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Environmental Concern: An Attitudinal and Behavioural Analysis of Working Women in Coimbatore

M. Nagesh Kumari, Ph.D.

Need for the Study

Human life depends on the environment for its survival. Environmental Economics mainly builds its theoretical foundation on Welfare Economics. Economists have considered environmental degradation as a market failure. Externalities can cause market failure. The environment has got a very close relationship with economics. This relation deals with the welfare of the society and the growth theories of economics. Economic growth and environmental balance both oppose each other. To achieve a higher economic growth, resources have to be exploited and environment has to be harmed. Environmental balance can only be obtained, if resources are not exploited and pollution is not formed. This leads to low economic growth. It can be seen that both of them are needed for the economy and they oppose each other.

The only solution is controlling the scale of pollution and optimal use of the resources. Since consumers themselves are major contributors to environmental degradation and pollution, any environmentally responsible behaviour on the part of society can go a long way in integrating the problem of depletion of natural resources and bringing down pollution levels. This increasing

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concern for the environment will result in demand for green products and life with quality environment which leads to sustainable development.

According to the United Nations Environmental Programme's (UNEPs) Global Environment Outlook –3 (GEO-3) report released in the year 2002, over 70 per cent of the earth land surface could be affected by the impact of road, mining, cities and other infrastructure development in the next 30 years unless urgent action is taken. The potential for doing irreparable environmental harm is increasing with the increase in world population. It is projected that world population will increase to 9 billion by 2050 from the current 6 billion.

The World Wildlife Fund's (2000) *Living Planet Report*, found that the state of the earth's natural ecosystems have declined by about 33 per cent in the last 30 years, while the ecological pressure of humanity on the earth has increased by about 50 per cent. All of this led to the realization that the current behaviour of people toward their environment needs to change, implying that people need to learn how to behave in an environmentally responsible way.

Just as the discrepancy between attitudes and behavior is problematic in coping with the environment, it is an important issue whether indeed individuals bear the environment in mind in their day-to-day life activities even if their awareness is high. Environmental awareness has been increasingly studied over the last 30 years. As nations become economically developed, they are able to afford more environmental quality, which is considered to be a normal good. The ability to purchase environmental quality with increasing affluence is the logic behind the Environmental Kuznets Curve (EKC). The EKC hypothesis suggests an inverse U-shaped relationship between economic well-being and environmental degradation. Post-industrialized western countries have become concerned with nonmaterial values, such as environmental attitudes and behaviour, and not solely with material gain. Human concern for the quality and protection of the natural environment forms the basis of successful environmental conservation activities and the social sciences have considered this concern as an area of research activity. Woman is part and parcel of environment. Woman contributes a lot in so many ways for the environmental protection. Women revolutions in developed countries are helping so much to protect the environment. When compared to men, women have more direct relationship with their immediate environment.

India's Environment

India has 2.4 per cent of the world's land but supports 16 per cent of the global population. India has a population density of 300 people per square kilometer. Combined with rapid population growth, this has led to environmental degradation of natural resources. Much of the environmental legislation recognizes the relationship of human beings with their environment.

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While the developed world is guilty of over consumption and unsustainable life styles, Indians with enormous population, with 40 per cent of them living below the poverty level are over-exploiting their natural resources. Environmental degradation is one of the major issues facing India in the 21st century. India is predicted to become the world's important consumer market powerhouse. In recent years, environmentalism has caught up in India. India, with a sixth of the world's population and an annual increase of almost 16 million has an enormous responsibility in protecting the environment. Coimbatore, also known as Kovai, is the second largest city in the Indian state of Tamil Nadu with a metropolitan population of over 2 million. It is a major commercial centre and an educational hub of the region.

According to the Central Pollution Control Board (CPCB) report (December 2009) Coimbatore ranks 34 in the polluted zones of India. In Tamil Nadu it is No: 4 amongst the Industrial clusters of Tamil Nadu. Vellore stands first with an 81.79 score on Comprehensive Environment Pollution Index (CEPI), i.e., air, water and land pollution. Cudallore (77.45) and Manali (76.32) are ahead of Coimbatore. Coimbatore scores 72.38 in CEPI.

With this background the researcher proposed a study on

“ENVIRONMENTAL CONCERN: AN ATTITUDINAL AND BEHAVIOURAL ANALYSIS OF WORKING WOMEN IN COIMBATORE” with the following objectives.

Objectives of the Study

1. To know the general environmental concern of the selected respondents towards sustainable growth.
2. To assess the personal environmental concern
3. To study the personal environmental behaviour

Research Methodology

(i) Nature of Research Design

The research design adopted for the study is both descriptive and analytical in nature. The study describes the socio-economic background of the respondents, analyses the general concern of respondents towards environmental concern, attitudes and behaviour of the respondents. It also explains the perceptions of the respondents and suggests the ways and means to protect the environment with sustainable growth.

(ii) Period of Study

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The study was conducted from the year April 2008- March 2011. The data was collected from the respondents during September 2009 to March 2010.

(iii) Nature of data

The study is based on primary and secondary data.

(iv) Sources of Data

Though the study is mainly based on the primary data and was collected from the sample of working women in Coimbatore, secondary information was also collected from various books and journals relevant to the environment.

(v) Scope of the Study

Studies on environmental concern, attitudes and behaviour, and green consumers have been carried out in developed countries, and only a few of them originate from developing countries. Such studies are conspicuously lacking in the Indian context. Findings of the few studies undertaken in this respect in India are not publicly accessible because they are proprietary. This study widens the scope for understanding the Indian working women's concern about environment, and their attitude and behaviour.

(vi) Locale of the Study Area

The study is restricted to the Coimbatore city as it is assumed that the level of environmental awareness and social / public participation in environmental issues is rather high in cities and more so, in a city like Coimbatore which has Non-Governmental Organisations already taking steps to conserve the environment.

(vii) Selection of the Sample

The sample was selected from the infinite population of working women in Coimbatore. Data was collected through a structured questionnaire. Based on the questionnaire a pre-test was conducted with 20 samples and was subject to reliability and validity tests in order to check the reliability and validity of the questionnaire. After modifying the questionnaire the Pilot survey was done with 50 respondents (5 per cent of the total sample size). Thousand respondents were selected through purposive sampling method from non-probability sampling. The study covered the services sector which is providing more employment to the people.

Limitations of the Study

1. The study area was limited only to Coimbatore city.

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2. The researcher focuses only on working women's environmental concern, attitude and behaviour.
3. The findings of the study may or may not be generalized.

Data Analysis and Interpretation:

Table 1: KMO and Bartlett's Test Measures

Table 1: KMO and Bartlett's Test Measures

Measure	Value
KMO Measure	.738
Bartlett's test of sphericity	
(i) Appropriate Chi- Square	1990.225
(ii) Degrees of Freedom	105
(iii) Significance Levels	.000

Interpretation

Factor analysis was used to analyse the general environmental concern of the selected respondents. In order to identify the underlying pattern of relationship between various environmental factors, which contribute towards environmental concern and to determine the appropriateness of applying factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were computed and the results are shown in table 1.

The KMO static varies between 0 and 1. A value of 0 indicates that the sum of partial correlations is large relative to the sum of correlations, indicating diffusion in the pattern of correlations. A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors. Kaiser (1974) recommends accepting values greater than 0.5 as acceptable. Furthermore, values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb. In the present analysis, the value is 0.74, which falls into the range of being good. Hence, it is confident to say that the data is appropriate for factor analysis. KMO Statistics was

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high indicating a high level of adequacy in sampling. The Bartlett's test of Sphericity was also found to be significant at 1 per cent level providing evidence of the presence of relationship between variables to apply factor analysis.

Table 2: Communalities

<i>Factors</i>	Initial	Extraction
1.India's Environment is a major concern	1.000	.738
2. I have knowledge about sustainable development	1.000	.517
3. I am very confident about the correctness of my judgements about environmental issues	1.000	.583
4. I rarely form an opinion about an environmental issue until I have thought about the issue thoroughly	1.000	.444
5. I worry too much about the future of the environment and not about other issues	1.000	.543
6. Almost everything we do in modern life harms the environment	1.000	.555
7. I get frustrated and angry if I think about the ways the industries are polluting the environment	1.000	.531
8. Irrespective of the number of vehicles I own, I would like to maintain the environmental standard	1.000	.478
9. I would like to participate directly and indirectly in environment cleanliness with Residents" Association	1.000	.494
10. Conscious about protecting health from pollution	1.000	.555
11. Incensed about harm to plant and animal life	1.000	.514
12. Taken environmental protection from young	1.000	.414
13. Good listener to environmental talks	1.000	.540

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14. Gathering awareness relating to Environment legislature	1.000	.663
15. Rational on views about environment	1.000	.525

Extraction Method: Principal Component Analysis

Interpretation

The communalities for each variable were assessed to determine the amount of variance accounted by the variable to be included in the factor rotations and the results are shown in Table 2.

All the fifteen variables had a value greater than 0.5 signifying substantial portions of the variance in the variables are accounted by the factors.

Table 3: Factor Loadings

Variables	Component				
	1	2	3	4	5
Conscious about protecting health from pollution	.733				
Participate in environment cleanliness	.646				
Incensed about harm to plant and animal life	.644				
Like to maintain environment standard	.528				
Almost everything we do harm the environment		.716			
I worry too much about future of the environment		.676			
I get angry about pollution by industries		.616			
Gathering awareness relating to Environment legislature			.801		
Rational views about environment			.712		
Good listener to environmental talks			.678		
Knowledge on sustainable development				.713	
I rarely form an opinion until thought about thoroughly				.520	
Taken environment protection from young					
India's Environment is a major concern					.863
confident about my correctness of judgement					.553

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Eigen Value	3.067	1.581	1.310	1.154	1.030
Percentage of variance	20.445	10.541	8.734	7.693	6.864
Cumulative Percentage	20.445	30.986	39.720	47.413	54.277

Rotation Method: Varimax with Kaiser Normalisation.

Interpretation

Table 3 shows the Eigen value, their relative explanatory powers and factor loadings for 15 linear components identified within the data set. The Eigen value greater than one alone is considered for inclusion in the analysis.

The above results indicate that the Eigen value for first five components alone was greater than one and these factors together accounted for nearly 54 percent of the variations in the General concern / attitude towards environmental issues.

Factor 1 had significant loadings on four dimensions namely (i) conscious about protecting health from pollution, (ii) participation in environment cleanliness, (iii) incensed about harm to plant and animal life and (iv) liking to maintain environmental standard. Factor 1 accounted for nearly 21 per cent of the variations and signifies “Protective Measures” towards safeguarding environment.

Factor 2 has significant loadings on three dimensions namely (i) almost everything we do harm the environment, (ii) worry too much about future of the environment and (iii) getting angry about pollution by industries, which together accounted for nearly 11 per cent of the variance and signifies “Environmental Awareness”.

Factor 3 has significant loadings on three dimensions namely (i) gathering awareness relating to Environment legislature, (ii) rational views about environment and (iii) being a good listener to environmental talks. These factors can be labeled as “Legal and Intellectual Awareness” and accounted for 9 per cent of the variations.

Factor 4 had significant loadings on two dimensions, namely (i) knowledge on sustainable development and (ii) I rarely form an opinion until thought about thoroughly, signifying “Intellectual Awareness”.

Factor 5 had significant loadings on 2 dimensions, namely (i) India's Environment is a major concern (Awareness about environmental issues) and (b) confident about correctness of judgments (Awareness about legal issues).

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Table 4: Correlation Between Attitude and Behaviour

S.No.	Variables	Co-relation Coefficient Value
1.	Protecting natural resources is must for sustainable development.	.137**
2.	Environmental quality in India can be improved.	.202**
3.	Practice what I preach about environmental issues.	.142**
4.	Willing to pay a pollution tax for decreasing the smog problem considerably.	.175**
5.	Go door to door to distribute the literature on environmental awareness if it is required.	.194**
6.	Donate a day's pay to a foundation (NGO), which help to improve the environment.	.089**
7.	Attending the meetings of the environmental organizations will be helpful in bettering the environment.	.086**
8.	Subscribe published materials on environmental aspects.	.092**
9.	Willing to write to local newspaper concerning ecological problems.	.095
10.	Important to raise environmental awareness among people to protect the environment.	0.036
11.	Decision has to be taken to keep the environment clean.	.123**
12.	Interested in planting and preserving the green trees and vegetation to promote green living in India.	.088**
13.	Participate in environmental issues.	0.028
14.	Use both sides of paper and put waste papers in to recycle bins.	.098**
15.	Avoid using disposables such as plastic cups and plates.	.144**
16.	Bottles and tins should be reused.	.187**
17.	Plastic bags should not be used.	.048
18.	Choose to buy products that are eco –friendly even if they are more expensive.	0.001
19.	Wait for the next time to buy things when there is no own bag.	.184**
20.	Consume food produced by organic farming methods.	.182**
21.	Prefer to go shopping without motor vehicles.	.276**
22.	Switch off the engine at traffic signal.	.130**
23.	Support speed limits of freeways across residential areas.	.148**
24.	Prefer to drive only if needed and offer lift for others.	.255**
25.	Keep the lights off if they are not needed.	.138**

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Interpretation

The above table 4 shows the correlation between respondents' attitude and behaviour. The variables, viz., (i) go shopping without motorcycle (.276), (ii) drive only if needed, (.255), (iii) environmental quality in India can be improved (.202), (iv) distribution of literature door to door (.194), (v) reuse of bottles and tins (.187), (vi) Buy things using own bags (.187), (vii) consume food produced using organic method (.182), (viii) willing to pay pollution tax (.175), (ix) follow speed limit (.148), (x) avoid plastic cups (.144), (xi) practice what I preach (.142), (xii) switch off lights when not needed (.138), (xiii) protecting natural resources is must for sustainable development (.137), (xiv) switch off engine at signals shows (.130) and (xv) decision to keep environment clean (.123) shows a positive correlation between the attitude and behavior. The correlation is significant at 1 per cent level for all the fifteen variables.

*The variables viz., (i) should use both sides of paper (.098), (ii) willing to write to newspaper about environmental issues (.095), (iii) subscribe to environmental materials (.092), (iv) donate a day's pay to NGO (.089), (v) planting and preserving trees shows (.088) and (vi) attending meetings of environmental organizations (.086) shows a low positive correlation between attitude and behaviour and the correlation is significant at 1 per cent level for all the six variables.

**The variables viz., (i) not using plastic bags (.048), (ii) raise environmental awareness among people (0.036), (iii) Participate in environmental issues (0.028), and (iv) buy eco-friendly products (0.001) shows that there is no correlation between the attitude and behaviour and the correlation is not significant for all the four variables.

The overall results reveal that that there is no high correlation between the attitude and behaviour of the respondents.

Suggestions

Women resources are an integral part of "Human resources" and they are part and parcel of environment. Women have an important role to play in balancing environment on the one hand and development on the other. They are producers of income and assets in every society. Women revolutions in developed countries are helping so much to protect the environment. Even in developing country like India there are action oriented women environmentalists viz., Vandana Shiva, Medha Patkar, martyr Amrita Devi, Chandi Prasad Bhatt, Sunderlal Bahuguna, Mrs. Vanitha Mohan and others. But the awareness level is very limited on environmental problems among working women in a city like Coimbatore.

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□ Social and institutional constraints may prevent working women from acting pro-environmentally regardless of their attitudes. The constraints are like lack of time, lack of money and information and social factors such as familial pressures and cultural norms. Hence, at individual level proper time, financial and stress management and emotional balance are essential.

□ Firms with their inspirational vision towards green environment should ensure the availability of eco-friendly products in the markets by highlighting their mere features.

Women in 21st century are playing an important role in shaping India's future. It is concluded that with the co-operation of the stakeholders of the environment, with pro-environmental perceptions and practices, feel of social responsibility, edge of knowledge on environmental problems and issues, with a positive attitude and behavior towards the environment, the working women along with their counter parts can pave the path for green economy by 2020.

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