

Tilikidou, I. And Delistavrou, A. (2006). Consumers' Ecological Activities and their Correlates. *In the IFSAM VIII World Conference 2006, Berlin Germany 28-30/09/2006*. Proceedings available on line.

## **Consumers' Ecological Activities and their Correlates**

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## **Consumers' Ecological Activities and their Correlates**

### **ABSTRACT**

There are other ecological activities – besides green buying and recycling – that have been rather neglected by the academic marketing research. Greek consumers were found to be rather moderately engaged with these behaviours. Older, well educated people, who hold relatively low incomes, adopt the ecological activities more frequently. The ecological activities were found to be negatively correlated to environmental unconcern and materialistic values, while positively to feelings of control over political evolutions. Those activities that rather traditional and conservative are closely associated with feelings of social responsibility as well as with non-materialistic values, while more energetic, more active behaviours are closely associated with feelings of power over politicians and politics as well as with values of generosity and tenderness.

### **KEYWORDS**

Ecological Activities, Environmental Unconcern, Materialism, Locus of Control.

## **Consumers' Ecological Activities and their Correlates**

### **Introduction**

The protection of the physical environment requires multi-disciplinary cooperation. Among other socio-economic disciplines, marketing 'needs and wants' to offer its own contribution. Certain marketing activities have been blamed as factors that are hostile to the environment, mainly because they push consumers to over-consumption. Although the ecological research has never been in the mainstream of the marketing academic community, there have always been suggestions that marketing may become part of the solution instead part of the problem (Peattie, 1995, p.24).

So far, the ecologically oriented marketing research has focused either on 'green buying' or on recycling. Yet, there are other pro-environmental behaviours which are not directly related to purchase or recycling. They concern re-use, maintenance, donation of already used products or voluntary contribution to environmental protection actions. They may be viewed as an integrated set in the sense that they are not directly related to purchasing choices. These behaviours have driven very little attention so far, however unduly. There is evidence that consumers who are at least partially involved in pro-environmental actions might be more likely to get involved in other actions too (Peattie 1995, p. 79), as pro-environmental behaviours have been found to be inter-correlated (Tilikidou, 2001, p. 186, Tilikidou and Delistavrou, ---). In this sense either business or public organizations need trustful

information with reference to which determinants motivate consumers to get involved into the non-purchasing pro-environmental behaviours.

In Greece ecological marketing research started just a decade ago, relatively late in comparison to the other E.U. countries. Until now there is some evidence that Greek pro-environmental purchasers and recyclers are people who hold higher levels of education and income and pro-environmental attitudes than their counterparts do (Tilikidou, 2001, p. 186). It has also been indicated that pro-environmental behaviours are positively influenced by consumers' locus of control over society and politics while their materialistic values were found to be the main inhibiting factor of pro-environmental purchasing and recycling (Tilikidou and Delistavrou, 2004 and 2005). There is still the question whether the other types of ecological activities are also influenced by the same personality variables.

It was judged that ecological activities deserve more attention and thus this study aims to reveal their demographic, attitudinal and psychographic correlates.

### **Related Literature**

There have been few in number studies that examined, besides pro-environmental purchasing and recycling, other types of ecological activities. Corraliza and Berenguer (2000) included in their broad concept of 'environmental actions' some non-purchasing items such as 'taking bags for reuse when going shopping', 'signing petitions supporting environmental protection organizations'. Bohlen *et al.* (1993) developed a scale of 'political action', which included items such as 'supporting environmental pressure groups', 'writing to newspapers about green issues' etc. This scale was later used by Schlegelmilch *et al.* (1996), who found that political action was a determinant of green purchasing Behavior. Blake (2001) used the same term, 'political action', to include a larger set of items, such as 'donate

money to support an environmental cause', 'work to elect an environmentalist candidate', 'join an environmental group' and found that political action and personal values, namely post-materialism and environmentalism were related to consumers' environmental concern.

In Greece, Tilikidou (2001, p. 145) found that pro-environmental participative activities were related positively to education, income, occupation (professionals), while pro-environmental individual activities were related to age, education and occupation (employees). Both behaviours were found to correlate positively to attitudes and able to be predicted by recycling Behavior. That research was judged to be preliminary as the scales contained a rather small number of items, they were rather weak in terms of validation and the relationships found were not very well established (Tilikidou, 2001, p. 209). Later, Tilikidou and Delistavrou (---) examined a set of non-purchasing ecological behaviours and found that they are adopted by highly educated people who are partially influenced by their social responsibility and their sense of power over politics.

In addition, some other types, besides recycling, of pro-environmental post-purchasing behaviours have been examined in a few studies. Ebreo and Vining (2001), for example, examined the reuse of products in their 'waste-reduction' concept. Tilikidou and Delistavrou (2004) examined along with recycling Behavior some other pro-environmental post-purchasing behaviour such as re-use of products, maintenance and donation of used products etc. It was found that the negative influence of materialism was stronger than the positive influence of recycling attitudes upon these behaviours.

## **Research Objectives**

- To investigate to what extent Greek consumers are engaged in Ecological Activities and the impact of selected demographics upon these behaviours.
- To expand previous research by the examination of the - assumed negative - influence of attitudes (environmental unconcern) and materialism as well as the - assumed positive - influence of locus of control upon Ecological Activities

### **Methodology**

A survey was conducted among 419 households in the Thessaloniki urban area. The sampling method was a two-stage area sampling in combination with the systematic method (Tull and Hawkins, 1993, p. 544; Zikmund, 1991, p. 471). The sampling frame was a map of the Thessaloniki urban area. In the first stage, 30 city blocks were randomly selected. In the second stage, the investigated households in each block were selected through the systematic method (1 every 10 apartments). One adult member of the household served as interviewee. Detailed instructions to the interviewers secured the probability sampling in all steps. The survey instrument was a structured questionnaire containing **71** variables in total, administered through personal interviews by trained senior marketing students.

### **Questionnaire content**

The dependent variable was named *Ecological Activities*. In an effort to increase measurement accuracy a scale was created. It contained modified items of two previously presented scales, namely Pro-environmental Activities (Tilikidou, 2001, p.67) and Pro-environmental Post-purchasing Behaviours (Tilikidou and Delistavrou 2004). The new scale contains 17 items in total, all measured on a 7-point frequency scale from 1= Never to 7=Always. It provided a Cronbach's alpha of 0.8520.

With regard to attitudes it was preferred to follow previous suggestions by Tilikidou and Delistavrou (2005) and examine negative than positive attitudes towards the environmental protection. Positive attitudinal scales provide usually over-estimated results and a large gap with behaviour. The attitudinal measure of *Environmental Unconcern* (EU) was adopted from Tilikidou and Delistavrou (2005), contains 18 items measured on a Likert scale from 1=Absolutely Disagree to 7=Absolutely Agree and provided an alpha value of 0.8606.

With regard to the personality variables, two psychographic scales were selected: a) the socio-political control scale of the *Spheres of Control* (Paulhus, 1983) consisting of 10 items, measured on 7-point Likert scale. The measure examines “the consumers’ perceptions about their own ability to affect and control the national and global socio-political evolutions” (Robinson *et al.*, 1991, p. 428). Paulhus (1983) reported a Cronbach’s alpha of 0.81, while in this study alpha was found to be 0.7335 and b) a scale of *Materialism* comprised of 21 items in total, 5 adopted from Richins (1987) and 16 adopted from Ger and Belk (1996), providing an alpha of 0.7658. This merged scale has been previously used in the same geographical area by Tilikidou and Delistavrou (2004 and 2005) and provide reliable results with reference to recycling and pro-environmental purchasing behaviours.

## **Results**

The demographics of the sample were compared to the relevant variables of the Greek population through chi-square analysis and no significant differences were found. The variable of Ecological Activities (EA) takes theoretical values from 17 to 119, obtained a Mean of 56.95 (St.D. = 13.8216) indicating a moderate level of consumers’ engagement. Consumers are mostly used to avoid throwing rubbish on the

ground (D08) and making noise (D09) as well as donate and maintain used products (D16, 17) (Table 1).

Environmental Unconcern takes theoretical values from 18 to 126, provided a Mean of 64.11 (St.D. =16.82) indicating low negative attitudes toward environmental protection. Socio-political Control Scale takes theoretical values from 10 to 70, a Mean of 38.11 (St.D. =8.83) indicating a moderate level of locus of control. Materialism takes theoretical values from 21 to 147, a Mean of 72.71 (St.D. =14.54) indicating rather low materialistic values.

### **Analysis**

One – way ANOVA was employed to indicate the mean differences in EA across each demographic characteristic. It indicated (Table 2) statistically significant differences at  $p < 0.01$  with gender (women), and at  $p < 0.05$  with age (older people), education (graduate) and income (lower).

Pearson's parametric correlation indicated that Ecological Activities are statistically significantly ( $p < 0.01$ ) and moderately correlated negatively to Environmental Unconcern ( $r = -0.445$ ) and Materialism ( $r = -0.394$ ) while positively to Socio-political Control Scale ( $r = 0.338$ ).

Multiple Regression indicated that the interactive effect of Environmental Unconcern (EU), Materialism (M) and Socio-political Control Scale (SOC) is able to predict the 29.1% (Adjusted R square) of the variance in Ecological Activities (EA). The resulting equation is:

$$\mathbf{EA = 76.424 - 0.288 EU - 0.240 M + 0.203 SOC}$$

In addition, *hierarchical clustering* was employed in an effort to obtain more detailed information about the psychological profile of the consumers. Hierarchical cluster analysis groups variables, not cases (Sudman and Blair 1998, p. 558) in



relatively homogeneous groups (Malhotra 1999, p. 610). All the items of Ecological Activities, Socio-political Control Scale and Materialism were entered in the analysis (Figure 1).

An interpretable solution indicated two clusters. In cluster A the items of Ecological Activities that concern more energetic, progressive behaviours (D15, D03, 02, 05, 04, 01, 11, 12) were joined together with those items of the Socio-political Control Scale that express feelings of power over politics and politicians (H08, 04, 03) and those items of materialism that express generosity and lack of jealousy with regard to material goods (M21, 12, 20, 19,05, 14,06, 07, 10, 11, 04, 09). In cluster B the items of Ecological Activities that concern conservative non-energetic behaviours (D10, 06, 07, 08, 09 and D13, 14, 17, 16) were joined together with those items of the Socio-political Control Scale that express social responsibility over political national and global problems (H09, 07, 05, 02, 01, 06, 10) and those items of materialism that express aspects of addiction to material things and possessions (M18, 16, 13, 08, 03, 02, 01, 17, 15).

## **Discussion**

With regard to income the findings of this study are in contrast to previous results in the same geographical area; previous results concerned recyclers and pro-environmental purchasers who were found to hold relatively high incomes (Tilikidou and Delistavrou, 2004 and 2005). With regard to education though, the ecological activities were found to be adopted mostly by better educated people as recyclers and pro-environmental purchasers have been previously found to be (Tilikidou and Delistavrou, 2004 and 2005). Attitudes were found to be the most influential factor of ecological activities. The Environmental Unconcern scale seems to provide better evidence of correlation with behaviours than positive attitudes did in the past (e.g.

Tilikidou, 2001, p. 151). This approach provided – to an extent – insights with relevance to which attitudes make people rather indifferent to ecological problems and environmental protection. People seem to be concerned more with other problems of their lives than the physical environment (E02), they are very reluctant to pay from their own pocket (E03); they believe that the governments should hold the responsibility of the environmental protection (E05) although they do not take into much consideration environmental criteria when choosing a party to vote for (E09) (Table 1). Add the items in parentheses in the last sentence of the text. Please save in a separate file the measures in English in the corrected form.

The results revealed that the most adopted activities are those that concern avoidance of throwing rubbish on the ground and making noise as well as donation and maintenance of used products. The most energetic activities like contribution of work and/or money to ecological groups and organizations or planting trees are almost never adopted by Greeks. These results are in line with previous findings - mainly with reference to recycling (e.g. Davies *et al.*, 2002, Tilikidou and Delistavrou, ---) which indicated that consumers are most likely to adopt pro-environmental behaviours where cost and/or inconvenience are minimized as Peattie (1995, p. 93) and Ottman (1997, p. 23) theoretically claimed earlier.

The activities that concern mainly the re-use of already used products could be somehow characterized as rather traditional, conservative habits. We would not be positive that these activities derive from other than habitual behavioural patterns (Jackson, 2005, p. 66). This might be the reason that they were found to be mostly adopted by older people who hold rather low incomes. In any case the ecological activities, conscious or not, are pro-environmental in fact, as they assist in reducing litter and over-consumption. Ecologically friendly consumer behaviour should be

understood as incorporating much more than 'buying green offerings' or recycling of newspapers. It has been many times underlined that the green markets alone may very well increase over-consumption (Kilbourne et al. 1997), while there is a need of reducing the overall consumption to reduce the overall environmental damages.

What seem to be haunting behind the over-consumption tendency of the Greek society are the materialistic values. The results of this study confirmed with no doubt that the non-purchasing or post-purchasing ecological activities are also inhibited by materialism as pro-environmental purchasing behaviour and recycling have been previously found to be (Tilikidou and Delistavrou 2004 and 2005). Also locus of control over politics seems to influence positively - at least to a certain extent - the consumers' ecological activities. The results concerning Spheres of Control are in line with previous findings by Tiliakidou and Delistavrou (---) in the same geographical area.

With reference to materialism and locus of control the results of this study expanded – as expected – previous research that concerned purchasing behaviour and recycling. Although expected, the results of this study should be understood as a basis of questioning and discussion. In all the Western communities it is apparent that more and more citizens tend to over consume even if they do not get richer in an era of generalized economic depression. At the same time people who feel interested in politics and powerful over political evolutions seem to get fewer over time. Moreover traditional behaviours like re-use and maintenance of products have been rather abandoned by younger people who have to work hard, both men and women and do not have time to worry about neat housekeeping. They probably do not have enough time or energy to worry and act seriously in favour of the environment. On the other hand it is a utopia to believe that business would ever 'promote' the reduction of over

consumption or people's involvement in politics. From this point of view the results of this study are useful to those who are in charge of the environmental protection and have the power to establish regulations; also to those who design educational programmes or pro-environmental policies and actions.

## **Conclusions**

It is concluded that Greeks are not strongly engaged in most ecological activities. Consumers who adopt more frequently these behaviours are older people, holding relatively low incomes, however well educated. The ecological activities were found to be negatively correlated to environmental unconcern and materialistic values, while positively to feelings of control over political evolutions. The more energetic, more active behaviours are closely associated with feelings of power over politicians and politics as well as with values of generosity and tenderness, while the rather traditional and conservative activities are closely associated with social responsibility and non-materialistic values.

It is well understood that ecological activities are not in the main-stream of marketing research, although they are capable of contributing to the environmental protection and the reduction of over-consumption and waste. Greece, along with its other counterparts in the E.U., has to seriously consider and acknowledge the need to motivate consumers to act pro-environmentally. Governmental, non-profit and non-governmental organizations as well as local authorities should incorporate in their strategies creative campaigns aiming at increasing people's environmental concerns, locus of control and anti-materialistic values.

The main limitation of this study is judged to be the absence of a measurement for social desirability, which is always a limitation in self-reported surveys. Both the attitudinal scores and some of the behaviours may be argued as being over-evaluated,

due to the fact that they are socially well approved. An overall look upon the results of this study verifies Jackson's (2005, p. 18) argument about the difficulty and complexity of the change towards pro-environmental behaviours. There is much to be added in our understanding of the cognitive, affective and psychographic links to pro-environmental behaviours, as both the correlation and the regression findings left much residual. Future research might examine the influence of other factors, such as environmental knowledge upon these behaviours; also their relationships to other types of pro-environmental behaviours, such as 'green buying' or recycling.

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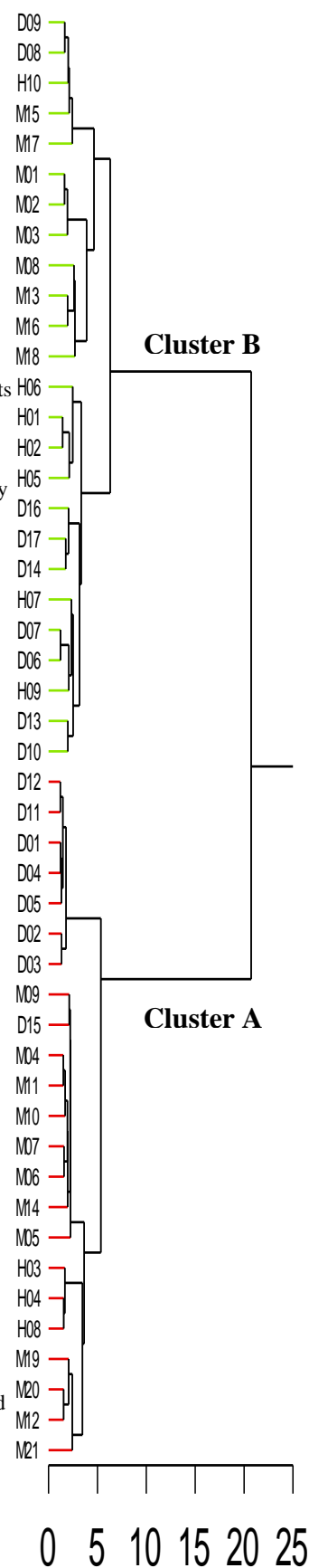
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**Table 1: Analysis of Variance of Ecological Activities across demographics**

<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>		<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<i>Sex</i>							
Men	193	54.6425	14.4143	Between Groups	1999.417	10.724	0.001
Women	203	59.1379	12.8910	Within Groups	73460.470		
Total	396	56.9470	13.8216	Total	75459.886		
<i>Age</i>							
15 – 24 years old	97	53.3402	14.8084	Between Groups	2022.077	3.598	0.014
25 – 44 years old	180	57.2889	13.8852	Within Groups	73437.810		
45 – 64 years old	85	59.0000	12.8517	Total	75459.886		
>65 years old	34	60.2941	11.0111				
Total	396	56.9470	13.8216				
<i>Education</i>							
Elementary	35	56.5714	11.4102	Between Groups	1557.173	4.140	0.017
High school	239	55.5021	13.6048	Within Groups	73902.714		
Graduate	122	59.8852	14.4955	Total	75459.886		
Total	396	56.9470	13.8216				
<i>Income</i>							
< €10,000	92	59.0000	12.8474	Between Groups	1631.687	2.914	0.034
€10,001–€20,000	149	58.4698	12.5766	Within Groups	68490.496		
€20,001–€30,000	94	53.7979	15.2171	Total	70122.183		
> €30,000	36	56.7778	15.6079				
Total	371	57.2534	13.7666				



D09 Try to make less noise (music, horn, scream).  
 D08 Do not throw rubbish on the ground  
 H10 In the long run we, the voters, are responsible for bad government on a national as well as a local level.  
 M15I get very upset if something is stolen from me, even if it has little monetary value  
 M17I don't get particularly upset when I lose things\*  
 M01I would like to be rich enough to buy anything I want  
 M02I'd be happier if I could afford to buy more things  
 M03It sometimes bothers me quite a bit that I can't afford to buy all the things I want  
 M08I do not enjoy donating things to the needy  
 M13I worry about people taking my possessions  
 M16I don't like to have anyone in my home when I'm not there  
 M18I am less likely than most people to lock things up\*  
 H06 One of the major reasons we have wars is because people don't take enough interest in politics.  
 H01 By taking an active part in political and social affairs we, the people, can control world events  
 H02 The average citizen can have an influence on government decisions  
 H05 With enough effort we can wipe out political corruption  
 D16 Donate to charity old clothes and shoes.  
 D17 Care and maintenance of consumer durables in an attempt to increase their lifespan and delay the need for replacement (i.e. clothes, furniture, electric machinery, linen).  
 D14 Reuse part of a product or waste packaging for other needs instead of throwing them in the garbage (i.e. tubs of butter or yogurt, plastic bags, rapping paper, etc.).  
 H07 There is very little we, as consumers, can do to keep the cost of living from going higher \*  
 D07 Listen to the radio or watch television programs on ecology  
 D06 Have discussions with my family and/or friends about environmental issues  
 H09 I prefer to concentrate my energy on other things rather than on solving the world's problems \*  
 D13 Drive at less speed to reduce the emissions of the car  
 D10 Use public transportation instead of my car for reasons of reducing pollution  
 D12 Voluntarily run to help in cases of fire or flood  
 D11 Take part in planting trees  
 D01 Take part into cleaning shore, parks, yards etc  
 D04 Voluntarily work for ecological groups and organizations  
 D05 Participate in media discussion related to environmental issues (phone, write)  
 D02 Buy ecological magazines and/or other printed material  
 D03 Contribute money to ecological groups and organizations  
 M09 I don't like to lend things, even to good friends  
 D15 Sell second-hand products, no more needed, instead of throwing them away (i.e. books, clothes, etc.).  
 M04 People place too much emphasis on material things \*  
 M11 I enjoy having people I like stay in my home\*  
 M10 When friends do better than me in competition it usually makes me feel happy for them\*  
 M07 I enjoy sharing what I have\*  
 M06 I enjoy donating things for charity\*  
 M14 I don't mind giving rides to those who don't have a car\*  
 M05 It's really true that money can buy happiness  
 H03 It is difficult for people to have much control over the things politicians do in office \*  
 H04 This world is run by the few people in power and there is not much the little guy can do about it \*  
 H08 When I look at it carefully I realize it is impossible to have any really important influence over what politicians do \*  
 M19 If I have to choose between buying something for myself versus for someone I love, I would prefer buying for myself  
 M20 I am bothered when I see people who buy anything they want  
 M12 When friends have things I cannot afford it bothers me  
 M21 There are certain people I would like to trade places with



**Figure 1: Hierarchical clustering dendrogram**

