

Tilikidou, I., and Delistavrou, A. (2005). Recycled Paper Products: Are there any consumers to buy them? Πρακτικά του 4<sup>ου</sup> Διεθνούς Συνεδρίου 'New Horizons in Industry and Business – NHIBE 2005', Κέρκυρα 25-26/8, σ. 592-600.

## **Recycled Paper Products: Are there any consumers to buy them?**

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### **Abstract**

*Presents the examination of the factors that influence purchasing behaviour concerning recycled paper products. It was found that the relevant market has potentials, although it is still rather slow. More frequent purchasers count for the one third of the sample. Consumers who are young, highly educated and either professional or students are more likely to buy recycled paper products. They are also people who recycle, feel socially responsible and powerful over political evolutions.*

### *Keywords*

*Recycled Paper Products, Ecological Consumer Behaviour, Recycling.*

### **Introduction**

Among other socio-economic sciences, marketing 'needs and wants' to play its own role in the global effort for sustainable economic consumption (Van Dam and Apeldoorn, 1996; Peattie, 1995, p. 24). Surveys indicate that although awareness and concerns for the environment have considerably increased (Corrado and Ross, 1990; Pickett *et al.*, 1993; Shrum *et al.*, 1995; Schlegelmilch *et al.*, 1996) the relevant buying behaviour is still very limited, either in USA (Roberts, 1996; Wong *et al.*, 1996) or in Europe (Peattie, 1995, p. 154; Schlegelmilch *et al.*, 1996). The situation in Greece is more or less similar. Previous research indicated that environmentally related attitudes are considerably higher than any type of ecological behaviour (Centrum/Yankelovich, 1993; Tiliidou and Delistavrou, 2004).

However, increasing social and political pressures force business to look for alternative products, which are less harmful to the environment (Polonsky *et al.*, 1998; Straughan and Roberts, 1999). Are there any consumers willing to respond to this kind of offerings?

If ecologically related consumer research is characterized marginal in comparison to other marketing topics (Schlegelmilch *et al.*, 1996; Tilikidou and Delistavrou, 2004), research that examines a specific products' market hardly appears in the literature. On the other side marketers in business, need detailed information about their own specific products. Among other environmentally less harmful offerings, recycled paper is being used to produce two categories of consumer goods: *stationary* such as printer paper, copy paper, rapping paper, notebooks and *home products* such as toilet paper, paper towels, tissues, coffee filters etc. Research is needed to explore the potentials of the ecological products market.

This study aims to assist in a better understanding of consumer behaviour towards recycled paper products by examining the factors that influence more, describe better and can possibly predict this type of ecologically conscious behaviour.

### **Review of the literature**

With respect to the recycled paper products there is a number of papers in the literature (e.g. Nichols, 1993; Drumwright, 1994; Polonsky *et al.*, 1998) that examine purchases of recycled paper products by business executives. There has been scan research with regard to consumers' behaviour making choices for themselves and their households.

Kishino *et al.* (1999) found that consumption of recycled toilet paper was similar in Germany and Japan. With regard to quality less than 50% of the consumers think that recycled toilet paper is adequate, less than 15% are willing to buy it at the same price with the virgin toilet paper, while their purchasing criteria are 'comfort', 'inexpensiveness' and 'good for the earth'. In Greece Tilikidou (2001, p. 268) found that there were slight but noteworthy differences between the recycled paper products and the detergents in consumers' self-reported behaviours.

### **Objectives**

The literature review assisted in formulating the theoretical model to guide our research design. In brief, recycled paper products purchase is assumed to be affected by: a) specific attitudes towards these products (Martin and Simintiras, 1995), b) demographics, as being the best market segmentation tool, c) socially oriented personality variables

(Ebreo and Vining, 2001) and d) the most relevant to the issue post-purchasing behaviour, which is recycling behaviour. The following research objectives were set at an effort to fulfil the aim of this study:

- To explore the purchasing behaviour concerning the two main categories of products made by recycled paper, i.e. stationary and home products.
- To investigate the influence of specific attitudes towards recycled paper products upon the relevant purchasing behaviour.
- To describe the demographic and psychographic characteristics of purchasers of recycled paper products.
- To examine the inter-relationship between purchasing and recycling behaviours.

### **Methodology**

A survey was conducted among Thessaloniki, Greece households. For the sample size the N.S.S.G formula (3%) was used resulting in an n=420. The sampling method was a combination of the two-stage area sampling and the systematic sampling according to Tull and Hawkins (1993, p. 544) and Zikmund (1991, p. 471). A structured questionnaire was used, which contained the following multi-item variables.

*Purchasing Behaviour* was examined through 2 items asking how many times the respondent had ever bought stationary and home products respectively. These items were measured on a 7-point frequency scale from 1= Never to 7= More than 10 times.

*Attitudes towards Recycled Paper Products* was originally developed for this study. Item analysis provided 7 items (see Appendix), measured on a 7-point Likert scale, which provided a Cronbach's alpha of 0.7888.

Five demographic characteristics were included in the questionnaire, namely *gender, age, income, education and occupation*.

Two psychographic scales were selected: a) the socio-political control scale of the *Spheres of Control* (Paulhus, 1983) consisting of 10 items measured on a 7-point Likert scale (see Appendix). 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 0.7782; b) the *Doubt About Self Determination* scale (Scheussler, 1982) consisting of 14 items (see Appendix). In this study it was measured on a 7-point Likert scale. The construct measures "whether a person feels shaped by social circumstances rather than capable of shaping them, with a high score reflecting the belief that social world is unresponsive to planning

and work” (Robinson *et al.*, 1991, p. 306). The initial alpha value was 0.80, while in this study it was found to be 0.8403.

*Recycling Behaviour* was examined through 4 items (paper, aluminum cans, plastic bottles, glass) all measured on a 7-point scale asking the percentage of the whole quantity of each material - produced in the household - that consumers transfer to the recycling bins.

## Results

In the case of the stationary products, it is observed (Table 1) that 18.8% of the consumers have never made a purchase, 53.2% have purchased products of this type up to 6 times and 28.1% more than 7 times. As to the home products it is observed (Table 1) that 36.4% have never made a purchase, 47.8% up to 6 times and 15.8% more than 7 times.

|                         | n   | %     | n                          | %     |
|-------------------------|-----|-------|----------------------------|-------|
| <i>Stationary (D01)</i> |     |       | <i>Home products (D02)</i> |       |
| 0 times                 | 79  | 18.8  | 153                        | 36.4  |
| 1 to 2 times            | 88  | 21.0  | 108                        | 25.7  |
| 3 to 4 times            | 83  | 19.8  | 45                         | 10.7  |
| 5 to 6 times            | 52  | 12.4  | 48                         | 11.4  |
| 7 to 8 times            | 36  | 8.6   | 34                         | 8.1   |
| 9 to 10 times           | 32  | 7.6   | 12                         | 2.9   |
| More than 10 times      | 50  | 11.9  | 20                         | 4.8   |
| Total                   | 420 | 100.0 | 420                        | 100.0 |

**Table 1: Frequencies of Purchasing Behaviour items**

## Analysis

*ANOVA One-way*, in the case of stationary indicated statistically significant ( $p < 0.01$ ) relationships with each one of: age (15-24 years old), education (graduates) and occupation (professionals and students). In the case of the home products a statistically significant relationship ( $p < 0.05$ ) with education (high school) was found.

Pearson’s parametric correlation indicated a positive, moderate relationship between Recycled Paper Purchasing Behaviour and Attitudes ( $r = 0.306$ ,  $p < 0.001$ ). A positive, rather strong relationship was found between Purchasing Behaviour and Recycling Behaviour ( $r = 0.600$ ,  $p < 0.001$ ). The two psychographic measures also provided statistically significant relationships with Purchasing Behaviour, of a weak strength however. As expected Spheres of Control indicated a positive relationship ( $r = 0.219$ ,  $p < 0.001$ ), while Doubt about Self-Determination indicated a negative relationship ( $r = -0.192$ ,  $p < 0.001$ ).

*Multiple regression* was then applied. The analysis revealed that the interactive effect of Recycling Behaviour, Attitudes and Doubt about Self-Determination could predict Recycled Paper Purchasing Behavior better as it explains the 38% (adjusted R square) of the variance. The resulting equation is:

$$\begin{aligned} \text{Recycled Paper Purchasing Behaviour} = & \\ & \mathbf{1.587 + 0.537 \text{ Recycling Behaviour}} \\ & \mathbf{+ 0.141 \text{ Attitudes}} \\ & \mathbf{- 0.099 \text{ Doubt about Self-Determination}} \end{aligned}$$

#### *Cluster Analyses*

In an effort to better understand the subtle associations among all variables non-parametric techniques were employed.

Firstly, the behavioural variables were entered in a K-Means clustering of a two clusters solution (Table 2): the first cluster grouped  $n_1=276$  cases (65.71%) and represents *less frequent purchasers* of recycled paper products; the second one grouped  $n_2=144$  cases (34.29%) and represents *more frequent purchasers* of recycled paper products. The consumers in the second cluster scored significantly more than their counterparts in all behavioural items of both Recycled Paper Purchasing and Recycling.

In addition, hierarchical clustering was employed in an effort to gain a deeper understanding of the association among Purchasing Behaviour and all items of the other scales used. Hierarchical cluster analysis groups variables, not cases (Sudman and Blair 1998, p. 558) in relatively homogeneous groups (Malhotra 1999, p. 610). The analysis using Average Linkage (within groups) and Euclidean distance was applied in the sub-sample of the more frequent purchasers ( $n_2=144$ ) and resulted in three clusters.

| <b>Variable</b>   | <b>Cluster 1 Centers</b> | <b>Cluster 2 Centers</b> |
|---|--------------------------|--------------------------|
| B01: Recycle paper  | 2.61                     | 5.53                     |
| B02: Recycle aluminum cans  | 1.34                     | 3.01                     |
| B03: Recycle plastic bottles  | 1.10                     | 1.92                     |
| B04: Recycle glass  | 1.12                     | 2.13                     |
| D01: Buy recycled paper stationary (printer paper, notebooks, envelopes, etc.)              | 2.39                     | 5.37                     |
| D02: Buy recycled paper products for home (toilet paper, paper towels, coffee filters etc.) | 1.83                     | 3.98                     |

**Table 2: K-Means Cluster results**

It is observed (Diagram 1) that in the first cluster the item D01 appears together with the item B01. They represent the purchase of stationary and the recycling of paper. Consumers enhancing these behaviours are people who trust other people (K01), feel powerful enough to fight political corruption (H05) and also feel responsible for poor governing at both local and national level (H10). These two (D01 and B01) items are also closely associated with most of the attitudinal items. Consumers do not believe that the recycled paper products are of lower quality than the conventional products (F02, F03, F04 and F08); they would be happy to see more commercials of recycled paper products (F12).

In the second cluster the item D02 appears, which concerns the purchase of recycled paper home products. It seems that people who buy these products are influenced by their beliefs concerning an individual's responsibility and power over global (items H01 and H09), governmental (H02), and anti-war (H06) decisions and evolutions.

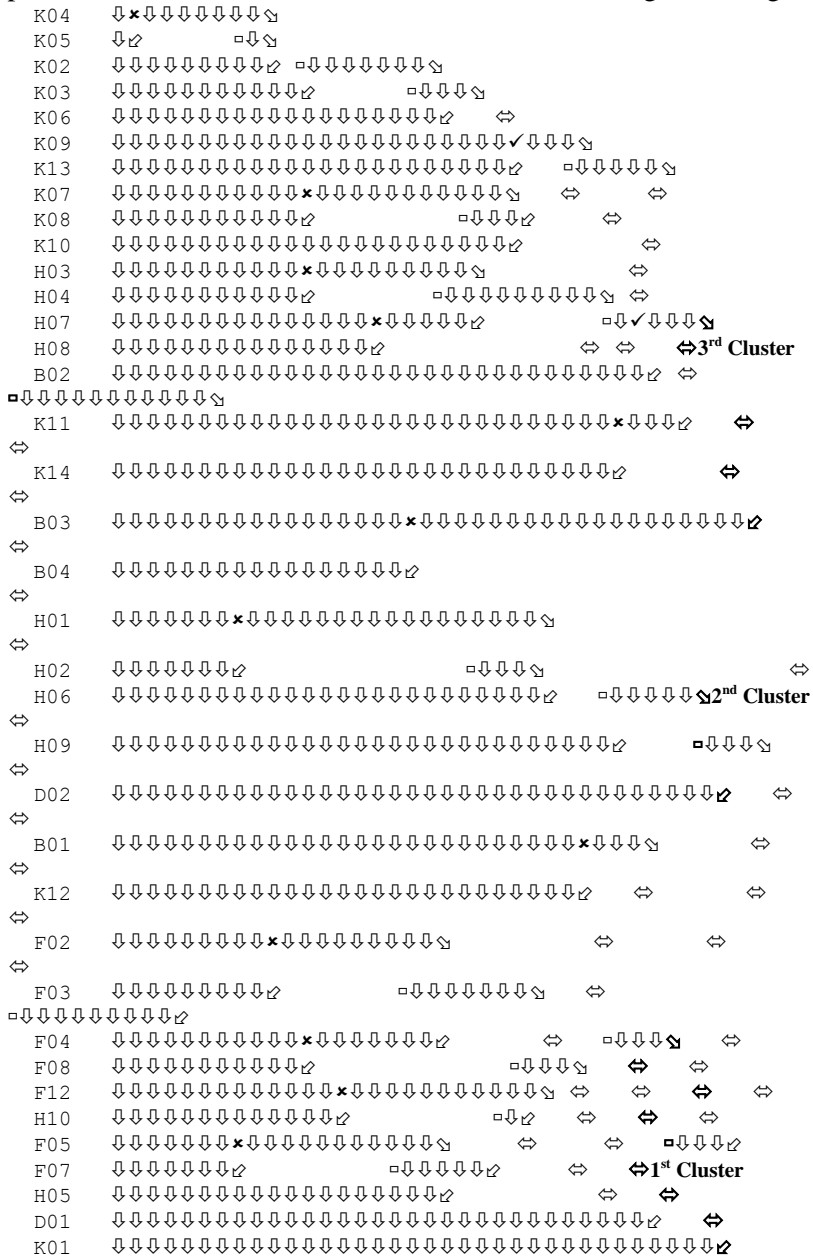
In the third cluster recycling items, those concerning aluminium, plastic bottles and glass, are grouped together. They are closely associated with items expressing optimistic beliefs about future and a decent relationship with money (items K14 and K11) as well as a sense of control over politics (items H03, H04, H07 and H08).

### **Conclusions and Implications**

It may be concluded that the market of recycled paper products, which might contribute to the environmental protection is still rather low in Greece. Consumers, who buy these products, cannot be characterised as really frequent purchasers. They can be characterised as relatively more frequent purchasers than their counterparts are. They are people young, educated, mostly students and professionals who are used in recycling, who do not think that recycled paper products are of lower quality and also people who feel socially responsible and powerful over political evolutions. They are influenced by their positive perceptions about their own ability to affect and control the national and global socio-political evolutions. Neither they believe that the social world is unresponsive to planning and work, nor that themselves are shaped by social circumstances rather than capable of shaping them.

Paper companies should acknowledge the opportunity to produce and promote recycled paper products. They can start by targeting more efficiently the most frequent purchasers. They should place printed advertisements nearby recycling bins and also incorporate in their media messages the idea of recyclers saving trees. They should build creative campaigns to make these products familiar to consumers

aiming at increasing their positive attitudes towards recycled paper. They should also incorporate in these campaigns messages attractive to people who feel psychologically powerful to press control over socio-political evolutions. Marketers, interested to target ecologically



conscious consumers segments have to study carefully the relevant

research results in order to understand that consumers will not make a purchase driven by their ecological concern only. They need ecological products that can be easily found in shops, are competitive to the conventional choices in terms of appearance, price or quality and are properly pushed by an adequate promotional mix.

There is much left to be further understood in reference to ecological buying. For example it is still not clear if professionals buy stationary for their households or for their jobs. The attitudinal scale needs further improvement; examination of a social desirability effect is required.

In addition, future research might focus on several other products' markets such as organics, detergents etc.

### **Appendix**

**Attitudes towards Recycled Paper Products** F02\*: Recycled paper products are less long lasting than the regular products. F03\*: Recycled paper products are of low quality in comparison to the conventional products. F04\*: Recycled paper products are not as elegant and impressive as the other products. F05: All paper products should be made of recycled paper. F07: All of us should buy products of recycled paper even if they are more expensive, less beautiful, less long lasting. F08: Packaging made of recycled paper is aesthetically attractive. F12: I would like to see recycled paper products advertisements.

**Spheres of Control** (Paulhus, 1983) 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. 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. H05: With enough effort we can wipe out political corruption. H06: One of the major reasons we have wars is because people don't take enough interest in politics. H07\*: There is very little we, as consumers, can do to keep the cost of living from going higher. H08\*: When I look at it carefully I realize it is impossible to have any really important influence over what politicians do. H09\*: I prefer to concentrate my energy on other things rather than on solving the world's problems. H10: In the long run we, the voters, are responsible for bad government on a national as well as a local level.

**Doubt about Self Determination** (Scheussler, 1982) K01: There are few people in this world you can trust, when you get right down to it. K02: What happens in life is largely a matter of chance. K03: If the odds are against you, it's impossible to come out on top. K04: I have little influence over the things that happen to me. K05: I sometimes



feel that I have little control over the direction my life is taking. K06: Nowadays a person has to live pretty much for today and let tomorrow take care of itself. K07: I've had more than my share of troubles. K08: For me, one day is no different from another. K09: The world is too complicated for me to understand. K10: I regret having missed so many chances in the past. K11: It's unfair to bring children into the world with the way things look for the future. K12: The future is too uncertain for a person to plan ahead. K13: I find it difficult to be optimistic about anything nowadays. K14: There are no right or wrong ways to make money, only easy and hard.

\*Reverse coded items

## REFERENCES

- [1] Centrum/Yankelovich (1993). Environment and Ecological Products. What Do the Consumers Believe? *Scientific Marketing*, January, pp. 64-67 (in Greek).
- [2] Corrado, M., and Ross, M. (1990). Green Issues in Britain and the Value of Green Research Data. *ESOMAR ANNUAL CONGRESS 1990: Environmental Issues in the 90's*, September, vol. 43, pp. 347-369.
- [3] Drumwright, M. E. (1994). Socially Responsible Organizational Buying: Environmental Concern as a Non Economic Buying Criterion. *Journal of Marketing*, July, vol. 58, pp. 1-19.
- [4] Ebreo, A. and Vining, J. (2001), "How Similar Are Recycling and Waste Reduction? Future Orientation and Reasons for Reducing Waste as Predictors of Self-Reported Behavior", *Environment and Behavior*, vol. 33, no 3, 424 – 448.
- [5] Kishino, H., Hanyu, K., Yamashita, M. and Hayashi, C. (1999). Recycling and Consumption in Germany and Japan: A case of Toilet Paper. *Resources, Conservation and Recycling*, vol. 26, 3-4 June, pp. 189-215.
- [6] Malhotra, N. K. (1999). *Marketing Research: An Applied Orientation*. Third edition, New Jersey, Englewood Cliffs, Prentice Hall, Inc.
- [7] Martin, B., and Simintiras, A. C. (1995). The Impact of Green Product Lines on the Environment: Does What They Know Affect How They Feel? *Marketing Intelligence & Planning*, vol. 13, no 4, pp. 16-23.
- [8] Nichols, M. (1993). The Green Office: Plastic Wood and Grainy Paper. *Harvard Business Review*, vol. 71, no 4, p. 9.
- [9] Paulhus, D. (1983). Sphere-specific Measures of Perceived Control, *Journal of Personality and Social Psychology*, vol. 44, pp 1253-1265. In Robinson, J. P., Shaver, D. R., and Wrightsman, L. S. (1991). *Measures of Personality and Social Psychological Attitudes*. Academic Press.

- [10] Peattie, K. (1995). *Environmental Marketing Management*. London, Pitman Publishing.
- [11] Pickett, G. M., Kangun, N., and Grove, S. J. (1993). Is There a General Conserving Consumer? A Public Policy Concern. *Journal of Public Policy & Marketing*, Fall, vol. 12, no 2, pp. 234-243.
- [12] Polonsky, M. J., Brooks, H., Henry, P. and Schweizer, C. (1998). An Exploratory Examination of Environmentally Responsible Rebuy Purchases in Large Australian Organizations. *Journal of Business and Industrial Marketing*, vol.13, no 1, pp. 54-69.
- [13] Roberts, J. A. (1996). Green Consumers in the 1990s: Profile and Implications for Advertising. *Journal of Business Research*, vol. 36, pp. 217-231.
- [14] Robinson, J. P., Shaver, D. R., and Wrightsman, L. S. (1991). *Measures of Personality and Social Psychological Attitudes*. Academic Press.
- [15] Scheussler, K. (1982). Measuring Social Life Feelings, San Francisco: Jossey-Bass. In Robinson, J. P., Shaver, D. R., and Wrightsman, L. S. (1991). *Measures of Personality and Social Psychological Attitudes*. Academic Press.
- [16] Schlegelmilch, B. B., Bohlen, G. M., and Diamantopoulos, A. (1996). The Link Between Green Purchasing Decisions and Measures of Environmental Consciousness. *European Journal of Marketing*, vol. 30, no 5, pp. 35-55.
- [17] Shrum, L. J., Lowrey, T. M., and McCarty, J. A. (1995). Applying Social and Traditional Marketing Principles to the Reduction of Household Waste. *American Behavioral Scientist*, vol. 38, no 4, pp. 646-657.
- [18] Straughan, R. D., and Roberts, J. A. (1999). Environmental Segmentation Alternatives: A Look At Green Consumer Behavior In The New Millennium. *Journal of Consumer Marketing*, vol. 16, no 6, pp. 558-575.
- [19] Sudman, S., and Blair, E. (1998). *Marketing Research: A Problem Solving Approach*. New York, McGraw-Hill, Inc.
- [20] Tilikidou, I. and Delistavrou, A. (2001). Utilization of Selected Demographics and Psychographics in Recycling Behavior Understanding: A Focus on Materialism, *International Greener Management Journal*, vol. 34, Summer, pp. 75-93.
- [21] Tilikidou, I. and Zotos, Y. (1999). Ecological Consumer Behaviour: Review and Suggestions for Future Research, *MEDIT*, vol. 10, no 1, pp. 14-21.
- [22] Tilikidou, I (2001). *Ecologically Conscious Consumer Behaviour in Thessaloniki, Greece*. Unpublished doctoral dissertation. University of Sunderland, U.K.

- [23] Tilikidou, I. and Delistavrou, A. (2004). The Influence of the Materialistic Values on Consumers' Pro-Environmental Post-Purchase Behavior. In: Cron, W.L. and Low, G.S. (Eds.) *Marketing Theory and Applications, Proceedings of the 2004 American Marketing Association Winter Educators' Conference*, vol. 15, Chicago IL., A.M.A., pp. 42-49.
- [24] Troy, L. C. (1994). Consumer Environmental Consciousness: A Conceptual Framework and Exploratory Investigation. In: Cravens, D. W., and Dickson, P.R. (Eds.), *Enhancing Knowledge Development in Marketing, Proceedings of the 1993 American Marketing Association's Summer Educator's Conference*, Chicago IL., A.M.A., pp. 106-113.
- [25] Tull, D. S., and Hawkins, D. I. (1993), *Marketing Research*. Sixth edition, New York, McMillan.
- [26] Van Dam, Y. K., and Apeldoorn, A. C. (1996). Sustainable Marketing. *Journal of Macromarketing*, Fall, pp. 45-56.
- [27] Wong, V., Turner, W., and Stoneman, P. (1996). Marketing Strategies and Market Prospects for Environmentally-Friendly Consumer Products. *British Journal of Management*, vol. 7, pp. 263-281.
- [28] Zikmund, W. G. (1991). *Exploring Marketing Research*. Fourth edition, Orlando, The Dryden Press.