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## Elements of perception regarding sustainable development in Geneva

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**ABSTRACT:** Environmental preservation, economic growth and related topics that have an impact on Earth are becoming more and more important today. Worldwide, there's a call for a deep involvement in favour of sustainable development. Pursuing sustainable development objectives needs day-by-day commitment from all the society actors: governments, industries and individuals. Among them, individuals play a strategic role: they have the possibility to vote for politicians who act in favour of sustainable issues. Then, people can decide to buy and consume goods produced by sustainable industries. Additionally, they can pay attention not to waste water, electricity or gasoline (e.g. by walking or using public transport means) and contribute to higher recycling rates. To address these issues of individuals' attitudes and behaviours, we have conducted a survey research in order to measure the perception of the Geneva population regarding the main social aspects of sustainable development. This empirical research provides answers to some aspects of the following questions: what does sustainable development mean for the Geneva population? Who should act in favour of sustainable development? How habits should be changed to contribute to sustainable development? Relationships between classes and between variables are analyzed in depth. Research hypotheses are then verified on the basis of non-parametric statistical tests. This empirical research attempts to provide some elements of perception about sustainable developments leading to recommendations for better policies for public and private institutions. Among other results, we have found that people who are attentive to the protection of the environment are more likely to change their day-by-day habits in favour of sustainable development: we thus indicate that this could be a lever over which public policies could push their activities.

**Keywords:** sustainable development, perception, survey research, environmental preservation

# Elements of perception regarding sustainable development in Geneva

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**ABSTRACT** *Environmental preservation, economic growth and related topics that have an impact on Earth are becoming more and more important today. Worldwide, there's a call for a deep involvement in favour of sustainable development. Pursuing sustainable development objectives needs day-by-day commitment from all the society actors: governments, industries and individuals. Among them, individuals play a strategic role: they have the possibility to vote for politicians who act in favour of sustainable issues. Then, people can decide to buy and consume goods produced by sustainable industries. Additionally, they can pay attention not to waste water, electricity or gasoline (e.g. by walking or using public transport means) and contribute to higher recycling rates. To address these issues of individuals' attitudes and behaviours, we have conducted a survey research in order measure the perception of the Geneva population regarding the main social aspects of sustainable development. This empirical research provides answers to some aspects of the following questions: what does sustainable development mean for the Geneva population? Who should act in favour of sustainable development? How habits should be changed to contribute to sustainable development? Relationships between classes and between variables are analyzed in depth. Research hypotheses are then verified on the basis of non-parametric statistical tests. This empirical research attempts to provide some elements of perception about sustainable developments leading to recommendations for better policies for public and private institutions. Among other results, we have found that people who are attentive to the protection of the environment are more likely to change their day-by-day habits in favour of sustainable development: we thus indicate that this could be a lever over which public policies could push their activities.*

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## INTRODUCTION

In 1987, the United Nations in the “*Our Common future* – Report of the World Commission on Environment and Development” (“Brundtland Commission’s Report”) asked for a development that “*meets the needs of the present without compromising the ability of future generations to meet their own needs*”. This is one of the most quoted definitions for “sustainable development” (see for example Byrch *et al.*, 2007; Dearing, 1999; Garvare and Isaksson, 2001; Seelos and Mair, 2005; Sobol, 2008; Sors, 2001).

This empirical research attempts to provide an outlook of the current perception among Geneva inhabitants on sustainable development issues. Geneva is a city located in the heart of Europe and it hosts several local and international organisations. Its population is rather international with about 38.4% of foreigners, 61.6% of Swiss citizens and further 60'630 people that work in the area but live and come from the surrounding French territories (Source: Cantonal Office of the Statistics of Geneva, 2007). This makes the second Swiss city an interesting place for social research, especially when dealing with topics of international interest. In such a context, we wanted to know individuals' opinion about

sustainable development and their potential behaviour regarding some future hypothetical scenarios.

Individuals play a crucial role in making sustainable development effective: day-by-day choices have a straight influence on the future evolution of our societies. In particular, they have the possibility to vote for politicians who devise and implement policies attentive to sustainable development. For instance, we will show later in this paper that sustainable policies proposals made during political campaigns have a straight influence on people that are typically concerned by environmental protection. Then, people can decide to buy goods manufactured by environmentally friendly or fair-trade industries, thus influencing the way they are produced. Also, they can pay attention not to waste water, electricity or gasoline (e.g. by walking or using public transport means) and contribute to the increase of recycling rates.

For these reasons, we have conducted a survey research in order to measure the perception of the Geneva population regarding some social aspects related to sustainable development. We collected 509 valid questionnaires. The Haute École de Gestion of Geneva (HEG-GE) has created a laboratory of market research (LEM, Laboratoire d'Études de Marché) whose main objective is to form students to marketing survey techniques. Among the mandates already carried by the LEM, let us quote "Consumer choices among alternative electricity programs in Geneva – An Empirical Analysis" (Baranzini A et al. 2007), "Influences of Public Ecological Awareness and Price on Potable Water Consumption in the Geneva Area" (Catenazzo G et al. 2008). The mandate under study in this paper, "Elements of perception about sustainable developments in Geneva" was conducted from February to May 2007.

The three main research questions underlying this empirical survey are the following:

1. What does sustainable development mean for the Geneva population?
2. Who should act in favour of sustainable development?
3. How habits should be changed in order to contribute to sustainable development?

Thus, we first analyse population opinion regarding sustainable development with the aim to verify whether Sir Jonathon Porritt's statement: "*sustainable development is one of those ideas that everybody supports but nobody knows what it means*" quoted by Byrch (Byrch et al., 2007) fits with the Geneva context. Then, we attempt to find what are the actors supposed to take steps in order to achieve sustainable development

goals. Finally, we had to include Contingent Valuation Methods (CVM, see for example Imandoust and Gadam, 2007) in our questionnaire to assess whether individuals are willing to make concrete efforts in favour of sustainable development. Therefore, the use of hypothetical scenarios (CVM) has enabled us to get to know people sensitivity as a function of commodities price changes. Relationships between classes as well as relationships between variables have been analysed in depth and research hypotheses have been verified on the basis of non-parametric statistical tests. This empirical research provides some elements of perception regarding sustainable development policies leading to recommendations for better policies for private and public institutions.

This short paper is organized as follows. In the next section, we present some academic findings related to our research. Then, we present the main descriptive statistics obtained from the survey. Few hypotheses related to the theme retained for this paper, i.e. elements of perception regarding sustainable development in Geneva, are then treated. In conclusion, we indicate limitations of this study and directions for future research.

## LITERATURE REVIEW

Sustainable development requires social, economic and environmental necessities to be efficiently balanced (Sors, 2001). To achieve sustainable development goals, science makes efforts to provide cutting-edge technology that have the lowest impact on the environment. In the coming future, we can foresee advanced sensors, new biotechnology techniques, clean car technologies, more efficient product recycling, new water and waste treatments, improved micro manufacturing, renewable and photovoltaic energy sources able to satisfy the demand. These are the nine key technologies (Dearing, 1999) that can be considered among the technical available solutions to contribute to sustainable development.

From a social point of view, making sustainable development principles effective is still a hard challenge as it is actually difficult to put into practise its theories. (Kühtz, 2007). Nevertheless, Dearing (Dearing, 1999) supports the idea that people must make efforts in order to make sustainable development happen.

An empirical research conducted in Italy (Kühtz, 2007) show that all economic actors are supposed to play a strategic role in pursuing sustainable development objectives. The selected sample of public and private managers, environmental advisers and local community members identifies the key role played by education and culture. The author (Kühtz, 2007) concludes that a continuing educational process in addition to the efforts of the school system will make people aware of

sustainable development needs and improve their willingness to actively participate.

Nevertheless, teaching young generations is important to meet sustainable development goals. For example, combining effective teaching and learning strategies over these themes leads most of the students to be committed to play in favour of sustainable development. This is one of the main findings of a research conducted in a hospitality management school (Wade, 1999). It is envisioned by the author that most of the future hospitality managers issued by that school will be effective change agents pursuing sustainable corporate policies.

Business and industry should take part to this process: they engender economic progress and are a source of innovation (Dearing, 1999). Although it is difficult to give a straight definition of sustainable business (Wade, 1999), social entrepreneurship attempts to provide an answer based on the creation of social value through innovative business models (Seelos and Mair, 2004). Several cases and analyses (Seelos Mair, 2005) show the impact and the contribution that sustainable entrepreneurship has made in order to pursue the “Millennium Goals”.

Siemens (Zhao, 2004) tries to apply sustainable development principles and attempts to comply with them thanks to an organisational culture that values the role of sustainable development. The main levers of action that the author identifies in pursuing this corporate policy are the design of a performance, audit and incentive systems to reward employees’ efforts in optimising resources. The author also indicates that a systematic management approach and communication are also very important to support the approach.

Hong Kong Declaration may be seen as a model of sustainable development application (Lai *et al.*, 2006). Its objective is to foster partnership among actors through a participatory approach. The sustainable development criteria are compatible with market economics as they are rather based on private agreements among players. Dialogue and partnerships between local communities and government are of strategic importance to pursue sustainable development goals (Sobol, 2008).

Finally, Sors (Sors, 2001) outlines the importance of measuring sustainable development progress in terms of decision-making, communication and participation, analyses some of the main approaches and indicators towards sustainable development. This is established in order to develop a proposal for an appropriate methodology applied for studying Venice actions in favour of sustainable development.

This literature review, although not exhaustive, also indicates that too little knowledge is available to understand the sociological aspects of sustainable development. In this study, we intend to discover some social patterns associated with sustainable development in a wealthy and international city, Geneva, where development drawbacks could seem far away from individuals’ daily lives.

## METHODOLOGY

This empirical study investigates the “Elements of perception about sustainable development in Geneva” was conducted from February to May 2007. It was realized with the help of a group of students under the supervision of the LEM research staff and encompassed the following steps: determination of the axes of investigation, design of the questionnaire, data collection, coding and statistical data processing, and finally communication of the results.

In the exploratory phase we conducted (around 40) in-depth interviews exploring this topic. Three main themes emerged from these: understanding of the notion of sustainable development, acting responsibilities regarding sustainable development, potential behaviours by individuals to foster sustainable development.

On the basis of the three identified research themes, we have designed a questionnaire administered to the active population of the Geneva area. Respondents were selected on a random basis in the streets, open spaces and other public places of the Geneva area. The questionnaire (the complete questionnaire, in French, is available on request) was made up by 22 questions attempting to define the individuals’ opinion about sustainable development. In particular, we addressed some questions in order to evidence what is sustainable development, who should act in favour of it and which behaviours should supported to achieve its main objectives. Hypothetical scenarios have also been presented in order to provide further elements of analysis leading to policy-making suggestions.

509 people responded to the questionnaire, 48.9% men and 50.9% women. Age classes are homogeneous, the mean being 35 years old. As a whole, socio-economic statistics of the sample are representative of the socio-economic parameters indicated in the official statistics of the Geneva Canton.

## DESCRIPTIVE STATISTICS

Here are some of the main descriptive results obtained by the analysis of the questionnaires collected.

50.9% of the respondents affirm to have a “rather precise” idea of what is sustainable development. 25.8% say that their idea is “rather imprecise” idea, 17.2%

“very precise” and only 6.1% “very imprecise” idea of the meaning of sustainable development.

The main topics associated with sustainable development are the following: environmental protection and natural resources conservation (50.9%), struggle against poverty and disparities (18.7%), education (11.3%), economic growth promotion (9.9%), health (6%), other (1.6%) and “I don’t know” (1.3%).

54.2% of the sample affirms not to be well informed about sustainable development and its related topics. One third of the whole sample (36.4%) believes to be well informed about sustainable development while 9.7% cannot answer.

We asked which of these players should act in favour of sustainable development: the State was chosen by 35.5% of the respondents followed by Non-governmental organisations (18.5%), International Organisations (12.9%), Companies (11.1%), Individuals (8.9%), I don’t know (7.1%), no-one of these actors (4.4%) and other (1.6%).

37% of the respondents agree with the statement: “Is sustainable development only a fashion effect?” 26.3% disagree, 19.4% strongly disagree, while only 8.9% strongly agree with this quote. 8.5% of the whole sample can’t answer.

The interviewees were also asked if they were “acting” in order to protect the environment in their day-by-day lives. 48.2% of the respondents answered “often”, 36.3% “very often”, 13.1% “rarely” and only 2.0% “never” and 0.4% “I don’t know”.

Among those respondents who affirm not to “act” in order to protect the environment in their day-by-day lives, the most quoted reasons are “lack of time” and “I don’t know”.

79.2% of the respondents affirm they would change their habits in favour of sustainable development. Only 8.3% would not while 12.5% of the sample doesn’t know.

39.5% of the sample affirms not to be willing to pay an extra tax on petrol for ecological reasons in order to contribute to sustainable development issues. 13.4% of the respondents would accept to pay no more than CHF 0.01 per litre while 16.8% would accept a tax between CHF 0.01 and CHF 0.05 (about USD 0.01 to USD 0.04) per litre. 6.9% of the interviewees would pay an extra-tax of CHF 0.05 to CHF 0.10 (about USD 0.04 to USD 0.09) per litre, 2.4% of the respondents are willing to pay between CHF 0.10 and CHF 0.20 (about USD 0.09 to USD 0.18) per litre. Only 5.1% of the sample would accept to pay a higher tax (more than CHF 0.20 – USD 0.18) on petrol, while 15.8% can’t answer.

24.6% of the sample affirms not to be willing to pay an extra fee when purchasing 1 kg of bananas to encourage fair-trade policies. 26.8% would accept to pay no more than an extra 10% of its current price, 25.8% of the respondents would pay an extra fee of about 10% to 20% of its current price. Only 3.6% of the sample would accept an extra fee of about 20% to 50% of its price and 1.4% a higher fee (more than 50%). 17.9% of the respondents can’t answer.

56.3% of the respondents strongly agree with the statement “making the young generations aware of sustainable development issues would improve people behaviour”. 35% of the sample agrees and 3.6% disagree and only 1% strongly disagrees with this statement. 3.8% don’t know.

Only 2.4% of the respondents strongly agree with the statement “public authorities manage efficiently environmental problems”, 41.8% disagree, 28.7% agree, 15.7% strongly disagree and 10.2% don’t know.

42% of the respondents affirm that proposals in favour of sustainable development policies made during political campaigns influence their vote choice. 30% affirm not to be influenced, while 13.5% say they don’t vote at all and 14.3% can’t answer.

69.9% of the respondents think that efforts made by companies in favour of sustainable development are insufficient. 12.7% affirm they are sufficient, 6.3% say they are good and 11.1% don’t know.

44.6% of the respondents think that companies should focus their efforts on environmental respect, fair-trade (26.0%), individuals’ conditions at work (16.5%), gender equality (7%), charities (2.1%), I don’t know (2.3%) and other (1.5%).

41.5% of the respondents agree with the statement “to act in favour of sustainable development higher companies performance”, 24.9% don’t know, 14.4% strongly agree, 14% disagree and 5.1% strongly disagree.

## HYPOTHESES TESTING

Descriptive statistics have shown that Geneva inhabitants have broad knowledge of sustainable development issues. Also, it seems that they are willing to make little efforts with the aim to make effective sustainable development approaches. Thus, we have analysed in more depth the existing relationships among of the findings presented above. This might provide useful elements of perception in order to design effective and well-perceived sustainable development policies.

First of all, we wanted to check whether individual commitment on environment preservation is connected

with one's notion of sustainable development. To answer to this more specific question we propose to test the following hypothesis scheme:

**H<sub>0</sub>:** There is no relationship between people attentiveness to environmental protection and willingness to change their consumer habits in favour of sustainable development.

**H<sub>a</sub>:** There is a relationship between people attentiveness to environmental protection and the willingness their consumer habits in favour of sustainable development.

To identify individuals' attentiveness and commitment to environmental protection, we asked our sample the following question: "do you everyday make actions in order to protect the environment?" Interviewees were asked to choose among: "very often", "often", "rarely", "never" and "I don't know" provided answers. This is an ordinal scale made up by five levels. Also, we aim to define individuals' involvement for sustainable development issues. The respondents were asked: "would you be ready to change your consumption habits in order to contribute to sustainable development?" People were asked to choose among the following answer possibilities "yes", "no" and "I don't know". This second question provides answers defined over a nominal scale.

According to the type of scale used in the given answer, we have chosen a statistical test called Kruskal-Wallis. According to Bryman and Cramer (Bryman and Cramer, 2001) this non-parametric test is best used for three or more unrelated samples and it is adapted to correlations between ordinal and nominal variables. We have retained a significance level of 5% that is the first-type error, i.e. the risk to reject the null hypothesis when it is correct.

#### **Take in Table 1**

The p-value of 0.000 (see Table 1) indicates that we can reject the null hypothesis at the significance level of 5%. Therefore, we can conclude that there is a relationship between people attentiveness to environmental protection and the willingness to change their consumer habits in favour of sustainable development. It seems that people attentive to environmental protection are more willing to make actions in favour of sustainable development than the others.

As we have explained earlier in this paper, individuals play a strategic role to make sustainable development a reality. Thanks to individuals' votes for those politicians who act in favour of sustainable issues, people indirectly head public powers' policies. Also, people can decide to buy and consume only those goods produced by sustainable industries. Therefore, we decided to explore more in depth these statements to

check whether these theoretical assumptions fit within Geneva inhabitants' behaviours.

We have made another statistical test with the aim to explore the existence of a relationship between environmental protection and the influence of sustainable development proposals that are made during political campaigns. Here follows the second hypothesis scheme:

**H<sub>0</sub>:** There is no relationship between people attentiveness to environmental protection and the fact that individuals are influenced by sustainable development proposals made during political campaigns.

**H<sub>a</sub>:** There is a relationship between people attentiveness to environmental protection and the fact that individuals are influenced by sustainable development proposals made during political campaigns.

The following question: "Do you everyday make some acts in order to protect the environment?" has been addressed to our sample to measure individuals' attentiveness in protecting the environment. The possible answers respondents were asked to choose are: "very often", "often", "rarely", "never" and "I don't know". These possible answers can be considered as a variable defined over an ordinal scale with five levels. The second question used to test our hypothesis deals with the vote issue. We asked the 509 interviewees "During political campaigns, do proposals in favour of sustainable development policies influence your vote?" The possible answers are defined over a nominal scale and are "yes", "no", "I don't vote" and "I don't know".

The statistical test we have used to test this second hypothesis is a non-parametric test for three or more unrelated samples called Kruskal-Wallis (Bryman et al. 2001). This test is adapted to correlations between ordinal and nominal variables. We have retained a significance level of 5% that is the first-type error, i.e. the risk to reject the null hypothesis when it is actually correct.

#### **Take in Table 2**

The p-value of 0 (see Table 2) indicates that we can reject the null hypothesis at the significance level of 5%. Therefore, we can conclude that there is a relationship between people attentiveness to environmental protection and the fact that individuals are influenced by sustainable development proposals made during political campaigns. We show here that politicians who make sustainable development proposals seem to influence people who are attentive to environmental protection. Thus, sustainable development proposals seem to be a driver for the vote choice for several people.

Companies play an important role in making sustainable development effective: their production methods and internal policies have a straight impact on sustainable development. Several companies have already turned into social-sustainable missions and policies (see for example Seelos and Mair, 2004; Seelos and Mair, 2005; Zhao, 2004). Thus we wanted to know people's opinion about companies' contribution to sustainable development. Also, this provides further elements to answer to our second main research question, i.e. "who should act in favour of sustainable development?"

For these reasons, we decided to test the following hypothesis (third one) scheme:

**Ho:** There is no relationship between people who think that companies make effort in favour of sustainable development and those who think that to act in favour of sustainable development could increase the company's performances.

**Ha:** There is a relationship between people who think that companies make effort in favour of sustainable development and those who think that to act in favour of sustainable development could increase the company's performances.

In our questionnaire, we asked: "how do you judge the efforts made by companies for the sustainable development?" Respondents could choose between the following provided answers: "good", "sufficient", "insufficient" and "I don't know". These answers are defined over a four-level ordinal scale (non-categorical).

The second question we take into account to verify our hypothesis is: "If companies acted according to the principle of sustainable development, they would increase their performance..." The given answer people had to choose among, are defined over an ordinal scale with five levels: "strongly agree", "agree", "disagree", "strongly disagree" and "I don't know".

The statistical test we have employed here is a non-parametric test called rank correlation (Bryman and Cramer, 2001) that is adapted to correlations between ordinal variables. In particular, we employ two approaches: Kendall's tau and Spearman's rho. We have retained a significance level of 5% that is the first-type error (or the risk to reject the null hypothesis when it is actually correct).

### Take in Table 3

The p-value of 0.00 (see Table 3) for both tau and rho cases indicates that we can reject the null hypothesis at the significance level of 5%. Consequently, we conclude that there is a relationship between people who think that companies make efforts in favour of sustainable development and those who think that to act

in favour of sustainable development would increase the companies' performances.

Finally, we have tested a fourth hypothesis:

**Ho:** There is no relationship between the people who think that the public authorities manage effectively the problems related to the environment protection and the fact that individuals are influenced by sustainable development proposals made during political campaigns.

**Ha:** There is a relationship between the people who think that the public authorities manage effectively the problems connected to the environment protection and the fact that individuals are influenced by sustainable development proposals made during political campaigns.

To get to know whether Geneva inhabitants believe that public authorities act efficiently in favour of sustainable development we asked the interviewees: "do the public authorities manage effectively problems related with the environment?" The given answers are defined over an ordinal scale (non-categorical) with five levels: "strongly agree", "agree", "disagree", "strongly disagree" and "I don't know". To test this hypothesis, we have taken again the following question: "during political campaigns, do proposals in favour of sustainable development policies influence your vote?" The answers are defined over a nominal scale, people were asked to choose among: "yes", "no", "I don't vote" and "I don't know".

The statistical test we have used here is a non-parametric one called Kruskal-Wallis for three or more unrelated samples (Bryman and Cramer, 2001) that is adapted to correlations between ordinal and nominal variables. We have retained a significance level of 5% that is the first-type error (or the risk to reject the null hypothesis when it is actually correct).

### Take in Table 4

The p-value of 0 (see Table 4) indicates that we can reject the null hypothesis at the significance level of 5%. Therefore, we can conclude that there is a relationship between people who think that the public authorities manage effectively problems related to the environment protection and the fact that individuals are influenced by sustainable development proposals made during political campaigns.

## CONCLUSION

In this paper, we have presented some of the main results of a survey conducted in spring 2007 gathering a sample of 509 individuals living in Geneva, Switzerland, both in city and its surrounding area (Canton). Our work has the purpose to verify whether



individuals are aware of the meaning of sustainable development and which are the players supported to make actions to pursue its goals. Hypothetical scenarios (CVM) let us identify people willingness to contribute to sustainable development issues.

Individuals play a strategic role for sustainable policies: they have the power to choose a political class that acts in favour of sustainable development and are consumers of goods and services produced by industries. Our results (descriptive statistics and hypotheses tests) show that sustainable proposals made during political campaigns have an influence on vote actions of a large part of Geneva inhabitants. Also, we show that there is a relationship between people who think that public authorities manage effectively problems related to the environment protection and the fact that individuals are influenced by sustainable development proposals made during political campaigns.

Whenever each individual purchases goods or takes advantage of services supplied by sustainable industries (let's quote for example biological or fair-trade productions), s/he makes a concrete action in favour of the sustainable process. If most individuals effectively played the game, industry would quickly turn into a sustainable direction. In this paper we make evidence that there is a relationship between consumers who think that companies make efforts in favour of sustainable development and those who think that acting in favour of sustainable development would increase the companies' performances.

Unfortunately, the Willingness To Pay (WTP) stated by the population to pursue sustainable development goals is generally low. Consequently, it might seem unattractive for companies to make high investments in R&D and production methods in order to turn into sustainable productions. Nevertheless, we discover that people attentive to environmental protection are more willing to make actions in favour of sustainable development than the others: this could be a lever over which public policies could push their activities. Making people more and more attentive to environmental protection and other related topics would increase the general awareness over sustainable development needs. Then, people would make more and more efforts in terms of day-by-day actions and show higher Willingness To Pay (WTP) levels that would lead public and private boards to comply with sustainable development objectives.

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## Figures and Tables

### Ranks

	Attention to environmental protection	N	Mean Rank
Will you change your habits in favour of SD?	Very often	181	222.68
	Often	242	250.12
	Rarely	66	316.44
	Never	10	314.40
	I don't know	2	444.75
	Total	501	

### Test (a, b)

	Will you change your habits in favour of SD?
Chi-Square	52.240
Df	4
Asymp. Sig.	.000

a Kruskal Wallis Test

b Grouping criterion: Attention to environmental protection

**Table I:** Results of the first hypothesis

	Attention to environmental protection	N	Mean Rank
SD: influence on voting?	Very often	181	205.81
	Often	242	264.02
	Rarely	66	307.36
	Never	10	298.10
	I don't know	2	337.75
	Total	498	

	SD: influence on voting?
Chi-Square	35.261
Df	4
Asymp. Sig.	.000

a Kruskal Wallis Test

b Grouping Variable : Day to day attention to the environment

**Table II:** Results of the second hypothesis

			Companies efforts - DD	SD: better performances for companies
Kendall's tau-b	Companies efforts - DD	Correlation Coefficient	1.000	.204(**)
		Sig. (2-tailed)	.	.000
		N	505	503
	SD: better performances for companies	Correlation Coefficient	.204(**)	1.000
		Sig. (2-tailed)	.000	.
		N	503	506
Spearman's rho	Companies efforts - DD	Correlation Coefficient	1.000	.232(**)
		Sig. (2-tailed)	.	.000
		N	505	503
	SD: better performances for companies	Correlation Coefficient	.232(**)	1.000
		Sig. (2-tailed)	.000	.
		N	503	506

\*\* Correlation is significant at level 0.01 (bilateral).

**Table III:** Results of the third hypothesis

## Ranks

	Public authorities efficiently manage environmental problems	N	Mean Rank
SD: influence on voting?	Strongly agree	12	174.54
	Agree	144	232.84
	Disagree	212	260.43
	Strongly disagree	80	224.16
	I don't know	52	316.97
	Total	500	

### Test (a, b)

	SD: influence on voting?
Chi-Square	22.538
df	4
Asymp. Sig.	.000

a Kruskal-Wallis Test

b Grouping Variable: Public authorities efficiently manage environmental problems

**Table IV:** Results of the fourth hypothesis

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