CHAPTER 2
THEORETICAL OVERVIEW

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2.1 INTRODUCTION

The present study is an investigation on the factors affecting responsible environmental behaviour of secondary school students. The theoretical overview presents a conceptual framework regarding the theoretical concepts of environmental behaviour to support the research purposes of the study.

The present chapter tries to present the theoretical background related to the investigating concepts in the following headings.

1. Concept of environmental education
2. Theoretical constructs in environment- behaviour research
3. Theoretical perspectives of attitude- behaviour relationship
4. Self-efficacy and behavioural change
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2.2 CONCEPT OF ENVIRONMENTAL EDUCATION

Environmental education is the education about the environment, for the environment and in the environment. While education about the environment includes concepts and skills that are necessary to understand it, education for the environment covers those aspects of education that covers conservation, preservation, and upgradation of the environment (Constanza, 1996). Education in the environment looks into education outside the classroom in the social and biophysical contexts in which it exists (Ayres, 1999). It supposes to teach a person to interact fully with the surrounding world and at the same time to improve his own inner world (Agarwal, 1997). It helps in the maintenance of life and health, in self-
preservation and in the preservation of human race as a whole. It provides each and every person with opportunities to acquire knowledge, attitudes, values, interest, commitment and skills to protect and improve our environment.

The definition of Environmental Education encompasses a variety of concepts and approaches. The most common definition given by the U.S. office of Education states: “Environmental Education is the process that fosters greater understanding of society’s environmental problems and also the process of environmental problem solving and decision making. It involves development of skills and insights needed to understand the structure, requirements and impact of interaction within and among various environmental entities, subsystems and systems” (Kirk, 1992).

Being a vital component of efforts to solve environmental problems, it must stay relevant to the needs and interests of the community and yet constantly adapt to the rapidly changing social and technological landscape (Hudson, 2001). Environmental Education is a lifelong process that occurs in both planned and unstructured ways for recognizing and practicing values and developing a strong passion for the nature. It is a process of recognizing values and clarifying concept in order to develop the skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his biophysical surroundings (Bandhu, Singh & Maitra, 1999). Thus the clarification of concepts related to environment and its importance is highly essential to develop skill and attitudes as well as to understand, realize and love the nature.
Now there is an urgent need to teach younger generation and allow them to understand the environment, its governing principles and living being’s close relationship and dependence on it. They should also be aware of environmental issues such as scarcity of non-renewable resources, depletion of forests, loss of biodiversity, energy crisis, pollution etc. There should be no excuse for environmental illiteracy as it is a major impediment for protecting our mother earth. (Bjorkland & Pringle, 2001)

2.2.1 Genesis and History of Environmental Education

The root of the environmental education can be traced back to the ancient times. Perhaps under the term “nature”, attention was paid to the conservation and preservation of environment. It has been known from the Vedic times that nature and human being form an inseparable part of the life support system. Buddhist, Jain and Hindu philosophers from about 2500 years ago showed concern for nature and its preservation. In the modern sense of this concept the seeds of environmental concern have been noted by Gorge Perkin Marsh in his book ‘Man and Nature’. He expressed deep concern that natural resources are limited and their over exploitation will put the man in danger (Dash & Satapathy, 2006). The publication of books like ‘Silent Spring’ by Carson, Population Bomb by Ehrlich and Ehrlich and Pesticide Conspiracy by Bosch were significant landmarks in environmental education, as these publications started a hot debate on the environmental issues.

With mechanical improvement and increment in the information of science and innovation, in the last piece of nineteenth century and additionally first and foremost of the twentieth century, there had been a fast deterioration in nature of environment, which constrained the educationist, intellectuals, politicians and the
common people to think about it and resulted in the establishment of International Union for the Protection of Nature (IUPN), later changed into International Union for the Conservation of Nature and Natural Resources IUCN). Diseigner (1983) observed that the first use of the term environmental education was at an IUCN meeting in Paris in 1948. From the late 1960s the use of this term began increasing and this was refined in the United Kingdom by the establishment of the Council for Environmental Education. The United Nation also took on its agenda to spread environmental consciousness among the common people, “Man and Biosphere Programme, World Conservation Strategy (ECS), publication of Red Data Book, etc., are some of the important achievements.

In June, 1972, the first UN sponsored conference on “Human Environment” held at Stockholm, assessed the damage done to environment on a global level and contemplated on ways and means of preventing those. In its Principal 19, it gave emphasis to the human dimension of environmental protection and conservation (Saxena 1993), and stressed on the need for environmental awareness and education. This was the first international conference to identify education as an important means of addressing environmental issues. In pursuance of the recommendation of this conference United Nations Environment Programme (UNEP) was created as an independent body. Subsequently, UNESCO in cooperation with UNEP launched the UNESCO-UN international Environmental Education Programme (IEEP) in 1975 at UNESCO Secretariat in Paris. IEEP aimed at assisting government, national, international and regional institutions to incorporate environmental education into formal and non-formal education systems and programmes. Though the Stockholm conference (1972) approved an action plan for the environmental protection, giving
emphasis on various strategies including environmental education, the major recognition was given by Belgrade Charter, in Yugoslavia in 1975. It recognized the urgent need of environmental education and provided working frame of reference for designing and practicing environmental education programme. The Tbilisi Inter-governmental conference on Environmental Education (1977) outlined a substantive structure of environmental education, which became the prototype of Environmental Education programme worldwide. It also clearly defined the goals, objectives and guiding principles of Environmental Education (Dash & Satapathy, 2007).

After ten years in 1987, the International congress on Environmental Education, was held in Moscow and was followed by Jomtien Conference, Thailand. All these conference had given emphasis to Environmental Education (EE) at local, national, regional and international levels and for all the age groups, inside and outside the formal school system. By the 1980s the term Environmental Education encompassed environmental studies, field studies, environmental science, environmental interpretation, urban studies, heritage education and conservation education. The Agenda 21 of famous Earth Summit (1992) held at Rio-de Janeiro also shows the implication for environmental education throughout the document. It also recommended that environmental and developmental education should be incorporated as an essential part of learning within formal and non-formal education streams (UNESCO, 1998). In India first International Conference on Environmental Education was held at New Delhi in the year 1981. Addressing this conference, Mrs. Gandhi, the then prime minister of India outlined the objects of environmental education as: “Environmental Education is to arouse social consciousness and make
community aware of the fact that goal of the individual and that of the community are both harmed ecological disruption.”

The concern for environment as a social issue got special recognition in the Brundtland Report of 1987. This report also known as “Our Common Future”, coined a new concept known as sustainable development. It stresses that development should be aimed at improving the quality of life of all sections of the population, combating poverty, protecting environment and most importantly building the innermost capacity for mutual respect, tolerance, cooperation and peaceful co-existence (WCED, 1987). The focus has changed from the problems of the environment to those of the people. Thus, after 1990 environmental education has changed to Environmental Education for sustainable development having two intimately linked goals.

1. Education towards protection and enhancement of the environment, and
2. Education as an instrument of development for improving the quality of life of human community (Dash & Satapathy, 2007).

Further, Millennium Development Goals (MDG) adopted by 189 nations in 2000 as a part of comprehensive development agenda stressed on environmental sustainability. The World Summit on Sustainable Development (WSSD) held at Johannesburg in 2002 noted that much of current education falls far short of what is required and calls for a new vision and deeper and more ambitious way of thinking about education (UNESCO, 2002).
2.2.2 Environmental Education in Indian Context

The imparting of Environmental Education is an age-tradition and is a part of Indian culture and ancient civilization. In fact the father of the nation, Mahatma Gandhi, in 1937, launched the movement of basic education for the first time, which was perhaps the first serious attempt in relating education in school to local environmental needs (Dash & Satapathy, 2007). In the constitution of India the Directive Principles of State Policy on Environment has been articulated in Article 48 A of the constitution introduced by the 42nd Amendment in 1977. It says that state shall endeavour to protect and improve the environment and to safe-guard forests and wildlife of the country. Further the national concern for environmental Education is reflected in the National Policy on Education (NPE, 1986) document. The document observes: “There is a paramount need to create a consciousness in the environment. It must permeate all ages and all sections of the society beginning with the child. Environmental consciousness should be there in the form of teaching in schools and colleges. This aspect will be, integrated in the entire educational processes.”

The best that basic education had to offer was incorporated in the report of the education commission (1964-66) that laid emphasis on the internal transformation of education so as to relate it to the life, needs and aspirations of the nation. However, till 1970 special emphasis was not laid on organizing learning experiences included in the curriculum to create awareness on environmental problems and their solution to inculcate habits of conserving nature and judicious use of natural resources (Panigrahi, 2004). Taking after the production of Curriculum for the Ten year school – A Framework in 1975, National Council of
Educational Research and Training (NCERT, 1974-77) created syllabi, text books and other instructional materials through dynamic inclusion of national specialists, experienced educators, and agents of state organizations of instruction. These were the impacts, which made the suitable atmosphere of bestowing the environmental education in India. The national Curriculum for Elementary and Secondary Education: A Framework developed by the NCERT in 1988 has consolidated the major thrusts and recommendation of NPE identifying with Environmental Education. The NCERT likewise added to the National Curriculum Framework for School Education (NCERT, 2000). It underlined on protection of natural environment including forests, lakes, river, and wildlife and empathy for the living animals. It likewise incorporates issues of vitality, environment, population explosion, water management, and so forth under diverse connections like forefront educational program, indigenous educational program, and so on. The recent curriculum framework (NCERT, 2005) likewise puts equivalent or much emphasis on Environmental Education particularly on hands of experience and undertaking work which tries to put the concerns under habitat and learning.

The plan “Environmental Orientation to School Education” is being actualized in the nation since 1988 under the aegis of Department of Education, Ministry of Human Resource Development, to permit instructive projects in the schools to be completely blended with the local environmental contexts and concerns. NCERT (2001) has also published the document “Environmental Orientation to School Education: a Training Module’ for eastern region’. The document has brought local specificity and social relevance to environmental education for the benefit of teachers and teacher educators. The Hon’ble Supreme
Court of India in its historic judgment (18 December, 2003) directed that from the academic year 2004-05, environment as a compulsory subject should be taught at all levels of education (School, College and University) in our country. Following this NCERT (2004) has published the document “Environmental Education in Schools” carrying guidelines and syllabus for Environmental Education. Centre for Environmental Education (CEE) is also involved in spreading environmental awareness among children as well as general community. Besides these, many non-government environmental groups are working in India for the promotion of environmental education. The Centre for Science and Environment, New Delhi is regularly monitoring the environmental scenario of the country and bringing out its finding through its publication of the state of India’s Environment (Dash & Satapathy, 2007). The Ministry of Environment and Forestry (MOEF) concurs need for the advancement of non-formal environmental education and awareness among all areas of the general public through assorted exercises, for example, National and Regional museums of Natural history, setting up of eco-clubs in schools, production and dissemination of films, audio-visuals, popular publications on the environmental issues, institutional honours and so on.

2.3  THEORETICAL PERSPECTIVES IN ENVIRONMENT-BEHAVIOUR RESEARCH

Environmental psychology is a relatively new field of study, which was developed in 1960 in order to examine a range of complex interactions between humans and the environment (Kollmuss & Agyeman, 2002). The field of environmental psychology and the interdisciplinary domain of environment behaviour studies are fundamentally concerned with both the scientific goal of
broadening our understanding of people’s transactions with their surroundings and the more practical goal of enhancing people’s relationship with their everyday environments.

The basic interest in environmental psychology is focused on a bi-directional nature of environment-behaviour relationships: effects of environmental contexts on humans and their behaviour, and effects of human behaviour on the environment. This reciprocal effect between the person and the environment reflects the ground of the study field based on Lewin’s field theory as expressed in his famous equation: \( B = f(P, E) \) where \( B \) is behaviour, \( P \) is the person and \( E \) is environment. Specifically, Lewin (1951) defined behaviour is a function of the person, the environment, and the interaction between these two.

There are three areas of studies recognized to be important in explaining the ways people respond to their environments in psychology (Cassidy, 1997):

- Environmental perception- how the person actually perceives the environment where he/she lives with its rich interplay of social and physical elements;

- Environmental appreciation- the emotional or evaluative element in terms of how the person feels about his/her environment; and

- Environmental personality- based on the notion that there may best able, salient traits reflected in the persons’ differential responses to their distinct environments.

These concepts are important because as to the theoretical perspective of environmental psychology research, they have been widely accepted as the basic
assumptions of determination of the theoretical boundaries and the research
methods; and in turn, for the practical purposes, these ideas help to determine the
type of knowledge available and how that knowledge is applied.

A majority of the studies on the behavioural effects focused on the factors
underlying environmental concern has found that it is largely rooted in both social
and psychological aspects, such as the characteristics of environmental settings,
human emotions, attitudes, perceptions, personality and behavioural choices.

2.3.1 Model of Responsible Environmental Behaviour

The behavioural science research on environmental issues has revealed a
number of variables that are somehow linked to environmental behaviour. In one of
the major reviews in the educational perspective by Hines, Hungerford, & Tomera
1987) the researchers synthesized 128 out of 380 empirical studies through the meta-
analysis and proposed a conceptual model of responsible environmental behaviour.
Five major categories of the variables were noticed to be influential predictors of
environmental behaviour. These categories include: (1) cognitive factors, such as
knowledge of issues, action strategies, and action skills; (2) personality factors, such
as attitudes, locus of control, perceptions, and personal responsibility; (3) intention
to act, such as the judgment of a specific behaviour or a class of actions reflected
from the above two variables pre-acting in combination; (4) situational factors, such
as social motives, economic constraints, and opportunities; and (5) demographic
variables, such as age, income, education, and gender.

In their study, it was noted that knowledge of the environmental problems is
a prerequisite for the behaviour. Abilities alone (e.g., awareness, knowledge, skills)
are not sufficient to guide one’s action, unless an individual possesses a desire (e.g., personality factors) to act. In addition, situational factors confronted by a person also appear to serve as a critical role in predicting one’s environmental behaviour. Hines model of responsible environmental behaviour is displayed in the Figure 2.1.

Figure 2.1 Hines model of responsible environmental behaviour
2.3.2 Environmental Citizenship Behaviour

Several other models on investigating the determinants of Environmentally Responsible Behaviour have been developed subsequent to Hines et al.’s model. For example, Hungerford and Volk (1990) developed their own model based upon previously proposed models. They identified three categories of variables contributing to behaviour; (1) Entry-level variables, (2) ownership variables, and (3) empowerment variables.

Entry level variables seem to be predictors and includes prerequisite variables (environmental sensitivity, androgyny, knowledge of ecology and attitudes toward pollution, technology or economics) enhancing decision making process of people.

Ownership variables which make environmental issues personal include two main variables; in-depth knowledge or understanding of issues and personal investment.

Empowerment variables enable human being to feel that they have the ability to make changes and help to resolve the environmental problems and issues. Empowerment variables include perceived skill in using environmental action strategies, knowledge of environmental action strategies, locus of control and intention to act.

Environmentally Responsible Behaviour has been classified into different sub-categories and/or components in the existing literature. Hungerford and Peyton (1977) identified six categories of Environmentally Responsible Behaviour as
Theoretical Overview

1. Persuasion action: a verbal effort to motivate someone to take positive environmental action as a function of modified values, (e.g. letter writing, debate).

2. Consumerism: an economic threat aimed at modification in business or industry (e.g. boycotting and discriminating use of goods).

3. Political action: an effort aimed at persuading an electorate, legislators, or government agencies to conform the values held by the person or persons who initiated the action (e.g. lobbying, voting).

4. Legal action: any legal or judicial action aimed at some aspect of environmental law enforcement or, a legal restraint preceding some environmental behaviour perceived as undesirable (e.g. injunctions).

5. Eco-management: any physical action aimed at maintaining or improving natural systems (e.g., reforestation, urban landscaping).

6. Interaction: any combination of two or more of the above components (Ramsey, Hungerford & Tomera, 1981).

Most recently, based on the previous categorizations, Environmental Responsible Behaviour are further divided into five different, but related, categories (Simmons, 1995; Wilke, 1995; Hsu, 1997; McBeth & Volk, 1997). The category of “interaction” does not take place in the recent categorization and consumerism is modified in to economic action.
(1) Eco-management: It is also called as physical action. It refers to those environmental actions in which people work directly with the natural world to prevent or resolve environmental issues.

(2) Consumer/Economic action: It refers to those environmental actions in which people use monetary support or financial pressure to prevent or resolve environmental issues.

(3) Persuasion action: It refers to those environmental actions in which individuals or groups appeal to others in order to prevent or resolve environmental issues.

(4) Political action: It refers to those environmental actions in which people use political means to prevent or resolve environmental issues.

(5) Legal action: It refers to those environmental actions in which people use to support or enforce existing laws which are designed to prevent or resolve environmental issues.

2.3.3 Model of Reasoned Action

The Theory of Reasoned Action introduced by Fishbein and Ajzen in 1975, has been extensively adopted to predict and explain a person’s intention in a given behaviour. Ajzen and Fishbein formulated the Theory of Reasoned Action after trying to estimate the discrepancy between attitude and behaviour. The Theory of Reasoned Action was related to voluntary behaviour.

The fundamental assumption for this theory is that humans are reasoning or rational creatures who are able to systematically utilize or process the information available to them. The Theory of Reasoned Action is conceptually designed to deal
with the relationships among a series of hypotheses, comprising intentions to a given behaviour; a weighted combination of attitudes and subjective norms to intentions; and an outcome-behavioural and normative beliefs to attitudes and subjective norms.

Theory of Reasoned Action suggests that a person’s behaviour is determined by his/her intention to perform the behaviour and that this intention is, in turn, a function of his/her attitude toward the behaviour and his/her subjective norm.

(Source adopted from Ajzen and Fisbein, 1980)

*Figure 2.2 Theory of reasoned action: factors determining a person’s behaviour*

The best predictor of behaviour is intention. Intention is the cognitive representation of a person's readiness to perform a given behaviour, and it is considered to be the immediate antecedent of behaviour. This intention is determined by three things: their attitude toward the specific behaviour, their subjective norms and their perceived behavioural control.
A person is most likely to be successful in producing a change in a given intention and is a function of two underlying determinants, the personal factors in nature (namely, attitudes toward the behaviour) and the perceptions of the social influences in question (namely, subjective norms). The Model of Reasoned Action is appropriate in predicting a given behaviour of a person if this chosen behaviour is compatible with the person’s preference and cognition; yet, it may not be an adequate measure of determining the potential of the intrinsic and extrinsic factors that would be driving a person’s attitudes toward adaptation of different orientations of behaviour.

### 2.3.4 Model of Planned Behaviour

The theory of reasoned Action was modified by Ajzen (1988) as Theory of Planned Behaviour. The theory was intended to explain all behaviours over which people have the ability to exert self-control. The key component to this model is behavioural intent. Behavioural intentions are influenced by the attitude about the likelihood that the behaviour will have the expected outcome and the subjective evaluation of the risks and benefits of that outcome.

The Theory of Planned Behaviour has been used successfully to predict and explain a wide range of behaviours. This theory states that behavioural achievement depends on both motivation (intention) and ability (behavioural control). It distinguishes between three types of beliefs such as behavioural, normative, and control. The Theory of Planned Behaviour is comprised of six constructs that collectively represent a person’s actual control over the behaviour.
1. Attitudes - It refers to the degree to which a person has a favourable or unfavourable evaluation of the behaviour of interest. It entails a consideration of the outcomes of performing the behaviour.

2. Behavioural intention - It refers to the motivational factors that influence a given behaviour where the stronger the intention to perform the behaviour, the more likely the behaviour will be performed.

3. Subjective norms - It refers to the belief about whether most people approve or disapprove the behaviour. It relates to a person's beliefs about whether peers and people of importance to the person think he or she should engage in the behaviour.

4. Social norms - It refers to the customary codes of behaviour in a group or people or larger cultural context. Social norms are considered normative, or standard, in a group of people.

5. Perceived power - It refers to the perceived presence of factors that may facilitate or impede the performance of a particular behaviour. Perceived power contributes to a person's perceived behavioural control over each of those factors.

6. Perceived behavioural control - It refers to a person's perception of the ease or difficulty of performing the behaviour of interest. Perceived behavioural control varies across situations and actions, which results in a person having varying perceptions of behavioural control depending on the situation. This construct of the theory was added later, and created the shift from the Theory of Reasoned Action to the Theory of Planned Behaviour.
The model of planned behaviour explicitly recognizes “the possibility that many of the behaviours may not be under complete control and the concept of perceived behavioural control is added to handle behaviours of this kind” (Ajzen, 1988).

### 2.3.5 Causal Model of Resource Consumption Behaviour

Recent research in the behaviour-environment arena has developed and tested theoretical models to differentiate the effects of variables operating at different levels relating to environmental behaviour (Stern and Oskamp, 1987; Gardner and Stern, 1996). As illustrated in Figure 2.4, the framework of a multistage causal chain is designed, based on an analysis of numerous studies, to identify and explain how those different levels of the variables are interacting among one another, and further directly or indirectly influence one’s environment-related behaviour. According to the concept of the model, any variable at a higher level in
the chain is able to influence any variable at a lower level. Most importantly, the factors lower in the chain are also possible to conversely influence those higher up in the chain. This is to say, attitudes and knowledge can help to shape one’s behaviour; nevertheless, behaviour can also, in turn, change attitudes and knowledge through a psychological process by finding oneself justification for her/his past efforts with adoption of pro-behaviour attitudes and knowledge.

<table>
<thead>
<tr>
<th>Level of Causality</th>
<th>Type of variables</th>
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<tbody>
<tr>
<td>External Barriers</td>
<td>Back ground factors</td>
</tr>
<tr>
<td></td>
<td>External incentives and constraints</td>
</tr>
<tr>
<td></td>
<td>Values and worldviews (General attitudes and beliefs)</td>
</tr>
<tr>
<td></td>
<td>Attitudes and Beliefs (Specific attitudes and beliefs)</td>
</tr>
<tr>
<td></td>
<td>Specific Knowledge</td>
</tr>
<tr>
<td>Internal Barriers</td>
<td>Attention, Behavioural Commitment, etc</td>
</tr>
<tr>
<td></td>
<td>Resource- using or Resource- saving Behaviour</td>
</tr>
</tbody>
</table>

*Figure 2.4 A casual model of resource consumption behaviour*

In contrast to addressing the reasons for action, it is also helpful to point out the why of absence of action. There are two major types of barriers indicated from the model to address the importance of the relationships between attitudes and behaviour. One is defined as internal barriers, because such barriers exist within individuals. For example, any absent variable in the chain between attitudes and behaviour levels, such as lack of appropriate information and knowledge or commitment, could possibly decrease the incidence of the action. The other is found as external barriers, which exist outside the individuals. For example, any unfit
variable in the chain at higher levels than attitudes (level 4), especially levels 6 and 7 such as one’s background, social forces, economic and technological constraints, inconvenience and so on, could also disrupt the formation of positive attitudes toward appropriate environmental behaviour.

2.3.6 Model of Ecological Behaviour

Fietkau and Kessel (1981) use sociological as well as psychological factors to explain pro-environmental behaviour or the lack of it. Their model comprises of variables that directly or indirectly influence the pro-environmental behaviour. These variables are independent from each other and can be influenced and changed.

Figure 2.5 Model of ecological behaviour (Fietkau & Kessel, 1981)

2.4 THE RELATIONSHIP BETWEEN ATTITUDE AND BEHAVIOUR

The issues involved in determining the relationship between attitudes and behaviour are more complex than had generally been acknowledged. Although the assumptions of attitude-behaviour consistency are incongruent, at least some certain level of confidence in the proposition that attitudes and behaviour are related has
gained from the long research history. Situational influences often produce overt behaviour, whereas attitudes develop in order to justify the patterns of behaviours exercised. For this reason, the relationship between attitudes and behaviour is thought as reciprocal; not just attitudes have causal effect over behaviours, but even when behaviours lead to attitudes, the resultant attitudes will influence the pattern of subsequent behaviours (Weigel, 1983).

2.4.1 Simplistic Linear Model of Environmentally Responsible Behaviour

Traditionally the assumption was that increased environmental knowledge would automatically lead to environmental awareness (perceptions) that would in turn lead to pro-environmental attitudes that will be expressed as overt and responsible environmental behaviour. This simplistic and linear relationship is illustrated in the figure 2.6.

![Figure 2.6 Simplistic linear model of environmentally responsible behaviour](image)

The social and behavioural scientists have concentrated research on the development of broad attitudinal theories and methodologies in relation to both general and specific behavioural responses. Ajzen and Fishbein (1973) pointed out that attitude-behaviour consistency would be enhanced when both the attitudes measured and the behaviours observed (or self-reported) have a highly specific focus in terms of their measurements.
Hines, Hungerford, & Tomera (1987) conducted a study which measured 51 outcomes on the attitude-behaviour relationship by a meta-analysis. Results indicated that a positive correlation was found between attitude toward action and environmental behaviour, and between attitude toward the environment in general and environmental behaviour. Similarly, a study by Axelrod and Lehman (1993) used general attitudes as one of the measured variables to predict environmentally concerned behaviour. Results revealed that the respondents’ general belief regarding the environment and their evaluations about the need of environmental protection was significantly associated with the behaviour.

2.4.2 Dillon and Gayford’s Theory of Planned Behaviour

According to Dillon and Gayford (1997), Ajzen and Fishbein’s theory of reasoned action provides a theoretical framework with which the relationship between attitude and behaviour can be studied. In their theory they distinguish between beliefs, attitudes, intentions and behaviour. Beliefs involve knowledge or opinions concerning the attitude object; attitude involves emotions and evaluations with respect to that object; intentions refer to the behavioural aims and behaviour involves the actual action itself.

Ajzen and Fishbein (in Dillon and Gayford 1997) postulated a specific pattern of effective relations among the four components. In this view, for instance, actual behaviour is first a function of behavioural intentions, and second, a function of attitudes that in turn is affected by knowledge. A critical assumption in this theory is that knowledge and attitudes influence actual behaviour only through behavioural intentions. According to them, behavioural intentions are the best predictors of actual behaviour. In line with this theory at least four environmentally related
dimensions could be distinguished: knowledge and opinions concerning the environment, attitude towards the environment, willingness to make personal sacrifices in favour of the environment (behavioural intentions) and environmentally responsible behaviour. They also stressed that knowledge affects actual behaviour only through attitude and behavioural intentions.

According to Dillon and Gayford (1997), the principle of Ajzen and Fishbein’s theory is that it integrates attitude, subjective norm and perceived behavioural control. Dillon and Gayford (1997) furthermore believed that these variables exert powerful influences on behavioural intentions. They have therefore Ajzen and Fishbein’s theory and described in the following way.

1. An attitude is an individual’s beliefs about the outcomes of the behaviour (known as the behavioural belief), combined with the value placed on those outcomes (known as the outcome evaluation).

2. A subjective norm is the individuals perceptions of the social pressure to perform or not to perform a particular behaviour based on his or her beliefs (known as normative beliefs) about the wishes of peer group, family and important others and his or her motivations to comply with this pressure.

3. Just as beliefs concerning consequences of behaviour underlie an individual’s attitudes and normative beliefs underlie his or her subjective norms, so beliefs about resources and opportunities (known as control beliefs) underlie an individual’s perceived behavioural control. Perceived behavioural control is thus the degree of control that an individual thinks he
or she has over his or her actions. This perception reflects past experience as well as an anticipation of impediments and obstacles.

The model has been used in a wide range of contexts for investigating human behaviour in a variety of social groups and cultures.

Figure 2.7 Dillon and Gayford’s model of planned behaviour

2.4.3 Fazio’s Attitude-to-Behaviour Process Model

The theory of reasoned action assumes that attitudes guide behaviour through conscious consideration of and deliberation about a person’s attitude and its implications for a given course of action. In contrast, the process model proposed by Fazio and colleagues (Fazio & William, 1986; Fazio, Powell, & Herr, 1983) suggests that attitudes can guide a person’s behaviour even when the person does not actively reflect and deliberate about the attitude. According to the process model, the precursor of behaviour is an individual’s definition of the event that is occurring. That is, the individual’s interpretation of what is happening is assumed to determine how he or she responds.

Within the process model, this definition of the event consists of two components: an individual’s perceptions of the attitude object in the immediate
situation and the individual’s definition of the situation. Definition of the situation refers to the storehouse of knowledge that the individual possesses concerning behaviours that are to be expected and that are appropriate in the particular situation. For example, when smoke enters a room due to a fire, the norm is that people should report the fire. It is in this way that norms can influence behaviour.

Perceptions of the attitude object in the immediate situation also influence people’s definition of an event and provide the means for a potential impact of attitudes. The literature indicates that attitudes can guide how and what people perceive.

The Fazio process model views an attitude as an association in memory between the attitude object and a person’s evaluation of that object. The strength of this association can vary and determine the accessibility of the attitude from memory. The process model maintains that the attitude must be activated from memory if the attitude is to exert any influence over a person’s behaviour. If activated, the attitude acts as a filter through which the object is viewed at that moment in time. As a result, immediate perceptions of the attitude object will be consistent with the attitude. In contrast, if the attitude is not activated, the immediate perceptions will be based on momentarily noticeable features of the attitude object that might not be consistent with the attitude.

According to the process model, then, the initiation of the attitude-to-behaviour process depends on whether the attitude is activated from memory. There are a number of ways in which attitudes can be activated from memory. Such activation can occur as a result of situational cues (Snyder & Kendzierski, 1982).
When we are told to vote our feelings, our attitudes are likely to be activated from memory. However, attitude activation also can occur without the benefit of prompting from a situational cue if the attitude is sufficiently accessible from memory. Once activated from memory, the attitude can influence a person’s perceptions of the object in the immediate situation, his or her definition of the event, and ultimately his or her behaviour. The model predicts that attitude accessibility will determine the relation between attitudes and perceptions or judgments of an object. The relation is expected to be stronger if the attitude is accessible from memory than if it is not. The model makes a similar prediction.

**Figure 2.8** Schematic diagram of Fazio’s attitude-to-behaviour process model

According to the process model, whether an attitude directs behaviour will depend on whether it is activated from memory and the extent to which it colours individuals’ definition of the event. Through such a process, attitudes can serve as remarkably functional tools for individuals. Attitudes that are accessible from memory can guide individuals’ behaviour in a satisfying direction without the individuals having to engage in conscious deliberative reasoning.
2.5 SELF-EFFICACY AND BEHAVIOURAL CHANGE

It has been suggested that a wide array of extraneous variables could affect the attitude-behaviour relationship. One of the limitations for dependence on measures of attitudes toward the behaviour(s) is concerned with one’s competence to behave in an attitudinally consistent manner (Weigel, 1983). In other words, while two persons may hold equally favourable attitudes toward an object, their tendency in behavioural patterns with respect to that object may vary considerably. This, hence, reflects the concept of self-efficacy, initially developed in Bandura’s Social Learning Theory.

2.5.1 Bandura’s Social Learning Theory

The concept of self-efficacy was initially developed in Bandura’s Social Learning Theory (1977). Self-efficacy is a more specific concept which refers to the individual’s belief that he or she is capable of carrying out the particular behaviour(s) or achieving the desired goal(s) required by a specific situation.

Social Cognitive Theory (SCT) started as the Social Learning Theory (SLT) in the 1960s by Albert Bandura. It developed into the Social Cognitive Theory in 1986 and posits that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behaviour. The unique feature of this theory is the emphasis on social influence and its emphasis on external and internal social reinforcement. It considers the unique way in which individuals acquire and maintain behaviour, while also considering the social environment in which individuals perform the behaviour. The theory takes into account a person's past experiences, which factor into whether behavioural action will occur. These past experiences influences reinforcements, expectations, and expectancies, all of
which shape whether a person will engage in a specific behaviour and the reasons why a person engages in that behaviour.

According to Bandura (1977), self-efficacy operates as cognitive mediators of action, involving a generative capability in which the components of social, behavioural, and situational cognition must be organized into integrated courses of action. The efficacy-behaviour relationship can be manipulated to acquire or even to retain across different sources of efficacy information (i.e., performance accomplishments; vicarious experience; verbal persuasion; and emotional arousal) and across different types of circumstances (i.e., ease or difficulty of the given situations with which individuals can successfully carry out particular behaviours; effectiveness of people’s expectation on themselves to be in different situations; amount of effort people would expend in dealing with the inexperienced situations etc.).

The first five constructs were developed as part of the Social Learning Theory; the construct of self-efficacy was added when the theory evolved into Social Learning Theory.

1. Reciprocal Determinism - This is the central concept of Social Learning Theory. It refers to the dynamic and reciprocal interaction of person (individual with a set of learned experiences), environment (external social context), and behaviour (responses to stimuli to achieve goals).

2. Behavioural Capability –It refers to a person's actual ability to perform a particular behaviour through essential knowledge and skills. In order to successfully perform that behaviour, a person must know what to do and
how to do it. People learn it from the consequences of their behaviour, which also affects the environment in which they live.

3. Observational Learning - It asserts that people can witness and observe the behaviour conducted by others, and then reproduce those actions. This is often exhibited through "modelling" of behaviours. If individuals see successful demonstration of behaviour, they can also complete the behaviour successfully.

4. Reinforcements - It refers to the internal or external responses to a person's behaviour that affect the likelihood of continuing or discontinuing the behaviour. Reinforcements can be self-initiated or in the environment, and reinforcements can be positive or negative. This is the construct of Social Learning Theory that most closely ties to the reciprocal relationship between behaviour and environment.

5. Expectations - It refers to the anticipated consequences of a person's behaviour. Outcome expectations can be health-related or not health-related. People anticipate the consequences of their actions before engaging in the behaviour, and these anticipated consequences can influence successful completion of the behaviour. Expectations derive largely from previous experience. While expectancies also derive from previous experience, expectancies focus on the value that is placed on the outcome and are subjective to the individual.

6. Self-efficacy - It refers to the level of a person's confidence in his or her ability to successfully perform a specific behaviour. Self-efficacy is unique
to Social Learning Theory although other theories have added this construct at later dates, such as the Theory of Planned Behaviour. Self-efficacy is influenced by a person's specific capabilities and other individual factors, as well as by environmental factors such as barriers and facilitators.

So it has been established that enhancing the individual’s sense of self-efficacy and changes in behaviour are highly correlated and that self-efficacy is a powerful determinant of behaviour. A number of studies confirmed the result that the greater the individuals perceived their self-efficacy, the higher the possibility can be in explaining and predicting the relevant behaviour (Bandura, 1977; Simmons & Widmar, 1990; Marcinkoswski, 1988; Axelrod& Lehman, 1993; Yeh, 1998, Hsu, 2003).

2.6 OTHER RELATED THEORIES

2.6.1 Norm Activation Theory

Schwartz’s (1977) Norm Activation theory remains one of the most widely applied models of moral behaviour. The original motivation of the theory was to provide a framework for understanding pro-social, altruistic behaviours, and Schwartz restricted the domain of application quite specifically to these kinds of behaviours. The basic premise of the theory is that personal norms are the only direct determinants of pro-social behaviours. Schwartz conceived of personal norms as feelings of strong moral obligation that people experienced for them to engage in pro-social behaviour. He rejected the idea that intentions mediate this relationship. It is clear that the concept of personal norm in Schwartz’s theory is markedly different from the concept of subjective norm embodied in the Theory of Reasoned Action. Schwartz argued that some behaviour is intended quite specifically ‘to benefit
another as an expression of internal values, without regard for social and material reinforcements.

Norm-Activation theory regards internalised personal norms as having two direct psychological antecedents, namely an awareness of the consequences of one’s actions and an acceptance of the personal responsibility that one holds for these consequences.

![Figure 2.9 Schwartz’s norm activation theory](image)

Importantly, awareness of consequences and ascription of responsibility are not just causal antecedents of the personal norm, their strength are also supposed to moderate the link between the personal norm and the behaviour. In other words, the relationship between personal norm and behaviour is stronger in the case where one is aware of the negative consequences of not engaging in the pro-social behaviour and where one accepts responsibility for these consequences, and weaker where one is unaware of negative consequences and denies responsibility.
2.6.2 Triandis’ Theory of Interpersonal Behaviour

Triandis developed an integrated model of ‘Interpersonal’ behaviour. Triandis recognised the key role played both by social factors and emotions in forming intentions. He also highlighted the importance of past behaviour on the present. On the basis of these observations, Triandis proposed a Theory of Interpersonal Behaviour in which intentions, as in many of the other models we have examined, are immediate antecedents of behaviour. But crucially habits also mediate behaviour. And both of these influences are moderated by ‘facilitating conditions’, a concept similar to Stern’s notion of external contextual factors.

![Triandis' theory of interpersonal behaviour](image)

*Figure 2.10* Triandis’ theory of interpersonal behaviour

It is equally important that, intentions are in themselves seen as having three distinct kinds of antecedents. Attitudes, or to be more specific the perceived value of
the expected consequences, play a role in mediating intentions. Triandis is also particularly concerned to include both social and affective factors in the model.

Social factors include norms, roles and self-concept. Norms, for Triandis, appear to be conceptualised as social norms, that is, as social rules about what should and should not be done. Roles are ‘sets of behaviours that are considered appropriate for persons holding particular positions in a group’ (Triandis, 1977). Self-concept refers here to the idea that a person has himself, the goals that it is appropriate for this kind of person to pursue, and the behaviours that this kind of person does or does not engage in.

2.7 SUMMARY

The investigator examined in detail the theoretical framework of different factors that affect the behaviour. This helped the investigator to frame the topic of the study, to select the independent variables and to adopt a suitable methodology to carry out the study.