Environmental Protection

or

Economic Growth?

Differences in Attitudes towards Environmental Protection and Economic Growth based on Age, Gender, Education and Financial Security

A Bachelor Thesis by Gesine Werner

Student-No: 2181878

Supervisors: Franziska Eckardt, Prof. Dr. Oliver Treib

Public Governance across Borders

Department of Behavioural Studies, Management, and Science

University of Twente

Drienerlolaan 5, 7522 NB Enschede (NL)

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Summary

This study investigates the prioritization of Greek and Swedish citizens between environmental protection and economic growth. Socio-economic characteristics are explored that influence the setting of priorities. The study aims at answering the following research question: *To what extent can differences in perceptions of environmental protection as compared to economic growth be explained by socio-economic profiles of individuals in Sweden and Greece?* Using quantitative survey data from 2019, four socio-economic variables were analysed: (a) gender, (b) age, (c) education and (d) living standard. After conducting a multiple-regression analysis including these variables, it becomes visible that due to a low explanatory power of the results, the suggested variables hardly explain the respondents' environmental and economic preferences. However, from significant results it can be concluded that in Sweden, a higher living standard as well as masculinity positively affect the prioritisation of economic growth when compared to environmental protection.

Contents

1 Introduction

For decades the meaning of environmental protection has been a highly disputed topic in the political debate in Europe. Environmental movements like "Fridays for Future" are demanding national and international institutions to act (Fridays for Future, 2019). Currently, the "European Green Deal" aims to set guidelines for a sustainable future (Commission, 2019). Even though environmental protection is considered as highly important by many people, the support for environmental protection seems to vary between individuals, depending on their socio-economic statuses. According to Inglehart's theory on value change (Inglehart, 2008) environmental and economic concerns are subject to a bias of income in the population. People from lower income groups are mainly concerned with materialist matters, leaving no room for less visible problems. In contrast, people from higher income groups, whose materialistic needs are fully met, have been labelled as "post-materialists", (Inglehart, 1995, p. 57). As their financial security gives them time and resources to solve problems, which are less pressing in their surroundings, these individuals are more likely to advocate for environmental protection policies than people with less financial security (Inglehart, 2008).

"Fridays for Future" and the "Yellow Vests" are examples for European movements in which the phenomenon of materialist and non-materialist priorities can be observed. The activists of "Fridays for Future" in Germany have been called out to be privileged, white people, whose wealth is not in question (Aschenbrenner, 2019). On the other hand, the "Yellow-Vests" movement in France is mainly supported by lower income groups. Its followers predominantly demonstrate for more inclusive and supporting welfare policies while not primarily confronting their government with climate issues (Blume, 2019). Furthermore, the anxieties of lower income groups are sometimes framing the public climate discussion as a CO^2-tax could negatively affect poorer households (Edenhofer, Kalkuhl, & Ockenfels, 2020).

Observing how the public debate about climate change is framed by a big variety of voices, it seems relevant to analyse people's opinions about sustainable policies. Conducting social studies about the connection of the socio-economic profiles of people and their environmental and economic preference has potential to contribute to fairer and more integrative environmental politics.

Going through already existing literature, Inglehart's (1995, 2008) theory was confirmed several times, stating the post-materialist interests of wealthy people who care more for the environment than poorer citizens (Mostafa, 2013). The importance of sustainability is then

mainly a perception of the higher income class, while lower income groups prioritise materialistic values like economic growth (Inglehart, 2008). More recent studies, however, come to the conclusion that the opposite can also be true. Even though economic issues make a difference to people with less income, they conceive environmental protection as equally important as they are more directly affected by the negative consequences of climate change (Fuchs, 2017).

To approach the conflict above, this study aims to analyse how different socio-economic groups within the European society estimate environmental protection vs. economic growth, and if both are perceived as opposing. It is studied how individuals sort out their values when confronted with a trade-off: Which concept has a higher priority when compared to the other; environmental protection or economic growth? This research gap is tackled by the question to what extent the opposing views by Inglehart (2008) and Fuchs (2017) can or cannot be confirmed by current surveys conducted in the EU in 2019. To do so, this thesis is measuring the preferences of individuals from two European countries, Sweden and Greece which widely differ in terms of environmental and economic policies (Welzel, Inglehart, & Klingemann, 2003). Additionally, this study investigates the significance of other socio-economic factors like gender, age and education in people's decision-making as suggested by Inglehart's value-change theory (Inglehart, 1995).

In this thesis the following research question is addressed:

To what extent can differences in perceptions of environmental protection as compared to economic growth be explained by socio-economic factors in Greece and Sweden?

In more detail my study explores the following two sub-questions:

Sub-question 1: Which socio-economic factors might influence citizens' preferences for either environmental protection or economic growth?

Sub-question 2: *Do Greek and Swedish respondents show a clear preference for either climate protection or economic growth?*

Based on data from the European Voters' Study (2019), I measure the influence of socio-economic factors on the perception of environmental protection compared to the perception of economic growth. In order to do so, I first discuss relevant literature and, based on theory, formulate hypotheses. I then describe the methods used for the study and explain the operationalisation, the concepts used and limitations to the study. After running a multiple

regression analysis and presenting the descriptive statistics of my variables, I am able to corroborate the hypotheses. Finally, results are discussed, considering their limitations and the need for future research.

2 Theoretical Framework

In order to investigate which characteristics of people contribute to certain political views, I am drawing on political and sociological literature that seek reasons for the support of environmental protection, even at the cost of economic growth. First, Robert Inglehart's theory of value change is shortly summarised, which aims to explain the contribution of cultural and socio-economic patterns to the values of individuals. After that, it is discussed which characteristics are correlating with environmental values. Including various literature, suggestions are made how a change of values is influencing if either environmental protection or economic growth are prioritised over each other.

2.1 Theories on Value Change

Inside advanced industrial societies an "intergenerational value change" took place due to the economic growth happening after the Second World War (Inglehart, 2008, p. 130). The occurring shift from "materialistic"- to "post-material values" draws on Maslow's Pyramid of Needs (Inglehart, 2008, p. 130). According to Maslow (1943), physiological needs must be fulfilled first to make space for "higher needs", organised in a hierarchy with 'self-actualisation' on top of the pyramid (Maslow, 1943, pp. 375,382) . Before the 1950's, priority was mainly given to 'materialistic' goals like food and safety. Inglehart (2008) argues how the new built welfare state would keep the post-war generation from suffering hunger and survival uncertainties. The younger cohorts, according to Inglehart, developed 'post-materialist' goals like autonomy and quality of life. New values, the so called "self-expression values" became important. Unlike materialistic "survival-values" which are concerned with economic growth, self-expression values are prioritizing environmental protection, political participation, tolerance and diversity (Inglehart, 2008, p. 131). Consequently, postmaterialists are more likely willing to make financial sacrifices in order to protect the environment, because they take economic growth for granted. Materialists on the other hand consider economic growth as more important than environmental protection (Inglehart, 1995).

When one aims to investigate the materialistic and post-materialistic preferences of groups, socioeconomic factors are highly important. Like post-materialism, socioeconomic development correlates with other emancipative value changes (Welzel et al., 2003). Age is one of the factors which influence the goals people develop, indicating that younger people attach

higher importance to post-material values and self-expression. Even though a value change occurred, "large intergenerational value differences are still present" (Inglehart, 2008, p. 145).

A higher per capita income, as well as more education are navigating the shift towards post-materialism. Therefore, higher educated people are more likely to support environmental protection. The same occurs for people with a higher living standard. Still, environmental issues are lower on the ranking scale when compared to other problems, like food or water supplies (Kollmuss & Agyeman, 2002) Drawing on Inglehart's (1995) and Kollmuss et al.'s (2002) theory of post-materialism and the outweighing of needs, it can be derived that more impoverished people do attach more importance to economic growth than to environmental protection (Inglehart, 1995). Post-materialism correlates with gender equality, which in the post-industrial era is an important emancipative value (Inglehart, Norris, & Ronald, 2003). Overall, new political issues like the women's movement and the environmentalists' movement reached the centre of political discussion. Women, as biggest stakeholders of gender equality, are putting more emphasis on post-material values, e.g. environmental protection and human rights. Another reason why women are in favour of environmental protection is that both the nature and women are victims of the patriarchal system. Saving and conserving the environment would therefore be in strong interest of women, because it is in their own interest to be freed from the male domination[1] (Meinzen-Dick, Kovarik, & Quisumbing, 2014).

Materialistic and post-materialistic values can vary both within a country and between countries: Economic inequality exists within countries, however, economically more "advanced" societies with a higher GDP differ from countries with a lower GDP in many aspects of life (Welzel & Inglehart, 2010, p. 49). The Nordic countries and the Netherlands rank highest in environmental protection support. These countries have "high proportions of postmaterialists" (Inglehart, 1995, p. 57). To be concrete, Sweden has both the highest amount of individual resources in Europe and the highest share of emancipation values (Chris Welzel et al., 2003). However, it must be noticed that the effect of post material values differs across countries. Because postmaterialist values are less common in low-income countries, the impact of individual resources on self-expression values is found to be lower. In low-income countries, environmental protection measures are more influenced by "materialist" motivations for

[1] Gender is socially constructed into two norms which leave out the fact that there can be more than two gender identities (Villa, 2003). Yet, the conceptual classification into "male" and "female" is necessary for this study. Using the binary paradigm in the theory section will be appropriate since most of the scientific literature has not overcome these concepts, yet.

concern with the quality of the environment" (Inglehart, 1995, p. 64). This view is supported by Fuchs (2017), who claims that in times of problems like waste and air pollution, people with more income have the privilege to move away from polluted areas, while others must deal with negative environmental changes (Fuchs, 2017). Thus, people with less financial security are more in favour of environmental protection, as it protects them from being exposed to dramatic changes in their surroundings.

Based on the literature discussed, socioeconomic factors like financial security, education, gender and age are considered important for whether environmental protection or economic growth are prioritised above each other. It can be hypothesised that people from younger generations are considering environmental protection as more important than economic growth. This is due to the post-materialistic character of sustainability as a self-expression value, while economic growth is taken for granted by the younger generations. Because gender equality is correlating with post-material values, females are expected to stronger prioritise environmental protection over economic growth than men. Higher financial security is expected to have a positive influence on prioritizing environmental protection over economic growth. This influence is hypothesised to vary between countries. In a country like Greece, which recently experienced an economic crisis and whose GDP is growing slowly, financial security is expected to have a small positive effect on prioritizing environmental protection over economic growth. In a country with higher GDP, like Sweden, the positive effect of financial security on the prioritisation of environmental protection over economic growth is expected to be larger than in countries with low GDP, like Greece. Following Fuchs' (2017) thesis, the effect of financial security could even be negatively influencing the prioritisation of environmental protection over economic growth in Greece. This would be due to the direct impact of environmental changes on people with less financial security.

2.2 Hypotheses

Based on the literature discussed in the previous section, I can derive the following six hypotheses:

H1: Younger respondents are more likely to favour environmental protection over economic growth than older respondents.

H2: Women are more likely to prefer environmental protection over economic growth than men.

H3: Respondents with higher education are more likely to favour environmental protection over economic growth than respondents with less education.

H4: Respondents with high financial security are more likely to favour environmental protection over economic growth than respondents with lower financial security.

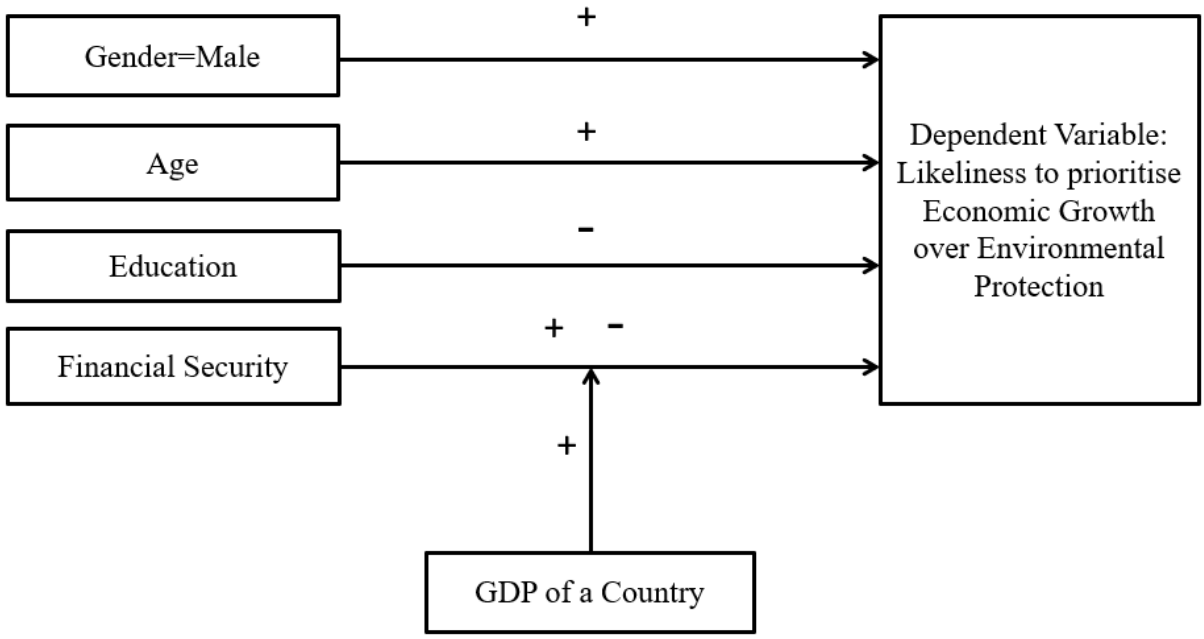
H5: The effect of high financial security on prioritizing environmental protection over economic growth, is stronger in Sweden than in Greece.

H6: In Greece, the effect of financial security on prioritizing environmental protection is negative: People with less financial security are more likely to favour environmental protection over economic growth.

2.3 Causal Diagram

By using the formulated hypothesis, a causal diagram is created. 'Education' and 'Financial Security' are, according to Inglehart's theory (2008, 1995) expected to have a negative effect on prioritizing economic growth over environmental protection. When following Fuchs' (2017) theory this effect could also be positive. 'Gender=male' is, according to various theories, assumed to have a positive influence on the dependent variable, 'Age' is expected to have a positive impact, too. In a country with higher GDP, according to Welzel et al. (2003), the negative effect of financial security on prioritizing economic growth is expected to be stronger.

Causal Diagram 1: Causal Diagram showing the assumed support for either environmental protection or economic growth explained by socio-economic factors



3 Research Methodology

3.1 European Election Survey and Sampling

For answering the explanatory research question posed in this thesis, the research is based on secondary data from a cross-sectional study, the European Election Survey (EES) (2019). "Scientific surveys are useful instruments to measure concepts and behaviours" (Bautista, 2012, p. 37). Cross-sectional surveys are conducted at one point of time. A part of the EES is the European Voter's Study. It was carried out immediately after the elections of the European Parliament (EP) between May 23-26, 2019. The study, that contains over 100 items and emphasises on aspects like voting behaviour, preferences of EU politics and many identical questions, is indeed carried out every five years, always after the EP elections. However, I focus only on the 2019 survey, as it deals with current topics like climate change and environmental protection.

The ESS is funded by the Volkswagen foundation and is taking grants from MZES Uni Mannheim and the Amsterdam Centre for European Studies. All surveys were conducted by Gallup- International, data was obtained mainly online. The EES in 2019 was conducted among all (by then 28)[2] member states of the European Union. In each country, the respondents were randomly selected, and stratified according to stratification variables like 'gender', 'age', 'region' and 'type of locality'. The total number of interviews is 26,500 which consists of 1,000 interviews per country, except for Malta, Luxembourg, and Cyprus, where only 500 interviews were conducted (Schmitt, Hobolt, van der Brug, & Popa, 2019). Due to the high number of participants and the randomisation of the data, the sample is representative and useful for making statements about political and social behaviour among EU citizens.

3.2 Case Selection

In this thesis, I analyse the data of only two EU member states, Sweden and Greece. Based on Inglehart's (2008) theory of value change, one can assume that disparities exist between countries with higher and lower GDP. A society develops different post-material values, depending on whether most of the population has "grown up under conditions of hunger and economic insecurity" (R. F. Inglehart, 2008). A country like Greece, which suffers from economic instability, is assumed to have different post-material values than a country with less insecurity like Sweden. Comparing both countries in the analysis of results would be an appropriate approach, as it is assumed to observe a difference between the two.

[2] By spring 2019, the United Kingdom was still an EU member state, whose citizens also had the possibility to vote in the elections for the European Parliament.

3.3 Operationalisation

In the following I give an overview of the dependent variable and the independent variables of this study and the way these variables have been operationalised.

3.3.1 Dependent Variable

The dependent variable is derived from a survey question dealing with environmental protection. Participants had to choose a number between 0-10 on a scale between two extremes. The number zero on the scale contained the statement: "Environmental protection should take priority even at the cost of economic growth", whereas number ten stated the opposite: "Economic growth should take priority even at the cost of environmental protection" (Schmitt et al., 2019). The term 'priority' is referring to political measures taken by the EU about climate change. Using scales for multiple regression is a common strategy in social science (Winship & Mare, 1984). This 0-10 scale, used as dependent variable for this study, treated as a metric variable allows for multiple regression.

3.3.2 Independent Variables

In order to assess the socio-economic profiles of the respondents, I use the variables "Age", "Gender", "Education" and "Financial Security" as independent variables in this study.

The first independent variable investigated is the age-variable. Here, survey respondents had to indicate the year they were born. This variable is overtaken for regression, as it is already treated as a scale, which allows for including it as a predictor of the dependent variable in multiple regression.

The second independent variable is gender, which, in the survey, is coded as a nominal variable with three possible answers, that stand in no hierarchy to one another: 'male', 'female', and 'other'. The term 'other' refers to the third gender, which is established by the law as a third category in some EU states. However, most EU countries do not include the term 'other' in their institutions. Consequently, I exclude the third category and code gender as a nominal, dichotomous variable. For regression, I create the dummy-variable "male", which measures the effect of male respondents compared to female respondents. Doing this, the answer "female" is given the value 0, while "male" is given the value 1.

The third variable used as predictor is "Education". Education is measured by the age where participants stopped full-time education. The lower the number indicated by the respondents; the younger were they when stopping their full-time education. A low number is thus referring

to ‘less years of education’, while a higher number stands for ‘more years of education’. The measurement level attached to education is scale.

The last independent variable is “financial security”. In the EES, people were asked to choose the social class they would say they belonged to. Because the term ‘Class’ is rather subjective and poorly defined here, I decided to measure people’s financial security with another variable from the survey, ‘Standard of Living’. This term is more objective and clearly formulated. For operationalising the standard of living, I am overtaking the scale of the questionnaire, on which participants could choose between 1-7 whether they thought they had a ‘poor family’ (1), a ‘rich family’ (7) or something in between (2-6). Although this variable was originally treated as ordinal, a scale measurement better allows for a regression. Consequently, in the further statistical process, “standard of living” is treated as scale.

In order to exclude the possible answers “don’t know”, “no answer” or “other”, which were indicated as extremely high numbers in the questionnaire, I recode each of the variables (except age, where these answers were not possible) into another variable, leaving out these numbers. Having done that, I can be sure that the mean of each variable will not be biased by those extreme values.

For descriptive purposes, I recode the variables “Age”, “Education”, “Standard of Living” and “Environmental or Economic Preference” into four ordinal variables, which consist of grouped cases, sorting every respondent into a smaller cluster of values. The variable “Environmental or Economic Preference”, originally consisting of 11 values, is sorted into a variable with three options, where 0-3 indicate a pro-environmental preference, 4-6 show no clear preference for either environmental or economic growth and 7-10 indicate a clear preference for economic growth over environmental protection. The “Standard of Living” variable, as well as the “Education variable” are also grouped into three groups, sorting respondents into the categories “low”, “medium” and “high”. For more visibility of the respondents’ age, the years of birth are grouped into five categories.

3.4 Limitations of this Study

Like all cross-sectional studies, limits are found in the way that they are not considering changes over time. Furthermore, both nonresponse and biased response of the participants are common sources of error in surveys. Telephone- and Mail-prompting, as well as giving material incentives for participation are useful tools for getting survey respondents and countering nonresponse. The problem of biased response is harder to solve, due to the availability of certain

groups. E.g. are retired people more likely to answer the phone or fill out surveys, because they often spend more hours at home. However, age and gender biases are shrunk by the stratification processes of this study. Other errors could occur from inaccurate responses, for example by asking participants about values. As values are hard to measure and often very subjective, the ability of surveys to make inferences about populations are limited (Bautista, 2012). Asking respondents to indicate their political preference on a 0-10 scale, deciding between two extreme positions, puts respondents into a dilemma. Due to the nature of the question it might have happened that respondents chose the middle option, even though they should have stated "don't know". Neither of the numbers 0-10 are clearly defined in the survey. Definitions are also unclear for the "standard of living"-variable, which seven options are highly relative and subjective. A respondent from Greece who opted for a medium standard of living might have less money than a Swedish respondent indicating a low standard of living. The variable "education" is neither measuring the quality of the respondents' education, nor is it giving information about the people who are still studying. Consequently, definition biases can occur, using this data. Other than that, there could be more causal relationships explaining the support of environmental protection (e.g. political party or country as intervening variables).

Also, the internal validity must be given, which encompasses all steps of methods and the fitting research process. To ensure internal and external validity, it is therefore important to correctly define all selected variables, choose a fitting method, include control variables for testing and be aware of intervening variables. For the reliability of my study, I report the syntax steps I take using SPSS and use data from one public dataset only. Then, after conducting another study with the same data, the same result can be reached.

4 Data Analysis

This chapter firstly seeks to answer the question whether Greek and Swedish citizens show a clear preference for either environmental protection or economic growth and whether Greek and Swedish citizens differ greatly in their socio-economic profiles. Secondly, the chapter proceeds to answer the question of whether citizens' priorities can be explained by their socio-economic profiles and, if so, to what extent. While the first two questions are answered by analysing descriptive statistics of the survey respondents, the last question is acknowledged by interpreting the multiple regression analyses (which was performed by SPSS, version 25).

4.1 Greek and Swedish Citizens' Perceptions on Environmental Protection compared to Economic Growth in 2019

Table 1 (see below) summarises people's answers to the question which concept they prioritised: Environmental protection over economic growth or vice versa.

Table 1: Environmental and economic preferences in Greece and Sweden

Variable	Greece Mean (SD)	Sweden Mean (SD)	Greece N (%)	Sweden N (%)
What do you think about (the?) environment?	2.64 (2.39)	4.03 (2.70)		
Pro Environmental Protection attitude (0-3)			647 (65.0%)	396 (42.1%)
No clear preference (4-6)			290 (29.1%)	380 (40.4%)
Pro Economic Growth attitude (7-10)			59 (5.9%)	165 (17.5%)

N(Greece) = 1005; N (Sweden) = 1000

On average both Greek and Swedish respondents prefer environmental protection over economic growth. On a scale of 0-10, the average score of Greek respondents is 2.6, indicating a clear prioritisation of environmental protection over economic growth. The average score is higher for Swedish respondents than for Greek respondents with a score of 4. This indicates that Swedish respondents also show a tendency towards environmental protection, although to

a lesser extent than Greek respondents.[3] To check for outliers, a boxplot is created, which displays the mean and the distribution of answers. No outliers are found (see Boxplot 1 and Boxplot 2 in the Appendix).

When grouping the respondents' answers into three categories - [1] preference for environmental protection, [2] preference for economic growth, or [3] equal preference towards environmental protection and economic growth - it becomes even more visible that the prioritisation for environmental protection is higher among Greek respondents than among Swedish respondents. While 65 percent of the Greek respondents indicated to have a clear preference towards environmental protection, in Sweden only 42 percent of respondents said they did. The percentage of people prioritizing both concepts equally, while voting for the middle option is only 29 percent in Greece. This share is much higher among Swedish respondents at 40 percent. Finally, looking at the relative numbers of people who clearly prefer economic growth over environmental protection, this number is low in Greece with only 6 percent. In Sweden this percentage is still 18 percent. Diagram 1 aims to visualise the contrast between the countries, showing the preferences of Greek and Swedish respondents towards environmental protection and economic growth.

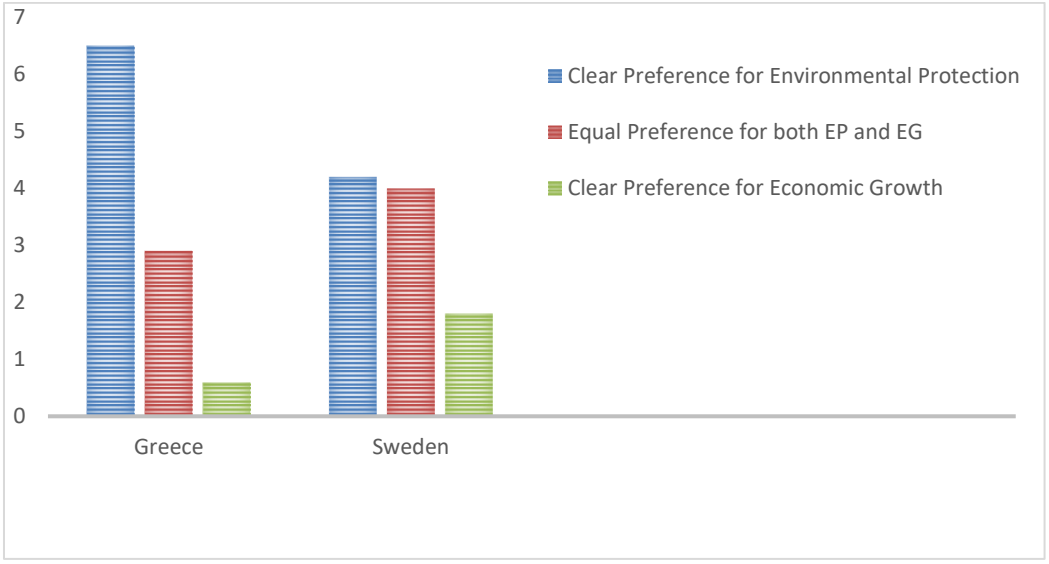


Diagram 1: Distribution of Preferences for Environmental Protection or Economic Growth in Greece and Sweden

[3] The mean in Greece for the 0-10 scale is 2.64 with a standard deviation of 2.39. In Sweden, the mean is 4.03 with a standard deviation of 2.0, indicating that the prioritisation for environment is higher in Greece than in Sweden, where the people are rather undecided.

The aim is to answer whether respondents from Greece and Sweden show a clear preference of either environmental protection or economic growth. The descriptive statistics show that Greek respondents strongly prioritise environmental protection over economic growth. Swedish respondents also prioritise environmental protection over economic growth. However, according to the data, in Sweden the opinion of seeing both environmental protection and economic growth as important was held by a similar amount of people as the opinion that environmental protection should be strongly prioritised.

4.2 Socio-Economic Profiles of Greek and Swedish Citizens in 2019

Table 2: Socio-economic characteristics in Greece and Sweden

Variable	Greece Mean (SD)	Sweden Mean (SD)	Greece N (%)	Sweden N (%)
What is your gender?				
male			512 (51.0%)	537 (54.0%)
female			492 (49.0%)	458 (46.0%)
When were you born?	1977,96 (13.18)	1973.36 (17.61)		
Age 18-24			145 (14.4%)	152 (15.2%)
Age 25-39			314 (31.2%)	258 (25.8%)
Age 40-54			365 (36.3%)	262 (26.2%)
Age 55-64			133 (13.2%)	153 (15.3%)
Age 65+			48 (4.8%)	175 (17.5%)
How old were you when you stopped full-time education?	24.84 (8.31)	24.31 (9.1)		
15 years and less “low”			5 (0.6%)	36 (4.2%)
16-19 years “medium”			174 (20.3%)	296 (34.3%)
20+ “high”			677 (79.1%)	532 (61.6%)
What is your Standard of Living? (1-7)	3.54 (1.08)	4.18 (1.31)		
Rather low (1-2)			157 (15.8%)	105 (10.8%
Medium (3-5)			816 (82.3%)	747 (77.2%)
Rather high (6-7)			19 (1.9%)	116 (12.0%)

N(Greece) = 1005; N (Sweden) = 1000

As summarised in Table 2, the mean values of age, education and living standard differ between Greece and Sweden. In the following paragraphs, mean values are listed and analysed, followed by the participants' gender, age, education and standard of living.

Gender

In Greece, 51 percent of the respondents are male, and 49 percent of the respondents are female. In Sweden 54 percent are male and 46 percent of the respondents are female. Consequently, both countries have approximately the same number of males and females taking part in the questionnaire.

Age

The mean age of respondents in Greece in 2019 is 41. In Sweden, the mean age of respondents is 46.[4] Thus, participants of the questionnaire are slightly older in Sweden than in Greece. Looking at the age groups, it is visible that in both countries, most respondents are between 40-54 years old.

Educational Level

The average age at which Greek respondents finish their full-time education is around 25, whereas in Sweden people finish education approximately at the age of 24.[5] Thus, in both countries, the mean age of stopping education is rather similar. Looking at the grouped values, in Greece, only 0.6 percent finish education before the age of 15, whereas in Sweden, 4.2 percent finish their education that early. With 34.3 percent in Sweden, more people are likely to finish their education between 16-19 years of age. In Greece, only 20.3 percent of the respondents finished their education by that time. Thus, both countries have most of the people finishing their education after 20, with 79 percent in Greece and 61 percent in Sweden. However, these values do not provide information about the quality of education Swedish and Greek people experience; they simply inform at what age the respondents finish a full-time education which can be after middle-school, high-school, university or technical college.

[4] The mean of the respondents' birth year is 1977.96 in Greece, with a standard deviation of 13.18 and 1973.36 in Sweden, with a standard deviation of 17.61.
[5] Students finish the education at the mean age of 24.84 with a standard deviation of 8.31 in Greece and with the age of 24.31 with a standard deviation of 9.1 in Sweden.

Standard of Living

In Greece the mean living standard is indicated as 3.54. In Sweden, the mean value is 4.18.[6] Consequently, respondents from both countries answered to have a medium living standard, with the Swedish average answer being close to indicating a high living standard. When grouping the answers into three groups, similar results are visible: In Greece, 15.8 percent opted for a rather low, 82.3 percent a medium, and 1.9 percent for a rather high standard of living, whereas in Sweden, 10.8 percent said to have a low, 77.2 percent a medium and 12 percent of the people a high living standard. Thus, respondents from both countries indicate to have a medium living standard, but with more Swedish people to indicate a high standard of living and more Greek respondents likely to choose a rather low living standard.

Summarising these findings, it can be stated that Swedish and Greek respondents show no clear structural differences in the variables age, gender and education. Respondents from both countries indicated to have a medium living standard, with Swedish respondents tending to opt for a higher living standard, whereas Greek respondents indicated a living standard which was lower than the Swedish average.

[6] The variable "Standard of Living" which ranges from 1-7 has a mean of 3.54 in Greece with a standard deviation of 1.08. The mean in Sweden is 4.18 with a standard deviation of 1.31.

4.3 Multiple Regression Analysis

A multiple regression analysis is performed to predict peoples' preferences towards either environmental protection or economic growth from gender, age, education and standard of living. The same regression is done for both Greek and Swedish respondents. In the Greek multiple regression model, the adjusted R^2 coefficient[7] turns out to be very small. With a value of 0.002, the overall prediction of the dependent variable by the independent variables is not given (see Table 3). The p-value which is greater than 0.05 for the Greek model, states that hardly any prediction can be made for the dependent variable, based on the Greek data.[8] Looking at my research question, this would mean that no generalizing statement can be made about the extent to which socio-economic profiles explain the prioritisation of environmental protection and economic growth in Greece. In Sweden, the low R^2 of 0.04 states that less than 1 percent of the dependent variable is explained by the independent variables in comparison to the mean model (see Table 4). Nevertheless, the Swedish data have a p-value of 0.000 which shows overall significance of the regression model[9]. Even with a very low R^2-coefficient, significant results indicate a relationship between the variables. Therefore, in the following paragraphs the effects of the independent variables will be listed for both Sweden and Greece, followed by answers to the hypotheses.

Table 3: Regression Coefficients for Greece

Dependent variable: The prioritisation of economic growth over environmental protection

(N = 1005)

	Unst.B	Std. Error B	Standardized B	Sig.
Constant	-7.691	14.082		0.585
Gender=male	0.136	0.166	0.028	0.413
Age	0.005	0.007	0.025	0.483
Level of Education	-0.004	0.010	-0.014	0.691
Standard of Living	0.152	0.075	0.070**	0.042
Adjusted R^2	0.002			

*p<0.1; **p<0.05; ***p<0.01

[7] For determining to what extent the respondents' environmental and economic preferences can be explained/predicted by the analysed variables in this model, the adjusted R^2-coefficient were analysed.
[8] The difference was not statistically significant (F (4.841) =1.457; p=0.21; p>0.05).
[9] The difference was statistically significant (F (4.798) =9.12; p=0.000; p<0.05).

Table 4: Regression Coefficients for Sweden

Dependent variable: The prioritisation of economic growth over environmental protection

(N = 1000)

	Unst.B	Std. Error B	Standardized B	Sig.
Constant	-2.833	11.348		0.803
Gender=male	0.952	0.188	0.177***	0.000
Birth Year	0.003	0.006	0.018	0.616
Education finishing Age	-0.006	0.010	-0.020	0.566
Standard of Living	0.195	0.070	0.097***	0.005
Adjusted R^2	0.04			

*p<0.1; **p<0.05; ***p<0.01

Age and educational level

It is visible that neither the variable "age" nor "education" show significant results in Sweden and Greece. Consequently, the results do not indicate an influence of education and age to whether someone would prioritise environmental protection over economic growth or vice versa. Younger respondents are as likely to favour environmental protection over economic growth as older respondents, both in Sweden and Greece. Also do respondents with less years of education show equal priorities for the dependent variable like respondents with more years of education The first hypotheses (H1[10]) can be rejected and the null-hypotheses is confirmed: Age has therefore no significant effect on the prioritisation between either environmental protection and economic growth. For both Greek and Swedish respondents, no significant results are found regarding education and thus, hypotheses three (H3[11]) is rejected as well.

Gender

In Sweden, for the variable "gender" a significant relationship exists between a respondent being male and the dependent variable. The standardized beta coefficient of 0.18, with a p-value lower than 0.001 shows that in Sweden being male has a positive influence on prioritizing economic growth over environmental protection. In Greece, the gender variable has a p-value

[10] H1: Younger respondents are more likely to favour environmental protection over economic growth than older respondents.

[11] H3: Respondents with higher education are more likely to favour environmental protection over economic growth than respondents with less education.

higher than 0.05, which implies that the data set does not confirm a significant role of gender for the dependent variable (See Tables 3 and 4). As far as my second hypothesis (H2[12]) is concerned, being male in Sweden has a little positive influence on prioritizing economic growth over environmental protection. Considering the overall high support for environmental protection shown in the descriptive statistics, this result predicts males to score higher on the priority scale, indicating a priority closer towards economic growth than females. While women show stronger support for environmental protection, men are more likely to support both concepts. However, due to lacking significance of the Greek coefficients, my second hypotheses (H2) can be only confirmed for Swedish respondents.

Standard of Living

In both countries, the variable "standard of living" has a p-value smaller than 0.05 and therefore shows a significant effect of the living standard on the respondents' prioritisation of environmental protection over economic growth or vice versa. In Greece, the standardized beta coefficient is 0.07 with a p-value of 0.04. This shows that Greek respondents who have a higher standard of living are more likely to prioritise economic growth over environmental protection than Greek people with a lower living standard. In Sweden, the beta coefficient is 0.1 with a p-value of 0.01. Thus, people with a higher standard of living are expected to be more in favour of economic growth than environmental protection, with the effect being larger in Sweden than in Greece (see Tables 3 and 4). Observing that the variable "standard of living" has a significantly positive effect on prioritizing economic growth in Sweden and Greece, it can be said that respondents with higher financial security are more likely to favour economic growth over environmental protection, while respondents with less financial security and a lower living standard more likely tend to favour environmental protection. Because the prioritisation for environmental protection is so high in both countries, one can conclude that respondents with higher living standards are more likely to score higher on the trade-off scale. Thus, people with a higher standard of living favour a combination of environmental protection and economic growth. My fourth hypothesis (H4[13]) is therefore rejected, as the influence of financial security goes into the other direction. The fifth hypothesis (H5[14]) must be rejected as well because, as mentioned beforehand, a high financial security predicts the prioritisation of economic growth.

[12] H2: Women are more likely to prefer environmental protection over economic growth than men.
[13] H4: Respondents with high financial security are more likely to favour environmental protection over economic growth than respondents with lower financial security.
[14] H5: The effect of high financial security on prioritizing environmental protection over economic growth, is stronger in Sweden than in Greece.

However, this influence is slightly stronger in Sweden than in Greece, showing that people with a higher living standard in Sweden are more to prioritise economic growth over environmental protection than people with a high living standard in Greece. The final hypotheses (H6[15]), however, can be confirmed. In Greece, people with a higher living standard prioritise economic growth over environmental protection. Thus, people with less financial security are more likely to favour environmental protection than people with more financial security.

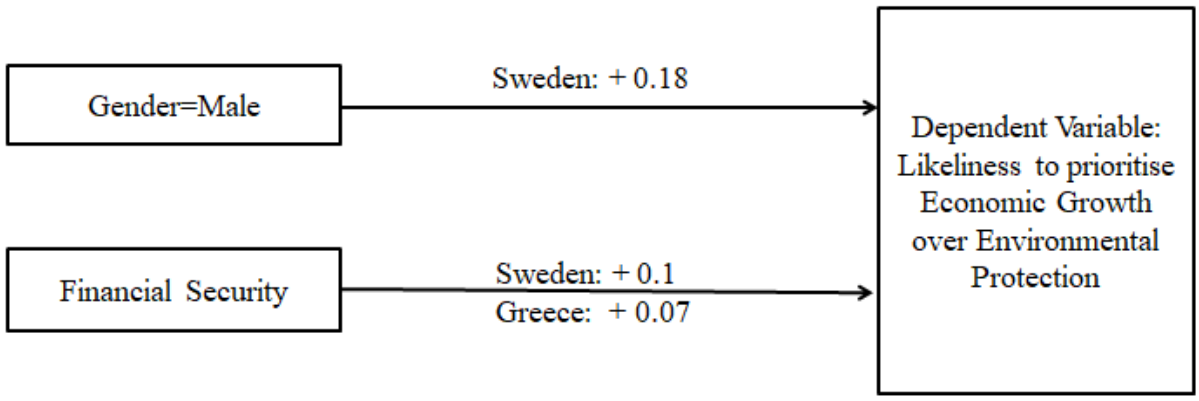
To sum up, considering the low R^2-coefficient socio-economic profiles do not explain how a Swedish person sorts out their priority towards environmental protection and economic growth. However, due to a statistically significant model, one can make weak predictions about the prioritisation of the concepts in Sweden, based on people's socio-economic profiles. The variables gender and living standard are significant, which confirms that in Sweden being male, as well as having a relatively high living standard has a positive influence on prioritizing economic growth over environmental protection.

[15] H6: In Greece, the effect of financial security on prioritizing environmental protection is negative: People with less financial security are more likely to favour environmental protection over economic growth.

4.4 Causal Diagram

This causal diagram shows the influence of the independent variables on the dependent variable. The beta coefficients drawn from the tables above are demonstrating the significant positive effect of gender and financial security on the prioritisation of economic growth over environmental protection.

Causal Diagram 2: Causal Diagram showing the support for either environmental protection or economic growth explained by socio-economic factors



5 Discussion and Conclusion

The starting point of this thesis was to answer the research question, *to what extent differences in perceptions of environmental protection or economic growth can be explained by the respondents' socio-economic profiles in Sweden and Greece?*

This question can be answered as follows: The different socio-economic profiles of citizens in Sweden and Greece do not explain people's preferences towards either economic growth or environmental protection. Because the R^2-coefficient is close to zero, the regression model has no explanatory power. Four socio-economic variables were analysed: (a) gender, (b) age, (c) education and (d) living standard. Consequently, these factors are no fitting predictors for whether environmental protection or economic growth are prioritised above each other. Nevertheless, significant results for the Swedish model indicate a relationship between the variables. As shown in the previous section, H2 and H6 are supported: Gender has an influence on prioritising one of the concepts to the extent that male respondents in Sweden slightly favour economic growth more than women do. Also, people's standards of living explain their political preferences: In Sweden, a higher living standard predicts a score on the trade-off scale which is closer to economic growth. Having in mind the overall strong support for environmental protection among the respondents[16] one can conclude that a higher living standard, as well as being male, predicts the willingness to combine environmental protection with economic growth in Sweden.

How can these findings be explained when compared to the theoretical implications drawn from Inglehart (1995, 2008) and Fuchs (2017)? Why did the data support some of the conclusions from the literature reviewed, such as the effect of gender? On the other hand, how can the reverse effect of the respondents' living standard on the support of economic growth and environmental protection be explained? Is Inglehart's theory outdated due to a second value-change in society? Or is there another distinction than categorising political opinions as derived from "material" and "post-material" values? These questions derived from my results shall now be discussed briefly.

In terms of gender, the hypotheses that female respondents care more about environmental politics than men, was confirmed for Sweden. This result builds on existing evidence by Inglehart and Norris (2003), as well as Meinzen-Dick et al. (2014) which state the correlation of the willingness to save the environment with the demand for gender equality. However, the

[16] See Graph 3 and Graph 4 in the Appendix

insignificance of age and education states equal preference for the environment among younger and older respondents as well as for more and less educated respondents. These results do not fit into Inglehart's theory (2008) of an intergenerational value-change occurring after the second world war.

The most surprising result of this study was the rejection of hypothesis 4 and 5, confirming hypotheses 6: A higher living standard is positively affecting the prioritisation of economic growth over environmental protection, other than what was to be expected according to Inglehart (1995). The outweighing of needs is to be seen as a reason why poorer people care more for economic growth and less for environmental circumstances (Inglehart, 1995). The data from this study however support the argument by Fuchs (2017) stating that a sustainable environment is necessary for a healthy life and therefore prioritised by citizens of lower incomes (Fuchs, 2017). Other variables might play a role, too: One can suggest that environmental protection is getting more important, as economic growth is subjected to a lot of mistrust by poorer citizens. According to Teocharis and van Deth (2015), the trust of Greek citizens in economic institutions is much lower than in the other EU countries, due to the tough austerity measures applied to meet the economic crisis of 2008 (Theocharis & Van Deth, 2015). Being unemployed negatively influences citizens' trust in the European Central Bank (Bursian & Fürth, 2015).

Inglehart's theory of value change could be outdated by now to that extent that it misses a priority change that recently occurred in the European Union. According to Mostafa (2011) the support of environmental protection measures has become a global phenomenon, including even the global South (Mostafa, 2013). This new 'value change' could be a reason why Inglehart's theory does not explain the results of this study. The terms "materialist" and "post-materialist" are no fitting descriptions for the priorities I have found. Otherwise, it could be possible that Greek people have reached a level of wealth to make post-material decisions. This could be a reason why no strong difference was found between Sweden and Greece.

Climate change must be stopped. This sentence has become common sense. The data display that Greek respondents clearly favour environmental protection over economic growth. The same priority was indicated for Sweden but to a smaller extent; an equally high number of respondents accorded the same importance to environmental protection and economic growth, possibly indicating their optimism about a combination of the two. These results seem to suggest another categorisation of people. According to Jakob and Edenhofer (2014), two argumentative positions are dominating the public discussion: 'Green growth', whose

supporters see environmental protection as combinable with a growing economy and the concept of "degrowth" (Jakob & Edenhofer, 2014, p. 452), according to which climate change is not stoppable in a system of a growing economy in which we keep doing "business as usual" (Jakob & Edenhofer, 2014, p. 452).

6 Limitations of the Study and Future Research

As any other this study has its limits due to the data basis, the nature of the research question and the statistical results, as brought up in the operationalisation section (see Chapter 3.3). More in detail, the number of respondents could be too low to make valid statements. Furthermore, the survey question automatically treats economic growth and environmental protection as opposites. Like the results show, this must not be the case. As most respondents indicated to prioritise the environment, this opinion can be called common sense in Greece and Sweden. But does this mean that people do behave in a consequently environmentally friendly way (e.g. by buying only regional food or avoiding travelling by airplane)? Currently, this question is of increasing relevance, especially in the EU which is planning to transform the economy to carbon-neutrality until 2050. Thus, future research should measure individual priorities and the willingness of people to change their behaviour more precisely. A better measurement could imply the engagement into sustainability by asking whether respondents are taking part in pro-environmental protests or if they are intending to invest money or time into a more sustainable lifestyle. Furthermore, factors as people's living standard and education can be measured more precisely in order to get a better understanding of the causal relationships between attitudes and socio-economic factors in the European societies.

When asking for the prioritisation of either environmental protection or economic growth, future research should observe other possibly relevant factors as mistrust in governments, political parties or citizen engagement for the environment. To explain the determining factors of people's environmental and economic preferences, conducting interviews with a range of people from all backgrounds could be a promising approach.

The urgent need of combating climate change is close to becoming common ground in the policy of the EU (Commission, 2019). In order to support climate friendly policies, researchers have the chance -if not the duty- to collect more data-based information about values and priorities but especially about the willingness and the potential of transforming societies for a more environmentally friendly way of living.

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8. Appendix A

8.1 Tables

Table 1: Environmental and economic preferences in Greece and Sweden

Variable	Greece Mean (SD)	Sweden Mean (SD)	Greece N (%)	Sweden N (%)
What do you think about (the?) environment?	2.64 (2.39)	4.03 (2.70)		
Pro Environmental Protection attitude (0-3)			647 (65.0%)	396 (42.1%)
No clear preference (4-6)			290 (29.1%)	380 (40.4%)
Pro Economic Growth attitude (7-10)			59 (5.9%)	165 (17.5%)

N(Greece) = 1005; N (Sweden) = 1000

Table 2: Socio-economic characteristics in Greece and Sweden

Variable	Greece Mean (SD)	Sweden Mean (SD)	Greece N (%)	Sweden N (%)
What is your gender?				
male			512 (51.0%)	537 (54.0%)
female			492 (49.0%)	458 (46.0%)
When were you born?	1977,96 (13.18)	1973.36 (17.61)		
Age 18-24			145 (14.4%)	152 (15.2%)
Age 25-39			314 (31.2%)	258 (25.8%)
Age 40-54			365 (36.3%)	262 (26.2%)
Age 55-64			133 (13.2%)	153 (15.3%)
Age 65+			48 (4.8%)	175 (17.5%)
How old were you when you stopped full-time education?	24.84 (8.31)	24.31 (9.1)		
15 years and less “low”			5 (0.6%)	36 (4.2%)
16-19 years “medium”			174 (20.3%)	296 (34.3%)
20+ “high”			677 (79.1%)	532 (61.6%)

What is your Standard of Living? (1-7)	3.54 (1.08)	4.18 (1.31)		
Rather low (1-2)			157 (15.8%)	105 (10.8%
Medium (3-5)			816 (82.3%)	747 (77.2%)
Rather high (6-7)			19 (1.9%)	116 (12.0%)

N(Greece) = 1005; N (Sweden) = 1000

Table 3: Regression Coefficients for Greece

Dependent variable: The prioritisation of economic growth over environmental protection

(N = 1005)

	Unst.B	Std. Error B	Standardized B	Sig.
Constant	-7.691	14.082		0.585
Gender=male	0.136	0.166	0.028	0.413
Age	0.005	0.007	0.025	0.483
Level of Education	-0.004	0.010	-0.014	0.691
Standard of Living	0.152	0.075	0.070**	0.042
Adjusted R^2	0.002			

*p<0.1; **p<0.05; ***p<0.01

Table 4: Regression Coefficients for Sweden

Dependent variable: The prioritisation of economic growth over environmental protection

(N = 1000)

	Unst.B	Std. Error B	Standardized B	Sig.
Constant	-2.833	11.348		0.803
Gender=male	0.952	0.188	0.177***	0.000
Birth Year	0.003	0.006	0.018	0.616
Education finishing Age	-0.006	0.010	-0.020	0.566
Standard of Living	0.195	0.070	0.097***	0.005
Adjusted R^2	0.04			

*p<0.1; **p<0.05; ***p<0.01

8.2 SPSS Syntax

Recoding Variables into other Variables

```
RECODE Q14_6 (0=0) (1=1) (2=2) (3=3) (4=4) (5=5) (6=6) (7=7) (8=8) (9=9) (10=10) INTO
Dep_V.
VARIABLE LABELS  Dep_V 'What do you think about environment_ recoded'.
EXECUTE.

RECODE Q14_6 D11 (1=1) (3=3) (2=2) (4=4) (5=5) (6=6) (7=7) INTO Dep_V SoL.
VARIABLE LABELS  Dep_V 'What do you think about environment_ recoded' /SoL 'What is your '+
    'standard of living?'.
EXECUTE.

RECODE Q14_6 D11 EDU (1=1) (3=3) (2=2) INTO Dep_V SoL EDU_r.
VARIABLE LABELS  Dep_V 'What do you think about environment_ recoded' /SoL 'What is your '+
    'standard of living?' /EDU_r 'How many years of education have you had?'.
EXECUTE.

RECODE Q14_6 D11 EDU D3 (1=1) (2=2) INTO Dep_V SoL EDU_r Gender_r.
VARIABLE LABELS  Dep_V 'What do you think about environment_ recoded' /SoL 'What is your '+
    'standard of living?' /EDU_r 'How many years of education have you had?' /Gender_r 'What is '+
    'your gender?'.
EXECUTE.

RECODE SoL (1 thru 2=1) (3 thru 5=2) (6 thru 7=3) INTO SoL_grouped.
VARIABLE LABELS  SoL_grouped 'poor medium rich'.
EXECUTE.
```

Relabelling the Variables and creating a Dummy for 'Gender'

```
VARIABLE LABELS  Dep_V 'What do you think about environment_ recoded' /SoL 'What is your '+
    'standard of living?' /EDU_r 'How many years of education have you had?' /Gender_r 'What is '+
    'your gender?' /D2_1_r 'How old were you when you stopped full-time education?'.
EXECUTE.

RECODE Gender_r_2 (1=1) (ELSE=0) INTO genderdummy_male.
```

Creating a variable to split file by country= Sweden and country=Greece:

```
RECODE hCountry SoL (12=12) (27=27) (1 thru 2=1) (3 thru 5=2) (6 thru 7=3) INTO SE_GR
EXECUTE.
```

Getting the Descriptives -Tables

```
FREQUENCIES VARIABLES=D4_1 hAge ENVI_ECON Dep_V SoL EDU_r D2_1_r Gender_r_2
SoL_grouped
  /NTILES=4
  /STATISTICS=STDDEV VARIANCE MINIMUM MAXIMUM MEAN MEDIAN
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```

Running a Regression for the Scale Variables with a 6% Random Sample to test Assumptions

```
DATASET ACTIVATE randomsample6.
SORT CASES  BY SE_GR.
SPLIT FILE SEPARATE BY SE_GR.

REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS CI(95) R ANOVA COLLIN TOL ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Dep_V
  /METHOD=ENTER D2_1_r D4_1
  /PARTIALPLOT ALL
  /RESIDUALS DURBIN HISTOGRAM(ZRESID) NORMPROB(ZRESID)
  /CASEWISE PLOT(ZRESID) OUTLIERS(3)
  /SAVE PRED COOK LEVER SRESID SDRESID.
```

Building a Graph of Studentized Residual and Unstandardized Predicted Value in order to identify a linear Relationship between the Variables collectively

```
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=PRE_1 SRE_1 MISSING=LISTWISE
REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE
  /FITLINE TOTAL=NO.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: PRE_1=col(source(s), name("PRE_1"))
  DATA: SRE_1=col(source(s), name("SRE_1"))
  GUIDE: axis(dim(1), label("Unstandardized Predicted Value"))
  GUIDE: axis(dim(2), label("Studentized Residual"))
  GUIDE: text.title(label("Simple Scatter of Studentized Residual by Unstandardized Predicted ",
    "Value"))
  ELEMENT: point(position(PRE_1*SRE_1))
END GPL.
```

Running a Regression of the whole Sample, split by Sweden and Greece

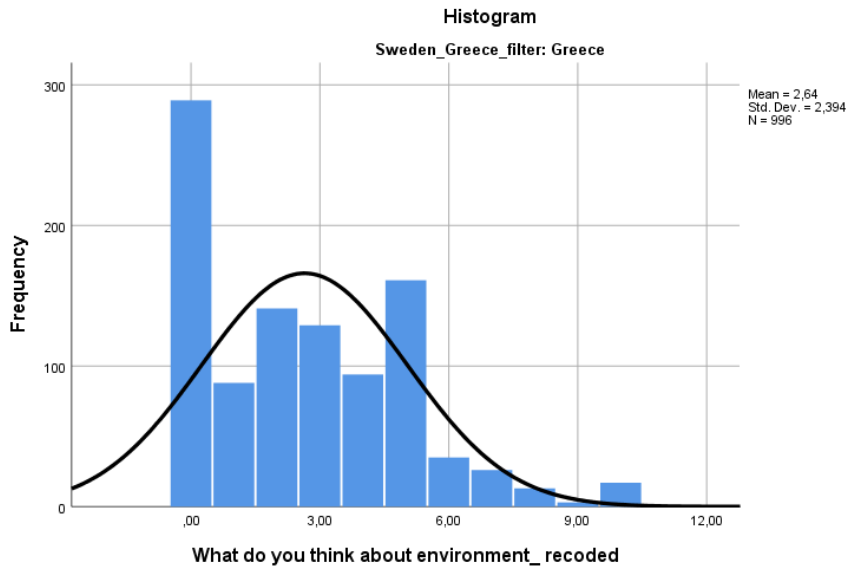
```
DATASET ACTIVATE DataSet1.
SORT CASES  BY se_gr.
SPLIT FILE SEPARATE BY se_gr.


REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Dep_V
  /METHOD=ENTER genderdummy_male D4_1 D2_1_r SoL
```

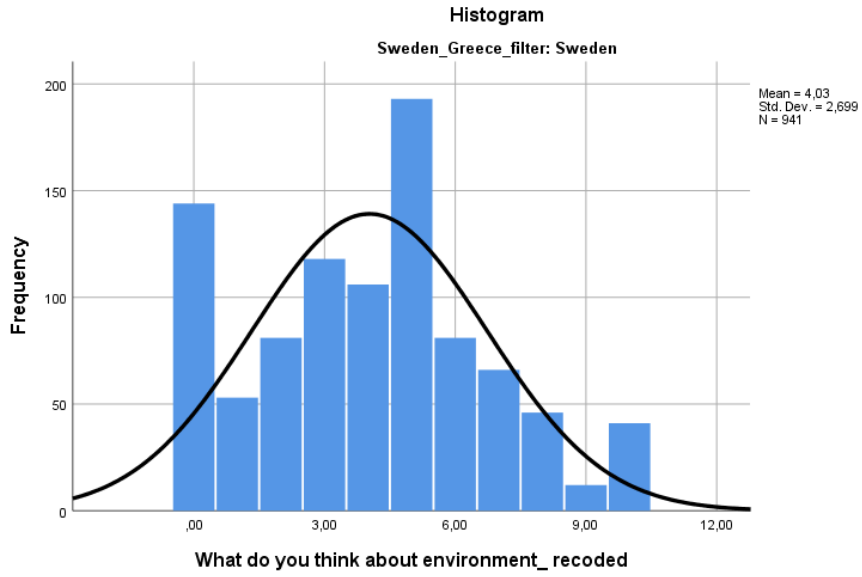
/RESIDUALS HISTOGRAM(ZRESID) NORMPROB(ZRESID)
/SAVE PRED COOK LEVER SRESID SDRESID.

8.3 Graphs

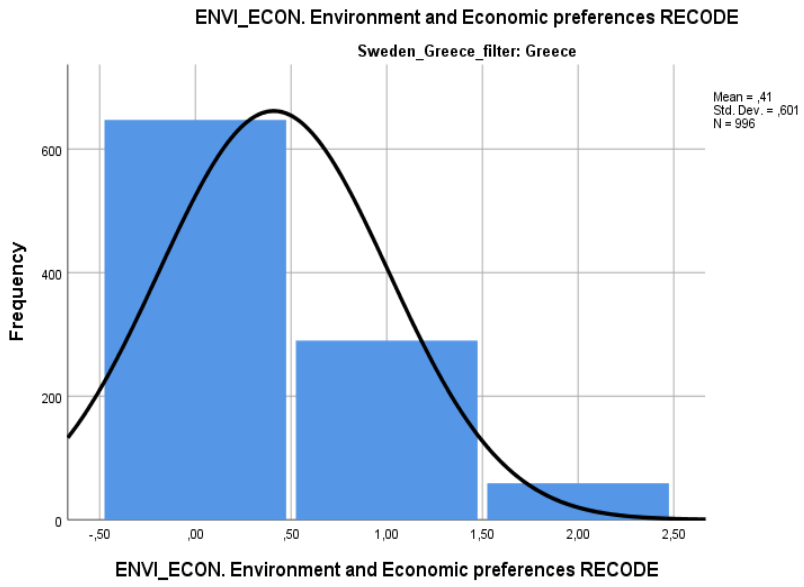
Histogram 1 (Greece): What do you think about environment (0-10)?



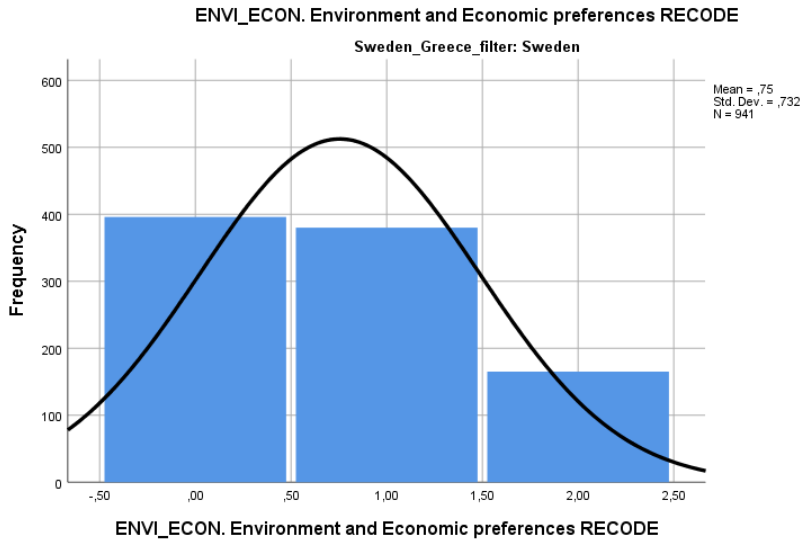
Histogram 2 (Sweden): What do you think about environment (0-10)?



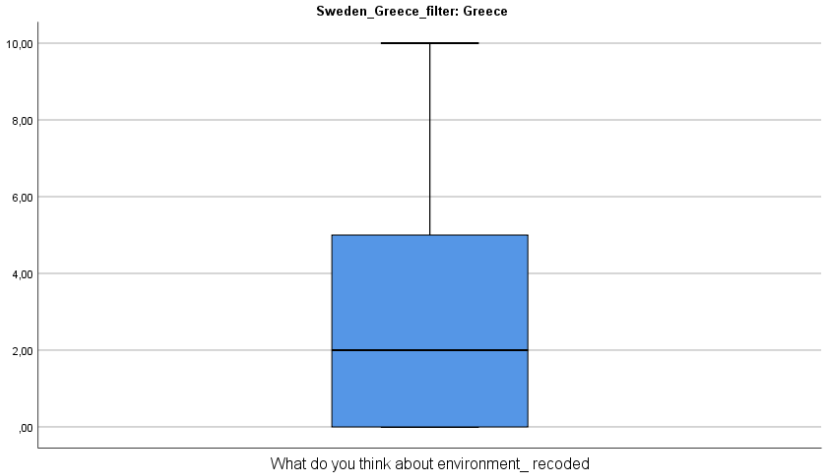
Histogram 3 (Greece): What do you think about environment (1-3)?



Histogram 4 (Sweden): What do you think about environment (1-3)?



Boxplot 1 (Greece): What do you think about environment (0-10)?



Boxplot 2 (Sweden): What do you think about environment (0-10)?