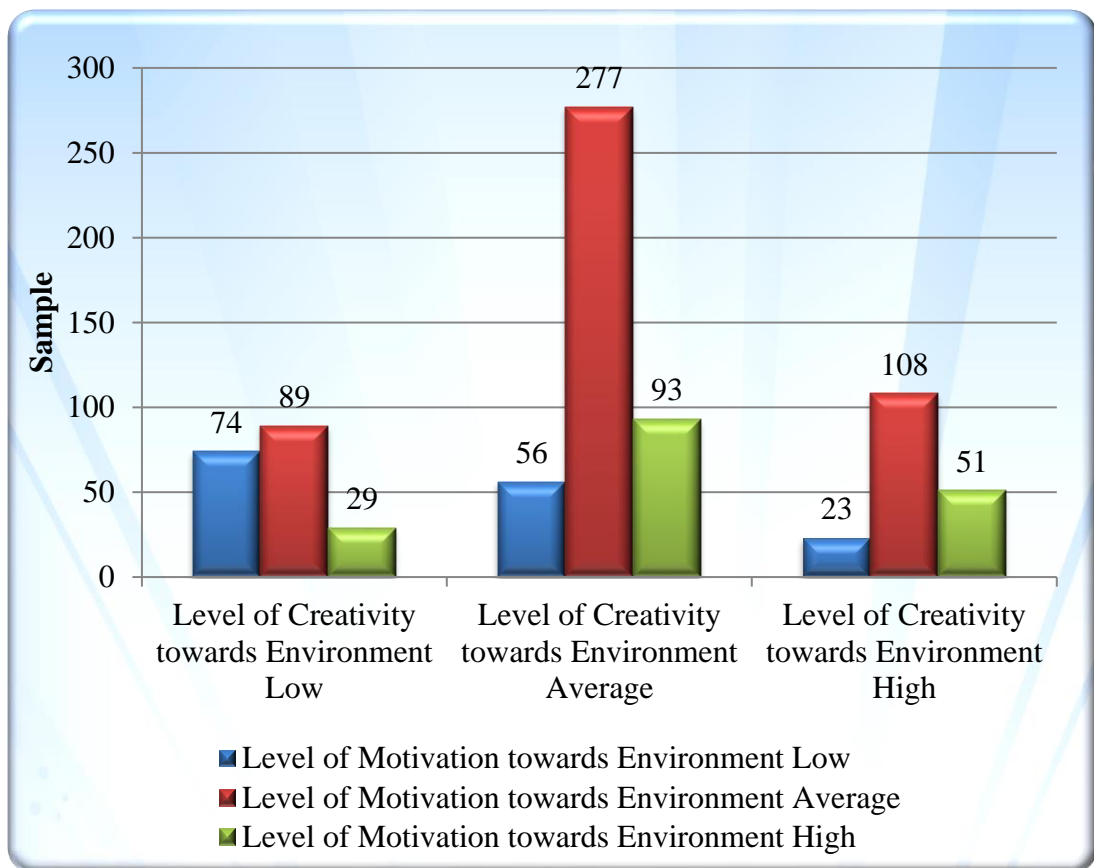
Null Hypothesis 4.c There is no significant association between the level of motivation towards environment and the level of creativity toward environment in scores of Sr. Sec. Students of Kota region.

Table 4.26: Chi-Square test for level of Motivation towards Environment and level of Creativity towards Environment

Level of Creativity towards Environment	Level of Motivation towards Environment			Total	df	Chi square value	Level of Significance	
	Low	Average	High				0.05	0.01
Low	74 (36.7)	89 (114)	29 (41.5)	192	4	64.8	Significant	Significant
Average	56 (81.5)	277 (252)	93 (92.1)	426				
High	23 (34.8)	108 (108)	51 (39.4)	182				
Total	153	474	173	800				

The value within () refers to expected frequency

Since the computed Chi Square (χ^2) Value 64.8 is significant at both the 0.05(9.4) and 0.01(13.27) level at df 4, which reveals that the level of Motivation towards Environment and level of Creativity towards Environment is significantly associated and denotes that the students with high level of Creativity towards Environment are significantly associated with high level of Motivation towards Environment. The students with low level of Motivation towards Environment are significantly associated with low level of Creativity towards Environment. Hence the Hypothesis that “There is no significant association between the level of Motivation towards Environment and the level of Creativity toward environment in scores of Sr. Sec. Students of Kota region” is rejected.



Graph 4.26: Chi-Square test for level of Motivation towards Environment and level of Creativity towards Environment

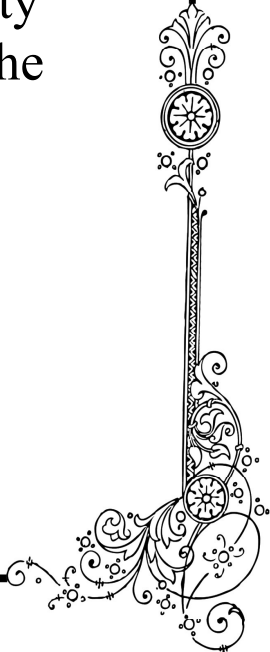
4.6 CONCLUSION

A detailed analysis of Hypotheses has been done in this chapter. Statistical techniques like t test, Chi Square has been used in verifying the hypotheses. The discussion of the result obtained, conclusion and suggestions will be dealt in next chapter.



Summary & Conclusions

Glittering water, fertile lands, lofty mountains and dense woods are the bulk wards of a good country.



CHAPTER 5

SUMMARY & CONCLUSIONS

5.1 INTRODUCTION

The term environment comes from the medieval French word, “environ” meaning to form a ring around or to surround. A modern Statement is that the environment is concerned with conditions or influences under which any person lives or is developed. Environment Consist of various type of forces like physical intellectual, moral, political, cultural, emotional, social and economic. Thus environment is the aggregate of all the external forces, which influence the life, nature, behavior, development and achievement of an individual. So the clean and favorable environment is necessary for the all around development of child. But due to urbanization human activities exert enormous influence on the natural condition of the entire planet. Environment degradation has been increased day by day and created a lot of environmental problems likes climates change, pollutions, ozone layer depletion, loss of bio diversity etc. All these environmental hazards necessitate the leaning teaching of environment educations or environmental science. Aim of environmental science is to develop a world population that is aware of, and concern about the environment and associated problems and develop the commitment to work individually or collectively towards solutions of current environmental problem and prevention of new ones.

Environment Conservation is first recorded in India during the third century BC in days of emperor Ashoka, his edicts on stone, on nature conservation survive even today thus the Indian tradition of love, respect and reverence for nature goes back to time immemorial, and environmental protection was considered as religious duty. Public statements about the nature and magnitude of environmental problems implicate human being as the principal casual factor. “Since people are causing global warming; they also have it in their power to prevent it from getting worse” (**Union of concerned scientist Australia 2006**)

The International Environmental Education Programme (**IEEP**) launched by UNESCO and UNEP in 1975 aimed at promoting exchange of information and

experiences, research and experimentation, training and curricula and material development and international co-operation in field of Environment Education.

After that many national and international conferences were arranged to develop concern towards environmental problems, like Rio summit, Kyoto protocol etc. In India second international conference was held in New Delhi in 1985. NCERT did pioneering work in environmental education by developing modern curriculum and also prepared text book and other instructional material teaching aid and audiovisual materials. The Hon'ble Supreme Court of India in 2003 directed the UGC to introduce a basic course on environment at every level in college education. India has also signed the latest agreement i.e. Paris agreement for Climate change which intended to lower the rate of emissions of poisonous gases (Green house gases). In spite of all the efforts of minimizing the environmental problems it remains increasing rapidly. Environmental problems or degradation have been viewed as very pressing social issues and societal concerns, as well as environmental issues. (**Oskamp & shultz 2006**).

The effective management and conservation of natural environment and ecosystem requires an appropriate knowledge base and applied expertise for conserving natural environment, for fostering environmentally sustainable lifestyle and behaviour and for managing and mitigating adverse human impacts on and of the natural environment. (**Reser & Bentrapp baumer, 2001**) To decrease these problems we must develop the interdisciplinary work. Expert from every field must contribute to solve the environmental problem.

Environmental science psychology

To protect our planet from degradation environmental science alone could not sensitise the people to minimize the pollution and environmental hazards. It needs an interdisciplinary approach, environmental science and psychology combines to form a new field or area of focus to save environment. Psychology has a special responsibility to be proactively involved in fostering more ecologically sensitive and sustainable behaviours & lifestyles. Psychology has been a lead discipline in addressing the nature quality and importance of Human-Natural environment

transaction, and those mediating individual and system level factors which contribute to natural environment degradation and destruction (**Gifford 2000, clayton and Brook 2005**).

Individual level psychological factors include Behaviour, value, Knowledge level, Motivation, Attitude creativity and decision making. System level psychological and social factors include social process, consumption patterns, Media representation, environmental monitoring, reporting measures and legislation. Psychologists have an indispensable role to play, in analyzing and addressing linkage, between people and environmental problems and finding achievable and effective solutions. (**Oskamp, 2000 a, b**)

Psychology address the more immediate determinants & social context of environmentally relevant decisions, involvement & behaviours and the nature of human appraisals of and response to risk, threatened resources, environmental degradation and related psychosocial impacts. Therefore environmental science psychology (ESP) is important area to be focused and studied. Environmental science psychological researches are linked to architectural design and planning approaches and on a more enlightened involvement and relationship with the natural world. Environmental science psychology is concerned with aspects of how people come to experience, understand and behave in their physical and social environment and the nature of their relationship and interactions with natural and human made environment. Environmental science psychology works as natural and behavioural science, as well as a social science, brings a particularly helpful and bridging perspective to environmental problems which can often fall between the natural and social science. Environmental science psychology has much to offer:

Theoretically – By way of conceptual models and behaviour analytic approaches with which to consider the nature of environmental problems and issues.

Methodologically – With respect to relevant research instruments, measures and findings.

Practically – With respect to evidence based application, strategies and expertise.

Environmental Science and psychology has made a substantial investment in documenting the multiple benefits of natural environment and setting to individual and community well being and environmental quality (**Hartig & Staats 2003**).

Environmental science psychology is concerned about:

1. The current state of the natural environment.
2. The adequacy and effectiveness of current initiatives to address environmental problems at regional, national and international level.
3. Impact of environment degradation and climate change on human communities, quality of life & psychological and physical well being.

The implications for human are not limited to physical health and well being and availability of uncontaminated air, water, food but includes psychological need and benefit considerations relating to a spectrum of development, competency fostering and care eliciting experience in natural environment such as restoration, recreation and inspiration. Environmental science and psychology play a key role, particularly with respect to problem analysis and effective risk communication and behaviour change strategies (**Lorenzoni, Pidgeon & O' Connor 2005**) Current films such as *The day after tomorrow*, Al Gore's 'An inconvenient truth', and countless media images, Newspapers articles posed a devastating impacts on particular urgency and concern of environmental problems. Given the urgency and magnitude of environmental issues or problems requires much greater attention, visibility, strategic cross disciplinary collaborations. It has particular insight expertise, with respect to environment – linkages relevant to addressing environmental problems

These includes

- a. Better understanding that behaviour which is directed towards protecting and conserving the natural environment or adversely impact on it.
- b. Effectively changing awareness, perceptions, attitudes understandings and behaviours relating to the natural environment, adverse natural environment impacts and attributions of cause and responsibility.
- c. Sensitively, measuring and monitoring changes in perceptions, Motivations & attitude relating to the natural environment.

- d. The nature and role of media coverage and representations of environmental issues & problems and the nature and implications of social constructions & social representation process with respect to environmental ‘problem’ and ‘solutions’.

5.2 STATEMENT OF THE PROBLEM

Psychologist now becomes concerned about how environment affect us. Just as toxic chemicals in the air and the ground can damage physical health so other characteristics of the environment can damage mental & social health. Environmental degradation in form of pollution, deforestation etc Calls for the research in environmental issues by educationists in students to make them behave positively toward environment.

Motivation towards environment is necessary to know the importance of keeping environment clean and protecting earth. We are facing various environmental problems like global warming, acid rain, over population etc. In this situation creating positive behaviour towards environment increases the autonomous motivation/self determined motivation towards environment among the students which help the student in developing creativity about environmental issues and environmental conservation.

Hence the present study has been undertaken by the investigator and entitled as **“A Study of Environmental Science psychology of senior secondary school students, with relation to Behaviour, Motivation and Creativity”**.

5.3 OBJECTIVES OF THE STUDY

The major objective of the study is to investigate the environmental behaviour, creativity and motivation of Senior Secondary School students of Kota region. More specifically the objectives of present study are:

- (i) To compare the Environmental Behaviour of Sr. Sec. School Students of Kota region with respect to the following categorical variables:
 - a) Gender (Male & Female)
 - b) Type of Management (Govt. and Pvt.)
 - c) Locality (Rural & Urban)
 - d) Medium of Instruction (English and Hindi)
 - e) Type of board of school (CBSE and RBSE)
- (ii) To compare the Motivation towards Environment of Sr. Sec. School Students of Kota region with respect to the following categorical variables:
 - a) Gender (Male & Female)
 - b) Type of Management (Govt. and Pvt.)
 - c) Locality (Rural and Urban)
 - d) Medium of Instruction (English and Hindi)
 - e) Type of board of school (CBSE and RBSE)
- (iii) To compare the Creativity towards Environment of Sr. Sec. School students of Kota region with respect to the following categorical variables:
 - a) Gender (Male and Female)
 - b) Type of Management (Govt. and Pvt.)
 - c) Locality. (Rural and Urban)
 - d) Medium of Instruction (English and Hindi)
 - (f) Type of board of school (CBSE and RBSE)
- (vii) To explore whether there exists any association between Environmental Behavior, Motivation towards Environment and Creativity towards Environment.

5.4 HYPOTHESES OF THE STUDY

Hypotheses are tentative statements about solution of the problem and add direction to the purpose of study. The researcher had formulated the following hypotheses for the present study:

- 1 There is no significant difference between the mean scores of Environmental Behaviour of the subgroups of students of Kota region with respect to following variables (a) Gender (b) Locality (c) Type of Management (d) Medium of Instruction (E) Type of School Board.
- 2 There is no significant difference between the mean scores of Motivation towards Environment of the subgroups of students of Kota region with respect to following variables (a) Gender (b) Locality (c) Type of Management (d) Medium of Instruction (E) Type of School Board.
- 3 There is no significant difference between the mean scores of Creativity towards Environment of the subgroups of students of Kota region with respect to following variables (a) Gender (b) Locality (c) Type of Management (d) Medium of Instruction (E) Type of School Board.
- 4 There is no significant association among the level of Environmental Behaviour, level of Creativity towards Environment and Motivation towards Environment in scores of Sr. Sec. Students of Kota region.

5.5 DELIMITATIONS OF THE STUDY

It is generally not possible to study the entire mass of variables associated with given problems. Every research study is limited in several ways. It cannot be exhaustive and complete in all respects it has to be delimited in terms of population covered, sample selected, scope of variables studied, the scope of generalization of findings and so on. The present study also has certain delimitations

1. The present study deals with only selective variables like Environmental behaviour, Motivation towards environment and creativity towards environment. As far as categorical variables are concerned, Gender, Medium of instruction, type of Management, Locality and type of board of school are

considered only. The space and time constraints forced the researcher to limit the variable into a few.

2. The survey selects only eleven schools, the difficulties faced by the researcher in obtaining permissions from the management financial and time constraints etc made the sample limited to 800 only.
3. The sample covered only the students of Kota region due to travel and financial and time constraints.
4. The study has been carried out on students of Sr. Sec. Level only so age as factor remains uncontrolled.
5. The study included the physical aspect of environment, the other social and individual environment has been avoided by the researcher.
6. Measuring creativity towards environment among students is a difficult task specially when there is no suitable tool for it. Therefore the researcher herself developed a tool required, this tool may not cover all the issues related to creativity towards environment and the study may not cover all the aspects that have any bearing of creativity towards environment. The results obtained therefore may not be generalized on a universal basis. The present study delimits its findings only to selected sample and available resources.
7. The tool of motivation towards environment was made by foreign author and in English language only, so the researcher herself translate that in Hindi language which may slightly changed in meaning of original statements therefore a better tool in Hindi language could be developed.

5.6 OPERATIONAL DEFINITIONS OF TERMS

Generally the terms used in the study pertain to their popular connotation but there are some terms used in the study which need clarification. The literature related to concepts of environmental behaviour, motivation towards environment and creativity has been studied for the conceptualization of the terms.

1. ENVIRONMENTAL BEHAVIOUR

According to Anastasi "The environment is everything that affects the individual except his genes."

Behaviour is the range of actions and mannerisms made by individuals, organism, action & systems in conjunction with themselves or their environment, which includes the other systems around as well as the physical environment. It is the response of the system or organism to various stimuli or inputs, whether internal or external, conscious or subconscious, voluntary or involuntary. (**Wikipedia**)

Therefore Environmental Behaviour is an observable movement of the organism generally taken to include verbal behaviour as well as physical movements towards the changes in environment. Focused on this research another definition is often referred as “environmental literacy and requires a transfer of skills and increase in motivation to act in an environmentally responsible manner. (**Jacobson et al, 2006**).

In simple terms behavior can be regarded as response of any person that shows its relationship to its environment. Environmental behavior provides outputs from the organism to its environment. Simply environmental behavior is **what** they are doing to and for environment.

2. MOTIVATION TOWARDS ENVIRONMENT

Motivation is derived from the word “Motive” which means an inner state of our mind that activates and directs our behaviour.

Fred Luthans defined motivation as a “process that starts with a physiological or psychological deficiency or need that activates behaviour or a drive that is aimed at a goal or incentive”.

Gray and stark “Motivation is the result of processes internal or external to the individual that arouses enthusiasm and persistence to pursue a certain course of action.

Therefore motivation is a theoretical construct used to explain behaviour. It gives a reason for people’s action, desire and need it can also be defined as one’s direction to behaviour.

So Motivation towards Environment is defined as a desire or internal urge to do things for environment. Simply Motivation towards Environment is **why** people do things for environment.

3. CREATIVITY TOWARD ENVIRONMENT

Creativity is the ability to create or make new things, thinking & ideas. Creativity is the ability to produce original and unusual ideas or to make something new or imaginative.

According to **Pam Slim** – Creativity is expressing your ideas in full contact, full colour way. It is using as many senses as possible to express an idea; it is the zone from which great, useful things are created.

Therefore creativity is an act or idea that novel, good & useful. It involves two process, thinking and then producing. If people only think not produce than they are imaginative not creative & it must be meaningful also.

Creativity towards environment is characterized by the ability to perceive environmental issues in new ways, and to find hidden patterns to make connections seems unrelated phenomena and to generate solutions of environmental problems in a novel way. Creativity towards Environment is also defined as the tendency to generate or recognize ideas, alternatives or possibilities that may be useful in solving environmental problems, and entertaining ourselves and other.

In simple terms Creativity towards Environment describes the diverse thinking process of person towards environment and what new ideas they develop for environment and they must be valuable or adaptive.

4. HIGHER SECONDARY STUDENTS

Students those who are studying in XIth and XIIth standards and to the age group of 16-18 years are considered to be as higher Secondary students.

5.7 DESIGN OF THE STUDY (METHODOLOGY)

According to **Anderson, Durston and Poole (1970)** choosing a design for a study basically involves selecting the most appropriate methods and techniques to solve the particular problem under investigation. In fact it is the most crucial decision on which depends the success of any research.

According to **J.W. Best (1986)**, There are three types of research i.e. historical research, descriptive research and experimental research, which describes what was, what is, and what will be respectively. Keeping in mind the nature and objectives of the present research problem, survey method was found to be the most suitable method for this study. A survey method is a descriptive research concerned with conditions of relationship that exists, opinions that are held, and processes that are going on, effects that are evident or trends that are developing although it often considers past events and influences as they relate to current conditions. (**Best & Khan**).

Hence the present investigation is a descriptive study of environmental science psychology towards Environmental Behaviour, Motivation toward Environment and Creativity towards Environment of senior secondary students.

5.8 SELECTION OF VARIABLES

In any research the dependent variables are the measured changes in pupil performances attributable to the influence of the independent variables and the independent variables are the conditions or characteristics that the experimenter manipulates in attempt to ascertain their relationship to observed phenomena. The investigator selected the following **dependent variables** (process variables) for the study.

- A. Environmental Behaviour.
- B. Motivation towards Environment.
- C. Creativity towards Environment.

Independent Variables: The researcher has taken the following independent variables (Categorical Variables) such as:

- a. Gender (Male and Female)
- b. Medium of Instruction (Hindi and English)
- c. Type of Management (Govt. and Pvt.)
- d. Locality (Rural and Urban)
- e. Type of board of school (CBSE and RBSE)

5.9 POPULATION AND SAMPLE

Population

The whole group of units from which sample is selected is technically termed as population. According to K S Siddhu “population means the aggregate or totality of objects or individuals regarding which inferences are to be made in sampling study” when data is collected from any field the set or group of all units to be covered under inquiry is called population. It is very essential that the population of research study is theoretically defined. If the definition of population is not clear than the researcher can not apply the findings of sample to population. So population should be clearly defined before selecting the sample. In the present research the researcher decided to select Senior Secondary students of Kota region as the population. The researcher selected the male and female students of different Govt. and Pvt. Schools.

SAMPLING

Sampling is indispensable technique of behavioral research, the study of whole population is not possible and it is also impractical. The concept of sampling has been introduced with a view to make the research findings economical and accurate.

Advantages of sampling are:-

- i. Reduced Cost
- ii. Greater speed
- iii. Greater scope
- iv. Greater accuracy.

Goode & Hatt (1952) writes, instead of spending many hours on the analysis to mass of material from one point of view, one may use that time to examine a smaller amount of material from many point of view or in other words to do a more intensive analysis of fewer cases.

Techniques of Sampling:

Various techniques have been used in obtaining a sample, which will be the representative of its population. In the present study **Stratified Sampling** procedure is used. Stratified sampling is a method of sampling that involves the division of population into smaller groups known as stratum. This method is rational and appropriate, because in stratified sampling, units of sampling are taken in proportion to every stratum. Advantage of this method is that schools and students whom the tools were to be administered were selected according to the need of the study. The schools chosen were stratified for the purpose of comparison.

Sample of the Study

A sample is a small proportion of a population selected for observation and analysis. By observing the characteristics of the sample one can make certain inferences about the characteristics of the population. In present study the researcher has taken a sample of 800 Senior Secondary Students. Out of which 400 Female students and 400 Male students and further they are categorized in Govt. Students and Private school students. Govt. school students are further divided in Rural and Urban students and private school students are further divided in English and Hindi medium students. The English medium students are further divided into CBSE and RBSE school students. The description of the selected sample has been presented in the forthcoming tale.

Table 5.1: Sample Demography

S. No.	Variable	Categories	Sample	Percentage
1.	Gender	Male	400	50
		Female	400	50
2.	Locality	Rural	200	25
		Urban	200	25
3.	Type of Management	Govt.	400	50
		Pvt.	400	50
4.	Medium of Instruction	English	200	25
		Hindi	200	25
5.	Type of Board of School	CBSE	100	12.5
		RBSE	100	12.5

5.10 DESCRIPTION OF THE TOOLS USED

For any research study, the research worker has to collect data and on the basis of that data, he can draw conclusions and arrives at generalization. The meaningfulness of these conclusions and generalizations depends not only on method and procedure, data analysis or result interpretation but also on the appropriateness of the tools and measures employed in the study. They should be reliable, valid and suitable for the age and ability levels of the sample included in research work. For the present study, tools which were used for collecting data were as follows

- (i) Environmental Behaviour Scale (EBS): by Archana Singhal, Urmila Verma and Pradeed K. Singhal.
- (ii) Motivation towards Environment Scale (MTES): by Pelletier, Green Demers, Tuson, Noels and Beaton (1998). Modified by researcher.
- (iii) Creativity towards Environment Test. (CTE-t) developed by researcher herself.

(I) ENVIRONMENT BEHAVIOUR SCALE: (EBS)

EBS is a standardized tool developed by Archana Singhal (Assistant Professor, Dpt. of Education, St. Aloysius Autonomous College Jabalpur), Urmila Verma (Head, Dpt. of Edu. Mata Gujri Mahila Mahavidyalaya Jabalpur) and Pradeep K. Singhal (Professor and Head of Dpt. of Biological Science Rani Durgavati University, Jabalpur M.P.)

Construction of the scale

The EBS was constructed to quantify the environment behaviour of the target student population considering the following dimensions of the environment:

1. Air pollution
2. Water pollution
3. Noise pollution
4. Land pollution
5. Water conservation
6. Forest conservation
7. Biodiversity conservation
8. Human health Management.
9. Energy conservation and Management
10. Environment conservation and management.

Initially large number of statements on the above mentioned dimensions were made and given to the experts in the field of Environmental Science, education and psychology. The experts evaluate and judged the efficacy of each statement along with clarity of instruction and scoring procedures. Finally 60 statements are included in the scale based on above 10 dimensions of environment.

Validity

The face and content validity was determined by the well known experts in field of education, environmental sciences, linguistics and psychology, since they were requested to judge relevance of the content and criterion of each statement with respect to environmental Behavior.

Reliability

The reliability coefficient of the scale was measured by the standard statistical procedures. The reliability coefficient by the split-half method was 0.76 and by the Test-Retest method was 0.79.

Scoring

There are 60 statements in the scale. A total of 44 statements are positively worded- eliciting a 'Yes' response and the remaining 16 statements are negatively worded eliciting a 'No' response from the students. For positive statement, 1 Mark is to be awarded for a 'Yes' response. For the negative statement, 1 Mark is to be awarded for a 'No' response. A separate answer sheet has been provided for giving the responses.

II. MOTIVATION TOWARDS ENVIRONMENT SCALE (MTES)

Luc.G Pelletier, Kim M. Tuson, Isabelle green-Demers, Kimbley Noels, Ann M. Beaton.

The MTES was developed by above authors and was published in Journal of applied social psychology. The scale would help to examine why some people are motivated to behave pro-environmentally and why others are not. The scale is based upon self Determination theory (SDT) proposed by **Deci & Ryan 1985**. They used the basis of SDT, as well as the motivation continuum proposed by SDT.

Self Determination theory

According to SDT different types of motivation could be distinguished with respect to the level of self-determination underlying the behavior. These motivational subtypes could be classified into three broad categories as follows

- (1) **Intrinsic Motivation:** is defined as the innate tendency to engage in an activity for the sole pleasure and satisfaction. An intrinsically motivated person acts out of personal choice and interest.
- (2) **Extrinsic Motivation:** Underlies instrumental behaviour (Deci, 1975). The individual is not interested in the activity for its own sake; the goal of the

behaviour is to bring about positive consequences or to avoid negative ones. This extrinsic motivation is further subdivided into four categories i.e.

- A) **Integrated Regulation:** Occurs when an instrumental behaviour has been valued to an extent such that it becomes part of the person's self-definition, such behaviour has been assimilated by the person, and it grows into an integral part of his/her self concept.
 - B) **Identified regulation:** When a behaviour gains enough importance in the individual's mind to be valued in itself. The behaviour is still instrumental, but external motives have been sufficiently internalized to induce the individual to identify with the activity, The individual thus performs the activity by personal choice in order to attain his goals.
 - C) **Interojected regulation:** The individual begins to internalize the control of his behaviour, Reinforcement, therefore originates from emotions related to self esteem and punishment from internal pressure, such as guilty or anxiety.
 - D) **External Regulation:** is governed by source of contest originating from the individuals environment (e.g. reward or punishment).
- III. Amotivation:** is an experience of lack of control and alienation which has been compared to learned helplessness. An amotivated individual unable to perceive the motives underlying it. Amotivated actions are mechanical and meaningless. The individual is thus likely to give up eventually.

The tool was developed in English language only, and for abroad conditions so the researcher had translated that in Hindi, and to quantify the influence of different subscales of motivation **RAI (Relative Autonomy Index)** method was used, Which is not originally used by the developers of the scale, Because of the above reasons the researcher had calculate the reliability and validity of the scale again.

Validity: to ensure the content validity the tool sent to the experts, the experts included were teachers of environment science, psychology, faculty of dept. of education. for the language the tool was sent to the Hindi expert teachers. The final test format was prepared according to their suggestions.

Reliability: The reliability of the test refers to the consistency of scores obtained by the same individuals on different occasions or with different sets of equivalent items” (Anastasi, Anne, 1970)

Researcher follows the two methods of reliability

1. **Test retest reliability:** determines how much error in a test score is due to problems with test administration. To calculate test retest reliability a group of 30 students was formed it contained equal number of boys and girls. The test is given to the sample students and after a period of 3 months the same students were retested. The score of different dimensions have been calculated by table RAI method. And then calculate the PPMCC (Pearson Product Moment Correlation coefficient) of the score of both time i.e. time 1 and time 2. The calculated value of PPMCC is **0.69** which is quite satisfactory on reliability score.
2. **Split half method:** In this method the item of the test was divided into 2 parts for testing the reliability of the scale.
 - (i) Test I having even numbered items
 - (ii) Test II having odd numbered items.

Thereafter calculate the person product moment correlation between these two tests by following formula. The correlation coefficient denotes the reliability of half test. The self correlation coefficient of the whole test is estimated by using spearman and brown formula The calculated value of reliability of the test, $r = 0.73$ assures that the test is free from technical defects & can be used for research purpose.

III. Creativity Towards Environment test, (CTE-t). Self Made Tool

Creativity is characterized by originality of thoughts, a creative mind and showing Imagination to create meaningful new ideas, methods, interpretation etc. Creativity is the sum total of fluency, flexibility, originality and elaboration. On the basis of these components the researcher developed a tool for creativity towards environment. The tool includes following components of creativity.

1. Fluency: - Fluency is the property of a person or of a system that delivers information quickly and with expertise. Fluency in creative thinking is seen as the ability to think of many diverse ideas quickly. Therefore fluency is the total number of interpreted Meaningful and relevant ideas generated in responses to the stimulus. (Guilford in his model of intellect gives four subtypes of fluency i.e. ideational fluency, associational fluency, expressional fluency and word fluency.)

Word fluency is to give more words to stimulus. Words may be synonyms or antonyms. It is more vocabulary test.

Ideational fluency is generation of more ideas to stimulus, may be word phrases, sentences, story etc.

Expressional fluency is to produce many ideas to fit a system or logical theories may be in the form of sentences or verbal ideas etc.

Associational fluency is to produce ideas or words from a restricted area, i.e a relationship. It requires completion of relations, like production of relations, generation of synonyms, analogies, similarities, problem of likeness etc.

- 2. Flexibility:-** The ability to easily abandon old way of thinking, adopt new ones, and produced ideas, responses, questions solutions in a variety of categories.
- 3. Originality: -** The ability to develop ideas that are statistically unusual, novel and unique, it is the ability to think and act independently innovative, new unconventional ideas or method or performance.
- 4. Elaboration: -** Elaboration is the ability to add details, fill in gaps, add finishing touches or ability to add details in order to modify or expand upon a idea or a general scheme.

Different components of creativity and their test Names are as follows

1. Word fluency –word production test (WPT)
2. Association fluency –Similarity test. (ST)
3. Expressional fluency –Sentence Construction test (SCT)
4. Flexibility – Use of things test (UTT)

5. Originality –Title test (TT)
6. Elaboration –Elaboration test (ET)

So it is clear that 3 test are based on three abilities of creativity i.e flexibility, originality and elaboration, However for the sub abilities of fluency i.e. word fluency, association fluency and expressional fluency separate test are made to measure them. This test is made in Hindi and English both language.

Creativity Score:- Creativity is the sum total of fluency, flexibility, originality and elaboration. The Raw score obtained from all the six test cannot be added directly to get creativity score because of greater variations in the score incomparability because their domains and approaches are different therefore the Raw scores received for all dimensions should be converted into standard scores. The respective standard score (T score) of raw scores of all the dimensions be added to get creativity score or the mean values of those standard score of all the dimensions be added to get the total creativity score.

Validity of test:- Validity of the test is defined as the extent to which the procedure actually accomplish what it seeks to accomplished or the test actually measures uses what it purposes to measure. To ensure content validity the tool sent to the experts. The experts included were the teachers teaching environment science, a psychology teacher and a faculty of department of education.

They were asked to mark whether an item would measure the concept with which it was associated and to mark if the statements fall within the selected creativity dimensions. The final test items were prepared according to their suggestion.

Reliability: The reliability of the test refers to the consistency of scores obtained by the same individuals on different occasions or with different sets of equivalent items.

Researcher follows the two methods of reliability.

1. **Test retest reliability:** To calculate test retest reliability a group of 30 students was formed it contained equal number of boys and girls. The test is given to the sample students and after a period of 3 months the same students were

retested for creativity score. The score of different dimensions have been calculated and then calculate the PPMC (Pearson Product Moment Correlation) coefficient of different dimension separately which are presented below:-.

Test retest reliabilities of test are as:-

- | | | |
|----|-----------------------------|-----|
| 1. | Word production test- | .69 |
| 2. | Sentence construction test- | .71 |
| 3. | Similarity test- | .74 |
| 4. | Use of thing test- | .76 |
| 5. | Title test- | .70 |
| 6. | Elaboration test- | .72 |

2. Split half method: In this method the item of the test was divided into 2 parts for testing the reliability of the scale.

- (i) Test I having even numbered items
- (ii) Test II having odd numbered items.

Thereafter calculate the person product moment correlation between these two tests by following formula. The correlation coefficient denotes the reliability of half test. The self correlation coefficient of the whole test is estimated by using spearman and brown formula. The calculated value of reliability of the test, $r = 0.71$, assures that the test is free from technical defects & can be used for research purpose.

5.11 ADMINISTRATION OF TOOL

After preparing and selecting the appropriate tools the researcher set out to collect the data from the sample. The principals of the schools were contacted earlier and permission was taken for administering the tools, the researcher explained the tools and method of filling them to the students. The students were asked to read the instructions of tools carefully and they were requested to give free, unbiased opinions. All the three tools were administered separately and collected one, after which another was given to the student. Appropriate time has been given to students to fill the

answers of tool according to items of tools, but it should be taken care that all the three tools were administered on the same students.

After collecting the data a detailed scoring sheet was prepared for MTES and Creativity Test (CTE-t), as a separate scoring sheet for EBS has already prepared. Then the researcher checked the answer sheet of all the 800 respondents and then marks of each student were summed up and written on sheet. The data collected from the sample were analyzed by using online statistical sites. Initially the data were fed in excel worksheet and then transferred to online statistical sites for further calculation.

5.12 STATISTICAL TECHNIQUES USED IN THE STUDY

Statistics comprises the collection, tabulation, presentation and analysis of an aggregate of facts, collected in methodical manner without lies and related to predetermined purpose. In the present study following statics is used to give the raw scores a readable from and for the interpretation.

i) For Descriptive analysis:

- Mean
- Standard deviation.
- Quartile.

ii) For inferential analysis:- Used for testing Hypothesis

t test: the t test is used to find out the significant difference between different groups. The usual level of significance 0.05 and 0.01 were used to test the significance of the obtained statistics.

CHI Square: the chi-square test is one of the simplest and mostly widely used non parametric statistical method used to calculate whether two or more attributes are associated (G.C Berri, 2008).the test gives the magnitude between theory and observation.

5.13 FINDINGS AND DISCUSSION

The data collected by the researcher were analyzed by using statistical technique like t test and chi-square test, the summary of the various findings are given below:-

ENVIRONMENTAL BEHAVIOR

1. The t test was applied to test the null hypothesis that “There is no significant difference between the mean scores of Environmental Behaviour among Male and Female Sr. Sec. Students of Different schools of Kota region.”

The finding revealed that The obtained t value ($t=4.6$) was found to be significant at both the levels i.e.0.05 and 0.01 level on df 798, which assures the influence of gender on level of Environmental Behaviour Hence the hypothesis that “There is no significant difference between the mean scores of Environmental Behaviour among Male and Female Sr. Sec. Students of different schools of Kota region.” is **rejected** and the corresponding objective is achieved.

Discussion: The females score high on EBS as the mean score of females $M=48.54$, was higher than that of males ($M=46.53$). Female students are found to behave more environmentally safe than that of male students it may be because girls are more preserving towards their families and environment. Closeness of female students to nature as a result of societal historical development in which women because of their capacity of giving birth, child care, their nature of love and affection are bound to nature in special way, hence they develop a special bond with nature and nurture the environment to a greater extent than male students.

2. The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of Govt. and Pvt. schools of Kota region.”

The **finding revealed** that the obtained t value (1.94) was found to be insignificant at both the level i.e.0.05 and 0.01 level on df 798, which assures that there is no influence of Type of Management on level of Environmental Behaviour,

hence the hypothesis that “There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of Govt. and Pvt. schools of Kota region.” is **accepted** and the corresponding objective is achieved.

Discussion: There exist little or insignificant difference in mean scores of Govt. and Pvt. school students, may be because just only type of management of school does not only affects persons behavior other factors like family, peer group, well trained teacher etc. are also matters.

3. The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of environmental Behaviour among Sr. Sec. Students of Rural and Urban government schools of Kota region.”

The **finding revealed** that the computed t value (3.01) was more than the critical value of t for 0.05 and for 0.01 level at df 398, so the value is significant at both the levels, which assures the effect of Locality on level of Environmental Behaviour and hence the hypothesis that “There is no significant difference between mean scores of environmental Behaviour among Sr. Sec. Students of Rural and Urban government schools of Kota region.” is **rejected** and the corresponding objective is achieved.

Discussion: the mean score on EBS of Sr. Sec students of Rural school is 48.89, which is more than that of urban school students (47.03). Hence the Rural School students shows more proenvironmental behavior which assures that, they are more concern towards the environmental problems because may be they are more in contact to real environment problems like climate change and have no alternatives, and also may be they have more affection towards nature.

4. The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.”

The **finding revealed** that the computed t value (1.88) was less than the critical value of t for 0.05 and for 0.01 level at df 398. So the value is not significant at both the

levels, which assures that there is no influence of Medium of Instruction on level of Environmental Behaviour. Hence the Hypothesis that, “There is no significant difference between mean scores of Environmental Behaviour among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.” is **accepted** and the corresponding objective is achieved.

Discussion: the mean score on EBS of Sr. Sec. Students of English Medium schools is 47.68, which is quite more than that of Hindi medium school students (46.55), there exists less or insignificant difference in the mean scores of English medium and Hindi medium school students which assures that Medium of Instruction, or language does not influence the Environmental behavior of the students, other factors like upbringing, family, teachers influence, peer group, course content is also affect the environmental behavior of students.

5. The t test was applied to test the null hypothesis that, “There is no significant difference between mean scores of environmental Behavior among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.”

The finding revealed that the computed t value (1.08) was less than the critical value of t for 0.05 and for 0.01 level at df 198. So the value is not significant at both the levels, which assures that there is no influence of Type of Board of school on level of Environmental Behaviour. Hence the Hypothesis that, “There is no significant difference between mean scores of environmental Behavior among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.” is **accepted** and the corresponding behavior is achieved.

Discussion: the mean score on EBS of Sr. Sec. Students of CBSE board schools is 48.19, which is quite more than that of RBSE school students (47.17). this is may be because CBSE board have better designed and comprehensive syllabus of environmental education across all the disciplines or may be because of presence of well trained teachers, improved teaching methodology and project based activities make students behave proenvironmentally.

MOTIVATION TOWARDS ENVIRONMENT

1. The t test was applied to the null hypothesis that “There is no significant difference between the mean scores of Motivation towards Environment among Male and Female Sr. Sec. Students of Different schools of Kota region.”

The **finding revealed** that the computed t value (1.05) was less than the critical value of t for 0.05 and for 0.01 level at df 798. So the value is not significant at both the levels, which assures that there is no influence of gender, on level of motivation towards Environment. Hence the Hypothesis that. “There is no significant difference between the mean scores of Motivation towards Environment among Male and Female Sr. Sec. Students of different schools of Kota region.” is **accepted** and the corresponding objective is achieved.

Discussion: the mean score of Female Sr. Sec. Students is 77.21, which is more than that of male Sr. Sec school students (76.55) which assures that though there is insignificant difference between mean scores, but females are quite more internally motivated towards environment because of their preservative nature.

- 2 The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Govt. and Pvt. Schools of Kota region.”

The finding revealed that the computed t value (4.8) was more than the critical value of t for 0.05 and for 0.01 level at df 798. So the value is significant at both the levels, which assures the influence of Type of Management on level of Motivation towards Environment. Hence the Hypothesis that, “There are no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Govt. & Pvt. schools of Kota region.” is **rejected** and the corresponding objective is achieved.

Discussion: the mean score of Sr. Sec. Students of Govt. schools is 78.39 which is more than that of Pvt. School students (75.36). Govt. school students score high may

be because of well trained teachers and ability to motivate the school children for contributing to cleaner environment.

3. The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Rural and Urban government schools of Kota region.”

The **finding revealed** that the computed t value (2.63) was more than the critical value of t for 0.05 and for 0.01 level at df 398, so the value is significant at both the levels, which assures the effect of Locality on level of Motivation towards Environment. Hence the Hypothesis that “There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of Rural and Urban government schools of Kota region.” is **rejected** and the corresponding objective is achieved.

Discussion: the mean score of Sr. Sec students of rural school is 79.49 which more than that of urban school students (77.30), this is may be because the rural students are more exposed to environmental issues like climate change and have less alternative so they are more self determined and motivated to protect environment.

4. The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.”

The **finding revealed** that the computed t value (1.90) was less than the critical value of t for 0.05 and for 0.01 level at df 398. So the value is not significant at both the levels, which assures that there is no influence of Medium of Instruction, on level of Motivation towards Environment. Hence the Hypothesis that. “There is no significant difference between mean scores of Motivation towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.” is **accepted** and the corresponding objective is achieved.

Discussion: the mean score of Sr. Sec. Students of English medium school is 76.22 which is quite more than that of Sr. Sec students of Hindi medium schools (74.50).

The difference is not significant which assures that the language of teaching does not influence the students level of Motivation towards Environment it may be other factors like family background, parents education and their behavior, could motivate the children more.

5. The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of motivation towards environment among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.”

The **finding revealed** that the computed t value (1.28) was less than the critical value of t for 0.05 and for 0.01 level at df 198. So the value is not significant at both the levels, which assures that there is no influence of Type of Board on level of Motivation towards Environment. Hence the Hypothesis that. “There is no significant difference between the mean scores of motivation towards environment among Sr. Sec. Students of CBSE Board and RBSE Board English medium private schools of Kota region.” is **accepted** and the corresponding objective is achieved.

Discussion: the mean score of Sr. Sec. Students of CBSE Board school is 77.02 which is quite more than that of Sr. Sec students of RBSE Board schools (75.42), though the difference is not significant, but the CBSE school students score more may be because of CBSE board have better designed and comprehensive syllabus of environmental education across all the disciplines or may be because of presence of well trained teachers, improved teaching methodology and project based activities make students more self determined towards environment.

CREATIVITY TOWARDS ENVIRONMENT:

1. The t test was applied to test the null hypothesis that “There is no significant difference between the mean scores of Creativity towards Environment among Male and Female Sr. Sec. Students of different schools of Kota region.”

The **finding revealed** that the computed t value (6.9) was more than the critical value of t for 0.05 and for 0.01 level at df 798. So the value is significant at both the levels, which assures the Influence of Gender, on level of Creativity towards Environment.

Hence the Hypothesis that, “There is no significant difference between the mean scores of Creativity towards Environment among Male and Female Sr. Sec. Students of different schools of Kota region.” is **rejected**. And the corresponding objective is achieved.

Discussion: the mean score of Female Sr. Sec. Students is 350 which is more than that of Male Sr. Sec school students (339.1). This is may be by virtue of their behavior of choosing alternatives and saving in their day to day life they adopt more ecofriendly practices than males, and are more creative towards environment.

2. The t test was applied to test the null hypothesis that: “There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of Govt. and Pvt. schools of Kota region.”

The finding revealed that the computed t value (3.97) was more than the critical value of t for 0.05 and for 0.01 level at df 798. So the value is significant at both the levels, which assures the influence of type of Management on level of Creativity towards Environment. Hence the Hypothesis that, “There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of Govt. & Pvt. schools of Kota.” is **rejected** and the corresponding objective is achieved.

Discussion: the mean score of Sr. Sec. Students of Govt. schools is 347.7 which is quite more than Sr. Sec students of Pvt. school students (341.3), this is may be attributed to well trained teachers, teachers teaching methodology and project based activities which inculcate creative nature in students to preserve the nature for future generation.

3. The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of creativity towards environment among Sr. Sec. Students of Rural and Urban government schools of Kota region.”

The finding revealed that the computed t value (3.64) was more than the critical value of t for 0.05 and for 0.01 level at df 398, so the value is significant at both the levels, which assures that the effect of locality on level of Creativity towards Environment

Hence the Hypothesis that, “There is no significant difference between mean scores of creativity towards environment among Sr. Sec. Students of Rural and Urban government schools of Kota region.” is **rejected** and the corresponding objective is achieved.

Discussion: the mean score of Sr. Sec students of rural school is 351.8 which is more than Sr. Sec students of urban school students (343.6), the rural school students are more exposed to environmental problems like climate change and due to scarcity of resources like water etc and they don't have alternatives so they adopt creative ways to preserve natural resources and practice to protect themselves from environmental hazards. It may be also because they have seen their parents and other family members adopting the ecofriendly alternatives.

4. The t test was applied to test the null hypothesis “There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.”

The finding revealed that the computed t value (0.82) was less than the critical value of t for 0.05 and for 0.01 level at df 398. So the value is not significant at both the levels, which assures that there is no influence of Medium of Instruction, on level of Creativity towards Environment. Hence the Hypothesis that. “There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of English medium and Hindi medium private schools of Kota region.” is **accepted** and the corresponding objective is achieved.

Discussion: the mean score of Sr. Sec. Students of English medium school is 340.4 which is quite less than that of Sr. Sec students of Hindi medium schools (342.3). The difference is not significant which assures that language of teaching does not influence the students level of Creativity towards Environment it may be other factors like teaching methodology family atmosphere could enhance the creativity of the children's towards environment.

- 5 The t test was applied to test the null hypothesis that “There is no significant difference between mean scores of Creativity towards Environment among Sr. Sec. Students of CBSE board and RBSE board English medium private schools of Kota region.”

The **finding revealed** that the computed t value (0.97) was less than the critical value of t for 0.05 and 0.01 level at df 198. So the value is not significant at both the levels, which assures that there is no influence of Type of Board on level of Creativity towards Environment. Hence the Hypothesis that. “There is no significant difference between the mean scores of Creativity towards Environment among Sr. Sec. Students of CBSE Board and RBSE Board English medium private schools of Kota region.” is **accepted** and the corresponding objective is achieved.

Discussion: the mean score of Sr. Sec. Students of RBSE Board school is 338.8 which is less than that of Sr. Sec students of CBSE Board schools (341.9) which is not significant but CBSE school students scores high because may be CBSE board have better designed and comprehensive syllabus of environmental education across all the disciplines or may be because of presence of well trained teachers, improved teaching methodology and project based activities make students more Creative towards Environment.

ASSOCIATION BETWEEN VARIABLES

- 1 The Chi Square test was used to test the null hypothesis that “There is no significant association between the level of Environmental Behaviour and the level of Motivation toward Environment in scores of Sr. Sec. Students of Kota region.”

The **finding revealed** that the computed chi square (χ^2) Value 52.9 is significant at both the 0.05 and 0.01 level at df 4, which reveals that the level of Environment Behaviour and level of Motivation towards Environment is significantly associated. Hence the Hypothesis that “There is no significant association between the level of environmental behaviour and the level of Motivation toward environment in scores of

Sr. Sec. Students of Kota region.” is **rejected** and the corresponding objective is achieved.

Discussion: result of Chi square test denotes that the students with high level of Environmental behaviour are significantly associated with high level of Motivation towards Environment. The students with low level of Environmental behaviour are significantly associated with low level of Motivation towards environment which means that if the students are more internally motivated or self determined towards environment protection than for sure they will behave environmentally safe.

2. The chi square test was used to test the null hypothesis that “There is no significant association between the level of Environmental Behaviour and the level of Creativity toward Environment in scores of Sr. Sec. Students of Kota region”.

The **finding revealed** that the computed chi square (χ^2) Value 67.1 is significant at both the 0.05 and 0.01 level at df 4, which reveals that the level of Environmental Behaviour and level of Creativity towards Environment is significantly associated. Hence the Hypothesis that “There is no significant association between the level of Environmental Behaviour and the level of Creativity toward Environment in scores of Sr. Sec. Students of Kota region.” is **rejected** and the corresponding objective is achieved.

Discussion: result of chi square test denotes that the students with high level of environmental behaviour are significantly associated with high level of creativity towards environment. The students with low level of environmental behaviour are significantly associated with low level of creativity towards environment which means if students have high level of creativity towards environment then they will try to behave in environment safe manner because they can think and create many other alternatives, which does not harm environment much and protect environment from degradation.

3. The chi square test was used to test null hypothesis that “There is no significant association between the level of Motivation towards Environment and the

level of Creativity toward Environment in scores of Sr. Sec. Students of Kota region.”

The **finding revealed** that the computed chi square (χ^2) Value 64.8 is significant at both the 0.05 and 0.01 level at df 4, which reveals that the level of Motivation towards Environment and level of Creativity towards Environment is significantly associated. Hence the Hypothesis that “There is no significant association between the level of Motivation towards environment and the level of Creativity toward Environment in scores of Sr. Sec. Students of Kota region” is **rejected** and the corresponding objective is achieved.

Discussion: the chi square test denotes that the students with high level of Creativity towards environment are significantly associated with high level of Motivation towards environment. The students with low level of Motivation towards environment are significantly associated with low level of Creativity towards environment. Which means that if the students are more internally motivated or self determined towards environment than they would likely to be more Creative towards environment and vice a versa. And try to save our natural resources more deliberately.

5.14 EDUCATIONAL IMPLICATION

Since education is a strong means of modification of behaviour. It increases knowledge change personality/attitude and improves the person’s quality of life. Education works as a mean of connection with the entire world so it may solve the problems faced by humans globally. Environments degradation is one of such global problem. Education may develop positive behaviour in human being towards environment. It enhances the concern of people towards their immediate surroundings as well as towards the entire world.

1. The review of researches has shown that the government, the policy makers and the educationists, all have come on one platform to propagate environmental science psychology in order to increase sensitivity, positive behaviour, motivation and creativity towards environment.
2. The present investigation was attempt to see the influence of gender, Type of management, medium of instruction, locality and type of board of school on environmental behaviour, creativity towards environment and motivation

towards environment. Thus all topics related to these variables when included in education will surely help in protecting environment.

3. This study will help the future researches to conduct similar studies with different settings and variables.
4. This study is very much useful for teachers, media experts, conservation agencies, educational administrators, curriculum planner to make changes according to findings.
5. The study will help the school management to organize more curricular activities to enhance the creativity & motivations towards environment and to develop positive behaviour towards environment.
6. The study will be helpful for administration in preparing and launching an objective programme to raise environmental behaviour, motivation & creativity.
7. The study will be very helpful in selection of content for construction the syllabus and its revisions, for environmental education, environmental science & psychology.
8. The study will be helpful for students in enhancing knowledge towards environmental issues & after they take interest in reading articles and books related to environment.
9. The study will motivate students to develop their creativity in making ecofriendly things & procedures to minimize the impact of environmental degradation.
10. The study will help the teachers to teach the topics related to environmental issues more in psychological way to force them to think by their heart & Brain towards these issues.
11. The study will be also helpful for the parents to guide their children according to their cognitive level of their Behaviour, Creativity and Motivation towards Environment.
12. The results of the present research compel to imply the psychological concept should compulsorily be included in syllabi of environmental science or environmental education to protect environmental degradation.

13. The study will help to look at areas where policy solutions be needed to support higher education's contribution to sustainable development.
14. It will help to develop vision of higher education and to optimize its contribution to Sustainable development.

In this respect, the present study may shed light on the present environmental conditions and helped the people to improve it.

5.15 RECOMMENDATIONS

Following are the several recommendations for relevant persons which might help to minimize environmental degradation:

1. PARENT

- a. Parents must inculcate good habits in their children regarding environment. They should teach their children the use of dust bins, and motivate them to preserve natural resources.
- b. Narrate stories to children which has good moral environmental values which motivate them to keep their surrounding clean.
- c. Parents themselves create ecofriendly practice in front of children to develop creativity towards environment in children.

2. TEACHER

- a. The teacher should encourage the students to involve in various creative and motivating activities such as workshop, seminar, projects, field work and exhibitions etc. to create interest among the students in environment, which help the future generation in solving the complex environmental problems faced by the society.
- b. Teacher must acquaint children's about pros and cons of environment pollution.
- c. Teacher should have the ability not just to increase environmental knowledge but also convert into behavior and letter into problem solving skills.
- d. Teacher should made efforts to encourage the students to watch environmental programmer in T.V. and internet. If possible, the institutions must retrieve environmental programmes from Radio. T.V and internet and show them to

all students in the school as part of curriculum.

- e. Teachers must possess strong and efficient professional skills as they are the important key who operated the educational system.
- f. As teachers are the role model for students, so they should behave pro environmentally in all walks of their life.

Teacher should consider the subject of environmental science with holistic approach so as to develop holistic perspective on environment so that students understand the sensitive relationships among physical, biological and psychological dimensions of environment.

3. SCHOOL

- a. In present situation, it is recommended that every educational institution should design programmes to enhance environmental behaviour, creativity towards environment and motivation towards environment, further by employing suitable strategies such as media techniques, movies and by practical knowledge.
- b. Environmental clubs/cell should be created at every school and students must be encouraged to participate in various related programmes. Participation in such programmes, help to inculcate environmental values within the tender mind of the students and make them to become warriors of environmental protection
- c. Schools must organize different activities to promote environmental concern like tree plantation drive, making trees as friend, visit slum areas, zoo, museum etc.
- d. School must improve different audio-visual aids like chart, models, and posters, slogans writing on environment, environmental poetry writing and preparation of transparencies.
- e. Schools must organize debate, dramas and skit competition among students on topics of environment to motivate internally.
- f. Concept of conservation is developed which is expressed by the four “R” (i.e. rethink, reduce, reuse and recycle).

4. EDUCATION DEPARTMENT

- a. Develop innovative participatory, multisensory and action oriented, interactive methods and approaches for imparting environmental values.
- b. Revise the syllabus of environmental education and include latest problems which will ensure equitable contribution by the young students in sustainable development of the country.
- c. To organize training programme to teach and orient teachers of all disciplines and at all levels, environmental education and how to integrate the same in their day-to-day classroom situation.
- d. To conduct environment audit, environment documentation, environment accountability etc. strictly in all educational institutions.
- e. Introducing environmental education as a compulsory subject in teacher's training syllabus.
- f. Broadcasting several environment related programmes through radio and television.
- g. Universities should arrange outdoor environmental education courses for teachers, better training programmes and certification requirements need to be developed.
- h. Emphasis should be done on complexity of environmental problems and must need to develop critical thinking and problem solving skills.
- i. Develop syllabus in such a manner that at the primary level the emphasis should be made mostly on building up environmental safe behavior through real life situation and by conservation. At secondary level, general and easy concept of environment, various environmental problems their solutions and various theoretical and practical content, which increases the motivation of students towards environment should be given preference in the syllabus. At higher level, the research work regarding different environmental problems, their reason, effect and creative solution should be given proper place in the curriculum.
- j. It is recommended to develop an interdisciplinary syllabus of environment education which includes many subjects like geography, sociology, physics, chemistry etc but with special emphasis on psychology to study the mental functioning of learner towards environmental issues.

5. STATE

- a. Promote the value and necessity of local, national and international co-operation in the prevention and solution of environmental problems with due stress on practical activities and first hand experience.
- b. It is the duty of the State to implement various, environment-friendly jurisprudence in the state through the recognition of the principle of sustainable development.
- c. Provide good governance free from corruption to protect the environment as clean air, clean water, greenery and open space are also the right of every citizen.
- d. Set up village education committees and school development and monitoring committees and to sensitize them on environmental issues, especially local environment problems.
- e. Sensitize and develop environment responsible behaviour in the society, administrator, policy makers, business people, industry, working personnel etc.
- f. To take stringent action against those persons, who breaks environmental law.
- g. Award those schools or colleges, which do maximum work towards maintaining clean environment.
- h. The Government must ban plastics at the production stage itself to encourage the use of bio- degradable paper containers and cloth bags.
- i. With the help of various mass media and modern means of communication, the concept of environment and its protection should be published and popularized.

6. STUDENT

- a. Students should participate in tree planting campaign in and around their schools and residential areas.
- b. School students should take part in various environmental management seminars organized by the school
- c. Students should develop the habit of reading and writing in the day light and hence save energy and should travel by foot and bicycles.

- d. Students should help the government and the non-government organizations in preventing pollution from the society by actively participating in programmes and by giving the information of those who pollute the environment.
- e. Students should participate in all the environmental activities organized by the school such as cleanliness day, debate, quiz, poster making and tree planting campaign, environmental management seminars etc.

5.16 SUGGESTION FOR THE FURTHER RESEARCH

Research in any branch of human knowledge is never closed chapter, there is always a need of finding solutions to new problems and testing the reality of the solution to the order problems. In the light of the result subsequent conclusions and experiences gained on the course of the study. Following suggestions may be made for the further researcher in the area.

1. An environment impact assessment studies may be carried out in different environmental conditions.
2. Curriculum developmental studies relating to environmental education for different types of students viz handicapped children & backward children etc. may be undertaken.
3. While analyzing the influence of variables i.e. gender, type of Management, locality, medium of instruction and type of board on the dependent variable i.e. environmental behaviour, creativity towards environment and motivation towards environment, several factors like intelligence, socio-economic status personality profile, values and family background which were outside the purview of the present investigation are not controlled. It is a fact that all variables in question can never be studied in one single research, the researcher therefore suggest that future researches in this area may take care of the above mentioned variables which have not been covered in the research due to paucity of time and limited resources.
4. The review of literature has revealed that studies on psychological aspect of environmental science are very rare almost not in spite of the fact that environmental science/education has attracted the attention of researchers, the

psychology of the students towards environment science has not been studied properly. The researches in this area may therefore explore many issues like roll of media, values, religion etc on environment conservation.

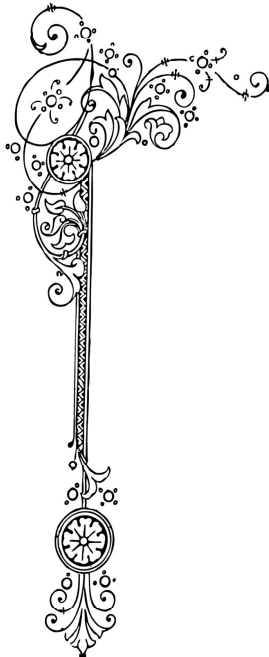
5. The present study has taken a sample of only 800 students if a larger sample with a wider area has been chosen in further studies, it will substantiate the validity of findings.
6. The present study has dealt with cognitive variables such as behaviour, and affective variables such as motivation and psychomotor variables as creativity towards environment but other variables like problem solving, skill development of ecofriendly things, reasoning etc can also be taken in further studies.
7. The present study has taken the students of Sr. Sec. level only, the further studies may take the sample from the other age group such as college and university students, teachers trainees, teachers, working & nonworking persons, literate, illiterate etc.
8. The present study has done with only students in formal education. But we cannot forget the fact that there are lots of drop outs, illiterates, child labor etc. So the further studies should consider these non formal and informal categories also.
9. A comprehensive study may be undertaken to find out the relationship with some important environmental factors viz. pollution, population explosion, climate change and living standard of peoples.
10. Impact of polluted environment upon physical, moral and academic achievement and development of the children of various ages may be taken.
11. Comparative studies between different groups in different environmental conditions have been taken.
12. Neuro-mechanism by which environmental toxins disrupt normal psychological development and functioning will also be studied in deep.
13. A comprehensive study may be undertaken to study the role of national and international agencies like WWF, UNEP and UNESCO on environmental education and implication of their facilities in India.ss

5.17 CONCLUSION

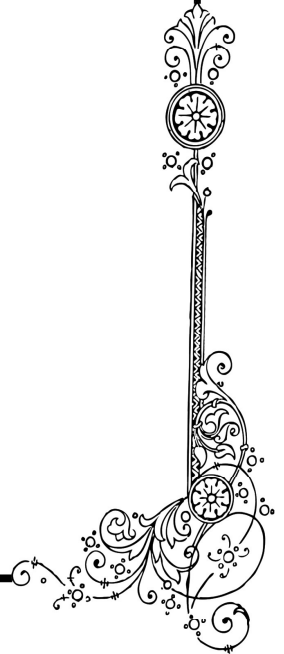
The problem of environment degradation is increasing day by day, even though various Summits, Conferences and Programmes have been taken and run but a final solution is not yet decided. Every individual have to think seriously or else the future generation will blame us for extinction of various species on earth and degradation of natural resources. So it is right time to start otherwise it will be too late. So we have to sensitize the students and youth about environmental problems as they are the groups which can change the world for tomorrow or else the planet will be completely lost. The present study is a step to investigate Environmental Behaviour, Motivation towards Environment and Creativity towards Environment in the sr.sec school students of Kota. It is clear from the study that all these variables studied are very important as they are the major factor which affects the environment protection or destruction, if they are regularly studied and monitored and try to enhance their level in students than definitely students will be more responsible, self determined, creative and behave sustainably and in turn they try to save natural resources and protect our planet from pollution, and so make the world a better place to live.

“Yes we need more research, but we know enough to act”

- Howard Frumkin



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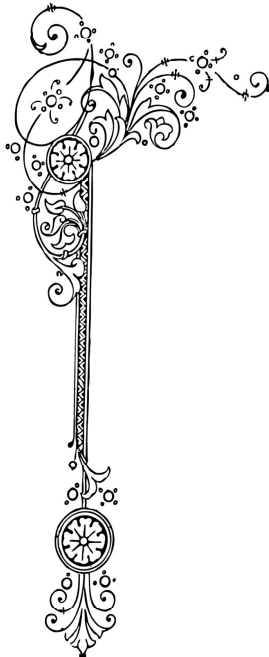
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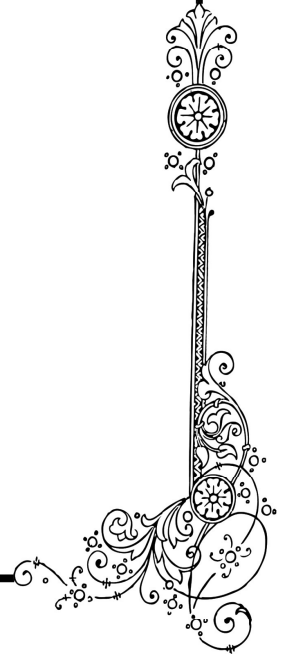
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Annexures





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Archana Singhal (Jabalpur)
Dr. Urmila Verma (Jabalpur)
Dr. P. K. Singhal (Jabalpur)

Reusable Booklet

of

E B S-SVS

(English/Hindi Version)

INSTRUCTIONS (निर्देश)

- ☛ There are 60 statements given to you related to your daily behaviour.
- ☛ Please read these statements carefully and put tick mark as under the given option of **Yes** or **No** on the Answer Sheet.
- ☛ Your answer should be based on your daily behaviour.
- ☛ Please complete your answers within 20 minutes.
- ☛ Your responses will be kept confidential.

- ☛ आगे आपके दैनिक व्यवहार से संबंधित 60 कथन दिये गये हैं।
- ☛ कृपया इन कथनों को ध्यान पूर्वक पढ़िये एवं दिये गये विकल्पों में से हाँ अथवा नहीं में सही का निशान उत्तर पत्र पर लगाइये।
- ☛ आपका उत्तर आपके दैनिक व्यवहार पर आधारित होना चाहिए।
- ☛ कृपया अपने उत्तर 20 मिनट में पूरे कीजिये।
- ☛ आपके द्वारा दी गई जानकारी को गोपनीय रखा जायेगा।

Estd. 1971

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NATIONAL PSYCHOLOGICAL CORPORATION

4/230, KACHERI GHAT, AGRA-282 004 (INDIA)

Sr. No. क्रमांक	STATEMENT कथन
1.	My family uses smokeless stove or fuel. मेरा परिवार धुँआ रहित स्टोव या ईंधन का उपयोग करता है।
2.	I feel uneasy by the pollution-causing vehicles. मुझे प्रदूषण फैलाने वाले वाहनों से परेशानी होती है।
3.	I support any initiative to tackle problems like global warming. मैं 'ग्लोबल वार्मिंग' जैसी समस्या से निपटने हेतु किसी भी प्रकार के प्रयास को करना उचित समझता/समझती हूँ।
4.	I make people aware that the increase in greenhouse gases in the atmosphere adversely affects our health. मैं लोगों को अवगत कराता/कराती हूँ कि वायु मंडल में ग्रीन हाऊस गैसों की वृद्धि स्वास्थ्य पर दुष्प्रभाव डालती है।
5.	My family burns the garbage. मेरा परिवार कचरा जलाता है।
6.	I do not dispose off garbage in ponds or rivers. मैं तलाबों या नदियों में कचरा नहीं डालता/डालती हूँ।
7.	I use soap while bathing in river or pond. मैं नदी या तालाब में नहाने समय साबुन का उपयोग करता/करती हूँ।
8.	I encourage people not to bathe their animals in river or pond. मैं लोगों को नदी या तालाब में जानवरों को न नहलाने के लिए प्रोत्साहित करता/करती हूँ।
9.	I do not pollute the water resources in any way. मैं जल स्रोतों को किसी भी प्रकार से प्रदूषित नहीं करता/करती हूँ।
10.	There is no proper drainage for water in my house. मेरे घर में पानी की समुचित निकास व्यवस्था नहीं है।
11.	I neither burst crackers nor play loudspeakers on the occasion of happiness or festivals. मैं खुशी के अवसर या त्यौहारों पर पटाखों एवं लाउड स्पीकर का उपयोग नहीं करता/करती हूँ।

4 | Reusable Booklet of EBS-SVS

Sr. No. क्रमांक	STATEMENT कथन
12.	I do not allow loudspeaker to play at high volume during local religious ceremonies. मैं स्थानीय धार्मिक समारोहों में लाउड स्पीकर तेज आवाज में नहीं बजाने देता/देती हूँ।
13.	I enjoy listening to music at high volume. मैं तेज आवाज में संगीत सुनना पसंद करता/करती हूँ।
14.	I listen to TV or radio at high volume. मैं तेज आवाज में टी. वी. या रेडियो सुनता/सुनती हूँ।
15.	I make use of horn only when it is very necessary. मैं हार्न का उपयोग अति आवश्यक होने पर ही करता/करती हूँ।
16.	I do not dispose off garbage on road. मैं सड़क पर कचरा नहीं फेंकता/फेंकती हूँ।
17.	Instead of throwing plastic bags on roads, I collect and sell it to the scrap dealer. मैं प्लास्टिक की थैलियों को सड़क पर फेंकने के बजाय उन्हें एकत्रित कर रद्दी वाले को बेच देता/देती हूँ।
18.	Instead of throwing the packing paper received from market, my family collects and sells it along with other waste papers. मेरा परिवार बाजार से पेपर पैकिंग वाले कागज को बाहर न फेंक कर उसे एकत्रित कर रद्दी पेपरों के साथ विक्रय कर देता है।
19.	My family uses paper plate and tissue paper in the parties. मेरा परिवार पार्टी आयोजन में कागज की प्लेट तथा टिश्यू पेपर का प्रयोग करता है।
20.	My family does not accept items packed in paper during marketing. मेरा परिवार खरीददारी करते समय दुकानदार से पेपर पैकिंग में सामान नहीं लेता है।
21.	My family does not misuse water. मेरा परिवार पानी का दुरुपयोग नहीं करता है।

Sr. No. क्रमांक	STATEMENT कथन
22.	I take only that much water for drinking as required. मैं पीने के लिए उतना ही पानी लेता/लेती हूँ जितनी जरूरत होती है।
23.	Instead of using shower, I make use of bucket for bathing. मैं नहाने के लिए 'शावर' का उपयोग न कर बाल्टी का उपयोग करता/करती हूँ।
24.	I get my faulty taps in my house immediately repaired. मैं अपने घरेलू नलों के खराब होने पर उनको तुरन्त ठीक कराता/कराती हूँ।
25.	I keep tap running during brushing in the morning. मैं प्रातः ब्रुश करते समय नल को खुला रखता/रखती हूँ।
26.	I try to plant a tree in a park/garden on my each birthday. मैं अपने प्रत्येक जन्म दिन पर पार्क/बगीचे में एक वृक्ष लगाने का प्रयास करता/करती हूँ।
27.	I encourage people for tree plantation. मैं लोगों को वृक्षारोपण करने के लिए प्रोत्साहित करता/करती हूँ।
28.	I do not allow anybody to cut tree without any appropriate reason. मैं अपने सामने बिना उचित कारण के किसी को भी वृक्ष नहीं काटने देता/देती हूँ।
29.	I do not write on both sides of a paper sheet. मैं कागज के पन्ने पर दोनों तरफ नहीं लिखता/लिखती हूँ।
30.	Instead of giving a greeting card, I consider it appropriate to personally greet my friends on their birthday. मैं अपने मित्रों के जन्म दिन पर उनको ग्रीटिंग कार्ड न देकर व्यक्तिगत रूप से शुभकामनाएँ देना उचित समझता/समझती हूँ।
31.	I do not use the items made from skin of animals. मैं पशुओं की खाल से बनी वस्तुओं का उपयोग नहीं करता/करती हूँ।
32.	I neither disturb nor destroy the natural habitat of animals and birds. मैं पशु पक्षियों के प्राकृतिक आवास से छेड़छाड़ या उन्हें नष्ट नहीं करता/करती हूँ।
33.	I consider conservation of fauna and flora a pious job. मैं पेड़-पौधों एवं पशु-पक्षियों के संरक्षण को पवित्र कार्य मानता/मानती हूँ।

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Sr. No. क्रमांक	STATEMENT कथन
34.	I provide water and grains to birds in the morning. मैं प्रातः पक्षियों के लिए पानी एवं दाना रखता/रखती हूँ।
35.	I motivate the people of my locality to throw their rotten food materials packed in polythene. मैं अपने मोहल्ले के लोगों को खराब हुए खाद्य पदार्थ पॉलिथीन में भरकर फेंकने के लिए प्रेरित करता/करती हूँ।
36.	I use handkerchief at the time of coughing or sneezing. मैं खाँसते या छींकते समय रूमाल का उपयोग करता/करती हूँ।
37.	I forbid smoking by my elders at home. मैं घर में बड़ों को धूम्रपान करने से मना करता/करती हूँ।
38.	I do not use mosquito nets at home to avoid mosquitoes. मैं घर में मच्छरों से बचने के लिए मच्छरदानी का प्रयोग नहीं करता/करती हूँ।
39.	The drinking water in my family is used only after filtering or boiling. मेरे परिवार में पीने के पानी का उपयोग छानकर या उबालकर किया जाता है।
40.	The vessels used for water storage are cleansed regularly in my house. मेरे घर में जल संग्रहण पात्रों की नियमित रूप से सफाई की जाती है।
41.	My family uses solar cooker to save energy. मेरा परिवार ऊर्जा बचाने के लिए सोलर कुकर का इस्तेमाल करता है।
42.	My family does not make unnecessary use of radio, fans or TV. मेरा परिवार अनावश्यक रूप से रेडियो, पंखे या टी. वी. नहीं चलाता है।
43.	I do not switch off the engine of my vehicle during red light at crossings. चौराहे पर रेड लाईट होने पर मैं अपने वाहन का इंजन बंद नहीं करता/करती हूँ।

Sr. No. क्रमांक	STATEMENT कथन
44.	I take mopeds or scooters to crowded places. भीड़ वाले स्थानों पर मैं मोपेड या स्कूटर ले जाता/जाती हूँ।
45.	I make use of bicycle or public transport for going to school. मैं स्कूल जाने के लिए साइकिल अथवा सार्वजनिक वाहन का उपयोग करता/करती हूँ।
46.	I do not share vehicle with my friends. मैं अपने मित्रों के साथ वाहन की साझेदारी नहीं करता/करती हूँ।
47.	I motivate people to get their vehicles serviced regularly. मैं लोगों को अपने वाहनों की नियमित जाँच करवाने के लिए प्रेरित करता/करती हूँ।
48.	I encourage people to get their vehicles checked regularly for pollution. मैं लोगों को वाहन के प्रदूषण की नियमित जाँच करवाने के लिए प्रोत्साहित करता / करती हूँ।
49.	I do not believe in high speeds and applying frequent brakes while driving a vehicle. मैं वाहन को तेज गति एवं ब्रेक देने में विश्वास नहीं रखता/रखती हूँ।
50.	My family uses vehicle only when in need. मेरे परिवार में वाहन का प्रयोग आवश्यकतानुसार ही किया जाता है।
51.	"Population increase is the major cause of pollution". I express this thought before people by different means. 'जनसंख्या वृद्धि प्रदूषण का मुख्य कारण है' मैं यह विचार लोगों के सम्मुख विभिन्न माध्यमों से व्यक्त करता/करती हूँ।
52.	I follow the norms/principles related to environmental conservation in my daily chores. मैं अपने दैनिक आचरण में पर्यावरण संरक्षण संबंधी आदर्शों / सिद्धांतों का पालन करता/करती हूँ।
53.	In my opinion, the reckless use of chemicals like D. D. T. should be banned. मेरे विचार में डी.डी.टी. जैसे रासायनिक पदार्थों के अंधाधुंध उपयोग पर प्रतिबंध लगाया जाना चाहिए।

Sr. No. क्रमांक	STATEMENT कथन
54.	I along with my family take full care of environmental conservation when celebrating any festival. मेरे परिवार के साथ मैं भी किसी भी त्यौहार को मनाते समय पर्यावरण संरक्षण का पूरा ध्यान रखता / रखती हूँ।
55.	I do not use clothe bags while buying domestic articles or vegetables. मैं घर का सामान अथवा सब्जियाँ खरीदते समय कपड़े की थैली का उपयोग नहीं करता/करती हूँ।
56.	I motivate my friends to conserve environment. मैं अपने दोस्तों को पर्यावरण को संरक्षण देने के लिए प्रेरित करता/करती हूँ।
57.	I and my family like vegetarian foods. मैं एवं मेरा परिवार शाकाहारी भोजन पसंद करता है।
58.	My family does not collect rain water. मेरा परिवार वर्षा के पानी का संचय नहीं करता है।
59.	My family does not make any misuse of natural resources. मेरे परिवार प्राकृतिक संसाधनों का दुरुपयोग नहीं करता है।
60.	This is my belief that there is a need of participation by all sections of society for conservation of environment. मेरा विश्वास है कि पर्यावरण संरक्षण हेतु समाज के सभी वर्गों की सहभागिता की आवश्यकता है।

पर्यावरण के प्रति सृजनात्मकता परीक्षण

कृष्णा गुर्जर
डॉ. सपना जोशी

CTE - t
(Hindi Version)

कृपया निम्न विवरण दीजिए:-

नाम -

कक्षा -

लिंग -

विद्यालय -

निर्देश:-

- आगे के पृष्ठों पर अलग-अलग प्रकार की समस्याएँ दी गई हैं जिन्हें उनके निर्देशों के अनुसार हल करने का प्रयास करें।
- समय के अभाव के कारण अपने उत्तर शीघ्रता से देने का प्रयास करें (35 मिनट सम्पूर्ण परीक्षण के लिये)।
- अपने उत्तर दिये हुये रिक्त स्थान पर दें।
- कृपया अपने उत्तर स्पष्ट व पठनीय लिखें।

1. शब्द रचना जाँच (Word production test)

निर्देश – समय के अभाव के कारण उत्तर जल्दी-जल्दी लिखियें तथा यदि आपको किसी प्रश्न का उत्तर नहीं पता तो समय व्यर्थ ना गवाएँ व आगे के प्रश्नों का उत्तर लिखें।

प्र.1. 'अ' अक्षर से प्रारम्भ होने वाले अधिक से अधिक शब्द लिखिए जो पर्यावरण से सम्बन्धित हो।

उत्तर:

प्र.2. पर्यावरण से सम्बन्धित ऐसे शब्द लिखिए जिनमें 'प' अक्षर का प्रयोग होता है।

उत्तर:

2. समानता जाँच (Similarity Test)

निर्देश: नीचे कुछ शब्द दिये हुए हैं जो विभिन्न अर्थों में प्रयोग किए जा सकते हैं। प्रत्येक शब्द के सामने रिक्त स्थान पर जितने अधिक से अधिक समानार्थक या सम्बन्ध वाले शब्द आप सोच सकते हैं। रिक्त स्थान पर संक्षिप्त में लिखिए। उत्तर केवल शब्द में लिखिए पूरा वाक्य लिखने की आवश्यकता नहीं है। शब्द पर्यावरण से सम्बन्धित होने चाहिए।

उदाहरण – काला : गैस, कार्बन इत्यादि।

1.	धुआँ:
2.	पानी:
3.	प्रदूषण नियंत्रण
4.	धरती:

3. वाक्य रचना जाँच (Sentence construction test)

निर्देश: पर्यावरण संरक्षण के लिए भिन्न उद्धरण (Quotations) लिखिए –

1.	जल संरक्षण से सम्बन्धित –
2.	प्रदूषण से सम्बन्धित –

4. वस्तुओं का उपयोग (Use of things test)

निर्देश: नीचे कुछ अनुपयोगी या रद्दी वस्तुओं (Waste materials) के नाम दिये गये हैं। प्रत्येक वस्तु के लिए आपको उसके सामने अधिक से अधिक व भिन्न-भिन्न उपयोग संक्षेप में लिखने हैं।

1.	टिन केन
2.	कागज के कार्टन
3.	कपड़े
4.	इलेक्ट्रॉनिक कचरा
5.	ऑग्रेनिक कचरा
6.	पॉलिथीन

5. शीर्षक जाँच (Title test)

निर्देश: नीचे दो छोटी कहानियाँ लिखी हैं। उनके अच्छे से अच्छे, अद्भूत व रोचक विभिन्न शीर्षक सोचकर लिखिए। एक कहानी के कई शीर्षक लिख सकते हैं।

1. एक व्यक्ति अपने गाँव में वृक्षों की कटाई से बहुत परेशान था। वह गाँव के सभी लोगों को वृक्षों का महत्व समझा-समझा कर थक जाता है पर वृक्षों की कटाई नहीं रूकती। अन्ततः उसे एक तरकीब सुझती है वह सभी वृक्षों पर देवी-देवताओं की तस्वीर बना देता है। जिसमें वृक्षों की कटाई बन्द हो जाती है।

शीर्षक:—

2. एक गृह पर अत्यधिक विकास के कारण सभी आधुनिक यंत्र व वस्तुएँ थी पर विकास के कारण प्राकृतिक वस्तुओं में हास हो गया था। एक दिन उस गृह पर एक बालक ने एक लाल फूल वाला पौधा देखा जो बहुत बीमार था, बालक उस पौधे को किसी दूसरे स्थान पर लगाने की कोशिश करता है, परन्तु ग्रह पर उसे कोई उपयुक्त स्थान नहीं मिलता, तब वह उस पौधे को चाँद पर लेकर जाता है तथा वहाँ उगा देता है वहाँ वह पौध खूब फलता-फूलता है तथा चाँद पर बहुत सारे लाल फूल वाले पौधे हो जाते हैं। सभी लाल फूल एक साथ खिलते हैं तब ऐसा लगता है मानों इस ग्रह को चेतावनी दे रहे हों, ग्रह को प्रदुषण मुक्त रखने के लिये।

शीर्षक:

6. विवर्धन जाँच (Elaboration test)

निर्देश: नीचे कुछ समस्याएँ दी हुई हैं प्रत्येक समस्या को पढ़कर उनके सामने अधिक से अधिक समाधान संक्षेप में लिखिए। तथा अन्त में एक अधूरी कहानी लिखी है, उसे जितना अधिक हो सके पूरा कीजिए।

प्र.1. बिजली बचाने के लिए आप क्या-क्या उपाय अपनाएंगें?

उत्तर:

प्र.2. अपने आसपास की जगह किसी जंगली जानवर/साँप को देखकर आप क्या करेंगे?

उत्तर:

प्र.3. कहीं पाईपलाईन टूटी हुई देखकर आप क्या करेंगे?

उत्तर:

4. नीचे अधूरी कहानी दी गई है, उसे जितना अधिक हो पूरा कीजिए :-
एक बार वर्षा कम होने से देश में अच्छी फसलें नहीं हुईं व जंगल में पेड़ पौधे भी हरे-भरे कम ही हुए
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.....
.....
.....
.....
.....

CREATIVITY TOWARD ENVIRONMENT TEST (CTE-t)

Krishna Gurjar
Dr. Sapna Joshi

CTE-t
(English Version)

Please fill the following information:-

Name.

Class.

Gender

School.

INSTRUCTION:-

- Different type of problems are presented in next few Page, please try to solve them according to their instructions.
- Write your answer quickly due to scarcity of time, i.e 35 minutes for whole test.
- Write your answer in the blank spaces provided.
- Please write your answers clear and legibly.

(1) Word Production Test (WPT):-

Instruction: - Please attempt the question fast and if you don't know the answer of particular Question, do not waste time and go for next question.

Q.1 Write more and more word starting from the letter 'o' related to environment.

Answer:

Q.2 Write those word in which 'E' letter is used, which are related to environment as much as you can.

Answer:

(2) Similarity Test (ST)

Instruction: - Few words are given below with the blank spaces in front, you must write their synonyms or related word in blank spaces as much as you can, but your answer must be related to environment only. Do not write the sentence only single words are enough.

For e.g. Black, Gas, Carbon, etc.

A.	Ash:
B.	Water:
C.	Pollution:
D.	Earth:

(3) Sentence Construction Test (SCT)

Instruction: - Write different quotation/slogans for the topics given below:-

A.	Water conservation.
B.	Pollution control.

(4) Use of things test (UTT)

Instruction: - Name of some waste materials are give below, you must write different and diverse use of these waste Materials in short, in front of them.

A.	Tin can:
B.	Paper Carton:
C.	Clothes:
D.	Electronic Waste.
E.	Organic Waste.
F.	Poly Bags.

(5) Title Test:-

Instruction: - Two short stories are written below please write different, unusual, novel and unique titles for both stories more than one title can be write for single Story.

A. Once there was a man who was very much worried about the cutting of trees in his village. He tried a lot to tell the importance of trees to the villagers, but won't stop the cutting of trees, at last he got an idea, he draws the painting/ pictures of god and goddess on stem of trees, the idea worked and the villagers stop cutting the trees and try to protect them.

Titles:-

B. On a very developed planet there are many modern and technological equipments, but due the development there was a scarcity or shortage of natural resources. Once on that planet a child saw a red flower plant which was very ill and dry, he puts out the red flowers plant with roots and try to grow it to some other place on planet, but he did not find any suitable place, at last he took that flower plant to the to the moon and grow there, the plant would grow there and many red flowers would flourish there. All the red flowers will open together and they look like, as they were giving warning to the planet to save it from pollution.

Titles:-

(6) Elaboration test (ET):-

Instruction: - Read the problem given below and try to suggest the short solutions for every problem as you can. An incomplete story is also presents at last number. Try to complete the story as long as you can.

Q. 1. What measures would you suggest to save electricity?
Answer:

Q.2. What will you do if your saw any wild animals in living area?
Answer:

Q.3. What will you do if you saw a broken water pipeline?
Answer:

Q.4. Incomplete story:-
Once due to scarcity of rain there is loss of crops yield in the state and also loss of greenery in jungle
.....
.....
.....
.....
.....
.....
.....
.....

पर्यावरण के प्रति अभिप्रेरणा मापनी (MTES)

1. Luc. G. Pelletier (University of Ottawa canada)
2. Kim M tuson (Northern telecom Ottawa canada)
3. Isabelele green demers (university of Ottawa canada)
4. Kimberley noels (university of California at santa Barbara)
5. Ann. M beaton (university of moncton, Canada)

(कृपया निम्न सूचनाएँ भरिये)

1. नाम
2. कक्षा
3. लिंग
4. विद्यालय

निर्देश

- कृपया कथनों को ध्यान से पढ़ें तथा हर कथन के लिये (7 point Scale) सात बिन्दु मापनी 1 पूर्णतया असहमत से 7. (पूर्णतया सहमत) पर उस सबसे उपयुक्त क्रमांक जो आपकी पर्यावरण के प्रति व्यवहार की व्यक्तिगत अभिप्रेरणा से मेल खाता हो या समतुल्य हो को उत्तर कॉलम में कथन के समानान्तर लिखें।
- कृपया अपने उत्तर 30 मिनट में पुरे कीजिये।
- आपके द्वारा दी गई जानकारी गोपनीय रखी जायेगी।
- सभी कथन नीचे दिये गये प्रश्न के उत्तर के रूप में होंगे।

प्रश्न आप पर्यावरण के लिये कुछ क्यों करते है?

7 बिन्दु मापनी

1	2	3	4	5	6	7
(पूर्णतया असहमत)			(मध्यम / आंशिक सहमत)			(पूर्णतया सहमत)

प्रश्न आप पर्यावरण के लिये कुछ क्यों करते है?

क्रमांक	कथन	(7 बिन्दु मापनी पर उत्तर क्रमांक)						
		(पूर्णतया असहमत)			(मध्यम/ आंशिक सहमत)			(पूर्णतया सहमत)
		1	2	3	4	5	6	7
1.	क्योंकि जब मैं पर्यावरण की सहायता करने के लिये नये तरीके खोजता हूँ/ खोजती हूँ तो मुझे आनन्द का अनुभव होता है।							
2.	क्योंकि जब मैं पर्यावरण की गुणवत्ता को सुधारने का अनुभव करता हूँ/ करती हूँ तो मुझे आनन्दभुति होती है।							
3.	क्योंकि जब मैं पर्यावरण के लिये कुछ करता हूँ तब जो भावना में मन में आती है वो मुझे पसन्द है।							
4.	क्योंकि पर्यावरण के प्रति योगदान करने से मुझे आनन्द होता है।							
5.	क्योंकि पर्यावरण का ध्यान रखना मेरे जीवन का अभिन्न अंग है।							
6.	क्योंकि मुझे ऐसा लगता है कि अपना ध्यान रखना और पर्यावरण का ध्यान रखना दोनो एक साथ सम्बन्धित है या एक दुसरे से अलग नहीं हैं।							
7.	क्योंकि ये मेरी जीवन शैली में शामिल है।							
8.	क्योंकि पर्यावरण चेतना मेरे व्यक्तित्व का मूल भाग है।							

क्रमांक	कथन	(7 बिन्दु मापनी पर उत्तर क्रमांक)						
		(पूर्णतया असहमत)			(मध्यम/ आंशिक सहमत)			(पूर्णतया सहमत)
		1	2	3	4	5	6	7
9.	क्योंकि पर्यावरण को सुधारने के लिये कुछ करना समझदारी है।							
10.	क्योंकि ये तरीका मेने बेहतर पर्यावरण बनाने के लिये चुना है।							
11.	क्योंकि पर्यावरण संरक्षण में सहायता करना एक बुद्धिसम्पन्न बात है।							
12.	क्योंकि मुझे लगता है पर्यावरण के लिये कुछ करना एक अच्छा कार्य है।							
13.	क्योंकि शायद मुझे खेद है कि मैं पर्यावरण के लिये कुछ नहीं कर पाऊँगा/पाऊँगी।							
14.	क्योंकि पर्यावरण के लिये कुछ नहीं कर पाने पर मुझे अपराध बोध होगा।							
15.	क्योंकि अगर मैं पर्यावरण के लिये कुछ नहीं करूँगा/करूँगी तो मुझे बुरा लगेगा।							
16.	क्योंकि मुझे अपने उपर शर्म आयेगी अगर मैं पर्यावरण के लिये कुछ नहीं कर पाऊँगा/पाऊँगी।							
17.	क्योंकि दुसरे व्यक्ति मुझसे नाराज हो जायेगे अगर मैं पर्यावरण के लिये कुछ न करूँ।							
18.	दुसरे व्यक्तियों से सम्मान प्राप्त करने के लिये।							

क्रमांक	कथन	(7 बिन्दु मापनी पर उत्तर क्रमांक)						
		(पूर्णतया असहमत)			(मध्यम/ आंशिक सहमत)			(पूर्णतया सहमत)
		1	2	3	4	5	6	7
19.	क्योंकि मेरे दोस्त ऐसा करने के लिये मुझे आग्रह करते हैं।							
20.	दुसरे व्यक्तियों द्वारा आलोचना से बचने के लिये।							
21.	मुझे हैरानी होती है कि क्यों मैं पर्यावरण के लिये कुछ करूँ जबकि परिस्थिति में सुधार नहीं हो रहा है।							
22.	ईमानदारी से, मुझे नहीं पता, मुझे सच में लगता है कि पर्यावरण के लिये कुछ करके मैं अपना समय बर्बाद कर रहा हूँ/ रही हूँ।							
23.	मुझे नहीं पता, मैं ये देख नहीं सकता/ सकती कि पर्यावरण चेतना के प्रयासों से परिस्थिति में सुधार हो रहा है।							
24.	मुझे सच में नहीं पता, मैं ये नहीं देख सकता/ सकती कि इससे मुझे क्या मिल रहा है।							

MOTIVATION TOWARDS ENVIRONMENT SCALE (MTES)

1. Luc. G. Pelletier (University of Ottawa, Canada)
2. Kim M. Tuson (Northern Telecom Ontario, Canada)
3. Isabelle Green Demers (University. of Ottawa Canada)
4. Kimberley Noels (University of California at Santa Barbara)
5. Ann. M Beaton (University of De Moncton, Canada)

Please fill the following information

1. Name
2. Class
3. Sex
4. School

Instruction

Please carefully read the statement and indicate the extent to which each item corresponds to your personal motives for engaging in environmental behaviors, by marking the appropriate Number on 7 Point Scale, ranging From 1 (does not corresponds at all) to 7 (corresponds exactly) please put answer (appropriate No.) in response column parallel to the statements.

- Please complete your answers within 30 minutes
- Your response will be kept confidential
- Every Statement in the form of a answer of the following question.

Q. Why are you doing things for Environment?

7 Point Scale

1	2	3	4	5	6	7
Does not Corresponds at all			Corresponds Moderately			Corresponds Exactly

Q. Why are you doing things for Environment?

S. No.	Statement	Response on 7 Point Scale						
		Does not correspond at all.			Corresponds moderately			Corresponds exactly
		1	2	3	4	5	6	7
1.	For the pleasure I experience while I am mastering new ways of helping the environment							
2.	For the pleasure I experience In improving quality of environment.							
3.	Because I like the feeling I have when I do things for environment.							
4.	for the pleasure I get from contributing to the environment.							
5.	Because taking Care of environment is an integral Part of my life.							
6.	Because it seems to me that taking care of myself and taking care of the environment are inseparable.							
7.	Because it's part of the way I have chosen to live my life.							
8.	Because being environmentally - conscious has become a fundamental part of who I am.							
9.	Because it's a sensible thing to do in order to improve the environment							

Annexures

S. No.	Statement	Response on 7 Point Scale						
		Does not correspond at all.			Corresponds moderately			Corresponds exactly
		1	2	3	4	5	6	7
10.	Because it's way I have chosen to contribute to a better environment.							
11.	Because it's a reasonable thing to do to help the environment.							
12.	Because I think it's a good idea to do something about the environment.							
13.	I think I'd regret not doing something for the environment.							
14.	Because I would feel guilty if I didn't do anything for the environment.							
15.	Because I would feel bad if didn't do anything for the environment.							
16.	Because I would feel ashamed of myself if was doing nothing to help the environment							
17.	Because Other People will be upset if I don't.							
18.	For the recognition I get From others.							
19.	Because my friends insist that I do it							
20.	To avoid being criticized							

Annexures

S. No.	Statement	Response on 7 Point Scale						
		Does not correspond at all.			Corresponds moderately			Corresponds exactly
		1	2	3	4	5	6	7
21.	I Wonder why I am doing things for the environment, the situation is simply not improving.							
22.	Honestly I Don't Know; I trully have the impression I am wasting time doing things for the environment.							
23.	I don't Know; I can't see how my efforts to be environmentally - conscious are helping the environmental situation.							
24.	I don't really Know; I can't see What I am getting out of it.							

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	56	1	57
2	56	2	58
3	49	3	55
4	55	4	49
5	53	5	56
6	57	6	51
7	51	7	56
8	57	8	52
9	55	9	50
10	57	10	57
11	55	11	55
12	55	12	57
13	47	13	42
14	53	14	47
15	55	15	49
16	56	16	56
17	52	17	46
18	45	18	45
19	55	19	56
20	55	20	54
21	42	21	44
22	56	22	54
23	56	23	51
24	58	24	39
25	57	25	52
26	58	26	42
27	56	27	51
28	56	28	49
29	43	29	57
30	42	30	45
31	55	31	41
32	55	32	56
33	46	33	57
34	57	34	54
35	56	35	55
36	55	36	56
37	57	37	53

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	49	38	52
39	56	39	45
40	45	40	40
41	55	41	47
42	46	42	54
43	57	43	39
44	43	44	43
45	42	45	48
46	55	46	46
47	55	47	45
48	48	48	45
49	51	49	44
50	42	50	39
51	57	51	46
52	42	52	45
53	47	53	42
54	55	54	45
55	44	55	50
56	43	56	45
57	56	57	39
58	44	58	42
59	43	59	54
60	39	60	37
61	55	61	47
62	44	62	49
63	57	63	39
64	43	64	43
65	55	65	45
66	43	66	45
67	42	67	39
68	51	68	56
69	55	69	47
70	47	70	47
71	39	71	39
72	46	72	46
73	46	73	47
74	56	74	44

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
75	48	75	46
76	48	76	53
77	45	77	46
78	48	78	45
79	44	79	48
80	45	80	42
81	46	81	57
82	42	82	45
83	43	83	53
84	40	84	39
85	42	85	44
86	48	86	48
87	44	87	46
88	55	88	53
89	45	89	49
90	48	90	44
91	45	91	52
92	55	92	49
93	47	93	48
94	45	94	46
95	48	95	47
96	43	96	48
97	45	97	39
98	46	98	49
99	48	99	46
100	56	100	45

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	56	1	52
2	57	2	56
3	58	3	56
4	52	4	45
5	53	5	54
6	58	6	51
7	54	7	50
8	55	8	52
9	54	9	50
10	56	10	57
11	43	11	54
12	49	12	53
13	54	13	47
14	47	14	54
15	56	15	55
16	55	16	49
17	57	17	52
18	56	18	57
19	56	19	56
20	56	20	40
21	58	21	56
22	59	22	54
23	34	23	52
24	56	24	50
25	32	25	51
26	58	26	32
27	56	27	56
28	39	28	56
29	57	29	42
30	56	30	42
31	31	31	51
32	56	32	56
33	56	33	50
34	57	34	52
35	42	35	57
36	56	36	56
37	58	37	48

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	56	38	50
39	47	39	55
40	50	40	35
41	41	41	45
42	39	42	46
43	55	43	37
44	37	44	48
45	49	45	45
46	41	46	44
47	54	47	55
48	45	48	50
49	45	49	49
50	49	50	46
51	56	51	50
52	41	52	45
53	42	53	41
54	40	54	39
55	44	55	43
56	49	56	42
57	49	57	41
58	42	58	42
59	49	59	39
60	42	60	41
61	39	61	42
62	38	62	41
63	42	63	40
64	45	64	42
65	39	65	39
66	43	66	50
67	48	67	46
68	40	68	45
69	46	69	46
70	47	70	47
71	46	71	42
72	43	72	46
73	42	73	48
74	44	74	46

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
75	42	75	43
76	43	76	43
77	45	77	41
78	39	78	45
79	40	79	44
80	38	80	42
81	45	81	42
82	37	82	38
83	45	83	42
84	47	84	41
85	42	85	40
86	38	86	42
87	50	87	36
88	52	88	46
89	56	89	40
90	54	90	41
91	54	91	39
92	56	92	37
93	37	93	55
94	45	94	40
95	34	95	41
96	45	96	40
97	41	97	49
98	44	98	40
99	39	99	44
100	42	100	48

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Pvt. Schools of CBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	55	1	41
2	56	2	40
3	43	3	57
4	55	4	56
5	45	5	40
6	44	6	45
7	53	7	42
8	44	8	40
9	56	9	44
10	46	10	40
11	45	11	39
12	53	12	46
13	55	13	45
14	55	14	42
15	56	15	55
16	46	16	57
17	39	17	57
18	56	18	44
19	54	19	41
20	55	20	51
21	44	21	40
22	57	22	46
23	56	23	45
24	56	24	39
25	56	25	55
26	55	26	44
27	48	27	54
28	43	28	43
29	55	29	57
30	45	30	42
31	44	31	55
32	56	32	42
33	56	33	56
34	55	34	38
35	52	35	41
36	44	36	41
37	55	37	39

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Pvt. Schools of CBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	57	38	56
39	55	39	41
40	40	40	46
41	38	41	56
42	48	42	56
43	49	43	55
44	45	44	56
45	43	45	40
46	45	46	38
47	57	47	42
48	55	48	38
49	39	49	40
50	56	50	41

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Pvt. School of RBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	51	1	45
2	57	2	51
3	45	3	39
4	55	4	41
5	44	5	44
6	52	6	45
7	57	7	48
8	42	8	55
9	44	9	40
10	59	10	42
11	46	11	43
12	38	12	43
13	55	13	41
14	56	14	40
15	56	15	41
16	40	16	55
17	55	17	57
18	56	18	45
19	39	19	38
20	54	20	49
21	40	21	47
22	57	22	46
23	35	23	48
24	54	24	44
25	45	25	47
26	46	26	45
27	55	27	39
28	43	28	41
29	55	29	44
30	39	30	40
31	54	31	45
32	56	32	45
33	44	33	55
34	57	34	41
35	50	35	42
36	39	36	40
37	55	37	49

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Pvt. School of RBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	54	38	39
39	55	39	52
40	39	40	58
41	57	41	40
42	43	42	56
43	46	43	47
44	55	44	40
45	45	45	55
46	45	46	47
47	57	47	39
48	48	48	48
49	39	49	45
50	45	50	38

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	57	1	49
2	47	2	52
3	52	3	50
4	54	4	45
5	54	5	57
6	52	6	45
7	51	7	51
8	49	8	55
9	50	9	54
10	54	10	52
11	53	11	46
12	45	12	51
13	50	13	39
14	49	14	42
15	51	15	45
16	49	16	54
17	50	17	52
18	52	18	56
19	48	19	53
20	55	20	56
21	50	21	44
22	45	22	46
23	48	23	44
24	48	24	55
25	58	25	56
26	50	26	38
27	52	27	56
28	49	28	49
29	48	29	55
30	45	30	39
31	49	31	51
32	55	32	55
33	51	33	50
34	51	34	55
35	52	35	47
36	56	36	52
37	50	37	50

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	56	38	52
39	57	39	48
40	43	40	45
41	45	41	47
42	46	42	44
43	47	43	35
44	46	44	43
45	44	45	45
46	43	46	46
47	49	47	45
48	55	48	45
49	49	49	55
50	45	50	43
51	45	51	46
52	55	52	39
53	42	53	45
54	43	54	40
55	46	55	45
56	45	56	45
57	44	57	44
58	39	58	39
59	45	59	44
60	43	60	42
61	39	61	38
62	43	62	47
63	43	63	55
64	42	64	43
65	56	65	39
66	43	66	55
67	38	67	41
68	42	68	45
69	44	69	46
70	44	70	47
71	46	71	42
72	46	72	46
73	42	73	47
74	55	74	39

SCORES SHEET OF ENVIRONMENTAL BEHAVIOR SCALE			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
75	42	75	46
76	43	76	43
77	45	77	45
78	43	78	45
79	44	79	44
80	46	80	42
81	43	81	38
82	38	82	45
83	39	83	39
84	52	84	38
85	42	85	44
86	48	86	42
87	44	87	46
88	43	88	37
89	42	89	51
90	45	90	44
91	45	91	46
92	55	92	38
93	41	93	45
94	40	94	38
95	45	95	40
96	43	96	44
97	45	97	40
98	39	98	37
99	44	99	39
100	40	100	45

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	85	1	78
2	79	2	88
3	89	3	77
4	79	4	76
5	91	5	73
6	78	6	75
7	88	7	77
8	92	8	77
9	89	9	76
10	75	10	75
11	86	11	86
12	68	12	83
13	89	13	75
14	90	14	69
15	76	15	92
16	83	16	77
17	86	17	79
18	89	18	91
19	75	19	82
20	83	20	76
21	86	21	86
22	69	22	76
23	76	23	78
24	72	24	68
25	78	25	69
26	84	26	83
27	78	27	85
28	69	28	90
29	86	29	88
30	84	30	91
31	74	31	66
32	77	32	90
33	76	33	89
34	78	34	88
35	68	35	92
36	79	36	76

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
37	69	37	88
38	88	38	81
39	77	39	92
40	78	40	86
41	69	41	79
42	76	42	99
43	88	43	88
44	85	44	80
45	77	45	78
46	86	46	91
47	76	47	93
48	78	48	75
49	84	49	90
50	78	50	66
51	80	51	89
52	89	52	69
53	86	53	78
54	85	54	65
55	69	55	88
56	75	56	74
57	78	57	92
58	89	58	62
59	67	59	68
60	79	60	75
61	75	61	65
62	90	62	89
63	78	63	83
64	83	64	73
65	77	65	98
66	74	66	72
67	75	67	78
68	81	68	89
69	77	69	75
70	88	70	66
71	79	71	85
72	68	72	79

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
73	68	73	77
74	80	74	72
75	89	75	96
76	81	76	79
77	85	77	85
78	68	78	78
79	69	79	69
80	79	80	75
81	88	81	88
82	79	82	76
83	77	83	79
84	87	84	89
85	75	85	74
86	68	86	69
87	79	87	91
88	65	88	81
89	76	89	73
90	75	90	78
91	76	91	76
92	78	92	77
93	89	93	67
94	72	94	86
95	65	95	89
96	78	96	78
97	75	97	68
98	75	98	92
99	76	99	69
100	68	100	77

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	89	1	77
2	80	2	88
3	85	3	78
4	89	4	66
5	91	5	78
6	79	6	70
7	92	7	79
8	77	8	75
9	86	9	73
10	73	10	77
11	88	11	72
12	90	12	75
13	89	13	83
14	89	14	83
15	75	15	92
16	85	16	73
17	79	17	79
18	80	18	92
19	76	19	86
20	62	20	61
21	84	21	91
22	66	22	76
23	90	23	85
24	84	24	72
25	88	25	69
26	72	26	91
27	74	27	88
28	67	28	59
29	80	29	76
30	66	30	90
31	64	31	78
32	88	32	66
33	89	33	62
34	75	34	88
35	73	35	88
36	76	36	90

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
37	84	37	92
38	89	38	81
39	69	39	99
40	74	40	86
41	68	41	88
42	67	42	92
43	86	43	90
44	68	44	65
45	76	45	74
46	67	46	91
47	78	47	60
48	76	48	75
49	77	49	93
50	77	50	69
51	67	51	88
52	89	52	78
53	76	53	65
54	88	54	68
55	79	55	89
56	69	56	74
57	75	57	70
58	85	58	89
59	68	59	92
60	78	60	67
61	75	61	73
62	89	62	85
63	74	63	78
64	68	64	73
65	65	65	68
66	72	66	75
67	75	67	72
68	96	68	89
69	75	69	78
70	78	70	78
71	77	71	75
72	73	72	75

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
73	79	73	76
74	70	74	70
75	73	75	85
76	69	76	79
77	75	77	96
78	77	78	78
79	71	79	69
80	85	80	65
81	68	81	62
82	78	82	76
83	65	83	66
84	67	84	89
85	65	85	69
86	75	86	79
87	69	87	79
88	79	88	65
89	89	89	78
90	78	90	77
91	76	91	76
92	87	92	73
93	76	93	57
94	64	94	86
95	78	95	85
96	65	96	78
97	72	97	65
98	65	98	72
99	76	99	69
100	77	100	55

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Pvt. Schools of CBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	72	1	75
2	75	2	89
3	92	3	66
4	83	4	59
5	86	5	75
6	77	6	72
7	79	7	75
8	76	8	89
9	90	9	65
10	79	10	78
11	73	11	79
12	76	12	68
13	88	13	63
14	96	14	70
15	76	15	62
16	83	16	71
17	85	17	85
18	90	18	65
19	91	19	69
20	72	20	78
21	78	21	78
22	92	22	76
23	88	23	79
24	88	24	89
25	80	25	69
26	78	26	69
27	76	27	69
28	81	28	77
29	92	29	73
30	80	30	78
31	85	31	76
32	99	32	77
33	86	33	76
34	91	34	60
35	74	35	65
36	75	36	64

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Pvt. Schools of CBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
37	93	37	65
38	91	38	75
39	90	39	62
40	62	40	78
41	61	41	78
42	79	42	92
43	77	43	77
44	73	44	75
45	74	45	63
46	70	46	67
47	88	47	70
48	90	48	65
49	65	49	68
50	79	50	65

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Pvt. Schools of RBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	77	1	78
2	69	2	70
3	75	3	75
4	78	4	73
5	75	5	78
6	78	6	72
7	78	7	75
8	70	8	92
9	72	9	68
10	66	10	75
11	77	11	77
12	86	12	79
13	72	13	65
14	62	14	65
15	69	15	65
16	73	16	89
17	78	17	96
18	78	18	85
19	86	19	67
20	91	20	78
21	78	21	69
22	80	22	79
23	76	23	77
24	88	24	76
25	90	25	71
26	71	26	67
27	80	27	73
28	75	28	76
29	75	29	69
30	68	30	75
31	76	31	63
32	99	32	64
33	70	33	87
34	77	34	78
35	75	35	65
36	60	36	72

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Pvt. Schools of RBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
37	99	37	78
38	78	38	75
39	90	39	65
40	76	40	62
41	79	41	70
42	78	42	89
43	77	43	62
44	73	44	77
45	69	45	63
46	70	46	68
47	90	47	78
48	74	48	67
49	85	49	65
50	79	50	75

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	72	1	75
2	73	2	90
3	68	3	92
4	78	4	59
5	58	5	72
6	72	6	77
7	63	7	79
8	65	8	80
9	62	9	83
10	72	10	76
11	82	11	86
12	70	12	86
13	70	13	60
14	71	14	76
15	90	15	90
16	71	16	83
17	91	17	91
18	64	18	69
19	75	19	62
20	60	20	85
21	73	21	75
22	80	22	91
23	76	23	74
24	82	24	88
25	62	25	91
26	71	26	62
27	80	27	81
28	73	28	88
29	71	29	73
30	84	30	61
31	73	31	65
32	92	32	73
33	70	33	99
34	60	34	79
35	72	35	74
36	91	36	93

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
37	82	37	77
38	71	38	90
39	90	39	75
40	75	40	78
41	74	41	88
42	72	42	79
43	62	43	65
44	73	44	92
45	52	45	90
46	70	46	70
47	73	47	88
48	90	48	74
49	84	49	79
50	79	50	89
51	72	51	75
52	89	52	85
53	78	53	66
54	73	54	72
55	71	55	64
56	72	56	73
57	75	57	75
58	62	58	80
59	85	59	66
60	78	60	62
61	65	61	74
62	68	62	68
63	67	63	61
64	70	64	77
65	96	65	89
66	71	66	64
67	85	67	86
68	65	68	70
69	69	69	78
70	67	70	65
71	78	71	77
72	79	72	72

SCORES SHEET OF MOTIVATION TOWARDS ENVIRONMENT SCALE			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
73	77	73	79
74	87	74	96
75	77	75	70
76	67	76	76
77	65	77	69
78	63	78	76
79	73	79	76
80	78	80	78
81	65	81	73
82	75	82	77
83	76	83	63
84	65	84	56
85	72	85	75
86	78	86	68
87	76	87	62
88	75	88	65
89	62	89	75
90	64	90	80
91	78	91	76
92	92	92	65
93	74	93	70
94	70	94	62
95	63	95	67
96	65	96	72
97	67	97	63
98	77	98	67
99	68	99	66
100	75	100	64

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	369.8	1	356.6
2	357.7	2	364.1
3	364.8	3	372
4	362.5	4	353
5	337.8	5	369.8
6	364.8	6	349.1
7	363.3	7	323.2
8	371.6	8	346
9	355.1	9	357.7
10	375.2	10	299.2
11	356.6	11	375.2
12	337.8	12	371.6
13	351.9	13	362.5
14	363.3	14	349.1
15	357.7	15	356.6
16	369.8	16	371.6
17	364.8	17	356.6
18	376.1	18	362.5
19	376.1	19	364.8
20	392.8	20	353
21	364.8	21	337.8
22	375.2	22	349.1
23	351.9	23	356.6
24	364.8	24	346
25	319.1	25	357.7
26	364.8	26	295.4
27	363.3	27	327.7
28	353.5	28	299.2
29	369.8	29	294.2
30	378.4	30	295.4
31	358.8	31	356.6
32	371.6	32	371.6
33	362.5	33	369.8
34	363.3	34	342
35	357.7	35	374.9
36	362.5	36	327.7
37	376.1	37	349.1

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	371.6	38	358.8
39	353.5	39	356.6
40	363.3	40	295.4
41	319.1	41	351.9
42	369.8	42	337.8
43	371.6	43	299.2
44	351.9	44	295.4
45	371.6	45	319.1
46	364.8	46	327.7
47	357.7	47	327.7
48	374.9	48	356.6
49	364.8	49	346
50	357.7	50	349.1
51	363.3	51	327.7
52	353.5	52	335.5
53	353.5	53	337.8
54	357.9	54	371.6
55	364.8	55	356.6
56	371.6	56	346
57	374.9	57	362.5
58	376.1	58	371.6
59	362.5	59	371.6
60	365.8	60	356.6
61	376.1	61	364.1
62	357.7	62	353
63	375.2	63	327.7
64	358.8	64	319.1
65	369.8	65	299.2
66	362.5	66	318.7
67	358.8	67	340.3
68	349.1	68	295.4
69	362.5	69	327.7
70	376.1	70	364.8
71	362.5	71	327.7
72	369.8	72	349.1
73	294.2	73	356.6
74	378.4	74	362.5

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Rural Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
75	385.2	75	362.5
76	371.6	76	346
77	371.6	77	299.2
78	364.8	78	295.4
79	357.7	79	327.7
80	353.5	80	288.9
81	346	81	288.9
82	362.5	82	346
83	365.8	83	342
84	363.3	84	362.5
85	357.7	85	346
86	357.7	86	342
87	371.6	87	299.9
88	362.5	88	362.5
89	356.6	89	346
90	371.6	90	342
91	376.1	91	295.4
92	373.4	92	294.2
93	362.5	93	342
94	373.4	94	342
95	374.9	95	335.5
96	368.2	96	337.8
97	342	97	295.4
98	371.6	98	358.8
99	384.7	99	349.1
100	381.1	100	346

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	351.9	1	356.6
2	357.7	2	364.7
3	363.3	3	372
4	331.3	4	351.9
5	356.6	5	337.8
6	356.6	6	349.1
7	353	7	327.7
8	353	8	346
9	349.1	9	347.9
10	358.8	10	295.4
11	356.6	11	356.6
12	345.5	12	362.5
13	356.6	13	299
14	356.6	14	349.1
15	337.8	15	356.6
16	342	16	363.3
17	362.5	17	362.5
18	346	18	356.6
19	374.9	19	335.5
20	362.5	20	349.1
21	342	21	337.8
22	345.5	22	353
23	340.3	23	356.6
24	346	24	345.5
25	351.9	25	318.7
26	373.4	26	308.7
27	358.8	27	331.3
28	340.3	28	371.6
29	335.3	29	337.8
30	340.3	30	294.2
31	331.3	31	356.6
32	342	32	364.7
33	337.8	33	366.9
34	349.1	34	345.5
35	337.8	35	335.3
36	332.2	36	323.2
37	323.2	37	347.9

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	342	38	323.2
39	351.9	39	331.3
40	342	40	294.2
41	335.6	41	353
42	340.3	42	308.7
43	337.8	43	295.4
44	294.2	44	364.8
45	340.3	45	318.7
46	337.8	46	331.3
47	356.6	47	365.8
48	346	48	356.6
49	342	49	347.9
50	365.8	50	335.3
51	349.1	51	327.7
52	353	52	349.1
53	351.9	53	335.3
54	362.5	54	351.9
55	340.3	55	323.2
56	335.5	56	342
57	362.5	57	342
58	376.1	58	366.9
59	327.7	59	342
60	342	60	327.7
61	327.7	61	353
62	357.7	62	342
63	371.9	63	327.7
64	358.8	64	318.7
65	294.2	65	318.7
66	369.8	66	364.8
67	362.5	67	335
68	358.8	68	327.7
69	349.1	69	294.2
70	369.8	70	340.3
71	364.1	71	323.2
72	376.1	72	342
73	371.6	73	346
74	308.7	74	378.8

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Urban Govt. Schools			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
75	364.8	75	335.6
76	376.1	76	347.9
77	371.6	77	327.7
78	385.7	78	299.2
79	362.5	79	294.2
80	351.9	80	318.7
81	295.4	81	346
82	357.7	82	342
83	323.2	83	299.2
84	327.7	84	294.2
85	327.7	85	342
86	356.6	86	349.1
87	357.7	87	345.5
88	371.6	88	335.5
89	376.1	89	349.1
90	373.4	90	299.9
91	376.1	91	363.3
92	371.6	92	295.4
93	368.2	93	362.5
94	335.8	94	337.8
95	371.6	95	323.2
96	327.7	96	342
97	375.2	97	295.4
98	299.9	98	346
99	379.9	99	318.7
100	347.9	100	327.7

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Pvt. Schools of CBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	327.7	1	331.3
2	366.9	2	369.8
3	342	3	335.3
4	371.6	4	299.2
5	351.9	5	356.6
6	345.5	6	351.9
7	362.5	7	362.5
8	362.5	8	371.6
9	351.9	9	347.9
10	342	10	356.6
11	345.5	11	366.9
12	345.5	12	353
13	356.6	13	323.2
14	362.5	14	342
15	365.8	15	299.9
16	342	16	295.4
17	345.5	17	331.3
18	327.7	18	319.1
19	357.7	19	376.1
20	366.9	20	323.2
21	340.3	21	356.6
22	349.1	22	347.9
23	323.2	23	356.6
24	319.1	24	369.8
25	369.8	25	331.3
26	340.3	26	356.6
27	319.1	27	340.3
28	318.7	28	365.8
29	347.9	29	366.9
30	351.9	30	353
31	362.5	31	323.2
32	295.4	32	362.5
33	345.5	33	347.9
34	366.9	34	299.2
35	337.8	35	327.7
36	347.9	36	294.2
37	356.6	37	295.4

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Pvt. Schools of CBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	335.3	38	327.7
39	362.5	39	295.4
40	327.7	40	345.5
41	327.7	41	294.2
42	356.6	42	378.4
43	331.3	43	318.7
44	342	44	364.8
45	323.2	45	331.3
46	337.8	46	337.8
47	345.5	47	345.5
48	351.9	48	346
49	299.2	49	347.9
50	331.3	50	346

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Pvt. Schools of RBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	347.9	1	356.6
2	356.6	2	360.6
3	342	3	345.5
4	362.5	4	353
5	295.4	5	308.7
6	345.5	6	299.2
7	369.8	7	294.2
8	342	8	368.2
9	365.8	9	295.4
10	308.7	10	347.9
11	357.7	11	356.6
12	375.2	12	360.6
13	366.9	13	345.5
14	345.5	14	308.7
15	356.6	15	356.6
16	345.5	16	335.3
17	323.2	17	363.3
18	362.8	18	362.5
19	368.2	19	295.4
20	365.8	20	319.1
21	327.2	21	294.5
22	358.8	22	284.7
23	342	23	318.7
24	365.8	24	331.3
25	366.9	25	299.2
26	351.9	26	295.4
27	308.7	27	345.5
28	356.6	28	308.7
29	360.6	29	318.7
30	323.2	30	345.5
31	345.5	31	323.2
32	371.6	32	356.6
33	340.3	33	366.9
34	345.5	34	345.5
35	323.3	35	345.5
36	345.5	36	331.3
37	371.6	37	342

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Pvt. Schools of RBSE Board			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	308.7	38	351.9
39	335.3	39	342
40	342	40	299.2
41	351.9	41	295.4
42	327.7	42	368.2
43	349.1	43	299.1
44	346	44	294.2
45	335.3	45	327.7
46	323.2	46	299.2
47	368.2	47	345.5
48	331.3	48	342
49	362.5	49	347.9
50	335.3	50	360.6

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
1	346	1	376.1
2	331.3	2	356.6
3	369.8	3	343
4	331.3	4	365.8
5	378.4	5	368.2
6	351.9	6	366.9
7	366.9	7	369.8
8	363.3	8	376.1
9	375.2	9	365.8
10	347.9	10	369.8
11	356.6	11	356.6
12	349.1	12	360.6
13	357.7	13	319.1
14	362.5	14	363.3
15	299.1	15	357.7
16	356.6	16	378.4
17	323.2	17	345.5
18	331.3	18	368.2
19	357.7	19	362.5
20	387.7	20	365.8
21	356.6	21	368.2
22	331.3	22	357.7
23	345.5	23	342
24	351.9	24	360.6
25	376.1	25	347.9
26	356.6	26	323.2
27	327.7	27	366.9
28	347.9	28	357.7
29	349.1	29	366.9
30	351.9	30	327.7
31	347.9	31	308.7
32	365.8	32	371.6
33	347.9	33	345.5
34	366.9	34	364.7
35	340.3	35	375.2
36	368.2	36	342
37	356.6	37	366.9

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
38	335.3	38	353
39	371.6	39	366.9
40	346	40	340.3
41	345.5	41	351.9
42	356.6	42	349.1
43	337.8	43	318.7
44	345.5	44	342
45	323.2	45	337.8
46	337.8	46	351.9
47	340.3	47	351.9
48	376.1	48	365.8
49	347.9	49	364.7
50	331.3	50	360.6
51	327.7	51	356.6
52	369.8	52	360.6
53	335.5	53	299.2
54	378.4	54	351.9
55	356.6	55	294.2
56	347.9	56	345.5
57	362.5	57	295.4
58	299.2	58	308.7
59	347.9	59	299.2
60	308.7	60	295.4
61	284.7	61	356.6
62	353	62	284.7
63	349.1	63	299.2
64	323.2	64	345.5
65	366.9	65	356.6
66	371.6	66	335.5
67	331.3	67	368.2
68	327.7	68	294.2
69	318.7	69	327.7
70	323.2	70	323.2
71	335.3	71	342
72	349.1	72	345.5
73	319.1	73	351.9
74	366.9	74	368.8

SCORES SHEET OF CREATIVITY TOWARDS ENVIRONMENT TEST			
Sr. Sec Students of Hindi Medium Pvt. School			
Female		Male	
Sr. No.	Obtained Marks	Sr. No.	Obtained Marks
75	337.8	75	347.9
76	345.5	76	337.8
77	340.3	77	299.2
78	319.1	78	362.5
79	318.7	79	360.6
80	353	80	345.5
81	323.2	81	345.5
82	294.2	82	356.6
83	347.9	83	345.5
84	295.4	84	327.7
85	323.2	85	345.5
86	294.2	86	299.2
87	299.2	87	346
88	327.7	88	323.2
89	294.2	89	345.5
90	323.2	90	345.5
91	299.2	91	356.6
92	365.8	92	327.7
93	337.8	93	343
94	342	94	294.2
95	319.1	95	327.7
96	337.8	96	331.1
97	327.7	97	345.5
98	346	98	299.2
99	295.4	99	294.2
100	323.2	100	299.2



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Environmental Science and Psychology : How psychology can help to reduce environmental degradation

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Keywords: *Environment science, psychology, defense mechanism, Motivation, coping, appraisal, threat appraisal, sustainable development.*

ABSTRACT:

Environment Science is considered as a compulsory and Important subject now in India and other countries too, but the curriculum makers or educators must developed it as an interdisciplinary approach, along with other subjects it must include psychology, as it makes easier to understand human behavior by the help of it and can change their behavior, motivate them to act in sustainable manner. There are many ways by which psychology can help for eg. by observing social interactions and developing creative models & the theories for environmental protection. psychology can also help in studying, the peoples defense mechanism towards environment degradation & what motivates them to behave in particular ways so we need help of psychology in every level of environmental project and environmental education.

Introduction :

Environment is a source of happiness to man, and his happiness will be increased if they learn to love and conserve nature. There is an immediate need to make man aware about environmental degradation, pollution, ecological imbalance and its after effects. Advancement in science and technology and the rapid growth of urbanization has posed danger to

environment. We face lot of problems due to environmental degradation therefore it is necessary to create pro-environment behaviour among peoples. The physical environment with its different aspects stimulates and directs human behaviour in many ways.

Role of Psychology :

All the environmental problems can not be solved alone by the study of environmental science. It needs an interdisciplinary approach especially psychology. Psychologists all over the world have been substantially involved in collaborative and multidisiplinary work in environmental issues. Environment science can only gives the knowledge of environmental hazards and can quantify them, it can not measures the behaviour of people that what are they doing and why are they doing anything for environment. By the help of psychology we can study the relationship between physical environment and human behaviour and their reciprocal relationship. It includes the behaviour like, care, value, Morality etc. Human care for nature should be taught to childrens from thier childhood, as like a friend, that if they will not care for their friend, the friend soon gone, same with earth, so we should learn to care about our earth soon. Human behaviour is a major source of environmental problem and can be a source of solutions as well. According to **Clayton & Brook (2005)**. Psychology has also been a lead discipline in addressing the nature, quality and importance of human-natural environment transaction, and those mediating individual and system level factors which contributes to natural environment degradation and distruction.

Now Psychologist becomes aware about how environment affect us, Just as toxic chemicals in the air and ground can damage physical health so other characterstics of the environment can damage mental and social health too.

Psychological Construct like behaviour, Motivation etc must be studied by doing research in education institutes to enhance the psychological knowledge towards physical environment and environment protection. By the researches on these variables we get to know the pattern of positive and negative behaviour of person towards environmental issues, and also get the knowledge, Why people do the particular behaviour by the study of motivation. To enhance the ecofriendly way, the creativity must be studied in pupils so that pupil encourage to think in new, unique ways to protect environment from degradation and made a sustainable development.

Behaviour :

Environmental behaviour is an observable movement of the organism generally taken to include verbal behaviour as well as physical movement towards the changes in environment. There are many tools present which can measure peoples positive and negative behaviour towards environmental issues.

Defense Mechanism :

People often use defense mechanism to avoid the situation. **Deborah winter 2000 & Kogr 2004** describes how psychological defenses interfere with rational perception of environmental realities. Defensive thinking results when our basic wants, such as the desire for comfort & Pleasure are incompatible with rationale or moral judgement faced with a conflict between a desire for self-gratification through unsustainable behaviour and the knowledge that environment is threatened by such behaviour, we repress our awareness of the conflict, deny the threats that face us, displace them on to other communities and rationalize our continued unsustainable behaviour as having no alternative. In simple terms that what people want to be true is true and conversely, the desire not to think about things they do not want to be true.

Motivation :

Frud Luthans defines Motivation as a process that starts with a physiological or psychological deficiency or need that activates behaviour. Motivation is an internal urge to do things therefore it gives a reason for people's action, desire and need. Motivation is an important psychological construct because by it we come to know the reason of people's positive and negative behaviour towards environmental issues.

Protection Motivation theory (Lazarus 1966)

According to this theory when a threat is perceived the two appraisal steps are realised by a person.

- (i) **Threat appraisal** :- Person valued that the threat is high or low.
- (ii) **Coping appraisal** :- Person appraisal their own ability to respond and the cost and benefit of doing so. It can results in high or low sense that one can cope with the threat or not.

Results of these two appraisal steps determines the persons strategy. If the person feel high threat and high coping they will approach the situation in problem solving fashion, assessing and deploying resources to deal with threat and making changes as need.

If a person high threat and low coping ability they will use emotion-focused coping in which a person tries to lessen or tolerate fear, anxiety, helplessness by emotional means such as avoidance, denial, desensitization.

How psychology can help to prevent environmental degradation:

- Using survey research to assess community attitudes towards environmental protection.

- Observing social interactions in order to understand the ways in which environmental values are created and transmitted.
- Designing creative Models and test to develop creativity in pupils and to motivate them to develop ecofriendly things.
- Help people to change their perception, attitude and behaviour towards environment.
- Developing theories about how people perceive the environment, and what motivates peoples to behave in particular ways.
- Understanding the role of media in shaping public perceptions of problems and how media be used to communicate effective messages.
- Exploring the neuron-mechanisms by which environmental toxins disrupt normal psychological development and functioning.

Many psychologist still think that environmental problems are the concern of environmental scientist but environmental problems are caused primarily by human behaviours, feelings and attitudes so we can't solve these problems without the help of psychology and we really need psychologist to work on every level of planning, implementation and evaluation of environmental projects. In India environmental education is included in the curriculum in 2003 by Hon'ble education supreme court at every level in college. But it must also include psychological approach to study the mental functioning of person which in turn helps in reducing environmental degradation and helps to maintain sustainable development.

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ENVIRONMENTAL BEHAVIOUR AMONG SENIOR SECONDARY STUDENTS OF KOTA (RAJ.)

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ABSTRACT

Environmental education aims to equip the individuals with knowledge, attitude and skills in order to raise concern for the environment and to work towards solutions of environmental problems and the prevention of new ones. Environmental education programs have mainly focused on increasing environment knowledge, to change the environmental behaviour. The present study measured the environmental behaviour by a standard tool in senior sec. students of different schools which includes different variables like gender, Type of Management, Locality and Medium of instructions. The Rural girl students showed the highest level of environmental behaviour. The level of environmental behaviour is not affected by type of Management and Medium of instructions. Whether Gender and Locality affects the level of environmental behaviour in students. The Rural students and Girl students were score high on EBS. (Environmental behavior scale)

KEYWORDS: Environmental Behaviour, Environmental education, Environmental Behavior Scale, Gender, Rural, Urban, Senior Secondary students, English Medium, Hindi medium, Govt. Pvt. Schools.

INTRODUCTION:

The fast emerging economy of India is resulting in rapid degradation of environment. Now India is experiencing multi-sectoral growth in agriculture, manufacturing, transport and urbanization, in synergy with a geometric rise in its human population and degradation of its natural habitat (CME, 2009; CPCB 2009.) The problem in handling the environment degradation is not only the lack of scientific knowledge but the inner will to act for protecting environment. Most of the people do not take this as a serious issue.

Environmental Education programs have mainly focused on increasing environmental knowledge to change Environmental behavior. (polley and connor. 2000) Higher Education aims to raise responsibility and competent individuals with knowledge, skills and value who will contribute to an improving world, therefore As Corcoran and wals (2004) say: higher education can play a pivotal role in turning Society towards sustainability hence the importance of scope and Target of Environmental Education in higher education curricula must be recognized. But Environmental education still does not find an important place in the curriculum of major universities and educational institutes. The environmental syllabus must include the psychological approach so that the students must be motivated enough to behave in environmental safe manner. Environmental Behaviour: The term Behaviour is hard to define, some educators define it as any learning as a change in behaviour; often without the presumption that this will in term, lead to change in any form of expressed behaviour. Environmental behaviour is often referred to as environmental literacy and requires a transferal of skills and increase in motivation to act environmentally responsible manner (Jacobson et al., 2006) Environmental Behaviour is an observable movement of the organisms generally taken to include verbal behaviour as well as physical movement towards the changes in environment. In simple terms Environmental behaviour can be regarded as response of any person that shows its relationship to its environment. Environmental behaviour provides outputs from the organism to its environment. Simply environment behaviour is what they are doing to and for environment.

The study attempts to compare the Environmental Behaviour among the senior secondary students of different schools of Kota. The key objectives of the study is:

To compare the Environmental Behaviour of Sr. Sec. School students with respect to the following variables:

- Gender (Male & Female)
- Type of Management
- Locality
- Medium of instruction.

RESEARCH METHODOLOGY:

The present study was based on survey method and stratified sampling. The Stratified sampling design provided due to representation gender, locality, Type of management and medium of instruction. The sample of the present study con-

sisted a total of 800 senior secondary students selected from different schools of Kota.

Table I. Sample Demography

S. No.	Variable	Categories	Sample	Percentage
1.	Gender	Male	400	50
		Female	400	50
2.	Locality	Rural	200	25
		Urban	200	25
3.	Type of Management	Govt.	400	50
		Pvt.	400	50
4.	Medium of Instruction	English	200	25
		Hindi	200	25

The standardized tool of Environmental Behaviour Scale (EBS) by Urmila Verma and Archana Singhal was used to measure environmental behaviour among students. The score of tool ranged from 0 (minimum) to 60 (maximum). On each sampling date the tool is administered to the students of selected schools. Clear instruction was given to the students to properly attempt the test. The completed test booklets were scored strictly according to prescribed manual. The scores so obtained were tabulated and processed by standard statistical methods.

HYPOTHESIS TESTING:

To test the response with regard to Environmental behaviour with different independent variables like gender, type of management etc, different hypothesis were formulated and subsequently tested:

- Ho1:** There is no significant difference in level of environmental behaviour among male and female senior secondary students of different schools of Kota.
- Ho2:** There is no significant difference in level of environmental behaviour among Sr. Sec. students of Govt. and Pvt. schools of Kota.
- Ho3:** There is no significant difference in level of environmental behaviour among Sr. Sec. students of Rural and Urban Govt. schools of Kota.
- Ho4:** There is no significant difference in level of environmental behaviour among Sr. Sec. students of English medium private schools & Hindi medium private Schools of Kota.

Data Analysis: Collected data were edited, coded and fed into computer and analyzed by Calculated, Mean, Standard deviation (SD) and T Value.

Table II: Comparison of Environmental Behaviour of different senior secondary school students.

Sr. No.	Variable	Categories	Frequency	Mean	SD	T Value	Result	
							5% Level	1% Level
1.	Gender	Male	400	45.20	11.68	5.87	Significant	Significant
		Female	400	50.02	8.7			
2.	Type of Management	Govt.	400	47.70	8.4	1.99	Not Significant	Not Significant
		Pvt.	400	46.20	12.50			
3.	Locality	Rural	200	49.15	4.7	3.11	Significant	Significant
		Urban	200	47.49	6.05			
4.	Medium of Instruction	English	200	45.13	5.09	1.89	Not significant	Not significant
		Hindi	200	46.06	4.70			

RESULT AND DISCUSSION:

It is well evident from table II that the H2 and H3 were accepted which means that the level of environmental behaviour does not affected by the medium of instruction (English/Hindi) and Type of management of schools whether govt. or pvt. However the Hypotheses H1 is rejected which means that level of environmental behaviour in female students is higher, this might be due to different level of understanding of environmental issues. It may also due to fact that females in general by virtue of their behaviour adopt more ecofriendly practices. The Hypothesis H3 is also rejected which means that the level of environmental behaviour in rural students is higher than the urban students, may be because they face the environmental problems more practically than the urban students. The mean score of EBS of rural girls students is high among all other variables it may be because they became use too of choosing alternative or more ecofriendly behavior due to scarcity of resources and are more concern of environmental issues as they are in more touch with natural and clean environment. So it can be concluded, that to develop high level of environmental behaviour in student we must teach them in practical situation & try to show them real environmental problems in fields and make them sensitized to behave sustainably, and train them to be less exploitive in their use of natural resources.

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Reg. No.109/97-98



Board No.1180341

A-1313-1314, R.K. Puram, Kota (Raj.) ☎:0744-2471314 E-mail : arihant.kota5@gmail.com

Ref.:

Date : 23.1.17

"To Whomsoever it may concern."

This is to certify that Ms. Krishna Gurjar
(Research Scholar of Kota University) has
Conducted the test of environmental
Behaviour, Creativity towards Environment
and Motivation towards Environment
on Senior Secondary students of
our school.

PRINCIPAL
Arihant Children Senior Secondary School
R.K. Puram, KOTA (Raj.)



M.B. PUBLIC SR. SEC. SCHOOL

Talwandi, Kota Tel.: 0744-2406826

Managed by : M.B. Educational Society, Talwandi, Kota

Ref. MBP/2017-18/-382

Date: 28.1.2017.....

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ms. **KRISHNA GURJAR** (Research Scholar of Kota University) has conducted the test of Environmental Behavior, creativity towards Environment and motivation towards Environment, on Senior Secondary Students of Our School

Principal (1180563)
M.B. Public Sr. Sec. School
Talwandi, Kota



Maa Bharti

Sr. Sec. School

Affiliated to C.B.S.E., New Delhi | Affiliation No. : 1730353 | School code : 16194
Swami Vivekanand Nagar, Kota (Raj.) ☎: 0744-2471198, 2471199, 9829072309
Mail Address : maabhartikota@gmail.com Web site : maabharti.ac.in

To Whomsoever it May Concern

This is to certify that Ms. KRISHNA GURJAR (Research Scholar of Kota University) has conducted the test of Environmental Behavior, creativity towards Environment and motivation towards Environment, on Senior Secondary Students of Our School.

DATE: 8-2-2017

Principal

Maa Bharti Sr. Sec. School
Swami Vivekanand Nagar, Kota

Reg. No. 87/1982, 83
School Code : 16094

NALANDA
ACADEMY
SENIOR SECONDARY SCHOOL
CBSE AFFILIATED

Affiliation No. : 1730255/06

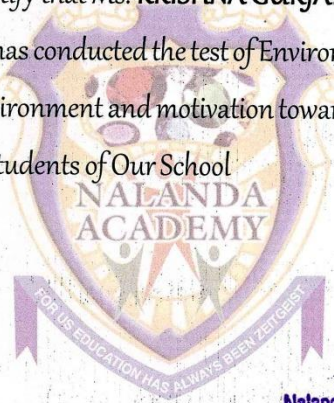
www.nalandaacademy.ac.in E-mail : msnalandaacademy@rediffmail.com

Ref. No. NAL/17-18/-182

Date : 13.2.2017

To Whomsoever it May Concern

This is to certify that Ms. KRISHNA GURJAR (Research Scholar of Kota University) has conducted the test of Environmental Behavior, creativity towards Environment and motivation towards Environment, on Senior Secondary Students of Our School




Principal
Nalanda Academy Sr. Sce. School
Anantpura, Kota