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**GREEN PURCHASING BEHAVIOR: GREEN PRODUCTS AND AJZEN'S
THEORY OF PLANNED BEHAVIOR**

της

ΑΝΤΟΡΑ ΔΗΜΑ

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ΚΙΤΣΙΟΥ

Υποβλήθηκε ως απαιτούμενο για την απόκτηση του μεταπτυχιακού

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DEDICATIONS

...dedicated to my loving parents and to all who made this possible

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Abstract

The central aim of this study is to explore the green purchase behavior of consumers in Greece. The emergence of green or environmentally friendly products indicates the increasing attention that environmental issues are receiving. Being able to determine and explain the factors that influence pro-environmental behavior in general and green purchase behavior in particular, will enable marketers and other involved parties to understand and encourage such behaviors. This thesis draws from Ajzen's *Theory of Planned Behavior* (TPB) in order to predict and examine the formation of consumers' intention of purchasing an environmentally friendly product.

Ajzen's Theory of Planned Behavior essentially postulates that an individual's intention to perform a behavior is influenced by three parameters: the attitude of the individual toward purchasing environmentally friendly products, the perceived social pressure to purchase this category of products (subjective norm) and perceived behavioral control over the performance of the behavior. The theory is in principal open to the inclusion of additional antecedents of the main constructs, and thus in this thesis TPB is enriched by testing one additional variable, that of satisfaction from past experience with an environmentally friendly product. The importance of this study lays on the addition of this extra parameter and on the fact that it provides a useful insight in the relatively uncharted area of green purchase behavior among young adults in the region of Thessaloniki, Greece.

The outcomes of the survey on a sample of 353 respondents, showed that attitude toward green purchase behavior and green products in general, exerted by far the greatest effect on green purchasing intentions. The attitudes of the respondents though were only moderately favorable, a fact that raises questions as to the effectiveness of "green declarations". Perceived behavioral control was only moderately significant whereas subjective norms were not a significant predictor. In the extended model satisfaction from previous purchase proved a statistically significant predictor. The implications of these findings for marketers are discussed in the last part of the thesis.

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ABBREVIATIONS

ATT: Attitude

EF: Environmentally Friendly

PBC: Perceived Behavioral Control

SAT: Satisfaction from previous experience

SN: Subjective Norm

TPB: Theory of Planned Behavior

TRA: Theory of Reasoned Action

1. Introduction

1.1 The emergence of environmental concern

“We're in a giant car heading towards a brick wall and everyone's arguing over where they're going to sit”

David Suzuki

There is no secret that the environment is on a path of continuous deterioration. Each and every one of us has witnessed, experienced and felt various facets of this gloomy reality. Climate change, depleting natural resources, ecosystem degradation, pollution, rising population and the never ending demand for expansion of the capitalistic structure of our economy, shape the picture of situation today.

Environment is no more a subject of concern for the “weird” few, but has emerged as an urgent issue for all of us. This broad awareness concerning environmental issues is the result of the extensive media coverage of the ever more often environmental disasters, the emergence of environmental non-governmental organizations and the fact that we live in an era where information is just one click away. Emerging environmental dimensions have also brought about new notions, fields and disciplines that try to understand and achieve the seemingly impossible: to balance human development, as expressed by economic growth, and the limited capacity of earth to host our expansion. Notions such as sustainability, social responsibility, responsible consumption, green marketing, green consumers etc. have become an integral part of the management and marketing vocabulary.

This “green trend” has given rise to a unique category of products: the green or environmentally friendly (EF) products. We should expect that the growing environmental concern and awareness would be translated into a growing demand for green products and consequently into a growing market share for this category. The interesting fact here is that this does not seem to be the case (see *The Attitude Behavior Gap* section). Either they are self-proclaimed or genuinely green, this category of products is yet to capture the share of market that the urgency of the environment's deterioration dictates (Kalafatis *et al.*, 1999). Trying to answer this pressing question this thesis sets to explore something that has always fascinated researchers: how can we predict consumers' behavior?

As time goes by more and more sophisticated models are aspiring to capture the key elements that define and shape human attitude, intentions and ultimately behavior. The behavior in question is the purchase of green products –or more precisely the formation of the intention of engaging in such a behavior- and the conceptual context that provides us the tools in our analysis is that of *The Theory of Planned Behavior* (TPB). This study consequently aspires to identify the significance of the influential factors for green purchase behavior, as stipulated by TPB, and hopefully contribute to our further understanding of the subject.

1.2 Contribution of the thesis

Ajzen's *Theory of Planned Behavior* has been widely used in order to explore behaviors in various domains, providing satisfactory results and a strong predictive utility. Thus, it will provide the model and methodological tools for this study, aiming at enhancing our understanding and prediction ability of customers' intention to buy an environmentally friendly product.

The present study aspires to add on previous research that apply Ajzen's Theory of Planned Behavior in studying green purchase behavior, by enhancing the model and testing the validity of an additional research parameter, that of satisfaction from previous purchase of an environmentally friendly product. Furthermore, it will provide a useful insight into the context of green product purchase intention and behavior of young adults in the area of Thessaloniki.

1.3 Thesis Outline

In the next part of the thesis, namely the Literature Review, key concepts such as Green Purchase Behavior along with its influential factors and Green Marketing are discussed. A detailed analysis of The Theory of Planned Behavior by *Icek Ajzen*, Professor of Psychology in the *University of Massachusetts at Amherst*, follows in order to set the conceptual basis and framework for the research part of the thesis. Moreover, the attitude-behavior gap is examined so that the importance of relevant studies becomes evident. In the third part of the thesis the Methodology is outlined while the Results are presented in the fourth part. The thesis concludes examining the appropriateness of the Theory of Planned Behavior in predicting green purchasing intentions. Concluding, implications for marketers are reviewed and discussed along with limitations and suggestions for future research.

2. Literature Review

2.1 Green Purchase Behavior

The emergence of serious environmental problems like global warming in the 1990s moved environmental issues from the fine prints into the spotlight of headlines, and enhanced peoples' sensitivity for environmental issues. As the environment moved from a fringe to a mainstream issue (Kalafatis *et al.*, 1999) consumers were faced with a new dimension, that of environmental responsibility that gave birth to one particular kind of behavior, pro-environmental behavior. Kollmuss and Agyeman (2002) define pro-environmental behavior as “...*behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built world (e.g. minimize resource and energy consumption, use of non-toxic substances, reduce waste production).*”

The term pro-environmental is rather generic since a number of behaviors can be classified as pro-environmental: recycling, reusing materials, composting, green purchase behavior and green consumption in general, energy and water conservation, waste management, taking the bus or bicycle to work instead of your car and more. The target behavior of this thesis is green purchase behavior, which falls into the general context of green consumption. Zhao *et al.* (2013) identify three forms of green consumer behavior according to the stage of the consumption process: *purchasing, using and recycling*. Wang (2010, cited in Zhao *et al.*, 2013) has pointed out that these three behaviors have different intrinsic motivations:

- *Purchasing* incurs personal costs since consumers are requested to pay more for environmentally friendly products in order to secure public benefits.
- *Using* as translated by conservation behavior basically implies that one has to change his or her life habits.
- *Recycling* represents seeking private interest in order to engage.

The type of pro-environmental or environmentally sensitive behavior that this thesis focuses on, as mentioned above, is that of green purchase behavior that has become a very popular research topic among academics in the last three decades (Albayrak *et al.*, 2011; Zhao *et al.*, 2013). Consumers have come to the realization that their purchasing behaviors and patterns have an impact on environment by contributing to

various environmental problems. This realization consequently led consumers to seek and prefer to buy green or environmentally friendly products over conservatives even if they had to pay or search more (Laroche et al., 2001; Kalafatis et al., 1999) or even accept lower levels of performance (Han et al., 2010).

Durif et al. (2010, p.27) have identified a number (35 to be exact) of definitions in the literature for green products which they codified in order to form an integrative definition: "A green product is a product whose design and/or attributes (and/or production and/or strategy) use recycling (renewable/toxic-free/biodegradables) resources and which improves environmental impact or reduces environmental toxic damage throughout its entire life cycle".

At this point is useful to identify what exactly means to purchase green or environmentally friendly products. There are many aspects of green consumption, as expressed by green purchasing, that include: purchasing products, such as detergents, that have a reduced environmental impact, avoiding products with aerosols, purchasing recycled paper products such as toilet tissue and writing paper, buying organic produce or locally produced foods, purchasing from a local store, buying fairly traded goods, looking for products using less packaging etc. (Gilg et al., 2005).

2.2 The influential factors of green purchase behavior

The focus of the many empirical studies produced since the 1970's has been to identify and determine the influential factors of green purchase behavior (Ramayah et al., 2010). In other words researchers have tried to answer and ultimately reach a consensus on what drives consumers to purchase green or environmentally friendly products. Who is this infamous "green consumer" and what factors influence his purchase decision? These factors can be best summarized into three sets of variables, socio-demographic variables, psychological factors and environmental and social values (Gilg et al., 2005).

I. Demographic factors

The once most widely used set of variables, has now fallen into disfavor since its success to explain consumer green purchase behavior has been rather limited (Albayrak et al., 2011). The stereotypical view of the green consumer as the young, well-educated female with a high income and liberal views seems to be an unhelpful oversimplification (Hines et al., 1987). Age, gender, marital status, education, social

class and income have been the subject of numerous studies with contradicting results: [Diamantopoulos's et al. \(2003\)](#) profiling of green consumers, [Kinnear's et al. \(1974, cited in Zhao et al., 2013\)](#) conclusion that income is another positive predictor of green purchasing behavior since green products are generally priced higher than conventional products ([Laroche et al., 2001](#); [Kalafatis et al., 1999](#)), [Widegren's \(1998\)](#) indication of the independence of green behavior of age, [Robert's \(1993\)](#) work on sex differences in socially responsible consumers' behavior and more. There is no consensus among researchers and the debates that surround both the impact of age and income are still ongoing ([Gilg et al., 2005](#)). The education level appears to be the most important demographic variable and a plausible explanation can be that the more educated can better understand complex environmental issues and thus form a more positive attitude toward green consumer behavior ([Diamantopoulos et al., 2003](#); [Zhao et al., 2013](#)).

II. Psychological factors

Psychological factors are *personal attitudes* held by the individual concerning the behavior in question, green consumption in our case ([Gilg et al., 2005](#)):

- **Perceived consumer effectiveness (PCE)** indicates the extent to which a consumer perceives that he/she can have an impact on the environment. It has generally been found that a high level of PCE results in greater levels of green consumerism ([Gilg et al., 2005](#); [Roberts, 1996](#)).
- **Self-efficacy** relates to one's own ability to take part in green consumption ([Gilg et al., 2005](#)).
- **Social responsibility** refers to the extent to which an individual feels morally responsible to take part ([Gilg et al., 2005](#)).
- The interaction of the **effects of price, quality and brand loyalty** ([Gilg et al., 2005](#)).
- **Environmental knowledge** has been thought to be a main motivator of green consumer behavior ([Peattie, 2010](#)). Generally the literature points towards a positive relationship but again results are inconclusive ([Zhao et al., 2013](#)).

III. Environmental and social values

This most recent set of variables that has also not yet come to definitive results explores the impact that underlying personal values have on behavior. [Ramayah et al. \(2010\)](#) defines values as one's judgments about what is important in life, and along with beliefs and worldview assumptions influence one's behavior. These values include but are not limited to environmental concern, environmental activism, moral norms, social altruism, conservation values, etc.

Many researchers have contributed to the enrichment of this particular category of determinants: the *social values* of [Schwartz \(1992\)](#), [Inglehart's \(1990\) Theory of Post-materialism](#), [Dunlap's and Van Liere's \(1978\) New Environmental Paradigm \(NEP\)](#), the social-altruism of [Stern et al. \(1995\)](#), [Thogerson's and Olander's \(2002\) study on the influence of individual value priorities on sustainable consumption](#), [Follows and Jobber's \(2000\) model of self-transcendence \(SVN\)](#), conservation (CVN) and self-enhancement values (SEVN), [Karp's \(1996\) work on altruistic values](#), [Chan's \(2001\) measure of biospherism](#) and [Robert's \(1996\) Ecologically Conscious Consumer Scale](#) and more.

2.3 Green Marketing

Green or Ecological or Environmental Marketing ([Tiwari et al., 2011](#)) emerged as a trend in the 1990's following a long line of environmental responsibility research, starting from the 1970's and focusing on non-consumption behaviors (energy conservation, political activism), on ecology, on air pollution and on post-purchase behaviors such as recycling and waste separation ([Ramayah et al., 2010](#)).

There are plenty definitions and approaches as to what green marketing is. For [Tiwari et al. \(2011\)](#) "*Green Marketing refers to holistic marketing concept wherein the production, marketing consumption and disposal of products and services happen in a manner that is less detrimental to the environment with growing awareness about the implications of global warming, non-biodegradable solid waste, harmful impact of pollutants, etc.*"

Peattie (2001) identifies three phases in the evolution of green marketing:

1. The "Ecological" green marketing phase, where all marketing activities were concerned to help remedy existing environmental problems.
2. The "Environmental" green marketing phase, where the focus shifted on clean technology.
3. Lastly, the "Sustainable" green marketing phase.

Green marketing movement, much as green consumption, reflects businesses' responsibility toward society to ensure that they conduct their activities in a way that minimizes the negative effects on the environment (Tiwari *et al.*, 2011). The emergence of this green dimension offered new business opportunities for organizations and marketers to develop pro-active environmental strategies and launch environmentally friendly or green products. Effective marketing strategies can help position this category of products in the competitive arena and gain a competitive edge by differentiating themselves from similar but non-green alternatives (Han *et al.*, 2010).

Other than gaining a competitive advantage firms adopt green marketing strategies for many reasons (Tiwari *et al.*, 2011):

- To use the fact that they are environmentally responsible as a marketing tool.
- To transform their organizational culture.
- To respond to governmental pressures.
- To address competition.
- To take advantage of cost savings in the production process.

Green marketing though does not solely refer, as many believe, to the promotion or advertising of products with environmental characteristics, but is a much broader concept that involves product modification, changes to the production process, and changes in packaging, that can be applied to either consumer or industrial goods and services (Tiwari *et al.*, 2011).

According to Tiwari *et al.* (2011) there are two underlying assumptions of green marketing: first, that the green characteristics of a product will be perceived by potential consumers as a benefit and affect their purchasing decision accordingly, and second that consumers will be willing to pay more for green products compared to

conservatives. These two assumptions imply that the “greenness” of a product is an additional trait or function that should render a higher price than conservatives a logical outcome. Now, how consumers perceive these assumptions in conjunction with other influential factors is a very interesting subject.

It is therefore extremely important for businesses to understand how a consumer decides whether or not to buy a green product. The focus of our analysis is not if the product in question is environmentally friendly *per se*. It is the consumer’s perception of a product being environmentally friendly and how this affects his/her attitude and purchase behavior that interests us.

2.4 The Theory of Planned Behavior

“...explaining human behavior in all its complexity is a difficult task”

Icek Ajzen (1991, p.179)

The *Theory of Planned Behavior* (henceforth TPB) (Ajzen, 1985, 1991, Ajzen and Madden, 1986) is an extension to the initial *Theory of Reasoned Action* (henceforth TRA) by Fishbein & Ajzen (1975). The Theory of Planned Behavior (TPB) is an expectancy-value model examining the relationship of attitude and other constructs with behavior (Conner and Armitage, 1998). The theory implies that behavioral decisions rely on a deliberative processing model based on careful consideration of available information (Conner and Armitage, 1998). TPB has been widely applied in many domains such as marketing, consumer behavior, health psychology and more, and has exhibited strong predictive power in terms of the percentage of variance explained in behavior and intentions by TPB components (Conner and Armitage, 1998; Han *et al.*, 2010).

Both in TRA and its extension TPB we find the role of *intention* to be central as Ajzen (1991, p.181) defines it ““...the motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior”. Intention is a determination to act in a certain way which means that when a person willingly performs a behavior then this behavior is under the control of intention. It is self-evident the people tend to engage in behaviors they *intend* to perform and this exactly links intentions with behavior (Conner and Armitage, 1998). In other words,

individuals normally have a high degree of volitional control on their decision process which means that the final decision will be a *reasoned* choice among alternatives.

Now, the next logical step is to identify how behavioral intention is formed. For TRA behavioral intention is a function of two factors, *attitude (ATT)* toward the behavior in question and *subjective norm (SN)*. Attitudes are the overall evaluations of the behavior by the individual or in the words of Ajzen, (1991, p.188) “*the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question*”. Subjective norms assess the *perceived* social pressures on individuals to perform or not to perform the behavior in question (Ajzen, 1991, p.188) and is therefore, internally controlled. This essentially means that it does not operate through external reinforcement or disapproval of others significant to the individual, such as friends, parents, political parties, religious organizations, etc. (Kalafatis *et al.*, 1999). It is what the individual *thinks* (subjective) that *others* who matter to him/her want him/her to do (norm).

A schematic representation of the initial Theory of Reasoned Action follows in *Figure 2.4.1*.

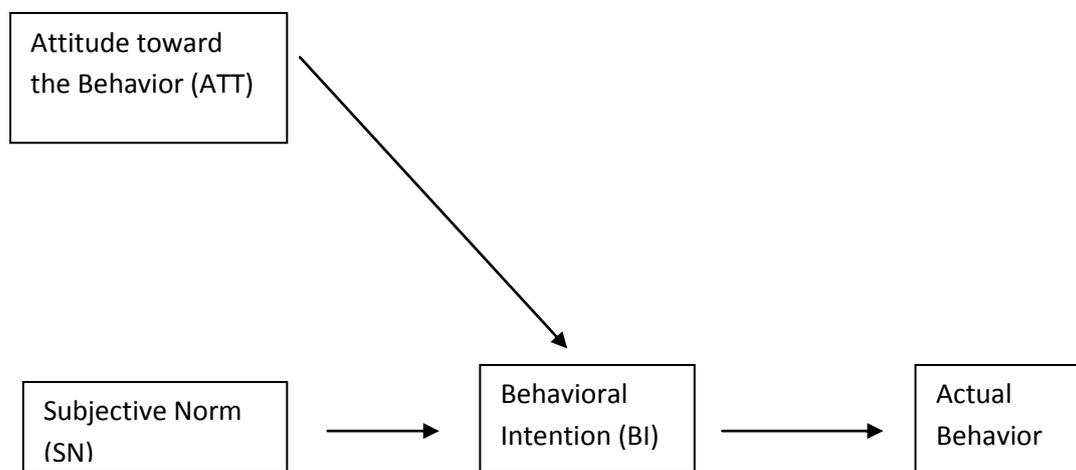


Figure 2.4.1: Schematic representation of the Theory of Reasoned Action (Ajzen, 1991)

Where motivation and opportunity permit, attitude toward a behavior may well influence behavior via intentions, but a person’s behavior can be also influenced by

non-volitional factors that may inhibit or facilitate the performance over the behavior. For example, a person might have a positive attitude toward buying a green product and also have a perception of general social pressure to enact, but the high price and/or the inconvenient location etc. inhibit him from actually buying the product. If there are no external or internal parameters that influence the performance over the behavior then TRA should be sufficient, but chances are that such behaviors are limited. The lack of non-volitional factors has been considered to be a major setback for TRA and has led to the questioning of its applicability (Ajzen, 1985; 1991).

TPB has been assumed to fill this void by introducing a third predictor of behavioral intention, *perceived behavioral control (PBC)*, which concerns the possession of sufficient resources and/or opportunities to perform a specific behavior, incorporating also perceptions of control over performance of that behavior (Ajzen, 1991). Naturally, individuals who perceive that they have access to the necessary resources and furthermore have the opportunities (or equally perceive no obstacles) to perform the behavior, are more likely to have a high degree of PBC (Ajzen, 1991). In more plain words, PBC is the individual's perception of the extent to which performance of the behavior is easy or difficult (Ajzen, 1991, p.122) and thus should be a defining factor over the realization of the behavior. This control that an individual can exert on a behavior, can be seen as continuum according to Conner and Armitage (1998): at the one end are easily executed behaviors such as buying gum, and at the other end behavioral goals that demand resources, opportunities, and specialized skills (e.g. buying a car).

The link between PBC and behavior is more complex than the link of behavior with intention. PBC has both a direct effect on behavior and an indirect effect on behavior mediated by intentions. TPB depicts the actual behavior itself as a function of PBC and intentions and Ajzen (1991, p.184) offers two reasons for this:

*“First, holding intention constant, the effort expended to bring a course of behavior to a successful conclusion is likely to increase with perceived behavioral control.
(...)The second reason for expecting a direct link between perceived behavioral control and behavioral achievement is that perceived behavioral control can often be used as a substitute for a measure of actual control.”*

The above are based upon the assumption that PBC has motivational implications for behavioral intentions, as mentioned earlier. Individuals who believe they lack the necessary resources or opportunities to perform the behavior in question are rather unlikely to form strong behavioral intentions and by extension perform the behavior, even if their attitude and subjective norm is favorable (Kalafatis *et al.*, 1999).

Another important element concerning intentions and PBC that should be noted is that their importance in predicting actual behavior depends heavily not only upon the type of the specific behavior examined but upon the nature of the situation itself as well (Ajzen, 1991, p.185). This also applies for the relative importance of attitude, subjective norm and perceived behavioral control in the prediction of intentions.

The addition of PBC makes TPB a very useful model in predicting pro-environmental (Chan and Lau, 2002, p.13) behaviors such as purchasing green products that may demand more search, money, time etc. Although intention to purchase a specific product has been found to be a good predictor of actual behavior in purchasing the product (Ramayah *et al.*, 2010), the non-volitional or the external moderators play an also important role in the decision making process concerning green products, since if consumers feel that can buy a green product then they are more likely to do so.

To recap a person's behavior can be directly predicted by one's intention to perform this behavior and his/her control over the performance of the behavior in question. Behavioral intention moreover is influenced by attitude, subjective norm and perceived behavioral control. Hence, an individual forms a behavioral *plan* or intention about how to behave based on his/her attitude, normative pressures and perceptions of control over the behavior: it is a *planned behavior* (Conner and Armitage, 1998).

Just as intentions are held to have determinants, so the attitude, subjective norm, and perceived behavioral control are also held to have determinants which can be considered as indirect determinants of intentions (Ajzen, 1991; Ajzen and Fishbein, 1980):

- **Attitude (ATT)** is the function of a person's salient (those that are easily brought to mind and thus are likely to affect behavior) *behavioral beliefs (BB)*, which represent one's subjective probability that performing a behavior will lead to certain outcomes, and the *outcome evaluation (OE)* about their

significance or desirability. Since attitude (ATT) is based like this on salient beliefs it may well be termed a belief-based measure of attitude. Following expectancy-value conceptualizations the model determines ATT as the multiplicative combination of BB that outcome i will occur and the person's evaluation (OE) of that outcome: $BB_i OE_i$. These expectancy value products are then summed over the various salient outcomes leading to a favorable or unfavorable *attitude toward the behavior (ATT)*: $\Sigma BB_i OE_i$. If this is valid, the belief-based measure of attitude should correlate well with a standard or direct measure of the same attitude (Ajzen, 1991, p.191).

- **Subjective norm (SN)** is the function of *normative beliefs (NB)*, which represent perceptions or subjective likelihood of specific salient groups or individuals' (salient referents such as family, friends, coworkers etc.) expectations about whether one should or should not engage in the behavior, and one's *motivation to comply (MC)* with these expectations. SN is quantified as the multiplication of NB of referent j with the person's motivation to comply (MC) with that same referent: $NB_j MC_j$. These products are then summed across salient referents to form the *perceived social pressure (SN)*: $\Sigma NB_j MC_j$. Again, a positive correlation is to be expected with the direct measure of SN.
- **Perceived Behavioral Control (PBC)** is the function of *control beliefs (CB)* that refer to one's perception of the presence/absence of resources/opportunities required to perform the behavior, and his/her assessment of the power of each factor to facilitate or inhibit the behavior (*perceived power (PP)*). PBC is quantified as the multiplication of CB of factor k with the person's perceived power (PP) over that factor: $CB_k PP_k$. These products are then summed across salient factors to form the *perceived control over the performance of behavior (PBC)*: $\Sigma CB_k PP_k$. Again, a positive correlation is to be expected with the direct measure of PBC.

For a better understanding of the causal relationships and links that TPB outlines a schematic representation of the classic theory is depicted in *Figure 2.4.2*.

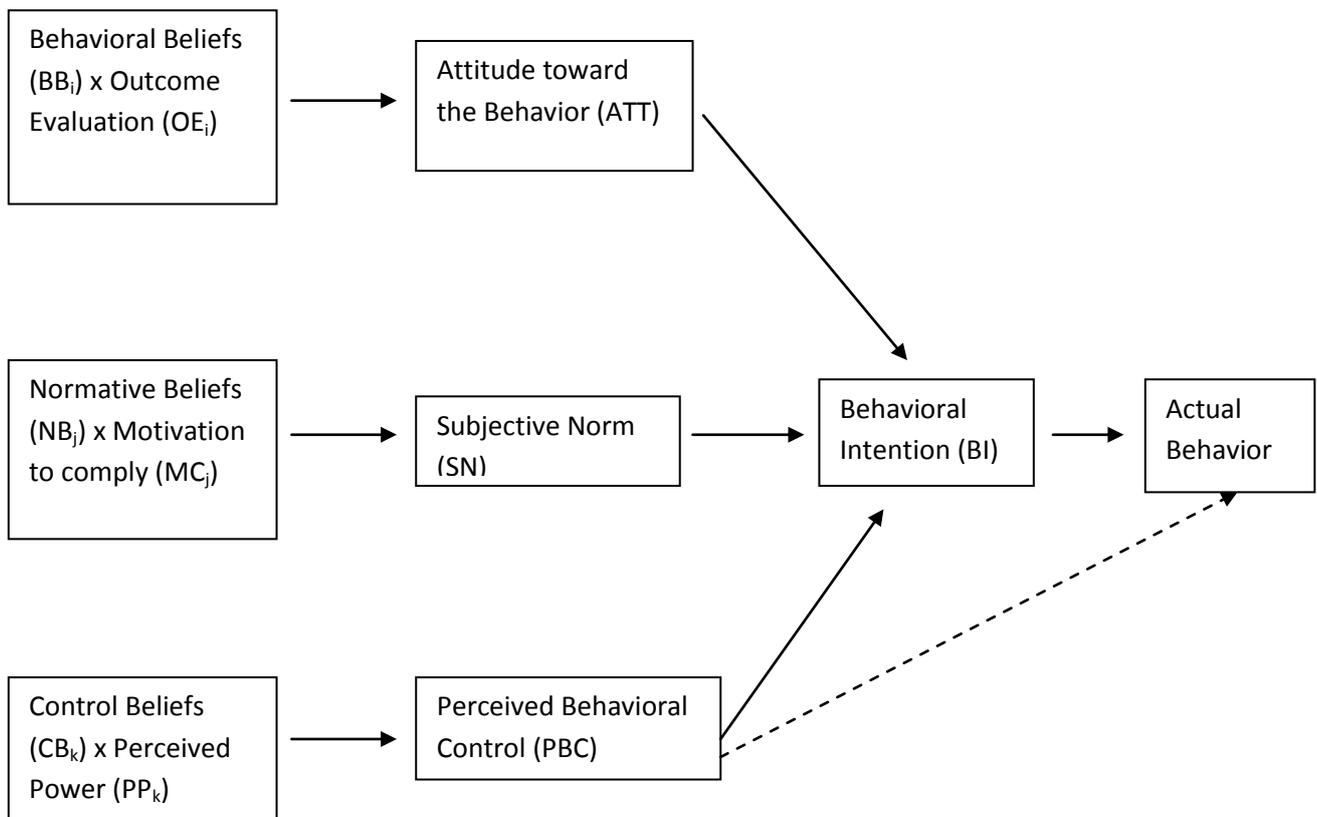


Fig.2.4.2 Schematic representation of the Theory of Planned Behavior (Ajzen, 1991)

All these factors, attitude toward the behavior (ATT), subjective norm (SN) and perception of behavioral control (PBC) influence the *behavioral intention (BI)*.

Ajzen (1991) furthermore argues that “...*the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger should be the person’s intention to perform the behavior in question.*” In other words he identifies a positive relationship between ATT/SN/PBC and BI.

2.5 The Attitude Behavior Gap

The previous sections should have made clear the fact that both consumers and businesses are willing to make the green step forward. Green products and services are out there, environmentally concerned consumers are also out there, but the market doesn’t seem to reflect or prove that the intentions and positive attitudes of green consumers are translated into actual buying behavior (Kleiner, 1991; Schlossberg 1991; Gupta and Ogden, 2009). This means that a positive *attitude* toward a behavior

or an *intention* to engage does not automatically lead a person to perform that behavior, even if there are no apparent obstacles. The “black box” that is consumers’ unknown behavioral processes is indicative of the phenomenon of proclaimed “environmentally concerned” consumers that do not show the expected consistent preference for environmentally friendly products. This phenomenon is known as the *attitude-behavior gap* and puzzles researchers, marketers and public policy makers (Kilbourne and Picket, 2008; Gupta and Ogden, 2009).

This gap may be attributed to various reasons (Grimmer and Bingham, 2013): consumers may be more likely to shop based on traditional product attributes (e.g. price, performance etc.), consumers may not trust the environmental claims of companies and products or consumers may not have adequate environmental knowledge, concern or the necessary commitment.

In Greece of 2013 the situation is quite discouraging. In a time of severe economic crisis Greeks do not seem to acknowledge environment as a priority on a national level. The European Commission’s survey on main concerns of European citizens (Standard Eurobarometer 79, 2013) revealed that a remarkably low percentage of Greeks (0%) identifies environment, climate and energy issues as an important issue facing Greece, with unemployment scoring 65%. Therefore, how green products are to capture consumers’ preference if their most distinguished attribute (being green) is of no imminent importance for consumers in Greece?

Nevertheless, the question still remains. Why that is, that the favorable attitude towards environmentally friendly products cannot always be translated into actual purchasing of these products? And what ultimately drives people to buy environmentally friendly products? A very challenging question for marketers and researchers, since this represents a social dilemma between the decision to buy a green product, based on a collective social gain, and the decision not to buy that stems from self-interest considerations.

Many explanatory theories and models have been used in order to shed light into the decision-making process of consumers and on how their intentions are formed. Theories from domains such as sociology, psychology and economics have explored the dimensions of attitude and intention formation and it remains a concern of social psychologists to understand why not everyone behaves in accordance with their

intentions. Drawing from the Theory of Planned Behavior the author seeks to understand what are the driving forces and motivational factors behind green purchase behavior and how this mechanism, that leads to the development of behavioral intentions, works.

TPB is one of the most commonly used theories (Chan and Lau, 2002), though it has received its fair share of critique for the absence of variables that may determine behavior. This has been addressed by Ajzen who argues that any other influences on behavior are exerted via influencing components of the TPB (Ajzen, 1991) which renders TPB a theory of *proximal* determinants of behavior (Conner and Armitage, 1998).

TPB allows further variables to be incorporated into the model in order to enhance its predictability and thus in principle TPB “*is open to the inclusion of additional predictors if it can be shown that they capture a significant proportion of the variance in intention or behavior after the theory’s current variables have been taken into account*” (Ajzen, 1991, p.1991). This is an extra advantage of TPB that can enhance its predictability provided that the process by which the new variable influences intentions and behavior is specified and its relationship to existing components of the TPB is explored.

3. Methodology

3.1 Questionnaire Construction

TPB forms the conceptual framework of this study because it provides a well-defined structure that allows thorough investigation of the formation of customers’ environmentally friendly products purchasing intentions by simultaneously considering volitional and non-volitional factors, by allowing for additional predictors to be employed and lastly because intention to purchase a specific product has been found to be a good predictor of actual behavior in purchasing the product (Ramayah *et al.*, 2010).

The construction of the questionnaire followed the instructions by Ajzen (2002; 1991) and was based on the work of Han *et al.* (2010) and Han and Kim (2010), who employed TPB in order to investigate consumers’ intention to stay at a green hotel when travelling, and on the work of Chan and Lau (2002) who applied TPB in green

purchasing behavior, as this thesis does. Items were adapted for the requirements of this research but the general style of the studies was followed.

TPB was tested against a sample of young Greek consumers through the questionnaire prepared in the Greek language. The questionnaire was distributed in two ways during April to August 2013: it was posted online and was communicated to a convenience sample through social media and academic email databases of the *University of Macedonia* and the *International Hellenic University*, and was additionally printed in 210 copies and distributed to the students of the *Technological Institute of Thessaloniki*, Department of Agricultural Studies and to a convenience sample.

In the opening instructions of the questionnaire a definition of environmentally friendly products was provided. The questionnaire used in this study was composed of seven sections:

1. The first included items designed to assess behavioral beliefs (BB), control beliefs (CB), normative beliefs (NB), perceived power (PP), perceived behavioral control (PBC) and subjective norm (SN).
2. The second section consisted of outcome evaluation (OE) constructs.
3. The third section measured motivation to comply (MC) constructs.
4. The fourth measured the predictor construct of attitude (ATT).
5. The fifth consisted of buying intention / behavioral intention measures (BI).
6. The sixth section asked respondents to choose from two hypothetical products X and Y with different characteristics and also to state if they had ever purchased an environmentally friendly product and if yes if they were satisfied by their choice.
7. Finally, the last section contained questions for demographic information (gender, age, annual available income, educational level).

The respondents were asked to answer each item measuring TPB components, except questions concerning attitude, in a 7 point Likert-type scale as most applications of TPB do (Ajzen, 1991, p.192).

Moreover, Ajzen (1985, p.15; 1991) points out that the three determinants of intention (ATT, SN, PBC) may be measured directly or indirectly, as mentioned in a previous section, with both methods being equally recommended. In this thesis, the author

chose to use both the direct and indirect measurement of ATT, SN and PBC by employing the respective measures in the questionnaire (for a detailed review on the indirect and direct measures of TPB components see also [Ajzen 1985 and 1991](#)). In more detail BB and OE were measured by 5 items, NB and MC by 3 items, CB and PP by 3, attitude by 5 items and lastly subjective norm, buying intention by 3 items, future behavior and past experience with 1 item.

To measure ATT a semantic differential scale was used (*1=extremely unpleasant, 7=extremely pleasant*) including as well the *good-bad* scale which tends to capture overall evaluation of the behavior very well, as [Ajzen \(2002\)](#) has stated. Generally both in the semantic differential scale and in the Likert-type scale items are scored in a *unipolar* fashion, from 1 to 7, with higher numbers representing greater subjective probabilities (*7=highly likely*) or more favorable evaluations (*7=extremely pleasant*), respectively ([Ajzen, 2002](#)).

To measure SN 3 items were employed (e.g. “People whose opinions I value would prefer that I buy EF products.”) with a 7-point Likert-type scale (*1=strongly disagree, 7=strongly agree*).

PBC was directly measured by 3 items such as “Whether or not I buy EF products is completely up to me.” with a 7-point Likert-type scale (*1=strongly disagree, 7=strongly agree*). BI was measured by items such as “I intend to buy EF products.” (*1=strongly disagree, 7=strongly agree*).

BBs were measured by items in a 7-point Likert-type scale (*1=strongly disagree, 7=strongly agree*) for the perceived advantages of buying EF products as elicited by the relevant literature (healthier, safer products, protection of the environment, social responsibility, reduced expenses). Their outcome evaluation (OE) for each construct (e.g. Protecting the environment is for me:) was measured by *1=very unimportant-7=very important*.

NB was measured for 3 referents as in [Han’s et al. \(2010\)](#) and [Han and Kim’s \(2010\)](#) work: family/relatives, friends, colleagues/partners (e.g. My friends think I should buy EF products, *1=strongly disagree, 7=strongly agree*) and MC with “Generally speaking, how likely are you to do what your family/relatives think you should do?” (*1=highly unlikely, 7=highly likely*).

Finally, CB was measured as in [Han's et al. \(2010\)](#) and [Han and Kim's \(2010\)](#) work: EF products are expensive/hard to find/have lower performance with a *1=strongly disagree, 7=strongly agree* scale, were PP was measured on the same scale about the power that each construct had on one's decision (e.g. The performance of an EF product would affect my decision to purchase).

Following, a measure of behavior was included in the form of a hypothetical situation (variable GPB- *Green Purchasing Behavior*). The respondents were asked to choose between two laundry detergents X and Y with the following characteristics:

X: Promises good performance even at low temperatures, the active ingredients are biodegradable, contains raw materials of plant origin and its packaging is recyclable. Product X has a value of 20 € and is produced by a company that you have never purchased before.

Y: Promises absolute cleanliness even at low temperatures, is the product of a large company you know and trust, and the price is 14 €.

This question was designed to elicitate respondents' actual purchasing choice between an environmentally friendly product (X) and a conventional one (Y) without explicitly stating which is which.

Lastly, in order to establish an additional past experience measure, which according to [Ajzen \(1991, p.188\)](#) is assumed to be already reflected in PBC, respondents were asked to state if they had ever purchased an environmentally friendly product, and if so what was their level of satisfaction. It is assumed that this additional variable acts as a direct antecedent of intention along with attitude, subjective norm and perceived behavioral control. Following [Ajzen's \(1991, p.202-203\)](#) suggestion, this inclusion can be used in order to test the model's sufficiency in predicting future behavior: a significant residual effect of past on future behavior would indicate the absence of an important factor from the theory.

Figure 3.1.1 summarizes the proposed extended model.

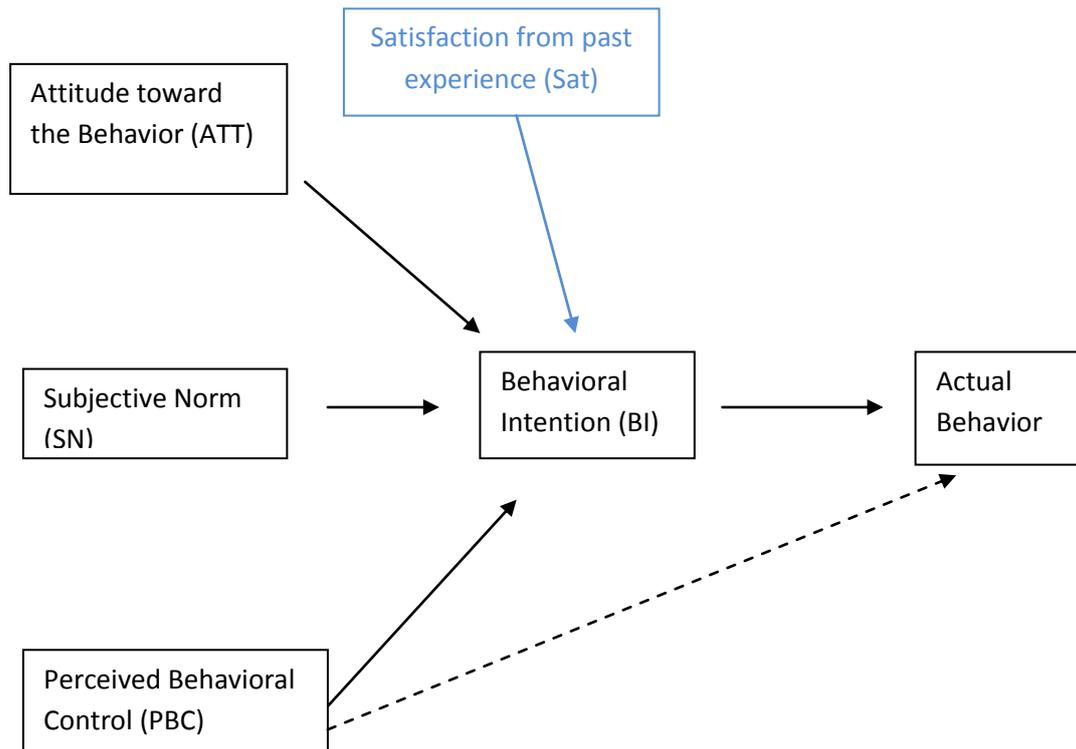


Figure 3.1.1: Satisfaction from past experience serves as predictors of behavioral intention in an extended Theory of Planned Behavior

The questionnaire is presented in [Appendix 1](#) in Greek and in [Appendix 2](#) in English.

3.2 Research Objectives and Hypotheses

The main objective of the research presented here is to provide an insight into how attitudes, perceived behavioral control and subjective norm are related to environmentally responsible purchase. Thus, the applicability and appropriateness of TPB within the green marketing domain will be tested in order to establish the nature (positive or negative) and the statistical significance of the parameters in the model.

In more details the research presented here aims at determining the relative contributions of *attitudes*, *perceived behavioral control* and *subjective norm* to intentions of purchasing environmentally friendly products. Moreover, this study explores the contribution to the theory and the validity of one additional parameter, that of satisfaction from past behavior. *Figure 3.1.1* summarizes the proposed extended model where satisfaction from past behavior serves as an immediate predictor of intention. Thus, the respective hypothesis (*Hypothesis 7*, see below) postulates that a positive relationship should be expected between satisfaction from a

previous purchase of an environmentally friendly product and intention to engage in green purchase behavior again.

Next, the hypotheses stemming from the Theory of Planned Behavior along with the additional hypothesis for satisfaction from previous experience are stated. (see also p. 11-12 for a detailed analysis of the indirect determinants of intentions $\Sigma B_i E_i$, $\Sigma N B_j M C_j$ and $\Sigma C k P k$ as shown in *Hypotheses 1-3*).

Hypothesis 1: $\Sigma B_i E_i$ should positively correlate with **ATT**.

Hypothesis 2: $\Sigma N B_j M C_j$ should positively correlate with **SN**.

Hypothesis 3: $\Sigma C k P k$ should positively correlate with **PBC**.

Hypothesis 4: If an individual has a more positive **attitude (ATT)** toward green products, then he or she will be more likely to have the intention of buying a green product.

Hypothesis 5: If an individual has more positive **subjective norms (SN)** toward green products, then he or she will be more likely to have the intention of buying a green product.

Hypothesis 6: If an individual **perceives** more **behavioral control (PBC)** on buying green products, then he or she will be more likely to have the intention of buying a green product.

Hypothesis 7: If an individual has been engaged in the process of buying a green product and was satisfied with its performance, then he or she will be more likely to have the intention of buying a green product.

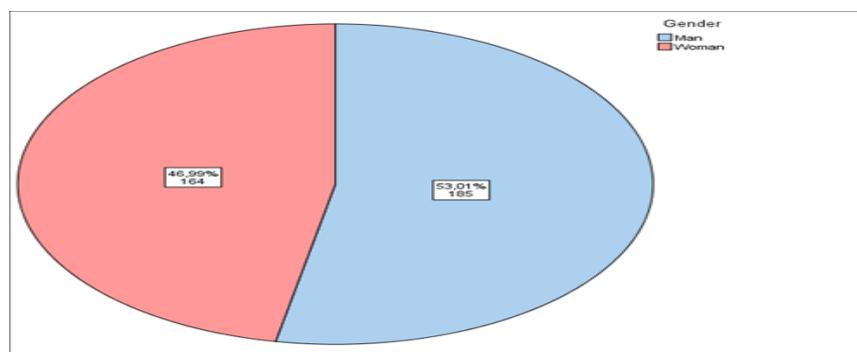
4. Results

4.1 Sample description

The valid responses recorded both from the online and the printed forms of the questionnaire were 352. *SPSS version 20* was employed in this thesis data analysis.

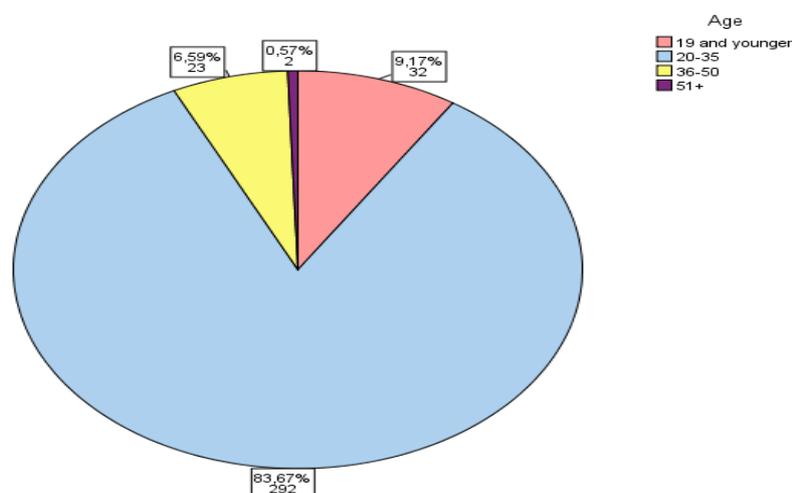
53% of the respondents were men, 47% women and 3 respondents chose not to disclose (*Pie chart 4.1.1*). Therefore, we detect a slight gender bias in the sample towards males.

Figure 4.1.1: Gender



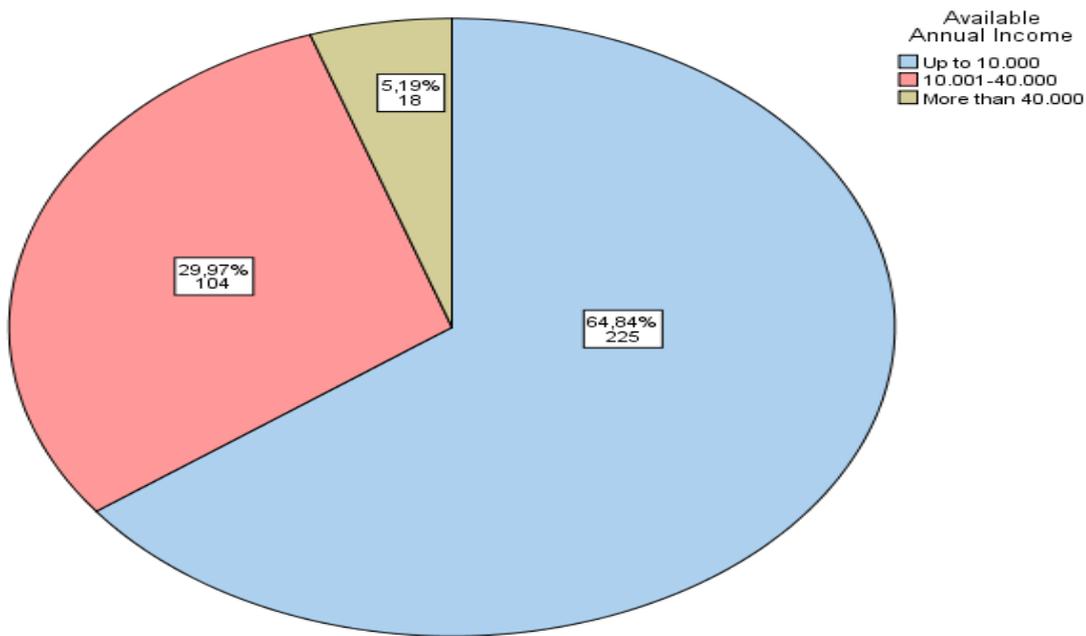
9,2% of the respondents were 19 years old or younger, the overwhelming majority of 83,7% between 20-35, 6,6% between 36-50, 0,6% 51 and older and finally 3 respondents did not answer (*Pie chart 4.1.2*). Thus, we have a major age bias towards the age group 20-35.

Figure 4.1.2: Age



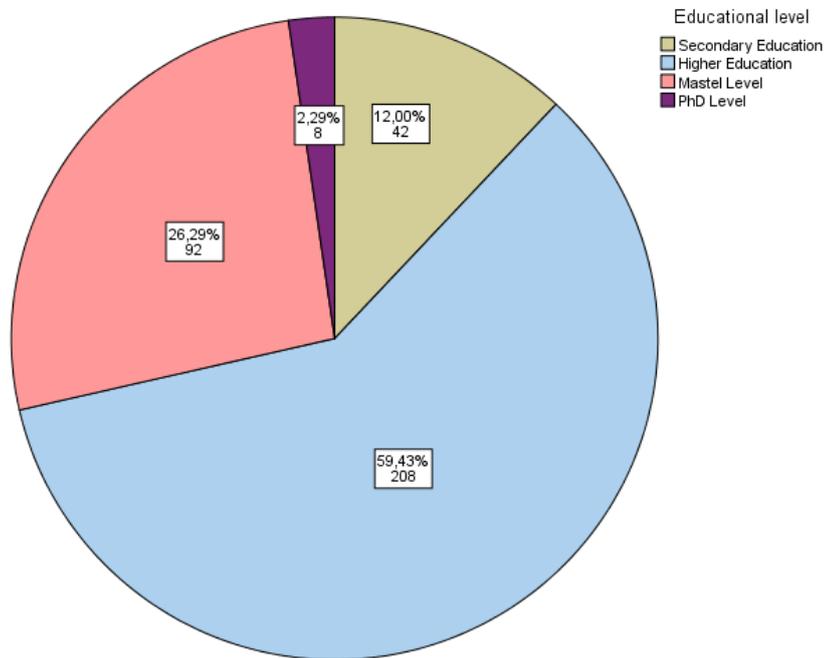
64,8% of the respondents stated that they had an annual available income up to 10.000€, 30% earned 10.001-40.000€, only 5,2% earned more than 40.000€ and 5 respondents chose not to disclose (*Pie chart 4.1.3*). Due to the relatively young age of the respondents and the severe economic crisis in Greece, this income distribution was expected.

Figure 4.1.3: Available Annual Income



12% of the respondents were graduates of the secondary educational level, 59,4% stated a higher educational level (Universities or Technical Institutes), 26,3% were on a Master level, 2,3% were on PhD level and 3 respondents chose not to disclose (*Pie chart 4.1.4*). The overwhelming majority of the respondents were well educated, which constitutes an education bias towards Higher education and Master Level.

Figure 4.1.4: Educational level



Conclusively, our sample is young, well-educated and with relatively low earnings.

4.2 Descriptive Statistics

Having explored the demographic synthesis of our sample, now we can derive useful information employing descriptive statistics.

Table 4.2.1: Descriptive Statistics for the variable BBi

	N	Minimum	Maximum	Mean	Std. Deviation
Protect the environment	352	1	7	5,70	1,216
Being socially responsible	351	1	7	5,38	1,206
Consume/use healthier products	352	1	7	5,02	1,337
Consume/use safer products	349	1	7	4,92	1,294
Have reduced expenses	351	1	7	4,09	1,536
Valid N (listwise)	347				

In *Table 4.2.1* the underlying beliefs (***Behavioral Beliefs-BB***) of Green Purchasing Behavior are outlined. All the beliefs scored relatively high, except BB5 (Have reduced expenses). This denotes that consumers do anticipate these outcomes when buying an environmentally friendly product and feel that these outcomes are quite important to them (*Appendix 3, Table 1, Outcome Evaluation - OE*).

Perceived normative pressures (***Normative Beliefs-NB***) from the respondents' environment (the referent groups: family/relatives, friends, colleagues/partners), are relatively low as *Table 4.2.2* shows. Moreover, the respondents' motivation to comply with perceived normative pressures is also relatively low (*Appendix 3, Table 2, Motivation to comply - MC*). We can conclude that the effect is only moderate (so is expected to be for SN if the theory holds), denoting the fact that for engaging in green purchase behavior the perceived social pressure and the probability of compliance with it, is rather low.

Table 4.2.2: Descriptive Statistics for the variable NBj

	N	Minimum	Maximum	Mean	Std. Deviation
My family/relatives believe that I should buy EF products	352	1	7	4,37	1,519
My friends believe that I should buy EF products	351	1	7	4,03	1,529
My colleagues/partners believe that I should buy EF products	351	1	7	4,15	1,515
Valid N (listwise)	350				

Now as for the control beliefs as shown in *Table 4.2.2*, the respondents generally believe that environmentally friendly products:

- are more expensive than conservatives (also see *Table 3, Appendix 3*).
- do not have a lower performance with 54,6% of the respondents having a level of disagreement with this statement and 21% neither agreeing or disagreeing (see *Table 4, Appendix 3*).

- are not so hard to find with 41,3% of the respondents having a level of disagreement with this statement, 23,4% neither agreeing or disagreeing and 21,1% slightly agreeing (see *Table 5*, Appendix 3).

Table 4.2.3: Descriptive Statistics for the variable CBk

	N	Minimum	Maximum	Mean	Std. Deviation
EFs are expensive	350	1	7	5,17	1,419
EFs are hard to find	351	1	7	3,81	1,553
EFs have lower performance	350	1	7	3,31	1,589
Valid N (listwise)	348				

From all these factors (price, convenience, performance), performance seems to exert the most significant effect on the purchasing decision (*Table 6*, Appendix 3).

Now, as for the *attitudes* (ATT1 – ATT5) that the respondents stated towards purchasing green products:

1. 71,8% think of green purchasing behavior as something very good (scores 6 and 7).
2. 57,4% as very pleasant (scores 6 and 7).
3. 64,2% as very positive (scores 6 and 7).
4. 61,9% as very desirable (scores 6 and 7).
5. 56,5% as very favorable (scores 6 and 7).

It becomes apparent that respondents hold only moderately positive attitudes towards the salient aspects (found in the literature) of green purchase behavior. *Normative beliefs* about perceived social pressure (SN1- SN3) are even weaker since the percentage of respondents identifying a strong perceived social pressure is around 30% (scores 6 and 7).

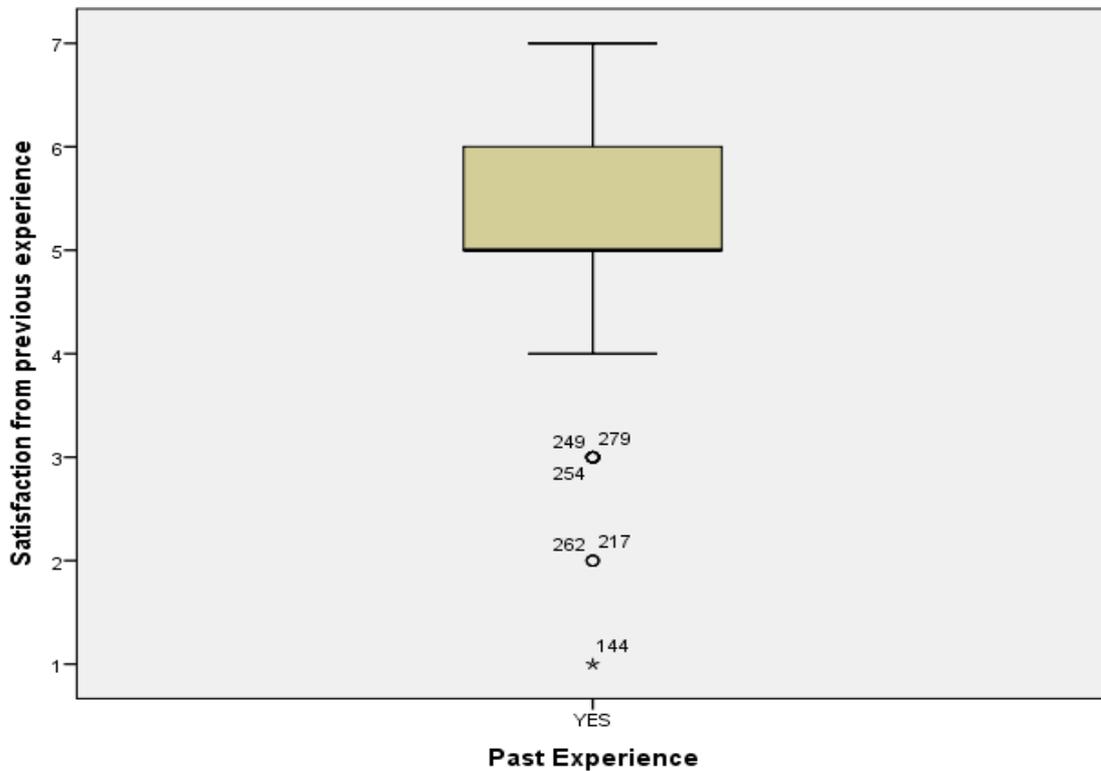
Perceived control (PBC1- PBC3) over the performance of green purchase is quite more complex since 57,4% of the respondents stated a high degree of control over the performance of the behavior with only 15,9% strongly believing (scores 6 and 7) that they have plenty of time, resources or opportunities to buy environmentally friendly products.

The overwhelming majority of respondents (88,3%, *Table 4.2.4*) stated that they had purchased an environmentally friendly product before, and those who had they were relatively satisfied from this previous experience (see *Boxplot 4.2.1*).

Table 4.2.4: Past Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	YES	309	87,8	88,3	88,3
	NO	41	11,6	11,7	100,0
	Total	350	99,4	100,0	
Missing	No Answer	2	,6		
Total		352	100,0		

Figure 4.2.1: Past Experience and Satisfaction level



As for the actual behavior itself, the majority of respondents (58%) chose to buy product Y instead of the much more environmentally friendly (and more expensive) X (42%) in the hypothetical purchasing situation (Table 4.2.5).

Table 4.2.5: Green Purchase Behavior

		Frequency	Percent	Valid Percent	Cumulative
Valid	X	147	41,8	42,0	42,0
	Y	203	57,7	58,0	100,0
	Total	350	99,4	100,0	
Missing	No Answer	2	,6		
Total		352	100,0		

4.3 Testing the model

4.3.1 Exploratory Factor Analysis

Exploratory Factor Analysis is employed in order to test the Theory of Planned Behavior. Essentially we want to confirm the hypothesized underlying structure of the set of variables and thus we employ *principal components analysis (PCA)* technique using SPSS (Pallant, 2001). Running factor analysis was appropriate since the *Kaiser-Meyer-Olkin Measure of Sampling* was greater than 0,6 (0,818) and *Bartlett's Test of Sphericity* reached statistical significance ($p=0,000 < ,05$, Table 4.3.1.1) (Pallant, 2001).

<i>Kaiser-Meyer-Olkin Measure of Sampling</i>		,887
<i>Bartlett's Test of Sphericity</i>	Approx. Chi-Square	2729,18
	df	105
	Sig.	,000

Using *Kaiser's criterion* (focusing only on components with an eigenvalue more than 1 (Appendix 3, Table 7) (Pallant, 2001) revealed 3 components and one component marginally close (0,963). Due to this marginal proximity the author chose to extract 4 factors for further investigation. These components, that explain 71,693% of the variance, were then rotated (*Varimax rotation*, Table 4.3.1.2).

The grouping of the variables resulted from the rotation, further supports the Theory of Planned Behavior: ATT1-ATT5 load strongly on component 1, SN1-SN3 on component 3, perceived behavioral control (PBC1-PBC3) on component 4 and behavioral intention on component 2. Satisfaction from a previous purchase though loads on both components 1 and 2 with a small difference. For further information about the variable coding see [Appendix 2](#).

This comes as no surprise since a positive prior experience will be reflected and represented in consumers' attitudes and intention to repurchase a product of the same category. In further testing of the Theory of Planned Behavior though we will treat the variable satisfaction as a separate component, assuming that it directly predicts buying intention.

Table 4.3.1.2: Rotated Component Matrix^a

	Component			
	1	2	3	4
ATT4	,846			
ATT2	,844			
ATT1	,828			
ATT3	,783	,355		
ATT5	,741	,366		
Satisfaction	,398	,385		
BI3	,380	,798		
BI2	,351	,798		
BI1	,413	,775		
SN2			,877	
SN1			,864	
SN3			,813	
PBC2				,796
PBC3			,350	,642
PBC1		,387		,555

Extraction Method: Principal Component Analysis.

a. Rotation converged in 5 iterations.

4.3.2 Reliability Analysis

Before submitting the observed items to a data reduction analysis (4.3.3 *Hypotheses Testing*) it is required to test and validate the suitability of the selected items for conducting the analysis. In order to ensure the reliability and the internal consistency of the scales used, reliability analysis is performed on the items constituting each component of the Theory of Planned Behavior (ATT, SN and PBC) and the Satisfaction from past experience (SAT). *Table 4.3.1.1* summarizes the findings. More details about the codification of items and variables can be found in [Appendix 2](#).

Table 4.3.2.1 summarizes the findings.

Variable	Cronbach's alpha
Attitude (ATT1-ATT5)	0,916
Subjective Norm (SN1-SN3)	0,868
Perceived Behavioral Control (PBC1-PBC3)	0,490
Behavioral Intention (BI1-BI3)	0,911
Table 4.3.2.1: Cronbach's alpha for the present study.	

George and Mallery (2003, p.231) provide simple rules to check for the internal consistency of the items in the scale, using Cronbach's alpha coefficient that ranges between 0 and 1:

- Cronbach's alpha > 0,9 is excellent
- Cronbach's alpha > 0,8 is good
- Cronbach's alpha > 0,7 is acceptable
- Cronbach's alpha > 0,6 is questionable
- Cronbach's alpha > 0,5 is poor
- Cronbach's alpha < 0,5 is unacceptable

Since Cronbach's alpha reliability coefficient of greater than 0,7 in all cases, except PBC (Table 4.3.2.1.), the measures have achieved acceptable reliability and internal consistency between the items attributing to each one of the five constructs, especially in the case of subjective norms (SN) and attitude (ATT) factors. In order to "fix" the PBC component PBC1 "Whether or not I buy EF products is completely up to me" was removed and the resulted Cronbach's alpha for the PBC component is 0,609 (Appendix 3, Table 8), still questionable but we will proceed with that. Generally, the results suggest that the method of factor analysis for deriving a *single factor* using the various observed items is a suitable methodology to follow. This means that each set of questions used, elicits consistent and reliable responses, thus each set represents an "underlying construct.", or in other words e.g. SN1-SN3 can be replaced by a global measure of subjective norms.

Finally, the reliability coefficient for the belief based measures was computed: BB1OE1-BB5OE5 (0,834), NB1MC1-NB3MC3 (0,856) and CB1PP1-CB3PP3 (0,361). The belief based measured for PBC also displays a poor Cronbach's alpha, indicating the low reliability of the scale. Note that CBj was reversed, since the respective items in the questionnaire were negatively worded.

4.3.3 Hypotheses Testing

Following the reliability analysis results we submit the observed items to exploratory factor analysis to obtain a single latent construct from each set of items. Therefore, in our subsequent analysis only *composite or latent variables* of the respective 5 constructs (ATT, SN, PBC, BI and SAT) will be used. These global measures of **Attitude** (ATT1-ATT5), **Subjective Norm** (SN1-SN3), **Perceived Behavioral Control** (PBC2-PBC3), **Behavioral Intention** (BI1-BI3) and **Satisfaction from past behavior** (SAT) which is already measured with one item, provide information about an individual's placement on the factors (DiStefano *et al.*, 2009). To predict factor scores the least squares regression approach was used since it provides the highest correlation between a factor score and the corresponding factor (DiStefano *et al.*, 2009). Moreover the factor scores were rotated using the *Varimax* method.

Subsequently, factor scores are saved for each one of the factors to perform correlation analysis between the four factors and the Behavioral Intention (BI) variable. *Pearson correlation* coefficients between the BI variable and the 4 factors are presented in *Table 4.3.3.1*. As one observes, higher correlations are met between Behavioral Intention and the Attitude factor ($r=0.664$), the Attitude factor and Satisfaction ($r=0.512$) and the Behavioral Intention and Satisfaction ($r=0.494$). On the other hand, lowest correlations are between Attitude and Perceived Behavioral Control ($r=0.309$).

The respective results of the bivariate correlations further support the hypotheses stated by the Theory of Planned Behavior (Hypotheses 4-6), since all factors correlated positively with the intention to purchase environmentally friendly products (BI). Moreover, satisfaction from previous experience (SAT) was also positively correlated with behavioral intention (Hypothesis 7).

Lastly, $\Sigma BiEi$ positively correlated with **ATT**, $\Sigma NBjMCj$ positively correlated with **SN** and $\Sigma CkPk$ positively correlated with **PBC** (*Table 4.3.3.2*) (Hypotheses 1-3).

Therefore, all seven hypotheses stated are supported. Attitude toward green purchase behavior was the factor most strongly correlated with purchasing intentions, followed by the satisfaction from previous experience and lastly subjective norm and perceived behavioral control.

		ATT	SN	PBC	BI	Satisfaction
Attitude	Pearson	1	,339**	,306**	,664**	,512**
	Sig. (2-tailed)		,000	,000	,000	,000
	N	349	346	348	349	302
Subjective Norm	Pearson	,339**	1	,406**	,335**	,316**
	Sig. (2-tailed)	,000		,000	,000	,000
	N	346	349	348	349	302
Perceived Behavioral Control	Pearson	,306**	,406**	1	,352**	,344**
	Sig. (2-tailed)	,000	,000		,000	,000
	N	348	348	351	351	303
Behavioral Intention	Pearson	,664**	,335**	,352**	1	,494**
	Sig. (2-tailed)	,000	,000	,000		,000
	N	349	349	351	352	304
Satisfaction from previous experience	Pearson	,512**	,316**	,344**	,494**	1
	Sig. (2-tailed)	,000	,000	,000	,000	
	N	302	302	303	304	304

** . Correlation is significant at the 0.01 level (2-tailed).

		SumBBiOEi	SumNBjMCj	SumCBk_RPPk
SumBBiOEi	Pearson	1	,412**	,073
	Sig. (2-tailed)		,000	,181
	N	347	345	341
SumNBjMCj	Pearson	,412**	1	-,063
	Sig. (2-tailed)	,000		,243
	N	345	350	344
SumCBk_RPPk	Pearson	,073	-,063	1
	Sig. (2-tailed)	,181	,243	
	N	341	344	345
Attitude	Pearson	,572**	,174**	,095
	Sig. (2-tailed)	,000	,001	,080
	N	344	347	343
Subjective Norm	Pearson	,523**	,526**	,014
	Sig. (2-tailed)	,000	,000	,794
	N	344	347	342
Perceived Behavioral Control	Pearson	,360**	,279**	,037
	Sig. (2-tailed)	,000	,000	,497
	N	346	350	344

** . Correlation is significant at the 0.01 level (2-tailed).

4.3.4 Hierarchical Multiple Regression Analysis

In order to test the overall predictive utility of the Theory of Planned Behavior and the influence that each component exerts on green purchasing intention, this thesis employs a two-step hierarchical multiple regression analysis with Behavioral Intention as a dependent variable. In this way we can determine if the explained variance of the dependent variable is increased when an additional predictor (independent variable) is added (indicated by a change in R^2). In the first step the components of TPB (attitude, subjective norm and perceived control) were entered (Model 1). In the second step the satisfaction from previous experience was entered (Model 2). *Table 4.3.4.1* summarizes the findings.

Model - Dependent Variable: Green Purchase Intention		Unstandardized		Standardized	t	Sig.
		B	Std. Error	Beta		
Model 1 Adj. $R^2 =$.423	(Constant)	,039	,041		,946	0,345
	Perceived Behavioral	,129	,047	,134	2,729	,007
	Subjective Norm	,038	,047	,041	,805	,421
	Attitude	,604	,049	,588	12,408	,000
Model 2 Adj. $R^2 =$.449	(Constant)	-,854	,235		-3,640	,000
	Perceived Behavioral	,092	,047	,096	1,961	,051
	Subjective Norm	,021	,046	,022	,449	,653
	Attitude	,514	,053	,500	9,707	,000
	Satisfaction from previous experience	,172	,045	,201	3,861	,000
a. Dependent Variable: Behavioral Intention						

The components of the TPB (ATT, SN, PBC) collectively explained 42,3% (Adj. $R^2 =$,423) of the variance in the dependent variable of green purchase intentions. Perceived behavioral control and attitude are statistically significant ($p < ,05$) but subjective norm is not. The standardized regression coefficients for each independent variable shown in *Model 1* reveal that among the components of TPB, attitude ($b = 0,588$, $p < ,05$) exerts by far the greater influence, followed by perceived behavioral control ($b = 0,134$, $p < ,05$). The relative contribution of each of the independent variables in explaining the variance in green purchasing intention is determined by the beta weight: variables whose beta weight has a Sig. $t < 0,05$ are significant at the 95% confidence level. Thus, only Attitude and PBC are only significant at the 95% confidence level ($p < 0,05$).

The percentage of the explained variance is quite satisfactory and in line with previous research (Armitage and Conner, 2001). When satisfaction from previous experience was entered (*Model 2*) the percentage of variance explained increased to 44,9% (Adj. $R^2=0,449$). Again subjective norm is not statistically significant ($p<0,05$) as well as perceived behavioral control by a close difference. From the TPB components thus, only attitude is statistically significant as well as satisfaction from previous experience. The greater effect in the extended model is exerted by far from attitude and satisfaction from previous experience follows. The inclusion of satisfaction from a previous experience with an environmentally friendly product did not substantially improve the model's predictive utility, since the percentage of the variance in the dependent variable explained, increased only moderately.

5. Conclusions and Suggestions

5.1 Green purchase behavior and its determinants

The objective of this study was to examine the applicability of the Theory of Planned Behavior in predicting green purchase behavior of young adults in Greece. The results of this study support the applicability of the Theory of Planned Behavior (TPB) in determining the antecedents of green purchase intention for environmentally friendly products. The hypotheses of TPB, about a positive correlation between its components (attitude, subjective norm, perceived behavioral control) and green purchase intention are supported. Moreover, the belief based measures of attitude, subjective norm and perceived behavioral control, positively correlated with their respective direct composite measures.

The TPB components collectively explained a 42,3% of the variance in the dependent variable of green purchase intentions, a very satisfying percentage and in line with previous studies, but only attitude and perceived behavioral control were found to be statistically significant predictors. The inclusion of satisfaction from previous experience did receive supporting evidence from the data proving to be statistically significant. This inclusion, in an extended TPB model though, only marginally increased the predictive ability of the standard model. There is evidence as indicated by exploratory factor analysis, that this concept is also strongly related with the respondents' attitudes towards green purchase behavior. This implies that if

consumers have a positive experience with a previous purchase of an environmentally friendly product, this will be reflected in the formation of their attitudes toward green purchase behavior in general.

The stronger effect on green purchase intention was exerted by attitude followed by perceived behavioral control while on the other hand subjective norms did not prove to be statistically significant in explaining green purchase intention. Nevertheless, it should be pointed out that based on the initial postulates of TPB, we would expect that the perceived social pressure would be a significant antecedent of green purchase intentions. This outcome could be explained based on [Tucker's \(1999\)](#) argument that in cases where the visibility of the behavior is low and the anonymity of the individual high, like in green purchase behavior, the perceived social pressure would not be significant.

Thus, we conclude that the Theory of Planned Behavior can be successfully applied in determining the antecedents of green purchasing intentions as well as their relative contribution. Moreover, although the extended model did not substantially increase the predictive utility of TPB, it showed the importance of the inclusion of satisfaction from previous experience with an environmentally friendly product as an antecedent of green purchase intentions.

5.2 Implications for Marketers

Hopefully, the above have shed light to green purchasing intentions. Using the well-known theoretical concept of the Theory of Planned Behavior we identified the influential parameters. Identifying the determinants of green purchasing intentions can guide the development and implementation of marketing campaigns and promote a new mentality of responsible purchasing. Especially for a country such as Greece, where the term “green” is often followed by a feeling of distrust and thoughts of “green washing”, it is vital to turn things around. The relatively low percentage of respondents stating their preference to an environmentally friendly product over a more known and less expensive conservative one, as demonstrated by the responses, is indicative of the above.

The most crucial outcome of this thesis is that it revealed the importance of attitudes toward green purchasing behavior, as they are shown to be the most significant predictor of the intention to buy environmentally friendly products. The sad and

challenging fact though is that the respondents' attitudes toward green purchasing are only moderately positive and favorable. This is the key for promoting such products: creating positive and favorable attitudes. Marketing campaigns, green messages and product positioning should focus on relating green products to positive outcomes and highlighting the importance of these outcomes. Marketers should be able to reinforce these positive attitudes but more importantly "bridge" the gap between favorable attitudes and actual green purchase behavior. This link is crucial, since without it favorable attitudes are just empty statements lacking any practical utility. Thus, the key to a more increased market share for green products is to ensure, promote and enhance the attitudes of consumers towards responsible purchasing.

The confidence over the performance or in other words the situational factors that may inhibit or facilitate green purchasing also did prove to be a significant predictor. But for residents in Greece these factors, as expressed by the composite measure of perceived behavioral control, exerted only a moderate influence on green purchasing intention. In other words, the intention to purchase environmentally friendly products is not greatly influenced by having the appropriate opportunities such as will, resources or time. Nevertheless, marketers should address the issues that may inhibit green purchasing behavior. Price is one of those since the majority of respondents do believe that green products are more expensive than conservatives. This is the most difficult part to tamper with since it assumes internal changes in the production and distribution process. Essentially, green products should be as accessible and "cheap" as conservative products. Maybe, the strategy of placing green products as a separate category should be reconsidered.

Green purchasing intention does not appear to be influenced, on the other hand, by normative components. Perceived normative pressures from the respondents' environment (the referent groups: family/relatives, friends, colleagues/partners), are relatively low so is the respondents' motivation to comply with these. This means that for engaging in green purchase behavior the perceived social pressure and the probability of compliance with it, is rather low. Compliance with the perceived normative pressures should entail and be strengthened by the subject's belief that significant referent groups would want him/her to comply. If the perceived social pressure for one to buy environmentally friendly products is low chances are that one's intention to buy will be weak as well. This chain of events presents a vicious

circle that one event feeds the other and entry points of interventions cannot be easily identified.

Another important outcome of the study is the relatively low percentage of the respondents (around 40%) who chose to buy the environmentally friendly product in the hypothetical purchasing situation. The only differentiating characteristics were the price and the knowledge and trust of the company behind the product, with the environmentally friendly product being more expensive and produced by a company unknown to the respondent. Thus we can assume that price and brand awareness are strongly moderating variables that influence consumers' decision. It is up to marketers to design and implement the green product message in order to successfully handle price, brand awareness and trust issues.

Lastly, satisfaction from previous experience is strongly related with purchasing intentions and consumers' attitude toward environmentally friendly products. This is not surprising since positive experience from a previous purchase would strengthen the intention to repurchase an environmentally friendly product and lead to the formation of positive attitudes toward green products. It is important thus for marketers to establish feelings of brand loyalty among consumers, ensuring that positive experience will lead to repurchasing of green products.

5.3 Limitations and suggestions for future research

As every research, so the present thesis has its limitations that represent the factors that can influence the interpretation and the utility of the results. Under the light of a more fruitful consideration though, these limitations though should not be seen only as constraints on generalizability of the findings, but should also serve as useful suggestions for future research.

A limitation of this study was the composition of the convenience sample used since, as it was demonstrated in the respective section, the majority of the respondents (92,9%) were below the age of 35 and well educated. For this reason, these findings cannot be generalized to the broader population based on this study alone.

Another limitation concerns the self-report nature of the study's approach. Self-reported statements should be dealt with caution since the level of accuracy and precision is debatable. A strong bias could be detected, when examining issues strongly related to environmental and green concepts, towards stating what one would

want to do instead of what he or she truly *intends* to do. It is important to distinct once again between the actual behavior and the intentions, since this survey was based entirely on responses from a self-administrated questionnaire.

Furthermore, this study did not focus on a particular category of environmentally friendly products, but examined the broader aspect of consumers' perception, attitude and intention formation. This implies that the application of the results of this study to a specific product category (e.g. hybrid car) should be made with caution.

Lastly, another limitation of the study could also be the possibility of over-representation in the sample of people more interested or more positive towards green or environmentally friendly products, since they would be the ones more motivated to participate at least in the online questionnaire.

As stated above the limitations of any research do not represent only its boundaries, but also the endless possibilities for future research. Below, future research suggestions are provided in the light of this study's limitations and in an effort to highlight possible future research avenues.

Green purchase behavior is a behavior with a repetitive character affected by habits and inertia. Many purchases can be attributed to habit or automatic responses and this aspect of green purchase behavior has not yet received much attention in the relevant literature, and although it was also not incorporated as a research objective of this thesis, the author believes that it is a very interesting and promising aspect. Therefore, future studies should explore the role and relative contribution of past behavior and habit in conjunction with brand loyalty.

Moreover, the inclusion of measures of observed actual behavior would be important in order to assess the strength of the intention-behavior link. Another useful concept that should be further studied is the moral aspect of green purchase behavior and its relationship with TPB components.

Lastly, another prominent issue, that this thesis did not focus on but nevertheless is worth exploring, is the concept of self-identity, or in other words what individuals think themselves to be, can have an impact on what they do (Manetti *et al.*, 2004). A self-expressive behavior approach like this implies that people tend to behave in a way that reflects their perception of who they are or who they want to be. If an individual perceives himself/herself as a "green buyer" for x reasons, then he/she will tend to purchase environmentally friendly products.

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Appendices

Appendix 1

Στάσεις καταναλωτών απέναντι στα φιλικά προς το περιβάλλον προϊόντα.



Το ερωτηματολόγιο που κρατάτε στα χέρια σας δημιουργήθηκε στα πλαίσια έρευνας για την εκπόνηση διπλωματικής εργασίας με σκοπό την απόκτηση μεταπτυχιακού διπλώματος εξειδίκευσης στην Διοίκηση Επιχειρήσεων από το Πανεπιστήμιο Μακεδονίας. Σκοπός του ερωτηματολογίου είναι να διερευνήσει την στάση των καταναλωτών απέναντι στα φιλικά προς το περιβάλλον προϊόντα.

Σύντομος ορισμός: “Φιλικά προς το περιβάλλον προϊόντα είναι τα προϊόντα που θεωρούνται ότι έχουν θετικό αντίκτυπο στο περιβάλλον ή είναι λιγότερο επιζήμια για το περιβάλλον από ό, τι ανταγωνιστικά προϊόντα. Αυτό μπορεί να οφείλεται, για παράδειγμα, στη σύνθεση του προϊόντος, στον τρόπο με τον οποίο έχει κατασκευαστεί ή παραχθεί, στον τρόπο με τον οποίο μπορεί να εξασφαλισθεί η τελική του διάθεση και στη μείωση της ενέργειας ή της ρύπανσης που αναμένονται λόγω της χρήσης του.”

(Απόσπασμα από τις κατευθύνσεις για την υλοποίηση/εφαρμογή της οδηγίας 2005/29/EK για τις αθέμιτες εμπορικές πρακτικές.)

Οι απαντήσεις σας είναι ιδιαίτερα σημαντικές για την έρευνά μας και θα μας βοηθήσουν να κατανοήσουμε πώς στάσεις, αντιλήψεις και χαρακτηριστικά των ανθρώπων επηρεάζουν την απόφαση για την αγορά ή όχι φιλικών προς το περιβάλλον προϊόντων σε σύγκριση με τα συμβατικά. Η συμμετοχή στην έρευνα αυτή είναι καθαρά εθελοντική και ανώνυμη. Σας ευχαριστούμε πολύ για την συμμετοχή σας!

Οι υπόλοιπες ερωτήσεις του ερωτηματολογίου απαντώνται σε 7-βάθμιες κλίμακες. Τα άκρα κάθε κλίμακας, δηλαδή το 1 και το 7, εκφράζουν δύο αντίθετες έννοιες. Όσο πιο κοντά σε κάθε μία από αυτές τις έννοιες είναι η άποψη σας, τόσο η απάντησή σας θα πλησιάζει το αντίστοιχο άκρο. Παρακαλούμε βάλτε σε κύκλο τον αριθμό που αντιπροσωπεύει την απάντησή σας.

A) Αγοράζοντας φιλικά προς το περιβάλλον προϊόντα: πεποιθήσεις

	Διαφωνώ Απόλυτα							Συμφωνώ Απόλυτα						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Προστατεύω το περιβάλλον.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Είμαι κοινωνικά πιο υπεύθυνος.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Καταναλώνω/Χρησιμοποιώ πιο ασφαλή προϊόντα σε σχέση με τα συμβατικά.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Καταναλώνω/Χρησιμοποιώ πιο υγιεινά προϊόντα σε σχέση με τα συμβατικά.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Κάνω περισσότερη οικονομία σε σχέση με τα συμβατικά.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Τα φιλικά προς το περιβάλλον προϊόντα είναι ακριβά.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Τα φιλικά προς το περιβάλλον προϊόντα είναι δύσκολο να τα βρεις.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Η τιμή ενός φιλικού προς το περιβάλλον προϊόντος θα επηρέαζε την απόφασή μου για την αγορά του.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Τα φιλικά προς το περιβάλλον προϊόντα έχουν χαμηλότερη απόδοση.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Το αν βρίσκω εύκολα τα φιλικά προς το περιβάλλον προϊόντα επηρεάζει την απόφασή μου για την αγορά τους.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Η απόδοση ενός φιλικού προς το περιβάλλον προϊόντος θα επηρέαζε την απόφασή μου για την αγορά του.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Η οικογένεια/συγγενείς μου πιστεύουν ότι πρέπει να αγοράζω φιλικά προς το περιβάλλον προϊόντα.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Οι φίλοι μου πιστεύουν ότι πρέπει να αγοράζω φιλικά προς το περιβάλλον προϊόντα.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Οι συνάδελφοι/συνεργάτες μου πιστεύουν ότι πρέπει να αγοράζω φιλικά προς το περιβάλλον προϊόντα.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Το αν αγοράζω ή όχι φιλικά προς το περιβάλλον προϊόντα εξαρτάται μόνο από μένα.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Οι άνθρωποι των οποίων τις απόψεις σέβομαι θα προτιμούσαν να αγοράζω φιλικά προς το περιβάλλον προϊόντα.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
Για μένα το να αγοράζω φιλικά προς το περιβάλλον προϊόντα είναι εύκολο αν το θέλω.	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Οι περισσότεροι άνθρωποι που είναι σημαντικό για μένα θα ήθελαν να αγοράζω φιλικά προς το περιβάλλον προϊόντα.	1	2	3	4	5	6	7
Έχω τον χρόνο, τους πόρους και τις ευκαιρίες να αγοράζω φιλικά προς το περιβάλλον προϊόντα.	1	2	3	4	5	6	7
Οι περισσότεροι άνθρωποι που είναι σημαντικό για μένα πιστεύουν ότι πρέπει να αγοράζω φιλικά προς το περιβάλλον προϊόντα.	1	2	3	4	5	6	7

Β) Πόσο σημαντικά είναι για εσάς τα παρακάτω;

	Καθόλου Σημαντικό							Πάρα πολύ Σημαντικό
Το να προστατεύω το περιβάλλον είναι για μένα:	1	2	3	4	5	6	7	
Η κατανάλωση/χρήση πιο ασφαλών προϊόντων είναι για μένα:	1	2	3	4	5	6	7	
Το να είμαι κοινωνικά υπεύθυνος είναι:	1	2	3	4	5	6	7	
Το να κάνω οικονομία είναι για μένα;	1	2	3	4	5	6	7	
Η κατανάλωση/χρήση πιο υγιεινών προϊόντων είναι για μένα:	1	2	3	4	5	6	7	

Γ) Πόσο πιθανά είναι για εσάς τα παρακάτω;

	Καθόλου Πιθανό							Εξαιρετικά Πιθανό
Μιλώντας γενικά πόσο πιθανό είναι να κάνετε αυτό που η οικογένεια/συγγενείς σας θέλουν να κάνετε.	1	2	3	4	5	6	7	
Μιλώντας γενικά πόσο πιθανό είναι να κάνετε αυτό που οι φίλοι σας θέλουν να κάνετε.	1	2	3	4	5	6	7	
Μιλώντας γενικά πόσο πιθανό είναι να κάνετε αυτό που οι συνάδελφοι/συνεργάτες σας θέλουν να κάνετε.	1	2	3	4	5	6	7	

Δ) Στάσεις

Για μένα το να αγοράζω φιλικά προς το περιβάλλον προϊόντα είναι:

Ιδιαίτερα Κακό	1	2	3	4	5	6	Ιδιαίτερα Καλό
Καθόλου Ευχάριστο	1	2	3	4	5	6	Ιδιαίτερα Ευχάριστο
Καθόλου Επιθυμητό	1	2	3	4	5	6	Ιδιαίτερα Επιθυμητό

Η γενικότερη στάση μου προς τα φιλικά προς το περιβάλλον προϊόντα είναι:

Ιδιαίτερα Αρνητική						Ιδιαίτερα Θετική
1	2	3	4	5	6	7
Ιδιαίτερα Δυσμενής						Ιδιαίτερα Ευνοϊκή
1	2	3	4	5	6	7

Ε) Αγοραστική Προδιάθεση.

	Διαφωνώ Απόλυτα					Συμφωνώ Απόλυτα	
Είμαι διατεθειμένος να αγοράσω ένα φιλικό προς το περιβάλλον προϊόν.	1	2	3	4	5	6	7
Σκοπεύω να αγοράσω ένα φιλικό προς το περιβάλλον προϊόν.	1	2	3	4	5	6	7
Θα προσπαθήσω να αγοράσω ένα φιλικό προς το περιβάλλον προϊόν.	1	2	3	4	5	6	7

ΣΤ) Γενικές ερωτήσεις

1) Υποθέστε ότι βρίσκεστε στο σουπερμάρκετ της γειτονιάς σας και έχετε να επιλέξετε ανάμεσα σε δύο απορρυπαντικά σκόνη πλυντηρίου X και Y ίδιας ποσότητας με τα εξής χαρακτηριστικά:

X: Υπόσχεται καλή απόδοση ακόμα και σε χαμηλές θερμοκρασίες, τα ενεργά συστατικά του είναι βιοδιασπώμενα, περιέχει πρώτες ύλες φυτικής προέλευσης και η συσκευασία του είναι ανακυκλώσιμη. Το προϊόν X έχει τιμή 20€ και παράγεται από μια εταιρεία την οποία δεν έχετε επιλέξει στο παρελθόν.

Y: Υπόσχεται απόλυτη καθαριότητα ακόμα και σε χαμηλές θερμοκρασίες, είναι προϊόν μιας μεγάλης εταιρείας που γνωρίζετε και εμπιστεύεστε και η τιμή του είναι 14€.

Ποιο προϊόν θα επιλέξετε; **X** **Y**

2) Έχετε στο παρελθόν επιλέξει ένα φιλικό προς το περιβάλλον προϊόν;

ΝΑΙ ΟΧΙ

Αν ναι πόσο ευχαριστημένοι μείνατε;

Καθόλου Ευχαριστημένοι						Εξαιρετικά Ευχαριστημένοι
1	2	3	4	5	6	7

Z) Δώστε μας μερικές πληροφορίες για εσάς!

1) Φύλο: Άνδρας Γυναίκα

2) Ηλικία: 19 και κάτω 20-35 36-50 51+

3) Ετήσιο Διαθέσιμο Εισόδημα: Μέχρι και 10.000€

10.001-40.000€

Πάνω από 40.000€

4) Μορφωτικό επίπεδο:

Απόφοιτος Λυκείου

ΑΕΙ/ΤΕΙ

Μεταπτυχιακές σπουδές

Διδακτορικές σπουδές

Σας ευχαριστούμε πολύ για την συμμετοχή σας!

Appendix 2

Consumer Attitudes toward environmentally friendly products.



The questionnaire that you hold in your hands was created in order to support a research dissertation for a Master's degree in Business Administration from the University of Macedonia. The purpose of this questionnaire is to investigate the attitudes of consumers towards environmentally friendly products.

Short definition: “Environmentally friendly products are products that are considered to have a positive impact on the environment or are less harmful to the environment than competing products. This may be due, for example, the composition of the product, the way that has been manufactured or produced, the way which was distributed and energy reduction or pollution expected as a result of its use.”

(Excerpt from the guidelines for the implementation / application of Directive 2005/29/EC on unfair commercial practices.)

Your answers are very important for our research and will help us understand how attitudes, perceptions and characteristics of people are influencing the decision to buy or not environmentally friendly products **compared to conventional**. The participation in this survey is purely voluntary and anonymous. Thank you very much for your participation!

The following questions in the questionnaire are answered in a 7-point scale. The ends of each scale, i.e. 1 and 7 reflect two opposite concepts. The closer to each of these concepts is your opinion, so will your answer be closer to the same end. Please circle the number that represents your answer.

A) Buying environmentally friendly (EF) products: beliefs

	Strongly Disagree							Strongly Agree
I protect the environment.(BB1)	1	2	3	4	5	6	7	
Be more socially responsible.(BB2)	1	2	3	4	5	6	7	
I consume / use safer products than conventional ones.(BB4)	1	2	3	4	5	6	7	
I consume / use healthier products than conventional ones. (BB3)	1	2	3	4	5	6	7	
I have reduced expenses than with conventional ones.(BB5)	1	2	3	4	5	6	7	
EF products are more expensive than conventional.(CB1)	1	2	3	4	5	6	7	
EF products are hard to find.(CB2)	1	2	3	4	5	6	7	
The price of an EF product would affect my decision to purchase.(PP1)	1	2	3	4	5	6	7	
EF products have a lower performance.(CB3)	1	2	3	4	5	6	7	
Whether I easily find EF will affect my decision to purchase. (PP2)	1	2	3	4	5	6	7	
The performance of an EF product would affect my decision to purchase.(PP3)	1	2	3	4	5	6	7	
My family / relatives think that I have to buy EF products.(NB1)	1	2	3	4	5	6	7	
My friends think that I have to buy EF products. (NB2)	1	2	3	4	5	6	7	
My colleagues/partners think that I have to buy EF products.(NB3)	1	2	3	4	5	6	7	
Whether or not I buy EF products is completely up to me.(PBC1)	1	2	3	4	5	6	7	
People whose opinions I value would prefer that I buy EF products. (SN3)	1	2	3	4	5	6	7	
I am confident that if I want, I can buy EF products. (PBC2)	1	2	3	4	5	6	7	

Most people who are important to me would want me to buy EF products.(SN2)	1	2	3	4	5	6	7
I have resources, time, and opportunities to buy EF products. (PBC3)	1	2	3	4	5	6	7
Most people who are important to me think I should to buy EF products.(SN1)	1	2	3	4	5	6	7
B) How important are the following for you?	Very Unimportant Very important						
Protecting the environment is for me: (OE1)	1	2	3	4	5	6	7
The consumption/use of safer products is for me: (OE4)	1	2	3	4	5	6	7
Being more socially responsible is for me: (OE2)	1	2	3	4	5	6	7
Having reduced expenses is for me: (OE5)	1	2	3	4	5	6	7
The consumption/use of healthier products is for me: (OE3)	1	2	3	4	5	6	7
C) How likely are the following for you?	Highly Unlikely Highly Likely						
Generally speaking, how likely are you to do what your family/relatives think you should do? (MC1)	1	2	3	4	5	6	7
Generally speaking, how likely are you to do what your friends think you should do? (MC2)	1	2	3	4	5	6	7
Generally speaking, how likely are you to do what your colleagues/partners think you should do? (MC3)	1	2	3	4	5	6	7

D) Attitudes

For me, buying EF products is:

(ATT1) Extremely Bad	1	2	3	4	5	6	Extremely Good
(ATT2) Extremely	1	2	3	4	5	6	Extremely Pleasant
(ATT4) Extremely	1	2	3	4	5	6	Extremely Desirable

My overall attitude towards environmentally friendly products is:

(ATT3) Extremely	1	2	3	4	5	6	Extremely Positive
(ATT5) Extremely	1	2	3	4	5	6	Extremely Favorable

E) Buying Intention

	<i>Strongly Disagree</i>						<i>Strongly Agree</i>
I am willing to buy an environmentally friendly product. (BI1)	1	2	3	4	5	6	7
I intend to buy an environmentally friendly product. (BI2)	1	2	3	4	5	6	7
I will make an effort to buy an environmentally friendly product. (BI3)	1	2	3	4	5	6	7

F) General questions

1) Suppose you are at your local supermarket and you have to choose between two powder laundry detergents X and Y that have the same amount and the following characteristics: (GPB)

X: Promises good performance even at low temperatures, the active ingredients are biodegradable, contains raw materials of plant origin and its packaging is recyclable. Product X has a value of 20 € and is produced by a company that you have never purchased before.

Y: Promises absolute cleanliness even at low temperatures, is the product of a large company you know and trust, and the price is 14 €.

Which product will you choose? **X** **Y**

2) Have you previously chosen an environmentally friendly product?

YES NO

If so, were you satisfied? (Satisfaction)

<i>Not Satisfied at all</i>						<i>Very Satisfied</i>	
1	2	3	4	5	6	7	

G) Give us some information for you!

1) Gender: Male Female

2) Age: 19 and under 20-35 36-50 51+

3) Annual available income: Up to 10.000€
 10.001-40.000€
More than 40.000€

4) Educational level:

High school

Higher Education

Master Studies

PhD Studies

Appendix 3

Table 1: Descriptive Statistics for the variable OE

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std.</i>
<i>Protecting the environment</i>	352	1	7	5,99	1,147
<i>Being socially responsible</i>	352	1	7	5,99	1,145
<i>Consuming/using healthier products</i>	352	1	7	5,82	1,234
<i>Consuming/using safer products</i>	352	1	7	5,76	1,164
<i>Having reduced expenses</i>	352	1	7	5,95	1,233
<i>Valid N (listwise)</i>	352				

Table 2: Descriptive Statistics for the variable MC

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>
<i>Generally speaking, how likely are you to do what your family/relatives think you should do?</i>	352	1	7	4,20	1,486
<i>Generally speaking, how likely are you to do what your friends think you should do?</i>	352	1	7	3,95	1,371
<i>Generally speaking, how likely are you to do what your colleagues/partners think you should do?</i>	352	1	7	3,56	1,499
<i>Valid N (listwise)</i>	352				

Table 3: EFs are expensive (CBI)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
<i>1</i>	6	1,7	1,7	1,7
<i>2</i>	12	3,4	3,4	5,1
<i>3</i>	24	6,8	6,9	12,0
<i>Valid 4</i>	61	17,3	17,4	29,4
<i>5</i>	82	23,3	23,4	52,9
<i>6</i>	103	29,3	29,4	82,3
<i>7</i>	62	17,6	17,7	100,0
<i>Total</i>	350	99,4	100,0	
<i>Missing No Answer</i>	2	,6		
<i>Total</i>	352	100,0		

Table 4: EFs have lower performance (CB3)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
<i>Valid</i> 1	49	13,9	14,0	14,0
2	79	22,4	22,6	36,6
3	63	17,9	18,0	54,6
4	74	21,0	21,1	75,7
5	54	15,3	15,4	91,1
6	21	6,0	6,0	97,1
7	10	2,8	2,9	100,0
<i>Total</i>	350	99,4	100,0	
<i>Missing</i> No Answer	2	,6		
<i>Total</i>	352	100,0		

Table 5: EFs are hard to find (CB2)

	<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative</i>
<i>Valid</i> 1	31	8,8	8,8	8,8
2	45	12,8	12,8	21,7
3	69	19,6	19,7	41,3
4	82	23,3	23,4	64,7
5	74	21,0	21,1	85,8
6	39	11,1	11,1	96,9
7	11	3,1	3,1	100,0
<i>Total</i>	351	99,7	100,0	
<i>Missing</i> No Answer	1	,3		
<i>Total</i>	352	100,0		

Table 6: Descriptive Statistics for the variable PPK

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Devia.</i>
<i>The price of an EF product would affect my decision to purchase.</i>	351	1	7	4,99	1,582

Whether I easily find EF will affect my decision to purchase.	352	1	7	4,75	1,600
The performance of an EF product would affect my decision to purchase.	350	1	7	5,24	1,418
Valid N (listwise)	349				

Table 7: Total Variance Explained-Factor Analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6,511	43,409	43,409	6,511	43,409	43,409
2	2,004	13,359	56,768	2,004	13,359	56,768
3	1,276	8,504	65,272	1,276	8,504	65,272
4	,963	6,421	71,693			
5	,876	5,840	77,533			
6	,682	4,549	82,081			
7	,492	3,277	85,358			
8	,451	3,007	88,365			
9	,350	2,336	90,701			
10	,323	2,153	92,854			
11	,281	1,874	94,728			
12	,242	1,613	96,340			
13	,225	1,502	97,842			
14	,167	1,116	98,959			
15	,156	1,041	100,000			

Extraction Method: Principal Component Analysis.

Table 8: Item-Total Statistics-PBC1-PBC3, Reliability Analysis

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total	Cronbach's Alpha if Item Deleted
PBC1	9,08	5,971	,191	,601
PBC2	9,45	5,137	,474	,115
PBC3	10,37	5,799	,291	,419