

Ecology and Consumer Behavior: an Attempt to Description Profile of Consumer Pre-Occupied by Ecology in Tunisian Context

Faouzia Mida¹

Department of Management, ESSEC, Tunis, Tunisia

Imed Zaiem

Department of Management, FSEG, Nabeul, Tunisia

Abstract

This paper attempts to propose Tunisian consumers' profile pre-occupied by ecology through the analysis of sociodemographics variables (such as age, sex, and occupation, level of education, revenue and place of residence) and psychographics variables (such as perceived consumer effectiveness, liberal political orientation and behavioral spiritual commitment). To meet this end, we conducted a questionnaire survey next to 300 individuals. The results of the analysis of correlations indicated that the demographics variables age and occupation were significantly correlated with ecological behavior. Also, results show that all of the psychographics variables were significantly correlated with ecological behavior.

Keywords: Ecological behavior, age, occupation, perceived consumer effectiveness, liberal political orientation, behavioral spiritual commitment.

Cite this article: Mida, F., & Zaiem, I. (2018). Ecology and Consumer Behavior: an Attempt to Description Profile of Consumer Pre-Occupied by Ecology in Tunisian Context. *International Journal of Management, Accounting and Economics*, 1006-1024.

Introduction

It was during the 1960s that the premises for ecology appeared. Indeed, environmental catastrophes have contributed to an awareness of the link between human and ecology. This awareness has led to the emergence of various concepts (such as ecological

¹ Corresponding author's email: faouziamida2016@gmail.com

marketing, sustainable development, ...) and various behaviors (such as green purchasing, the use of other renewable energy sources, the reduction of pollution and waste, etc.).

Today, ecology is an integral part of the strategies of companies wishing to differentiate themselves from the competition by proposing solutions to consume otherwise.

However, despite all the reports and mobilizations, the facts sadly show that government can not resolve this problem alone. The gravity of the environmental crisis requires, in fact, the setting in motion of all the components of society.

In the literature, concern with ecology was dealt with through various approaches some of which have explored the ecologically responsible consumption schemes such as knowledge of ecological products (Cornwell and Schwegler, 1995); (Balderjahn, 1988) as well as motivations upon purchasing an ecological product (Kréziak, 1995). Others were interested in the conceptualization and operationalization of environmental concern (Giannelloni, 1998). Further researchers tried to propose a typology of ecological consumers (Awad, 2011). Finally, there are studies interested in the description of profiles of ecologically concerned individuals through an examination of the respondents' sociodemographic and psychographic characteristics (Pickett et al., 1993); (Kréziak and Valette-Florence, 1997). The present research fits within this approach. In fact, several studies tried to identify the determinants of the consumer's ecological behavior (Scott and Willits, 1994); (Shrum et al., 1995) ; however, the results remain mixed.

In this respect, our objective is twofold: first, to determine the behavior of the Tunisian ecological consumer, then to identify the sociodemographic and psychographic determinants of his/her behavior. We shall first present a literature review, then display the methodology followed by an empirical study, its results and the ensuing managerial implications.

Literature review

Ecological marketing, Green marketing and Sustainable development

Interest in ecology has allowed the emergence and the use of many similar terms, for example: ecological marketing, or eco-marketing, green marketing, environmental marketing, sustainable marketing or sustainability marketing, and other terms. These terms have emerged as a result of the ecological evolution of marketing. Indeed, this evolution has gone through three stages.

- Ecological marketing (1975-1989):

According to Henion and Kinnear (1975), ecological marketing encompasses all marketing activities that are aimed at removing the consequences of already existing ecological problems. This stage is mostly characterized by combating the consequences of environmentally harmful production and marketing activities. Decisions are sought in the field of legal company defense and in technology, but mostly as technological additions and innovations to an already manufactured (in the old way) product.

- "Green" marketing (1990-2000):

This stage begins in the late of 1980s and is distinguished from the previous one by focusing on the branches that directly affect the environment (petroleum industry, coal mining, chemical industry, etc.). It is marked by the emergence of a new type of consumers called "green consumers" which avoids the purchase of products that: pose a potential health hazard; significantly endanger the environment; consume a large portion of natural resources that do not coincide with their benefits etc. As well the emergence of the concept of eco-performance should be noted, according to which competing products and companies are differentiated on the basis of the ecological dimension. Also, the emergence of the concept of eco-performance should be noted, according to which competing products and companies are differentiated on the basis of the ecological dimension.

- Sustainable marketing (post-2000):

The third stage of the "green wave" development in marketing involves the evolution of marketing thought in the direction of the so called sustainable marketing. It is defined as "a process of planning, implementing and controlling the development, price-formation and distribution of a product in a way that guarantees adherence to the following three criteria: (1) satisfying consumer needs; (2) guaranteeing the achievement of the organization's goals; (3) the whole process being in harmony with the ecosystem" (Fuller, 2000). His main characteristics include: a strong orientation toward the future, justice and emphasis on the needs of the planet's population.

Consumer's Ecological Behavior

Giannelloni (1998) defined ecological behavior as one that helps, directly or indirectly, avoid natural environment's degradation and contributes to the protection and/or rehabilitation thereof.

The literature review allowed us to highlight various ecological behaviors notably green purchasing behavior, recycling, the adoption of responsible conduct, use of other renewable energy resources, reducing pollution and waste.

In order to measure ecological behavior, researchers developed various measurement tools. There are those who dealt with the selection of waste (Fady and Pontier, 1995), others with purchasing behavior (Biswas, 2016) or various other behaviors concerned with environmental protection (Van Liere and Dunlap, 1981).

However, and despite the significant number of studies that proposed a theoretical framework and developed measurement tools in order to better understand ecological behavior to describe a green consumer, the literature review on ecological concern indicates that researchers have not yet managed to explain the social bases of ecological behavior. This can be explained by the fact that results were mitigated, even contradictory (Do Paço and Raposo, 2009). Those studies have based on the analysis of sociodemographics variables and psychographics variables.

Determinants of ecological behavior

Sociodemographics variables

A number of past studies have attempted to identify sociodemographics variables related to ecological behavior and/or ecological consumption. These variables offer an easy tool for announcers to segment the market (Jain and Kaur, 2006); (D'Souza et al., 2007). Among the sociodemographics variables that were object of ecological behavior study we find:

Age. There are a number of theories founded on the belief that younger individuals are likely to be more sensitive to environmental issues (Samdahl and Robertson, 1989). The findings of research have been somewhat equivocal. Some of the researchers to explore age as a correlate to green attitudes and behavior have found non-significant relationships (Roper, 1992). Others have found the relationship to be significant and negatively correlated with environmental sensitivity and/or behavior as predicted (Zimmer et al., 1994). Still others have found the relationship to be significant, but positively correlated (Roberts, 1996b).

Sex. Some researchers argue that women are more likely than men to hold attitudes compatible with the green movement. The theoretical justification from (Eagly, 1987), who finds that women, due to social development and sexual role differences, will examine more closely the impact of their actions on others. The results of sex-based investigations are still far from conclusive. Several studies have found the relationship not to be significant (Samdah and Robertson, 1989). Others have found support for the theoretical justification given (Stern et al., 1993). Still others have found the opposite of the predicted relationship (MacDonald and Hara, 1994).

Income. Income is generally thought to be positively related to environmental sensitivity. The most common justification for this belief is that individuals can, at higher income levels, bear the marginal increase in costs associated with supporting green causes and favoring green product offerings. Other studies have shown a non significant direct effect of income on environmental awareness (Van Liere and Dunlap, 1981). Several studies have shown the previously mentioned positive relationship between income and environmental attitudes and behaviors (Roper, 1990); (Zimmer et al., 1994). Few studies have found the opposite, a negative relationship between income and environmental concerns (Roberts, 1996b); (Samdahl and Robertson, 1989).

Education. Level of education is expected to be positively correlated with environmental concerns and behavior. That is, the more a person will have a higher education and the more it will have more to adopt an ecological behavior. A definitive relationship between the two variables has not been established. The vast majority of these studies have found the predicted positive relationship (Roberts, 1996b); (Roper, 1992).

Place of residence. Many studies have considered the correlation between place of residence and environmental concern. Several studies have found that those living in

urban areas are likely to show more favorable attitudes towards environmental issues (Zimmer et al., 1994).

Occupation. This variable has not been the subject of various research, unlike the other variables. Research results remain mixed. Laroche et al. (2001) found no relationship between occupation and ecological behavior. In contrast, Anderson and Cunningham (1972) find a significant relationship.

Psychographics variables

Several studies have attempted to identify correlation between psychographics variables and green behavior. In fact, those variables help better explain and predict ecological behavior than sociodemographics variables (Straughan and Roberts, 1999). These variables are based on life styles, beliefs, values, consumers' personalities and therefore can better describe their profile. Among the psychographics variables having been the object of study on ecological behavior we find:

Political orientation. Some studies showed that persons with more liberal political beliefs are more likely to exhibit strong verbal commitment than those with more conservative political views (Hine and Gifford, 1991); (Roberts, 1996a).

Perceived Consumer Effectiveness (PCE). Several studies (Roberts and Bacon, 1997) have addressed the fact that consumers' attitudes and responses to environmental appeals are a function of their belief that individuals can positively influence the outcome to such problems. This attitude or belief is referred to as perceived consumer effectiveness. The findings were significant (Leonidou et al., 2010); (Laroche et al., 2002) that PCE is positively correlated with ecological behavior. Roberts (1996a)' work showed that it was the strongest predictor of ecological behavior, exceeding all other demographic and psychographic correlations examined.

Behavioral spiritual commitment (BSC) with respect to religiosity and specifically with respect to collective religious practice. In fact, religion is one of the elements of culture (Usiner and Lee, 2005). Religiosity reflecting an individual's belief in the values and ideals of a particular religion and their practice (Delner, 1990). Religion has an important role in shaping the attitudes and behaviors of the individual, but its role has been relatively little studied in marketing in particular his relationship with concern of ecology. The analysis of its effects is difficult on a methodological level because it ability to distinguish the effects of religion (Majority or minority) of those other cultural factors, but also religiosity (Sood and Nasu, 1995). In fact, some studies have demonstrated the influence of spirituality on consumption behavior (Zang and Jolibert, 2003); (Koubaa et al., 2011). In addition, several experiments done by the Center of psychology of religion at the University of Louvain (le *Centre de psychologie de la religion de l'université de Louvain*¹) showed that ecological behavior is more accentuated in people who have a stronger spiritual commitment. This shows that individuals who are involved in a collective religious practice (follow-up, information, donations, ...) are more committed to the protection of the environment which drives us to further explore this concept.

Hypothesis and Research model

The analysis of the literature allowed to formulate two hypotheses.

H1 : Sociodemographics variables *positively* influence ecological behavior.

H1-1: Age positively influences ecological behavior.

H1-2: Sex positively influences ecological behavior.

H1-3: Occupation positively influences ecological behavior.

H1-4: Level of education positively influences ecological behavior.

H1-5: Income positively influences ecological behavior.

H1-6: Place of residence positively influences ecological behavior.

H2 : Psychographics variables *positively* influence ecological behavior.

H2-1: Perceived consumer effectiveness positively influences ecological behavior.

H2-2: Liberal political orientation positively influences ecological behavior.

H2-3: Behavioral spiritual commitment positively influences ecological behavior.

Our research model is represented in Figure 1.

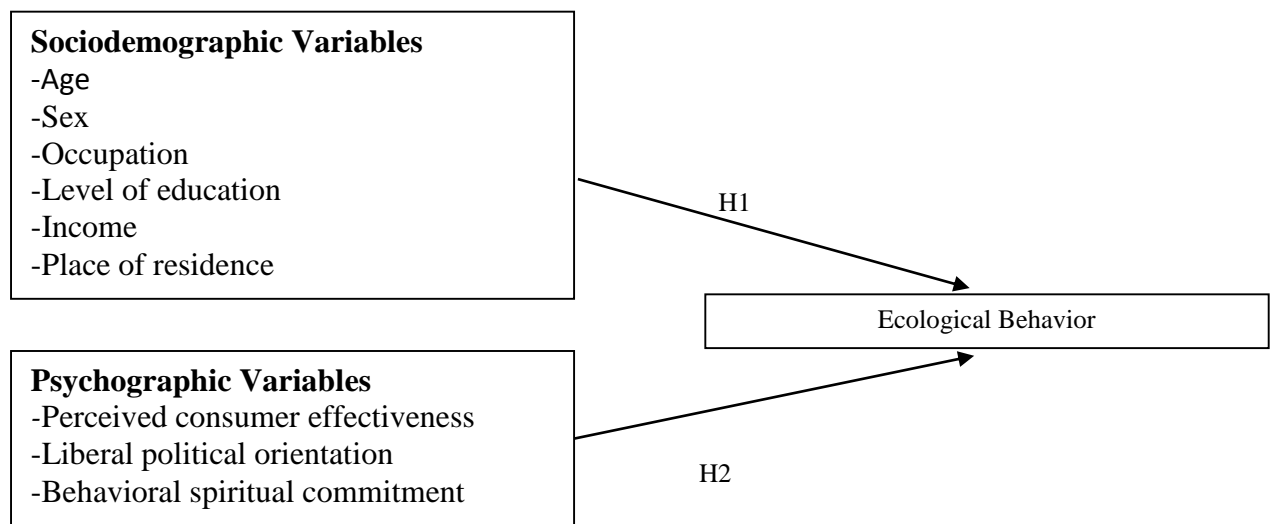


Figure 1 Research model

Methodology

Data collection and sample

Data collection was done through a questionnaire survey next to 300 individuals from the city of Tunis. We collected the data by administering questionnaires via face to face interviewer. The retained method is that of quotas which will allow us to reproduce the sample as per the characteristics of the parent population. The control variables taken into consideration to structure the sample are the following (variables mentioned by several previous studies conducted in different surveys by the National Institute of Statistics): age (age groups), level of education, and sex. The subjects were given as much time as need to complete the questionnaire. Referring to appendix 1, the results indicate that out of the 300 respondents, 55.2 per cent were males and 44.8 per cent were females. Over 62 per cent of the respondents were above 30 years. The majority of the respondents works as manual worker (33.6 per cent) and have an income below 400 DT (48.8 per cent). 43.5 per cent of the respondents were at the secondary level, currently married (47.6 per cent) and come from urban environment (86.5 per cent).

Measurement scales

In order to measure the model's variables, our choice was made over three Roberts (1996a) uni-dimensional scales.

The first allows to evaluate the Ecologically Conscious Consumer Behavior (ECCB). In fact, the works of Roberts (1996a) brought to light a measurement tool of diverse behaviors and was adopted in several studies (Singh and Gupta, 2013); (Zuraidah et al., 2012). It consists of 22 items reflecting various ecological behaviors. The scale was reduced to 10 items to fit the Tunisian context.

The second scale allows to measure the Perceived Consumer Effectiveness (PCE). It consists of four statements.

And the third scale measures Liberal Political Orientation (LPO). It consists of five statements.

These three measures were submitted to a classification of items going from 1 « Strongly disagree » to 5 « Strongly agree ».

Finally, behavioral spiritual commitment (BSC) was measured using Worthington et al., (2003)'s scale of *Religious Commitment Inventory* adapted by Moal (2013). It consists of four statements. Each item is measured on a 5 point-Likert scale going from « Totally not true for me » to « Totally true for me ». (The measurement scales are presented in appendix 2)

Findings

Following the data collection phase, the data were subject to statistical analysis using the Statistical Package for Social Sciences (SPSS 18.0) and Analysis of MOment Structures (AMOS 18.0) and included statisticals treatments in order to obtain the survey's empirical results.

Purification of the measuring scales

We performed exploratory and confirmatory analyses on all scales. Results in Table 1 and 2 indicate that:

- For all the scales, the KMO indicators and Bartlett's sphericity test are satisfactory values. Table 1 shows that Cronbach Alpha coefficients are reliable for all the scales on the exploratory level.
- The Jöreskog's Rhô indicate satisfying values exceeding the minimum threshold of 0,7.
- The convergent validity rhôs are superior to the minimum prescribed threshold of 0,5.
- The discriminant validity was verified considering that the extracted value is superior to the correlation square between the latent variables.
- Confirmatory analyses show a good quality of models adjustment

Thus, we can conclude that the scales are reliable and valid.

Table 1. Results of exploratory analyses

Scales	KMO and Bartlett's sphericity test	Variance explained (%)	Reliability α
Ecologically conscious consumer behavior	KMO = 0,774 Bartlett's test = 0,000	Component 1 : 74,429 Total : 74,429	0,907
Perceived consumer effectiveness	KMO = 0,758 Bartlett's test = 0,000	Component 1 : 64 Total : 64	0,803
Liberal political orientation	KMO = 0,821 Bartlett's test =0,000	Component 1 : 74,125 Total : 74,125	0,753
Behavioral spiritual commitment	KMO = 0,782 Bartlett's test =0,000	Component 1 : 69,625 Total : 69,625	0,775

Table 2. Results of confirmatory analyses

Scales	Rho of Jöreskog	Convergent validity	Models adjustment Indices
Ecologically conscious consumer behavior	0,86	0,76	X ² /ddl=1,773; NFI=0,938 ; CFI=0,925; RMR=0,069 ; RMSEA=0,074; GFI=0,911, AGFI=0,944
Perceived consumer effectiveness	0,77	0,82	X ² /ddl=2,914 ;NFI=0,987 ;CFI=0,991 ;RMR=0,029 ;RMSEA=0,068 ; GFI=0,989 , AGFI=0,976
Liberal political orientation	0.75	0,58	X ² /ddl=2,513 ;NFI=0,941 ;CFI=0,951 ;RMR=0,044 ; RMSEA=0,066 ;GFI=0,901, AGFI=0,790
Behavioral spiritual commitment	0,78	0,71	X ² /ddl=2,323 ;NFI=0,957 ;CFI=0,934 ; RMR=0,058 ; RMSEA=0,072 ;GFI=0,929, AGFI=0,932

Description of the Tunisian consumer's ecological behavior

The analysis of the consumer's ecological behavioral shows two types of behaviors. First, a general behavior linked to gestures and actions for the protection of the environment. The results show that paying a higher price to buy energy saving bulbs (58%) and buying products packed in recyclable packaging (55.5%) are the main actions declared to be taken by respondents. To a lesser extent, we can mention deploying effort in reducing power consumption (26.5 %), buying power saving electrical household appliances (25%) and buying products that can be recycled (11%). In sum, limiting consumption of products that are made of (or use) rare resources (5%), boycotting an ecologically irresponsible company (4%) and driving one's car as little as possible to save energy (3%) are actions that are little undertaken by respondents.

Then, there is the specific behavior linked to purchasing ecological products. When buying an ecological product, the latter's ecological characteristics are but little taken into consideration (12.5%). Among the barriers that dissuade consumers from purchasing an ecological product one can cite the price of other (non ecological) products estimated to be inferior compared to ecological ones (34.5%) (see appendix 3).

Testing the relation between ecological behavior and sociodemographic variables

In order to identify the relation between ecological behavior and sociodemographics variables (age, sex, level of education, occupation, income and place of residence), we proceeded with the multiple variance analysis. The results of analysis are presented in Tables 3, 4 and 5.

Table 3. Manova tests

Dependent variable	F	Signification
Age	51.399	0.000
Occupation	7.365	0.002
Sex	0.421	0.517
Level of education	0.892	0.132
Income	0.429	0.916
Place of residence	0.392	0.224

Table 4. Dependent variable age

Variable	Range	Average
Ecological behavior	15 - 19	2.054
	20 - 29	2.100
	30 - 49	2.165
	50 and over	4.522

Table 5. Dependent variable occupation

Variable	Occupation	Average
Ecological behavior	Senior manager	5.601
	Middle Manager and office employee	3.141
	Liberal profession	3.300
	Manual worker	3.227
	Student	1.915
	Housewife	2.001
	Retired	3.081

The results show that only the variables age ($F= 51.399$, $p= 0.000$) and occupation ($F= 7.365$, $p= 0.002$) have a significant effect which partially confirms our first global hypothesis. In fact, the consumer's ecological behavior increases with age (H1-1 confirmed). People over 50 years old are ready to modify their behavior more than teenagers (15-19 years old).

In addition, analyses show that it is sensitively senior employees who state that they are ready to change their ecological behavior more than others like manual workers and office employees (H1-3 confirmed).

Testing the relation between ecological behavior and psychographic variables

In order to identify the relation between ecological behavior and psychographics variables, we conducted Pearson correlation tests two by two. The results of analysis are presented in tables 6, 7 and 8.

Table 6. Correlations between ecological behavior and perceived consumer effectiveness

	Ecological behavior	Perceived consumer effectiveness
Ecological behavior Pearson correlation	1	0.45
Sig. (2-tailed)		0.000
N	300	300
Perceived consumer Pearson correlation effectiveness	0.45	1
Sig. (2-tailed)	0.000	
N	300	300

Table 7. Correlations between ecological behavior and behavioral spiritual commitment

	Ecological behavior	Behavioral spiritual commitment
Ecological behavior Pearson correlation	1	0.39
Sig. (2-tailed)		0.000
N	300	300
Behavioral spiritual Pearson correlation commitment	0.39	1
Sig. (2-tailed)	0.000	
N	300	300

Table 8 Correlations between ecological behavior and liberal political orientation

	Ecological behavior	Liberal political orientation
Ecological behavior Pearson correlation	1	0.34
Sig. (2-tailed)		0.000
N	300	300
Liberal political Pearson correlation orientation	0.34	1
Sig. (2-tailed)	0.000	
N	300	300

Results show that the correlations are positive and significant for all of the psychographics variables (Sig=0,000): perceived consumer effectiveness (0,45), behavioral spiritual commitment (0,39) and liberal political orientation (0,34). Which confirms hypotheses H2-1 and H2-2 and H2-3.

Discussion and conclusion

The purpose of this contribution is to propose a description of Tunisian consumers' profiles pre-occupied by ecology through the analysis of sociodemographics and psychographics variables.

Our empirical study revealed interesting results. First, the analysis of the consumer's ecological behavior shows two types of behaviors. There is a general behavior linked to gestures and actions taken for the protection of the environment. Then, there is a specific

behavior linked to purchasing ecological products. Those behaviors demonstrate that the Tunisian consumer is not involved in the ecological problem and is not yet ready to adopt a behavior in this sense such as the behaviors " recycling ", " buying environmentally friendly products " or " boycotting an ecologically irresponsible company ".

In this respect, as indicated by Pickett et al. (1993), marketers and policy-makers must exercise caution when attempting to extend environmental initiatives from one ecologically conscious behavior to another. For example, those consumers who recycle plastic may not be the same consumers who would pay more for low-phosphate detergent.

The results of the analysis of correlations indicated that the demographics variables age and occupation were significantly correlated with ecological behavior. In fact, the consumer's ecological behavior increases with age and with senior employees. These results converge with Samdah and Robertson, (1989)'s works.

In addition, all of the psychographic variables were significantly correlated with ecological behavior. Psychographics appear to be more effective than demographics in explaining variation in description of consumers' profiles pre-occupied by ecology or ecological behavior. A person's belief that individuals can play an important role in combating environmental destruction (PCE) is likely the driving force behind ecological behavior. These results supports the findings of Leonidou et al. (2010) and Laroche et al. (2002).

Behavioral spiritual commitment was also found to play a role, albeit a secondary one, in explaining ecological behavior. Which is in line with the experimental studies conducted by the University of Louvain's Center of psychology of religion that confirms that believers (who have a high level of religiosity) have more tendency to adopt an altruist behavior such as the protection of environment.

Although, liberalism was found to be a significant correlate of ecological behavior, it appears that this type of behavior transcends ideological boundaries. Our results converge with those of Roberts (1996a).

Limitations, future research and managerial implications

This paper's limitation offer a number of future research opportunities. Within the scope of this study, we were only based on the few most influential sociodemographics and psychographics variables on ecological behavior. In fact, for future research, we suggest to integrate other individual explanatory and situational variables, in addition to variables linked to culture and interpersonal relations as well as social orientations.

It would be interesting to conduct comparative studies between muslim countries and to propose consumer typologies based on their ecological behaviors.

Finally, it is also important to validate the measurement scales in the context of the study and to validate the model using structural equations methods.

Our paper presents interesting implications for management. Our study could help companies who aim at positioning themselves on the ecological axis by adapting their marketing strategies using the ecologically concerned individuals' profiles' test. This research provides managers and government with pertinent criteria they may use to lead their strategies to success.

References

- Anderson, T. Jr and Cunningham, W.H. (1972) 'The socially conscious consumer', *Journal of Marketing*, Vol. 36 No. 7, pp.23-31. .
- Awad, T.A. (2011) 'Environmental segmentation alternatives: buyers profiles and implications', *Journal of Islamic Marketing*, Vol. 2 No. 1, pp.55-73.
- Balderjahn, I. (1988) 'Personality Variables and Environmental Attitudes as Predictors of Ecologically Responsible Consumption Patterns', *Journal of Business Research*, Vol. 17 No.1, pp.51-56.
- Biswas A. (2016) 'A study of consumers' willingness to pay for green products', *Journal of Advanced Management Science*, Vol. 4 No. 3, pp.211-215.
- Cornwell, T.B. and Schwegler, C. (1995) 'Ecologically concerned consumers and their product purchases', in Polonski M.J. and Mintu-Wimsatt A.T. (eds.) *Environmental Marketing, Strategies, Practice, Theory and Research*, Binghamton, N.Y.: The Haworth Press., The Haworth Press, pp.119-153.
- D'Souza, C., Taghian, M., Lamb, P. and Peretiatkos, R. (2007) 'Green decisions: demographics and consumer understanding of environmental labels', *International Journal of Consumer Studies*, Vol. 31 No. 4, pp.371-376.
- Delener N. (1990) 'The effects of religious factors on perceived risk in durable goods purchase decisions', *Journal of Consumer Marketing*, Vol. 7 No. 3, pp.27-39. .
- Do Paço, A. and Raposo, M. (2009) 'Green segmentation: an application to the Portuguese consumer market', *Marketing Intelligence & Planning*, Vol.27 No.3, pp.264-379.
- Eagly, A.H. (1987), *Sex Differences in Social Behavior: A Social-role Interpretation*, Lawrence Erlbaum Associates, Hillsdale, NJ. .
- Fady, A. and Pontier, S. (1995) 'Les consommateurs sont-ils sensibles aux actions écologiques des GMS ?', *Revue Française de Marketing*, Vol. 5 No.175, pp.93-105.
- Fuller, D. A. (2000), *Sustainable Marketing: Managerial-Ecological Issues*, Sage, Thousand Oaks, California.

- Giannelloni, J.L. (1998) 'Les comportements liés à la protection de l'environnement : un état de recherche en marketing', *Recherches et Applications Marketing*, Vol.13 No. 2, pp.49-72.
- Henion, K. and Kinnear T. (1975), *Ecological Marketing*, American Marketing Association.
- Hine, D.W. and Gifford, R. (1991) 'Fear appeals, individual differences, and environmental concern', *Journal of Environmental Education*, Vol. 23 No. 1, pp.36-41.
- Jain, S. and Kaur, G. (2006) 'Role of socio-demographics in segmenting and profiling green consumers: an exploratory study of consumers in India', *Journal of International Consumer Marketing*, Vol. 18 No. 3, pp.107-117.
- Koubaa, Y., Ulvoas, G. and Chew, P. (2011) 'The dual impact of traditional and national cultural values on expatriate ethnic groups' attitude and willingness to buy', *Asia Pacific Journal of Marketing and Logistics*, Vol. 23 No. 5, pp.626-640. .
- Kréziak, D. and Valette-Florence, P. (1997) 'Les objectifs poursuivis par les consommateurs écologiquement responsable : une nouvelle approche', *Actes du 13e congrès de l'Association Française Marketing*, Toulouse, pp.135-162.
- Kréziak, D. (1995) 'Comportement des consommateurs et environnement : une approche exploratoire', *Actes de l'Association Française Marketing*, Reims, pp. 1109-1135.
- Laroche, M., Bergeron J. and Barbaro-Forleo G. (2001) 'Targeting Consumers Who are Willing to Pay More for Environmentally Friendly Products', *Journal of consumer marketing*, Vol. 18 No. 6, pp. 503-520.
- Laroche, M., Bergeron, J., Tomiuk, M., & Barbaro-Forleo, G. (2002) 'Cultural Differences in Environmental Knowledge, Attitudes, and Behaviours of Canadian Consumers', *Canadian Journal of Administrative Sciences*, Vol. 19 No. 3, pp.267-283.
- Leonidou L. C., Leonidou, C. N., & Kvasova, O. (2010) 'Antecedents and outcomes of consumer environmentally friendly attitudes and behavior', *Journal of Marketing Management*, Vol. 26 No. 13/14, pp.1319-1344. .
- MacDonald, W.L. and Hara, N. (1994) 'Gender differences in environmental concern among college students', *Sex Roles*, Vol. 33 No. 5/6, pp. 369-74.
- Moal, G. (2013) *Influence de la spiritualité des personnes âgées sur leurs motivations à voyager : une approche par la théorie de la géotranscendance*, Thèse de Doctorat en Sciences de gestion, Université de Bretagne occidentale, Brest. .

- Pickett, G.M., Kangun, N. and Grove, S.J. (1993) 'Is there a general conserving consumer? A public policy concern', *Journal of Public Policy & Marketing*, Vol.12 No. 2, pp.234-244. *Journal of Public Policy & Marketing*.
- Roberts, J.A. and Bacon, D.R. (1997) 'Exploring the subtle relationships between environmental concern and ecologically conscious consumer behavior', *Journal of Business Research*, Vol. 40 No. 1, pp.79-89.
- Roberts, J.A. (1996a) 'Green Consumers in 1990s: Profile and Implication for Advertising', *Journal of Business Research*, Vol. 36 No. 3, pp.217-231.
- Roberts, J.A. (1996b) 'Will the real socially responsible consumer please step forward?', *Business Horizons*, Vol. 39 No. 1, pp.79-83. .
- Roper Organization (1990), *The Environment: Public Attitudes and Individual Behavior*, Commissioned by S.C. Johnson and Son, Inc.
- Roper Organization (1992), *Environmental Behavior, North America: Canada, Mexico, United States*, Commissioned by S.C. Johnson and Son, Inc.
- Samdahl, D.M. and Robertson, R. (1989) 'Social determinants of environmental concern: specification and test of the model', *Environment and Behavior*, Vol. 21, No. 1, pp.57-81.
- Scott, D. and Willits, F.K. (1994) 'Environmental attitudes and behavior. A Pennsylvania Survey', *Environment and Behavior*, Vol. 26 No. 2, pp.239-260.
- Shrum, L.J., Lowrey, T.M. and McCarty, J.A. (1995) 'Applying Social and Traditional Marketing Principles to the Reduction of Household Waste', *American Behavioral Scientist*, Vol. 38 No. 4, pp.646-657.
- Singh, N. and Gupta, K. (2013) 'Environmental attitude and ecological behavior of Indian consumers', *Social Responsibility Journal*, Vol. 9 No. 1, pp.4-18.
- Sood, J. and Nasu, Y. (1995) 'Religiosity and Nationality: An Exploratory Study of Their Effect on Consumer Behavior in Japan and the United States', *Journal of Business Research*, Vol. 34 No. 1, pp.1-9.
- Stern, P.C., Dietz, T. and Kalof, L. (1993) 'Value orientations, gender, and environmental concern', *Environment and Behavior*, Vol. 25 No. 3, pp. 322-48.
- Straughan and Roberts. (1999). Straughan, R.D. and Roberts, J.A. (1999) 'Environmental segmentation alternatives: a look at green consumer behaviour in the new millennium', *The Journal of Consumer Marketing*, Vol. 16 No. 6, pp.559-562. .
- Usunier, J. C. and Lee, J. A. (2005) *Marketing across cultures*, Pearson, Harlow.

- Van Liere, K.D. and Dunlap, R.E. (1981) 'Environmental Concern, Does It Make a Difference How It's Measured?', *Environment and Behavior*, Vol. 13 No. 6, pp.651-676.
- Van Liere, K.D. and Dunlap, R.E. (1981) 'Environmental Concern, Does It Make a Difference How It's Measured?', *Environment and Behavior*, Vol. 13 No.6, pp.651-676.
- Worthington, E.J., et al. (2003) 'The religious commitment inventory-10: development, refinement and validation of a brief scale for research and counseling', *Journal of Counseling Psychology*, Vol. 50 No. 1, pp.84-96.
- Zhang, M. and Jolibert, A. (2003) 'Les valeurs traditionnelles des acheteurs chinois: conceptuel, mesure et application', *Recherche et Applications en Marketing*, Vol. 18 No. 1, pp.25-42.
- Zimmer, M.R., Stafford, T.F. and Stafford, M.R. (1994), 'Green issues: dimensions of environmental concern', *Journal of Business Research*, Vol. 30 No. 1, pp. 63-74.
- Zuraidah, R., Hashima, H.N., Yahya, K.W. and Mohamad, S.A. (2012) 'Environmental conscious behavior among male and female Malaysian consumers', *International Journal of Sustainable Development*, Vol.4 No 8, pp.55-64.

Appendix

Appendix 1. Sample characteristics

Sex	Percentage
Male	55,2 %
Female	44,8%
Age	Percentage
15 - 19	14,4 %
20 - 29	22,8 %
30 - 49	35,1 %
50 and over	27,7 %
Level of education	Percentage
Illiterate	10,2 %
Primary	26,7 %
Secondary	43,5 %
University	19,6 %
Occupation	Percentage
Senior manager	5 %
Middle Manager and office employee	14,7 %
Liberal profession	14 %
Manual worker	33,6 %
Student	13,5 %
Housewife	19 %
Retired	0,2 %
Income (Unit : DT)	Percentage
Less than 400	48,8 %
400-800	40,8 %
800 -1200	7,5 %
More than 1200	1,8 %
Civil status	Percentage
Single	43,2 %
Married	47,6 %
Widow(er)	6,2 %
Divorced	3,2 %
Place of residence	Percentage
Rural environment	13,5%
Urban environment	86,5%

Appendix 2. Measurement scales adopted in research

Ecologically conscious consumer behavior

1. To save energy, I drive my car as little as possible.
2. I normally make a conscious effort to limit my use of products that are made of or use scarce resources.
3. I try to buy energy efficient household appliances.
4. When there is a choice, I always choose that product which contributes to the least amount of pollution.
5. I have tried very hard to reduce the amount of electricity I use.
6. Whenever possible, I buy products packaged in reusable containers.
7. I will not buy a product if the company that sells it is ecologically irresponsible.
8. I have purchased light bulbs that were more expensive but saved energy.
9. I try only to buy products that can be recycled.
10. I usually purchase the lowest priced product, regardless of its impact on society.

Liberalism

1. The government should control the profits of the big industries.
2. I am for a health insurance program covering men and women of all ages.
3. If unemployment is high, the government should spend to create jobs.
4. A government administered health insurance program is necessary to insure that everyone receives adequate medical care.
5. I am for less government regulation of business.

Perceived effectiveness of the consumer

1. It is worthless for the individual consumer to do anything about pollution.
2. When I buy products, I try to consider how my use of them will affect the environment and other consumers.
3. Since one person cannot have any effect upon pollution and natural resource problems, it does not make any difference what I do.
4. Each consumer's behavior can have a positive effect on society by purchasing products sold by socially responsible companies.

Behavioral spiritual commitment

1. I am well informed of what the group to which I belong does and I influence its decisions.
2. I like participating in the activities of my spiritual group.
3. I donate to my spiritual group by conviction.
4. I like spending time with other persons who have the same spiritual affiliation as me.

Appendix 3. Consumer's ecological behavioral

Statements	Strongly disagree	Disagree	Neither	Agree	Strongly agree
To save energy, I drive my car as little as possible	27.5	36	33.5	3	0
I normally make a conscious effort to limit my use of products that are made of or use scarce resources.	37	51	3.5	5	3.5
I try to buy energy efficient household appliances.	15	43	9	25	8
When there is a choice, I always choose that product which contributes to the least amount of pollution.	26	37.5	16	12.5	8
I have tried very hard to reduce the amount of electricity I use.	8	23	26	26.5	16.5
Whenever possible, I buy products packaged in reusable containers.	8	18	6.5	55.5	12
I will not buy a product if the company that sells it is ecologically irresponsible	26	38.5	24.5	4	7
I have purchased light bulbs that were more expensive but saved energy.	3.5	11	19.5	58	8
I try only to buy products that can be recycled.	16	60	9	11	4
I usually purchase the lowest priced product, regardless of its impact on society.	5.5	0	8	34.5	52