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Segmentation of Green Product Buyers Based on Their Personal Values and Consumption Values

SEDA YILDIRIM

Department of International Trade and Logistics
Recep Tayyip Erdoğan University
Fındıklı School of Applied Sciences, Aksu mahallesi,
Prof. Dr. Hulusi Acar caddesi, 53700,
Fındıklı/RİZE, Turkey
Email: sedayil1@gmail.com

BURCU CANDAN

Department of Business Administration
Kocaeli University
Umuttepe Yerleşkesi
41380, Kocaeli, Turkey
Email: burcucandan@hotmail.com

ABSTRACT

In heterogeneous markets, one of the many consumer groups is that of green product buyers. With rising ethical values, the green market is assuming its place in a general growth trend. Given this, it is important to determine the profile of green product buyers. This study aims to find out whether there are sub-markets for green product buyers, based on their personal values and consumption values, and to determine a detailed profile for these buyers. Both personal values and consumption values are basic factors guiding consumer behaviour and affecting consumption preferences. The data was collected, through surveys in Turkey, from green consumers who were members of the TEMA (the Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats) council. The result of our clustering analysis indicates that green product buyers could be segmented into sub-groups according to their personal values and consumption values.

KEYWORDS

Sustainable consumption, ethical consumption, green market segmentation, personal values, consumption values.

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INTRODUCTION

It is clear that people have become more sensitive to the natural environment, and ethical consumption behaviour has become more widespread since ethical values and judgments have become more conspicuous (Barnett et al., 2011). Prior studies focused on environmental values to explain ethical consumption, but most studies have extended their research areas from environmentally-conscious to ethical lifestyles, where 'ethical consumption' includes every kind of ethical behaviour and judgement in consumption (Tallontire et al., 2001). Ethical consumption doesn't only include buying green products; it also includes ethical judgments about the production process: for instance, that products should not be tested on animals, that there shouldn't be any child workers, or that working conditions shouldn't be inhumane (Uusitalo and Oksanen, 2004). Accordingly, it can be said that sustainable consumption is one part of ethical consumption behaviour (Başgöze and Tektaş, 2012). All of humanity is responsible for the rise of global warming, water pollution, air pollution and other poor conditions in our environment (Schultz et al., 2005). As a result of their harming the environment through consumption, consumers began to change their usual behaviour, towards more sensitive consumption (Kalafatis et al., 1999).

This new consumption trend is called 'sustainable consumption': people nowadays are looking for green products, to harm the environment as little, or protect natural resources as much as they can. Most consumers have some ethical values in their buying behaviour (Burke et al., 1993). Consumers who remain close to ethical principles should be carefully investigated, because businesses can't produce the right products for them unless they analyse their specific needs and wants (Bray et al., 2011). People's decisions and behaviour are driven by the values they hold, and when people try to make a decision, they usually think via their feelings rather than the facts (Common Cause, 2010: 9). Research indicates that consumers who place more importance upon protecting nature and the environment also show different kinds of consumption behaviour (Grunert and Juhl, 1995; Karp, 1996; Schultz and Zelezny, 1999; Dietz et al., 2002). Personal values are considered to be the leading motive behind human behaviour (Kluckhohn, 1951) and the most important indicator of human identity (see Rovira et al., 2012: 217). Personal values are one of the most significant factors used to categorise and determine the consumer's type in the green market.

On the other hand, the 'consumption values theory' is a contemporary model that explains consumers' buying preferences, based upon functional, social, emotional, conditional and epistemic value-dimensions (Candan and Yıldırım, 2013). The consumption values theory was used in many studies to determine the consumer's preference, and this theory has shown its reliability and validity (Sheth et al., 1991b; Pope, 1998; Long and Schiffman, 2000;

Albaum et al., 2002; Xiao and Kim, 2009; Park and Rabolt, 2009; Candan et al., 2013). Green products which have some different attributes, such as being less harmful for health and the environment, being recyclable or energy-saving, are preferred by consumers who want these kinds of attributes. It is thought that the consumption values model can determine expectations for green products, and find out the most wanted attribute or benefit for green products. That's why this study investigated whether green product buyers could be divided into sub-segments according to the relevant personal and consumption values. As a result, it was ascertained that green product buyers could indeed be segmented into more specific sub-groups, based on their personal values and their consumption values. This study provides a new perspective upon green market segmentation, and helps green product producers to understand the specific needs and values of green product buyers.

LITERATURE REVIEW

Sustainable Consumption and Green Market Segmentation

Ethical values make people more responsible for environmental and social problems (Barnett et al., 2011). With rising environmental awareness, green buying behaviour and sustainable consumption behaviour have become important topics (Barr and Gilg, 2006). The Norwegian Ministry of Environment (1994) has defined sustainable consumption and production as:

> [the] usage of products which respond to basic needs and bring a better quality of life while minimizing the usage of natural resources and toxic materials as well as emissions of waste and pollutants over the lifecycle of products so as not to jeopardize the needs of future generations. (Ottawa, 2011: 1)

Early studies about sustainable consumption took place in the 1970s to 1980s, and in this period, there were difficulties for researchers: the market had few green products and sustainable consumption was not as common as nowadays. These troubles limited the content of studies to examining decreases in and reduced levels of consumption (see Follows and Jobber, 2000: 724).

It can be said that the concept of the green product has only recently settled in our discourse. The products of sustainable consumption are usually known as 'green products' or 'environmentally-friendly products'. Ottman (1993) defines a green product as 'being less harmful for the environment'. Elkington and Makeower (1990) determined the characteristics of green products which were most fundamental for a clear definition, and remarked that green products should not be harmful for people, animals or the environment during the process of their production or consumption. In addition, they said that green products should not use an excess of energy, and should not leave too much waste. Consumers with environmental concerns try to buy this kind of product

in order to cause less harm to the environment (Straughan and Roberts, 1999) and they generally decrease their purchasing quantities (Minton and Rose, 1997). Young et al. (2010) determined that green product buyers had strong environmentalist values, and they were experienced buyers of green products. The OECD (2008) pointed out that countries should take care to ensure sustainable production and consumption, to aid sustainable development. Sustainable consumption behaviour forces companies to produce green products, and to be much more careful in producing products environmentally (Thøgersen and Ölander, 2002; Schultz et al., 2005; Seyfang, 2006; Young et al., 2010).

In this context, businesses should develop new creative green products for their markets, and help consumers to consume more sustainably (World Business Council for Sustainable Development, 2013). Many favourite brands began to adapt their brand image into a more green or environmentally-friendly form. For example, Hewlett-Packard (HP) began to use recyclable products in 1981 and implemented recycling processes in 1987. Volvo began to use green messages in its promotions to Japanese consumers. Nike established the 'Nike Environmental Movement Team' in 1983 and began to recycle old sneakers (Dünya (World) E-Journal, 2012). Nike still continues this sustainable production, and supports sustainable consumption. Businesses which want a place in the competitive green market, and seek to support sustainable development, should know the needs and wants of green consumers. Thus market segmentation will be a good strategic tool to help businesses determine the specific and homogeneous markets and sub-markets of their green consumers. Smith (1956) determined that segmentation was based on market demand, and led to rational and directed marketing efforts. Armstrong and Kotler (2005) define market segmentation as 'dividing a market into specific and homogeneous groups of buyers'. When marketers want to use segmentation for their marketing strategy, first they determine some basic factors for dividing a market into sub-markets. These factors can be demographic, geographic, psychological, behavioural and so on (Gunter and Furnham, 1992). In general, 'psychographic segmentation' can more comprehensively describe sub-groups for markets: this is the division of consumers into sub-groups according to their lifestyles, personalities or social classes (Kotler et al., 2006). Every segmentation strategy, however, has some weaknesses; and so marketers can use several segmentation criteria together to determine sub-markets most efficiently (Walsh et al., 2001).

There are lots of studies that show some characteristics of green consumers and present some segmentations of the green market. Many of them show that green consumers bear high costs in buying green products (Straughan and Roberts, 1999; Laroche et al., 2001; Diamantopoulos et al., 2003; Gilg et al., 2005; Lin and Huang, 2012), and that most green consumers are highly educated (Van Liere and Dunlap, 1980; Roberts, 1996). Some studies present gender as an important factor in indicating sustainable consumption behaviour. For example, Shrum et al. (1995) found out that gender differences had

an effect upon the purchase levels of green products, and on the effort given to purchase them. Lee (2009) found out that there were significant differences between female and male green buying behaviour. Mostafa (2007) determined that there was a gender difference with respect to environmental concern and behaviour in Egypt. In addition, some studies investigated the relationship between values and environmental concern or sustainable consumption behaviour (Grunert and Juhl, 1995; Stern et al., 1999; Schultz and Zelezny, 1999; Follows and Jobber, 2000; Dietz et al., 2002; Thøgersen and Ölander, 2002; Schultz et al., 2005; Şener and Hazer, 2008). It has been proved that personal values can be used to separate consumers into green and non-green. For example, green consumers have higher scores in universalism values and benevolence values than non-green consumers; on the other hand, non-green consumers have higher scores in power values and achievement values than green consumers (Schultz and Zelezny, 1999; Schultz et al., 2005; Şener and Hazer, 2008; Karalar and Kiracı, 2010). Lin and Huang (2012) found out that there were significant relationships between environmental concern and consumption values regarding green products. In this context, the present study used two basic elements to determine sub-markets for green product buyers. These elements were personal values and consumption values. With the help of these values, green product buyers can be divided into significant sub-groups, and it is thought that a comprehensive profile study has been made for green product buyers and the green market.

Personal values

Personal values determine the crucial facts of people's lives. Every person has so many kinds of value that nobody can have the exact same values as another (Vinson et al., 1977; Schwartz and Bislky, 1987; Gibson and Schwartz, 1998; Schwartz, 1994; Bardi and Schwartz, 2003). Kluckhohn and Strodtbeck (1961) propounded that it would be too hard to understand people's demands, needs, goals (and so on) without taking account of their values systems. Schwartz (1994) explains personal values as basic aims that guide people's lives and their behaviour. In addition to that, he propounded that personal values brought out personal tendencies, and they had an effect on every kind of behaviour. Zeithaml (1988) stated that consumers evaluated products' attributes differently because of their different personal values. It has been observed in recent studies that sustainable consumption behaviour is mostly affected by personal feelings and values (Leiserowitz et al., 2006), and empirical research has determined the significant relationships between sustainable consumption behaviour and personal values (Dunlap et al., 1983; McCarty and Shrum, 1993; Grunert and Juhl, 1995; Karp, 1996; Schultz and Zelezny, 1999; Stern and Dietz, 1994; Stern et al., 1995, 1999; Thøgersen and Grunert-Beckmann, 1997).

There are many scales and methods for analysing a consumer's personal values. The 'Schwartz value survey' is one of the most useful scales in the existing literature (Vinson et al., 1977): it was tested in over sixty countries and implemented in over two hundred samples (Schwartz, 1992). With high numbers of test results, the Schwartz value survey is a convenient scale for almost every nation and every kind of behaviour (Roccas et al., 2002). There are ten basic values in Schwartz's value survey: power, achievement, hedonism, stimulation, self-direction, universalism, traditionalism, benevolence, obedience and security. These ten values are studied in two basic vertical value-dimensions which are called 'self-transcendence – self-enhancement' and 'openness to change – conservation' (Kuşdil and Şimşek, 2008). Power, achievement, hedonism, universalism and benevolence belong to the dimension of 'self-transcendence – self-enhancement'; stimulation, self-direction, tradition and conformity belong to the dimension of 'openness to change – conservation'. The value of hedonism applies to both value dimensions (Bardi and Schwartz, 2003).

According to Schwartz and Bardi (2001), elements such as social status, prestige, image, control, wealth and dominance over people generally show the presence of the *power* value. The elements of personal success, ambition, hard work and the desire to be best generally show the presence of the *achievement* value. The *hedonism* value can be expressed in elements such as pleasure, enjoyment and fun. The *stimulation* value comes from people's desire to lead exciting and varied lives. The desire to be independent, and other elements such as freedom and creativity, express the *self-direction* value. Elements such as social justice, equality, peace and support for a greener world show the presence of the *universalism* value. The *benevolence* value comes from people's good, honest, forgiving, loyal and responsible traits. The *tradition* value comprises people's desire to live within a traditional culture or religion. Elements such as politeness, obedience, self-discipline and the honouring of elders show the presence of the *conformity* value. Finally, the *security* value comes from people's desire to lead a safe and clean life (Schwartz and Bardi, 2001).

Most research about green buying behaviour used the Schwartz value survey, and found significant relationships between consumers' personal values and their buying behaviour regarding green products. In particular, research showed that the dimension of 'self-transcendence – self-enhancement' in the Schwartz value survey conspicuously showed the values of green consumers (Grunert and Juhl, 1995; Karp, 1996; Schultz and Zelezny, 1999; Dietz et al., 2002; Leiserowitz et al., 2006). Prior studies showed that the universalism value had the most positive and powerful effect on sustainable consumption in general; it was also seen that the benevolence value had a positive relationship with sustainable consumption (Mueller et al., 2011; Dreezens et al., 2005; Krystallis and Chryssohoidis, 2005). On the other hand, the power value had the most negative effect on sustainable consumption: Schultz et al. (2005)

found that this value had a negative relationship with sustainable consumption behaviour. Stern and Dietz (1994) also found a negative relationship between the power value and sustainable consumption behaviour. Schultz and Zelezny (1999) determined that the universalism value had a significant and positive relationship with environmentalist behaviour, and they also found that the power value had a negative effect on such behaviour. Şener and Hazer (2007) found that women who displayed environmentalist behaviour gave the universalism and benevolence values much more importance than the power, achievement and hedonism values.

Consumption values

The 'consumption values theory' developed by Sheth et al. (1991a) is one of the most recent models developed to explain consumers' buying decisions. The consumption values theory suggests that consumers could be divided into sub-groups, and that consumption values constitute one of the most important motives influencing buying behaviour (Long and Schiffman, 2000). There are five basic consumption value dimensions in consumption values theory: these are classified as 'functional, emotional, social, conditional and epistemic' values (Sheth et al., 1991a).

Functional value: Traditionally, the functional value has the primary effect on consumers' buying behaviour. Sheth, Newman and Gross (1991a) determine 'functional value' as a utility provided by a product's physical attributes and performance. For green products, price is known to be an important factor, because non-green buyers refuse to pay higher costs for them and green buyers can go along with these higher costs (Straughan and Roberts, 1999; Laroche et al., 2001; Diamantopoulos et al., 2003; Gilg et al., 2005; Lin and Huang, 2012). In this study, the cost-benefits and cost-quality are variables within the survey form, aiming to determine the price effect on green products in terms of functional value. In addition, some statements (variables) about the green products' performance and the attributes of the products' ingredients were used to determine functional value. This is because green buyers prefer green products on account of their environmentally-friendly ingredients, packaging and energy-saving capabilities (Straughan and Roberts,1999).

Social value: Utility which is perceived as being related to one or more social groups is thought to be a social value. This social value can appear positively or negatively, and can concern demographic, socio-economic and cultural groups (Sheth et al., 1991a). Myers and Bishop determined that 'occupation, education, income, prestige, status or values' can all be indicators of social class (1971: 8). The symbolic value of brands or products can also provide them with their social value (Sheth et al., 1991a). Grubb and Grathwohl (see 1967: 24) asserted that products provided consumers with an opportunity to express

themselves. Reference groups or opinion leaders can also influence consumers' buying behaviour: when consumers buy new products, they usually follow these groups or individuals (Yang et al., 2007). Accordingly, some statements (variables) such as having status, prestige or a role-model in a society were used to determine the social value involved in the usage of green products.

Emotional value: Emotional value is a utility provided by emotional reactions after the use of a given brand or product. Emotional values can appear positively or negatively in consumption preferences (Sheth et al., 1991a). In this context, feelings that appear when buying or using a product or brand show the emotional-value dimension. Using green products generally makes people feel good, and shows good or right behaviour towards the environment (Lin and Huang, 2012). In this context, some statements (variables) concerning feelings about green products were used to determine the emotional-value dimension of these products.

Epistemic value: Consumers' behaviour in switching brands, seeking variety or trying new products are all related to explorative motives (Sheth et al., 1991a). Hirschman (1980) determined that innovative consumers were both variety-seeking and explorative. Sheth et al. (1991b) defined epistemic value as a utility provided from the innovative attributes of products and their satisfaction of needs for change (see Sheth et al., 1991b: 162). One of the most significant attributes of green products is their being innovative and creative, and in particular, green products provide new solutions for protecting the environment and supporting sustainable consumption (Elkington and Makeower, 1990; Ottman, 1993). This study evaluated innovative and creative attributes, and the benefits of green products, through some of the statements recorded.

Conditional value: The definition of conditional factors in consumer behaviour generally includes time, place and environment (Hansen, 1972; Belk, 1974). The effect of conditional factors was investigated in the field of psychology, and then, as of the 1970s, this topic entered into the field of marketing. Sheth et al. (1991a) define conditional value as a utility provided by a special condition or perception during the situation of consumption. Green products have a great conditional value (Lin and Huang, 2012) because environmental changes and conditions make people aware of sustainable consumption. To determine the conditional value, some statements about changes in the environment were used.

RESEARCH METHODOLOGY

The population of this study comprised people who were members of TEMA (the Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats) in Turkey. TEMA has nearly 450,000 members,

with ages ranging from seven to seventy, across the whole of Turkey (TEMA, 2013). The simple random sampling method was used to determine samples, and random numbers in Excel were used to choose samples. With stated random numbers in Excel, five hundred members were chosen to be reached for survey implementation. In one month, four hundred and fifty-three members were reached for the survey, and after collection of the survey forms, four hundred and twenty were found to be suitable for analysis. In survey form, the 'Schwartz values survey' was used to determine participants' personal values. With regard to prior studies of sustainable consumption and personal values, the 'self-transcendence – self-development' dimension was considered appropriate for use, and the values of power, achievement, hedonism, universalism and benevolence were selected for the scale. The *power* value was evaluated by the elements of social status, prestige, wealth, dignity and respectability. The *achievement* value included the elements of success, ambition, authority and being best in all endeavours (job, school, sports and so on). The *hedonism* value included the elements of fun, enjoyment and pleasure: this value measured the importance of living a pleasurable life. The *universalism* value included the elements of protecting the environment (not causing it harm, living well with it), having a peaceful and calm world, being open-minded and showing justice for all in society. Finally, the *benevolence* value included elements of kindness, responsibility, sensibility, honesty, moderation, goodness and helpfulness. Following the 'Schwartz value survey' scale (1992), participants evaluated their personal values along a scale from -1 to 7.

In the second part of the survey, there was a scale of consumption values which was developed by Sheth et al. (1991a). In this part, there were five basic consumption values suitable as a basic scale, and thirty-six variables in total. Sheth et al. (1991a) developed 'functional, emotional, social, conditional and epistemic' values to determine consumption preferences. The original 'consumption value scale' was adapted for green products in this study. Before variables were set, a focus-group interview was held with eight members of TEMA: the results of this interview, as well as prior research (Sheth et al., 1991a; Yaşin, 2007; Xiao and Kim, 2009; Lin and Huang, 2012; Turel et al., 2010), helped in setting the correct variables for this study.

The price, quality and performance of green products were used to determine their functional value. The variables for social value were developed according to the social benefits (belonging to a specific social class, having symbolic value) gained by buying the green product. Emotions and feelings that appeared when buying green products, such as feeling like a good person, were used to determine the emotional value of the green product. The variables of environmental conditions, such as air pollution, global warming and the changes in nature's balance, were used to determine the conditional-value dimension of the green product. Lastly, the epistemic-value dimension focused upon the green product's innovative features and creative characteristics.

Participants evaluated these consumption values in a five-point Likert scale ranging from 'strongly disagree (1)' to 'strongly agree (5)'. In the final part, there were questions about participants' demographic status, such as their gender, marital status, occupation, education, income and age.

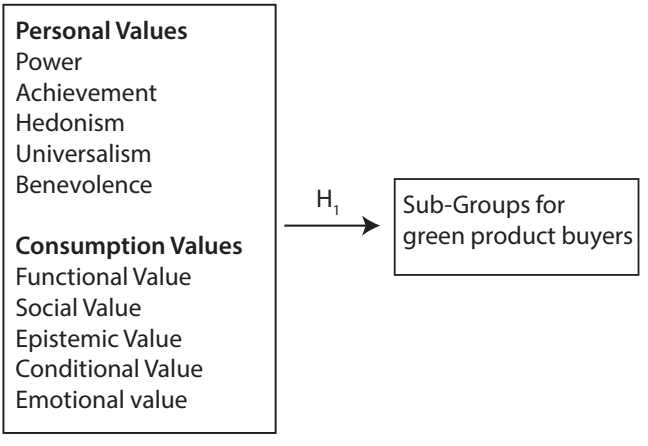

Figure 1. Research Model

This study sought to determine whether there are significant sub-groups for green product buyers based upon their personal values and consumption values. As seen in Figure 1, this study had one alternative hypothesis:

H_1: There are significant sub-groups for green product buyers based on their personal values and consumption values.

RESULTS

It was observed that most participants were elderly and female. 54 per cent of participants were single and 46 per cent of them were married. Most participants (68.3 per cent) had a university degree. It was seen that most participants were at a high level of income. It was also seen that most participants (34 per cent) were teachers or academicians, and 30 per cent of them were university students. Prior studies showed that green consumers generally have a high income, and that they are highly-educated people (Van Liere and Dunlap, 1980; Roberts, 1996; Straughan and Roberts, 1999; Laroche et al., 2001; Diamantopoulos et al., 2003; Gilg et al., 2005; Lin and Huang, 2012). As was therefore expected, in this study most green product buyers were highly-educated and were also at a high level of income.

Reliability and validity

Before the clustering analysis, it was determined whether the scales of personal values and consumption values were reliable. Cronbach's alpha values were presented in Table 1, and these results showed that the scales had enough reliability to continue hypothesis tests. Cronbach's alpha value was determined as 0.69 for personal values and 0.70 for consumption values.

Table 1: Reliability Tests

	Cronbach's alpha
Personal Values	0,69
Power	0,66
Achievement	0,83
Benevolence	0,92
Hedonism	0,69
Universalism	0,95
Consumption Values	0,70
Functional values	0,66
Social values	0,77
Emotional values	0,64
Epistemic values	0,55
Conditional values	0,77

The KMO-Barlett test was used to determine the validity of the personal-values and consumption-values scales. It was discovered that the personal-value scale's KMO-value was 0.781, and the KMO-value of the consumption-values scale was 0.812. With regard to the results-validity factor, analysis was implemented. As a result of factor analysis, twenty-four variables and five basic factors were acquired in the personal-values scale. In the consumption-value scale, eleven variables were eliminated and twenty-five variables were classified under five basic factors, according to their factor loadings.

The results of clustering analysis and segmentation of green product buyers

Table 2: Number of Cases in Each Cluster

Clusters	Number of cases	Percent of Cluster
1	181	47,0
2	239	53,0
Total	420	100,0

As seen in Table 2, there were one hundred and eighty-one respondents in the first cluster, and two hundred and thirty-nine respondents in the second cluster. Variance analysis was then carried out to test whether or not two clusters

obtained by hierarchic clustering analysis differed from each other statistically in terms of personal-values and consumption-values variables.

Table 3: The Results of ANOVA Analysis

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Power	84,293	1	,275	418	307,007	,000
Universalism	17,987	1	,170	418	105,886	,000
Hedonism	19,298	1	,285	418	67,696	,000
Achievement	117,780	1	,263	418	447,364	,000
Benevolence	80,953	1	,142	418	569,229	,000
Functional	7,323	1	,126	418	57,996	,000
Social	3,219	1	,109	418	29,473	,000
Emotional	,121	1	,241	418	,500	,480
Conditional	1,245	1	,077	418	16,210	,000
Epistemic	6,545	1	,123	418	53,296	,000

All of the factors (except 'emotional value') that were addressed for personal values and consumption values were significant at the 0.05 significance level. These factors included statistically-significant differences in terms of two clusters obtained by cluster analysis. Based on this result, the research hypothesis H_1 was supported. In other words, there were significant differences between the personal values and consumption values of green product buyers, such that they could be segmented into different sub-groups.

Table 4: Final Cluster Centres

	Cluster	
	1	2
Power	2,25	1,35
Universalism	6,27	6,69
Hedonism	2,41	1,98
Achievement	2,32	1,26
Benevolence	6,01	6,90
Functional	3,69	3,95
Social	3,20	3,02
Emotional	4,53	4,56
Conditional	4,43	4,32
Epistemic	4,78	4,53

In Table 4, the cluster distribution of personal values and consumption values were presented. The meaning and contents of these clusters are explained below:

Cluster 1: Self-developers – Social environmentalists. Participants of this cluster paid more attention to the values of power, success and hedonism among their other personal values. Being successful and rich in life, having social power and position or prestige in society were very important elements for these people. Moreover, these people were found to pay more attention to getting pleasure, and leading an enjoyable life. As was appropriate with Schwartz's personal-values list, participants who reached a high level in the power, achievement and hedonism values were grouped under 'self-enhancement'. On the other hand, these consumers paid more attention to the social, conditional and epistemic values when they bought environmentally-friendly products. Participants in this cluster paid more attention to being models for their family and friends, and to their images in society. People who liked having power, wealth and prestige in society also preferred products or brands for their social benefits. For the first cluster, the epistemic value of green products also had a great importance. This result is consistent with a high level of the hedonism value, because participants who liked having an enjoyable and pleasurable life also bought products or brands for their creative, innovative and epistemic values.

Cluster 2: Self-challengers – Functional environmentalists. Participants of this cluster paid more attention to the values of universalism and benevolence. With due regard to Schwartz's personal-value list, this cluster were called 'self-challengers', as people who had high points in the values of universalism and benevolence were categorised by their self-transcendence. The second cluster placed great importance upon protecting the environment, living in peace with nature, being sensitive to social problems, being helpful and being honest. Moreover, participants in this cluster cared mostly about functional and emotional values in environmentally-friendly products. Accordingly, the participants in the second cluster cared more about product contents, packaging, manufacturing technology, materials, price-quality relations and so on. Emotional value and functional value were very important for these participants because they had the values of universalism and benevolence as their personal values. They bought green products to protect the environment, and they tried to buy the most functional ones to be 'real' green buyers. To feel like 'real' environmentalists, and to be good people, participants in the second cluster looked out for green products or brands in the market.

Table 5: Wilks' Lambda Value

Function Test	Wilks' Lambda	Chi-square	df	Sig(p)
1	,731	129,789	6	,000

A discriminant analysis was carried out to determine whether or not the respondents differed from each other in terms of the clusters into which they

were categorised, based upon their demographic features and their personal and consumption values. Along with this, Wilks' Lambda value was found significant in terms of demographic features (see Table 5). With regard to Wilks' Lambda value, it can be said that the demographics of participants were just as significantly separated into two different clusters. Self-developers and social environmentalists were observed to be mostly young and single university students; on the other side, self-challengers and functional environmentalists were observed to be mostly older and highly-educated professionals.

CONCLUSION AND IMPLICATIONS

'Sustainable consumption' or 'green consumption' behaviour has been growing recently, and the green market has been improving with regard to changing needs and demands. Determining green needs is harder than determining other needs, because the green consumer is a relatively new term, and more complicated for businesses (Wagner, 2003). Many factors such as lifestyles, personal values, demographics, psychographics (and so on) are used to analyse consumer behaviour and determine homogeneous sub-groups in the market. Forecasting complicated consumer behaviour is so hard that one factor can't be enough to determine the homogeneous sub-groups within a green market. In this context, the present study used personal values and consumption values to determine significant sub-groups for green product buyers.

From four hundred and twenty samples, it was observed that participants were divided into two basic sub-groups, as 'self-developers/social environmentalists' and 'self-challengers/functional environmentalists'. Participants who had high points for the values of power, achievement and hedonism were termed 'self-developers' according to the Schwartz value-list. These people preferred green products in order to derive social and epistemic benefits in general; this is why they were termed 'social environmentalists' at the same time. Self-developers and social environmentalists were determined to be mostly young and single university students. Young people are seen as innovative and creative, and their buying behaviour is generally more changeable than that of their elders (Mason and Bellenger, 1973; Goldsmith and Stith, 1991). In this case, the present study shows that young environmentalist consumers mostly prefer green products for their epistemic value. Innovative buying behaviour comes from opinion-leaders in the society: these people are also social and self-confident (Mowen, 1993). Green product buyers' sociable and innovative attitudes were grouped together in the self-developers and social environmentalists observed in this study.

Green product buyers of the second cluster were called 'self-challengers/functional environmentalists' because they had high points for the values of universalism and benevolence. Also they preferred green products for their

functional benefits. Self-challengers and functional environmentalists were generally high-educated professionals. Sheth et al. (1991a) determined that functional value is related to benefits, needs and attributes. Accordingly, people who care about nature and the environment will prefer green products that include attributes such as recyclable materials, packaging and energy-saving characteristics. These people concur with high prices (Laroche et al., 2001) but they want to find real and functional green products in the market (Lin and Huang, 2012).

This study suggests that businesses could develop and improve their green products based on the expectations of green consumers. Older and more highly-educated people place greater importance upon universalism and benevolence than younger people. That's why businesses should make new plans and strategies for self-challengers and functional environmentalists, and why, in addition, green products should be designed first and foremost for these 'real' green consumers. On the other hand, businesses could arrange some green activities, such as festivals, events or conferences in universities, to reach young environmentalist consumers. Maybe green brands could select green celebrities as spokespeople, in order to influence young environmentalist consumers.

LIMITATIONS

This study included, as its sample, only members of TEMA who were eighteen years old or older, and from the west of Turkey: we therefore can't generalise results for all TEMA members. It is possible that the implementation of this survey in different green organisations will produce different results. There are also some limitations in the usage of scales in this study, because we included only five personal values from Schwartz's value survey to determine green personal values. Future studies could include all of the personal values from Schwartz's value survey, or determine different segmentations using new values. The scale for consumption values was developed from a focus-group interview and prior studies; accordingly, there is a new consumption-values scale for green products, to which different variables might be added, or from which some of the present variables might be eliminated, in future studies. Further studies could thus be carried out in different countries and different green organisations, with differently-developed scales of personal values and consumption values, to produce new green sub-markets.

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