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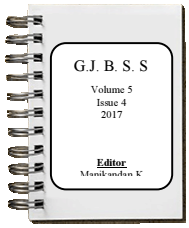

Personal Responsibility and Environmental awareness on Ecological Behaviour of Young adults

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Abstract

The present study aims at studying the relation of personal responsibility and environmental awareness on ecological behaviour. Standardized version of General Ecological Behaviour (GEB) Scale, Personal Responsibility (PR) Scale and Environmental Awareness Scale were used in this study. Instruments were individually administered to 350 young adults from Kozhikode, Malapuram, Kannur and Thrissur districts of Kerala. It is found that ecological behaviour of young adults can be best predicted by personal responsibility and environmental awareness. Results emphasize on the importance of environmental awareness programmes and being responsible in the face of environmental issues.

The relationship between human beings and environment is so obvious and important while considering human evolution, early civilizations and the drastic change that happened to its development. Of course, like man, other animals too use the resources of nature. But how the man utilized the natural resources and what he had done to his surroundings makes the discussion more important. Human activities make adverse effects on the environment. This destruction of environment is becoming a global issue and becomes more dangerous day by day. Perhaps man is the only being who acted against the environment without even considering other beings in the universe; man's actions on the environment results in extinction of biodiversity-the variety of life on earth. There is no denying that human beings are also going to get extinct because of the constant changes going on in our environment. People are facing new and challenging environmental problems every day. Issues like pollution, global warming, natural resource depletion, waste-disposal crisis, deforestation, ocean acidification, ozone layer depletion, acid rain and so on can only be explained by human interaction on environment and not by any other animals.

It is clear that such problems can be solved only by recognizing the existence of such issues- becoming aware that these are the results of our actions, should show some willingness to solve these issues and protect the environment before the condition becomes worse. People may be aware of environmental issues and may support environmental protection if they were asked about it. But this 'support' cannot always be observed in their behavior. It makes the issue more complex and the Psychology began to apply its knowledge to define and explain people's environmental attitudes and actions. Some people are more sensitized to such issues and engaging in pro-environmental activities; while others are not. So what determines one's behaviour which aims at environmental protection calls some psychological attention. How the psychological characteristics may contribute to one's ecological behaviour is to be explored.

An area emerged in Psychology at the end of 1950's and during early 1960's which was termed as "Environmental Psychology". The initial interest in physical characteristics of the environment developed into larger issue of the interface between human behavior and socio-physical environment (Bonnes&Secchiaroli,1995). Therefore, any definition of Environmental

Psychology must include a reciprocal relationship between human beings and environment. Proshansky (1976), states that Environmental Psychology is the study of reciprocal relationship between behavior and the built environment. The term Environmental Psychology was first used in his work "Environmental Psychology: The Man and His Physical Setting". There came many other definitions after Proshansky, but all these definitions seem to have some deficiency; a definition which includes all components of this area is yet to come. Barker (1968) used the term 'Ecological Psychology', while others uses Environmental Psychology in their work. According to Barker, Ecological Psychology is the study of relationship between living organism and their environment. When the study is specifically applied to human beings, it is also stated as Human Ecology, which is the study of the relationships between human groups and their physical environment. Basically, there is no difference between the two terms 'ecology' and 'environment' (Rajamanikkam, 1999). And in many studies, 'Ecological Behaviour' and 'Pro-environmental Behavior' is used interchangeably.

There has been conducting Psychological studies on ecological behaviour since late 20th century. According to Stern(2000) a significant ecological behaviour gets defined by the range of human actions or activities, all shaped by the intentions to protect the environment or reducing its deterioration besides the impact on the environment itself. That is, ecological behaviours are those actions which contribute to environmental protection and prevention of its degradation. By defining ecological behaviour, psychologists can explain why people are showing ecological behaviour at a very individual level. Stern theorized that there are several distinct types of environmentally significant behaviour and that different combinations of causal factors determine the different types. It can be environmental activism, non-activist behaviours in the public sphere and private sphere environmentalism. Private sphere environmentalism involves private-sector household behaviours like buying organic produce, sorting household waste for recycling and so on. Non-activist environmentalism includes this private sphere behaviour, policy support(willingness to make personal or financial sacrifices for environmental goals) and environmental citizenship behaviours. Value-Belief-Norm (VBN) of stern and colleagues thus offers what we believe to be the best explanatory account to date of a variety of behavioural indicators of non-activist environmentalism. The VBN cluster of variables was a stronger predictor of each behavioral indicator. The four types of causal variables explained in this model were: attitudinal factors, contextual factors, person capabilities and habit or routine.

Pro-environmental behaviour can be seen as a mixture of self interests and of concern for other people, the next generation, other species, or whole ecosystems. That is to protect one's own health and to prevent a global climate change. According to the Norm-Activation Model (NAM) of Schwartz in 1977, moral and personal norms determine directly one's prosocial behavior. It states that moral norms make a person obliged to engage in prosocial behavior. Based on this model several studies emphasize on the contribution of moral norms in explanaining of ecological behaviurs like energy conservation, recycling, consumer behaviour and so on. One' moral norm is affected by many cognitive, emotional and affective factors. It is said that one's attribution styles, social standards and guilt feelings may also contribute to his/her pro-environmental/ecological moral norm (Bamberg & Moser, 2006).

Ajzen's Theory of Planned Behaviour (TBP) states that there is a tendency in human behaviour to avoid punishments and to seek rewards. In this model, decision making is based a rational evaluation of its behavioural consequences. So the behavioural outcome and attitude are determined by its sum of positive and negative consequences. Attitudes indirectly determine behaviour through behavioural intention. That is ecological behaviour is a rational choice, more, based on self-interests. While performing a behaviour people consider their

attitude towards that behaviour as well as their ability to perform it. That is, the extent to which they perceive a behavioural control over ecological behaviour is important (Bamberg & Moser, 2006). Thus by combining these two theories, pro-environmental behaviour can be seen as a mixture of self-interests and prosocial motive moral norm.

There are some other theories used to explain the role of altruism in ecological behaviour. Heberlein (1972) presumes because environmental quality is public good, altruistic motives are necessary for an individual to contribute to it in a significant way. Schwartz (1977), in his norm activation theory of altruism states that altruistic (including pro-environmental) behaviours occur in response to threat to others (awareness of adverse consequences) and that actions they could initiate could advert those consequences (ascription of responsibility to self) (Stern, 2000). Some theories look values as the basis of environmentalism. Ingelhart (1990) suggests that it is an expression of post materialist values of quality of life and self expression that emerge as a result of increasing affluence and security in the developed countries. Some account emphasize that religious values predispose adherence to the belief that environment is sacred enhance environmental concern. Others have linked environmental concern and behaviour to general theories of values and have found that values those that focus concern beyond a person's immediate social circle are stronger among people who engage in pro-environmental activities. Young states that environmentally beneficial actions may also follow from non-environmental concern, desire to save money, confirm a sense of personal competence, or preserve time for social relationship. And many environmental concerns may fail to lead to pro-environmental action for various reasons (Stern, 2000). Many other theories of social behaviour were found to be the best in explaining ecological behaviour and there have been conducting studies with the use of these theoretical frameworks.

Whatever the Philosophical arguments, the assumption of responsibility in ecological behaviour captures great Psychological attention. How a person feels responsible for his environment is important. To study this relationship between ecological behaviour and responsibility, it has to begin from the bottom; how the individual feels responsible for his thoughts, emotions and actions is to be studied. Ecological behaviour can be one of the actions that the person feel responsible and has control over it.

According to Mergler (2007), personal responsibility is the ability to identify and regulate one's own thoughts, feelings and behaviours, along with a willingness to hold oneself accountable for the choices made and the social and personal outcomes generated from these choices. She states that personal responsibility is considered to have four components. These include: (1) an awareness of and control over individual thoughts and feelings; (2) an awareness of and control over choices made regarding behaviour;(3) a willingness to be accountable for the behaviour enacted and the resulting outcome; and (4) an awareness of, and concern for, the impact of one's behaviour upon others. These four elements are split into three subsections-metacognition, accountability and social responsibility (Mergler, 2007).

One can assume personal responsibility for environmental issues if he or she is aware of the environmental issues. Environmental awareness thus can be defined as the knowledge or perception of the environmental issues. It measures to what extend one is sensitized to one's environment- to what extent he is aware of the environmental issues, the connections among plants and animals and what is happening to biodiversity. While studying ecological behaviour it is observed that one must have the awareness and knowledge about environmental problems for developing ecological behaviour.

Environmental awareness measures a general awareness and attitude towards the environment related to planting works, environmental cleaning, the importance of other

species, protection of forests and national parks, cultural environment and environmental economy.

Young adulthood is the dawning of a new stage of life As their thinking will be more analytical and critical, young adults are supposed to be aware of, concerned about environmental issues and as they are more responsible and independent in decision making they decide on their ecological behaviour. The focus of this study is to study ecological behaviour of young adults; that is, ecological behaviour is considered as dependent variable.. To study this variable investigator considered personal responsibility and environmental awareness as independent variables. It is aimed to check whether this sense of accountability can be seen in one's ecological behaviour and to what extent environmental awareness contributes to one's ecological behaviour is to be studied.

Objectives

1. To study the relationship between personal responsibility and ecological behaviour.
2. To study the relationship between environmental awareness and ecological behaviour.
3. To study predictability of ecological behaviour based on personal responsibility and environmental awareness.

Hypotheses

1. There is a significant relationship between personal responsibility and ecological behaviour.
2. There is a significant relationship between environmental awareness and ecological behaviour.
3. Ecological behaviour can be predicted by changes in personal responsibility.
4. Ecological behaviour can be predicted by changes in environmental awareness.

Method

Participants

The participants of this study consisted of 350 young adults from Kozhikode, Malappuram, Trissur and Kannur districts of Kerala State. Random sampling technique was used to collect the data. There were 112 males and 238 females who served as participants. The age range of young adulthood is considered as 20 to 30.

Instruments

1. General Ecological Behaviour Scale: The General Ecological Behaviour was originally developed by Kaiser (2000). The scale consisted of seven ecological behaviour subscales: prosocial behaviour, ecological garbage removal, water and power conservation, ecologically aware consumer behaviour, garbage inhibition, volunteering in natural protection activities and ecological automobile use. There are 37 items and scoring is done for positive items 5,4,3,2,1 and negative items 1,2,3,4,5 for every time, almost every time, sometimes, almost never and never respectively.
2. Personal Responsibility Scale: The personal responsibility scale was originally developed by Mergler (2007). There were 30 items in personal responsibility scale. As personal responsibility scale is a five point Likert scale, the scoring was done for positive items 5,4,3,2,1 and negative items 1,2,3,4,5 for strongly agree, agree, undecided, disagree and strongly disagree respectively.
3. Environmental Awareness Scale: Items in the environmental awareness scale are

adapted from the Environmental Attitude Scale developed by Ugulu, Sahin and Basher (2013). As Environmental Awareness scale is a five point Likert scale, the scoring was done for positive items 5,4,3,2,1 and negative items 1,2,3,4,5 for strongly agree, agree, undecided, disagree and strongly disagree respectively.

Procedure

Instruments were administered to the participants by approaching individually. With each participants the investigator established rapport, explained the purpose of questionnaires, confidentiality of data etc. The three questionnaires: General Ecological Behaviour Scale, Personal Responsibility Scale, Environmental Awareness Scale were pinned together and administered as per the instructions given in the scale. Clarifications were given and finally collected the questionnaires and checked for omissions.

Results and Discussions

To verify the hypothesis the investigators used various statistical techniques and the results are presented in following tables.

Table 1

Correlation matrix of ecological behaviour, personal responsibility and environmental awareness

variables	Ecological behaviour
Personal responsibility	0.971**
Environmental awareness	0.959**

** p<.01

Table 1 shows that there is a good positive correlation between ecological behaviour and personal responsibility which is significant at 0.01 level. That is, as personal responsibility of individuals increases ecological behaviour also increases. Here the hypothesis, that there is significant relationship between ecological behaviour and personal responsibility is being accepted. The extent to which one feels responsible for his thoughts, actions and emotions are reflected here in one's ecological behaviour also. As people who are high in personal responsibility feel a willingness to hold oneself accountable for the choices made and the social and personal outcomes generated from these choices, they may also feel responsibility towards environmental threats which are man-made in nature. This spread of feelings of responsibility toward environmental concerns might have contributed to an increase in ecological behaviour. Here the environment is no longer felt as detached from the person's responsibility- that is, people include ecology to their sphere of responsibility.

From the table it can be observed that environmental awareness and ecological behaviour is also highly correlated. The correlation between these variables is significant at 0.01 level. Here the hypothesis, that there is significant relationship between ecological behaviour and environmental awareness, is accepted. When environmental awareness increases, ecological behaviour also increases. That is, when people have a general awareness related to planting works, environmental cleaning, the importance of other species, protection of forests and national parks, cultural environment and environmental economy it will be accompanied by a high ecological behaviour as shown in the result. Studies conducted by Uzun and Saglam (2005) provided that if the individual is offered a quality environmental education and awareness of environment, it is possible to overcome important environmental problems. That

is, if people are aware about the environmental concerns it will lead to behave more pro-environmentally. Kaiser and Fuhrer (2003) argues that different forms of knowledge must work together in a convergent manner if they are to foster ecological behaviour.

Here the correlation analysis shows that there is a positive correlation between ecological behaviour and personal responsibility, and ecological behaviour and environmental awareness. Further regression analysis was done to explore the nature of relationship. Here the ecological behaviour is considered as dependent variable, and environmental awareness and personal responsibility as independent variables.

Table 2

Multiple regression analysis of ecological behaviour as dependent variable

Independent variables	R	F value for 'R'	R square	Partial reg. Coefficient 'b'	Constant	Beta
Personal responsibility	.971	5.691E3	0.942	2.074	42.754	0.971
Environmental awarenes	.972	2.996E3	0.945	1.560 .632	19.175	0.730 0.247

From the table 2, it is seen that the first variable entered into the multiple regression analysis was personal responsibility. The multiple criterion (R) obtained was .971. The relationship was positive as indicated by the partial regression coefficient. R value indicated the strength of relationship between ecological behaviour and personal responsibility which was about 97.1% as R is significant at 0.01 level. The coefficient of multiple correlation (R square) was 0.942. This shows that 94.2% of the varience in ecological behaviour can be accounted by personal responsibility and also contributes to the fact that higher the score on personal responsibility, higher the overall ecological behaviour.

The partial regression coefficient 'b' was 2.074. This value indicates that ecological behaviour changed 2.074 units for every unit of change in personal responsibility.

Regression equation for this is EB= 42.754+2.074 PR

The present regression analysis says that if one feels control over his/her thoughts, emotions and behaviours, such a feeling of control best predicts one's ecological behaviour. Here the people might have extended their personal responsibility to the context of environmental issues. Studies conducted by Kaiser & Shimoda (1999) says that how responsible a person feels for the environment is a promising predictor of that person's ecological behavior. Their study shows that Guilt feelings explain 44 per cent of the variance of these responsibility feelings, which, in turn, explain 45 per cent of the variance of a person's deliberately made responsibility judgment, which, in turn, predicts 55 per cent of the variance of a person's ecological behaviour. The current study shows that feeling personal responsibility itself is the best predictor of ecological behaviour.

The second variable entered into the regression analysis was environmental awareness. The multiple criterion (R) was .972, which is significant at 0.01 level. The strength of relationship between ecological behaviour and personal responsibility is 97.2%. R square value was found to be .945, which indicates that personal responsibility and environmental awareness together contributes about94.5% of the variation in ecological behaviour.

The partial regression coefficient value of these two independent variables to ecological behaviour shows that the relationship between them are positive and there will be 1.560 and 0.632 unit changes in the values and the equation at this step will be;

EB= 19.175+1.560 PR+0.632 EA

Here the results show that environmental awareness predicts ecological behaviour. Environmental awareness is thus a variable to be considered in intervention with environmental issues. The knowledge, awareness and attitude towards the environment related to planting works, environmental cleaning, the importance of other species, protection of forests and national parks, cultural environment and environmental economy has much to do with one's behaviours concerning his/her environment. But what kind of knowledge is to be given and how it is to be implemented is a question. Kaiser and Furhrer (2003) conducted a study on different forms of knowledge and its dependency on ecological behaviour. Their results show that different forms of knowledge must work together in a convergent manner if they are to foster ecological behavior. They also discusses that strong situational constraints reduces the influence of such factors. So while dealing with ecological behaviour situational factors should be considered and tackled along with environmental awareness programmes.

Conclusion

From the findings of this study it can be concluded that personal responsibility and environmental awareness of an individual have strong positive relationship with ecological behaviour.As personal responsibility of individuals increases ecological behaviour also increases.When environmental awareness increases, ecological behaviour also increases. It was found that one's ecological behaviour can be best predicted by his or her personal responsibility and environmental awareness.94.2% of the variance in ecological behaviour can be accounted by personal responsibility and contributes to the fact that higher the score on personal responsibility, higher the ecological behaviour.Personal responsibility and environmental awareness together contributes about 94.5% of the variation in ecological behaviour. Hence if focus more on these independent variables intervening with one's ecological behaviour would be more effective.

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