AALBORG UNIVERSITY
DENMARK

STANDARD TITLE PAGE FOR PROJECTS

To be completed by the student(s)

Subjects: ***(tick box)***	Project :	Thesis: X	Written Assignment:
Study programme:	Msc International Marketing		
Semester:	4th semester		
Exam Title:	IM- Master Thesis		
Group Number:			
Names + Student Nos of group member(s):	Name(s)	Student Number(s)	
	Ricardo Silva	20191298	
Submission date:	13/08/2021		
Project Title /Thesis Title	Consumers' willingness to pay for carbon taxes as part of companies' value proposition		
According to module description, maximum number of characters/words/pages of the paper	144 000 characters/ 60 pages		
Number of characters/words/pages *(Standard page = 2400 characters including Tables and Figures, excluding References, Appendices, Front Page, Table of Contents)*	81 731 characters/ 47pages		
Supervisor (project/thesis):	Svetla Marinova		

We hereby declare that the work submitted is our own work. We understand that plagiarism is defined as presenting someone else's work as one's own without crediting the original source. We are aware that plagiarism is a serious offense, and that anyone committing it is liable to academic sanctions.

Rules regarding Disciplinary Measures towards Students at Aalborg University:
http://www.plagiarism.aau.dk/Rules+and+Regulations/

Date and signature(s):

Ricardo Silva 12/08/2017

Signature and date

Signature and date

Signature and date

Signature and date

Signature and date

Signature and date

Signature and date

Consumers' willingness to pay for carbon taxes as part of companies' value proposition

Executive Summary

Global climate change is the most significant environmental issue facing the world. There no longer is any question that global warming is occurring and if humanity fails to significantly reduce greenhouse gas emissions over the next years, the possibility of facing catastrophic environmental harm by the end of this century is very real. The issues listed in the previous chapter lay the foundation for this study. If the implementation of carbon taxes is often seen as a fast and effective solution to tackle climate change, why is it still not more widespread? Is it harder to implement carbon taxes in countries where perceived corruption is higher? Are eco-friendly citizens more favourable to support carbon taxes? Does are all questions that are going to be addressed in the course of this study.

The main purpose of this study is to comprehend what are the main key drivers of consumers to accept carbon taxes as part of companies' value proposition. This topic has already been researched in the literature but a gap between cross-country factors and willingness to pay for carbon taxes was found. To test the findings from the literature, a cross-sectional research was used, and the hypothesis were formed. A conceptual framework was then developed based on the hypothesis which were then tested.

The method used in this study was a quantitative questionnaire, developed by the European Social Survey, in particular ESS round 8, made in 2006. This survey follows a strict and rigorous process to guarantee its reliability and validity. The statistical analysis was made with a multilevel linear regression analysis to test the hypotheses.

The main findings of this research showed that both country-level factors and individual motivations such as costumes and believes have an impact on consumers' willingness to pay for carbon taxes. Moreover, the recognition of climate change as a problem is the main driver of consumer's willingness to pay for carbon taxes.

Contents

Table of Figures

1. Introduction

1.1. Research Background

In 2015 all the United Nations Member States adopted the 2030 Agenda for Sustainable Development recognizing that ending poverty and other inequalities should be followed with strategies that improve health and education, reduce inequality, and stimulate sustainable economic growth whilst tackling climate change and working to preserve the environment (United Nations, 2015). At the core of this Agenda are the 17 Sustainable Development Goals (SDGs) designed to "be a blueprint to achieve a better and more sustainable future for all". Goal 13, specifically, encourages to take urgent action to combat climate changes by strengthening resilience and adaptive capacity to climate-related hazards and natural disasters and integrate climate change measures into national policies. Together with the Paris Agreement, an international treaty on climate change adopted by 196 countries in 2015 that aims to limit global warming to 1.5, they are a landmark in the multilateral climate change process, bringing all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effect (UNFCCC, 2016).

A few studies have discussed the potential benefits of green products in the context of a competitive environment. The right set of regulations can encourage innovation and other positive outcomes that can offset the cost of the regulations (Haites, 2018). In addition to environmental benefits, a green revolution can also benefit the economy because it will create more products and markets (Bergquist, Konisky and Kotcher, 2020).

Carbon pricing, a principle based on the assumption that putting a price on pollution provides an incentive to shift to lower carbon consumption patterns, is often seen as an important climate policy to fight against climate change. Even though this policy is not mentioned in the Paris Agreement, carbon pricing is an important tool that a growing number of governments are using to reduce greenhouse emissions to reach their international climate commitments (World Bank, 2020).

However, even though carbon pricing is strongly recommended by economists, it has often been politically difficult to impose taxes on carbon, in part due to the low public acceptance of environmental taxes. Some major issues can explain this behavior regarding environmental taxes such as the trust in how well the government spends the revenue and the perception that

taxation does very little to change behavior and consequently to reduce environmental problems (Maestre-Andrés, Drews and van den Bergh, 2019).

From the perspective of marketing, a green revolution and the adoption of green taxes can be facilitated if the consumer behavior that leads to selecting green products is understood.

Sweden was among the Organization for Economic Co-operation and Development (OCDE)'s first countries to introduce green taxes with early trials starting in 1992 and as a share of the GDP, Sweden has the highest environmentally related tax revenue among 34 OECD economies, representing 3,97% of GDP in 2014, compared to an average of 2.0% among these countries (Jonsson, 2020). Moreover, according to the Transparency International's study of corruption perception worldwide, together Sweden is one of the least corrupt country in the world scoring 85 out of 100 possible points. No bribery and an open well-functioning public sector have placed Sweden on the top of the ranking since the first study in 1995 (Transparency.org, n.d.).

On the other hand, Portugal, a member of the OECD countries, only implemented a carbon tax in 2015, as part of a wider package of green tax reforms. This carbon tax only covers 29% of all greenhouse gases (GHG) and the government revenues generated with this tax amounted to US$281 million in 2019 (Pereira, Pereira and Rodriguesa, 2016), far below when compared to the swedish government revenues, which accounted for US$520 million in the same period. Furthermore, in 2020 Portugal ranked in 33 place among 180 countries on the Corruption Perception Index (CPI) scoring 61 out of 100 possible points (Transparency.org, n.d.).

1.2. Problem Formulation

Global climate change is the most significant environmental issue facing the world. There no longer is any question that global warming is occurring and if humanity fails to significantly reduce greenhouse gas emissions over the next years, the possibility of facing catastrophic environmental harm by the end of this century is very real. The issues listed in the previous chapter lay the foundation for this study. If the implementation of carbon taxes is often seen as a fast and effective solution to tackle climate change, why is it still not more widespread? Is it harder to implement carbon taxes in countries where perceived corruption is higher? Are eco-friendly citizens more favourable to support carbon taxes? Does are all questions that are going to be addressed in the course of this study.

The key point of this study is to get insights regarding the public acceptance of carbon taxes, more specifically what are the main factors affecting consumer decision to pay higher prices as part of carbon taxing. Moreover, the researchers are interested in understanding if cross-national factors have an impact on this decision as well as individual factors, such as peoples' values and beliefs.

Therefore, by including all this considerations, the problem formulation was constructed as follows:

· What drives consumers to buy into the idea of carbon price and therefore accept it as part of the value proposition of companies

2. Literature Review

2.1 Literature Review Methodology

Research should be contextualized in relation to an existing body of literature, building on previous research on the subject. By doing so, the researcher is likely to identify topics that have not previously been addressed and can therefore provide justification for the research (Kuada, 2012).

Based on the methodology and the aim of the study, there are different approaches to conducting a literature review. According to Jesson, Matheson and Lacey, (2011) there are two main styles of literature review, the traditional approach, and the systematic approach.

In a traditional literature review, the purpose is to examine the literature and summarize it. A comprehensive background of the literature within the topic is presented in the review. Researchers use the traditional literature review as a means of getting an initial impression of the topic that they intend to approach through their research. Accordingly, traditional reviews are less focused and more wide-ranging than systematic reviews and are less explicit about the criteria for exclusion or inclusion of studies, which often lead to criticism of lack of transparency in this type of review (Bryman and Bell, 2007).

On the other hand, systematic reviews have been argued to be replicable, scientific, and transparent methods, seeking to minimize bias and requiring reviewers to gather all information concerning the phenomenon to be studied in an impartial manner (Denyer and Tranfield, 2009). According to systematic review proponents, this approach generates less

bias than the traditional review in addition to being more comprehensive (Bryman and Bell, 2007).

Based on the advantages discussed above, a systematic literature review approach is deemed suitable for this study. A systematic review would facilitate the study's objective nature and increase the validity of the study. Additionally, due to the functionalist paradigm, a comprehensive investigation of the subject is needed. This study uses a systematically constructed search strategy to gather all existing related literature on the topic, using inclusion and exclusion criteria.

Additionally, this study applies backward snowballing to complement the systematic literature review. In order to broaden the scope of the search, the backward snowballing method is used to discover additional articles and papers in a paper's references. By using backward snowballing alongside a systematic literature review, rather than conducting an additional search in another database, the study can be accelerated since relevant articles are already found, so it can start from the beginning. The authors attempt to identify the best possible coverage of relevant literature by applying backward snowballing (Wohlin, 2014).

2.1.1 Search Strategy and Inclusion and Exclusion Criteria

The purpose of the systematic literature review is to answer the research question " What drives consumers to buy into the idea of carbon pricing and therefore accept its value as part of the value proposition of companies". In order to gain a deeper knowledge of these constructs, it is necessary to firstly understand the concept of carbon pricing and then relate it to the consumer perspective, to identify what are the main drivers of public attitudes towards carbon taxes. The number of publications related to this topic can be overwhelming and therefore, inclusion and exclusion criteria must be set to reduce the scope of the search.

Scopus was the chosen research database to identify the most pertinent publication. This is due to the fact that it is the largest abstract and citation database of peer-reviewed literature, covering different scientific fields of science, social sciences, humanities and technology, and it features smart tools to track, analyze and visualize research.

Moreover, to complement the literature review with reliable data, reports from the World Bank and the IMF are going to be used in order to understand the evolution of carbon taxes in the world and the current state of carbon pricing in different countries.

After considering the main criteria for the search strategy, the keyword string search used in Scopus was as follow:

Keyword String: carbon taxes OR carbon pricing OR green taxes AND consumer attitudes OR public attitudes AND willingness to pay

After entering the keywords in the Scopus database, it returned 469 documents. In order to limit the search for more relevant articles, the search was afterwards limited to the subject area of social science and business, management and accounting. Moreover, only articles published in English were selected. After the new criteria, the search returned 300 articles. These articles were then examined regarding their title and abstract to exclude not relevant articles. Towards the end, after a careful reading of the remaining articles, 21 articles were deemed relevant to be included in the systematic literature review. Combining the results from the systematic literature review and the backward snowballing, the researcher identifies 29 articles regarding consumer willingness to pay for carbon taxes.

2.2. Systematic Literature Review

2.2.1 The 2030 Agenda and The Paris Agreement

Both the Paris Agreement and the 2030 Agenda for Sustainable Development were adopted in 2015, bringing about a change from legally binding emission reduction targets based on common indicators for developed nations only, towards voluntary commitments for all. The two agendas are based on a bottom-up approach whereby each country defines, takes action, and reports its development goals and ambitions. These goals are embodied in nationally determined contributions (NDCs) and National Sustainable Development Strategies (NSDS)(Mbeva & Pauw, 2016).

The 2030 Agenda embodies 17 Sustainable Development Goals (SDGs) and were signed by all United Nation member states. Its adoption strategy varies from country to country and it is based on each nation's needs and ambitions, nevertheless, the UN advises nations to employ sustainable development strategies as key instruments for guiding decision-making and implementation of sustainable development at all levels. Numerous countries have drafted NSDSs or likewise designated plans to encourage sustainable development within countries and within all government levels (United Nations, 2015).

The 2030 Agenda and Paris Agreement have a similar structure when it comes to their implementation and planning as they include a forward-looking process of commitment and a

backward-looking audit of development. The Agenda 2030 includes a target for climate action - SDG 13 - that calls for governments to tackle climate change and its impacts while the Paris Agreement is a bottom-up approach based on countries formulating action plans that set out their goals and priorities for a specific period of time. As Article 2.1 of the Paris Agreement states, climate change should be addressed as part of efforts to eradicate poverty and to achieve sustainable development (Janetschek et al., 2019).

It goes far beyond SDG 13 to connect these two Agendas, as many countries' NDCs include numerous SDG-relevant activities that do not only address climate change but also promote sustainable development. Typically, NDCs have frequent connections with SDG 7: Affordable and clean energy, as most of the NDCs have climate activities that focus on renewable energy and energy efficiency. The same applies to SDG 15: Life on land, which can be explained by the importance of sustainable forest management, the conservation of ecosystems, and carbon sequestration (Janetschek et al., 2019).

2.2.2 Carbon Pricing

Carbon pricing can be considered as a mean to reduce greenhouse emissions and drive investment into cleaner options. It follows the principle of a Pigouvian tax scheme, charging a tax on individuals or businesses for engaging in activities that create adverse effects on society (Cremer, Gahvari and Ladoux, 1998). These adverse effects are often referred to as negative externalities, having an impact on the consumption and production opportunities of others, but the price of the product does not take those externalities into account. A classic example of a negative externality is pollution, as the polluter considers only his direct cost and profit opportunity from production, rather than the indirect costs to those harmed by the pollution (Helbling, 2018). Indirect costs of pollution include deterioration of air and water quality, which translates to decreased quality of life for citizens living near polluting industries. Because the indirect costs are not carried by the producer, and therefore are not transferred to the final consumer of the goods, the social costs of production are greater than the private costs (Helbling, 2018).

Because these negative externalities constitute a form of market failure since the private market fails to yield efficiency from a general welfare perspective, some economists advocate government intervention in order to address the effects of externalities.

Today, greenhouse gas emissions constitute the greatest externality challenge. Human activity has accumulated greenhouse gases in the atmosphere, and this has been identified as a key contributor to global warming. The scientists expect that the problem will grow if no

policies are implemented to curb greenhouse gas emissions, eventually leading to climate change and its associated costs, such as reduced economic activity due to destruction of capital along coastal areas and reduced agricultural productivity. There are few mechanisms to compel those who benefit from GHG-emitting activity to internalize these costs and risks, and externalities come into play because the costs and risks from climate change are shared by humanity at large (Helbling, 2018).

It is possible for governments to price carbon through different options, all of which lead to the same result. They begin to capture what is known as external costs of carbon emissions – the consequences of damaging crops and increased health care costs due to droughts and heatwaves or damage to property from flooding and sea level rise – and relate them back to their sources by setting a carbon price.

A price on carbon helps shift responsibility for the damage back to those who cause it and can reduce it. Instead of telling polluters how or where to reduce emissions, a carbon price serves as an economic signal to those polluting to choose for themselves whether to stop or decrease emissions or to continue polluting while paying for it. In this way, the overall environmental goal is achieved in the most flexible and least-cost way to society. Additionally, the carbon price stimulates the development of clean technologies and market innovations, which drive the growth of lower-carbon economic sectors (World Bank, 2020).

Pricing carbon typically takes the form of either a carbon tax or a requirement to buy a limited number of permits to pollute, commonly referred to as cap and trade or ETS.

The cap-and-trade system caps greenhouse gas emissions and allows companies with lower emissions to trade excess allowances with companies with greater greenhouse gas emissions. By creating demand for emissions allowances, an ETS creates a market price for greenhouse gas emissions. The cap ensures that the necessary emission reductions will take place for the emitters to stay within their quota (Kachi, 2017).

With a carbon tax, sometimes called a fee, the price of a tonne of greenhouse gas is constant, regardless of what amount of greenhouse gas is being emitted. The price signal does not fluctuate negatively regardless of the amount of greenhouse gas emitted.

The decision of the instrument will depend on national and economic situations. Additional indirect ways to price a greenhouse gas more accurately could include fuel taxes, removing fossil fuel subsidies, and regulations that incorporate a "social cost of carbon." Greenhouse gas emissions should also be priced through payments for reducing greenhouse gas emissions. Individuals or sovereigns can purchase emission reductions to offset their own

emissions or to support mitigation activities through results-based financing (World Bank, 2020).

Implementing a carbon price alone does not guarantee that emissions reduction targets will be met. Most countries that adopted some form of carbon price have carbon price below $10 per tonne, and carbon pricing initiatives worldwide cover approximately 20% of global fossil fuel emission (Parry, Veung, and Heine, 2015).

By enhancing public acceptance of carbon pricing, the gap between actual carbon prices and those required to achieve ambitious measures to mitigate climate change could be closed (Klenert et al., 2018). Certain climate policy instruments, however, may be challenging to impose, particularly in some countries where gaining public support for climate policies can be difficult.

Political leaders are responsive to public opinion, at least in most democratic countries, and are aware of the risks associated with implementing policies people dislike that could weaken their credibility (Davidovic and Harring, 2020). To increase climate action, countries will have to implement policies to direct or encourage different actors, including consumers, to address their behavior and pay higher prices for taxed goods, including fuel, electricity, and automobiles (Mansbridge, 2014). The following section will investigate in-depth public attitudes towards climate policies and therefore their willingness to accept to pay higher prices for products where carbon price is embedded in the value proposition of a company.

It is impossible to establish an accurate price tag on all the damage that climate change causes, including the loss of biodiversity, ocean acidification, rise in sea level, drought, famine, transmission of tropical diseases, and other unforeseen consequences (Kachi, 2017).

However, it is becoming increasingly clear that the correct way to determine carbon pricing is to factor in the cost of meeting emission targets in accordance with the Paris Agreement goals of keeping global mean temperature 1.5-2°C below pre-industrial levels (Parry, Veung, and Heine, 2015). The high-level carbon pricing commission, an expert panel of economists working with the Carbon Price Leadership Coalition, concluded that the explicit carbon price level for reaching the Paris temperature targets is at least USD40-80/tCO2 by 2020 and USD50-100/tCO2 by 2030 (Stiglitz and Stern, 2017).

2.2.3 Public Attitudes Towards Carbon Taxes

In order to effectively address the need for large-scale collective action, policymakers must create institutions and policies that promote individual participation in the mitigation of climate change (Matti, 2015). However, a policy instrument's ability to effectively target climate change is not only dependent upon its political and administrative merits; it is also highly dependent on the reaction of its target audience. It has been shown that the extent of support a policy instrument enjoys among the public is highly correlated with its performance. Implementing policy instruments with weak public support, in turn, undermines government legitimacy, thereby jeopardizing its performance in the future (Stern, 2008), (Burstein, 2003).

Although carbon taxes are widely regarded as one of the most cost-effective ways to combat climate change, they are not as common as might be expected (Sumner, Bird, and Dobos, 2011). The carbon tax is relatively strong in Scandinavian countries, but it has been stopped, delayed, or even abolished by several countries due to lack of support, such as Australia, France, Canada, and the US (Matti, 2015).

There are numerous factors affecting public preferences for climate policies. Many studies point country-specific contextual factors, such as quality of government, levels of perceived corruption, post-materialist values and levels of environmental concern as key factors affecting public support for environmental taxes (Kallbekken and Sælen, 2011). Others, point individual motivations as the main determinant of public acceptance of climate policies. These individual motivations are related to environmental beliefs and personal norms and values Some researchers also focus on the policy specific characteristics, whereas is introducing a carbon tax or carbon trading schemes, and how these policies will affect individual’s freedom and the expected personal outcome of the policy as the main determinant of public acceptance of green taxes (Andrew, Kaidonis and Andrew, 2010). All these factors will be extensively examined in the next sections.

2.2.3.1 Individual Motivations

Literature asserts that people's value orientations define their acceptance of environmental policy instruments, since holding certain values (e.g., egoistic/altruistic) lead to their beliefs about environmental conditions, which influence their attitudes toward environmental policy instruments.

In his study about public opposition to carbon taxes, Levi (2021) identifies the recognition of climate change as a problem as the most important condition for predicting opposition to

carbon taxes. In fact, people are more likely to support costly climate policies if they understand and believe climate change is real, caused by humans, and an issue that should worry them (Levi, 2021). Moreover, the recognition of climate change as a problem is on his turn influenced by socio-cultural factors, including formal education and income (Ballew et al., 2020), frequency of media consumption (Thaker, Zhao and Leiserowitz, 2017) and political partisanship (Bergquist, Konisky and Kotcher, 2020).

People's political value orientations often affect their attitudes towards environmental policies. In this view, green taxes are more acceptable to people who are more left-oriented, since environmental protection calls for interventionist government action (Davidovic, Harring and Jagers, 2019). Furthermore, they tend to place social equality and welfare ahead of industry and commerce and are less hierarchical and individualistic (Fairbrother, 2016) and view environmental degradation as an inevitable consequence of capitalist exploitation of nature necessary for the capitalist way of production (Lewis, Palm and Feng, 2018).

Their rightist counterparts, however, favor free-market economic policies and are therefore less receptive to market-based environmental policy tools and they are also less inclined to prioritize environmental issues and concerns (Davidovic, Harring and Jagers, 2019).

However, in his study about trust and public support for environmental protection, Fairbrother (2016), suggests that this relationship varies across nations, and that individuals who are right-minded can be more supportive than those who are left-minded and that environmental protection has become a political issue in some countries as opposed to others (Fairbrother, 2016).

Another perspective views environmental attitudes as tied to a shift in people's values. According to Inglehart (1995), generations of wealthy, industrialized nations that reached adulthood during World War II have experienced a major shift away from materialistic values such as economic and physical security to "postmaterialistic" values such as freedom and quality of life (Inglehart, 1995). After postmaterialistic values became prevalent, progressive movements emerged, including environmental movements (Fairbrother, 2016).

A large number of studies have found a causal relationship between postmaterialistic values and environmental concern as well as preferences for environmental protection (Gelissen, 2007; Kidd and Lee, 1997) however, according to Guha and Martinez-Alier (1997) the postmaterialistic framework does not allow for the expression of environmental concern in the least developed countries (LDC). Inglehart (1990) assumes that the lack of a culture of environmental concern in LDCs stems from the fact that the environment is seen as a high-order value that poor people cannot afford to pay attention to (Dunlap and York, 2008).

People living in affluent nations are more likely than those living in poor nations to have postmaterialistic values, so they should be more concerned about the environment than people in poor nations (Dunlap and York, 2008).
In their article comparing results of the World Value Survey (WVS), Dunlap and York (2008), showed that citizens in poor countries were more concerned with environmental issues and supportive of efforts to resolve them than were their counterparts in wealthy countries. When either national or international governments are able to recognize the motivation to protect the environment among citizens of poorer nations, especially those whose livelihoods depend on access to natural resources, more effective policy can be developed (Martínez-Alier, 2003).

Another point of view sees environmental protection as an expenditure that is influenced by people's incomes (Franzen and Vogl, 2013). From this economic affluence perspective, protecting the environment is seen as a luxury; therefore, wealthy people are more likely to pay for it, in contrast, low-income people have much more pressing priorities (Fairbrother, 2016). According to most empirical studies, at an individual level, people with higher incomes also tend to be more concerned about the environment, though the impact is not significant (Fairbrother, 2012). In contrast, there is mixed support for the economic affluence perspective at a cross-national level, with some studies concluding that environmental concerns are stronger in richer countries and others concluding they are not (Franzen and Vogl, 2013; Gelissen, 2007).
It has been shown that awareness of the environment may arise from personal interest, but a growing body of evidence indicates that moral-normative concerns have even more impact on attitudes and, as such, pro-environmental policies are influenced by personal values (Matti, 2015, Davidovic and Harring, 2020). Among the most comprehensive and widely used individual-level models of environmentalism is the value-belief-norm (VBN) theory. The model argues that an individual's behavior is influenced by long-term value priorities, environmental beliefs, and personal norms, so that the concept of moral norms can be applied to the range of factors underlying the adoption of climate policy instruments on an individual level (Stern et al., 1995). Based on the VBN theory of environmental support, many behavioral activities are a result of a causal chain that begins with a set of personal values, which then lead to beliefs, in this case general environmental beliefs, awareness of environmental consequences, and finally the formation of personal norms of behavior (Stern et al., 1995).

The VBN model has been shown to be an excellent predictor of a range of pro-environmental behavior, as well as a means of elucidating the mechanisms by which behavioral predispositions arise. It also accounts for variance in a range of environmentally related behaviors (Stern, 2000; (Steg, Dreijerink and Abrahamse, 2005).

2.2.3.2 Policy Specific Beliefs

Prior studies on political preference formation suggest that preferences for a particular policy instrument, e.g., carbon trading schemes rather than carbon taxes or increased emission regulations, are linked to its perceived characteristics. For climate policy support models to be accurate, beliefs about the consequences of the policy's implementation should be included in order to accommodate the possibility that a policy instrument's attributes might mediate the effects of individual motivation (Matti, 2015).

Governments have several different types of climate policy instruments at their disposal, including taxes, fees, subsidies and regulations. They can either push people in a certain direction (e.g. taxes), or they can choose to pull them in another direction (e.g. subsidies).

Different types of climate instruments are, however, difficult to categorize and distinguish because they often go together and can be introduced as policy packages. Furthermore, figuring out whether a particular instrument is rewarding or punishing can be difficult. The same measure that is punishing for someone who behaves in an environmentally unfriendly manner can also be perceived as rewarding for someone who behaves in an ecologically friendly manner (Davidovic and Harring, 2020). Moreover, there is a substantial cross-national variation in environmental policy support, and that citizens prefer different types of environmental policies in different contexts (Harring, 2015).

There are multiple ways a policy instrument can affect public acceptance towards green taxes. Previous studies have identified personal outcome expectancy, fairness and freedom as the main facets affecting individual’s response to policy instruments.

An individual's personal outcome expectancy is the amount of costs he or she can expect to incur when a policy is implemented. This is true either if the policy does not yield any behavioral changes or if the policy results in a behavioral change (Schuitema, Steg and Forward, 2010). The calculation of the value and cost of cooperation is the starting point for collective action decisions (Matti, 2015). The fact is that pro-environmental behavior tends to be governed by a value-based sense of collective benefits, but individual decisions against

introducing a particular policy instrument are often driven by a lack of alternative behavioral options and consequences to personal utility (Guagnano, Stern and Dietz, 1995).

Public attitudes towards new climate policies are also based upon perceptions of distributional impacts. It is highly significant for the level of support that a policy instrument receives whether it is perceived as fair (Jakobsson, Fujii and Gärling, 2000). It is important to note, however, that perceptions of fairness aren't necessarily tied to the type of policy instrument, such as a tax or a subsidy, but rather to the design of the specific policy. Additionally, how revenues from carbon taxes are used greatly influences public acceptance of the taxes (Hammar, Jagers and Nordblom, 2009).

On their study about the optimal use of carbon revenues, Klenert et al. (2018), found that even though uniform and targeted distributions to citizens, or mixed approach packages including green development can address public concerns over fairness of climate policy instruments, the lump-sum dividend tends to be more stable in the long term, particularly in countries experiencing economic inequality, political distrust, and polarization (Klenert et al., 2018). For instance, a carbon tax increase might be perceived as highly unfair to those with few alternatives to driving and with constrained personal budgets, but by utilizing the revenues to expand public transportation, this perception would be significantly mitigated, as it would lessen the negative effects of making the cost of private transportation higher (Matti, 2015).

The degree to which a policy instrument appears to impede the individual's freedom of choice also has an effect on its acceptability, meaning that policy instruments that restrict individuals' choices are also viewed as less fair (Eriksson, Garvill and Nordlund, 2006). However, the degree to which policy specific beliefs vary depends on individual beliefs and country specific contexts. An individual's willingness or capability to personally comply with the mandated behavior change may affect how much support they give to a policy instrument depending on the importance of personal autonomy as a key value (Matti, 2015).

2.2.3.3 Trust

As a form of collective action problem, environmental problems can be characterized as social dilemmas. Therefore, there is a tendency for short-term gains from abusing the environment to exceed collective losses over a longer period of time, thus counteracting cooperative behavior. The government, at all levels of governance, must intervene when

certain environmental problems are beyond the abilities of individuals or collective initiatives on an individual or local scale (Harring and Jagers, 2013).

Individuals should consider the risks of both generalized cheating by others as well as corruption and incompetence on the part of public officials and policymakers when they are assessing the appeal of new green taxes (Fairbrother, 2016). If individuals have the perception that other people will evade taxes there is no motivation to pay them. In contrast, trusting others to obey the rules increases the likelihood of individuals committing to the rules themselves (Ostrom, 2010).

Those nations with greater trust should benefit the most from environmental protection, and within those nations, people should be more supportive of the benefit of collective action for environmental protection (Fairbrother, 2016). Moreover, since the uncertainties about the behaviour of other actors grow with the complexity of the environmental problems, a cooperative strategy runs the risk of becoming prohibitively expensive for the individual if other individuals choose to free-ride rather than pay for the good (Harring, Jagers and Matti, 2017).

Institutional Trust

Institutional trust is crucial for the public's support of policies and fully implementing a policy instrument depends on both governments' abilities to monitor compliance and present viable alternatives for the public to choose from. Public trust in government and the way they manage revenues generated by taxes is one of the dominant explanations for low levels of public support, according to many studies (Kallbekken and Sælen, 2011; Harring and Jagers, 2013 Dresner et al., 2006).

The institutional quality, or quality of government (QoG) is linked to both political trust and institutional trust and it is broadly defined as the level of corruption and impartiality, and the quality of public services (Rothstein and Teorell, 2008).

The relationship between political trust and policy support is simple, because people are more likely to accept regulations from institutions they regard as trustworthy. When citizens are confident politicians are proposing good and efficient policy solutions, and no tax revenues will go to waste and the state authorities will use these funds for public goods, they are more likely to support state policies (Harring and Jagers, 2013).

In high-QoG countries, citizens have a norm of following rules and trusting both state institutions and others. People in low-QoG countries tend to have low trust in the state, and many people have inferred that the corrupt, inefficient, and unfair behavior of government

officials and bureaucrats is acceptable and expected. When trust in the state is low, compliance with policies will be lower (Davidovic and Harring, 2020).

Additionally, people in countries where governments are dysfunctional are more likely to demand intervention by the authorities and to favor punishing methods. In comparison with people living in less corrupt contexts, those in corrupt contexts are more likely to prefer severely punishing those who harm the environment instead of rewarding citizens with tax breaks (Harring, 2015).

Trust in others

Providing a healthy environment is often considered a collective good. However, such provision of goods is typically fraught with social dilemmas and free-riding opportunities (Klenert et al., 2018). Individuals generally choose not to collaborate but, instead, engage in behaviour that benefits them individually but harms the environment, thereby depleting the general supply of the good (Davidovic and Harring, 2020).

Despite their support for environmental taxes, people still doubt that others will follow and act environmentally friendly. Such behaviours are motivated by the need to counterbalance the adverse effects of selfish behaviour (Hammar, Jagers and Nordblom, 2009). In addition, the policy tool is based on cooperation, so if people perceive that their fellow citizens are dishonest or doubt that the environmental tax will be respected, they are less inclined to support the idea (Davidovic and Harring, 2020).

The acceptability of increased taxes is dependent on the degree to which they can be avoided, indicating a suspicion that others will not comply. It stands to reason that the more difficult to evade taxes, the more willing people are to accept an increase. Additionally, the lower the trust in citizens, the more people perceive that taxes are systematically evaded (Hammar, Jagers and Nordblom, 2009).

Thus, there are many ways that public support for carbon taxes can be guided by trust in others (Matti, 2015). In part, mistrust for others' willingness to engage in voluntary behavioural change can fuel a general support for policy measures that mandate change or compensate for deficient behavior, particularly if the problem is viewed as highly pressing. Additionally, low levels of interpersonal trust can negatively affect evaluations of a plan's efficiency and fairness, which in turn can reduce support if the plan is perceived as being too easy to evade by free-riders (Hammar, Jagers and Nordblom, 2009).

2.3 Research Questions

Based on the systematic literature review, some key themes were identified related consumer's willingness to accept carbon taxes as part of companies' value proposition and will be synthetised in the follow research questions:

RQ1: Country-Specific variables, such as the quality of the government and social trust affect consumer's willingness to pay for carbon taxes.

Based on research question 1, the following hypotheses were developed:
H1: Living in countries with higher levels of political trust has a positive influence in consumer willingness to pay for carbon taxes.
H2: Living in countries with higher levels of social trust has a positive influence in consumer willingness to pay for carbon taxes.

RQ2: Individual motives, including beliefs and values affect consumer's willingness to pay for carbon taxes.

Based on research question 2, the following hypothesis were developed:
H3: Recognition of climate change as a problem has a positive influence in consumers' willingness to pay for carbon taxes.
H4: Having higher post-materialistic values have a positive influence in consumers' willingness to pay for carbon taxes.

2.4 Conceptual Framework

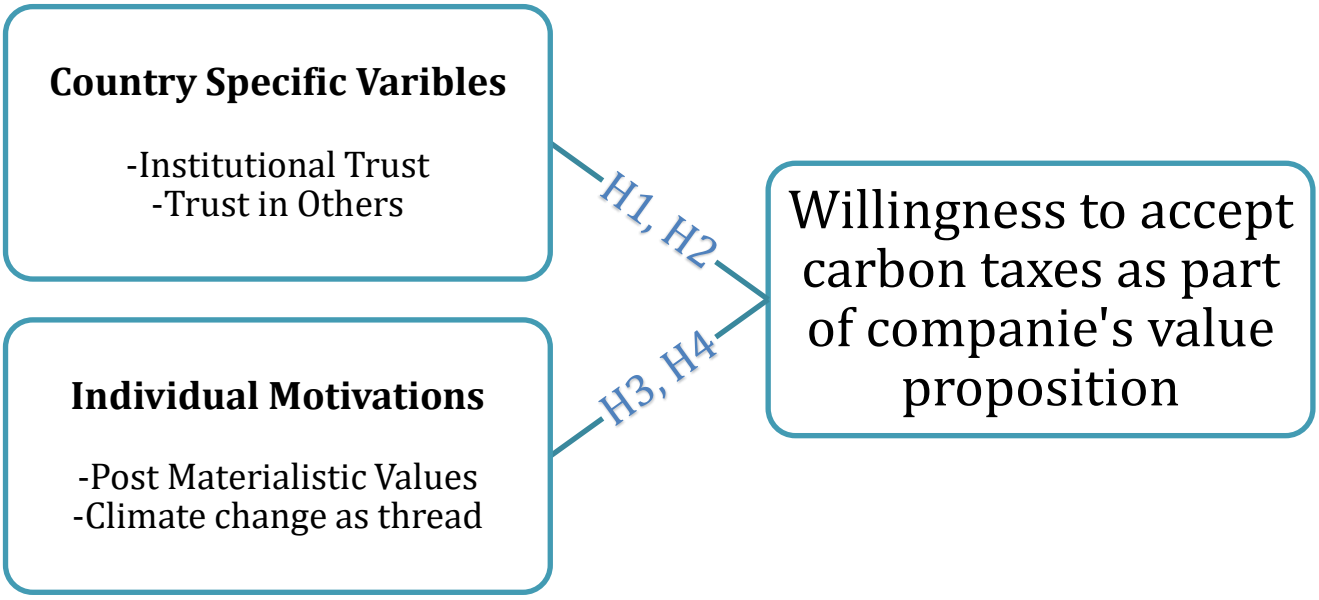

Figure 1- Conceptual Framework, own compilation

3. Methodology

The following chapter outlines the content, design, and philosophy of the thesis and provides a guideline on how the research questions will be answered. Having a methodological approach explained is crucial to the understanding of the researchers' viewpoint when undertaking the research, along with how they record the findings and analyse them.

Furthermore, it ensures that the paper meets academic standards and has a structure that is suitable for a scientific paper.

Different methodological views make certain ultimate presumptions beforehand about the subject of study and it affects how problems, as well as techniques to solve those problems, are seen. Following is the paradigm concept, which describes the basic philosophical assumptions underlying the practical research. An operative paradigm relates a methodological view to a specific study area and lastly, the study area discusses the design of the survey and what data collection methods were used to conduct the research.

Establishing the context in which the study takes place will greatly influence the manner in which the problem is viewed and the way data is collected. In addition, a clear understanding of both the paradigm and the philosophy of science will determine the research design as well as the data collection methods (Arbnor and Bjerke, 2009).

Kuanda (2012) presents four levels of research design steps in social sciences, as illustrated in Figure 2, and this study will be based on his theory.

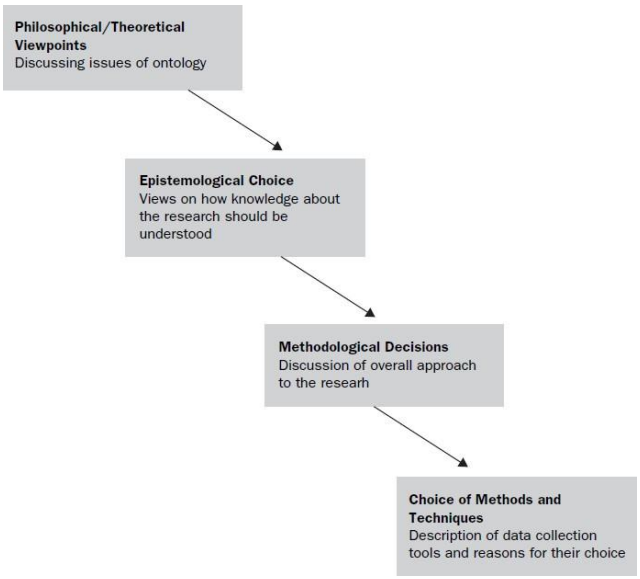

Figure 2 - Four levels of research design, source: Kuanda(2012)

3.1. Ultimate Presumptions

As individuals rely heavily on assumptions based on personal experiences to frame their worldview, their perspectives can differ according to them, and therefore, the philosophical and theoretical perspectives need to be provided so that readers can comprehend the parameters and the way the intentions of this study are conducted. The ultimate presumptions work as a guideline for scholars on how to investigate and obtain knowledge about the world,

what data to collect and how it should be interpreted and explained. It is thus crucial to determine a researcher's views and define the methodological circumstances before a study is conducted.

Therefore, whether this study has an objective or subjective view of the world impacts the way the analysis is conducted and the methods of data collection are selected. Defining the epistemological considerations, which is the way knowledge is gathered within the parameters defined by the actors, is also important to understand the view of the world from the writer's perspective (Kuada, 2012).

3.1.1 Ontological Considerations

Ontology is a term used by philosophy of science scholars to describe the nature of what the researcher seeks to know. There are generally two broad perspectives on the social world. According to some scholars, the social world is a reality external to an individual person and, therefore, imposes its will upon his or her consciousness while others believe that individuals create their own social world (Kuada, 2012). In ontology, the central issue is whether social entities are objective beings that exist separately from social actors, or if they are social creations of the perceptions of social actors (Bryman and Bell, 2007).

These positions are often referred to as objectivism and constructionism. Objectivism suggests that the social phenomenon and the meanings associated with them exist independently of social actors. Essentially, it implies that the social phenomenon and the terms we use in everyday discourse are separate from the actors. Alternatively, constructionism makes the case that the social phenomenon and its meanings are constantly achieved by social actors. In other words, social categories and phenomena are created not only through social interaction but are constantly being revised (Bryman and Bell, 2007).

This paper takes the ontological position of objectivism. This approach assumes that both organization and culture seem to be independent of the actor itself and have a tangible existence of its own (Bryman and Bell, 2007). This study focuses on collecting empirical data on political trust, green consumer behavior, and public acceptance towards carbon taxes, and therefore it aims to contrast various results in a quantitative manner. The paper analyzes the data objectively, as a whole, rather than taking into consideration the beliefs of each participant of the survey.

3.1.2 Epistemological Considerations

Epistemology is a concept that describes the nature of knowledge and the mean of knowing. Researchers hold the view that one can know the truth about a particular social world, whereas others maintain the social world can only be understood solely by placing oneself in the place of the actor under study (Kuada, 2012). According to Bryman and Bell, 2007 there are two main epistemological views, realism and interpretivism. According to the realist perspective, scientists should implement the same kind of methodology to collect data and explain phenomena as they do to the physical and the social sciences, committing themselves to the view that external reality must be taken into account when making decisions. Contrary to this, Interpretivism holds that a strategy must be applied which respects the differences between people and the nature of the natural sciences and hence requires the social scientist to grasp the subjective meaning of social action (Bryman and Bell, 2007).

Taking on the same principle as ontology, this paper follows a realistic approach in order to generate valid and reproducible data. Validation and reproducing quantitative data imply greater reliability than subjective data does and therefore emotions and personal beliefs tend to imply a greater bias.

3.2 Operative Paradigm

In modern days, the term paradigm is first attributed to Kuhn (1970). It is his contention that every field of scientific inquiry is shaped by a set of commonly held ideas about the phenomenon being studied, the kind of questions appropriate to ask about the phenomenon, the type of approach to answering research questions, and the manner in which the results should be interpreted. These characteristics collectively are known as a paradigm. (Kuada, 2012).

Understanding how the answer to the research questions was reached is essential to understanding how they should be interpreted. Paradigms have an objective and subjective approach depending on how the researchers see the world and various approaches of blending them depending on what kinds of paradigms they follow.

According to Kuada (2012), there are three main typologies to classify the paradigm: the FISI(functionalist, interpretivist, structuralist, interactionist) classification, the RRFI (radical humanist, radical structuralist, functionalist, and interpretivist) classification, and the Arbnor and Bjerke’s six paradigms and three research approaches. In addition, each paradigm gives

greater weight to some research issues than others, so a researcher's chosen paradigm can impact how he will define and research issues in his project (Kuada, 2012).

Burrell and Morgan (1979) RRIF classification system has become very influential in organizational studies. They categorize approaches to sociology as "sociology of regulation", which implies a focus on the explanation of the stability and order within human social units, and "sociology of radical change", which describes issues like change, conflict, and coercion within social units. This approach provides the opportunity for Burrell and Morgan to contrast functionalist and interpretive paradigms with radical humanist and structuralist paradigms, thereby producing four paradigms for organizational analysis and by extension the list of paradigms in social science can be extended to cover a more comprehensive range of principles (Kuada, 2012). The four paradigms mentioned in the RRIF classification are depicted in Figure 3.

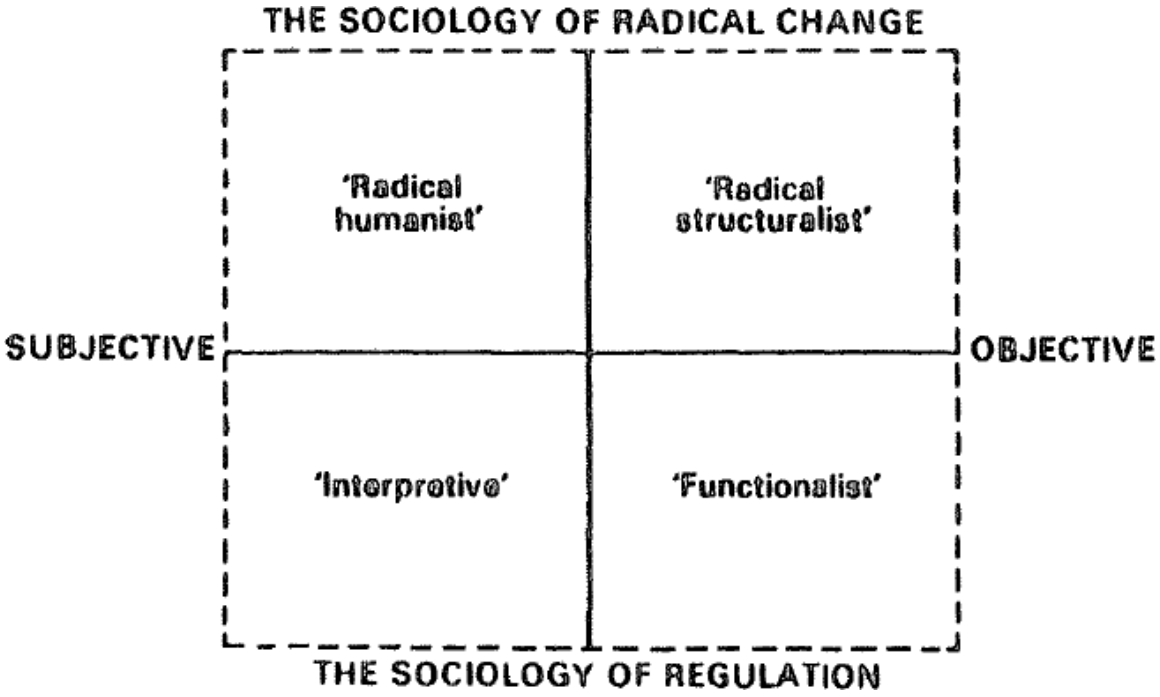

Figure 3 - RRIF, Source: Burrel and Morgan (2012)

A functionalist paradigm aims to provide rational explanations of social affairs that are highly pragmatic in perspective, concerned to generate knowledge that can be applied in society. It is usually problem-oriented and focuses on finding practical solutions for practical problems (Burrell and Morgan, 2017).

A primary concern of the interpretive paradigm is understanding the physical world at the level of the subject's subjective experience, to get a broader perspective on the activities in his or her life. It tries to find explanations within the frames of reference of participants rather than the actor or observer.

In its approach to social sciences, the radical humanist paradigm shares much in common with the interpretive paradigm, but its frame of reference is committed to an idea of society that emphasizes breaking free from the constraints of existing social orders.

According to the radical structuralist paradigm, sociologists of radical change should approach the problem from an objective standpoint. They argue that radical change is woven into the structure and nature of society, explaining the basic interrelationships within the total social systems they examine.

Each of the above-mentioned paradigms considers some research issues to be more important than others, and therefore the choice of paradigm influence the research and vice versa. A researcher should reflect on the assumptions underlying the theories he or she chooses as a reference for his or her own study.

The RRFI classification was considered the most appropriate to represent the methodological development of this study. Critical perspectives allow the researcher to contrast functionalist and interpretive paradigms with radical humanistic and structuralist paradigms to produce four paradigms for organizational analysis, thereby expanding the traditional paradigms of analysis.

Additionally, with this paper’s objective and realistic ontology and epistemology, a functionalist paradigm was selected in order to focus on social issues from an objective perspective. Therefore, the researcher may put himself or herself forward as an object of scientific scrutiny by adopting a credible scientific methodology.

3.3. Research Design

Research strategy can be viewed as a board orientation to business and management research, wherein the researcher decides whether to pursue a qualitative or quantitative analysis. In addition, the research strategy decision is not sufficient for producing a reliable piece of research. It is crucial to identify the decision regarding research designs and research methods (Bryman and Bell, 2007). As stated by Bryman and Bell (2007), the research design provides a framework for the collection, analysis, and interpretation of data, as well as the weights given to various components of the research process. These aspects incorporate the relationship between a problem and theory, a method and its results (Bryman and Bell, 2007). A research method, on the other hand, is a technique to collect data and it involves a specific instrument. They are often used interchangeably, however they represent different things. As an example, a case study is a type of research design and it involves the detailed examination of a specific case and after it is selected, a research method is needed to gather the data. It is not enough to choose a topic and decide to study it intensively in order for the necessary data to be collected (Bryman and Bell, 2007). Research requires reflection on methods that better fit the phenomena that are being investigated, as well as how to make them consistent throughout the whole study.

According to Bryman and Bell (2007), there are specific designs a researcher can choose according to the phenomenon that is being studied: Longitudinal design, experimental design, case study design, comparative design, and cross-sectional design.

Given the fact that this study follows an objective philosophical approach of quantitative nature, the chosen research design is a cross-sectional design. A cross-sectional study is one in which data are collected from more than one individual subject at a single point in time in an effort to collect a collection of quantitative data on two or more variables, which are then examined for patterns of association (Bryman and Bell, 2007). From this definition, it becomes evident that cross-sectional design is the most appropriate research design since the aim of this study is to identify the variation of citizens' attitudes toward carbon taxes in various countries at a particular time rather than through the use of multiple measures over an extended period. Moreover, the differences between green purchase behavior as well as perceived political corruption among these countries will also be examined. Quantitative data will be used in a standardized and systematic way to provide the researcher with a consistent benchmark in order to find specific patterns of association. In this particular case, the aim is

to find correlations between country specific variables and individual motivations and consumers' willingness to pay for carbon taxes.

3.3.1 Reasoning

There are several approaches to reasoning, and according to Bryman and Bell (2007) the most common ones are deductive and inductive approaches.

Among social science researchers, deductive theory is most common. Furthermore, it is based on already existing knowledge in the literature and theoretical considerations, and then hypotheses are deduced which are empirically assessed. In research, hypotheses are tested to see if they are true or rejected based on contrary evidence. When hypotheses are derived and data collection takes place, researchers need to ensure that the data is aligned with the given hypotheses (Bryman and Bell, 2007). It is important to implement the findings of the research, and to enrich the existing theory. As a matter of fact, deduction is usually associated with quantitative research (Bryman and Bell, 2007).

By contrast, induction takes an opposite approach. A better understanding of the investigated issue can be gained by using this method. A research task is to interpret the data collected after observations and findings (Bryman and Bell, 2007). Additionally, Saunders et al. (2009) describe it as a three-part process. First, observe the object being investigated. Second, to build behavior patterns based on observations, and then to make conclusions based on these patterns and lastly to develop theories based on these conclusions (Saunders et al., 2009).

The deductive theory approach will guide this research. Following the literature review, hypotheses will be presented based on possible theories. Quantitative research questionnaires will be used to determine whether those hypotheses are true or false.

3.3.2. Research method

Researchers should consider qualitative data, quantitative data, or mixed data when creating knowledge. The kind of data collected is often determined by the research methods used in a paper. In general, a researcher seeking subjective insights is advisable to gather his data by means of interviews. This is because interviews can be done in a qualitative manner while dealing with subjective insights. Also, assuming the researcher wishes to gain insights in a quantitative manner, the survey methodology can be used which allows for the collection of data in a quantitative manner and, thus, for it to be objective. Occasionally, quantitative and qualitative methods can also be combined to create mixed data (Bryman and Bell, 2007).

Given the quantitative nature of this research, a questionnaire was the chosen method as it allows the researcher to test hypotheses derived from theories that were investigated. Through this kind of method, causal relationships between specified variables may be investigated. The researcher can collect, organize, and analyze data using standardized procedures and approaches to collect and organize data that are sufficiently general to make the research's results more reliable (Kuada, 2012).

Before the survey is conducted, a systematic literature review is done in order to acquire secondary data on carbon taxes, perceived corruption, and green purchase behaviour.

In the thesis, the literature review is considered the first method of collecting data, to formulate the research questions. After this, a conceptual framework is developed to assist in summarizing the findings of the literature review, by taking into consideration the constructs most encountered in carbon taxes.

3.3.3 Data sources

In every survey, data is the most important component. Data is the only means by which analysis can be performed and conclusions can be drawn to answer research questions. Furthermore, data is used to test hypotheses developed during research, which can then be evaluated statistically (Bryman and Bell, 2007). According to Bryman and Bell (2007) there are two main forms of data sources: primary and secondary.

Traditionally, primary sources of data refer to data that is collected directly by the researcher and that has not been collected previously. Among the advantages of collecting primary data is its ability to be collected precisely as needed by a researcher (Bryman and Bell, 2007). The main methods of primary quantitative data collection are structured interviews and questionnaires, and structured observation, which is a systematic method for gathering people's observations (Bryman and Bell, 2007). However, primary data collection can be costly and time consuming thus, researchers should be aware if the necessary data is already available. This type of data, it is called secondary as it is collected from a previous research but not gathered specifically for the purpose of the current study.

In secondary analysis, data are analysed by researchers who were not involved with the collection of the data, and most likely for different purposes from those for which they were collected. This type of analysis can involve both quantitative and qualitative data (Bryman and Bell, 2007). There are numerous advantages related to the use of secondary data, for instance, the access of high-quality data as in many of those datasets the sampling procedures have been extremely rigorous, and the samples are often conducted at a national level

covering a large variety of a country's regions. Moreover, it allows for a subsetting analysis, to extract the data that is relevant for the particular study and offers the opportunity for cross-cultural analysis, since conducting primary data for cross-national studies can impose certain difficulties related to language and cultural differences (Bryman and Bell, 2007).

To conduct this research, secondary sources will be used to collect data. The reason is that data collected must follow a set of rules which makes it more valuable and allows the researcher to devote more time to searching the literature, analysing and interpreting the data. In particular, the secondary data to use in this study is retrieved from the European Social Survey (ESS), a multi-national, academic survey that has been conducted all across Europe since 2001. A cross-sectional sample of newly selected individuals is interviewed every two years (Europeansocialsurvey.org, 2013).

Over thirty countries participated in the survey which measured attitudes, beliefs and behaviours among diverse populations. ESS aims at charting social structure, conditions, and attitudes throughout Europe, and achieving and spreading higher standards of rigor in social science research across countries (Europeansocialsurvey.org, 2013).

ESS consists of a set of questions divided into two main sections - a core section and a rotating section. During each round, the core section features a variety of themes that are largely the same, whereas the rotating section features specific topics. ESS round 8, conducted in 2016 was chosen by the researchers, as the rotating component of this survey is aimed at public attitudes regarding climate change, since this study is about consumer willingness to pay for carbon taxes. There are four main aspects covered in the module: beliefs regarding climate change, energy security concerns, personal norms, efficacy and trust, and energy preferences. By analysing the role of socio-political values and actions, the module will increase understanding of how Europeans perceive climate change and energy security, as well as the relative importance of individual motivations and national contexts when evaluating their views on energy (Europeansocialsurvey.org, 2013).

Moreover, since the ESS covers a variety of countries in Europe, and the aim of this study is to analyse the main differences between consumers in Portugal and Sweden, only the respondents from these countries were selected, resulting in a total of 2821 respondents, 1270 from Portugal and 1551 from Sweden.

Thus, since not all the questions were relevant for this study's analysis, after a careful reading of the questionnaire, some pertinent questions were selected to provide data to answer the research questions. The selected questions are depicted in the next chapter.

3.3.4 Survey Method

Variable	Item	Measurement	Source
Country Specific Variables	Institutional Trust	Trust in country's parliament	(Franzen and Vogl, 2013; Fairbrother, 2016; Gelissen, 2007 Kallbekken and Sælen, 2011; Harring and Jagers, 2013 Dresner et al., 2006).
		Trust in the legal system	
		Trust in politicians	
	Trust in Others	Most people can be trusted	
		Most people try to take advantage of you	
Individual Motivations	Recognition of Climate Change as a problem	To what extent feel personal responsibility to reduce climate change	Levi, 2021; Gelissen, 2007; Kidd and Lee, 1997 Ballew et al., 2020 Inglehart, 1995 Matti, 2015 Thaker, Zhao and Leiserowitz, 2017).
		How worried about climate change	
	Post-materialistic values	Important to help people and care for others well being	
		Important to care for nature and environment	
	Political Partisanship	Placement on the left right scale	
	Economic Freedom and Education	Highest level of education	
		Household's total net income	
Willingness to pay		Favor increase taxes on fossil fuels to reduce climate change	

Table 1- Measuremets table, own creation

3.3.5 Sampling

Almost invariably, sampling is required in quantitative research as it is the process of choosing a sample of the total population to answer the questionnaire, since it is impossible to question the entire population (Bryman and Bell, 2007). According to the literature, there are two main sampling methods, probability and non-probability sampling (Saunders, Lewis and Thornhill, 2015). Based on a probability formula, probability sampling refers to the technique of selecting samples from a population. It is essentially based on the principle that all individuals in a population should have an equal chance of being selected through random selection. As opposed to a probability sampling, with non-probability sampling there is no way of predicting the probability that a unit will be selected. There is a chance that researcher judgment may influence selections in non-probability sampling and thus, certain individuals will be more likely to be selected than others (Saunders, Lewis and Thornhill, 2015).

The survey conducted by the ESS "*involves strict random probability sampling, a minimum target response rate of 70% and rigorous translation protocols." (The ESS Data Archive, 2020).* Furthermore, each country must have an effective sample size of 1500 individuals, and no quota sampling is allowed at any time; samples must be representative of the population aged 15 or older. It is the responsibility of each national team to produce a sample design that complies with ESS sampling principles and is suitable for use in their country (Europeansocialsurvey.org, 2013).

The ESS also apply weighting in their surveys. Since the ESS uses rigorous probability-based samples, every element in the ESS target population should therefore have a greater than zero probability of being included in the sample. Analysis of ESS data estimates must also take into account the likelihood that each respondent will be included in the sample - which means that the most accurate estimates will be obtained only after weighing the data (Europeansocialsurvey.org, 2013).

There are three weighting variables available for ESS surveys - post stratification weight, design weight, and population weight. Since this research aims to analyse data of different countries, the population weight was chosen. In a country, the weights assigned to each person are the same, but there are differences between countries. Due to the different population sizes in most ESS countries, these weights compensate for the difference in

sample sizes. A figure that combines data from more than one country might be biased, overrepresenting smaller nations at the cost of larger ones. In order to ensure that each country is represented proportionally to its population size, the population size weight is adjusted. Moreover, the post-stratified design was also implemented to reduce sampling error and non-response bias, using auxiliary information. The post-stratification targets use information about age, gender, education and region. (Europeansocialsurvey.org, 2013).

3.3.7 Pretesting of the survey

A national pretest involving personal interviews took place in all participating countries. The number of pretest interviews exceeded the minimum number of 30 in all countries except for Belgium and Iceland. In the median country, 34 pretest interviews were conducted, and in 9 countries there were 50 or more pretest interviews. The pretest was properly completed before the start of fieldwork in all countries except for Finland and Iceland, where it was completed less than half a week and 4 weeks after the start of fieldwork, respectively. Among the 16 countries where the pretest was completed before the start of fieldwork and fieldwork started in fairly good me and, the pretest was completed between 1 week (the Netherlands) and 10 weeks (Sweden) before the start of the fieldwork. Pretesting took between less than half a week (Switzerland) and 5 weeks (Sweden). In the median country, pretesting took 1.5 week (NSD - Norwegian Centre for Research Data for ESS, 2020).

3.3.8 Validity and Reliability

Reliability and validity are two of the most important evaluation criteria for business research. The reliability of a study concerns the question of the reproducibility of its results. Often, the term is used in connection with questions regarding consistency of measures designed for concepts in business (Bryman and Bell, 2007). According to Bryman and Bell (2007) there are three main factors involved when considering whether a measure is reliable - stability, internal reliability and inter-observer consistency. Stability is concerned if a measure is stable over time, so that the researcher can be confident that the results of a survey do not fluctuate. Internal reliability is related to if the respondents' answers on any one indicator are related to the scores on the other measures. Lastly, inter-observer consistency is related to the subjective judgments involved in the recording of observations, or the translation of the data (Bryman and Bell, 2007).

Validity refers to the degree to which a method measures what it is intended to measure, and it can be divided into measurement validity, internal validity, external validity and ecological validity (Bryman and Bell, 2007). Measurement validity concerns whether a measure that is created for a concept really does reflect the concept that is intended to detonate. An internal validity test is one that determines whether some conclusion based on causal relationships rests with any validity. External validity is concerned with the generalizability of a study's findings beyond its specific circumstances. Lastly, ecological validity examines the question whether it is possible to apply the findings of social science to people's everyday social environments (Bryman and Bell, 2007).

In order to ensure the validity and reliability of their surveys, the ESS data is collected using the highest methodological standards. This is done by applying measurement quality of individual questions to strengthen the relationship between the concept of interest and the observed answers. This relationship is estimated by using the multitrait-multimethod approach, which involves asking the same respondents to complete three surveys measuring different concepts twice by using different response scales. Moreover, they use the survey quality predictor (SQP), a licence online software, to combine the indicators of a concept into a single measure to facilitate its use in further analysis. A quality report is also provided by the ESS, a report that includes a comprehensive overview of the survey's data quality, which includes the assessment of both the survey's process and its output quality week (NSD - Norwegian Centre for Research Data for ESS, 2020).

4 Data Analysis

This chapter will present the collected secondary data and the analysis of the same. Firstly, an exploratory data analysis will be performed to show the demographic and social aspects of the participants as well as country-specific variables in order to understand the differences and similarities between the two countries. Later, a statistical model will be performed using the online analysis tool presented in the ESS website to prove or refute the hypothesis.

4.1 Socio-Demographic Variables

Face-to-face interviews were conducted in all participating countries during Round 8 of the ESS. A paper-and-pencil survey (PAPI) was used in 14 countries, although many have already moved to computer-assisted personal interviews. ESS supplementary questionnaires were administered in all countries except for Hungary as an addition to the face-to-face interview (NSD - Norwegian Centre for Research Data for ESS, 2020).

Regarding the duration of the questionnaires, the sampling design was signed off only after the end of June 2016, and pretesting was completed after the end of August 2016. In Sweden, the complete deposit of all data was made by the end of August 2017, whilst in Portugal, the complete deposits were made between the second week of September 2017 and the end of August 2018 (NSD - Norwegian Centre for Research Data for ESS, 2020).

The first demographic variable to be analysed is education, where the different colours correspond to different levels of education, as ilustrated on Figure 4, people who are more educated are situated on the right side of the graph, in relation to their country. In Portugal, 34.3% of the population only completeded primary education, and 20.6% only completed elementary school, whilst in Sweden this numbers are lower, with 7.3% of the population only completing primary school and 14% only completing elementary school. It is therefore possible to presume that citizen of Sweden have higher levels of education that their counterpart in Portugal.

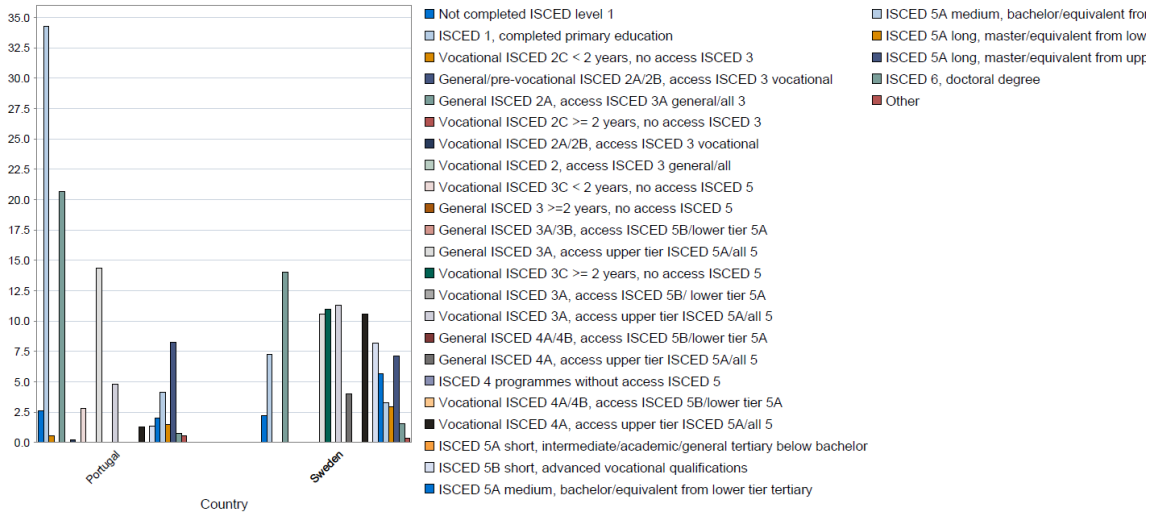

Figure 4 - Socio-demographic data - education, ESS Online Analysis Output

In order to analyse the income variable, the question: "Which of the description on this card comes closet to how you feel about your household's income nowadays?" was used. It was measured on a scale from 1 to 4, with the 1 value corresponding to "living comfortably on present income" and the value for to "very difficult on present income". The reason for choosing this question rather than the total net income was due to the fact that the researchers were more interested in the social behaviour of the respondents than the quantitative net income.'

As depicted on Figure 5, it is possible to observe that the majority of Sweden's population, 67%, is living comfortable with the present income while 25,6% of the population is coping on present income. The reality is very different in Portugal, where only 18.7% of the population is living comfortable with their incomes, and about half of the population is receiving only enough to survive with their present income, moreover, 17% of the population sustains that it is difficult to survive with their current income. Figure 5 illustrates the big disparities between these two countries regarding their citizen's net income.

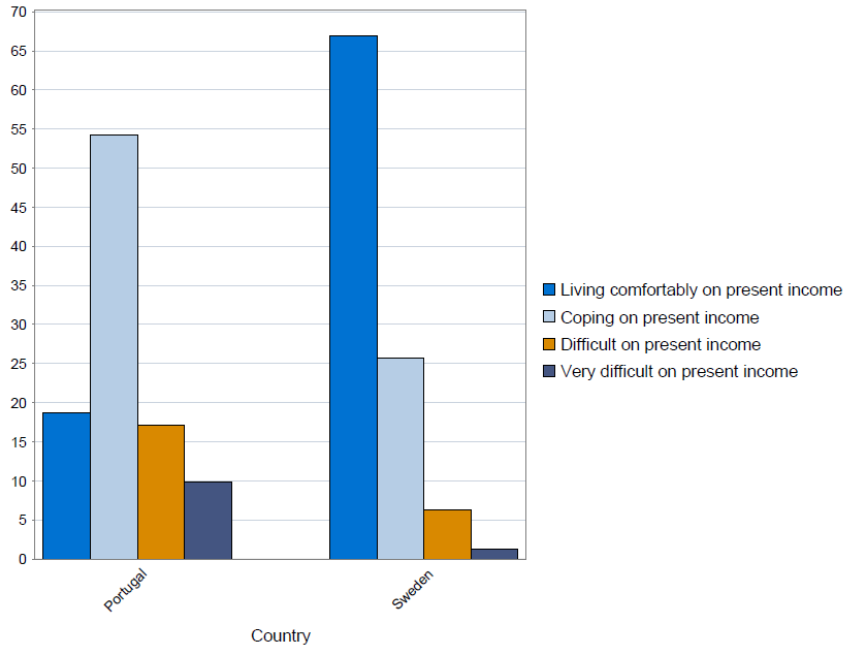

Figure 5 - Socio-demographic data - income, ESS Online Analysis Output

Another socio-demographic variable this study is concerned about is political partisanship, and in order to analyse it the question of the ESS survey "In politics people sometimes talk of 'left' and 'right'. Using this card, where would you place yourself on this scale, where 0 means the left and 10 means the right?" Figure 6 illustrates the answers to this question. In both countries, the majority of the population identifies as central wing, in Portugal this number was 35.5% of the population and in Sweden it represented 23.5%. In Portugal there are more people identifying as extremist, both left extreme with 9.7% of the population and right extreme with 4.5% of the population. In Portugal, a total of 38.8% of the population identifies as left wing and 26.1% identifies as right wing, while in Sweden 35.1% identifies as left wing and 41.4% identifies as right wing.

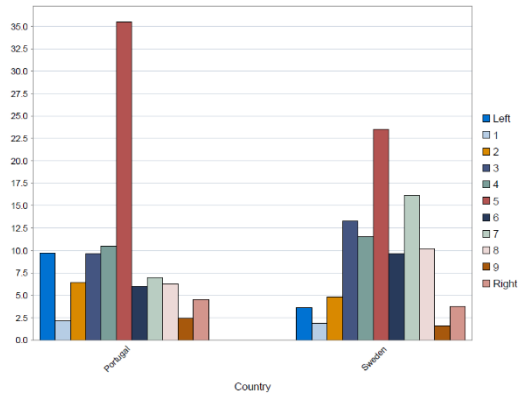

Figure 6 - Socio-demographic data - political partisanship, ESS Online Analysis Output

In order to understand if there were differences between the two countries regarding the recognition of climate change as a problem, the question “To what extent do you feel a personal responsibility to try to reduce climate change” from the ESS was chosen. By exploring the Figure 7, it becomes evident that in Sweden people feel way more responsible to tackle climate change.

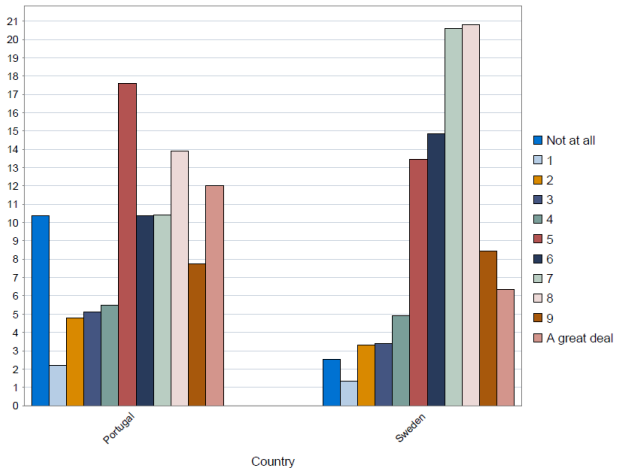

Figure 7- Socio-demographic data - climate change, ESS Online Analysis Output

Regarding the differences in post-materialistic values in both countries, two questions from the ESS were chosen, regarding human values. The first one was concerning the importance to people and care for others well-being, and it used a scale from 1 to 6, were 1 meant people cared deeply about helping others and 6 they did not care at all. The second was “How important it is to care for nature and environment” and it used the same scale as the first one. When comparing both countries, Sweden citizens appear to care more about others’ well-being and the same is true when it comes to care about nature and the environment even though the difference across both countries is not so large.

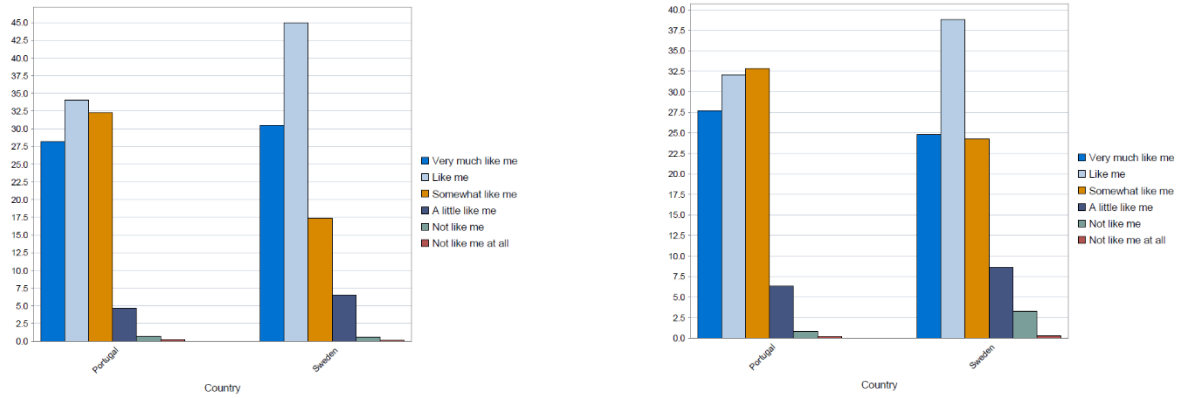

Figure 8 - Socio-demographic data - care about others, ESS Online Analysis Output

4.2 Country-Specific Variables

After inspecting the socio-demographic variables, it is also necessary to evaluate the country-specific data, namely regarding institutional trust and trust in other citizens.

To inspect the topic of institutional trust, two questions were chosen. Firstly, using a scale from 0 to 10, it was asked how much the respondent trust their politicians. Secondly, using the same scale, how much the respondents trust the legal system.

The differences across the two countries are enormous. While in Portugal, 30.6% of the respondents stated they do not trust their politicians at all, in Sweden only 5.1% answered they do not trust the politicians at all, and most of the population answered at least 5 in the scale. The same applies when asked about trust in the legal system, but to a smaller extent. In Portugal 12.6% of the population answered they do not trust the legal system at all, and in Sweden the number of people not trusting the legal system at all was only 2.4%.

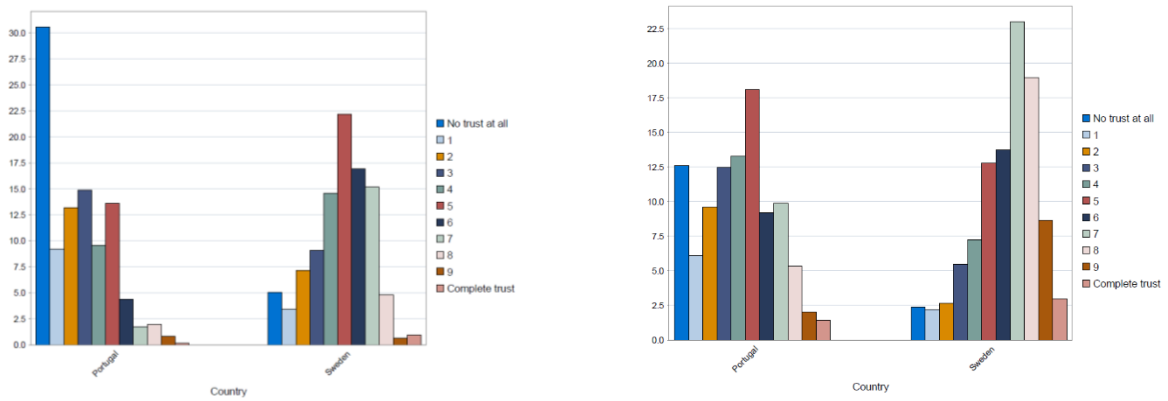

Figure 9 - Country - specific variable - trust in politicians and trust in legal system, ESS output

In regard to social trust, the variable chosen was “Most people can be trusted or you can’t be too careful”. As illustrated in Figure 10 there are major differences between both countries. In Portugal, a big part of the population feels like they cannot trust their fellow citizens, whilst in Sweden, most of the population trust, to a big extent, other citizens.

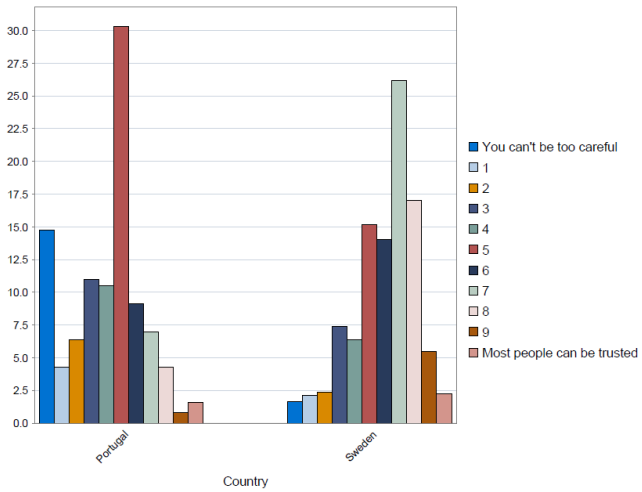

Figure 10 - Country-specific variables - trust in others, ESS output

After conducting the first exploratory data analysis some conclusions can be drawn. At first glance, the data seems to be aligned with the literature review. Sweden is one of the countries with the highest carbon taxes in Europe and when comparing the numbers with Portugal, both the income level and the education level of its citizens its higher in Sweden. Regarding the recognition of climate change as a problem, individuals in Sweden appear to feel more responsible to reduce the impacts of climate change in the world. In concerns to political partisanship, the relationship it is not clear since both countries have similar political division. Regarding post-materialistic values, respondents in Sweden appear to have higher concerns with others’ well-being and care more about the nature and the environment.

Concerning the country-specific variables, it is evident that in Sweden, people have higher levels of both institutional trust and trust in other citizens, when compared with Portugal. This support the findings of the literature review, where most studies support that citizens living in countries with higher levels of quality of government and higher levels of interpersonal trust are willing to pay higher carbon taxes.

However, just with the exploratory data analysis it is not possible to prove the causal effect between the willingness to pay for carbon taxes and the socio-demographic and country-

specific variables. To do so a multivariate regression analysis will be conducted in the next section to understand the relationship between the variables.

4.3. Hypotheses testing

In this section, the hypotheses presented in the research questions will be tested using a multivariate regression analysis using the multilevel data online analysis tool, offered in the European Social Survey website.

4.3.1 H1 and H2 testing

To test hypothesis 1 and hypothesis 2, a multivariate linear regression analysis was performed, the independent variables being “trust in politicians”, “trust in the legal system”, “most people can be trusted” and “most people try to take advantage of you”, and the dependent variable being “favor increase taxes on fossil fuels to reduce climate change”.

	B	SE B	Beta	T	Significance	Tolerance
Trust in politicians	-0.09	0.03	-0.15	-3.39	0.0007	0.60
Trust in the legal system	-0.04	0.02	-0.08	-1.79	0.0746	0.63
Most people can be trusted or you can't be too careful	-0.04	0.03	-0.06	-1.45	0.1467	0.65
Most people try to take advantage of you, or try to be fair	-0.01	0.03	-0.02	-0.41	0.6828	0.69

Intercept	3.51
Valid N	775.62
Multiple R	0.250
Multiple R Squared	0.062
Adjusted R Squared	0.058
F value	12.84
F sign	0.0000

Filter: (Country = "Sweden")

Figure 11- Model summary, H1 and H2, ESS online analysis output

As shown in Figure 11 the R square is measuring the relationship between all the variables. In multiple linear regression the R square is indicating the variation amount in the dependent variable, “favour in increasing taxes on fossil fuels to reduce climate change”, in relation to all independent variables summed. The R square in this model summary is 0.062, meaning that 6.2% of the variation in “favour in increasing taxes on fossil fuels” is explained by the independent variables. Furthermore, R square can increase in the case when independent variables are added. In order to avoid that, adjusted R square can be applied. In this specific case, the adjusted R squared has a value of 0.058, which translates in 5.8% of the variation of “Favour in increasing taxes on fossil fuels” can be explained by the four independent variables.

Figure 11 shows a F values of 12.84 and a significance level of 0.000. Probability of 0.000 shows that the relationship between the examined variables is true and there is no possibility of the linear regression being a result of random events.

Moreover, Figure 11 describes which of the variables are significant, since some variables are not good predictors of the selected dependent variable, if the coefficients are not statistically significant. It shows that the independent variable of “trust in politicians” has a significance level of 0.007 which is below suggested 0.05, so it is possible to conclude that “trust in politicians” influences favour in increasing taxes on fossil fuels”. On the other hand, the independent variable “Trust in the legal system” has a significance level of 0.0746, the independent variable “most people can be trusted” has a significance level of 0.1467 and the independent variable “most people try to take advantage of you” have a significance level of 0.6828, which are all above the suggested 0.05 and they are therefore, considered insignificant.

In conclusion, the independent variable “trust in politicians” has an influence in favour of increasing taxes in fossil fuels to reduce climate change. However, the same is not true for the other independent variables. Therefore, Hypothesis 1 is partially accepted, and Hypothesis 2 is rejected since there is no relationship between it and the dependent variable.

4.3.2 H3 and H4 testing

	B	SE B	Beta	T	Significance	Tolerance
To what extent feel personal responsibility to reduce climate change	-0.12	0.02	-0.23	-5.92	0.0000	0.79
How worried about climate change	-0.19	0.05	-0.13	-3.60	0.0003	0.83
Important to care for nature and environment	0.08	0.04	0.06	1.78	0.0757	0.89
Important to help people and care for others well-being	-0.04	0.05	-0.03	-0.87	0.3829	0.94

Intercept	3.75
Valid N	779.36
Multiple R	0.325
Multiple R Squared	0.106
Adjusted R Squared	0.101
F value	22.92
F sign	0.0000

Filter: (Country = "Sweden")

Figure 12 - Model summary, H3 and H4, ESS online analysis output

The second multivariate linear regression will be performed to understand the relationship of the independent variables “To what extent you feel responsible to reduce climate change”, “How worried about climate change”, “Important to care for nature and environment”, “Important to care for others well-being” and the dependent variable “favour in increasing taxes on fossil fuels to reduce climate change”.

Similarly with the previous multivariate linear regression, R square also shows the amount of variation in the dependent variable based on independent variables. In this case, The R square is 0.106, meaning that 10.6% of the variation in “favour in increasing taxes on fossil fuels” is explained by the independent variables. Furthermore, the adjusted R squared has a value of 0.101, which translates in 10.1% of the variation of “Favour in increasing taxes on fossil fuels” can be explained by the four independent variables.

The F ratio represents statistical significance – the higher the numbers the more variance in the dependent variable can be explained by independent variables. In this case, the F ratio in 22.92, meaning high significance and probability level of 0.000 which is below required 0.05, demonstrating a significant relationship between the examined variables.

Moreover, Figure12 shows that the independent variable "To what extent you feel personal responsibility to reduce climate change" has a significance level of 0.0000, whereas the independent variable "How worried about climate change" has a significance level of 0.0003, below the suggested 0.05, resulting in the acceptance of the hypothesis. On the other side, the independent variables "Important to care for nature and environment" and "important to help people and care for others well-being has a significance of 0.0757 and 0.3829 respectively, which are above the required probability level of 0.05 and thus, rejecting the hypothesis.

In summary, the feeling of personal responsibility to reduce climate change and the worry about climate change have an influence in favouring increasing taxes in fossil fuels to reduce climate change, whereas importance to care about the environment and nature and importance to care about others does not have influence.

Hypothesis	**Status**
H1: Living in countries with higher levels of political trust has a positive influence in consumer willingness to pay for carbon taxes.	Partially Accepted
H2: Living in countries with higher levels of social trust has a positive influence in consumer willingness to pay for carbon taxes.	Rejected
H3: Recognition of climate change as a problem has a positive influence in consumers' willingness to pay for carbon taxes.	Accepted
H4: Having higher post-materialistic values have a positive influence in consumers' willingness to pay for carbon taxes.	Rejected

Table 2 - Hypotheses acceptance or rejection, own creation

5. Discussion

The aim of this study was to examine what variables affect the consumers' willingness to pay for carbon taxes as part of companies' value proposition, and if cross-country factors would impact this decision. The discussion will be based on the on the literature review and findings from the data analysis.

With the first exploratory data analysis, comparing the socio-demographic data and the country-specific data of Portugal and Sweden, the results indicated that in Sweden, people have higher levels of education and income, when compared to Portugal. The literature asserts that recognizing climate change as a problem is influenced by socio-cultural factors, including formal education and income (Ballew et al., 2020), moreover, environmental

protection can be considered an expenditure or a luxury, and therefore, wealthy people are more likely to pay for it (Franzen and Vogl, 2013; Fairbrother, 2016; Gelissen, 2007).
In regards to the country specific variables, the differences between the two countries were immense. Whereas in Sweden citizens have high levels of trust in their government as well as trust in other citizens, that is not the case in Portugal, where a lot of people do not trust their politicians and legal system and there is also a lack of trust among fellow citizens. Many studies point the quality of the governments as the main factor of public acceptance of carbon taxes (Kallbekken and Sælen, 2011; Harring and Jagers, 2013 Dresner et al., 2006), while others suggest that trust in other citizens have an influence in consumers' willingness to pay for carbon taxes (Davidovic and Harring, 2020; Hammar, Jagers and Nordblom, 2009; Klenert et al., 2018).
Considering that Sweden is the country in Europe with the highest levels of carbon taxes, with the first exploratory analysis would be possible to infer that the data is supporting the literature. However, just with the exploratory data analysis it is not possible to prove the causal effect between the willingness to pay for carbon taxes and the socio-demographic and country-specific variables. To do so a multivariate regression analysis was conducted to understand the relationship between the variables and test the hypotheses.

The first hypothesis of this study states that living in countries with higher levels of political trust has a positive influence in consumer willingness to pay for carbon taxes. According to Dresner et al. (2006) public trust is one of the dominant explanations for the public support of carbon taxes, since people are more likely to accept regulations from institutions, they consider trustworthy (Kallbekken and Sælen, 2011; Dresner et al., 2006). When citizens are confident politicians are proposing good and efficient policy solutions, and no tax revenues will go to waste and the state authorities will use these funds for public goods, they are more likely to support state policies (Harring and Jagers, 2013). In order to confirm this hypotheses, two variables were tested – "trust in politicians" and "trust in the legal system". Trust in politicians proved to have an impact on the favour in increasing taxes on fossil fuels to reduce climate change, however when testing the trust in the legal system this impact was not proven. H1 was therefore, partially accepted.

H2 was concerned with the levels of social trust, either if it has a positive influence in consumer willingness to pay for carbon taxes or not. According to the literature, there are many ways public support for carbon taxes can be guided by trust in others (Matti, 2015).

Individuals generally choose not to collaborate but, instead, engage in behaviour that benefits them individually but harms the environment (Davidovic and Harring, 2020). The acceptability of increased taxes is dependent on the degree to which they can be avoided, indicating a suspicion that others will not comply. It stands to reason that the more difficult to evade taxes, the more willing people are to accept an increase (Hammar, Jagers and Nordblom, 2009). When testing the relation between the independent variables – "most people can be trusted" and "most people try to take advantage of you" had a level of significance of 0.1467 and 0.6828 respectively, which are all above the suggested 0.05 and the relationship was considered insignificant. Thus, H2 was refuted.

H3 claims that the recognition of climate change as a problem has a positive influence in consumers' willingness to pay for carbon taxes. Levi (2021) identifies the recognition of climate change as a problem as the most important condition for predicting opposition to carbon taxes. In fact, people are more likely to support costly climate policies if they understand and believe climate change is real, caused by humans, and an issue that should worry them (Levi, 2021). Moreover, the recognition of climate change as a problem is on his turn influenced by socio-cultural factors, including formal education and income (Ballew et al., 2020). In order to confirm this hypotheses, two variables were tested – "to what extent feel personal responsibility to reduce climate change" and "how worried about climate change". Both the variables had an influence on the dependent variable "favour in increasing taxes on fossil fuels to reduce climate change" and therefore, H3 was accepted.

Lastly, H4 states that having higher post-materialistic values have a positive influence in consumers' willingness to pay for carbon taxes. A large number of studies have found a causal relationship between postmaterialistic values and environmental concern as well as preferences for environmental protection (Gelissen, 2007; Kidd and Lee, 1997). According to Inglehart (1995), generations of wealthy, industrialized nations that reached adulthood during World War II have experienced a major shift away from materialistic values such as economic and physical security to "postmaterialistic" values such as freedom and quality of life (Inglehart, 1995). To test this hypothesis a multilevel regression analysis was performed, using the variables "important to care for nature and environment" and "important to help people and care for well-being" as independent variables. The results showed that the significance of both variables were 0.0757 and 0.3829 respectively, which are above the required probability level of 0.05 and thus, hypothesis 4 was rejected.

Moreover, the findings can also contribute for the research questions and problem formulation. RQ1 was concerned with country-specific variables, such as the quality of the government and social trust and if they affect consumer's willingness to pay for carbon taxes, whereas RQ2 was concerned with individual motives, including beliefs and values and if they affect consumers' willingness to pay for carbon taxes. When performing the multilevel linear regression analysis regarding country-specific variables the R square in this model summary was 0.062, meaning that 6.2% of the variation in "favour in increasing taxes on fossil fuels" is explained by the independent variables. On the other hand, when performing the same model on the individual motivations, the adjusted R squared had a value of 0.101, which translates in 10.1% of the variation of "Favour in increasing taxes on fossil fuels" can be explained by the four independent variables. Therefore, individual motivations have a higher impact on favouring increasing taxes on fossil fuels than country-specific variables.

6. Conclusion

In summary, this study investigated what drives consumers to accept the idea of carbon taxes, and therefore accept to pay higher prices as part of companies' value proposition. Findings of this study contribute to the literature on public attitudes towards carbon taxes in different country-level contexts. After the literature review was conducted, two main drivers of public acceptance of carbon taxes were found – country-specific variables and individual motivation. The result of the analysis indicates that there both country-specific variables and individual motives affect public acceptance of carbon taxes, however, individual motivation have a stronger effect, which was shown in the Beta coefficients. When the socio-demographic variables and the country-specific variables of Portugal and Sweden were compared, it appeared that the findings were supporting the literature review, since Sweden has higher carbon taxes than Portugal, and also higher levels of income, education, political trust and social trust, however the causal effect of this relationship was not proven.

The recognition of climate change as a problem was the variable that affected the most the favour of increasing taxes on fossil fuels to reduce climate change, as stated on the literature review. It was not possible to prove the relationship between social trust and favour of higher carbon taxes neither post-materialistic values favour of higher carbon taxes.

6.1 Theoretical implications

The main contribution of this study to the existing literature is that it extended the knowledge on consumers' attitudes towards carbon taxes, and their acceptance of its value as part of companies' value proposition, specifically it was possible to have a deeper knowledge of a new geographical context, by performing a data analysis of both Portugal and Sweden. Moreover, the study contributes to the existing literature in consumer behaviour and marketing by identifying the main variables affecting peoples' willingness to pay for carbon taxes. To sum, the study identified possible gaps and future recommendations for next researchers to include.

6.2. Managerial Implication

From a managerial viewpoint, this study contributes to the international marketing environment. By understanding the context of a specific country regarding its policies on carbon taxes, companies who are incorporating carbon taxes as part of their value proposition, can make a more conscious decision regarding exporting their products to that country. Moreover, it is also important for those companies to understand the individual motivations behind people who are willing to pay higher prices for carbon taxes. This study proved that people wo recognize climate change as a thread, are the ones that are willing to pay more for those kinds of products.

6.3 Limitations and Future Research

It must be mentioned that even though the socio-demographic details were analysed they were not used to make any conclusion on this research since the causal effect was not proven. Such factors, as income and education can further explain the results and therefore, future researchers might focus on the same study area using this socio-demographic aspects. Moreover, the dependent variable chosen was "favour increase taxes on fossil fuels to reduce climate change" which does not represent the overall sense of consumer's willingness to pay more for carbon taxes as part of companies' value proposition. It would be relevant for future research to include other criteria to evaluate this condition.

The data used to conduct the analysis was retrieved from the ESS round 8 which was conducted in 2016. Since climate change is a topic that it is becoming increasingly pertinent in our society, if this study was conducted more recently, the results could vary significantly.

Moreover, some of the hypotheses of this study were rejected, regarding social trust and postmaterialistic values. If more aspects and questions were used as independent variables it might influences the results and the hypothesis might have proven right.

References

Andrew, J., Kaidonis, M.A. and Andrew, B. (2010). Carbon tax: Challenging neoliberal solutions to climate change. *Critical Perspectives on Accounting*, 21(7), pp.611–618.

Arbnor, I. and Bjerke, B. (2009). *Methodology for Creating Business Knowledge*. [online] *Google Books*. SAGE Publications Ltd. Available at: https://books.google.dk/books/about/Methodology_for_Creating_Business_Knowle.html?id=-0u_5Waz6cYC&redir_esc=y [Accessed 11 May 2021].

Bação, P., Gaspar, I. and Simões, M. (2019). Corruption and Economic Growth: The Case of Portugal. *Notas Económicas*, (49), pp.11–33.

Ballew, M.T., Pearson, A.R., Goldberg, M.H., Rosenthal, S.A. and Leiserowitz, A. (2020). Does socioeconomic status moderate the political divide on climate change? The roles of education, income, and individualism. *Global Environmental Change*, 60, p.102024.

Bergquist, P., Konisky, D.M. and Kotcher, J. (2020). Energy policy and public opinion: patterns, trends and future directions. *Progress in Energy*, 2(3), p.032003.

Boyce, J.K. (2018). Carbon Pricing: Effectiveness and Equity. *Ecological Economics*, 150, pp.52–61.

Bryman, A. and Bell, E. (2007). *Business Research Method*. [online] ResearchGate. Available at: https://www.researchgate.net/publication/270820225_Business_Research_Method.

Burrell, G. and Morgan, G. (2017). *Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life*. [online] *Google Books*. Routledge. Available at: https://books.google.dk/books?hl=en&lr=&id=8UtBDgAAQBAJ&oi=fnd&pg=PT8&dq=Burrell+and+Morgan+1979+sociological+paradigms&ots=rw_JrWb_yv&sig=O58dV0Gh0gT60OotnbFhM96dt88&redir_esc=y#v=onepage&q=Burrell%20and%20Morgan%201979%20sociological%20paradigms&f=false [Accessed 14 May 2021].

Burstein, P. (2003). The Impact of Public Opinion on Public Policy: A Review and an Agenda. *Political Research Quarterly*, 56(1), pp.29–40.

Carattini, S., Carvalho, M. and Fankhauser, S. (2017). *How to make carbon taxes more*

acceptable Policy report. [online] . Available at: https://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2017/12/How-to-make-carbon-taxes-more-acceptable.pdf.

Cherry, T.L., Kallbekken, S. and Kroll, S. (2014). The impact of trial runs on the acceptability of environmental taxes: Experimental evidence. *Resource and Energy Economics*, 38, pp.84–95.

Cremer, H., Gahvari, F. and Ladoux, N. (1998). Externalities and optimal taxation. *Journal of Public Economics*, 70(3), pp.343–364.

Davidovic, D. and Harring, N. (2020). Exploring the cross-national variation in public support for climate policies in Europe: The role of quality of government and trust. *Energy Research & Social Science*, 70, p.101785.

Davidovic, D., Harring, N. and Jagers, S.C. (2019). The contingent effects of environmental concern and ideology: institutional context and people's willingness to pay environmental taxes. *Environmental Politics*, pp.1–23.

De Sousa, L. (2001). Political parties and corruption in Portugal. *West European Politics*, 24(1), pp.157–180.

Denyer, D. and Tranfield, D. (2009). *Producing a Systematic Review*. [online] Scirp.org. Available at: https://www.scirp.org/(S(vtj3fa45qm1ean45vvffcz55))/reference/ReferencesPapers.aspx?ReferenceID=1919948 [Accessed 18 May 2021].

Dresner, S., Dunne, L., Clinch, P. and Beuermann, C. (2006). Social and political responses to ecological tax reform in Europe: an introduction to the special issue. *Energy Policy*, [online] 34(8), pp.895–904. Available at: https://econpapers.repec.org/article/eeeenepol/v_3a34_3ay_3a2006_3ai_3a8_3ap_3a895-904.htm [Accessed 3 Aug. 2021].

Dunlap, R.E. and York, R. (2008). The Globalization of Environmental Concern and The Limits of The Postmaterialist Values Explanation: Evidence from Four Multinational Surveys. *The Sociological Quarterly*, 49(3), pp.529–563.

Eriksson, L., Garvill, J. and Nordlund, A.M. (2006). Acceptability of travel demand management measures: The importance of problem awareness, personal norm, freedom, and fairness. *Journal of Environmental Psychology*, 26(1), pp.15–26.

Europeansocialsurvey.org. (2013). *About ESS | European Social Survey (ESS)*. [online] Available at: http://www.europeansocialsurvey.org/about/.

Fairbrother, M. (2012). Rich People, Poor People, and Environmental Concern: Evidence across Nations and Time. *European Sociological Review*, 29(5), pp.910–922.

Fairbrother, M. (2016). Trust and Public Support for Environmental Protection in Diverse National Contexts. *Sociological Science*, 3, pp.359–382.

Franzen, A. and Vogl, D. (2013). Two decades of measuring environmental attitudes: A comparative analysis of 33 countries. *Global Environmental Change*, 23(5), pp.1001–1008.

Gelissen, J. (2007). Explaining Popular Support for Environmental Protection. *Environment and Behavior*, 39(3), pp.392–415.

Ghazouani, A., Xia, W., Ben Jebli, M. and Shahzad, U. (2020). Exploring the Role of Carbon Taxation Policies on CO2 Emissions: Contextual Evidence from Tax Implementation and Non-Implementation European Countries. *Sustainability*, 12(20), p.8680.

Guagnano, G.A., Stern, P.C. and Dietz, T. (1995). Influences on Attitude-Behavior Relationships. *Environment and Behavior*, 27(5), pp.699–718.

Haites, E. (2018). Carbon taxes and greenhouse gas emissions trading systems: what have we learned? *Climate Policy*, 18(8), pp.955–966.

Hammar, H., Jagers, S.C. and Nordblom, K. (2009). Perceived tax evasion and the importance of trust. *The Journal of Socio-Economics*, 38(2), pp.238–245.

Harring, N. (2015). Reward or Punish? Understanding Preferences toward Economic or Regulatory Instruments in a Cross-National Perspective. *Political Studies*, 64(3), pp.573–592.

Harring, N. and Jagers, S. (2013). Should We Trust in Values? Explaining Public Support for Pro-Environmental Taxes. *Sustainability*, 5(1), pp.210–227.

Harring, N., Jagers, S. and Matti, S. (2017). Public Support for Pro-Environmental Policy

Measures: Examining the Impact of Personal Values and Ideology. *Sustainability*, 9(5), p.679.

Harring, N. and Jagers, S.C. (2017). Why do people accept environmental policies? The prospects of higher education and changes in norms, beliefs and policy preferences. *Environmental Education Research*, 24(6), pp.791–806.

Helbling, T. (2018). *Externalities: Prices Do Not Capture All Costs*. [online] Finance & Development | F&D. Available at: https://www.imf.org/external/pubs/ft/fandd/basics/external.htm [Accessed 5 May 2021].

Inglehart, R. (1995). Public Support for Environmental Protection: Objective Problems and Subjective Values in 43 Societies. *PS: Political Science and Politics*, 28(1), p.57.

Jakobsson, C., Fujii, S. and Gärling, T. (2000). Determinants of private car users' acceptance of road pricing. *Transport Policy*, [online] 7(2), pp.153–158. Available at: https://econpapers.repec.org/article/eeetrapol/v_3a7_3ay_3a2000_3ai_3a2_3ap_3a153-158.htm [Accessed 3 Aug. 2021].

Janetschek, H., Brandi, C., Dzebo, A. and Hackmann, B. (2019). The 2030 Agenda and the Paris Agreement: voluntary contributions towards thematic policy coherence. *Climate Policy*, pp.1–13.

Jesson, J., Matheson, L. and Lacey, F.M. (2011). *Doing Your Literature Review: Traditional and Systematic Techniques*. [online] *Google Books*. SAGE. Available at: https://books.google.dk/books/about/Doing_Your_Literature_Review.html?id=NAYrLb8qsd4C&redir_esc=y [Accessed 17 May 2021].

Johnston, M. (2013). The Great Danes: Successes and Subtleties of Corruption Control in Denmark. *Research in Public Policy Analysis and Management*, pp.23–56.

Jonsson, S. (2020). *Looking Back on 30 Years of Carbon Taxes in Sweden*. [online] Tax Foundation. Available at: https://taxfoundation.org/sweden-carbon-tax-revenue-greenhouse-gas-emissions/#:~:text=Sweden%20levies%20the%20highest%20carbon.

Kachi, A. (2017). *Pricing carbon to achieve the Paris goals*. [online] . Available at: https://carbonmarketwatch.org/wp-content/uploads/2017/09/CMW-PRICING-CARBON-TO-

ACHIEVE-THE-PARIS-GOALS_Web_spread_FINAL.pdf [Accessed 27 Apr. 2021].

Kallbekken, S. and Sælen, H. (2011). Public acceptance for environmental taxes: Self-interest, environmental and distributional concerns. *Energy Policy*, 39(5), pp.2966–2973.

Kennedy Liti Mbeva and Pauw, P. (2016). *Self-Differentiation of Countries' Responsibilities Addressing Climate Change through Intended Nationally Determined Contributions*. [online] Available at: https://www.die-gdi.de/uploads/media/DP_4.2016.pdf [Accessed 8 May 2021].

Kidd, Q. and Lee, A.-R. (1997). Postmaterialist Values and the Environment: A Critique and Reappraisal. *Social Science Quarterly*, [online] 78(1), pp.1–15. Available at: https://www.jstor.org/stable/42863668 [Accessed 29 Jun. 2021].

Klenert, D., Mattauch, L., Combet, E., Edenhofer, O., Hepburn, C., Rafaty, R. and Stern, N. (2018). Making carbon pricing work for citizens. *Nature Climate Change*, [online] 8(8), pp.669–677. Available at: https://www.nature.com/articles/s41558-018-0201-2 [Accessed 27 Apr. 2021].

Klok, J., Larsen, A., Dahl, A. and Hansen, K. (2006). Ecological Tax Reform in Denmark: history and social acceptability. *Energy Policy*, 34(8), pp.905–916.

Kollock, P. (1998). Social Dilemmas: The Anatomy of Cooperation. *Annual Review of Sociology*, 24(1), pp.183–214.

Kuada, J. (2012). *Research methodology: - A Project Guide for University Students*. [online] *vbn.aau.dk*. Samfundslitteratur. Available at: https://vbn.aau.dk/en/publications/research-methodology-a-project-guide-for-university-students.

Levi, S. (2021). Why hate carbon taxes? Machine learning evidence on the roles of personal responsibility, trust, revenue recycling, and other factors across 23 European countries. *Energy Research & Social Science*, 73, p.101883.

Lewis, G.B., Palm, R. and Feng, B. (2018). Cross-national variation in determinants of climate change concern. *Environmental Politics*, 28(5), pp.793–821.

Maestre-Andrés, S., Drews, S. and van den Bergh, J. (2019). Perceived fairness and public acceptability of carbon pricing: a review of the literature. *Climate Policy*, 19(9), pp.1186–1204.

Mansbridge, J. (2014). The role of the state in governing the commons. *Environmental Science & Policy*, 36, pp.8–10.

Martínez-Alier, J. (2003). *The Environmentalism of the Poor: A Study of Ecological Conflicts and Valuation*. [online] *Google Books*. Edward Elgar Publishing. Available at: https://books.google.dk/books/about/The_Environmentalism_of_the_Poor.html?id=4JIzg4PUotcC&redir_esc=y [Accessed 29 Jun. 2021].

Matti, S. (2015). Climate policy instruments. *Research Handbook on Climate Governance*. [online] Available at: https://www.elgaronline.com/view/edcoll/9781783470594/9781783470594.00047.xml [Accessed 17 Jun. 2021].

Norwegian Centre for Research Data, Norway (2016). *ESS Round 8: European Social Survey Round 8 Data*.

NSD - Norwegian Centre for Research Data for ESS (2020). *ESS Round 8: European Social Survey (2020): ESS-8 2016 Documentation Report.*.

Ostrom, E. (2010). Beyond Markets and States: Polycentric Governance of Complex Economic Systems. *American Economic Review*, [online] 100(3), pp.641–672. Available at: http://web.pdx.edu/~nwallace/EHP/OstromPolyGov.pdf.

Parry, I., Veung, C. and Heine, D. (2015). HOW MUCH CARBON PRICING IS IN COUNTRIES' OWN INTERESTS? THE CRITICAL ROLE OF CO-BENEFITS. *Climate Change Economics*, 06(04), p.1550019.

Pereira, A.M. and Pereira, R.M. (2016). Reducing carbon emissions in Portugal: the relative roles of fossil fuel prices, energy efficiency, and carbon taxation. *Journal of Environmental Planning and Management*, 60(10), pp.1825–1852.

Pereira, A.M., Pereira, R.M. and Rodriguesa, P.G. (2016). *A New Carbon Tax in Portugal: A Missed Opportunity to Achieve the Triple Dividend?* [online] ideas.repec.org. Available at: https://ideas.repec.org/p/cwm/wpaper/161.html [Accessed 27 Apr. 2021].

ROTHSTEIN, B. and TEORELL, J. (2008). What Is Quality of Government? A Theory of Impartial Government Institutions. *Governance*, 21(2), pp.165–190.

Saunders, M.N.K., Lewis, P. and Thornhill, A. (2015). *Research methods for business students*. [online] *Open WorldCat*. New York: Pearson Education. Available at: https://www.worldcat.org/title/research-methods-for-business-students/oclc/921237863 [Accessed 6 Aug. 2021].

Schuitema, G., Steg, L. and Forward, S. (2010). Explaining differences in acceptability before and acceptance after the implementation of a congestion charge in Stockholm. *Transportation Research Part A: Policy and Practice*, [online] 44(2), pp.99–109. Available at: https://reader.elsevier.com/reader/sd/pii/S0965856409001256?token=18C004C8749A8D929E4F8A2D85B428BD2FD6203C2D99C5BC8AB8B6B68173722B8873E057D8BDB08B92747C6E06D28806 [Accessed 23 Mar. 2021].

Steg, L., Dreijerink, L. and Abrahamse, W. (2005). Factors influencing the acceptability of energy policies: A test of VBN theory. *Journal of Environmental Psychology*, 25(4), pp.415–425.

STERN, M.J. (2008). Coercion, voluntary compliance and protest: the role of trust and legitimacy in combating local opposition to protected areas. *Environmental Conservation*, 35(3), pp.200–210.

Stern, P.C. (2000). New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues*, 56(3), pp.407–424.

Stern, P.C., Kalof, L., Dietz, T. and Guagnano, G.A. (1995). Values, Beliefs, and Proenvironmental Action: Attitude Formation Toward Emergent Attitude Objects1. *Journal of Applied Social Psychology*, 25(18), pp.1611–1636.

Sterner, T. (2017). *Environmental Taxation in Practice*. [online] *Google Books*. Routledge. Available at: https://books.google.dk/books?hl=en&lr=&id=3lsPEAAAQBAJ&oi=fnd&pg=PA3&dq=environmental+taxes+public+acceptance&ots=78sxFlRlkc&sig=rwZk90OdLy7Y6W3O1zWtUH621ks&redir_esc=y#v=onepage&q=environmental%20taxes%20public%20acceptance&f=false [Accessed 27 Apr. 2021].

Stiglitz, J. and Stern, N. (2017). *Report of the High-Level Commission on Carbon Prices I.*

[online] . Available at: https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/59b7f2409f8dce5316811916/1505227332748/CarbonPricing_FullReport.pdf.

SUMNER, J., BIRD, L. and DOBOS, H. (2011). Carbon taxes: a review of experience and policy design considerations. *Climate Policy*, [online] 11(2), pp.922–943. Available at: https://www.nrel.gov/docs/fy10osti/47312.pdf [Accessed 18 Sep. 2019].

Thaker, J., Zhao, X. and Leiserowitz, A. (2017). Media Use and Public Perceptions of Global Warming in India. *Environmental Communication*, 11(3), pp.353–369.

The ESS Data Archive (2020). *ESS8 - 2016 Documentation Report*.

Transparency.org. (n.d.). *Sweden*. [online] Available at: https://www.transparency.org/en/countries/sweden.

UNFCCC (2016). *The Paris Agreement*. [online] UNFCCC. Available at: https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.

Unfccc.int. (2021). [online] Available at: https://unfccc.int/news/calls-increase-to-use-carbon-pricing-as-an-effective-climate-action-tool.

United Nations (2015). *Transforming Our World: the 2030 Agenda for Sustainable Development | Department of Economic and Social Affairs*. [online] United Nations. Available at: https://sdgs.un.org/2030agenda.

World Bank (2020). State and Trends of Carbon Pricing 2020. [online] Available at: https://openknowledge.worldbank.org/handle/10986/33809.

World Bank. (2019). *Pricing Carbon*. [online] Available at: https://www.worldbank.org/en/programs/pricing-carbon.