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Determinants that Influence the Consumption of Eco – Friendly Products in Greece

By

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ABSTRACT

Most prior research on green consumption focuses on standard models which are used to investigate the factors that influence such type of consumption. Based on data collected from 564 consumers, the present study combines two distinct theories in order to collectively examine the impact of under-examined factors on consumer's green purchase behaviour. The proposed extended model across a set of 68 variables, related to objective and behavioural characteristics provides clear evidence that variables such as environmental concern, perceived behavioural control, subjective norms, behavioural intention, functional and conditional values, significantly affect the purchase of eco-friendly products. The results are consistent with previous researches and provide insightful implications for manufacturers, marketers and researchers and suggest directions for future research.

Keywords

Eco-friendly products, Eco-friendly consumption, Green consumer behaviour, Theory of Planned Behaviour, Extended Theory of Planned Behaviour, Theory of Consumption Values

Dedication Note

*To my dear husband, Vasilis, who has been a constant source of support and encouragement.
A very special thank you for your commitment, love, dedication, patience and compromise that you
showed unconditionally in order for me to achieve my goal.*

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Preface

This thesis investigates the determinants which influence consumers to engage in a green purchase. In an increasingly globalised marketplace it is important to know what motivates such a type of consumption. A storm of information regarding the environmental deterioration and the worsening climatic conditions has a repercussion on individuals' daily behaviour. Hence, it is the right time for consumer research to examine the motivational factors of green behaviours and profile the green consumers.

The evidence suggests that a multivariate conceptualisation of the customers' values shows a more predictive ability on the customers' purchase intention than a dimensional one. The theory of Planned Behaviour and the Theory of Consumption Values use multi-attribute models which consider not only attitudes towards a specific behaviour but also the influence of social norms and behavioural control.

This thesis tries to shed light on the components which constitute a friendlier behaviour towards the environment and by extension to an eco-friendly purchase.

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1.Introduction

Green purchasing has become more popular among households than it was a few years ago. The formation of environmental pressure groups, the strict legislation, the media coverage of the ecological disaster and people's perception about environmental problems were the principal components that contributed to this direction (Butler, 1990; McIntosh, 1991; Tapon & Leighton, 1991; Charter, 1992; Wagner, 1997).

People, comprehending the menacing conditions are being sensitised and this can be proved by their environmental attitudes, preferences and purchases (Sarigöllü, 2009). In the USA and Western Europe an effort is being made by the consumers for a more environmental responsible lifestyle (Stone, Barnes & Montgomery, 1995). Starch (1996) identified that 15% of the world's population is included in green consumers. According to the Organisation for Economic Cooperation and Development, the proportion of environmentally conscious consumers has risen significantly (OECD, 2002a), nevertheless, individuals' preference for eco-friendly products does not reflect a consistent purchase behaviour (Smith, 1999; Dowie, 1995; Dunlap, Van Liere, Mertig & Jones, 2000) since the ecologically market share is maintained in marginal levels (Rex & Baumann 2007; Peattie & Crane 2006).

In fact, Grunert (1995), reported that 40% of environmental deterioration is a result of household consumption. During the last years, the global consumption of products and services has enormously increased (Chen & Chai, 2010). It is obvious that people underestimate the repercussion that their purchasing decisions have on the environment, since they do not take into account the environmental factor (Mohr, Webb & Harris, 2001). The transition from consumption to over-consumption or nonsustainable consumption and the over-exploitation of resources due to the tremendous economic growth of the last decades, has led to an inestimable environmental disaster.

At this time, people claim that they are concerned or very concerned over environmental problems (Diekmann & Franzen, 1999; Dunlap & Mertig, 1995). Eco-friendly products and services became desirable by ecological conscious consumers (Kalafatis, Pollard, East, & Tsogas 1999; Laroche, Bergeron, Guido, 2001; Roberts, 1996) therefore, the concern over the environmental depletion and the sustainable development is the epicentre of research by academicians, practitioners and industries (Rex & Baumann, 2007; Liu & Wang, 2010; Biswas & Roy, 2015).

Green technology has already been adopted by companies, which aim to optimise their profit margins, enhancing their competitive position by reducing costs and waste. The offer in the marketplace of products and processes that guarantee ecological and economic sustainability helps companies to maintain technically and commercially competitive, without jeopardising their long-term prosperity (Berger, 2011). For example, General Electric introduced compact fluorescent light bulbs in 2005, capturing less than 5% of the market. However, two years later GE captured 20% of the market, increasing its revenues and its competitive position due to the

focus on eco-friendly products (Gomis, Parra, Hoffman, McNulty, 2011). In this direction, car manufacturers such as Honda and Toyota have introduced hybrid cars in order to reduce fuel consumption and emissions (Baltas, Saridakis, 2013).

A plethora of studies have been conducted in order to identify the determinants that influence eco-friendly consumption (e.g. Zhao, Gao, Wu, Wang, Zhu, 2013; Lin, Huang 2011; Mostafa, 2009; Joshi, Rahman, 2015; Lai, 1991; Arvola, 2008; Leonidou, Leonidou, Kvasova, 2010), however the lack of certainty in previous outcomes, makes further research imperative. In practice, consumers encounter a variety of barriers to buying green, including lack of awareness, negative perceptions, distrust, high prices, low availability (Bonini & Oppenheim, 2008; Neff. 2010)

1.1 Environmentalism Chronological Standpoint

In the late 19th century, when the natural environment degradation began to become visible, some people, comprehending the seriousness of the problem, have been led to the formation of several groups demanding a cleaner environment. World War I (1914 – 1918) prevented the development of environmental concern, thus the environmental movement gave way to scientific era, making all the ideas of conservation seem anachronistic. The technological improvements such as chemicals for better agricultural productivity, huge machines and the development of plastic, intensified the environmental crisis.

During the Great Depression (1930 – 1936), conservation became again a trend, however, World War II (1945 – 1965) did not allow its consolidation. In 1962, the American biologist Rachel Carson published the *Silent Spring*. The author presented environmental and health implications due to the irrational use of pesticides and DDT spray (Dichlorodiphenyltrichloroethane). The book raised great public awareness, succeeding in forming new environmental organisations and reinforcing the older ones. As a result, in 1970, the Environmental Protection Agency was created by Congress and numerous laws about the environmental and wildlife protection were enacted (Nebel & Wright, 1998).

Around that time, the *United Tasmania Group* and the *Values Party* in New Zealand were the first political parties that were founded, in order to press for environmental issues (Milder, undated). In Europe, in 1972, the *Popular Movement for the Environment* in Switzerland, was the first green party that was founded, and in Britain, in 1973, the *People* was the first national green party which eventually turned into the *Ecology Party*, and later the *Green Party*. Generally, in the 20th century, environmentalism continued to develop and become more popular.

Environmentalism is considered to be an ideology and social movement with respect to environmental protection and health improvement, which advocates the lawful preservation, restoration and/or improvement of the environment. Environmentalism makes a great effort to set an equilibrium point between growing concern about a range of environmental issues and socio-economic issues in order to achieve a proper degree of sustainability. Follows and Jobber (1999), argued that environmentalism

except for an activist ideology, constitutes a 'market competition' which affects consumer purchase behaviour.

Hitherto, despite the fact that environmentalism has won many battles, it is still losing the war. Issues such as population growth, increasing consumption per person, degradation of soils, global atmospheric changes and loss of biodiversity are of particular concern (Nebel & Wright, 1998).

1.2 Sustainable Development

A system or a process is *sustainable* when it can be continued indefinitely without depleting any of the material or energy resources required to keep it running. In the first place the term was used in order to provide the idea of *sustainable yields* in human attempt such as forestry and fisheries. For example, under the condition that fishing is achieved without exceeding the capacity of population to grow and replace itself, the practice can be continued sine die, otherwise, the process is characterised as nonsustainable (Nebel & Wright, 1998).

Due to the fact that natural resources are necessary for the human, he has the responsibility to manage them in such a way to ensure a long term use (Dryzek, 1997), however, economic growth is strongly coherent with increased productivity (Douthwaite, 1992). It is considered that economic prosperity and human robustness are identical concepts to global commerce and industry (Reid, 1995; Moffat, 1996; Sachs, 1999). Daly (1993) regarding that natural resources are finite, evaluated the 'sustainable growth' as 'thought – stopping' and contradictory.

Sustainable development, as a term, came to the foreground in 1987 when the World Commission on Environment and Development published the report *Our Common Future*. They supported that sustainable development 'meets the needs of the present without compromising the ability of future generations to meet their own needs' (Nebel & Wright, 1998; WCED, 1987, p. 43). In a sense, the Commission relied on the ambiguity of this meaning (Wackernagel & Rees, 1996), approaching the issue in a demagogic way (Middleton, O'Keefe, Moyo, 1993, p. 16) in the direction of benefiting from the acceptance of the large majority of people.

Consequently, sustainable development set a continuous debate between socio-economics and environmentalism over their relation. One version, in order to settle down this conflict, was the change of words to sustainability (O'Connor, 1994) or sustainable livelihoods (Workshop on Urban Sustainability, 2000). In this way, further controversies can be avoided and the focal point of sustainable development can be achieved, that is the human needs and the environment, as the World Commission on Environment and Development (1987) claimed.

The Kyoto Protocol (1997) and Montreal Convention (1999) implemented a number of rules on developed countries, for reducing gas emissions. Manufacturers and marketers have responded to treaties and to people's environmental awareness and

concern introducing eco-friendly products (Dagnoli, 1991). Despite the environmental revolution, it is remarkable that consumers' purchase behaviours and attitudes have not totally changed (Larson, 1990).

1.3 Eco-friendly Products

Eco-friendly (or green) products can have a beneficial impact on water and soil quality, reduce energy uses and the amount of pollution or waste by using breakthrough concepts and accelerated application of cutting edge green technology and products (Ameta S., Ameta R., 2013). The special attributes of eco-friendly products could change consumers' purchase utilities and purchase decisions (Lancaster, 1996), or feelings of good conscience and responsibility (Bähr, Botschen, Laberenz, Naspetti, Thelen, Zanolli, 2004; Baker, Thompson, Engelken, 2004; Makatouni, 2002). Some examples of these products are detergents containing ingredients that are biodegradable, A+++ household appliances, energy-efficient light bulbs, rechargeable batteries, hybrid cars, post-consumer plastics or paper.

It has been argued that the positive aspect of eco-friendly products, concerning the environmental qualities they offer, is difficult to be presented to customers (Meyer, 2001), as a consequence their popularity is low. For this reason, governmental and nongovernmental organisations perceived this problem, contributed to its solution introducing eco-labelling (Rex, Baumann, 2007). There are various types of eco-labels, such as EU energy label for household appliances and automobiles and ISO which is classified into three types, according to the aspects they satisfy.

Concerning the purchase of eco-friendly products, individuals become price and quality sensitive (Mandese, 1991). D'Souza (2007) found evidence that on behalf of consumers, a compromise on quality is more possible than on price.

1.4 Theoretical Background

Aiming at exploring green consumers' profile and explaining the factors that influence green consumption, prior foci of investigation focus on socio demographics (D'Souza, Taghian, Lamb, Peretiako, 2007; Diamantopoulos, Schlegelmilch, Sinkovics, Bohlen, 2003; Straughan, Roberts, 1996; Sanjay, Gurmeet, 2006), environmental consciousness (Lin & Chang 2012; Schlegelmilch, Bohlen, Diamantopoulos, 1996), environmental concern (Ahmad & Thyagaraj 2015; Hartmann, Apaolaza-Ibanez, 2012; Killbourne & Pickett 2008; Van Liere, Dunlap 1981; Bohlen, Schlegelmilch, Diamantopoulos, 1993), eco labelling (Brécard, Boubaker, Lucas, Perraudeau, Salladarré, 2009; Rex & Baumann 2006, D' Souza 2006), willingness to pay more for eco-friendly products (Biswas, Mousumi, 2016; Laroche, Bergeron, Forleo, 2001), attitudes towards eco-friendly products and intentions (Magnusson, Arvola, Koivisto Hursti, Aberg, Sjoden, 2001; Arvola, Vassallo, Dean, Lampila, Saba, Lahteenmaki, Shepherd, 2008) and in general, on the factors that can influence the eco-friendly consumption (Lin, Huang 2011; Paul, Modi, Patel, 2016; Zhu, Li, Geng, 2013; Mei, Ling, Piew, 2012).

The generally poor correlation between attitudinal measures such as intentions and actual behaviour has often been attributed to inadequate measurement. In this study, an alternative approach to perceiving consumers' mindset and actual behaviour is provided by two mixed theories in order to comprehend the framework for understanding the determinants of such behaviours. These are the Theory of Planned Behaviour (TPB) (Ajzen 1991; 2005; 2012) with the intervention of the Theory of Consumption Values (TCV) (Sheth, Newman, Gross, 1991). The examination of exogenous and endogenous variables in an integrative manner can shed light to the way a model behaves that combines both types of indicators, in an effort to bridge the gap between intention to purchase eco-friendly products and actual purchasing behaviour.

The rest of the paper is organised as follows: in the following section, a review of the relevant literature on purchase behaviour is provided. Research method and data collection are presented in section 3 and then in section 4 the data analysis and results are presented in a step-by-step approach. Finally, in section 5 a conclusion summarises the thesis providing important implications for manufacturers, marketers and researchers and suggests directions for future research.

2.Literature Review

This section presents a review of the theory of planned behaviour, its extension and the theory of consumption values and develops hypotheses. Attempts to explain the gap between consumers' reported attitudes and their actual buying behaviour have been the main focus in the green faction of consumer psychology. A model often used in this line of research is Ajzen's Theory of Planned Behaviour. According to this theory, intentions towards an act are determined by attitudes, subjective norms and perceived control. Intention in turn, may lead to certain behaviour.

However, there are interfering factors that can prevent the eco-friendly purchasing process and they can contribute to not being accomplished. There are factors that have significant direct effect on behaviour and are not mediated by intention (Barr, Gigl, 2007). Factors, that identified as influencing this process, include price (D'Souza, Taghian, Lamb, Peretiako, 2007), quality (Lin, Huang, 2011), the combination of familiarity with the known products and incoming information regarding the new products (Lai, 1991), and conditional situations (Lai, 1991). Our study differs from the previous ones, to the extent that in order to avoid these obstacles it takes them into consideration with the application of the theory of consumption values in order to explore them. Simultaneous consideration of these two theories will provide better predictions of actual eco-friendly purchasing than an individual theory.

The TPB variables are treated as background factors that may have an effect on intentions and behaviour indirectly by influencing one or more of the TPB predictors. The theory of consumption values is able to increase the general understanding of the factors that intervene in consumer choice behaviour, regarding eco-friendly products. Furthermore, the TCV is able to enlighten the determinants which motivate specific choices, controlling values such as functional and conditional.

Afterwards the Research Model and Hypotheses Development are exhaustively presented.

2.1 The Theory of Planned Behaviour (TPB)

The *theory of planned behaviour* deals with behaviours over which people have incomplete volitional control. In the TPB, the immediate antecedent of a particular behaviour is the individual's *intention* to perform a given behaviour rather than in relation to actual performance. Intention is assumed to capture the motivational factors that influence a behaviour (Ajzen 1991, Ajzen 2015). This intention is determined by three types of considerations or beliefs, which are summarised as follows:

- i. a favourable or unfavourable evaluation of the behaviour (*attitude toward the behaviour*)
- ii. perceived social pressure to perform or not perform the behaviour (*subjective norm*)
- iii. self-efficacy in relation to the behaviour (*perceived behavioural control*)

In combination, attitude toward the behaviour, subjective norm and perception of behavioural control lead to the formation of a behavioural intention (Ajzen, 2008; Armitage & Conner, 2001). As a general rule, the more favourable the attitude and subjective norm with respect to engaging in the behaviour, and the greater the perceived behavioural control, the stronger should be the individual's intention to perform the behaviour in question (Ajzen 2008, 1991). Concluding, intentions are the leaders of the performed behaviour to the extent that people are in fact capable of doing so, i.e. to the extent that they have actual control over the behaviour. Actual control is thus expected to moderate the effect of intention on the behaviour.

In general, expectancy value models are popular for their ability to predict and comprehend human behaviour (Eagly, Chaiken, 1993). TPB is the most popular theoretical framework to analyse determinants and antecedents of purchase intention. Support has been provided for the efficacy of the TPB components to explain a wide range of intentions and behaviours (Armitage & Conner, 2001) including those relating to the environment (Terry, Hogg, White, 1999; Bamberg, Schmidt, 2001; Bamberg, Ajzen, Schmidt, 2003). TPB has been recurrently criticised for insufficient consideration of affective aspects of attitude because it is based on cognitive beliefs (Bagozzi, 1988; Zanna, Rempel, 1988) and for insufficiently capturing of normative or moral influences on behaviour (Armitage, Conner, 2001; Gorsuch, Ortberg, 1983; Sparks, Shepherd, 2002). However, inherently in the TPB, the measures of attitudes and subjective norms are assumed as mediators of all moral or normative influences on behaviour.

2.2 The Extended Theory of Planned Behaviour

Despite the fact that TPB has received much empirical support by many investigators, the literature review motivates us to add variables for better comprehension of eco-friendly purchase intention. Previous studies have used the TPB model to examine the determinants of eco-friendly purchasing, without factoring in the impacts of environmental concern, environmental knowledge, past behaviour and recycling behaviour together, which are equally important factors influencing green purchase behaviour (Paul, Modi, Patel, 2016; Yadav, Pathak, 2016; Diamantopoulos, Schlegelmilch, Sinkovics, Bohlen, 2003; Scott, Vigar-Ellis, 2014). In the present study, in an attempt to receive more accurate results, these four factors are incorporated into TPB model as antecedents of intention to buy eco-friendly products and as antecedents of actual purchase behaviour as well .

2.3 Attitude towards the Environment (AttitudeE)

Ajzen (2015) defined *behavioural beliefs* which are referred to the perceived positive or negative consequences of performing the behaviour and the subjective values or evaluations of these consequences. Aggregative, behavioural beliefs that are readily accessible in memory lead to the formation of a positive or negative *attitude to the behaviour*. Bagozzi (1992) has suggested that attitudes may first be translated into desires (e.g. 'I want to perform behaviour x'), which is gradually being transformed into intentions to act, in other words direct action.

Attitude towards the behaviour mirrors individual's spherical (positive or negative) assessment in order to perform the behaviour of interest. Practically, the more favourable the attitude towards the behaviour, the stronger should be the individual's intention to perform it (Armitage, Conner, 2001). On the contrary, a positive attitude towards eco-friendly products does not always imply an actual purchase (Magnusson, Arvola, Koivisto Hursti, Aberg, Sjoden, 2001) because its strength is determined by its antecedents (beliefs) (Armitage, Conner, 2001), which in turn are associated by normative beliefs, the SN's antecedents. This study proposes the following hypothesis:

H1: Positive attitudes towards the environment will positively influence intention to buy eco-friendly products

2.4 Subjective Norms (SN)

Subjective norms are considered to be perceived as expectations and behaviours of important referent individuals or groups, combined with the person's motivation to comply with the referents in question. These considerations are termed as *normative beliefs* and the normative beliefs that are readily accessible in memory combine to produce a perceived social pressure or *subjective norm* with respect to performing the behaviour (Ajzen 2015).

The individual's desire to act in a widely accepted way, incites a behaviour which is controlled by subjective norms. The non-standard rules, such as social norms (pressure of what an individual should do), personal norms and moral attitudes can contribute to the individual's motivation to 'go green' due to (self) approval or self-punishment (Arvola, et al., 2008). Hyman's (1942) research on reference groups suggested that an individual's behaviour is influenced by group membership. Both Rogers (1962) and Robertson (1967) indicated that interpersonal communication and information dissemination also have an impact on consumer choice behaviour. It is suggested that environmental marketing should be based on beneficial outcomes. Therefore, marketers must focus on the way eco-friendly consumers protect the environment (Lin, Huang, 2012).

It should be mentioned that several authors did not find SN strong enough to predict intention (Shepperd, Hartwick, Warshaw, 1988; Van De Putte, 1991), as a result, SN has been removed deliberately from analyses (Sparks, Shepherd, Wieringa, & Zimmermanns, 1995). The contribution of subjective norm is less to any explanation of variance than attitudes or perceived behavioural control (Thøgersen, 1994; Armitage, Conner, 2001). Armitage & Conner (2001), claimed that the most likely explanation for poor performance of the SN component lies in its measurement: many authors use single item measures, as opposed to more reliable multi-item scales (e.g. Nunnally, 1978). This study proposes the following hypothesis:

H2: Subjective norm will positively influence the intention to purchase eco-friendly products

2.5 Perceived Behavioural Control (PBC)



Control beliefs are associated with the perceived presence of factors that can influence a person's ability to perform the behaviour. Together with the perceived power of these factors to facilitate or interfere with behavioural performance, readily accessible control beliefs produce a certain level of perceived behavioural control (or self-efficacy, Bandura 1977) in relation to the behaviour (Ajzen 2015). PBC influences both intention and behaviour (Armitage, Conner, 2001). The conceptualisation of perceived behavioural control is implanted in the theory of planned behaviour in order to investigate situations in which individuals may limit volitional control over the behaviour of interest (Ajzen, 2002). In cases of complete volitional control, PBC does not influence the relationship between intention and behaviour since their relationship is considered to be optimal (Armitage, Conner, 2001).

PBC refers to the extent that an individual perceives the absence or presence of difficulty in order to perform a specific behaviour (Ajzen, 1991, Bandura, 1977). Zeithaml (1988,p 14) has suggested that PBC can be regarded as a 'consumer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given'. She referred to this assessment as a comparison of product or service's 'get' and 'give' components.

Consumers with an internal locus of control (conceptually similar to PBC) are proved to have strong intention to expose socially responsible attitudes and behaviour (Tucker, Lewis, 1978; Henion, 1976).Webster and Frederick (1975) claimed that environmentally concerned consumers experience strong emotions when they contribute to the environmental protection, thus they consider the social impact of their purchases. Additionally, they found that PBC was the only one significant predictor among ten independent variables for all three of their dependent variables. Moreover, many investigators (Berger, Corbin, 1992; Weiner, Doescher, 1991) reported indications for the strong association of PBC and eco-friendly behaviour, consequently, PBC is expected not only to contribute to the prediction of intention to buy eco-friendly products but also to the prediction of actual purchase behaviour. This study proposes the following hypotheses:

H3: Perception of the environmental qualities of eco-friendly products has an impact on the intention to purchase them

H4: Perception of the environmental qualities of eco-friendly products has an impact on actual purchase behaviour

2.6 Past Behaviour (PastB)

'The best predictor of future behaviour is past behaviour' and for this reason, it has a discrete role in research (Ajzen, 1991; Foxall, 1997, 2005; Kumar et al, 2003; Sheeran & Abraham, 2003; Triandis, 1977; Ouellette, Wood, 1998). The addition of past behaviour can be used in order to test the sufficiency of any model designed to predict future behaviour and does not improve the prediction of later behaviour as a causal antecedent of intention (Ajzen, 1987, 1991).

Specifically, if past behaviour has a significant residual effect beyond the model predictor variables, it would suggest the presence of other factors that have not been accounted for. The only reservation that must be added is that measures of past behaviour and later behaviour may have common error variance not shared by measures of the other variables in the model. A small but possibly significant, residual effect of past behaviour is expected even when the theoretical model is in fact sufficient to predict future behaviour (Ajzen, 1991).

Some researchers argue that past behaviour is equivalent to the other independent variables, as a *substantive* predictor of subsequent behaviour due to the fact that prior behaviour reflects later behaviour regardless of attitudes, subjective norms and intentions (Bentler, Speckart, 1979; Fredricks, Dossett, 1983). According to them, the establishment of a *habit* is the outcome of the repeated performance of a behaviour (Ajzen, 1991).

Habit is a behavioural tendency which is being obvious in a stable framework and it can be repeated automatically in it, without conscious awareness (Bargh, 1994) but by stimulus cues (Triandis, 1977, 1980; Verplanken, Aarts, van Knippenberg, Moonen, 1998). 'Routinised' behaviours are regarded as habitual behavioural norms (Verplanken, Aarts, van Knippenberg, Moonen, 1998), or as semiautonomic response norms (Bargh, 1989; Ajzen, 2002) and there are tendencies to act in sequent performance under different circumstances. Provided that the actions or responses are semiautonomic, in each fold of this process some control or thought is required (Bargh, 1989).

Thøgersen (2002) reported that past behaviour in a TPB model considerably increases the level of comprehension of the subsequent behaviour and Sheeran (1999) proved that it has a significant impact on the TPB. However, past behaviour is neither considered to be a causal factor 'in its own right', nor is it a valid measure of habit, but it is used as a mirror of the determinants of the behaviour of interest (Ajzen, 1991). In this study, past behaviour is used in order to investigate the extent to which it influences the relationship between intention and actual purchase behaviour and its direct effect on actual purchase behaviour as well. This study proposes the following hypotheses:

H5: Past behaviour will positively influence purchase intention for eco-friendly products

H6: Past behaviour will positively influence actual purchase behaviour for eco-friendly products

2.7 Environmental Concern (EC)

Green colour usually represents environmentalism, environmental concern and environmentally friendly products. The word 'green' originated as a marketing term known as green washing in order to promote specific products or services. Environmental concern is considered to be a level indicator of people's awareness

regarding the environmental deterioration and the solutions that can be provided for it or an indicator of people's readiness to involve individually into a greener direction (Dunlap, Jones, 2002). Concern for the environment should be composed by a sequence of actions and not indispensably by any particular action (Weigel & Newman, 1976). Innovative technology does not have the ability to solve alone the environmental issues (Hardin, 1993, Stern, Young & Druckman, 1992). The increase of consumer's environmental concern is possible to lead to environmental sensitisation and potentially to greener environmental habits (Killbourne & Pickett, 2008). As Maloney & Ward (1973) claimed "The ecological crisis is a crisis of maladaptive behaviour". It is obvious that in order to protect the environment, individuals must completely be adapted to sustainable lifestyle choices.

Many investigators reported that environmental concern and individual's personality variables have a strong correlation (Kinneer, Taylor, Ahmed, 1974; Schwepker & Cornwell, 1991). The basic principle of environmental research is the individual's environmental concern which is a major factor that determines pro environmental behaviour (Fransson N., Gärling T., 1999) and purchase decision making (Ottman J.A., 1998; Zimmer, Stafford, Stafford, 1994) since it amplifies green purchase intention and actual behaviour (Hartmann, Apaolaza, 2012; Roberts, Bacon, 1997; Hu, Parsa, Self, 2010; Kim, Choi, (2005), Samarasinghe, Samarasinghe 2013). Based on this discussion, we propose the following hypotheses:

H7: Environmental Concern will positively influence purchase intention for eco-friendly products

H8: Environmental Concern will positively influence the purchase of eco-friendly products

2.8 Environmental Knowledge (EK)

A few would dispute that a well-informed society is the cornerstone for a better world. Uninformed or misinformed individuals usually act in such a way that they harm themselves and other members of the society (Ajzen, 2011). Knowledge contains various conceptual elements about the way that an individual collects and classifies information (Alba, Hutchinson, 1987), uses the percentage of the information for the decision making process (Brucks, 1985) and assesses the value of products or services (Murray, Schlacter, 1990).

Consumer research recognises knowledge as a characteristic that influences all phases of the decision process (Laroche, Bergeron, Forlero, 2001). Subjective knowledge influences consumer choice behaviour as a factor that determines the way an individual acts due to it (Moorman, Diehl, Brinberg, Kidwell, 2004). Yang and Kahlor (2013) proposed that individuals who obeyed the social norms are more environmentally informed having a greater knowledge database. Moreover, knowledge increases individual's belief that they have control of the situation (Kim, Yun, Lee, 2014).

However, it is still controversial whether people have the accurate information in order to produce a desirable behaviour (DiClemente 1989; Fisher J., Fisher W., 1992). Furthermore, the clarification between knowledge and amount of information is of utmost importance (Wood 1982; Kallgren & Wood 1986; Wood & Kallgren 1988), since subjective knowledge influences consumer choice behaviour as a factor that determines the way an individual acts due to it (Moorman, Diehl, Brinberg, Kidwell, 2004).

Researchers have concluded that in many cases knowledge fails to predict behaviour, specifically, Helweg-Larsen, Collins and Barry (1994), observed that the relation between knowledge and preventive behaviour is 'weak' or 'nonexistent'. Many argue that knowledge is a neither sufficient nor necessary condition for effective action, however, it is undoubtedly a prerequisite. (DiClemente 1989; Fisher J., Fisher W., 1992). Maloney and Ward (1973) reported no significant linkage between environmental knowledge and ecologically compatible behaviour. Nevertheless, Vining, Ebreo (2002) and Chan (1999) identified that knowledge has a significant impact on eco-friendly behaviour, as well as Chan and Lau (2000), who considered environmental knowledge to be the predictor of green buying intention, thus proving its link with the willingness to buy green products.

On the one hand, for the TPB, the information accuracy is not substantial. Information accuracy can be irrelevant to the decision making process, for the reason that it is neither sufficient nor necessary. On the other hand, intentions' and actions' determinants are considered to be 'subjectively held' information which associates a behaviour of interest to positive or negative outcomes, to the normative expectations of important referent individuals or groups, and to control factors that can facilitate or inhibit performance of the behaviour (Ajzen, 2011). In current research the role of knowledge is examined to the extent to which individuals have information, which may lead them to a pro environmental intention and action. As a result, we hypothesize that:

H9: Environmental knowledge will positively influence purchase intention for eco-friendly products

H10: Environmental knowledge will positively influence actual purchase of eco-friendly products

2.9 Recycling Behaviour (RB)

It is difficult to dispute that the vast majority of individuals, who have recycling habits, aims at environmental protection. Hence, it is possible for them to make an eco-friendly purchase (Thøgersen, 1994).

The value-attitude-behaviour hierarchy model (Homer & Kahle, 1988; McCarthy & Shrum, 1994) has proven its ability in explaining how personal values affect ecological attitudes on specific ecological issues (such as recycling attitudes), which in turn influence particular forms of ecological behaviour.

According to Barr and Gigl (2007), individuals that have the intention of recycling are environmentally concerned and feel morally bounded to behave in such a way that they gain satisfaction. It is remarkable that there is no strong correlation between recycling behaviour and behavioural intention. This lack of harmony originates from subjective norms, thus the recycling action is less determined by values and actual environmental concern. This study proposes the following hypothesis:

H11: Recycling behaviour will positively influence purchase intention for eco-friendly products

2.10 Behavioural Intention (BI)

Behavioural intention is a function of individual's attitude towards the behaviour, subjective norm and perceived behavioural control, which successively may lead to certain behaviour (Ajzen, Fishbein, 1970). An individual's behaviour is determined by his behavioural intentions to perform the behaviour that is under volitional control and are assumed to capture the motivational influences on behaviour. Especially, in cases of very high volitional control, behavioural intention should be the only able factor to predict the behaviour.

In literature, it is argued that an individual's attitude does not suffice to predict a behaviour but additionally the behavioural response (e.g. intention) must be taken into consideration (Ajzen, Fishbein, 1970), id est, individuals with the same attitude towards environmental deterioration, may react entirely differently to it due to the behavioural intention. Finally, behavioural intention is not considered to be an attitude's component but an important driver of consumers' attitude (Ajzen, Fishbein, 1970). This study proposes the following hypothesis:

H12: Behavioural intention will positively influence the purchasing of eco-friendly products

2.11 The Theory of Consumption Values (TCV)

The theory integrates components from various consumer behaviour models and assumes that consumer choice is a function of multiple consumption values. It explains the reasons why consumers choose to buy or not to buy a specific product, why choose one product type over another, and why choose one brand over another. Three fundamental propositions are axiomatic to the theory: i) consumer choice is a function of multiple consumption values ii) the consumption values make differential contributions to any given choice iii) the consumption values are independent.

According to the theory of consumption values, *functional value*, *social value*, *emotional value*, *epistemic value* and *conditional value*, influence consumer choice behaviour. A decision may be influenced by any or all of the five consumption values. Various disciplines (including economics, sociology, several branches of psychology, marketing and consumer behaviour) have contributed theory and research relevant to these values. Each consumption value in the theory is consistent with various

components of models advanced by Maslow (1943, 1954, 1970), Katona (1953), Katona, Strumpel, Burkhard, Zahn, Ernest (1971), Katz, Daniel (1960), and Hanna (1980).

The consistently good predictive validity of the theory has been confirmed by more than 200 applications (Sheth, Newman, Gross, 1991). In our study, the functional and conditional values have been used because it was considered that emotional, social and epistemic values are concepts similar to the theory of planned behaviour components, thus they are overlapped by environmental concern, subjective norms and perceived behavioural control – environmental knowledge, respectively.

2.12 Functional Value (FV)

Functional value is supposed to be the primary driver of consumer choice. An individual perceives utility as an alternative's capacity for functional, utilitarian, or physical performance. An alternative acquires functional value through the possession of salient functional, utilitarian, or physical attributes. Functional value is measured on a profile of choice attributes. This assumption underlies economic utility theory advanced by Marshall (1890) and Stigler (1950). An alternative's functional value may be derived from its characteristics or attributes (Ferber, 1973), such as reliability, durability and price.

In addition, since functional value has been constructed by attributes such as reliability, durability and price, it could be argued that all these functional subfactors contribute separately to perceived value (Sweeny, Soutar, 2001). For example, in case that price is too high, consumers struggle to find a balance weighting other factors in product selection and decision process. Nevertheless, research concerning eco-friendly products, indicated lack of willingness to pay more (D'Souza, Taghian, Peretiatko, 2007). This study proposes the following hypothesis:

H13: Functional value can positively influence actual purchase behaviour regarding eco-friendly products.

2.13 Conditional Value (CV)

Finally, the conditional value of an alternative is defined as the perceived utility acquired by an alternative, as the result of the specific situation or set of circumstances facing the choice maker. An alternative acquires conditional value in the presence of antecedent physical or social contingencies that enhance its functional or social value. Conditional value is measured on a profile of choice contingencies.

Sweeny and Soutar (2001) described conditional value as a specific case of other types of value and doubted that this value component is of significant importance. Lai (1991) reported that consumption influences behaviour and sales and purchases of products are frequently in response to particular situations. In many cases purchase behaviour can be affected by personal situations which have changed (Laakonsen, 1993). Situational variables refer to the circumstances surrounding individuals as they

respond to stimuli pertinent to their needs and wants (Nicholls, Roslow, Dubish, Comer, 1996). This study proposes the following hypothesis:

H14: Conditional value positively influences actual purchase behaviour regarding eco-friendly products

3. Research Method and Data Collection

This section introduces the structure of research framework and describes the processes of data collection and the analysis method. Based on the theoretical background and the literature review in Section 2, Fig. 1 depicts the research framework and the hypotheses.

3.1 Research Framework and Hypotheses

A schematic representation of the combined model is shown in Figure 1.

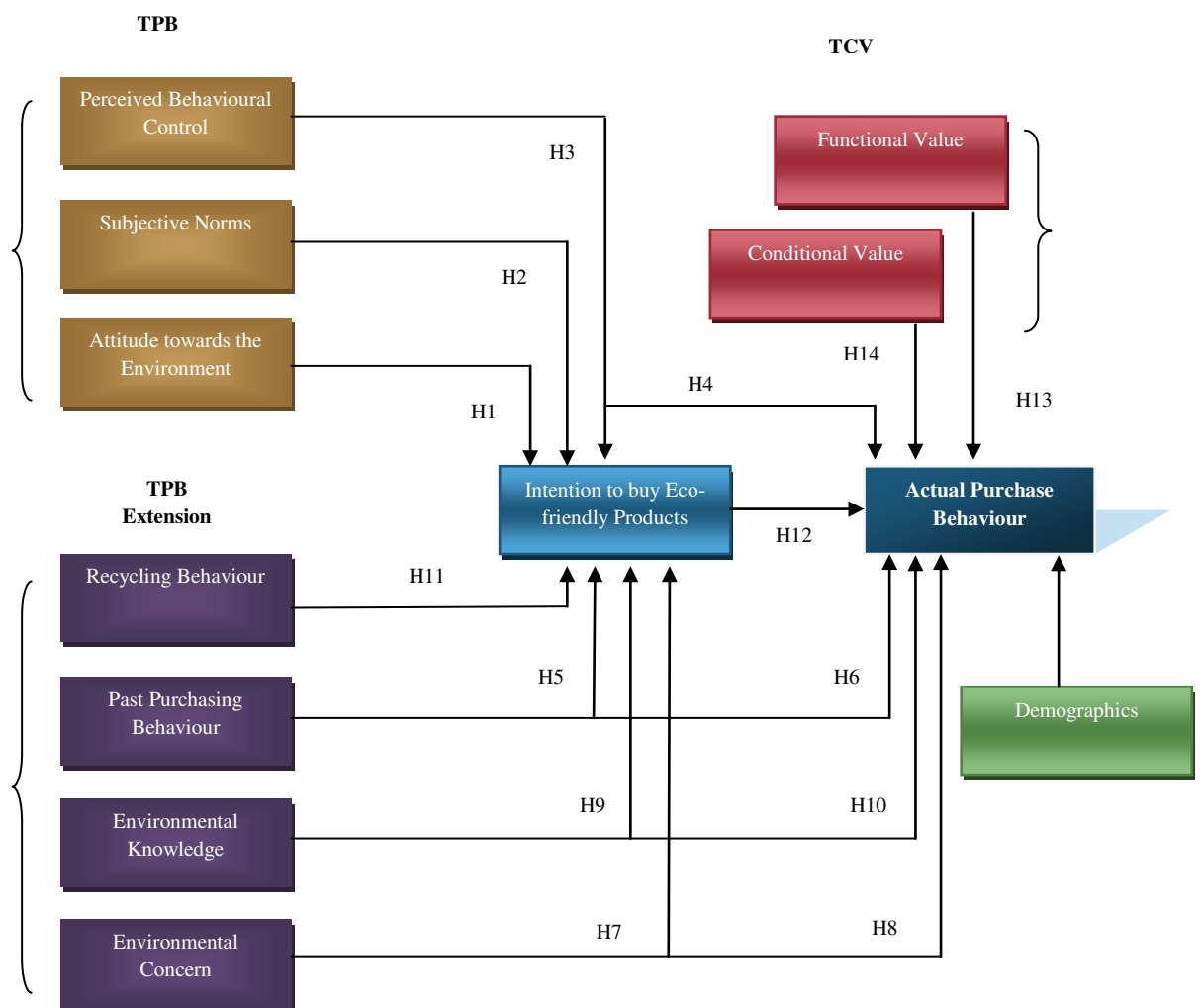


Figure 1

3.2 Questionnaire

The questionnaire, excluding personal information, is composed of 13 questions concerning environmental knowledge, 7 questions concerning recycling behavior, 3 questions concerning purchasing behaviour and 45 statements in which respondents have to denote the level of agreement. Each statement response is being measured by a five-point Likert Scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree). The subjects targeted in the study included not only green consumers but also those who may not be aware of environmental problems and eco-friendly products.

The questionnaire was written in English and translated into Greek. Prior to research conduct, the questionnaire was pilot-tested with 30 respondents in order to ensure its workability. This process highlighted a small number of ambiguous questions due to the wording, in which minor modifications have been made. In addition to this, five items were eliminated as they were to be repetitive. The final questionnaire was also pre-tested with 20 respondents in order to confirm relevance, validity and reliability. The survey questionnaire is provided in the Appendix.

<i>Variable Explanation</i>		
<i>Groups of Variables</i>		<i>Structure and operationalisation of variables</i>
EC	Environmental Concern construct	Continuous Variable
EK	Environmental Knowledge of more than 10 environmental problems	13 Dichotomous Variables (No, Yes)
RB	Recycling habits, Recycling any type of recyclable material	7 Dichotomous Variables
AttitudE	Attitude towards the environment construct	Continuous Variable
PBC	Perceived Behavioural Control construct	Continuous Variable
SN	Subjective Norms construct	Continuous Variable
PastB	Past Purchase Behaviour construct	Continuous Variable
BInt	Intention to buy eco-friendly products construct	Continuous Variable
FV	Functional Value construct	Continuous Variable
CV	Conditional Value construct	Continuous Variable
PurchB	Actual Purchase Behaviour construct	Continuous Variable
ConsInv	Consumer involvement with eco-friendly products	2 Dichotomous Variables, 1 Metric Variable
Demographics	Gender, Age, Education, Higher Education, Income, Marital Status, Children, Type of Work	1 Dichotomous Variable, 7 Metric Variables

Table 1

3.3 Sample

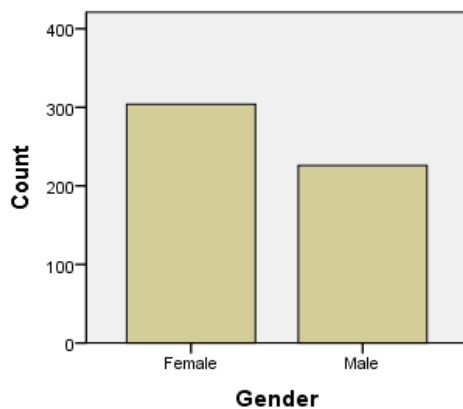
The population under consideration was consumers, who at the time of research were actively looking into buying electrical appliances or household detergents. The data collection procedure lasted two months (October and November 2017) and was carried out with personal interviews using a sample from ten of the main and most representative regions of Athens and Piraeus.

Of the sample of 564 questionnaires, 530 were valid, yielding a response rate of 93.97%. The sample size fulfils the standard confidence level of 95% with a margin error of 5%.

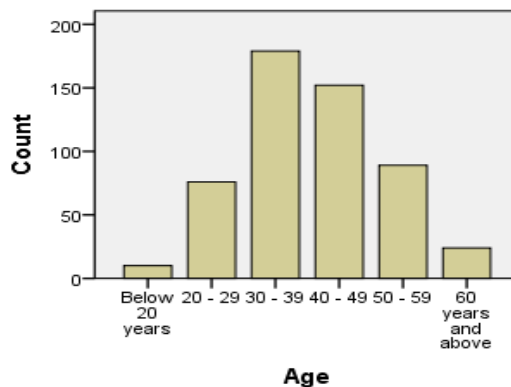
3.4 Descriptive Findings

For the statistical analysis of the questionnaire which follows, IBM SPSS 24 was selected because of its ability to extensively analyse quantitative data.

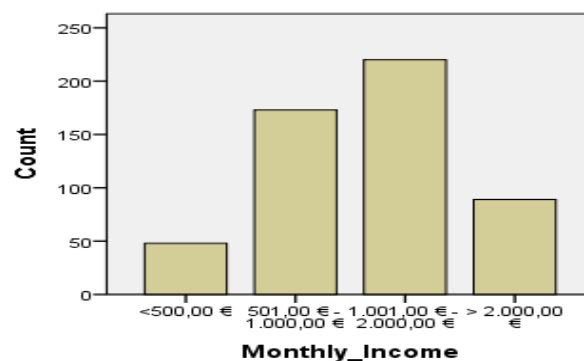
Respondents were required to be 18 years old or more to participate in the survey. The sample consisted of 530 respondents of which 57.4% were female and the remaining 42.6% were male. Among the 530 cases, all age levels were evenly represented. Regarding educational attainment, 27.2% were university-educated and 14.5% had a degree of a Technical Educational Institution. From them, 12.6% held a master degree and 0.3% a PhD. 96.4% of the respondents were aware of the existence of eco-friendly products and 73.4% had purchased eco-friendly products. Among the reasons offered of never buying eco-friendly products were “I don’t know if my purchases include eco-friendly products” (12.5%), “I am not interested in buying eco-friendly products” (1.3%), “I do not trust eco-friendly products” (1.9%), “I am not used to buying eco-friendly products” (10.9%). The percentage of 78.9% had recycling habits and from them only 25.6% used to recycle all the types of recyclable materials.



Graph 1



Graph 2



Graph 3

<i>Subject's profile</i>		<i>Sample size</i>	<i>Frequency distribution (%)</i>
Gender	Female	304	57,4
	Male	226	42,6
Age	Below 20 years	10	1,9
	20 - 29	76	14,3
	30 - 39	179	33,8
	40 - 49	152	28,7
	50 - 59	89	16,8
	60 years and above	24	4,5
Education	Lower Education	45	8,5
	Senior Education	199	37,5
	University	144	27,2
	Tech. Educ. Inst.	77	14,5
	Inst. For Voc. Train.	65	12,3
Higher Education	None	460	86,8
	Master	67	12,6
	PhD	3	0,6
Monthly Income	<500,00	48	9,1
	501,00 - 1.000,00	173	32,6
	1.001,00 - 2.000,00	220	41,5
	>2.000,00	89	16,8
Knowledge about eco-friendly products	Yes	511	96,4
	No	19	3,6
Ever purchased eco-friendly products	Yes	389	73,4
	No	141	26,6
The reason of never purchased eco-friendly products	I don't know if my purchases include eco-friendly products	66	12,5
	I am not interested in buying eco-friendly products	7	1,3
	I don't trust eco-friendly products	10	1,9
	I am not used to buy eco-friendly products	58	10,9
Recycling Habits	Yes	418	78,9
	No	112	21,1
Recycle all types of recyclable material	Yes	136	25,7
	No	394	74,3
Knowledge about Environmental Problems	Up to 10 problems	414	78,1
	Lower to 10 problems	116	21,9

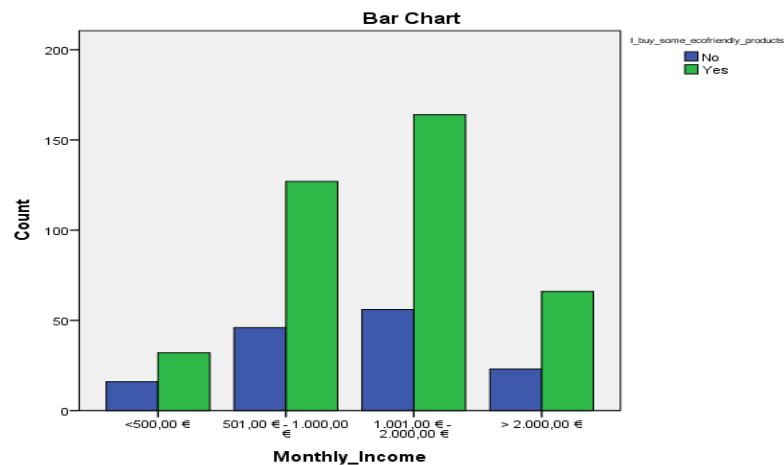
Table 2

3.5 Crosstabulation and Frequency Findings

As detailed below, several crosstabulations are presented, which are based on the consumers' monthly income in combination with some important statements which are included in the survey questionnaire.

Statement: *I buy some eco-friendly products*

From the crosstabulation process we can clearly conclude that the individuals who belong to lower income strata concentrate the bigger percentage of negative answers (33.3%) in the question if *they buy some eco-friendly products*. In addition, the second biggest percentage (26.6%) is being concentrated by the individuals of the next income strata. The percentages of the respondents that belong to higher income scales are approximately equal (25.5% and 25.8% respectively for the next two scales).



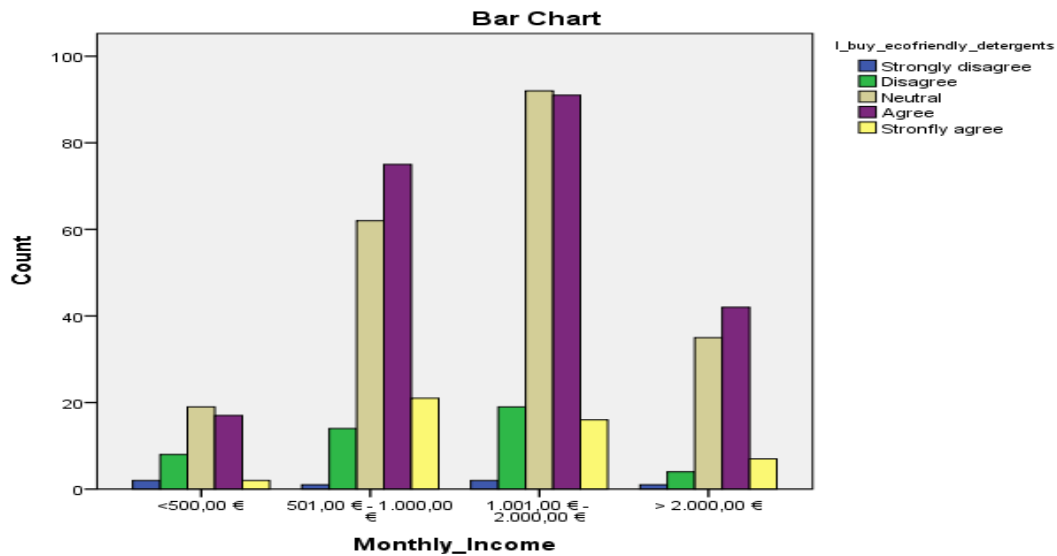
Graph 4

The results of Crosstabulation				
Monthly Income*I buy some eco-friendly products				
Monthly Income		No	Yes	Total
<500,00 €	Count	16	32	48
	Percent	33,30%	66,70%	100,00%
501,00 € -1.000,00 €	Count	46	127	173
	Percent	26,60%	73,40%	100,00%
1001,00 € -2000,00 €	Count	56	164	220
	Percent	25,50%	74,50%	100,00%
>2.000,00 €	Count	23	66	89
	Percent	25,80%	74,20%	100,00%
Total	Count	141	389	530
	Percent	26,60%	73,40%	100,00%

Table 3

Statement: *I buy some eco-friendly detergents*

It is impressive that 208 out of 530 respondents, that is 39.2%, did not know if the detergents they buy are environmentally friendly. The percentage of those who strongly disagree and disagree with the statement is 9.6% and eventually of those who agree and strongly agree is 51.2%. Consequently, more than half respondents buy at least some detergents which are eco-friendly.



Graph 5

The results of Crosstabulation							
Income*I buy some ecofriendly detergents							
Monthly Income		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
<500,00 €	Count	2	8	19	17	2	48
	Percent	4,20%	16,70%	39,60%	35,40%	4,20%	9,10%
501,00 € - 1.000,00 €	Count	1	14	62	75	21	173
	Percent	0,60%	8,10%	35,80%	43,40%	12,10%	32,60%
1001,00 € - 2000,00 €	Count	2	19	92	91	16	220
	Percent	0,90%	8,60%	41,80%	41,40%	7,30%	41,50%
>2.000,00 €	Count	1	4	35	42	7	89
	Percent	1,10%	4,50%	39,30%	47,20%	7,90%	16,80%
Total	Count	6	45	208	225	46	530
	Percent	1,10%	8,50%	39,20%	42,50%	8,70%	100,00%

Table 4

Statement: *I use low-phosphate detergent (or soap) for my laundry*

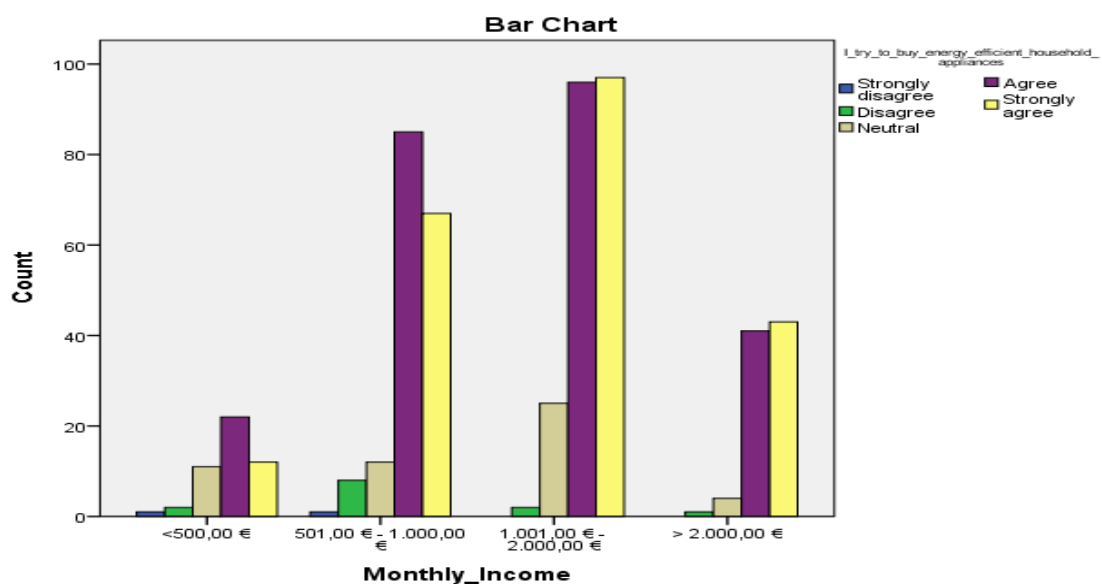
Furthermore, judging from the above less impressive is the fact that 47% of the respondents were neutral to the statement that *I use low-phosphate detergent (or soap) for my laundry*.

Frequency Results		
<i>I use low-phosphate detergent (or soap) for my laundry</i>		
	Frequency	Percent
Strongly disagree	8	1,50%
Disagree	78	14,70%
Neutral	249	47,00%
Agree	159	30,00%
Strongly agree	36	6,80%

Table 5

Statement: *I try to buy energy efficient household appliances*

On the other hand, when it comes to household appliances the consumers' preferences for eco-friendly products differ significantly. Table 6 indicates that 46% of the respondents agreed with the statement *I try to buy energy efficient household appliances* and 41.3% of these strongly agreed. It is obvious that consumers buy environmentally friendly electrical appliances without caveats in mind.



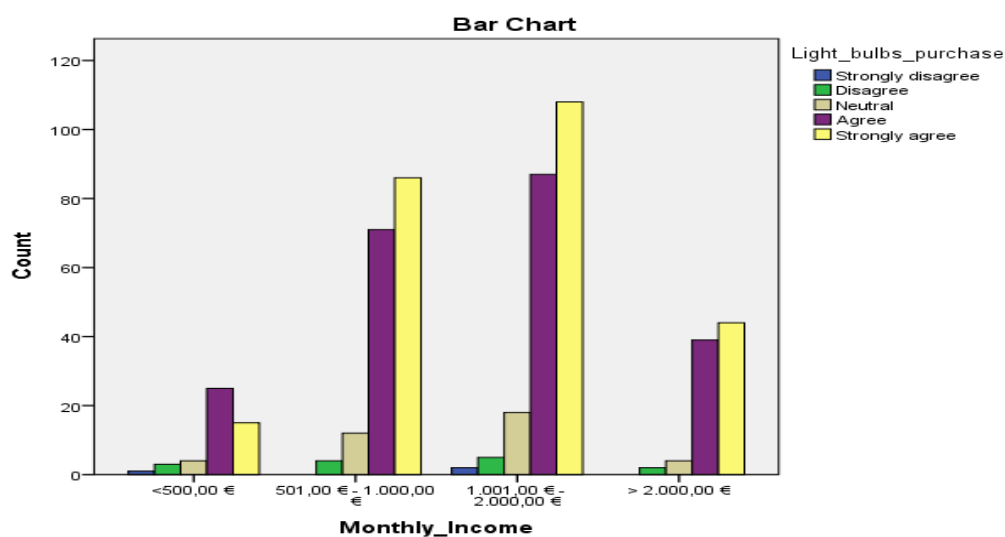
Graph 6

The results of Crosstabulation							
Income*I try to buy energy efficient household appliances							
Monthly Income		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
<500,00 €	Count	1	2	11	22	12	48
	Percent	2,10%	4,20%	22,90%	45,80%	25,00%	9,10%
501,00 € - 1.000,00 €	Count	1	8	12	85	67	173
	Percent	0,60%	4,60%	6,90%	49,10%	38,70%	32,60%
1001,00 € - 2000,00 €	Count	0	2	25	96	97	220
	Percent	0,00%	15,40%	48,10%	39,30%	44,30%	41,50%
>2.000,00 €	Count	0	1	4	41	43	89
	Percent	0,00%	1,10%	4,50%	46,10%	48,30%	16,80%
Total	Count	2	13	53	246	221	530
	Percent	0,40%	2,50%	9,80%	46,00%	41,30%	100,00%

Table 6

Statement: *I have replaced light bulbs in my home with those of smaller wattage so that I will conserve on the electricity that I use*

We can notice from the Crosstabulation results which follow (Table 7) that the same thing happens, concerning the energy efficient light bulbs. The majority of the respondents answered positively to the statement *I have replaced light bulbs in my home with those of smaller wattage so that I will conserve on the electricity that I use*. The percentages were 41.9% and 47.7% for those who agree and strongly agree, respectively.



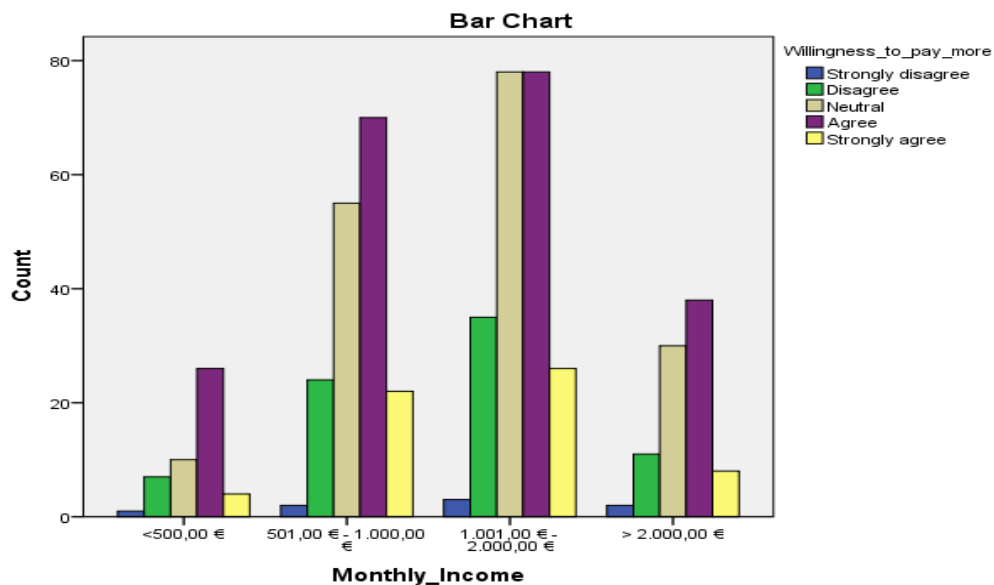
Graph 7

The results of Crosstabulation							
Income*I have replaced light bulbs in my home with those of smaller wattage so that I will conserve on the electricity that I use							
Monthly Income		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
<500,00 €	Count	1	3	4	25	15	48
	Percent	2,10%	6,30%	8,30%	52,10%	31,30%	9,10%
501,00 € - 1.000,00 €	Count	0	4	12	71	86	173
	Percent	0,00%	2,30%	6,90%	41,00%	49,70%	32,60%
1001,00 € - 2000,00 €	Count	2	5	18	87	108	220
	Percent	0,90%	2,30%	8,20%	39,50%	49,10%	41,50%
>2.000,00 €	Count	0	2	4	39	44	89
	Percent	0,00%	2,20%	4,50%	43,80%	49,40%	16,80%
Total	Count	3	14	38	222	253	530
	Percent	0,60%	2,60%	7,20%	41,90%	47,70%	100,00%

Table 7

Statement: *I am willing to spend a bit more to buy a product that is more ecologically friendly*

Moreover, the willingness to pay more for an eco-friendly product is examined. Once again, the consumers' positive response is decreased. Specifically, 40% of the respondents agreed with this case and 11.3% strongly agreed, while 32.6% remained neutral.



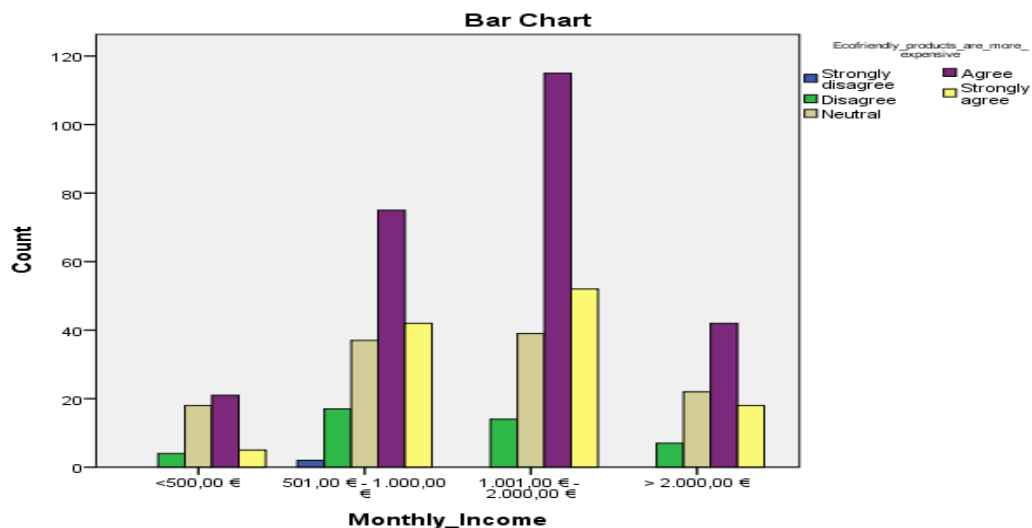
Graph 8

<i>The results of Crosstabulation</i>							
<i>Income*Willingness to pay more for an eco-friendly product</i>							
Monthly Income		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
<500,00 €	Count	1	7	10	26	4	48
	Percent	2,10%	14,60%	20,80%	54,20%	8,30%	9,10%
501,00 € -1.000,00 €	Count	2	24	55	70	22	173
	Percent	1,20%	13,90%	31,80%	40,50%	12,70%	32,60%
1001,00 € -2000,00 €	Count	3	35	78	78	26	220
	Percent	1,40%	15,90%	35,50%	35,50%	11,80%	41,50%
>2.000,00 €	Count	2	11	30	38	8	89
	Percent	2,20%	12,40%	33,70%	42,70%	9,00%	16,80%
Total	Count	8	77	173	212	60	530
	Percent	1,50%	14,50%	32,60%	40,00%	11,30%	100,00%

Table 8

Statement: The prices of eco-friendly products are usually more expensive than other products

From the next Table we can conclude that the purchase of an eco-friendly product is considered by the consumers as an extra expense, since the measure of comparison is the 'conventional' products. From the results, it is obvious that above half of the respondents stated that they strongly agree or agree that *the prices of eco-friendly products are usually more expensive than other products*, in a percentage of 22.1% and 47.7% respectively.



Graph 9

<i>The results of Crosstabulation</i>							
<i>Income*The prices of eco-friendly products are usually more expensive than other products</i>							
Monthly Income		Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
<500,00 €	Count	0	4	18	21	5	48
	Percent	0,00%	8,30%	37,50%	43,80%	10,40%	9,10%
501,00 € - 1.000,00 €	Count	2	17	37	75	42	173
	Percent	1,20%	9,80%	21,40%	43,40%	24,30%	32,60%
1001,00 € - 2000,00 €	Count	0	14	39	115	52	220
	Percent	0,00%	6,40%	17,70%	52,30%	23,60%	41,50%
>2.000,00 €	Count	0	7	22	42	18	89
	Percent	0,00%	7,90%	24,70%	47,20%	20,20%	100,00%
Total	Count	2	42	116	253	117	530
	Percent	0,40%	7,90%	21,90%	47,70%	22,10%	100,00%

Table 9

4. Data Analysis and Results

Before testing the hypotheses of this study, all the negatively stated variables have been reversed. An exploratory principal component analysis with the 45 statements and varimax rotation was conducted in order to reduce the number of items and examine the pattern of relationships among them with the intention of producing a meaningful set of underlying factors. Principal axis factoring was used in order to estimate the factor loadings and variances of the model. The value of 0.893 of KMO measure of sampling adequacy indicates that patterns of correlations are relatively compact and so factor analysis yields distinct and reliable factors. Bartlett's measure test is highly significant ($p < 0.001$), therefore there are some relationships between the variables.

Furthermore, reliability tests were conducted on each factor. Cronbach's Alpha varies from 0.721 to 0.792 for all constructs. Therefore the questionnaire has an acceptable reliability. The mean of each construct was computed and the range was between 3.31 and 4.39.

<i>The mean of each construct</i>	
<i>Constructs</i>	<i>Mean</i>
Environmental Concern	3,7132
Attitude towards the Behaviour	4,3940
Perceived Behavioural Control	3,3843
Subjective Norms	3,6948
Past Behaviour	4,1494
Intention to buy eco-friendly products	3,5704
Functional Value	3,1044
Conditional Value	3,5434
Actual Purchase Behaviour	3,3031

Table 10

<i>Reliability tests</i>	
<i>Constructs</i>	<i>Cronbach's alpha</i>
Environmental Concern	0,776
Attitude towards the Behaviour	0,734
Perceived Behavioural Control	0,733
Subjective Norms	0,721
Past Behaviour	0,749
Intention to buy eco-friendly products	0,761
Functional Value	0,723
Conditional Value	0,792
Actual Purchase Behaviour	0,771

Table 11

Linear regression analyses were carried out in order to examine how much of the variance in the dependent variable can be explained by the independent variables and also to test hypotheses' statistical significance in terms of the model in each case. In the present study, the *Intention to Purchase* (BI) eco-friendly products and the *Actual Purchase Behaviour* (PurchB) were used as dependent variables. Furthermore, Kruskal Wallis tests have been deemed necessary for the analysis and for this reason they are presented below.

4.1 Control Variables

To rule out confounding explanations, we included a set of control variables. We controlled for gender, age, education, higher education, monthly income, marital status, number of children and type of work. All the variables are metric except for gender, which is a dichotomous variable.

4.2 The Effect of the Extended Theory of Planned Behaviour on Intention to Buy Eco-friendly Products

A multiple linear regression analysis was performed with intention to buy eco-friendly products as the dependent variable and with AttitudE, SN, PBC, PastB, EC, RB, EK, as independent variables (Model 1). The results of the regression, the normality and the heteroscedasticity tests as well as the relevant graphs and comments are presented below.

The result of multiple linear regression analysis					
Model 1 Summary			ANOVA		Resid. Stat.
R Square	Adjusted R Square	Durbin-Watson	F	Sig.	Cook's Distance
0,573	0,567	1,885	100,009	0,000	0,177

Table 12

From Table 12, we notice that the Model 1 explains the 57.3% of the variance in the BI variable which is a respectable result. It reaches statistical significance since F value in the ANOVA test is 100.009 and it is significant at the level of 0.001. The Durbin – Watson statistic is 1.885 which does not indicate autocorrelation. The Cook's Distance is 0.177, hence none of the cases has an undue influence on the results of the model.

The result of multiple linear regression analysis				
Coefficients				
Dependent variable: Intention to buy eco-friendly products				
Independent Variables	Standardised Coefficients	p-value	VIF	
AttitudE	0,021	0,529	1,367	
SN	0,113	0	1,198	
PBC	0,386	0	1,956	
PastB	0,177	0	1,215	
EC	0,268	0	1,789	
EK	0,061	0,042	1,097	
RB	0,073	0,019	1,172	

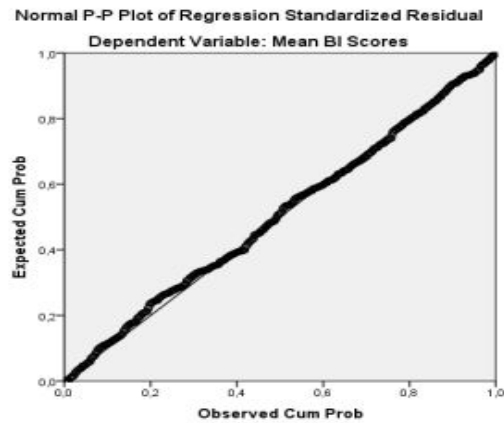
Table 13

The output from multiple linear regression analysis indicates that PBC makes the strongest contribution to explaining the BI. Moreover, SN, PBC, PastB, EC, EK and RB positively influence the respondent's intention to buy eco-friendly products, that is, if consumers associate intensely PBC, SN, PastB, EC, EK or RB the possibility to intend to buy green is higher.

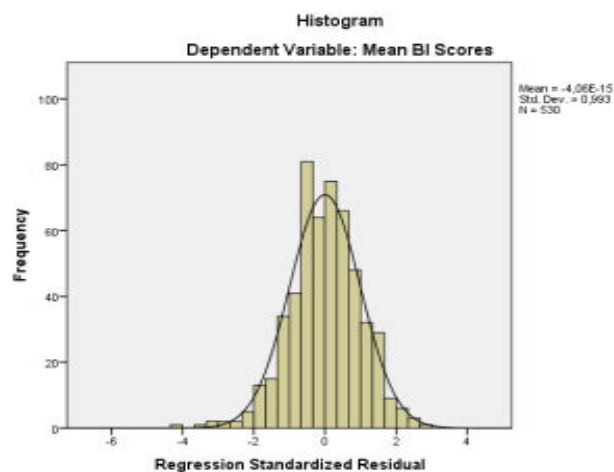
Furthermore, the VIF value (Table 13) for each independent variable is below the cut-off of 10, therefore the multicollinearity assumption is not violated.

In Model 1, in the Normal Probability Plot, the points lie in a reasonable straight diagonal line which means that there are no major deviations from normality. In the Scatterplot, the standardised residuals are rectangularly distributed, therefore no

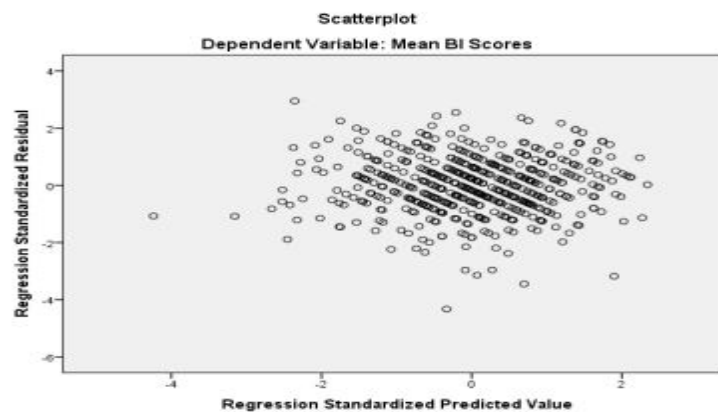
systematic pattern is obvious and the Histogram indicates that the residuals are normally distributed.



Graph 10



Graph 11



Graph 12

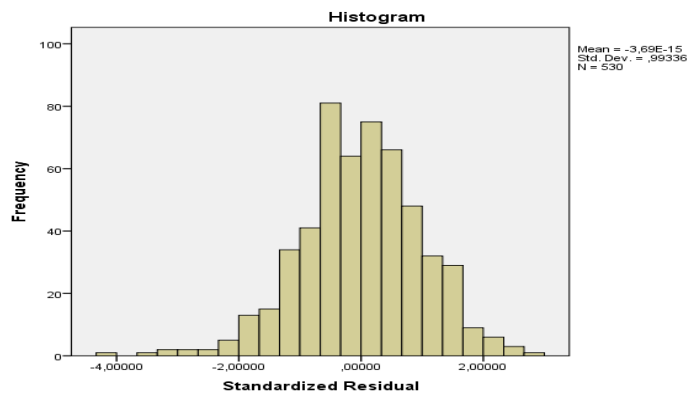
Finally, the Normality tests confirm that the residuals are normally distributed and the homoscedasticity tests confirm that heteroscedasticity is not present.

Tests of Normality	Kolmogorov - Smirnov		Shapiro - Wilk		
	Statistic	df	Statistic	df	Sig.
Standardised Residual	0,057	530	0,93	530	0,061

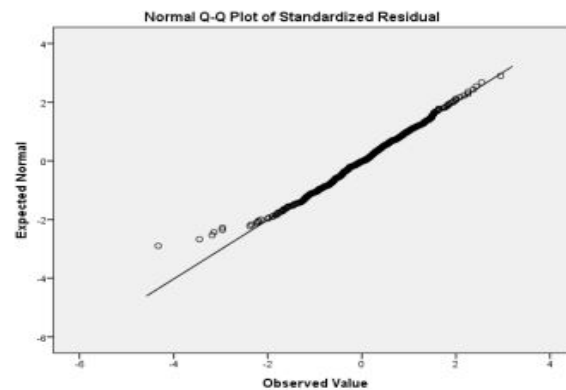
Table 14

Heteroscedasticity Tests		
	LM	Sig.
Breusch - Pagan	0,642	0,423
Koenker	0,56	0,454

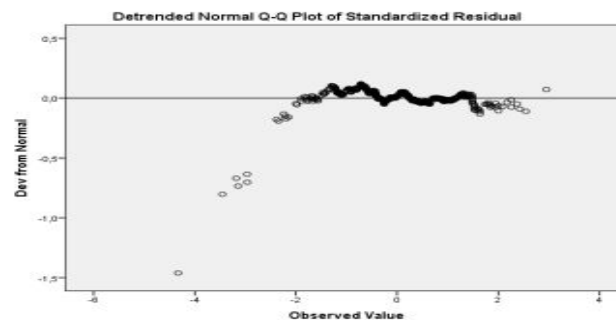
Table 15



Graph 13



Graph 14



Graph 15

Therefore the hypotheses H1, H2, H3, H5, H7, H9 and H11 are supported. Interesting is the fact that AttitudE does not play a significant role in BI, which contradicts previous researches such as Kalafatis, Pollard, East, Tsogas (1999), Paul, Modi Patel (2016) , Armittage & Conner (1999, 2001).

4.3 The Effect of the Extended Theory of Planned Behaviour in combination with the Theory of Consumption Values on Eco-friendly Purchase Behaviour

A multiple linear regression analysis was performed with purchase behaviour as the dependent variable and with PBC, PastB, BI, EC, EK, FV, CV as independent variables (Model 2). The results of the regression, the normality and the heteroscedasticity tests as well as the relevant graphs and comments are presented below.

<i>The result of multiple linear regression analysis</i>					
<i>Model 2 Summary</i>			<i>ANOVA</i>		<i>Resid. Stat.</i>
R Square	Adjusted R Square	Durbin-Watson	F	Sig.	Cook's Distance
0,606	0,601	1,849	114,861	0,000	0,198

Table 16

From Table 16, we notice that Model 2 explains the 60.6% of the variance in the PurchB variable which is a respectable result. It reaches statistical significance since F value in the ANOVA test is 114.861 and is significant at the level of 0.001. The Durbin – Watson statistic is 1.849 which does not indicate autocorrelation. The Cook's Distance is 0.198 hence none of the cases has an undue influence on the results of the model.

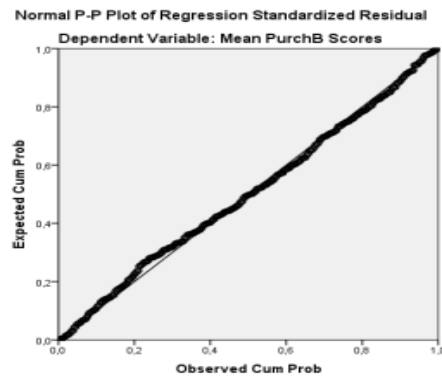
<i>The result of multiple linear regression analysis</i>			
<i>Coefficients</i>			
Dependent variable: Purchase Behaviour			
Independent Variables	Standardised Coefficients	p-value	VIF
PBC	0,352	0,000	2,264
PastB	-0,020	0,958	1,259
EC	0,109	0,005	1,994
BI	0,236	0,000	2,384
CV	0,187	0,000	1,225
FV	0,170	0,000	1,142
EK	-0,310	0,281	1,062

Table 17

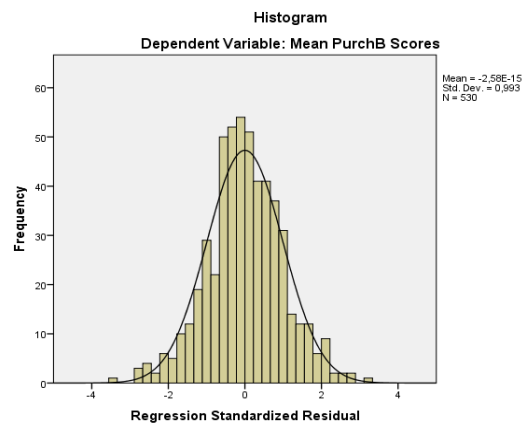
The output from multiple linear regression analysis indicates once again that PBC makes the strongest contribution to explaining the PurchB. Additionally, EC, BI, FV and CV positively influence individuals to proceed to an eco-friendly purchase, that is, if consumers attach higher PBC, EC, BI, FV or CV, the possibility of purchasing green is higher.

Moreover, the VIF value (Table 17) for each independent variable is below the cut-off of 10, therefore the multicollinearity assumption is not violated.

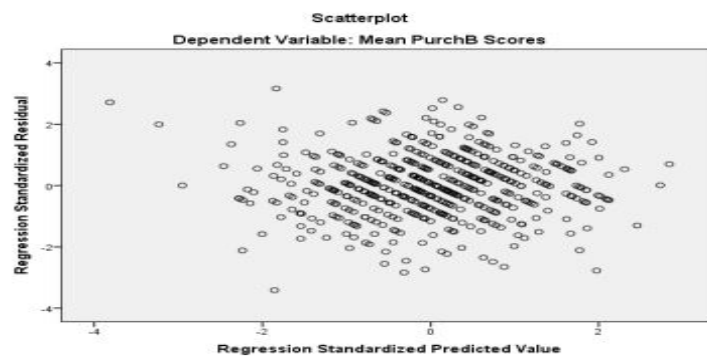
Once again, in Model 2, in the Normal Probability Plot the points lie in a reasonable straight diagonal line which means that there are no major deviations from normality. In the Scatterplot, the standardised residuals are rectangularly distributed, therefore no systematic pattern is obvious and the Histogram indicates that the residuals are normally distributed.



Graph 16



Graph 17



Graph 18

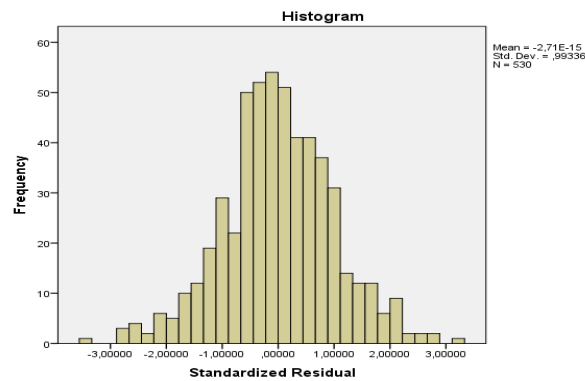
Eventually, the Normality tests confirm that the residuals are normally distributed and the homoscedasticity tests confirm that there is homoscedasticity.

Tests of Normality	Kolmogorov - Smirnov		Shapiro - Wilk		
	Statistic	df	Statistic	df	Sig
Standardised Residual	0,081	530	0,996	530	0,144

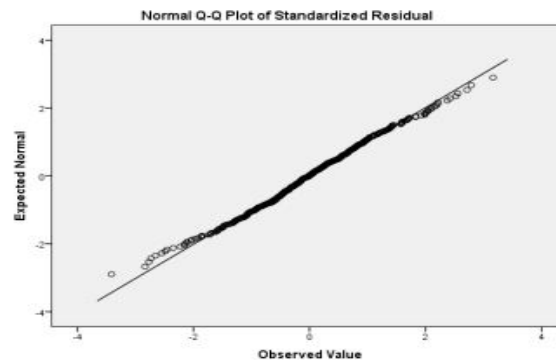
Table 18

Heteroscedasticity Tests		
	LM	Sig
Breusch - Pagan	0,771	0,38
Koenker	0,677	0,411

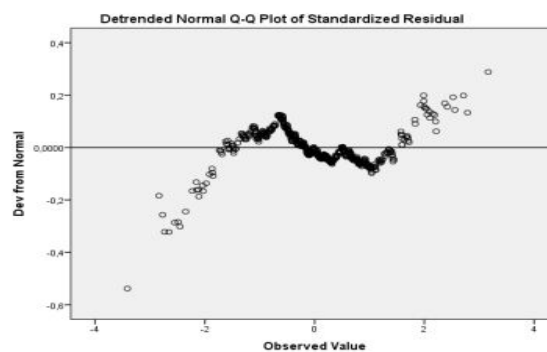
Table 19



Graph 19



Graph 20



Graph 21

Therefore, the hypotheses H4, H8, H12, H13 and H14 are supported. It is remarkable that PastB and EK do not influence PurchB.

4.4 Two Different Worlds Measured by TPB and TCV

A between groups analysis (Kruskal – Wallis test) was performed with ActBeh as the independent grouping variable and with extended TPB components and TCV values as dependent variables. Table 20 summarises the results from which we can conclude that there is a significant difference among the consumers who declared that they do not purchase eco-friendly products and those who declared the opposite. Table 20 indicates a p-value less than 0.05, suggesting that AttitudE, SN, PBC, PastB, EC, EK, RB, BI, PurchB, FV (marginally), differed between Yes and No respondents. According to these mean ranks, individuals who actually purchase green, achieved higher mean scores, especially in BI, PurchB, PBC, PastB, EC.

Actual Purchase Behaviour

The results of Kruskal - Wallis Test				
	Do you purchase eco-friendly products?	N	Mean	Test Stat.
AttitudE	No	141	237,63	0,011
	Yes	389	275,60	
BI	No	141	190,91	0,000
	Yes	389	292,54	
PBC	No	141	215,75	0,000
	Yes	389	283,53	
PastB	No	141	226,33	0,000
	Yes	389	279,70	
EC	No	141	222,50	0,000
	Yes	389	281,09	
PurchB	No	141	191,76	0,000
	Yes	389	292,23	
FV	No	141	244,02	0,049
	Yes	389	273,29	
SN	No	141	239,72	0,019
	Yes	389	274,84	
CV	No	141	265,09	0,971
	Yes	389	265,65	

Table 20

A second between groups analysis (Kruskal – Wallis test) was performed with the levels of age as the independent grouping variable and with extended TPB components and TCV values as dependent variables. Table 21 summarises the results

from which we can conclude that there is a significant difference among consumers' age scale, differed between the respondents' age levels. Specifically, with a p-value less than 0.05, it suggests that BI, PBC, PastB, EC, SN, PurchB differ substantially. It is remarkable that in the vast majority of cases, individuals below 20 years achieve the lowest mean scores and those from 30 to 59 the highest. Moreover, we can assume that as the age grows, mean scores increase and in many cases the scale of 50 – 59 achieves the highest mean scores.

Age Scale

The results of Kruskal - Wallis Test					The results of Kruskal - Wallis Test				
	Age	N	Mean	Test Stat.		Age	N	Mean	Test Stat.
AttitudE	Below 20 years	10	151,65	0,156	PurchB	Below 20 years	10	149,55	0,009
	20 - 29	76	259,39			20 - 29	76	261,74	
	30 - 39	179	266,68			30 - 39	179	243,34	
	40 - 49	152	270,41			40 - 49	152	280,98	
	50 - 59	89	281,44			50 - 59	89	298,28	
	60 years and above	24	233,25			60 years and above	24	271,38	
BI	Below 20 years	10	111,75	0,000	FV	Below 20 years	10	224,20	0,195
	20 - 29	76	285,54			20 - 29	76	271,37	
	30 - 39	179	240,03			30 - 39	179	244,29	
	40 - 49	152	282,47			40 - 49	152	274,07	
	50 - 59	89	298,33			50 - 59	89	284,35	
	60 years and above	24	226,81			60 years and above	24	298,13	
PBC	Below 20 years	10	109,55	0,000	SN	Below 20 years	10	218,30	0,000
	20 - 29	76	244,32			20 - 29	76	293,09	
	30 - 39	179	230,53			30 - 39	179	291,52	
	40 - 49	152	308,14			40 - 49	152	249,77	
	50 - 59	89	300,39			50 - 59	89	255,67	
	60 years and above	24	258,94			60 years and above	24	139,79	
PastB	Below 20 years	10	107,90	0,001	CV	Below 20 years	10	259,00	0,863
	20 - 29	76	239,99			20 - 29	76	279,42	
	30 - 39	179	260,44			30 - 39	179	255,05	
	40 - 49	152	290,55			40 - 49	152	267,67	
	50 - 59	89	285,72			50 - 59	89	266,39	
	60 years and above	24	216,04			60 years and above	24	285,00	
EC	Below 20 years	10	184,95	0,000					
	20 - 29	76	252,41						
	30 - 39	179	233,49						
	40 - 49	152	283,40						
	50 - 59	89	317,57						
	60 years and above	24	272,79						

Table 21

One more between groups analysis (Kruskal – Wallis test) was performed with Education as the independent grouping variable and with extended TPB components and TCV values as dependent variables. The results from this test are summarised in Table 22, from which we can conclude that there is a significant difference among the consumers who have a lower education and higher educated consumers. We can easily notice that lower educated individuals reach extremely low scores in all constructs. Consequently, we can assume that education contributes to the development of AttitudE, SN, PBC, PastB, EC, BI, PurchB, which is an outcome consistent to previous studies (Diamontopoulos, Schlegelmilch, Sinkovics, Bohlen, 2003; Samdahl and Robertson, 1989; Zimmer, Stafford, Stafford, 1994). On the contrary, the fact that university educated individuals do not achieve the highest scores is of particular importance.

Education Level

The results of Kruskal - Wallis Test					The results of Kruskal - Wallis Test				
Education		N	Mean	Test Stat.	Education		N	Mean	Test Stat.
AttitudE	Lower education	45	168,77	0,000	PurchB	Lower education	45	181,91	0,00
	Senior Secondary	199	257,89			Senior Secondary	199	270,79	
	University	144	284,93			University	144	259,83	
	Tech. Educ. Inst.	77	301,47			Tech. Educ. Inst.	77	299,18	
	Inst. Of Voc. Train.	65	270,10			Inst. Of Voc. Train.	65	279,85	
BI	Lower education	45	176,59	0,001	FV	Lower education	45	254,74	0,841
	Senior Secondary	199	267,76			Senior Secondary	199	261,11	
	University	144	270,77			University	144	268,09	
	Tech. Educ. Inst.	77	283,29			Tech. Educ. Inst.	77	262,80	
	Inst. Of Voc. Train.	65	287,40			Inst. Of Voc. Train.	65	283,86	
PBC	Lower education	45	180,06	0,001	SN	Lower education	45	156,40	0,000
	Senior Secondary	199	278,03			Senior Secondary	199	236,13	
	University	144	257,88			University	144	311,68	
	Tech. Educ. Inst.	77	283,15			Tech. Educ. Inst.	77	290,01	
	Inst. Of Voc. Train.	65	282,28			Inst. Of Voc. Train.	65	299,62	
PastB	Lower education	45	184,33	0,002	CV	Lower education	45	289,73	0,099
	Senior Secondary	199	266,03			Senior Secondary	199	274,04	
	University	144	290,64			University	144	238,69	
	Tech. Educ. Inst.	77	267,61			Tech. Educ. Inst.	77	259,60	
	Inst. Of Voc. Train.	65	261,88			Inst. Of Voc. Train.	65	288,98	
EC	Lower education	45	215,13	0,030					
	Senior Secondary	199	269,38						
	University	144	251,02						
	Tech. Educ. Inst.	77	294,27						
	Inst. Of Voc. Train.	65	286,49						

Table 22

5. Discussion and Conclusions

Based on data collected from a scale survey of 564 consumers, the novelty of the present model lies in the fact that for the first time in the literature, two distinct theories are combined in order to examine the motivational factors for eco-friendly purchase. The Extended TPB and TCV have been shown to represent a reliable predictive model of intention to purchase and to actual purchase eco-friendly products.

Multiple linear regression analyses were used for testing and verification. In the first case behavioural intention was the dependent variable and attitude towards the environment, subjective norms, perceived behavioural control, past behaviour, environmental concern, environmental knowledge and recycling behaviour were independent variables. In the second case purchase behaviour was the dependent variable and perceived behavioural control, past behaviour, environmental concern, behavioural intention, conditional value, functional value, environmental knowledge and recycling behaviour were independent variables. Additionally, respondents were separated into groups based on demographics and on green buyers and non-buyers.

The finding that attitude towards the environment seems to be non-influential to the intention to buy eco-friendly products was interesting because no such thing has been mentioned in any other investigation concerning Greece (e.g. Kalafatis et al., 1999). However, the ineffective performance of attitude is coherent to many other studies such as Bagozzi (1988) and Zanna, Rempel (1988). In addition to this, we showed that subjective norms are a determinant part in forming intention for eco-friendly products, a fact that comes in conflict with Kalafatis et al. (1999) investigation (which had marginal data) which was carried out in Athens, area of Greece but in accordance with Chan, Lau (2008), Ajzen (2015), Armitage, Conner (2001).

In our research, past behaviour seems to explain a significant percentage of the behavioural intention, a case which is confirmed by a plethora of researchers (Bentler, Speckart, 1979; Ouellette, Wood, 1998; Terry, Hogg, White, 1999; Conner, Sheeran, Norman, Armitage, 2000). Critical is the fact that past behaviour's contribution to actual purchase behaviour is absent. In response to such findings, Ajzen (2002) has argued that for the present routine, past behaviour's frequency is not a sufficient indicator because frequently performed behaviours may not subject to a routine.

Perceived behavioural control, as expected, plays a decisive role on intention and on green purchase behaviour, providing a useful explanation in the prediction of them. Support for this outcome comes from an excessive amount of investigations such as Maichum, Parichatnon, Peng (2016), Ajzen (2015), Armitage, Conner (2001), Chan, Lau (2008), Kalafatis, Pollard, East, Tsogas (1999).

Both components of the Theory of Consumption Values which are used in the survey positively influence green consumption. Functional value, even though marginally, is found to have a positive association with green purchase such as Finch's (2005), Long, Schiffman (2000), Goncalves, Lourenco, Silva (2015) surveys.

Conditional values have a strong and positive effect on purchase behaviour. This is confirmed by Finch (2005) and Lin and Huang (2012), Long, Schiffman (2000), while in Goncalves, Lourenco, Silva (2015) research, they were found to be influential in terms of combination with the other values of the consumption theory.

Additionally, in our findings, environmental concern explained about 10 per cent variance of purchase behaviour, a fact that corroborates Bamberg's (2003) research about environmental concern of specific environmentally related behaviours.

Finally, weak or non-significant findings between knowledge and behaviour have documented in plenty of investigations such as Guerra, Dominguez, Shea (2005), Schlueter (1982), Feeley, Servoss (2005), Spirito, Ruggiero, Duckworth, Low, (1993). Our survey corroborates the above and contradicts Stern's (1992) whose findings showed the opposite.

It should be mentioned that a further analysis in socio-demographics indicated, that much of this data did not prove to be influential for an eco-friendly purchase since they were not statistically significant in the case of purchasing eco-friendly products. Gender, income, higher education (which includes a Master or a PhD), marital status, number of children and type of work, in our survey, were not determinants for green purchase.

Perhaps of no surprise is the finding that lower education is an inhibitor of green consumption. From the results, we can assume that any type of education higher than the senior has a positive influence on most variables that were used in this survey.

Finally, the age scale has the strongest influence on all constructs except for conditional value. Evidently, older ages are a better audience for policies targeted to promote green consumption and sustainability. This concurs with the findings of Ngo et al. (2009), Diamantopoulos et al. (2003), Abeliotis et al. (2010), and Smallbone (2005).

The results of this study highlight the importance of environmental concern, perceived behavioural control, intention, functional and conditional values in the prediction of green consumer behaviour. Our results also provide substantial empirical support to classic behavioural theories as the Theory of Planned Behaviour (Ajzen, 1985) and the Theory of Consumption Values (Sheth, Newman, Gross, 1991).

5.1 Theoretical Implications

Our study makes an important contribution to the Theory, determining other components which are considered necessary in order for eco-friendly purchasing to be investigated. Firstly, by extending the Theory of Planned Behaviour, we showed that environmental concern in fact is a significant factor which positively influences both intention and actual purchase behaviour. Secondly, recycling behaviour, environmental knowledge and past behaviour seem to intensify green purchase intention. Consequently, these four factors, which have never been used all together in combination with TPB factors, contributed significantly to the intention performance.

Furthermore, as mentioned in section 2, TPB is able to explore the individual's intention, which may lead to certain behaviour. As observed from the results, intention to buy green products is necessary but it does not suffice in order for an individual to proceed to a green purchase. Therefore, adding values (constructs) such as functional and conditional from the Theory of Consumption Values, which can actually intervene to the purchase behaviour, we can ensure that this survey significantly contributed to enlightening some of the determinants which affect the eco-friendly consumption.

5.2 Managerial Implications

Undoubtedly, the findings presented in the previous sections have direct and important implications for marketers. It was shown in previous sections that the study provides interesting insights regarding the demographic and behavioural characteristics of the consumers. Such insights could be particularly useful for managers of this field in their efforts to develop appealing marketing mixes and effective product positioning strategies based on the distinct characteristics of the chosen target groups.

Environmental concern and knowledge per se are not sufficient to direct individuals to a green lifestyle. Many studies pointed out that with extended media coverage, public's mindset can be totally different in just two weeks (Roberts 1996). Consequently, the omnipotent role of media can amplify citizenry's environmental knowledge (which many times is abstract) with solutions and ways of action and not only just by referring to the problems.

The reasons for never buying eco-friendly products indicate that 26.6% of the respondents lack understanding of the scope of these products and their characteristics. Obviously, these 'negative' findings may indicate that accurate information is a critical determinant of behaviour (Ajzen, Joyce, Sheikh, Gilbert, 2011). Therefore, it is of major importance for the government to provide for citizenry's better environmental education. Furthermore, governments must encourage green consumption by subsidising businesses to establish more points of sale (Lin, Huang, 2012).

The presence of pressure groups in Greece is marginal and very few eco-friendly products such as detergents are available in large shops (supermarkets) (Kalafatis et al., 1999). In addition to this, specialist shops in Greece are minimal in number. The same problem does not exist with electrical appliances and light bulbs. The vast majority of respondents seems to buy more expensive energy efficient electrical appliances and light bulbs perhaps because in the long term the electricity bill would be lower. Hence, it is possible that the consumers' green purchases depend on personal economics which balance with this thought.

On the contrary, eco-friendly detergents cost at least double the price of conventional and without a positive impact on the consumers' 'pocket'. Individuals do not take into consideration health implications which some conventional products cause and as a

consequence eco-friendly products are directly considered as substitutes due to their price. In the case of eco-friendly detergents, consumers cannot find an equilibrium point between the money they give and the benefits they receive.

Furthermore, except for the economic perspective, energy efficient household appliances offer a modern design and advanced capabilities. From this point of view, eco-friendly products are less competitive because they are completely uninteresting. Therefore, the companies must orientate to the promotion of the benefits of eco-friendly detergents on the environment and mainly on health. If the consumers realise the avails of such products on their health, maybe they will feel that in the future, they will be compensated for the extra money they give.

5.3 Limitations and Further Research

Our study is not without limitations. This study has examined the green market as integrated. It would also be enticing to explore segmentation of the green market, identifying clusters of consumers who take into account various dimensions in a different way, and analysing how those variations affect the green market.

Furthermore, this study used a cross-sectional and not a longitudinal approach, which means that special importance was given only on observing respondents' behaviour rather than on observing respondents' behaviour with the passage of time.

Additionally, the scales used in the study are based on self-reports which recommend a quite good depiction of actual behaviours (Ajzen, Fishbein, 1980) but socially desirable past behaviours and intentions are usually over-reported and less desirable past behaviours are under-reported (Mostafa, 2009).

Another direction to extend the present study, is to investigate the subject of eco-friendly products' availability, which was not explored at allowing to lack of time. Furthermore, the sample originated just from Athens and Piraeus areas, hence it does not represent the general situation of the whole country.

From a theoretical viewpoint, our survey did not include utilitarian and hedonistic components which is an important combination. As Mac Kay (1999) argued, a product or service desire is an 'amalgam of rational and emotional factors'. Moreover, epistemic, emotional and social values suggested by Sheth, Newman, Gross (1991) were not tested in this study.

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Appendix

The items of the Theory of Planned Behaviour	
→ <i>Attitude towards Behaviour</i>	<i>Reference</i>
1 The environment is one of the most important issues facing the world today	<i>Bohlen G., Schlegelmilch B.B., Diamantopoulos A. (1993)</i>
2 Strict global measures must be taken immediately to halt environmental decline	
3 Unless each of us recognises the need to protect the environment, future generations will suffer the consequences	
4 Green issues should not be a main consideration when deciding what we do in future	
5 If all of us, individually made a contribution to environmental protection, it would have a significant effect	
→ <i>Subjective Norms</i>	<i>Reference</i>
6 Personally, I cannot help to slow down environmental deterioration	<i>Bohlen G., Schlegelmilch B.B., Diamantopoulos A. (1993)</i>
7 The benefits of environmental protection do not justify the costs involved	
8 Too much fuss is made about environmental issues	
9 I believe that mass media give much importance to environmental problems	
→ <i>Perceived Behavioural Control</i>	<i>Reference</i>
10 I normally make a conscious effort to limit my use of products that are made of or use scarce resources	<i>Roberts J.A. (1996)</i>
11 I use a low-phosphate detergent (or soap) for my laundry	
12 I have convinced members of my family or friends not to buy some products that are harmful to the environment	
→ <i>Behavioural Intention</i>	<i>Reference</i>
13 I have switched products for ecological reasons	<i>Roberts J.A. (1996)</i>
14 Whenever possible, I buy products packaged in reusable containers	
15 I make special effort to buy products that are made from recycled materials	
16 I drive my car as little as possible in order to save energy	
17 I will not buy a product if the company that sells it is ecologically irresponsible	
18 When i have a choice between two equal products, I purchase the one less harmful to other people and the environment	

Table 23

<i>The items of Extended Theory of Planned Behaviour</i>		
→	Past Behaviour	Reference
31	I try to buy energy efficient household appliances A+++, A++, A+	<i>Roberts J.A. (1996)</i>
32	I try very hard to reduce the amount of electricity I use	
33	I have purchased a household appliance because it uses less electricity than other brands	
34	I have replaced light bulbs in my home with those of smaller wattage so that I will conserve on the electricity I use	
35	I have purchased light bulbs that were more expensive but saved energy	
→	Environmental Concern	Reference
36	I purchase some products because they cause less pollution	<i>Roberts J.A. (1996)</i>
37	If I understand the potential damage to the environment that some products can cause, I do not purchase these products	
→	Environmental Knowledge	Reference
	Acid Rain	<i>Bohlen G., Schlegelmilch B.B., Diamantopoulos A. (1993)</i>
	Sea/River Pollution	
	World Population Explosion	
	Air pollution from Power Stations	
	Global Warming	
	Ozone Layer Depletion	
	Deforestation	
	Pollution of Drinking Water	<i>self-constructed</i>
	Ocean Oxination	
	Depletion of Natural Resources	
	Waste Management	
	Climate Change	<i>Alhassan G. A.-M. (2007)</i>
	Loss of Biodiversity	
→	Recycling Behaviour	Reference
	Paper	<i>Bohlen G., Schlegelmilch B.B., Diamantopoulos A. (1993)</i>
	Glass	
	Aluminium	
	Plastic	
	Batteries	
	Electrical Appliances	

Table 24

<i>The items of the Theory of Consumption Values</i>		
→ Functional Value		Reference
19	The eco-friendly products are reasonably priced	<i>Sweeny J., Soutar G. (2001)</i>
20	I agree that the quality of eco-friendly products is as good as other products	
21	The eco-friendly products are value for money	
→ Conditional Value		Reference
22	I would buy the green product instead of conventional products under worsening environmental conditions	<i>Lin P.C., Huang Y.H. (2012)</i>
23	I would buy the green product instead of conventional products when there is a subsidy for eco-friendly products	
24	I would buy the green product instead of conventional products when there is a discount rates for eco-friendly products or promotional activities	
→ Actual Purchase Behaviour		Reference
25	I prefer to purchase an environmentally friendly product even if it is somewhat lower in quality	<i>Bohlen G., Schlegelmilch B.B., Diamantopoulos A. (1993)</i>
26	I choose to buy an eco-friendly product regardless of its price	
27	I make a special effort buy household chemicals such as detergents and cleansing solutions that are environmentally friendly	
28	I usually purchase the lowest priced product, regardless of its impact on society	
29	Before buying the product, I seek substantial information about its composition	
30	I am willing to spend a bit more to buy a product that is more ecologically friendly	

Table 25



Panteion University of Social and Political Sciences
Department of Economic and Regional Development

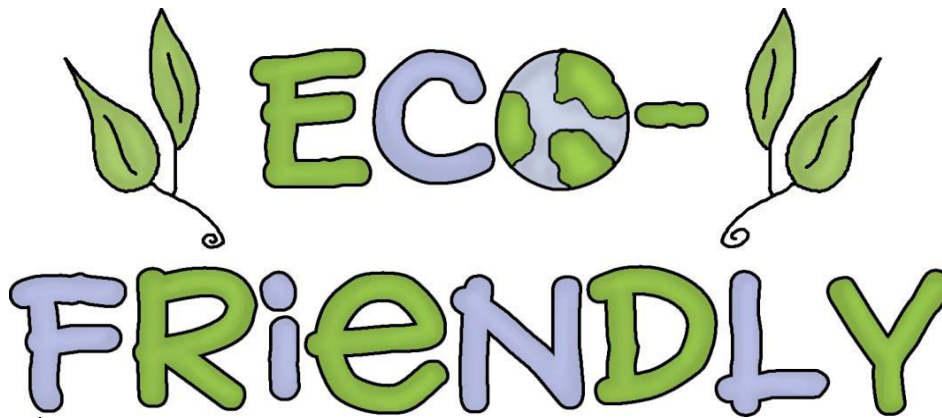


Eco-friendly products are produced with scientific criteria which are applied in the production process and they aim at the reduction of negative impacts on Environment, Health, Climate and Natural Resources. Eco-friendly products contribute to green sustainability and support resource conservation, preventing air, water and earth pollution.


Questionnaire

-			
Gender:	Female	<input type="checkbox"/>	Male <input type="checkbox"/>
Age:	<input type="checkbox"/>		
Educational Attainment:	<input type="checkbox"/>	Lower Education	
	<input type="checkbox"/>	Senior Secondary	
	<input type="checkbox"/>	University	
	<input type="checkbox"/>	Tech. Educational Institution	
	<input type="checkbox"/>	Inst. for Vocational Training	
Higher Education:	<input type="checkbox"/>	Master	
	<input type="checkbox"/>	PhD	
Monthly Family Income:	<input type="checkbox"/>	< 500,00 €	
	<input type="checkbox"/>	501,00 € to 1.000,00 €	
	<input type="checkbox"/>	1001,00 € to 2.000,00 €	
	<input type="checkbox"/>	> 2.000,00 €	
Marital Status:	<input type="checkbox"/>	Single	
	<input type="checkbox"/>	Married	
	<input type="checkbox"/>	Divorced	
	<input type="checkbox"/>	Widow/er	
Number of Children:	<input type="checkbox"/>		
Type of Work:	<input type="checkbox"/>	Public Sector	
	<input type="checkbox"/>	Private Sector	
	<input type="checkbox"/>	Freelance Sector	
	<input type="checkbox"/>	Retired	
	<input type="checkbox"/>	Undergraduate	
	<input type="checkbox"/>	Unemployed	

Do you know that there are specially produced products which are environmentally friendly?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Do you buy some of them?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
If you do not buy, which is the reason?					
I don't know if my purchase includes eco-friendly products			<input type="checkbox"/>		
I don't care to buy eco-friendly products			<input type="checkbox"/>		
I don't trust eco-friendly products			<input type="checkbox"/>		
I am not used to buying eco-friendly products			<input type="checkbox"/>		
Do you know some of the following environmental problems?					
Acid Rain	Yes		<input type="checkbox"/>		
Sea/River Pollution	Yes		<input type="checkbox"/>		
World Population Explosion	Yes		<input type="checkbox"/>		
Air Pollution from Power Stations	Yes		<input type="checkbox"/>		
Global Warming	Yes		<input type="checkbox"/>		
Ozone Layer Depletion	Yes		<input type="checkbox"/>		
Deforestation	Yes		<input type="checkbox"/>		
Pollution of Drinking Water	Yes		<input type="checkbox"/>		
Ocean Oxidation	Yes		<input type="checkbox"/>		
Depletion of Natural Resources	Yes		<input type="checkbox"/>		
Waste Management	Yes		<input type="checkbox"/>		
Climate Change	Yes		<input type="checkbox"/>		
Loss of Biodiversity	Yes		<input type="checkbox"/>		
Do you Recycle?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
If so, then which types of material do you usually recycle?					
Paper			<input type="checkbox"/>		
Glass			<input type="checkbox"/>		
Aluminium			<input type="checkbox"/>		
Plastic			<input type="checkbox"/>		
Batteries			<input type="checkbox"/>		
Electrical Appliances			<input type="checkbox"/>		



	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The environment is one of the most important issues facing the world today	1	2	3	4	5
Strict global measures must be taken immediately to halt environmental decline	1	2	3	4	5
Unless each of us recognises the need to protect the environment, future generations will suffer the consequences	1	2	3	4	5
Green issues should not be a main consideration when deciding what we do in future	1	2	3	4	5
If all of us, individually made a contribution to environmental protection, it would have a significant effect	1	2	3	4	5
The benefits of environmental protection do not justify the costs involved	1	2	3	4	5
The Government should take responsibility for environmental protection	1	2	3	4	5
Too much fuss is made about environmental issues	1	2	3	4	5
Personally, I cannot help to slow down environmental deterioration	1	2	3	4	5
I believe that companies should place higher priorities on reducing pollution than increasing their own profitability	1	2	3	4	5
I purchase some products because they cause less pollution	1	2	3	4	5
If I understand the potential damage to the environment that some products can cause, I do not purchase these products	1	2	3	4	5
The eco-friendly products are reasonably priced	1	2	3	4	5
I prefer to purchase an environmentally friendly product even if it is somewhat lower in quality	1	2	3	4	5
I always try to use electric appliances (e.g. Dishwasher, washer..) before 10 a.m and after 10p.m	1	2	3	4	5
I normally make a conscious effort to limit my use of products that are made of or use scarce resources	1	2	3	4	5
I have switched products for ecological reasons	1	2	3	4	5
I use a low-phosphate detergent (or soap) for my laundry	1	2	3	4	5
I have convinced members of my family or friends no to buy some products that are harmful to the environment	1	2	3	4	5
Whenever possible, I buy products packaged in reusable containers	1	2	3	4	5
I make special effort to buy products that are made of recycled materials	1	2	3	4	5
I drive my car as little as possible in order to save energy	1	2	3	4	5
I will not buy a product if the company that sells it is ecologically irresponsible	1	2	3	4	5

					
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I believe that mass media give much importance to environmental problems	1	2	3	4	5
When I have a choice between two equal products, I purchase the one less harmful to other people and the environment	1	2	3	4	5
I choose to buy an eco-friendly product regardless of its price	1	2	3	4	5
I make a special effort to buy household chemicals such as detergents and cleansing solutions that are environmentally friendly	1	2	3	4	5
I strongly agree that a well-known brand is always a safe product to buy	1	2	3	4	5
I try to buy energy efficient household appliances A+++, A++, A+	1	2	3	4	5
I try very hard to reduce the amount of electricity I use	1	2	3	4	5
I have purchased a household appliance because it uses less electricity than other brands	1	2	3	4	5
I strongly agree that the prices of eco-friendly products are usually more expensive than other products	1	2	3	4	5
I have replaced light bulbs in my home with those of smaller wattage so that I will conserve on the electricity I use	1	2	3	4	5
I have purchased light bulbs that were more expensive but saved energy	1	2	3	4	5
I usually purchase the lowest priced product, regardless of its impact on society	1	2	3	4	5
I agree that the quality of eco-friendly products is as good as other products	1	2	3	4	5
Eco-friendly products are value for money	1	2	3	4	5
Environmentally friendly products would be low priced	1	2	3	4	5
Buying the eco-friendly product would help me to feel acceptable	1	2	3	4	5
Buying the eco-friendly product instead of conventional products would feel like making a good personal contribution to sth better	1	2	3	4	5
I would buy the green product instead of conventional products under worsening environmental conditions	1	2	3	4	5
I would buy the green product instead of conventional products when there is a subsidy for eco-friendly products	1	2	3	4	5
I would buy the green product instead of conventional products when there is a discount rate for eco-friendly products or promotional activities	1	2	3	4	5
Before buying the product, I seek substantial information about its composition	1	2	3	4	5
I am willing to spend a bit more to buy a product that is more ecologically friendly	1	2	3	4	5