

Differences Between Pro-Environmental Attitudes and Consumption of Public Utilities (Water and Electric Power) in Socio-Economic Strata 2 and 5 in the City of Bogotá

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ABSTRACT This paper aims to identify the differences between the pro-environmental attitudes and consumption of utilities (water and electricity), in social strata (*estratos sociales*) 2 and 5 of the city of Bogotá (Colombia). To this effect, we conducted a descriptive correlational cross-sectional study with a sample of 462 people. An instrument was administered in order to evaluate the practices, beliefs and feelings that people have vis-à-vis environmental conservation and sustainable consumption of public utilities – water and electricity. The results show that households in social strata 2 and 5 show a positive correlation between beliefs on sustainable consumption and electricity consumption, thereby confirming the results found in other studies in Latin America.

KEYWORDS pro-environmental behavior, responsible consumption, sustainable consumption, environment, public utilities.

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Diferencias entre las actitudes proambientales y el consumo de servicios públicos (agua y energía eléctrica) en estratos 2 y 5 de la ciudad de Bogotá

RESUMEN El presente artículo tiene como propósito identificar las diferencias entre las actitudes proambientales y el consumo de servicios públicos (agua y energía eléctrica), en estratos 2 y 5 de la ciudad de Bogotá (Colombia). Para lograrlo se llevó a cabo un estudio descriptivo-correlacional de tipo transversal, con una muestra de 462 personas. Se aplicó un instrumento para evaluar las prácticas, creencias y sentimientos que poseen las personas frente a la conservación del medioambiente y el consumo sustentable de los servicios públicos de agua y energía eléctrica. Los resultados hallados muestran que los hogares de estratos 2 y 5 presentan una correlación positiva entre las creencias sobre el consumo sustentable y el consumo de energía eléctrica, lo que confirma los resultados encontrados en otros estudios en Latinoamérica.

PALABRAS CLAVE comportamiento proambiental, consumo responsable, consumo sustentable, medio ambiente, servicios públicos domiciliarios.

Diferenças entre as atitudes pró-ambientais e o consumo de serviços públicos e energia (Água e energia elétrica) em estratos 2 e 5 da cidade de Bogotá.

RESUMO O presente artigo tem como propósito identificar as diferenças entre as atitudes pró-ambientais e a consumação de serviços públicos (água e energia elétrica) nos estratos 2 e 5 da cidade de Bogotá (Colômbia). Para cumpri-lo, realizou-se um estudo descriptivo-correlacional de tipo transversal, com uma amostra de 462 pessoas. Foi utilizado um instrumento para avaliar as práticas, crenças e sentimentos que possuem as pessoas diante da conservação do meio ambiente e o consumo sustentável dos serviços públicos de água e energia elétrica. Os resultados obtidos mostram que as famílias dos estratos 2 e 5 apresentam uma correlação positiva entre as crenças sobre o consumo sustentável e o consumo de energia elétrica, o que confirma os resultados de outros estudos na América Latina.

PALAVRAS CHAVE comportamento pró-ambiental, consumo responsável, consumo sustentável, meio ambiente, serviços públicos domiciliários.

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Introduction

The world is going through a deep natural resource sustainability crisis, and governments, despite having regulations in line with international agreements and conventions to regulate the sustainable exploitation of the environment, still show low indicators on the environmentally responsible behavior of their citizens (Gutiérrez, Benayas & Calvo, 2006).

The environmental debate is today one of the main topics making worldwide news. Lomborg (2001), on his part, includes deforestation, energy resources and water dwindling, loss of species, global warming, and overpopulation as important topics to be discussed. This author proposes three interesting aspects to bear in mind: life expectancy, food, man and prosperity.

In Colombia, renewable resources are getting scarce as days pass by. There is not a reusing or recycling culture among citizens, which leads to the increased use of raw materials to manufacture more and more products. On the other hand, air is highly polluted in Colombian main cities, exceeding environmental standard limits. Atmospheric pollution – detected through the emission of particulate matter, sulphur and nitrogen oxides generated by factories-, deforestation, forest clearing, open-burning processes, generation of power through hydrocarbon extractive exploitation and burning processes, as well as carbon monoxide and hydrocarbon emissions, mainly from the vehicles, are the principal pollution focal problems (Sánchez, 2002).

Certainly, the explanation to these phenomena involves each one and all of us. Thus, environmental concerns have increased as our society experiences ecological and environmental disasters caused by the deterioration of our planet. Such events have inspired some political and social parties to foster changes for responsible consumption, involving a set of actions that governments and citizens must perform (Novo, 1996).

In such regard, there is a traditional relation between attitudes to preserve the environment and the sustainable behavior of people, based on the assumption that attitudes are key to protect the environment and that the beliefs on environment stewardship significantly predict a sustainable behavior, especially in terms of consumption of public utilities. However, studies show that the different population groups not only have different attitudes and practices towards the environment,

but their socio-economic variables also imply differences in the way they care for the environment (Corral-Verdugo & Queiroz, 2004).

In Colombia, such differences, and their related variables, have yet to be studied. In regards to domiciliary public utilities, Colombia still makes too much emphasis on consumption, but not on behavioral predictors. The purpose of this study is to identify the differences between consumption and pro-environmental attitudes in two extremely different population groups: socio-economic strata 2 and 5¹ homes. Based on the socio-economic characteristics of the participants, differences between their environmental attitudes and the consumption of public utilities were established.

Corral-Verdugo & Queiroz (2004) argue that based on the concept of environmental responsibility, being ecologically responsible involves all the actions performed by human beings to protect natural resources, or at least to reduce environmental deterioration. On the other hand, when comparing environmental policies to sustainability policies, the former focuses on the regulations mostly dealing with cleaning and rectifying pollution and environmental destruction, and the latter focuses on structural transformations on the production and consumption patterns to ensure and reinforce -for as much as possible- ecological survival.

In that regard, environmental behavior, according to Corral-Verdugo (2006), is defined as an effective, early, and driven behavior to prevent or diminish the deterioration of the environment. It is also a set of priority actions to guarantee the survival of the human species and achieve a decent standard of living.

It has been found that in real life, the behavior of individuals conflict with situational conditions since their attitudes sometimes do not accurately predict a pro-environmental behavior (Berenguer & Corraliza, 2000). The foregoing implies that an individual may, in general terms, show positive attitudes towards the preservation of the environment, but when it comes to act to satisfy his/her needs or his/her loved ones', this individual acts

1 Socio-economic stratification in Colombia is a public policy that proposes a system to classify housing developments in the cities through a set of criteria that focus on the quality of the surroundings and the materials used to build the houses, in order to provide subsidies to the population whose income low.

spontaneously without considering whether his/her actions have an impact on the environment. Such attitudes may be in disadvantage in the prediction of a pro-environmental behavior because they are constantly in conflict.

Accordingly, some studies, such as the ones by Corral-Verdugo, have found that the relation between attitudes and behaviors is not straight, especially because it has also been found that attitudes exert an effect upon behaviors through third variables (Corral-Verdugo, 2010). On their part, Álvarez & Vega (2009) state that, currently, most of the research studies on attitudes focus on the predictive value they may have on the behavior.

Pro-environmental attitudes are central in the analysis of the pro-environmental behavior since they, directly or indirectly, predict a sustainable behavior, which, notwithstanding their predictive use, have a place in the models designed to evaluate and intervene both the sustainable consumption and the pro-environmental behaviors in general. Rosenberg & Hovland (1960) regard one of the first definitions of attitude through a tripartite model by suggesting that in the face of an attitudinal object, individuals tend to provide one out of three different responses: a) cognitive responses: beliefs, thoughts, and opinions related to the object; b) affective responses: feelings related to the object in terms of like, dislike, repulsion, attraction, pleasure, etc., and c) behavioral responses: behaviors that include the intention to act in certain way in the face of an object (Carpi & Breva, 2001).

On the other hand, attitudes are global, and relatively stable, evaluations people make about other people, ideas, or things which, technically, are called attitude objects (Morales, 2007). Attitudes refer to the positive or negative level of expression used by people to judge any aspects of reality; these aspects are conventionally called attitude objects. General opinions or judgements characteristic of attitudes may be positive, negative, or neutral, and may vary depending on their intentionality or level of polarization.

Likewise, Corral-Verdugo (2010) propose that attitudes are tendencies to respond in a favorable or unfavorable fashion to an object, event, or situation; said tendencies are related in several ways to effective behavior.

Based on the concepts of environmental psychology, Holahan (1996) defined attitudes as "favorable or unfavorable feelings an object or

a situation elicits" (p. 115). Since the main topic here deals with the attitudes towards the environment, said feelings, beliefs, or intentions towards treats or objects in our surroundings are generally individual, although affected by the context and the physical and social conditions surrounding us.

Methodology

Problem Statement

This study was inspired on a positive reflection on the current environmental issues. It is not enough to realize what is going on within the context we live in, but it is also important to analyze and generate new ideas that can be harnessed to achieve sustainability, create strategies based on models that allow fostering the implementation of sustainable cultural practices, and raise awareness in the responsible consumption of natural resources.

In this respect, the following core problem arises: Which are the differences between socio-economic strata 2 and 5 in the city of Bogotá regarding pro-environmental attitudes and consumption of water and electric power, in a sample of 462 heads of households?

The general objective is to inquiry into the differences between the consumption of public utilities and pro-environmental attitudes (practices, beliefs and feelings) in socio-economic strata 2 and 5 homes in the city of Bogotá.

The predictor variable is the socio-economic strata: "Classification of houses in a city according to the factors and procedures established by the law" (Law 142 of 1994). The criteria variables include environmental attitudes such as favorable or unfavorable feelings towards any of the characteristics of the environment where a person lives in or their feelings towards the problem of conservation of natural resources (Holahan, 1996). Another important variable is public utilities consumption, which is defined as the use of utilities to satisfy the core needs of people, according to León (2005).

For practical purposes, in this study, pro-environmental behavior means all those deliberate and effective actions performed by individuals to respond to their own or the society's requirements leading to the conservation of the environment.

Method

Participants

462 heads of households, between 18 and 74 years old, belonging to socio-economic strata 2 and 5 homes in the city of Bogotá participated in this study —one person per house. Heads of households were chosen through a stratified random sample comprised of two groups: 231 homes belonging to the socio-economic stratum 2, and 231 homes belonging to the socio-economic stratum 5 in the city of Bogotá. The study was conducted during the second semester of 2011. The sample was calculated with a 95% reliability and 7% sampling error per stratum, according to the maximum variance criterion ($p: ,5$ and $q: ,5$).

Design

This is a cross-sectional, descriptive-correlational study with a sample of 462 homes in the city of Bogotá belonging to socio-economic strata 2 and 5. The study applied a scale to each head of household.

Instrument

For the purpose of collecting data, the attitudinal scale to assess the pro-environmental behavior and the sustainable consumption of water and electric power was adjusted according to de Cortés (2011). This adjustment included, on the one hand, changes in the measurement scales used, and on the other hand, modifications to certain items since the customs of the population in Bogotá are different from the sample the author published on the same topic in the city of Barranquilla. To make the adjustment, three pilot tests and a cognitive test were conducted until a reliability Cronbach's Alpha of 0.77 was obtained. 20 people participated in each one of the pilot tests; 3 people, with basic primary and postgraduate studies, participated in the cognitive test. The pro-environmental assessment scale was comprised of six sub-scales, each one of them with items alternating between positive and negative judgements to practices, beliefs, and feelings regarding the environment.

Procedure

The assessment scale was applied only on the head of household, and the items and scales were explained to them at the beginning of the interview to ensure they understood the dynamics. To verify water and electric power consumption, participants were requested to show their latest consumption bill generated by utility companies. After collecting the information above, a database was created using SPSS (Statistical Package for the Social Sciences) V20 to analyze data.

The first thing was to analyze the feasibility of the assessment scale by obtaining the Cronbach's Alpha (α) internal consistency coefficient. The assessment scale showed an acceptable Cronbach's Alpha ($\alpha: 0.77$) reliability level. After knowing the composition of the sample broken down per socio-economic strata, six quantitative variable groups were created to group the answers given by the interviewees. These variables were created upon the averages of each one of the sub-scales of the questionnaire: the first group comprises water and electric power consumption practices; the second group is comprised of pro-environmental behavior practices; the third involves variables of belief towards water and electric power sustainable consumption; the fourth group comprises beliefs towards environmental awareness and conservation; the fifth group involves feelings towards water and electric power sustainable consumption awareness and conservation, and the sixth group refers to feelings towards environmental awareness and conservation. On the other hand, it is important to mention that the individuals of the sample were asked the same questions in all the cases.

Results

To provide an answer to the objectives proposed above, the characteristics of the sample will be presented below, followed by the feasibility and internal consistency analysis of the pro-environmental behavior assessment sub-scales and the sustainable consumption of water and electric power public utilities; finally, the main descriptive, comparative, and correlational findings of this study will be presented.

TABLE 1. Percentage of Participation per Gender and Stratum

STRATUM	GENDER	PERCENTAGE
2	Female	26.6%
5	Female	32.7%
TOTAL FEMALES		59.3%
2	Male	23.4%
5	Male	17.3%
TOTAL MALES		40.7%
TOTAL		100.0%

Source: Created by the author

Table 1 shows that 26.6% of the participants belong to socio-economic stratum 2, and 32.7% to socio-economic stratum 5, for a total of 59.3% female participants. On the other hand, male participation in the socio-economic stratum 2 is 23.4%, and 17.3% in the socio-economic stratum 5, for a total of 40.7% male participants.

TABLE 2. Percentage of Participation Broken Down by Marital Status per Gender

MARITAL STATUS	GENDER		TOTAL
	Female	Male	
Single	20.1%	16.7%	36.8%
Married	21.2%	10.2%	31.4%
Common Law	15.2%	10.8%	26.0%
Divorced	1.9%	2.2%	4.1%
Widowed	0.9%	0.9%	1.7%
Total	59.3%	40.7%	100.0%

Source: Created by the author

Table 2 shows the marital status of participants per gender, evincing that most of the female participants are single, equivalent to 20.1%, and 16.7% are single males, for a total of 36.8%. 31.4% are married participants, broken down as follows: 21.2% females and 10.2% males. 26.0% of the participants are joined in common law, 15.2% being females and 10.8% males.

Most significant figures in table 3 show that socio-economic stratum 5 female participants, i.e. 14.5%, have a technical level of education, followed by 13.9% of socio-economic stratum 2 males with secondary education level. Only 3.9% of female interviewees in the socio-economic stratum 5 have a postgraduate level of education. 2.4% of the males with a postgraduate level of education belong to socio-economic stratum 2.

TABLE 3. Gender, Level of Education, and Stratum Statistics

GENDER	LEVEL OF EDUCATION	TOTAL STRATUM 2	TOTAL STRATUM 5
Female	Primary	5.0%	0.0%
	Secondary	11.9%	2.6%
	Technical	6.3%	14.5%
	Undergrade	1.5%	11.7%
	Postgrade	1.9%	3.9%
Male	Primary	1.7%	0.0%
	Secondary	13.9%	1.5%
	Technical	3.7%	8.4%
	Undergrade	1.7%	5.8%
	Postgrade	2.4%	1.5%

Source: Created by the author.

Socio-economic stratum 2 homes consume 6.84 cubic meters (m^3) of water in average per person, and 28.5 m^3 in total, when considering all the occupants. Socio-economic stratum 5 homes consume 19.6 m^3 of water in average per person, and 65.4 m^3 in total. Regarding electric power consumption, socio-economic stratum 2 homes consume more than socio-economic stratum 5 homes. Socio-economic stratum 2 homes consume 31.5 kWh in average per person, and 131.7 kWh in total, when considering all the members. Socio-economic stratum 5 homes consume 25.2 kWh in average per person, and 84.1 kWh in total.

It is important to stress that socio-economic stratum 2 homes hold around 4.18 people, while socio-economic stratum 5 homes hold 3.33 people. According to data provided by Secretaría Distrital de Planeación (District Planning Office) and Empresa de Acueducto y Alcantarillado de Bogotá (Drainage and Sewerage Company of Bogotá), assuming a total of 5 inhabitants per bill, it was found that, in average, in 2008, the total consumption of water in socio-economic stratum 2 homes was 77 m^3 and 90 m^3 in socio-economic stratum 5 homes. These data ratify that socio-economic stratum 5 homes consume more water than socio-economic stratum 2 homes, although the number of people held by socio-economic stratum 5 homes is lower.

In order to know if there are differences between the measurements in water and electric power consumption in socio-economic strata 2 and 5 homes, a Student's t-test was conducted with a significance value of 5%, obtaining results

TABLE 4. Average Water and Electric Power Consumption per Number of People in Socio-Economic Strata 2 and 5 Homes.

STRATUM		PER PERSON		Nº OF PEOPLE	PER HOME		
2	N	Valid	WATER AVERAGE	POWER AVERAGE	231	WATER AVERAGE	POWER AVERAGE
		Lost			0	231	231
	Median			4.18		0	0
5	N	Valid	6.84	31.53	231	28.56	131.71
		Lost			0	231	231
	Median			3.33		0	0
			19.64	25.23		65.46	84.11

Source: Created by the author.

TABLE 5. Student's T-test on Water and Electric Power Consumption

		T-TEST TO EQUAL MEASUREMENTS							
		FOL.	T	GAL	FOL. (BILATERAL)	MEASUREMENT DIFFERENCES	TYP. ERROR IN DIFFERENCES	95% CONFIDENCE INTERVAL OF DIFFERENCE	
								MINIMUM	MAXIMUM
WATER AVERAGE	Equal variances have been assumed	0.726	-18.793	460	0.000	-36.8961	1.96326	-40.75418	-33.03803
	Equal variances have not been assumed		-18.793	449.242	0.000	-36.8961	1.96326	-40.75442	-33.03779
POWER AVERAGE	Equal variances have been assumed	0	11.746	460	0.000	47.59831	4.05229	39.63503	55.5616
	Equal variances have not been assumed		11.746	321.294	0.000	47.59831	4.05229	39.62595	55.57068

Source: Created by the author

to provide answers to the first specific objective of this paper, as shown in table 5. Once the variance homogeneity test was conducted, in which it was stated that equal variances with a significance level of 5% can be assumed, results obtained showed differences in the average water and electric power consumption between socio-economic strata 2 and 5 homes in the city of Bogotá.

In average, the number of people inhabiting socio-economic stratum 2 homes is 4.18 people. However, it was found that 72% of the total homes interviewed in socio-economic stratum 2, hold 3 people (50 homes), 4 people (72 homes) or 5 people (45 homes). In some cases, socio-economic

stratum 2 homes hold up to 11 people in one single house. In average, in socio-economic stratum 5 homes, the average number of people in one single home is 3.33. 52% of the total interviewed homes in socio-economic stratum 5 is comprised of 2 people (40 homes), 3 people (70 homes) or 4 people (90 homes). 6 people was the maximum number of people inhabiting one single house for this socio-economic stratum. Data provided by Secretaría Distrital de Planeación (District Planning Office) for year 2006 show that electric power consumption per home in socio-economic stratum 2 homes was 114.9 kWh, while in socio-economic stratum 5 homes was 282.1 kWh.

TABLE 6. Student’s T-test on Consumption Practices and Pro-Environmental Behavior

INDEPENDENT SAMPLE TESTS		T-TEST FOR EQUAL MEASUREMENTS			FOL. (BILATERAL)	MEASUREMENT DIFFERENCES	TYP. ERROR IN DIFFERENCES	95% CONFIDENCE INTERVAL OF DIFFERENCE	
		Fol.	t					Inferior	Superior
			ooo	gal					
CONSUMPTION PRACTICES	Assumed variances =	0.351	5.06	460	0.000	0.27706	0.05476	0.16945	0.38466
	Non-assumed variances =		5.06	452.874	0.000	0.27706	0.05476	0.16945	0.38466
PRO-ENVIRONMENTAL BEHAVIOR	Assumed variances =	0.233	1.161	460	0.246	0.07888	0.06792	-0.05459	0.21235
	Non-assumed variances =		1.161	456.825	0.246	0.07888	0.06792	-0.05459	0.21236

Source: Created by the author

A T-test was conducted to know if there were any significant differences, with an alpha equal to 0.05. showing that, indeed, there are differences between the attitudes towards consumption practices in socio-economic strata 2 and 5 homes. Regarding attitudes towards pro-environmental behaviors, there is not a significant difference, as shown in Table 6. The foregoing provides an answer to the second objective of this paper. Once the variance tests were conducted, in which it was stated that equal variances can be assumed, results showed that, indeed, there is a difference in the average water and electric power consumption between socio-economic strata 2 and 5 homes in Bogotá.

Expectations indicated that, in socio-economic stratum 5 homes, consumption practices would have a higher impact in regards to pro-environmental behaviors, since it is assumed that in said socio-economic stratum people have higher levels of education, culture, and economic power if compared to inhabitants of socio-economic stratum 2 areas. Data proves that people tend to say they are friendly with the environment, but their behavior is totally opposite to their words.

According to results, Table 7 shows that there are differences between sustainable consumption beliefs and awareness beliefs, with a significance level of 5%.

TABLE 7. T-test on Sustainable Consumption Beliefs and Awareness and conservation of Environment Beliefs

		T-TEST FOR EQUAL MEASUREMENTS			FOL. (BILATERAL)	MEASUREMENT DIFFERENCES	TYP. ERROR IN DIFFERENCES	95% CONFIDENCE INTERVAL OF DIFFERENCE	
		Fol.	t					Inferior	Superior
			ooo	gal					
SUSTAINABLE CONSUMPTION BELIEFS	Assumed variances =	0.027	4.115	460	0.000	0.15844	0.0385	0.08278	0.2341
	Non-assumed variances =		4.115	455.498	0.000	0.15844	0.0385	0.08278	0.2341
AWARENESS AND CONSERVATION OF ENVIRONMENT BELIEFS	Assumed variances =	0	5.719	460	0.000	0.2224	0.03889	0.14598	0.29882
	Non-assumed variances =		5.719	428.888	0.000	0.2224	0.03889	0.14597	0.29884

Source: Created by the author

TABLE 8. Average of Sustainable Consumption Feelings and Feelings Towards Awareness and Conservation of Environment

	STRATUM	N	MEDIAN	TYP. DEVIATION.	TYP. ERROR IN THE MEDIAN
Feelings towards sustainable consumption	2	231	2.9604	0.42423	0.02791
	5	231	2.8021	0.42134	0.02772
Feelings towards awareness and conservation of environment	2	231	3.4613	0.4038	0.02657
	5	231	3.1712	0.51668	0.03399

Source: Created by the author

TABLE 9. Student's T-test on feelings Towards Sustainable Consumption and Feelings Towards Awareness and Conservation of Environment

		Fol.	T	gal	FOL. (BILATERAL)	MEASUREMENT DIFFERENCES	TYP. ERROR IN DIFFERENCES	95% CONFIDENCE INTERVAL OF DIFFERENCE	
								Inferior	Superior
FEELINGS TOWARDS SUSTAINABLE CONSUMPTION	Equal variances have been assumed	0.68	4.024	460	0.000	0.15832	0.03934	0.08101	0.23563
	Equal variances have not been assumed		4.024	459.978	0.000	0.15832	0.03934	0.08101	0.23563
FEELINGS TOWARDS AWARENESS AND CONSERVATION OF ENVIRONMENT	Equal variances have been assumed	0	6.722	460	0.000	0.29004	0.04315	0.20526	0.37483
	Equal variances have not been assumed		6.722	434.626	0.000	0.29004	0.04315	0.20524	0.37484

Source: Created by the author

After evaluating environment conservation beliefs, it was found that there are significant differences between socio-economic strata 2 and 5 homes when comparing the obtained data to the 5% test result.

Table 8 shows that socio-economic stratum 5 homes score 2.80 in average regarding feelings towards sustainable consumption and 3.17 in average regarding feelings towards awareness and conservation of environment. Table 8 also shows that, in average, there are more homes in the socio-economic stratum 2 in terms of feelings towards sustainable consumption, if compared to the same item for socio-economic stratum 5 homes (2.9 and 3.4., respectively).

Table 9 shows that there are significant differences between feelings towards sustainable consumption when evaluated with a P-value of 5%. Likewise, there are significant differences between feelings towards awareness and conservation of environment in socio-economic strata 2 and 5 homes.

Discussion

This study presents the main reflections on pro-environmental behavior and sustainable consumption, by integrating different knowledge areas to respond to the needs and challenges of our times in terms of the environmental, social, and economic crisis. Nowadays, it is evident, in our context, that environmental conservation is a challenge that can be overcome only through the active participation of different actors and actions; for instance, through culture practices and education, with the State being the main actor (Hernández & Barros, 2005). The State is the entity that regulates all the standards and policies the society must meet so that the environment can be recovered and humanity can overcome the current crisis; thus, the State is bound to enforce the corresponding standards and/or regulations.

In view of the above, it is necessary to highlight that according to the approaches in Berenguer & Corraliza's studies (2000) on the

main environmental concerns and their impact on the global crisis, it is imperative that alternatives are created to contribute to innovate and develop cultural changes and transformation-driven practices, as well as to improve people's life quality.

Aguirre, Echeverría, Charterina & Vicente (2003) show that individuals with positive attitudes towards environment conservation are more exposed and willing to acquire commitments to environmental activities, unlike individuals with less positive attitudes. It is important to point out that the relation between attitudes and behaviors is stronger when feelings have a reason to be, since attitudes towards certain situations may not be good predictors of pro-environmental behaviors.

The attitudinal scale to assess the pro-environmental behavior and the sustainable consumption of water and electric power has included components such as practices, beliefs, and feelings in its structure, making it possible to evince that attitudes, in fact, have a key component subdivided in factors that drive how individuals behave; said key component is linked to other variables no related to domiciliary public utilities consumption.

Results allow supporting the studies conducted by Corral-Verdugo in which the author found that, in real life, the behavior of individuals conflicts with situational conditions; on the other hand, according to Berenguer & Corraliza (2000), attitudes have restricted power to predict pro-environmental behavior.

As a conclusion, people say they behave in certain way, but when it comes to act, they behave in an opposite fashion. According to some authors who have used Ajzen's TAP (1991), in sustainable behavior studies (Corral-Verdugo, 2010), predicting pro-environmental behaviors is still difficult if predictions are based exclusively on attitudes as environmental behavior predictors (Kaiser, Wolfing & Fuhrer, 1999). The authors above have found that the relations between attitudes towards the environment and sustainable behaviors have difficulties derived from the lack of consensus in the definition of the concept of environmental attitude (Holahan, 1996).

Likewise, studies such as the ones conducted by Aragonés (1997) point out that the correlations between pro-environmental attitudes (concern about environmental issues) and environmentally responsible behaviors are, in general, very weak (Álvarez & Vega, 2009). The capacity to predict fades when emphasis is made on actions themselves, instead of on intentionality (Álvarez

& Vega, 2009). Results warn us and lead us to develop environmental conservation campaigns and programs, while stimulating the modification of cultural practices in terms of promotion or dissemination of practices for sustainable consumption of natural resources (López, Gutiérrez & Granada, 2004; Martínez-Soto, 2006). Environmental conservation and sustainable consumption campaigns and programs must be solid and comply with laws, allowing the development of procedures in which people raise awareness and control cultural practices for sustainability. On their part, consumers must start using natural resources properly.

This paper draws the attention to the real dimensions of society —culture, economy, politics, and environment—, forcing us to think of the current environmental situation, raising awareness, and calling people to implement real and immediate actions that effectively solve current environmental issues.

Results show that people's attitudes are driven towards the rational use and consumption of natural resources, considering whether those behaviors are related to the way of thinking, beliefs, and attitudes or not. On the contrary, results also show that behavior occurs irrespectively of commitments to the environment, and therefore results suggest that socio-economic stratum 5 homes consume more water than socio-economic stratum 2 homes. The above means that people in socio-economic higher levels consume more water, despite the fact less people comprise their families. The question now is if the members of socio-economic stratum 5 homes tend to consume more due to their economic facility and capacity to acquire public utilities if compared to members in socio-economic stratum 2 homes, where, due to economic issues, electric power consumption is higher (higher use of household appliances), or if they do it because they spend more time at home.

Contrary to results, it was expected that socio-economic stratum 2 homes consumed more public utilities due to 1) their large number of members, 2) the fact that public utilities are less expensive for socio-economic stratum 2 homes, and 3) because they are subsidized by higher socio-economic strata such as 5 and 6. Likewise, it was expected that members of socio-economic stratum 5 homes had better pro-environmental practices and behaviors according to their education, cultural level, social surroundings, economic resources, among other factors. In this sense, it is necessary that the State evaluates and makes the

necessary decisions to educate the members of this socio-economic stratum on the responsible consumption of domiciliary public utilities, not only because water and electric power are common goods, but because there is a global need to contribute to the environment.

It is evident, according to this research, that measuring attitudes not always help predict consumption. To be more precise, it is relevant to regularly follow up on the real consumption data. To do so, study panels and consumption monitoring committees are some of the proposals to collect accurate and solid data for the State and the Ministry of Environment to have more and better elements to foster pro-environmental behaviors.

Even though people know it is important to preserve the environment, and have access to concrete actions that can contribute to solve our current environmental crisis, they tend to behave against the environment, and forget about sustainable consumption. It is likely that their behavior tends to pay more attention to how other individuals do not care about the environment, and they end up behaving in the same way. Sadly, people are not willing to act individually and generate changes. A person may have a pro-environmental attitude, but her/his behavior does not reflect her/his attitude, as discussed early in this paper. Unfortunately, laws in Colombia dealing with environmental protection are not fully enforced, and therefore people tend to infringe them with no shame or remorse whatsoever.

According to the results in this study, it is evident that people say they contribute to the environment, but they do not actually act its favor. A proof of the foregoing is the data obtained from socio-economic stratum 5 homes. Further studies need to go deeper into the differences found by this study and some other aspects as a way to work with real practices and develop public policies that rely on evidence and not on stereotypes. On the other hand, it is evident that emphasis must be made on contingency systems governing the behavior of citizens, as well as on awareness programs that foster attitudes and pro-environmental practices.

When verifying the Cronbach's Alpha to validate the data collection instrument in this study, it was found that if some of the items are eliminated to generate a higher reliability, the rate keeps being 0.77. Should further similar studies apply this scale, it is recommended to add extra items and test the instrument to validate that individuals

actually understand the data-collection instrument, so that reliability improves.

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