The measurement instrument
of ecologically-conscious consumer behaviour

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1. Introduction

The continuous damage to the natural environment has led to the present environmental crisis. Therefore, multi-disciplinary co-operation is needed to protect the environment. Ecological Marketing has to rely upon updated concepts to acquire greater significance and contribute to the environment improvement. Marketing research proves to be necessary to understand better and examine thoroughly Ecologically Conscious Consumer Behaviour (ECCB). The literature demonstrates that fragments of ECCB have been examined by several studies so far, even though no commonly accepted profile of Ecologically Conscious Consumers (ECCs) has been proposed yet (Shrum et al., 1995; Tilikidou and Zotos, 1999). To date, the usual approach to ecologically related behaviour has been based on just one aspect of ECCB. For example, recycling behaviour is usually assessed separately from buying ecological products. As for the determinants (attitudes, demographics and psychographics) of these ecologically related behaviours, the results produced by many studies have been quite ambiguous, or even contradictory (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 the main reasons for these discrepancies (Antil, 1984; Shrum et al., 1996; Schlegelmilch et al., 1996). Consequently, it is necessary to develop reliable and valid constructs, which have to be contemporary and appropriate to meet the specific requirements of a given

Abstract

The aim of this paper is to outline a theoretical framework for Ecological Consciousness (EC) in which Ecologically Conscious Consumer Behaviour (ECCB) may be set and examined. ECCB is the behavioural dimension of EC framework and it is considered to be the result of the sequence of two other dimensions of this framework, namely the cognitive and the affective dimensions. Moreover, a detailed description of measures' development procedure is provided. This procedure allowed to develop a measurement instrument including reliable and valid measures, necessary to examine the main variables of the theoretical framework, i.e. Pro-environmental Purchase Behaviour, Pro-environmental Activities, Pro-environmental Attitudes and Recycling Attitudes.

Résumé

Cet article présente un cadre théorique de la conscience écologique (Ecological consciousness, EC), utilisable dans l'étude du comportement écologiquement conscient du consommateur (Ecologically Conscious Consumer Behaviour, ECCB). L'ECCB représente la dimension comportementale du cadre EC. Elle est considérée comme le résultat de la séquence des deux autres dimensions du même cadre, à savoir la dimension cognitive et la dimension affective. Parallèlement, on décrit en détail la procédure de mise au point des mesures. Cette procédure est le résultat du développement d'un instrument de mesure incluant des mesures fiables et valables pour étudier les variables principales du cadre théorique, c'est-à-dire le Comportement d'Achat Pro-environnemental, l'Activité Pro-environnementale, les Attitudes Pro-environnementales et les Attitudes de Recyclage.

project, in a given place and time. Indeed, examining only one aspect of ECCB may be a further reason for restriction in an effort to understand properly ECCB. There is a need for a cohesive theoretical framework in which ECCB may be set and examined in all its different aspects. In the past, the most appropriate framework proposed (Schlegelmilch et al., 1996; Tilikidou and Zotos, 1999) to include ECCB was the concept of Ecological Consciousness (EC).

This framework has to include all ECCB variables, as well as all variables that can describe ECCB, as illustrated in Figure 1.

A special effort is required in the measures' development process, in order to construct reliable and valid measures for the framework variables.

This paper aims to provide the constructs, sufficient to measure the variables of EC framework, as well as to illustrate the procedure applied to develop the relevant measurement instrument.

2. Literature review

Concerning the ecological consumer behaviour, in early research, ecological concern (attitudes) and ecological behaviour of several types were usually dealt with by applying more or less the same concept, sometimes in a unidimensional construct, as demonstrated by 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 an attitudinal concept, possibly related to, but metho-

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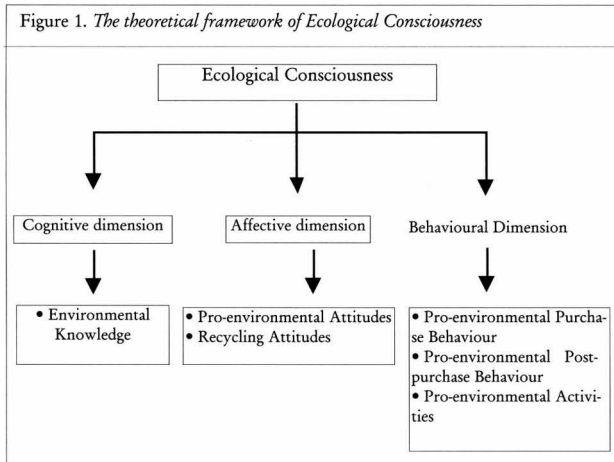
The eighties were a decade in which ecologically related academic research declined. Nonetheless, Balderjahn (1988) published a very interesting study. Although he followed the ECCs concept of the seventies, he expanded the ecological research agenda by including several consumption patterns in his model.

Figure 1. *The theoretical framework of Ecological Consciousness*

Ecological Consciousness

Cognitive dimension → • Environmental Knowledge

Affective dimension → • Pro-environmental Attitudes • Recycling Attitudes

Behavioural Dimension → • Pro-environmental Purchase Behaviour • Pro-environmental Post-purchase Behaviour • Pro-environmental Activities

ge), 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 used separately in order to develop reliable and valid measures. The case of Environ-

During the nineties, which were called the 'earth decade', there was a considerable increase in academic interest. The approach consisted in examining 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) combined several behavioural patterns into a composite measure representing the 'conserver' consumer. Schlegelmilch et al. (1996) examined some aspects of purchasing behaviour and recycling behaviour together. The term ECCB was used by Roberts for the first time (1996), but his theoretical model was different from the one applied in this study. Roberts (1996) and Roberts and Bacon (1997) incorporated all the ecologically related issues in one 30-item measure of ECCB.

Few efforts have been made to develop a measurement instrument or to lay emphasis on the measurement accuracy. In the past, Antil and Bennett (1979), Bohlen et al. (1993), Obermiller (1995) and Stanley and Lasonde (1996) followed a measures' development procedure similar to the one proposed in this paper. As for the construction of reliable and valid measurement instrument, the procedure followed in this project 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.

3. Development of the measurement instrument

In this research, the EC framework consisted of three dimensions, i.e. the cognitive (Environmental Knowled-

mental Knowledge is an exception since it is usually suggested to adopt a relevant valid scale of objective knowledge, already constructed by environmentalists (Schlegelmilch et al., 1996; Tilikidou, 2001). Concerning 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 deals with 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, for this research work, was published previously (see Tilikidou and Zotos, 1999; Tilikidou, 2001). The constructive procedure -summarised in Figure 2- includes Initial items pools, Data collection I, Measures' refinement, Data collection II and Reliability and validity assessments.

The Data collection I comprises 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 at achieving the internal consistency of the measure by keeping all internally consistent items and at eliminating some weak items. Statistical analyses were performed through SPSS-8.

First of all, to asses internal consistency of the Pro-environmental Purchase Behaviour measure, Cronbach's coefficient alpha was calculated for the initial 15 items and it resulted in a=0.8983. Secondly, item-to-total correlation coefficients were evaluated 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.

In third place, the principal component analysis (PCA) was carried out. 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 provided values which fell within the acceptable limits, PCA was considered appropriate as an exploratory factor analysis tool. Using the accepted criterion of eigenvalue higher than one (1), three factors were obtained explaining 67.16% of the total variance (Siardos, 1999, p. 82). It was underlined that, in the factor loading matrix, the items X05 and X09 gave factor loading lower than 0.50 in the first factor and that the items X12 and X13 cross-loaded on the second factor. It was decided to eliminate these 4 items and to 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 higher 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 were received by the first factor and they covered all domain components, providing a uni-dimen-

sional 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), called Participative Activities, and one of 4 items (Y01, Y02, Y03, Y04), called 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 remai-

Figure 2. *Measures' development procedure*

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

ning items (Z02, Z04, Z07, Z09, Z11, Z12, Z13, Z18, Z19, Z21, Z26, Z31, Z33) covered all domain components and gave a=0.8459.

As 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. Concerning 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 was an 11-item measure, measured on a 5-point frequency scale. For Pro-environmental Activities (Participative Activities and Individual Activities), no similar measure existed to examine convergent validity. It was therefore decided to evaluate 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 for a sample of 385 households of Thessaloniki Municipality.

In the second survey, the refined measure of Recycling Attitudes was included along with four items of Recycling Behaviour, plus demographics. Moreover, 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. As regards the 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 as well. 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 measure developed. 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 regards the content validity, first a philologist proofread the questionnaires for the Greek grammar. Afterwards, 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 reported in Table I.

Table 1. *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 w2. ith the other measures are missing.

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 similar measures borrowed. 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 values than expected for both reliability and validity. Therefore, the decision made at the end of the first data collection to eliminate the items Z17 and Z25 was considered too strict. As a result, 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 more nomological than convergent) validity with Obermiller's (1995) similar measure of recycling attitudes.

4. Discussion

All in all, four of the measures under construction provided acceptable reliability and validity estimates and thus they were judged as ready enough to be applied in future surveys. Moreover, the experience gained through this effort leads to raise some 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 higher number of items, especially in the case of the attitudinal measures, might have resulted in reliability and validity improvement.

As for reliability, although a thorough process was carried out to assess internal consistency of each measure, no external criterion was used for item refinement, e.g. 'social desirability' (Spector, 1992, p. 35). Furthermore, future research should incorporate the '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. In particular, as regards 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 some improvement. Pro-

environmental Activities, as a whole, being a new part of the conceptualisation of ECCB, certainly requires further thorough examination.

As far as construct validity of all constructed measures is concerned, only convergent and nomological validity was examined, since discriminant validity would require more complex administration and much more time-consuming data collection.

Lastly, in relation to the response scales, some modifications are suggested for future research applications. First, although the attitudinal measures rarely provide very high reliability estimates and the extracted results extracted fell 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. Secondly, 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 in a positive manner reliability and validity estimates (Churchill and Peter, 1984).

5. Conclusions

Marketing research may provide valuable information to business, as well as to national and local authorities, interested in adopting ecological strategies in favour of environment protection. As the key element for any strategy is consumer reaction, it is suggested that Ecologically Conscious Consumer Behaviour (ECCB) could be better examined if reset in an Ecological Consciousness (EC) multi-dimensional theoretical framework. The examination of the variables included in this framework variables requires a validated measurement instrument. Therefore, a procedure was applied to develop reliable and valid constructs for most of the relevant variables. The various stages undertaken were described. The final measures for Pro-environmental Purchase Behaviour, Pro-environmental Activities, Pro-environmental Attitudes and Recycling Attitudes are provided. Future research may use the measures illustrated in order to examine their stability, as well as to reveal ECCB indepths and the determinants.

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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 fruit and vegetables
X09	I choose to buy aerosols 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 so white

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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 in cleaning shore, parks, yards etc.
Y06	I often take part in environment 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 must live in harmony with nature in order to survive
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	Environment protection is the most important problem of our times
Z19	Pollution is the most serious threat to our health and to 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 pollution, which results from their production and use*
Z22	All people should reduce their consumption so that natural resources could last longer
Z23	Natural resources must be preserved, even if people have to do without some products
Z24	Environment protection requires drastic economic growth reduction
Z25	Over-consumption is highly responsible for the environment destruction
Z26	Rapid technology improvement is causing more problems than benefits
Z27	Improving people's 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 got used*
Z31	I don't believe that the environment would be protected if we used less water, electricity and oil*
Z32	Everyone who is polluting the environment should pay for this damage
Z33	I can not stand 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 into account the potential environmental consequences*
Z35	I am willing to pay a small tax increase, if I am convinced that this will be used for environment 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 my time and efforts
W06	The litter problem is exaggerated*
W07	Recycling helps to natural resources preservation
W08	Non recyclable packages should be banned by law
W09	Local authorities in my district do an excellent job for recycling
W10	I am not willing to take part in any recycling programme, if there is no financial motivation 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 environment protection
W18	There are no particular benefits for the whole community coming from recycling programmes*
W19	I feel guilty for not taking part in 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 from taking part in recycling
W27	I keep thinking that I should start participating in recycling programmes*
W28	Recycling benefits return back to the society

Notes:
1. * Reverse coded item
2. Underlined items are kept in the final measure