

## THE CONSUMPTION OF GREEN PRODUCTS IN GREECE DURING FINANCIAL CRISIS

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### **Abstract**

*During the last years, the increasing attention which is devoted to environmental issues has led to a remarkable growth of green products in the global market. More and more people all over the world are willing to adopt a "green", healthier lifestyle, spending time and money to that direction. On the other hand, the global financial crisis, with its tremendous results, seems to have affected decisively the consuming behavior of Europeans, but mostly the attitude of Greek consumers who have been hit hard by the crisis. The main objective of the present study is to examine the consuming behavior and the overall attitude of green consumers in Greece under the current financial crisis. In addition, is attempted a further investigation to relationship between the general environmental values and the green purchasing behaviour. Primary data were collected through door to door interviews of 250 residents in the metropolitan area of Athens. A structured questionnaire of 35 questions was used. Data elaboration and statistical analysis were performed using SPSS 20.0. The present study indicates that those who have adopted environmental habits and have strong environmental values are more likely to consume green products. However, after the outbreak of financial crisis, the consumption of green products has been dramatically reduced. It seems that even the most dedicated green consumers seem to change their previous purchasing behaviour since they have to struggle for their economic survival.*

**Keywords:** *green consumer, green consumption; financial crisis, consuming behavior, environmental consciousness, green products, green habits*

### **1. Introduction**

Interest in the environment and also in the ways of improving it grew in the late 1960's and early 1970's (Montoro Rios, Luque Martinez et al. 2006). During the last years, the environmental preservation has become a primary concern (De Moura, Cunha et al. 2012). Today, increasing attention is devoted to environmental problems, such as overconsumption of natural resources, global warming, ozone depletion and air pollution that seriously threaten human life (Tanner, Kaiser et al. 2004). The new lifestyle leads daily to the degradation of natural and urban landscapes, the worsening of the quality of life, as well as to adverse effects on human health. As nations have developed, the emphasis on the economic development has triggered environmental degradation and affected the quality of life (Veeravatnanond, Nasa-Arn et al. 2012).

The public's increasing awareness of environmental issues has led to a remarkable growth in the global market of the environmentally friendly products or green products) (Hunt

and Dorfman 2009) Today, people seem to be aware of their consuming behavior e.g. they try to purchase environmentally friendly products for the future generation's benefit (Kilbourne, Dorsch et al. 2009), they select firms that favor environmental practices (Roberts 1996, Kalafatis, Pollard et al. 1999, Laroche, Bergeron et al. 2001) e.t.c. Providing GPs for the growing global market could be a way to minimize the environmental impacts derivatives from the increasing consumption (Ritter, Borchardt et al. 2015).

Green Product (GP) was considered as a product striving to protect or to enhance the natural environment by conserving energy and/or resources and reducing or eliminating the use of toxic agents, pollution, and waste (Dangelico and Pontrandolfo 2010). The term "green" is alternatively called eco-friendly, environmentally responsible or environmentally friendly (Kalafatis, Pollard et al. 1999, Laroche, Bergeron et al. 2001, Manaktola. and Jauhari. 2007). According to Scheffer (Scheffer 1991), green consumer bears a specific type of socially responsible consumer behavior that may be viewed as involving an environmentalist perspective. Another description of "green consumerism" is this of this "environmentally concerned consumption" (Henion 1976). Hence, it was considered as green consumer anyone whose purchase behavior is influenced by environmental concerns. Consumers who translate these concerns into action and consume environmentally friendly products are identified as green consumers (Henion 1976, Mainieri, Barnett et al. 1997).

Despite the initial expectations, consumers do not purchase GPSs as regularly as expected (Polonsky 2011). According to Gleim et al (Gleim, Smith et al. 2013), the estimates market share for GPSs is less than 4% worldwide and may be decreasing. The process of buying green is still difficult to understand (Essoussi and Linton 2010) and consequently, has captured the attention of academic researchers (Chan and Lau 2000, Rowlands, Daniel et al. 2003, D'Souza, Taghian et al. 2007, Finisterra do Paco, BarataRaposo et al. 2009) during the last years. Exploring the consumers' behavior could help marketers and policy makers to promote habits that are less harmful towards the environment (Pei-Chun and Yi-Hsuan 2012). If we want to understand consumers response to green marketing communications, we have to understand the nature of their green consumption value (Ainsworth, Aditya et al. 2016). Green consumer's behavior express not only price and quality preferences (Monroe 1976), but also norms, values, and beliefs (Irwin and Baron 2001, Caruana 2007). According to researchers (Gill, Barr et al. 2005), there are three sets of variable that appear to be influential in classifying the green consumer: (i) environmental and social values; (ii) socio-demographic variables; and (iii) psychological factors.

Environmental consciousness (EC) and knowledge of GPs have both a positive relationship with the purchase of GPs (Zhao and Zhong 2015), as well as labels playing an important role to their symbolic value (Liu, Chen et al. 2015). Consumers with high environmental concerns, are also willing to pay a higher price for these products (Hume 1991, Cherian and Jacob 2012) and show greater readiness to choose them (Pei-Chun and Yi-Hsuan 2012). Actually, EC is one of the most important variables in green marketing literature (Wiernik, Ones et al. 2013, Paul, Modi et al. 2016). Contrary, there is a variety of contrary studies supporting that only few consumers are actually carrying forward the attitude to action (Mintel 2009) and people with high environmental values do not necessarily purchase GPs (Pickett-Baker and Ozaki 2008). Actually, environmental values may play a role, but other motivations and structural factors often play a greater role (Schultz, Oskamp et al. 1995, Kollmuss and Agyeman 2002, Jackson 2005, Schuitema and Judith 2015). Thus, although people may have a positive attitude, they are largely passive in their role as consumers when it comes to supporting environmental or animal welfare improvements with their available budget. Indeed, studies (Mintel 1991) supported that only few consumers are carrying forward the attitude to behavior and action and they were not interested in paying a premium for GPs (Ohtomo and Hirose 2007). In the same direction, Pickett-Baker and Ozaki (Pickett-Baker and

Ozaki 2008) supports that consumers with high EC, do not necessarily purchase environmentally friendly products, as behavioral intention and green consumption are correlated rather than causally related (Sumesh and Little 2016). Specifically, there is a gap between consumers' value and action (Kollmuss and Agyeman 2002), also called the attitude-behavior gap (Ajzen 2001), due to several reasons of which price is most commonly noted followed by poor perceptions of quality (Gleim and Lawson 2014).

As GPs are shown to be considerably more expensive than traditional products (Moser 2015, Zhao and Zhong 2015), their price also influence purchasing decisions (Gleim, Smith et al. 2013). There are consumers who are willing to pay more for GPs (Laroche, Bergeron et al. 2001, Cherian and Jacob 2012) although, other researchers argued that consumers would pay a higher price only if GPs had higher quality than the conventional ones (Kaufman 2014). The relevant value of GPs is often realized in long term: primary examples include hybrid vehicles and solar panels (Drozdenko, Jensen et al. 2011).

Due to the significant role of the price in the purchase behavior, consumers with different incomes have different abilities to pay for GBs (Arora and Gangopadhyay 1995). So, consumers are expected to be persons with medium/high incomes (Berkowitz, Lutterman et al. 1968) and wealthier than the average ones (Shim 1995, Mintel 2009). Income seems to have a positive relation with green consumption (Awad 2011), since unemployed and retired consumers purchase less GPs (Chan 1999). Contrary, Sandahl and Robertson (Sandahl, Robertson. et al. 1989) supported that green consumers had a lower income than average. According to other researchers (Laroche, Bergeron et al. 2001) consumers' household income does not influence their willingness to pay for environmentally friendly products. On the same side, Liobikienė (Liobikienė, Mandravickaitė et al. 2016) argued that income level is not the main factor determining the green purchase behavior. It is obvious that income is not a good predictor of environmental concern or purchase behavior.

According to several researches (Beckerman 1974, Dunlap, Gallup et al. 1993), consumers in wealthier countries are more concerned about the environment than consumers in less wealthy countries. These findings agree with Leff (Leff 1978) who found that EC is more developed in wealthier western countries. Dunlap and Mertig (Dunlap and Mertig 1995) didn't find any evidence to support the previous studies. The conclusion drawn from their findings is that an economic crisis is not predicted to lead to less environmental concern among consumers. Indeed, the level of green purchase behavior does not depend on economic development (Liobikienė, Mandravickaitė et al. 2016),

Several studies have examined the changes of consumers' behavior during financial crisis. According to them, consumers are affected both economically by reduced employment and lower incomes (Fiszbein, Giovagnoli et al. 2003) and psychologically by uncertainty and frustration (Shama 1978, Shama 1981). It is obvious that when consumers are uncertain about their future income, they are more likely to reduce their consumption expenditures (Leland 1968, Sandmo 1970, Dreze and Modigliani 1972). According to Shama (Shama 1978), consumers' motives, values, attitudes and expectations change during economic crisis. Consumers consider more thoroughly their motives for purchasing a product; they examine their needs carefully and make more careful decisions (Cravens 1974, Brown, Demirdjian et al. 1977). In addition, during crisis they reduce their overall purchases, consume selected products and postpone the purchase of luxury products (Ang, Leong et al. 2000). They spend more time to find affordable products and they prefer those with the lowest price, since price becomes more important in decision-making (Ang, Leong et al. 2000). They also avoid the wasteful behavior, become more energy conscious and their purchasing behavior becomes more careful (Shama 1981, Ang, Leong et al. 2000). Under such economic conditions, they start to consume cheaper products and brands and they use to shop at outlets (Shama 1981, Ang, Leong et al. 2000). This behavior can be defined as an increase in price-sensitivity

(Ramirez and Goldsmith 2009). Contrary, according to other studies, the current economic crisis could contribute to bigger interest on GPs and indirectly enhance the green purchase behavior (Liobikienė, Mandravickaitė et al. 2016).

In Greece, the wave of financial crisis seems to have smashed its citizens. Based to the annual data of OECD (OECD 2016) the annual growth rate for the household disposal income was reduced from 0.8% (2008) to -10.6% (2011) and -1.6% (2014). On the same direction, the employment rate was increased from 9.6% (2009) to 24.9% (2015). The data are rather spectacular from the variation of the youth unemployment which has increased from 25.7% (2009) to 58.3% (2013) and the long term unemployment from 40.4% (2009) to 73,1% (2015). Younger Greeks seem to be at the heart of economic crisis, facing serious problems. At the same time Total Tax revenue increased from 31,0% of GDP (2009) to 35,9% (2014).

The relationship between economic crisis, green consumption and the overall attitude towards environment has not been studied thoroughly, while previous studies focused more on the individual characteristics and the behavior of green consumers (Ang, Leong et al. 2000). It would be interesting to investigate how an economic crisis affects green consumerism given that in general, environmentally friendly products tend to be more expensive (Mahene 2007).

## **2. Methodology**

### *Study objectives*

The present study tries a further investigation in green consumer's attitude during financial crisis. It is made an effort to analyze how the green consuming behavior was affected by the current financial crisis in Greece, given that green products tend to be more expensive. Specifically, the survey aims to explore how the current financial crisis in Greece has affected Athenians' green purchases and also their overall attitude towards environment including (daily life style and habits). Finally, it is attempted a further investigation to the relationship that may exists between the environmental values and green purchasing behavior.

### *Data collection*

The data of this primary research were collected using the method of questionnaire formulation, collection and elaboration. The questionnaire was developed from a thorough literature review and consisted of questions grouped in 3 categories. The first group includes 29 questions about the general characteristics and the demographic profile of the respondents (sex, age, marital status, education, etc). The second group includes 22 questions about their general environmental values and beliefs and also about the way they view GPs. This section contains 13 five-scale questions asking the respondents how often they were engaged in particular friendly/unfriendly behaviors.

Primary data were collected through a door to door survey of residents in the metropolitan area of Athens (October 2013 to December 2013, January 2014 to September 2014, August 2015 to December 2015). Residents at least 18 years old, who agreed to participate in the study, were interviewed. To avoid misunderstanding in the completion of the questionnaires the interviews were administered by the investigators face-to-face with the residents.

### *Sample's profile*

After removing the unusable responses, a total of 250 usable surveys were kept where the majority were females from 18 to 79 years, single with no children and a relatively high education level. Most of them reported 10.000-15.000 € as annual income and indicated that have been working as employee in the private sector.

### *Data analysis*

Data elaboration and statistical analysis were performed using SPSS 20.0 for Windows (Statistical Package for Social Sciences), cross-tabulations were made between related responses and the chi-square ( $\chi^2$ ) test of independence was used for statistical comparisons among them. All significant dependencies where  $p < 0.05$  were reported. In addition, a logistic regression model was used to explain the factors that influence green consumption.

### 3. Results

#### Descriptive

Most of Athenians have knowledge of GPs and consider those as more qualitative than conventional ones, but also as rather expensive. Contrary, a significant proportion support those GPs are not so “innocent” and healthy as they claimed to be. The majority tends to purchase them and is also willing to pay more in order for a more expensive GP (Table 1).

[Table 1, Attitude towards GPs]

Attitude towards GPs	%
Knowledge of GPs	92.6
GPs are more qualitative	71.6
GPs are rather expensive	83.7
I purchase GPs	74
Willing to pay more for GPs	58.1
GPs are not so “innocent” and healthy	27.2

After the outbreak of financial crisis, most of the respondents (57.5%) were obliged to reduce the consumption of GPs, with detergents and nutrition products being at the top of reductions. Greek citizens who have been damaged by the wage cuts and the high taxes were obliged to make also serious reduces also in the conventional products. Table 2 shows the reductions on both green and conventional products, after the outbreak of crisis.

[Table 2, Products/Services reduced after crisis]

Green products	%	Conventional products/services	%
Detergents	18.1	Travelling	26.0
Nutrition	14.9	Entertainment	24.2
Clothing	11.2	Clothes	14.9
Household appliances	5.6	Nutrition	8.4
Pc	3.7	Car/Transportation	7.0
Lamps	3	Home appliance	6.5
Other	0.7	Detergents	4.7
		Other	4.7

After the outbreak of financial crisis, Athenians try to live in a green way with the minimum cost. So, more than half of the responders have installed several energy saving systems at home (Table 3).

[Table 3, Energy saving systems]

Energy saving system	Percentage %
Autonomous heating	61.3
Double glazing	59.3
Tents	56.7
Solar boiler	55.3
Wall thermal insulation	26
Fans	14.7
Automatic lights	10
Ceiling fans	8
Photovoltaic	2
None	3.3

Even during crisis, the majority of the respondents is positive towards investment in green technologies (89.3%) and is also willing to change daily lifestyle in order to contribute to the environmental protection (74%).

On the same side, the majority (49.7%) would buy a hybrid car and could also recognize at least one brand from a given list of brands of hybrid cars (46.9%). The respondents, who are negative at hybrid cars' purchases, explained they don't trust new technologies, mainly because they consider them as rather expensive and not so safe. Contrary, a significant proportion can't avoid using the car daily, spending over 100 euro monthly for gasoline (Table 4)

Most of the respondents attempted to maintain their green habits, mainly those which are related to energy and cost saving (Table 4). They also argue that it is impossible to retain their concern towards GPs during crisis and they prefer to spend the same money for going out for entertainment (coffee, cinema, e.t.c.) than purchasing a more expensive GP (Table 4).

[Table 4, Green Habits]

Green Habits	Always %	Often %	Sometimes %	Random %	Never %
I use rechargeable batteries	16.7	27	22.3	19.1	13
I recycle daily	24.2	20.5	25.1	14	10.7
I recycle weekly	19.5	11.2	12.6	9.8	4.7
I try to recycle but there aren't recycling collection points in my neighborhood	18.6	26	31.6	12.1	6.5
I throw my old home appliance in the recycle bins	36,7	20.9	16.3	11.6	12.1
I leave the tap water running when I wash my teeth/shaving	13	13	16.7	20.9	34
I switch off the lights when I leave a room of my house	58.1	24.2	10.7	4.2	2.3

I donate my old clothes	37.2	29.3	21.9	6.5	3.7
I use the washing machine only when is full.	47	26	16.7	5.6	2.8
I reuse the office paper	18.1	23.7	21.9	17.7	15.3
I use reusable bags at supermarket	13	14.9	20.5	22.8	26
I use my car daily	31.8	13.5	11.6	15.3	26,5
I prefer spending money for entertainment (coffee, cinema) rather than buying a GP.	13.5	14.9	37	24	10.6
It's too difficult retaining the concern for GPs during crisis	5.9	15.6	30.7	29.3	18
I prefer the imported products because they are more qualitative compared to Greek ones.	2.3	12.9	40.7	27,3	16

Based to the results, a remarkable proportion of the respondents, sometimes, prefer to purchase imported products instead of Greek ones because they consider those as more qualitative (Table 4). Indeed, the intention of purchasing a Greek product wasn't highly rated between the consuming priorities. Actually only the 5.3% of the respondents selected to purchase a product because it was made in Greece.

#### *Determinants of green consumption*

Based to the Chi square tests' results ( $p$  value $<0.01$ ), EC interacts positively to green consumption. So, the more they concern about the effect of environmental problems in daily life, the more GPs they consume. Furthermore, consumers who are positive towards green technologies and are willing to change their life-style are more probably to purchase GPs.

GPs' consumption is closely related to green habits. So, those who recycle daily or weekly, use rechargeable batteries, recycle old home appliance, donate old clothes and recycle office paper, tend to purchase more GPs.

Based to the results the income variable does not interact positively with any other variable. After the outbreak of financial crisis, those who reduced the consumption of GPs, are those who considered GPs as rather expensive or those who preferred to spent the same amount of money for entertainment. In addition, the consumers who prefer to spend money for entertainment are those who can't retain their concern about GPs during crisis, and also consider GPs as overrated and not as healthy as they claimed to be.

Based on the above findings, a binary logistic regression was conducted to investigate the interactions of green consumption which was measured based on the sample's responses. The willingness to pay more for a more expensive GP (WTP) is the dependent variable. All the independent variables used are statistically significant ( $p$ -value $<0.05$ ). The hypothesis is that consumers' willingness to pay more for a GP (WTP) interacts with the perception that GPs are more qualitative than conventional ones (Q), the willingness to change life style to a more green one (WTL), the positivity towards green technologies (GT) and the daily recycle (DR) The equation for WTP is as follows:

$$WTP = -6.630 + 0.992*Q + 1.725*EC + 0.865WTL + 1.652GT + 0.333DR$$

According to the results of the logistic regression model, it is obvious that there is an interaction among WTP and the variables below. Consumers who are willing to change life style in order to contribute to the environmental protection and are more conscious about their impact on environment and more positive towards green technologies investment are more likely to purchase GPs. The same applies to consumers who have adopted more green habits as daily recycle. So the initial hypothesis is confirmed.

#### **4. Discussion**

Through the present paper is made an effort to describe the changes that have occurred in green consumption after the outbreak of financial crisis in Greece. In addition, we aimed to investigate the environmental values and beliefs of the consumers during financial crisis and their influence in purchasing behavior.

According to the results, Athenians have knowledge of GPs and also consider those as more qualitative but also as rather expensive. A significant proportion considers that GPs are not so “innocent” and healthy as they claimed to be. In Greece, there are commercially available many products which are presented to be green without being so in reality. They have either the label “organic/environmental friendly”, either a green package, without any other labels of the proper official stamps of certification bodies. So, it is obvious that there is a wave of suspicion about the green controls and the certification system in Greece.

After the outbreak of crisis, most of the respondents have reduced GPs’ purchases with detergents and nutritional products being at the top of reductions. Due to the recent austerity measures, Greek citizens were obliged to make also serious reductions also in conventional products including travelling, entertainment and clothes’ purchases. These findings are in agreement with previous researches which claimed that during crisis price becomes more important in decision-making and people reduce purchases, consume selected products (Ang, Leong et al. 2000) and also purchase less GPs (Chan 1999).

A significant percentage has installed energy saving systems at home. Based to the interviews were made, the respondents explained that they preferred an energy saving systems, strictly for financial reasons. In Greece, the majority of new taxes were incorporated in electricity and water bills, which many times were equally to half of an average monthly salary. So, consumers prefer paying a bit more for an energy saving home appliance in order to avoid overconsumption and high electric bills. These findings confirm the previous research (Shama 1981, Ang, Leong et al. 2000) which supports that consumers during crisis try to avoid the wasteful behavior become more energy conscious and their purchasing behavior becomes more careful.

On the same side and in order to avoid the high gasoline prices, most of the respondents would buy a hybrid car, although a significant proportion declares cautious towards hybrid cars. Is confirmed that the relevant value of GPs is often realized in long term: primary examples include hybrid vehicles (Drozdenco, Jensen et al. 2011). Contrary, the majority of the respondents can’t avoid using their car daily, spending a remarkable amount of money for gasoline –especially during crisis- and encumbering the environment.

Athenians are willing to adopt an environmentally oriented lifestyle and they favor investments in green technologies even during financial crisis. It is confirmed from the previous literature (Dunlap and Mertig 1995, Liobikienė, Mandravickaitė et al. 2016) that consumers are not less environmentally conscious in less wealthy countries. Indeed, the respondents seem to have adopted many environmental habits. Habits as the old clothes’ donation could also be explained by the climate of extreme solidarity that prevails in Greece after crisis and made Greeks more active in favor of those who live at the poverty line. In addition, it is remarkable that almost half of the respondents try to recycle, although there are no recycling collection points in their neighborhood. This is another result of the current crisis in Greece. The Greek state has reduced the recycling programs due to the increased cost.

Although the majority is willing to pay more for a more expensive green product, a remarkable proportion prefer to spend the same money for going out for entertainment (coffee, cinema, e.t.c.) than purchasing a more expensive GP.

It is also quite surprising that a significant part of the responders seem to care less whether the products are made in Greece or not. This could be explained by the rather high prices of



most Greek products compared to the same imported. Furthermore, in the past years there was an inexcusable trend over the imported products which were presented as more qualitative than Greek ones. Only during the last -after crisis- years have appeared some campaigns explaining at the consuming public which are the financial effects and the qualitative benefits of an increased Greek products' consumption.

The present research supports the work of previous studies (Smith 1990, Hume 1991, Laroche, Bergeron et al. 2001) which argued that environmental concerns and values lead to green purchases. According to the results, consumers with high environmental concerns, who are positive towards green technologies' investments and are willing to change their life style to a greener one, support GPs and show greater readiness to choose them. Indeed, GPs' consumption is closely related to green habits. It is confirmed that consumers' environmental attitudes are very good predictors of their willingness to pay for GPs ([Laroche, Bergeron et al. 2001](#)).

After financial crisis, those who reduced GP's consumption, are those who considered them as rather expensive or those who preferred to spend the same amount of money for entertainment. In addition, the consumers who prefer to spend money for entertainment are those who can't retain their concern about GPs during crisis, and consider them as overrated and not as healthy as they claimed to be. Studies which supported that current economic crisis could contribute to bigger interest on GPs (Liobikienė, Mandravickaitė et al. 2016) are not confirmed.

No significant relationship is found between green consumption and income. This finding is in accordance with Laroche (Laroche, Bergeron et al. 2001) who supported that income does not influence the willingness to pay for environmentally friendly products.

According to the regression's results, consumers who are ready to change lifestyle to a more environmental friendly one, are more environmental conscious and recycle on daily basis are more probably to pay more of a GP's purchase. The same applies also for those who are positive towards green technologies investments' during crisis. The conclusion is in accordance with previous findings which supported that environmental consciousness leads to green purchases (Zhao and Zhong 2015) and consumers with high environmental concerns, are also willing to pay a higher price for these products (Hume 1991, Cherian and Jacob 2012) and show greater readiness to choose them (Pei-Chun and Yi-Hsuan 2012).

## **5. Conclusion**

The present study aims to gain a better approach in green consuming behavior during financial crisis. It also investigates the overall environmental attitude and behavior of Athenians under the current economical conditions.

Through the present study, it is confirmed that although Athenians have reduced the consumption of green products, they are still sensitive towards environmental issues. They also support green technologies and they have realized the environmental significance of green consuming and living. However, green interest and concern in Greece, is a rather recent phenomenon. Through the previous years, not much was known about green products, green living or sustainable consumption, while the rest of Europe deals with these issues for a few decades. The present study shows that the respondents even today make a huge effort to handle with the increased prices of both green and Greek products in order to improve the daily life quality. Perhaps, in the most critical turning point for Greece and under the worst financial circumstances ever, is quite optimistic and encouraging the fact, that Athenians don't give up. They concern about the environment, they try to live in a healthier and more environmental friendly way, they make sacrifices and they are willing to change their life in order to ensure a better future for their children and next generations.

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