The Measurement Instrument of Ecologically Conscious Consumer Behaviour

Abstract

This paper presents a theoretical framework of Ecological Consciousness (EC) sufficient to position and examine Ecologically Conscious Consumer Behaviour (ECCB) under it. ECCB is the behavioural dimension of EC framework and it is understood as the result of the sequence of the other two dimensions of this framework, namely the cognitive and the affective dimensions. A detailed description of measures' development procedure is also provided. This procedure resulted in the construction of a measurement instrument that includes reliable and valid measures, necessary for the examination of the main variables of the theoretical framework, namely Pro-environmental Purchase Behaviour, Pro-environmental Activities, Pro-environmental Attitudes and Recycling Attitudes.

RÉSUMÉ

Cet article present un cadre theorique de la consience ecologique (Ecological consiousness EC) valable pour etudier le comportement ecologique consencieux du consomateur (Ecologically Consious Consumer Behaviour ECCB). ECCB est la dimension comportemental du cadre EC. Elle est comprise comme le resultat de la sequence des deux autres dimesions de ce cadre, c' est a dire la dimension cognitif et la dimesion affectif. Une description detailée de la procedure du devellopement de mesures est aussi presentée. Cette procedure est le result de la construncion d' un instrument de mesure qui inclne mesures reliable et valable pour etudier les variables

principaux du catre thehorique, c' est a dire le Comportement d' Achat Pro-environmental, l' Activité Pro-environmental, les Attitudes Pro-environmental et les Attitudes de Recyclage.

The continuous damage of the natural environment has led to the environmental crisis of today. Multi-disciplinary co-operation is needed in protecting the environment. Ecological Marketing needs its own updated concept, if it is to make any significance, to be able to offer contribution towards the protection of the environment. Marketing research is needed to understand better and examine in depth Ecologically Conscious Consumer Behaviour (ECCB). The literature indicated that fragments of ECCB have been examined by a number of studies so far, but no commonly accepted profile of Ecologically Conscious Consumers (ECCs) is revealed yet (Shrum *et al*., 1995; Tilikidou and Zotos, 1999). The usual approach, in ecologically related behaviour so far, has been to examine one aspect of ECCB, separately from the others. For example, recycling behaviour is usually examined separately from buying ecological products. With regard to the determinants (attitudes, demographics and psychographics) of these, ecologically related behaviours the results of the several studies have been rather ambiguous, or even contradictory sometimes (Antil, 1984; Pickett *et al*., 1993; Shrum *et al*., 1994; Kilbourne and Beckmann, 1998; Tilikidou and Zotos, 1999). Differences in place, time and methodology of each study are usually considered to be the main reasons of the results discrepancies (Antil, 1984; Shrum *et al*., 1996; Schlegelmilch *et al*., 1996). The acceptance of these reasons leads to the necessity of developing reliable and valid constructs, contemporary and adequate for the specific requirements of a certain project, at a certain place and time. In addition it is suggested that to examine only one aspect of ECCB may be another reason of restriction in an effort to understand

ECCB in depth. There is a need of a cohesive theoretical framework to reposition ECCB under it and examine all its types at the same research effort. It has been previously proposed (Schlegelmilch *et al.*, 1996; Tilikidou and Zotos, 1999) that the most appropriate framework, to include ECCB in it, is the concept of Ecological Consciousness (EC). This framework must include all the variables of ECCB, as well as all the variables that can possibly describe ECCB as presented in Figure 1.

[Take in Figure 1]

Special effort is needed, in the measures' development process, in order to construct reliable and valid measures for the variables of the framework.

This paper aims to provide the constructs, sufficient to measure the variables of EC framework, as well as to describe the procedure undertaken for the development of the relevant measurement instrument.

Review of the literature

With regard to the ecological consumer behaviour, it is noted that in early research, ecological concern (attitudes) and ecological behaviour of several types were usually treated with more or less the same concept, sometimes in a uni-dimensional construct, for example in Antil's and Bennett's study (1979). In a number of cases 'ecological consumers' were considered to be the consumers who were concerned about the environment, the so-called Ecologically Concerned Consumers (ECCs) (Kinnear *et al.*, 1974; Buttel and Flinn, 1976; Murphy *et al.*, 1979). Research evolution clarified that concern should be viewed as simply an attitudinal concept, possibly related, but methodologically distinct from behaviour (Pickett *et al.,* 1993; Shrum *et al.*, 1994; Schlegelmilch *et al.*, 1996). The acronym ECCs is still used today, only with the crucial replacement of the word 'concerned' with 'conscious'.

The eighties were a decade in which ecologically related academic research declined. Despite that fact, Balderjahn (1988) published a very interesting study. Although he followed ECCs concept of the seventies, he expanded ecological research agenda by including in his model several consumption patterns.

During the nineties, which was named the 'earth decade', a considerable increase in academic interest appeared. The approach was to examine fragments of the ecologically related consumer behaviour in relation to a broad variety of determining factors (Granzin and Olsen, 1991; Baldassare and Katz, 1992; Scott and Willits, 1994; Martin and Simintiras, 1995; Shrum *et al*., 1995). Pickett *et al*. (1993) though, combined several behavioural patterns into a composite measure representing the 'conserver' consumer. Schlegelmilch *et al*. (1996) examined aspects of purchasing behaviour and recycling behaviour together. The term ECCB was firstly used by Roberts (1996) but his theoretical model was different than the one followed in this study. Roberts (1996) and Roberts and Bacon (1997) incorporated all the ecologically related issues in one 30-item measure of ECCB.

There have been few efforts of development of measurement instrument or aiming at emphasis in the measurement accuracy. Earlier, Antil and Bennett (1979), Bohlen *et al*. (1993), Obermiller (1995) and Stanley and Lasonde (1996) followed a similar, to the one proposed in this paper, measures' development procedure. With regard to the construction of reliable and valid measurement instrument, it is noted that the, followed in this project, procedure was mainly based on Churchill (1979 and 1995, pp. 543-545), Robinson *et al*. (1991, pp. 5-14), Spector (1992, pp. 19-46), Bearden *et al*. (1993, pp. 7-8), Tull and Hawkins (1993, pp. 298-321) and Nunnally and Bernstein (1994, pp. 209-290) suggestions.

The development of the measurement instrument

In this research the EC framework consisted of three dimensions namely, the cognitive (Environmental Knowledge), the affective (Pro-environmental Attitudes and Recycling Attitudes) and the behavioural dimension (ECCB: Pro-environmental Purchase Behaviour, Pro-environmental Post-Purchase (Recycling) Behaviour and Pro-environmental Activities) (see Tilikidou, 2001).

For most of the above variables a thorough procedure was separately used in order to develop reliable and valid measures. The case of Environmental Knowledge is an exception as it is usually suggested to adopt an allready constructed by environmentalists relevant, valid scale of objective knowledge (Schlegelmilch *et al.,* 1996; Tilikidou, 2001). It is also noted that for the examination of Recycling Behaviour five items, one for each recyclable material, measured on a 5-point frequency scale, were used. Thus, the measures' development procedure of this study concerns the variables of Pro-environmental Purchase Behaviour, Pro-environmental Activities, Pro-environmental Attitudes and Recycling Attitudes. The development of a multi-item measure consists of several stages and each stage involves several steps. The first stage is the *domain definition*, which, with concern to this research, was earlier published (see Tilikidou and Zotos, 1999; Tilikidou, 2001). The constructive procedure -summarised in Figure 2- included *Initial items pools, Data collection I, Measures' refinement, Data collection II* and *Reliability and validity assessments*.

[Take in Figure 2]

The *Data collection I* included two separate surveys conducted in the Municipality of Thessaloniki in order to collect data for the *Initial items pools* (Figure 2). The *Measures' refinement* involves item analysis, which aims to achieve the internal consistency of the measure by keeping all internally consistent items and

eliminating some weak items. Statistical analyses were performed through SPSS-8.

To asses internal consistency of the *Pro-environmental Purchase Behaviour* measure, first Cronbach's coefficient alpha was calculated for the initial 15 items and resulted in a=0.8983. Second, item-to-total correlation coefficients were examined through the item-remainder coefficient that was calculated for each item. In addition alpha-if-item-deleted was calculated for all items. It was observed that the items X05 and X09 gave low item-remainder coefficients, 0.2728 and 0.3622 respectively. Then it was observed that alpha was increased by the elimination of the items X12 and X13, although both gave correlation coefficients above 0.50.

Third, principal component analysis (PCA) was used. Preceding PCA, Kaiser-Meyer-Olkin (K-M-O) measure of sampling adequacy and Bartlett's test of sphericity, which shows the suitability of the PCA model, were calculated for all the initial 15 items. Since both tests resulted in values well within the acceptable limits, PCA was considered appropriate as an exploratory factor analysis tool. Using the accepted criterion of eigenvalue larger than one (1), three factors were obtained explaining 67.16% of the total variance (Siardos, 1999, p. 82). It was observed that in the factor loading matrix the items X05 and X09 gave factor loadings less than 0.50 in the first factor and the items X12 and X13 cross-loaded on the second factor. A decision was made to eliminate these 4 items and keep the remaining 11. So, X01, X02, X03, X04, X06, X07, X08, X10, X11, X14, X15 were kept for the second data collection.

An iteration of PCA was conducted for the remaining 11 items giving two (2) factors with eigenvalue greater than one (1), with the first factor explaining 58.52% of the total variance. A new Cronbach's alpha was calculated at this point giving a value of 0.9264 for the remaining 11 items. All items are received by the first factor and they do cover all domain components, providing an uni-dimensional measure of Pro-

environmental Purchase Behaviour.

With regard to the measure of *Pro-environmental Activities*, a similar procedure was followed that ended in two (2) sub-measures, one of 7 items (Y05, Y06, Y07, Y08, Y09, Y12, Y13) that was named *Participative Activities* and one of 4 items (Y01, Y02, Y03, Y04) that was named *Individual Activities*. The first explained 37.18% of the total variance, and gave a=0.8711, while the second explained 21.42% of the total variance and gave a=0.6982.

In the case of *Pro-environmental Attitudes*, the first factor explained 35.57% of the total variance. The 13 remaining items (Z02, Z04, Z07, Z09, Z11, Z12, Z13, Z18, Z19, Z21, Z26, Z31, Z33) covered all domain components and gave a=0.8459.

For the measure of *Recycling Attitudes* the procedure resulted in a first factor, which explained 33.10% of the total variance. The 15 remaining items (W02, W04, W05, W07, W12, W13, W14, W16, W17, W20, W21, W22, W23, W26, W28) covered all domain components and gave a=0.8469.

During the *Data collection II* in the first survey the refined measures of Pro-environmental Purchase Behaviour, Participative Activities, Individual Activities and Pro-environmental Attitudes were included, plus demographics. In addition, measures for the validity estimation were included. For the validation of Pro-environmental Purchase Behaviour two similar measures were used to assess convergent validity. The first one was published by Schlegelmilch *et al*., in 1996 and reported a=0.709 and a=0.817 for student and general public respectively. It is a 3-item measure and for this data collection it was measured on a 5-point frequency scale. The second one was published by Stanley and Lasonde, in 1996, as the first factor, namely Purchase, of their Environmental Behaviour Scale, which in total reported a=0.900. It is an 11-item measure, measured on a 5-point frequency scale. For Pro-environmental Activities

(Participative Activities and Individual Activities) no similar measures existed to examine convergent validity. It was therefore decided to examine the correlation of the measure with the other ECCB measures, i.e. Pro-environmental Purchase Behaviour and Pro-environmental Attitudes measure. For Pro-environmental Attitudes a similar measure, constructed by Bohlen *et al*. and published in 1993 with a reported alpha value of 0.896, was included to assess convergent validity. It is a 19-item measure, measured in this data collection on a 5-point Likert scale. The two-stage area sampling was used in a sample of 385 households of Thessaloniki Municipality.

In the second survey the refined measure of Recycling Attitudes was included together with four items of Recycling Behaviour, plus demographics. In addition, in order to assess convergent validity, a similar measure of recycling attitudes, constructed by Obermiller and published in 1995, was included in the questionnaire. Obermiller used this 9-item measure in an experimental design and he did not report Cronbach's alpha. With regard to internal consistency of his measure he reported an overall inter-item correlation of 0.59. Only 7 out of 9 items of his measure were adopted in this phase of measure development, mainly because they provided extensive face (content) validity. A mail survey was conducted. 350 questionnaires were mailed to a randomly selected sample of households of Thessaloniki Municipality, 103 questionnaires were returned, 99 of which were usable (response rate: 28%).

Reliability estimates usually include alpha's recalculation in addition to some other reliability tests for each developed measure. At this stage, suggestions by Peter (1979) and Churchill (1979) were adopted and thus, the coefficient alpha and the 'split-half' reliability method were employed.

For *measures validation*, two types of *validity* are suggested, content or face validity and construct validity (Tull and Hawkins 1993, p. 317; Bearden *et al*., 1995, pp. 4-5). As to the content validity, first a philologist proof-read the questionnaires for the Greek grammar. Following that, the questionnaires were mailed for a preliminary pre-testing to the members of the focus groups of the items generating stage. As to the construct validity, correlation coefficients between measures were calculated. All reliability estimates are presented in Figure 2, while overall validity estimates are indicated in Table I.

Pro-environmental Purchase Behaviour refined measure indicated 'exemplary' reliability according to Robinson *et al*. (1991, p.13). It also provided evidence of convergent validity with Schlegelmilch's *et al*. (1996) and Stanley's and Lasonde's (1996) similar measures.

Pro-environmental Activities indicated "moderate" reliability for Individual Activities sub-measure and "extensive" reliability for Participative Activities sub-measure, as well as for the total Pro-environmental Activities construct. With regard to validity it is noticed that either the whole construct or each one of the two sub-measures indicated rather nomological validity with the borrowed similar measures. They obtained higher correlation coefficients with the behavioural than with the attitudinal measures, which is natural since the concept of Pro-environmental Activities is a behavioural and not an attitudinal one.

Pro-environmental Attitudes provided lower than expected values for both reliability and validity. At this point, the decision made in the end of the first data collection to eliminate the items Z17 and Z25, was judged as too strict. So, it was decided to add again these two items to the proposed measure. Including two more items in the final scale may hopefully increase reliability estimates in future data

collections (Spector, 1992, p. 33).

Recycling Attitudes refined measure indicated "exemplary" reliability and an acceptable (though rather nomological than convergent) validity with Obermiller's (1995) similar measure of recycling attitudes.

[Take in Table I]

Discussion

Therefore, all four of the under-construction measures provided acceptable reliability and validity estimates and thus they were judged as ready enough to be applied in future surveys. Beyond this fact, the experience gained by this effort leads to certain points of discussion, which might be viewed as limitations, scientifically crucial, though not directly affecting the usefulness of the constructed measures. To begin with, initial item pools with a larger number of items, especially in the case of the attitudinal measures, might have resulted in reliability and validity improvement. As to reliability, although a thorough process was followed to assess internal consistency of each measure, no external criterion was used for item refinement, e.g. 'social desirability' (Spector, 1992, p. 35). In addition, future research should incorporate 'test-retest' reliability method, which in the long run is the only method to examine the stability of the constructed scales.

Improvement in item editing might also provide better reliability estimates. Especially with regard to the Pro-environmental Activities measure, the decision to accept two sub-measures needs further verification in the case of Individual Activities. The new and short sub-measure of Individual Activities may need improvement. Pro-environmental Activities as a whole, being a new part of the conceptualisation of ECCB, certainly requires further thorough examination.

With regard to construct validity of all constructed measures, only convergent

and nomological validity was examined, as discriminant validity would require more complex administration and much more time consuming data collection.

Lastly, as to the response scales, certain modifications are suggested for future research applications. First, although the attitudinal measures rarely provide very high reliability estimates and the extracted so far results fell well within the acceptable limits, it might be useful to lengthen the measurement scale from 5 to 7 points of a Likert scale for the measurement of all the attitudinal variables. Second, the frequency scale can be also lengthened from 5 to 7 points for the measurement of all the behavioural variables. Lengthening the scales may hopefully affect positively reliability and validity estimates (Churchill and Peter, 1984).

Conclusions

Marketing research may provide valiable information to business, as well as to national and local authorities, interested to adopt ecological strategies in favour of the environmental protection. As the key element for any strategy is consumers' reaction, it is suggested that Ecologically Conscious Consumer Behaviour (ECCB) can be better examined if repositioned under Ecological Consciousness (EC) multi-dimentional theoretical framework. The examination of the included in this framework variables requests a validated measurement instrument. Thus, a procedure was undertaken to develop reliable and valid constructs for most of the relevant variables. The undertaken stages were described. The final measures for each one of Pro-environmental Purchase Behaviour, Pro-environmental Activities, Pro-environmental Attitudes and Recycling Attitudes are provided. Future research may use the presented measures in order to examine their stability, as well as to reveal the indepths and the determinants of ECCB.

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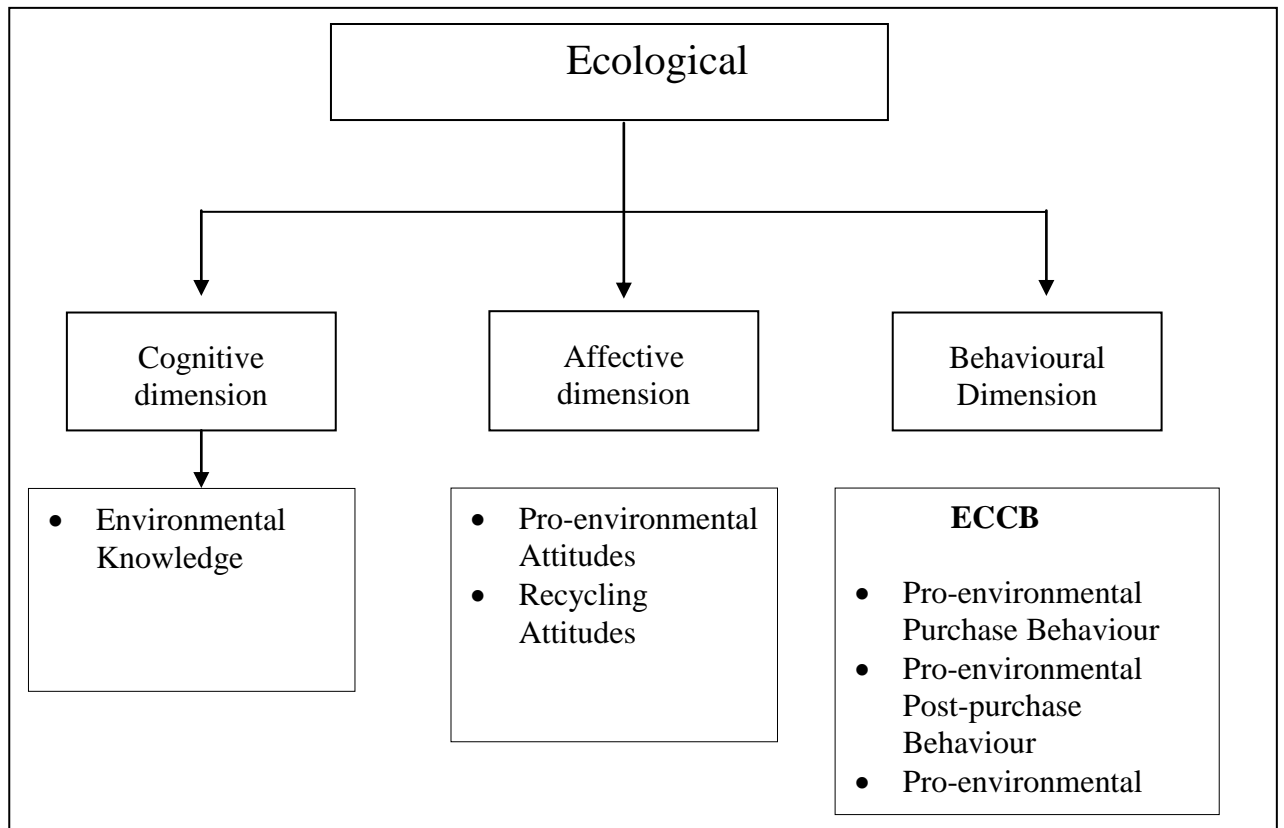Tull, D. S., and Hawkins, D. I. (1993), Marketing Research, Sixth edition, New York, McMillan.

Figure 1: The theoretical framework of Ecological Consciousness

	Pro-environ. Purchase Behaviour	Pro-environ. Activities	Pro-environ. Attitudes	Recycling Attitudes
Initial item pool ♦ Literature search ♦ 28 unstructured interviews ♦ 6 student surveys	28 items, 4 components	21 items, 3 components	72 items, 6 components	51 items, 5 components
♦ 3 focus groups ♦ Elimination – re-editing ♦ Response scale	15 items, all p. 5-point frequency scale	13 items, all p. 5-point frequency scale	35 items, 19 p. & 16 r. 5-point Likert scale	28 items, 16 p. & 12 r. 5-point Likert scale
Data Collection I ♦ Sample size ♦ Sampling method ♦ Cronbach's alpha	n=140 Two-stage area sampling .8983	n=140 Two-stage area sampling .7717	n=140 Two-stage area sampling .8470	n=135 Two-stage area sampling .7875
Measures' Refinement ♦ Item-to-total correlation	4 items eliminated	2 items eliminated	22 items eliminated	13 items eliminated
♦ Alpha-if-item deleted ♦ PCA ♦ Iteration of PCA ♦ Cronbach's alpha	11 remaining items .9264	11 remaining items 1st factor: 7 items 2nd factor : 4 items Pro-env. A.: .7951 Part. A.: .8711 Indiv. A.: .6982	13 remaining items .8459	15 remaining items .8469
Data Collection II ♦ Sample size ♦ Sampling method	n=385 Two-stage area sampling	n=385 Two-stage area sampling	n=385 Two-stage area sampling	n=99 Mail systematic sampling
Reliability assessment ♦ Guttman's split-half	.8864	Pro-env. A.: - Part. A.: .6500 Indiv. A.: .7780	.4896	.8292
♦ Cronbach's alpha	.9153	Pro-env. A.: .7570 Part. A.: .7948 Indiv. A.: .6650	.6436	.8632
Validity assessment *	♦ Pearson's r	♦ Pearson's r	♦ Pearson's r	♦ Pearson's r

* For overall validity estimates see Table I

Figure 2: Measures' development procedure

Table I: Overall validity estimates for all developed and 'borrowed' measures

	1	2	3	4	5	6	7	8	9	10
1 Pro-environmental Purchase Behaviour	1.000	.816	.632	.533	.500	.297	.402	.331		
2 Schlegelmilch's et al. (1996)	.816	1.000	.601	.461	.461	.209	.342	.348		
3 Stanley's and Lasonde's (1996)	.632	.601	1.000	.621	.495	.486	.201	.242		
4 Pro-environmental Activities	.533	.461	.621	1.000	.878	.649	.303	.288		
5 Participative Activities	.500	.461	.495	.878	1.000	.206	.301	.254		
6 Individual Activities	.297	.209	.486	.649	.206	1.000	.141	.179		
7 Pro-environmental Attitudes	.402	.342	.201	.303	.301	.141	1.000	.490		
8 Bohlen's et al. (1993)	.331	.348	.242	.288	.254	.179	.490	1.000		
9 Recycling Attitudes									1.000	.529
10 Obermiller's (1995)									.529	1.000

Notes:

1. All correlations are significant at 0.01 level
2. Recycling Attitudes and Obermiller's similar measure were administered by a different questionnaire in data collection II so coefficients with the other measures are missing.

APPENDIX

A. Pro-environmental Purchase Behaviour

X01	I choose the environmentally friendly alternative of a product, if there is one, regardless of price
X02	I choose the environmentally friendly alternative of a product, if there is no significant price difference
X03	I am interested in asking about the environmental consequences of a product before buying it
X04	I prefer recycled paper products
X05	I prefer products in recycled and/or recyclable packages
X06	I try to find products with the ecological badge (eco-label)
X07	I prefer environmentally friendly detergents, even if they are more expensive
X08	I prefer to buy organic fruits and vegetable
X09	I choose to buy aerosol which do not destroy ozone
X10	I prefer to buy environmentally friendly detergents even if they are not equally effective
X11	I would change my usual detergent brand for another, more friendly to the environment
X12	Whenever I have the choice, I choose the less polluting product
X13	I try to avoid environmentally harmful products
X14	I prefer the recycled paper products, even if they are more expensive
X15	I choose the recycled paper products, although they are not as white

B. Pro-environmental Activities

Y01	I do not throw rubbish on the ground
Y02	I try to use less water
Y03	**I try to use less energy**
Y04	**I try to make less noise**
Y05	I take part into cleaning shore, parks, yards etc.
Y06	I often take part into environmental protection events
Y07	I buy ecological magazines and/or other printed material
Y08	I contribute money to ecological groups and organisations
Y09	I voluntarily work for ecological groups and organisations
Y10	I send letters to journals and/or newspapers about environmental issues
Y11	I avoid using my car unless it is absolutely necessary
Y12	I have discussions with my family and/or friends about environmental issues
Y13	I listen to the radio or watch television programmes on ecology

Note:
Participative Activities: Y01, Y02, Y03, Y04
Individual Activities: Y05, Y06, Y07, Y08, Y09, Y12, Y13

C. Pro-environmental Attitudes

Z01	People should be more concerned about reducing the noise in their area
Z02	I often get angry when I think of how much water is wasted
Z03	Energy conservation should be a prominent concern in our society
Z04	Pollution does not affect my personal life *
Z05	Too much fuss is often made about pollution with no particular reason*
Z06	Air and water pollution will eventually lead to the planet's deterioration
Z07	I can not follow environmentalists and ecologists debates*
Z08	Discussions about environmental issues are very boring *
Z09	I have never been seriously concerned about issues such as ground water and sea pollution*
Z10	Certain climate changes in our times make me worry
Z11	I don't think that I have anything to do with the destruction of animals or plants *
Z12	I have never been concerned with the extinction of rare species *
Z13	I get very angry about experiments on animals using dangerous products
Z14	People in order to survive must live in harmony with nature
Z15	Plants and animals exist primarily to satisfy human needs*
Z16	Mankind is only one part of the global ecosystem
Z17	Humans were created to rule over the rest of nature*
Z18	Environmental protection is the most important problem of our times
Z19	Pollution is the most serious threat for our health and for the health of our children
Z20	Special scientists and ecologists are the only people who should be concerned with environmental problems*
Z21	The benefits of modern consumer products are more important than the pollution, which results from their production and use*
Z22	All people should reduce their consumption so that natural resources will last longer
Z23	Natural resources must be preserved, even if people have to do without some products
Z24	Environmental protection requires drastic economic growth reduction
Z25	Over-consumption is highly responsible for the environmental destruction
Z26	Rapid technology improvement is causing more problems than benefits
Z27	To improve peoples standard of living deserves any sacrifice*

Z28	Important benefits in development outweigh any necessary sacrifices*
Z29	I am willing to make personal sacrifices to protect the environment for future generation's sake
Z30	I don't think we can do without some modern comforts to which we have been used*
Z31	I don't believe that the environment will be protected if we used less water, electricity and oil*
Z32	Everyone who is polluting the environment should be made to pay for it
Z33	I am annoyed with governments and international organisations that do not take the necessary measures to protect the environment
Z34	It is practically impossible for each governmental decision, concerning economic growth to take under consideration the potential environmental consequences*
Z35	I am willing to pay a small tax increase, if I am convinced that it will go to environmental protection

D. Recycling Attitudes

W01	Recycling never crossed my mind*
W02	Recycling is important
W03	Recycling is not a solution to the litter problem*
W04	Each consumer can contribute to the solution of the litter problem in his/her district
W05	Recycling benefits are worth-while my time and effort
W06	The litter problem is exaggerated*
W07	Recycling helps to natural resources conservation
W08	Non recyclable packages should be banned by law
W09	Local authorities in my district do a very good job on recycling
W10	I am not willing to take part into any recycling programme, if there are no financial motives for me*
W11	Mainly businesses and not the environment take most of the recycling benefits*
W12	It is rather inconvenient to sort out and transport the recycling materials*
W13	Government should issue regulations about the use of recycled and recyclable materials in products packaging
W14	Consumers should force the producers to use recyclable materials in their products packages
W15	It is frightening to think about the consequences of the litter increase
W16	It is my personal responsibility to help recycling efforts
W17	Recycling is a great help to environmental protection
W18	There are no particular benefits for the whole community coming from recycling programmes*
W19	I feel guilty for not taking part into a recycling programme
W20	It is useless to recycle as long as not many other people do the same*
W21	Recycling is more fuss than benefit*
W22	Recycling reduces litter going to the landfill sites
W23	Recycling contributes to energy conservation
W24	I do not trust authorities, responsible for the recycling problems*
W25	The litter problem does not affect my personal life*
W26	I get satisfaction by taking part into recycling
W27	I keep thinking that I should start participating into recycling programmes*

W28	Recycling benefits return back to the society

Notes:

*1. * Reverse coded item*

2. Underlined items are kept in the final measure