

Postmaterialist populations

Can meaningful indicators be found on the systemic level?

Olle Ångeby

Abstract

The postmaterialism thesis put forth by Ronald Inglehart stipulates a relationship between wealth and non-physical values. Among these values is the protection of the environment, meaning that wealthier populations should more readily prioritise measures that further this goal. The postmaterialism theory has been a matter of contention, however, and there's substantial critique against it. One of these critiques concern the method with which postmaterialism is commonly measured. These measurements mostly aim at discerning postmaterialist value orientations among individuals. The thesis departs from this background, employing an understanding of postmaterialism as discernable on the systemic level also. Meaning that one should expect to see signs of postmaterialism by looking at the output of states. Regression analysis is employed, and a strong positive correlation between wealth and environmental performance can be found among countries. Whether this is because of differences in postmaterialist values among populations, or whether it's a matter of alternative explanations remains uncertain. By comparing two states that hold an equable amount of wealth but are unequable in terms of environmental performance the postmaterialist explanation might hold weight. This is due to a time-lag inherent to the conditions that produce postmaterialism, and its effects. By analysing how long such conditions have been present then, one might make the argument that differing degrees of postmaterialism have indeed produced differences in political outcome.

Key words: Postmaterialism, Regression analysis, Mixed methods approach, Environmentalism, Policy output, Environmental Performance Index
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1 Introduction

“Ki-taek : They are rich but still nice.
Chung-sook, Ki-taek's wife : They are nice because they are rich.”
Quote from the movie “Parasite” (2019)¹

Ronald Inglehart’s theory of value change seeks to explain a shift in values among affluent western countries. The theory states that people in these countries have been influenced by a significant and prevailing sense of security, brought to them by conditions of economic and physical security. This sense of security allows for such “materialist” issues to be taken for granted, leading people to instead prioritise other matters. Although it’s become influential, Inglehart’s theory has also proven quite controversial in some regards.

The controversy surrounding the theory is partly due to the method overwhelmingly used when postmaterialism is measured, as the method’s validity and reliability is said to be lacklustre. As such, this thesis seeks to complement existing literature by exploring an alternative way of measuring postmaterialist attitudes among populations. It does so because the postmaterialism theory can be said to imply that postmaterialist people will influence their political institutions. An alternative way of measuring postmaterialism might then present itself when the output of states are analysed, i.e by analysis on the systemic level. In a broad sense, assumptions about the prevalence of postmaterialist values among a population can be made by looking at the actions of their government.

The postmaterialist value focused on is that of environmentalism. According to the postmaterialism theory, populations in richer countries should more readily support measures on behalf of environmental protection than their less affluent counterparts would. Because of this, differences in how populations prioritise the environment might translate to differences in political output on the systemic level, and therefore differences in environmental performance.

As the thesis aims at complementing the method associated with an influential theory, its main contribution would be towards the scientific community. Of course, because of the wide societal reach of Inglehart’s theory, the thesis might also prove to serve its aim of explaining value change. That’s not the purpose of the thesis, however, as it’s to be regarded as explorative albeit theory modifying. By this I wish to make clear that this thesis doesn’t seek to test the explanatory power of the postmaterialism theory nor the validity of its commonly used method. Instead the thesis departs from the question: if Inglehart’s theory has been criticised because of the method it most commonly relies on, can complementing indicators be found elsewhere?

¹ Quote taken from the film’s IMDB page.

2 Theory and previous literature

In this part of the thesis, Inglehart's theory will first be presented, detailing its main assumptions and implications. After which a section about influential criticism directed at the method used by Inglehart and others who've sought to measure postmaterialism follows. This critique is relevant as my thesis aims to explore alternative means of measuring postmaterialism, which could circumvent this critique if these means prove usable. Finally, a section detailing how postmaterialism has been understood in conjunction with environmentalism is presented, seeing as the thesis focuses on a relation between these two.

2.1 The postmaterialist theory of value change

Synonymous with the theory of postmaterialist value change, is the name of Ronald Inglehart. This theory has been thoroughly detailed through a vast body of literature, but perhaps most significantly in his 1977 book *The Silent Revolution*. Inglehart describes a perceived ongoing change in basic values among the populations of affluent western countries. Departing from this observation, he seeks to explain the sources and eventual effects of this value change. His main conclusion is that people in these countries are becoming more "postmaterialist", meaning that they go beyond previously dominant "materialist" values. Materialist values are defined as those concerning one's immediate existential conditions, such as economic growth and security. Postmaterialist values on the other hand, are those that prioritise non-physical needs, such as matters that concern one's quality of life, self expression etc. (R. Inglehart, 1977/2015; R. Inglehart, 2007; R. Inglehart, 2008).

This shift in values is the result of changes to various socio-economic factors, with two reasons being the most influential. Firstly, is that people in these countries have enjoyed very secure economic conditions. This is partly due to the fact that many western nations experienced an unprecedented level of economic growth in the wake of World War II. Coupled with the rise of the welfare state, this meant that people's economic and existential conditions had fundamentally changed to be more secure. Second, the absence of total war in most western countries has brought with it a sense of physical security hitherto unseen.² A generation of people who've been born into these conditions therefore haven't had to worry about these matters to a great extent growing up. This has meant that they've been able to take matters of economic and physical security more or less for granted. As a consequence, societies where these conditions have prevailed are characterised by a shift in focus from materialist values towards postmaterialist values (R. Inglehart, 1977/2015, pp. 21-22 ; R. Inglehart, 2007, pp. 1-2; 8-9).

So how, and why, do postmaterialist attitudes and values become prevalent in a population? Inglehart's theory bases itself in two key hypotheses in order to answer that question. These are the *scarcity* and *socialisation* hypotheses.

The scarcity hypothesis states that people will prioritise their most pressing needs first. This means that although basically everyone might aspire to certain needs, such as needs for freedom and autonomy for example, such pursuits are only priorities once more basic needs

² The effects of the Ukraine war on postmaterialism among young people would make for an interesting study because of this.

have been met. The hypothesis reflects a distinction between material needs for physical safety and survival vis-à-vis non-material needs. Where the latter are prioritised only after material needs for survival have been sufficiently satisfied. In this sense the scarcity hypothesis is heavily inspired by, and similar to, other well known terms across the social sciences, like Maslow's hierarchy of needs or the principle of diminishing marginal utility (R. Inglehart, 2008, pp. 131–132; R. Inglehart, 1977/2015, p.22 ; R. Inglehart, 2007, p. 2 ; Dunlap & Mertig, 1995, pp. 121–122). In this case, postmaterialist values are only given priority if material values can be taken for granted.

The socialisation hypothesis states that the basic values adopted by people are largely a result of the conditions that were present during this individual's *formative* years. The formative years are the period between one's teenage years to their early adulthood. During this time people are also primarily influenced by their peers instead of their parents. An individual that spent their formative years in a society with conditions that would produce postmaterialist values, would adopt postmaterialist basic values. These basic values then change relatively little throughout an individual's life, at least for a majority of people. Because of this, there isn't a direct relationship between people's values and their economic conditions at any given time. If this wasn't the case, this would mean that people's values are susceptible to short term fluctuations in economic conditions. What matters for a generation or population to be more or less postmaterialist then, isn't necessarily their current economical and physical well being, but rather the state of these variables during their pre-adult years. For a society overall, this means that the prevailing values are determined by intergenerational population replacement. As the amount of postmaterialists continuously continually grows larger in the process of older materialist generation being replaced by younger postmaterialist cohorts (R. Inglehart, 1977/2015, p. 23;83;99 ; R. Inglehart, 2008, pp. 130–132 ; R. Inglehart, 2007, pp. 2–3).

As the scarcity hypothesis must be understood in conjunction with the socialisation hypothesis, Inglehart is careful to stress that the theory doesn't suppose a direct relationship between the factors that determine postmaterialism and the prevalence of postmaterialism in a society. There can indeed be countries with the right conditions for postmaterialism that don't showcase a large amount of postmaterialists yet. On the one hand this is due to postmaterialist values being a reflection of one's subjective sense of security. Which means that a mean level of income isn't the only thing which will shape an individual's sense of security, but also factors such as the social institutions present and the overall sense of security in society at large play a part. This brings with it a significant time-lag between the prosperity that gives rise to postmaterialism, and its effects³. Countries change gradually, for one as a result of postmaterialist generations replacing older and more materialist generations, but also because of postmaterialists exerting their influence (R. Inglehart, 1977/2015, pp. 69–70 ; R. Inglehart, 2007, p. 3).

³ Inglehart (2007) speculates that this time-lag would be around ten to fifteen years (p.3).

2.2 The critique towards Inglehart's method

Of course there's important critique against the explanatory power of the postmaterialism theory in itself, most relevant for this case being in conjunction with the matter of environmentalism, as will be brought up in the next section. This section will focus on more dominant points of contention within the literature, namely Inglehart's methodology. As even influential critics have found themselves agreeing that the theory is based in an intuitive understanding of a relationship between economic security, physical security and people's values.

To measure postmaterialist attitudes, Inglehart developed an index consisting of four points (a similar twelve question index was also developed, but the critique towards them is the same). Using the index, respondents are asked to rank the points according to which should be the most to the least prioritised by the state. Two of the questions are meant to reflect materialist prioritisations while the other two reflect postmaterialist prioritisations. Based on the respondent's answer, they can be sorted into one of three categories: materialist, postmaterialist or mixed. This method has been firmly established as a way to measure postmaterialist values, and as such it's often been replicated by others who seek to measure postmaterialism. Early and influential critics, however, pointed out that the index doesn't necessarily measure what it aims to measure. In the worst case scenario the classification of the respondents could be a result of them giving random answers. Which would lead to an incorrect assessment of their attitudes (Davis & Davenport, 1999, pp; 649-651; Davis et al., 1999, pp935; 951).

The critique towards the method has not stood without challenge, and there has been much said about whether the method is valid or not. What this controversy can tell us, however, is that the theory is probably struggling because of an undervaluing of the descriptive task, as explanation must necessarily be preceded by description (Teorell & Svensson, 2007, p.23). It seems that this "intuitive" theory might be suffering on the basis of lacking empirical and descriptive support. On the one hand, while there are indeed results from collected data that seem to support Inglehart's theory (for example Inglehart, 2007; Inglehart, 2015, p.31 ; Diekmann & Franzen, 1999), there are also contrary or conveluding results from data that was processed using the same method (Carter, 2018, p. 94 ; Brooks & Manza, 1994, pp. 545-546; 562-563 ; Dunlap & Mertig, 1995 ; Dunlap & York, 2008).

These disputed results show that there is a great need within the scientific community to investigate more methods for measuring postmaterialism, as the commonly used method appears to be unreliable, or at least disputed. To further this argument, the supposed unreliability of the method seems to be a result of an unsystematic error in the way it measures postmaterialism. In that case, Inglehart's method lacks not only internal validity but also reliability (Teorell & Svensson, 2007, pp. 55-56; 69).

2.3 Postmaterialism and environmentalism

This thesis does have a focus on postmaterialism in general, but it focuses on postmaterialism in relation to environmentalism in particular. On the one hand this is due to practical reasons. Environmentalism, understood as public concern for the state of the planet and subsequent new political ideas (Carter, 2018, p. xviii), is deemed much easier to operationalise than other postmaterialist values. This is further detailed further down, where the model of analysis is discussed. On the other hand, the matter of environmentalism is an especially relevant postmaterialist value because of the gravity of global environmental problems.

The postmaterialism theory of value change has naturally gained a footing when it comes to explaining the rise of environmentalism. As has been previously stated, the theory has been given much credibility due to being ‘intuitively’ correct. But a few influential scholars have greatly challenged this supposed intuitive understanding as simplistic layman wisdom. Leading to a misrepresentation of the actual relationship between environmentalism and environmental degradation in one’s surroundings. Values don’t act in a vacuum, some readily point out, and although they may influence decision-making they don’t represent the whole picture (Dietz et al., 2005, p. 356).

A relation between wealth and environmentalist attitudes has been established as a significant interest to researchers, and such studies don’t necessarily view environmentalism in conjunction with postmaterialism. Early on, influential work such as that of Riley Dunlap and Angela Mertig (1995), sought to investigate whether affluence was a prerequisite to environmentalism or not. Although they state that conventional wisdom has long suggested a positive relationship between wealth and environmentalism, they view their results as indicating the opposite. Using results from a 1992 international survey, they conclude that a substantial amount of positive correlations between wealth and care/concern for the environment aren’t present. Because of this, they conclude that environmentalism still enjoys broad support also in poorer countries, even though the conditions that are said to produce postmaterialist values haven’t been present in these countries. The validity and explanatory power of the postmaterialism theory is thus challenged.

Another article by Riley Dunlap and Richard York (2008), furthers this critique. Using the results of several surveys which they mean undermine the explanatory power of the postmaterialism theory, they state that the postmaterialism theory falls along the lines of conventional wisdom which has shown to go against the grain of the objectivity of environmental problems. Environmental problems aren’t something that only wealthy people worry about, but are rather something that concerns and is concerning to a wide range of people. This conclusion is bolstered by a growing number of grass-roots environmentalist movements in poorer countries. Meaning that at the very least, global environmentalism is an anomaly in postmaterialism theory (pp. 529-536).

So as to counter the matter of people in poorer countries showing concern for the environment, which would run contrary to the postmaterialist explanation as it was first presented, Inglehart (1995) offers a so-called “objective problems-subjective solutions” explanation. The argument is that the objective problem of environmental degradation is met with concern by people from different economic conditions because of different, subjective, reasons. Those from richer countries act upon their postmaterialist values when they show concern towards the environment, whereas those of poorer countries act because environmental degradation poses a threat towards their livelihood, which ties their concern to their materialist needs. Inglehart points out that this would be the case since the quality of environmental issues such as air and water purity vary across countries. These issues are worse in poorer countries, making environmental protection fall under the category of one’s basic physical needs there. In rich countries however, immediate environmental problems are not as palpable, meaning that concern for environmental issues would be a matter of postmaterialism in those countries. Diekmann and Franzen (1999) give weight to this explanation in their article when, also studying surveys, they find positive correlations between wealth and environmentalism. Albeit that they also find negative correlations between the two, such as people being immediately concerned for the environment. As such, they divide these types of correlations into two dimensions: environmental concern and willingness to give up something for priority of environmental values. Environmental concern is shown to be negatively correlated with wealth, meaning that less affluent people are more concerned about environmental degradation in their vicinity. Prioritisation of environmental goals at the cost of others, such as economic goals, is shown to be positively correlated to wealth. This would imply that the environment is given greater priority in wealthier countries. Dunlap and York (2008) call such explanations simplistic, however, as environmental problems are multidimensional and have materialist as well as non-materialist aspects to them in both rich and poor countries alike. For example, a poor community might oppose the exploitation of a forest for reasons of survival as well as a will to preserve its aesthetic value (p.536). See also Brechin (1999) for further critique of the objective problems-subjective solutions explanation

An interesting aspect is that both proponents and opponents of the postmaterialism theory as an explanation for environmentalism draw different conclusions from the same data. For example, Inglehart (1995) as well as Dunlap and Mertig (1995) point to a positive correlation between wealth and a willingness to make personal economic sacrifice, or a negative correlation between wealth and regarding the state of one’s local environment as poor, as either proving or disproving the postmaterialism explanation. Inglehart sees these correlations as strengthening his theory, since people in richer countries are more willing to sacrifice material wealth even though they’re not as concerned about the state of the environment in their immediate vicinity. Dunlap and Mertig on the other hand, state that people in richer countries have a greater ability to pay, which is why they gain an unfair advantage in this regard. And since people in poorer countries are more likely to see the state of their local environment as poor, this reflects a greater concern about the environment in these countries.

Once again, the disputed results surrounding the postmaterialism theory make a clear case for the continued need of testing it, in this case in regards to environmentalism. I should make clear, however, that the intent of this thesis is not to directly challenge or address any of the claims regarding the validity of the postmaterialism theory mentioned above. Rather this section is supposed to give the context that the issue has many explanations which are also hard to falsify.

3. Methodology

In this section, the methodology of the thesis is detailed. It first addresses the issue of shifting the analytical level from the individual to the systemic level, something that can't be done without stating the underlying assumptions such a shift relies on. Afterwards, the analytical tools used will be presented. The main tool used in this thesis is regression analyses, a quantitative method. Although the qualitative method of comparing cases will also be utilised, regression analyses are the main tool used in the thesis. Lastly, the nominal and operational definitions are introduced.

3.1 Shifting focus from the individual to the systemic level

Different theories can infer different implications when it comes to the “level” on which the analysis should be conducted. In this case, there is a distinction between the individual and the systemic level.⁴ There are different schools of thought as to on what level postmaterialism should be analysed, and the overwhelming majority of research that has been conducted has been aimed at the individual level. In this thesis, I don't intend to make any statement as to what level analysis *should* be conducted, but rather to explore the possibilities of systemic level analysis. It's my assumption that this wide reaching theory should be discernible on both levels if true. Meaning that analysis on either level should compliment the other.

In order to shift focus from individuals to states, it must be made clear what this means in regards to Inglehart's theory as well as what epistemological and ontological pitfalls this entails. The central concepts in the theory, materialism and postmaterialism, remain the same. Meaning that their normative definitions stay as Inglehart described. A significant change is made, however, as Inglehart and others use these to refer to individually held values. *People* are materialist or postmaterialist, not necessarily their society. This is why most analyses on this matter have used methods aimed at analysing the individual.

As a result of the shift in analytical level, the operational definitions change, and the theory is modified to fit a different level of analysis. This means that although the theoretical definitions are the same as Inglehart prescribed, the way these are measured has been altered. Put concretely, the operational definition shifts from the prevalence of postmaterialism in a society being certain answers from respondents to it instead being measured as certain output on the state level. The most notable effect this has is that the units of analysis shift from

⁴ This can also be referred to as the micro- and macro-levels, however the terms used in this thesis are individual and systemic level.

individuals to states (Teorell & Svensson, 2007, pp.38-39). So why should a theory about individual value change be discernible on the systemic level?

The notion that the theory is also applicable on the systemic level is somewhat supported by Inglehart himself in his book, although he remains quite ambivalent about this aspect. Throughout the book, he shifts analytical focus from the systemic to the individual level, detailing what effects these systemic changes have on individual value orientations. Finally, he reasons as to what effects individual value changes might have on the political institutions on the systemic level. Inglehart is quick to point out that changing attitudes among populations might not necessarily translate to immediate differences in political output. Since this is in turn dependent on the effectiveness of the political system in adopting the wishes of postmaterialists, as well as postmaterialists ability to exert their influence. In other words, it's possible for a state to house a great number of people with postmaterialist value orientations, without them necessarily affecting political output. An important aspect of the changed existential conditions in these economically and physically secure societies however, is the increased ability as well as willingness of larger parts of the population to participate in political processes than before. The increased ability as well as willingness to exert political influence would partly be due to the rising levels of education that comes with overall economic wealth. Thus, previously established elites would lose influence in favour of increasingly able challengers. According to Inglehart, this would bring with it changes in decision making on the systemic level, as postmaterialist cohorts challenge the old elites. Inglehart's view about the interplay between individual and systemic level indicators can be summarised as systemic level factors shaping individual attitudes, which then are the basis for systemic level change (Inglehart, 1977/2015, pp. 4-6; 293; 295-299; 321).

This part of the postmaterialism theory, and what it entails, has been explored by others who question whether postmaterialism should be seen as an individual or systemic level phenomenon. Several scholars challenge Inglehart's assumption about the interplay between individual and systemic level factors, instead coming to the conclusion that individual level factors such as age, class and occupation play a greater part in shaping people's value orientations than systemic level affluence and security (Nový et al., 2017 ; Davis & Davenport, 1999). There are also those who hold a firm belief that postmaterialism can't be seen as a national and therefore systemic level phenomenon, and that it must be seen as concerning individual value change only. In this sense, seeing countries as postmaterialist would be taking the analysis a step too far (Kidd & Lee, 1997). This issue is contentious, however, and as Brechin (1999) points out there has been much discussion and disagreement about the aggregate effects of postmaterialist attitudes, with many also viewing it as possible to measure on the systemic level (p.797).

In this context, my thesis departs from an assumption that it is indeed the case that prevailing postmaterialist attitudes among the population does translate to a noticeable difference in policy output, i.e. indicators on the systemic level, and that this has its origin in systemic level factors such as overall wealth in a population. At least in a majority of the countries that serve as the units of analysis.

My thesis is thus grounded in an interpretation of Inglehart's theory as holistic, meaning that if the theory is correct, then the differences produced by systemic level economic factors should be visible on the individual as well as systemic levels. The approach that I utilise is then characterised by an adoption of a top-down perspective, where the whole is more than the sum of its parts. Where the system (in this case the state) is in itself able to possess needs and goals along postmaterialist lines, which in turn explains the characteristics of the population. This positions my thesis along certain lines of an ontological divide which might not necessarily be shared by others who've sought to research the same matter: namely the question whether it is the structure that shapes the actions of individuals or if individuals shape the structure. In this my thesis aligns with the former assumption, which justifies a top-down approach. This isn't without inherent problems, however, as the so-called level-of-analysis problem points out: both a bottom-up and a top-down perspective are in a sense simultaneously wrong and right, as they would both be imperfect renderings of the same phenomena (Hollis, 1994, pp.8-9; 18; 106-108; 113). I clarify these assumptions and interpretations of the theory, as this is in my opinion necessary in order to justify the shift to analysis on the systemic level. Justified objections regarding how this method is meant to measure the same phenomena as previous studies might well be raised, since those studies were conducted primarily aimed at the level of individuals. The top-down approach also makes it harder to separate the impact of different interacting factors within the unit of analysis, which will prove an obstacle later in the thesis, where the results are presented.

3.2 Analytical models

Analyses will primarily be done using regression analysis, although these analyses will be complemented by a comparison of cases in the results section. In order to conduct the analyses, data from various indexes and measurements of wealth on the systemic level will be used. The primary index used is the Yale Environmental Performance Index, which serves to operationalise levels of environmentalism. This is analysed through GDP per capita as an indicator of wealth, although an alternative explanation using the Economist Intelligence Unit's democracy index is also used. In the results section, the UN Human Development Index is also used, although this is not relevant at this point in the thesis. These indexes will be detailed further on in the text, as the following section will focus on the analytical model of the regression analysis.

Later on, when the results are discussed, a comparison between cases is also made, meaning that this thesis uses a mixed methods approach. The comparison departs from a strategic selection of only two cases, however, which makes the comparison too limited to allow for any arguments concerning the two countries to be generalised to apply to a wider range of countries. Although this limits the external validity of the thesis, the comparison serves to compliment the overall argument of whether indicators for postmaterialism can be found on the systemic level, therefore strengthening the internal validity of the thesis. This matter will be further discussed where the comparison is made.

3.2.1 Bivariate regression analysis

The choice of data from the EPI in conjunction with for example GDP per capita entails that all the variables are on the so-called interval scale level, which means that the exact distance between the units of analysis can be determined (Teorell & Svensson, 2007, pp. 109-110). This is a significant shift in information compared to the nominal scale level that Inglehart's index entails, since it in this case would also be possible to ascertain which country is the most versus the least postmaterialist, as well as the distance between these. Such comparisons aren't possible on the nominal scale level, where units of analysis can only be categorised as materialist, postmaterialist or mixed for example. Being able to determine distances between cases allows for judgements regarding *how* postmaterialist these cases are, instead of just defining them as either postmaterialist or not. The primary advantage of having variables on the interval scale level is that it's necessary for a regression analysis to be made, which is a helpful statistical tool when one seeks to determine correlation and/or causation (Teorell & Svensson, 2007, p.160).

Using regression analysis means that the problem of causal inference can be avoided. The problem lies in that we as researchers of course can't rewind time, which means that it's practically impossible to actually determine if one factor did in fact the other. For example, it's impossible to see a shift in the values of a population depending on if they've grown up with economic and physical security or not. Seeing as they either have, or they have not. By instead comparing populations to each other that vary in the independent variable economic security, it's possible to discern the size of the effect that this variable might have. The regression analysis is such a vast comparison, making it a useful tool for determining causality (Teorell & Svensson, 2007, pp.65; 165-166).

Firstly this method would thus be relevant as Inglehart's theory centres around a claim of causality between wealth, security and postmaterialism. Secondly, the problem of causal inference seems to lie at the heart of some of the critique towards Inglehart's method (Davis & Davenport, 1999). These factors make regression analysis well suited in this case.

3.2.2 The variables used and their operationalisations

Each dataset presented concerns the year 2020. This is done so as to make the correlations between the variables as relevant as possible.

The EPI

The choice of looking at just one postmaterialist value, the protection of the environment, is made partly as a matter of practicality. The reasoning behind this is that this value is easier to operationalise as output by states than other values. For example, an operationalisation of the postmaterialist value "self-expression" seems far more difficult to operationalise in a similar manner. Another advantage is the accessibility of the data in not just the case of this study but

potential subsequent studies. Since the data is gathered and put together by an independent and reputable organisation, the intersubjectivity of this study should be high compared to if this was not the case.

The data used to operationalise states' level of environmentalism is the Environmental Performance Index (EPI). The index was developed as a way to evaluate and compare countries' performance on a wide range of environmental issues. The EPI sets out with the ambition to give a competent picture of which countries are leaders and laggards when it comes to developing a sustainable future. It does this by gauging how close each country is to meeting established policy targets on the national level. Such targets can be the internationally established Sustainable Development Goals, which provide quantified and time-sensitive indicators of a country's progress on a certain issue. The report claims that the index is on the forefront of development in the environmental sciences, seeking to choose and construct the most relevant indicators when evaluating countries' relative progress on various environmental issues. It then combines or composes these scores into a single figure, meaning that the EPI is a composite index (Wendling et al., 2020, pp. ix; 1-3; 168).

The EPI is not without flaws, of course. For one, what's seen as the best and most up to date indicators today might not stand the test of time. The fact there is a continuous need to find the best indicators can be a sign that what's currently regarded as the 'best' indicators might change. This brings with it a risk that the indicators of this edition of the EPI could themselves fall out of favour as the science progresses. A second, related, issue arises with the matter of how these indicators have been selected. As they borrow heavily from 'well established' measurements on environmental performance, such as the Sustainable Development Goals. Against which there has indeed been critique raised, calling the goals ambiguous, unquantifiable and open for interpretation (Carter, 2018, p.231)

GDP per capita

The Gross Domestic Product (GDP) per capita is an established measurement of wealth with the postmaterialism literature, as it's been used by other scholars to indicate the wealthy conditions from which postmaterialism is said to arise (see for example Dunlap & York, 2008, Davis et.al, 1999). But there have also been objections to its use in this context (Nový et al., 2017) the arguments against its use will be further explored in the section concerning results and discussion. The data over GDP per capita for each country have been collected from The World Bank's database, each country's GDP per capita is expressed in US dollars (The World Bank, n.d.).

The democracy index

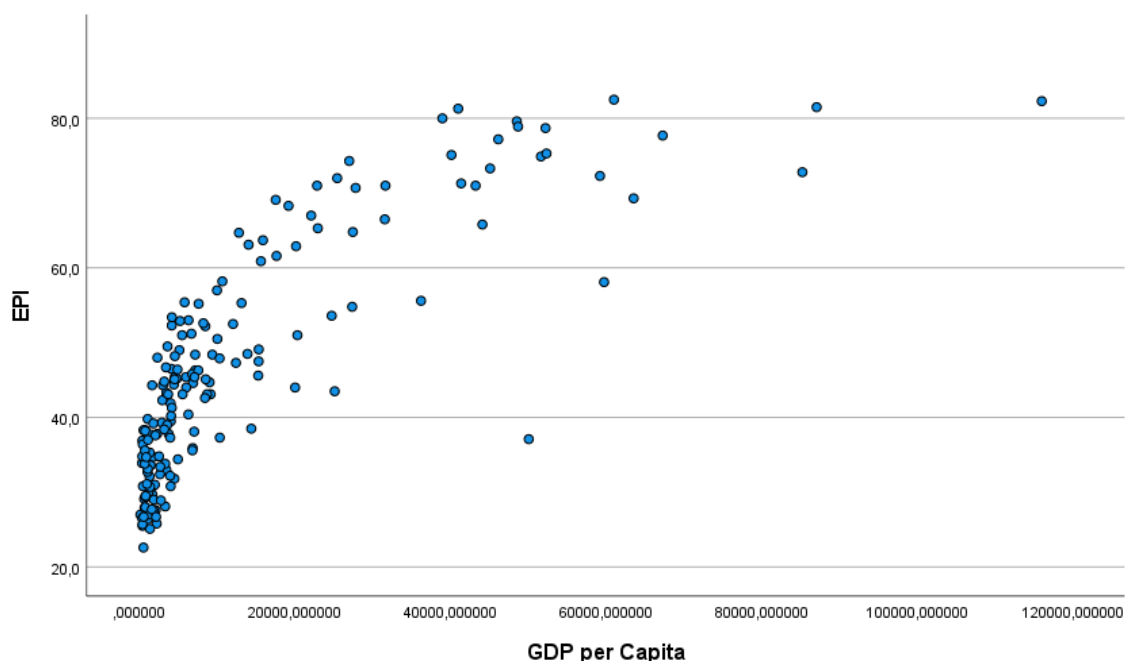
As people's ability to affect the political system has been pointed out as an alternative explanation by Inglehart and others, which is why this possibility will also be explored. In order to operationalise people's ability to influence government decisions, the Economist Intelligence Unit's democracy index is used (Economist Intelligence Unit, 2021). This choice relies on an assumption that people living in more democratic states have a greater ability to influence decision making than those living in non-democratic states.

4. Results and analysis

This section will contain presentations of the results produced by the regression analyses, what these figures say as well as how this can be understood in the postmaterialism framework. First a correlation between environmental performance and wealth is presented. This correlation is then challenged by a look into an alternative explanation, namely the matter of ability. Lastly, the two cases of Sweden and Qatar are compared to each other. This provides an opportunity to reason if postmaterialism can be said to explain differences in environmental performance between the two countries.

4.1 The correlation between environmental performance and wealth

By putting the dependent variable (environmentalism as measured by the EPI) through a regression analysis with the independent variable wealth (GDP per capita), some interesting results are produced. First, a scatterplot showing performance on the EPI on the Y-axis and GDP per capita on the X-axis, is presented. The blue dots are different countries, and the line that runs through them is the fit line showing the linear regression. After which the tables detailing the regression analysis are presented.



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⁵ An interesting aspect of the scatterplot is the apparent non-linearity of the correlation. It seems to make for a logarithmic correlation rather than a linear one, meaning that the variables probably have non-linear relation to each other. Instead using the log GDP per capita the correlation becomes more linear. This present correlation looks quite similar to the so-called “Preston curve”, however, a correlation between life-expectancy and wealth famously described by Samuel Preston in a 1975 article titled “The Changing Relation between Mortality and

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,798 ^a	,637	,634	9,4042

a. Predictors: (Constant), GDP per Capita

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26948,215	1	26948,215	304,708	<,001 ^b
	Residual	15388,457	174	88,439		
	Total	42336,672	175			

a. Dependent Variable: EPI

b. Predictors: (Constant), GDP per Capita

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	37,785	,866		43,636	<,001
	GDP per Capita	,001	,000	,798	17,456	<,001

a. Dependent Variable: EPI

When looking at the regression analysis a few things stand out. For one, the correlation is very significant with a p-value of $< 0,001$. The high significance means that the risk of this correlation being a statistical fluke is extremely low. Another important figure is the R Square value, which in this case is 0,637. This means that a large part of the variation in environmental performance among states stays more or less follows the regression line, and is thus explained by their variation in GDP per capita. In this case, about 63,7% of the variation in environmental performance can be explained by variation in GDP per capita.⁶ The regression coefficient is expressed as 0,001 in the table, meaning that for every USD added to a country's GDP per capita, it's expected to increase its performance on the EPI by 0,001 units⁷ (Teorell & Svensson, 2007, pp. 164–181).

Level of Economic Development". Perhaps some of the arguments made regarding the Preston-curve might prove useful in this context also.

⁶ Once again, the apparent non-linearity of the correlation should be acknowledged. By producing a better fit non-linear line, the variation might be better accounted for.

⁷ The abysmally small regression coefficient is the result of the great differences in span between the variables. While the figures of GDP per capita range from 0-12,000 the EPI has a highest score of 100. The analysis might've been better served by mitigating this effect.

In the report concerning the EPI, the authors also point out this strong correlation between GDP per capita and rankings in the EPI. They make clear that such a correlation has been true for previous editions of the EPI as well, although the 2020 report features an especially strong correlation. When discussing which type of country is typical at the top of the ranking, the answer is wealthy democracies. These seem to pay greater attention to many different areas of sustainability. They're also known to not only implement regulations in favour of environmental protection, but invest into sustainability at a higher rate. A crucial aspect of this is that these efforts have been ongoing for a longer amount of time in these countries, meaning that these efforts have had an effect for longer. As such, indicators on governance, like those that evaluate a country's institutions and traditions also exhibit a strong correlation to environmental performance. On the other side of the spectrum, countries that perform poorly on the EPI are often characterised as being poorer, with weak governments and/or major broad challenges such as civil unrest (Wendling et al., 2020, pp. 17–19; 39-41).

At a first glance, these results could fall in line with the postmaterialism explanation, as richer countries perform better than their poorer counterparts. These countries could also be said to exhibit a greater concern for environmental issues, as they more readily engage the problems and invest in solutions. As such, the argument that environmentalism can be found among poorer nations to an equal or perhaps greater extent doesn't seem to directly translate into environmental performance.

However, the argument about differences in ability makes for a compelling objection. Richer countries simply have greater means for engaging their environmental problems. It could be the case that poorer countries prioritise environmental issues to an equal extent, but this doesn't translate into performance because of their limited means in addressing these issues. Or, as was pointed out in the section concerning theory, it could be the case that people in these countries simply have limited means of effecting political outcomes. In which case the populations could prioritise environmental issues to an equal extent, while their governments have differences in susceptibility to these issues. This alternative explanation will be explored in the following section.⁸

4.2 A matter of ability?

That there's a strong correlation between wealth and environmentalism among countries (measured as environmental performance) doesn't necessarily mean that wealth explains environmentalism. Instead, something else could be having an impact on both these variables, for example. Or wealth could be impacting the factor that's really behind environmentalism. If one of these was the case, then the real correlation wouldn't be between wealth and environmentalism but rather environmentalism and something else. The correlation

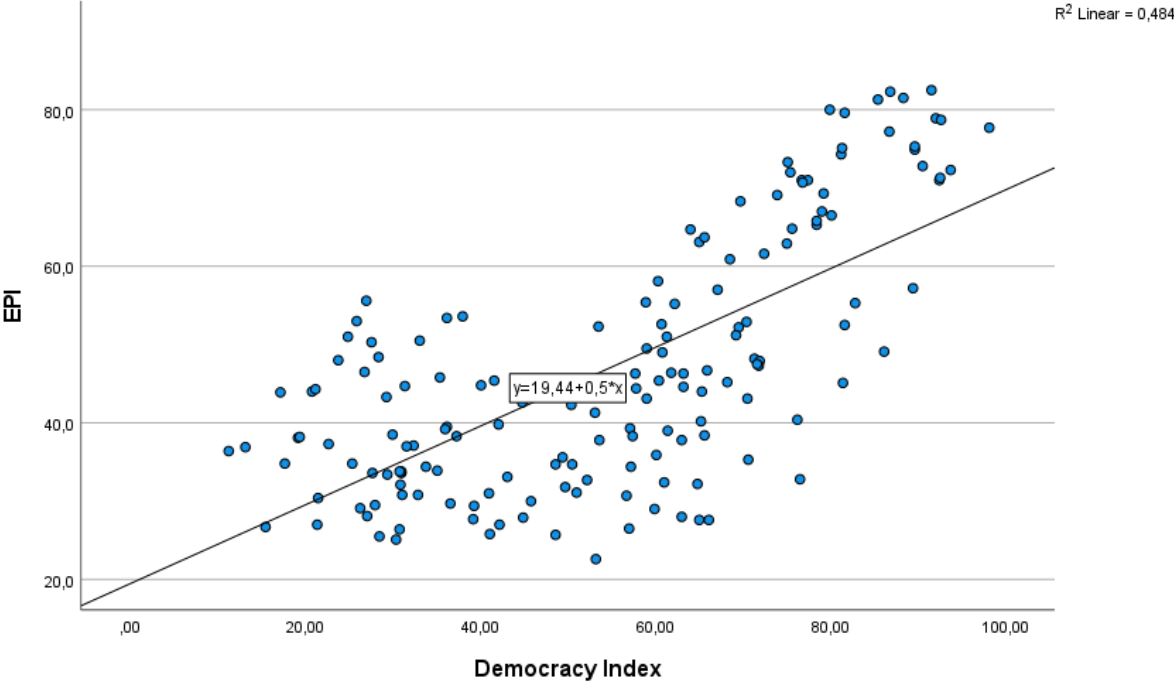
⁸ There is also the matter of the power dynamics between countries because of globalism. As many corporations are multinational and might be incentivised to put their environmentally damaging production in poorer countries with weaker governments. In this sense it could be argued that richer populations simply outsource their environmentally damaging activities to less fortunate populations. In which case they wouldn't be more environmentally conscious, but rather more environmentally oblivious.

introduced in the previous section would then be rendered spurious. So as to test the correlation between wealth and environmentalism, an alternative variable will be introduced, which would serve to challenge our original correlation (Teorell & Svensson, 2007, p. 183;185-186).

The control variable introduced will be people’s influence on their governments. As this has been brought up as a significant factor affecting postmaterialist influence in much of the literature. As was brought up in the section concerning theory, Inglehart reasoned that differences in people’s ability to influence political outcomes might make analysis on the systemic level misleading. After all, a country could contain a great number of postmaterialists whose states aren’t susceptible to their influence.

In this case, it would mean that the top performers simply tend to do better in translating the wishes of their populations than those who perform poorly. Seeing as the top performers on the EPI tend to be flourishing democracies, this would indicate that these populations do have an easier time getting their values translated into political action than people in un-democratic countries would.

By keeping performance on the EPI as the dependant variable, but substituting GDP per capita with a democracy index, this result is produced:



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⁹ As can be seen in the scatterplot, the correlation between EPI and the democracy index doesn’t seem to be strictly linear either. Rather a flatter curve might be more appropriate in the first half, while a score of <50 on the democracy index seems to bear with it a sharper positive curve.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,695 ^a	,484	,480	11,4929

a. Predictors: (Constant), Democracy Index

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19791,080	1	19791,080	149,835	<,001 ^b
	Residual	21133,780	160	132,086		
	Total	40924,860	161			

a. Dependent Variable: EPI

b. Predictors: (Constant), Democracy Index

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	19,438	2,429		8,003	<,001
	Democracy Index	,503	,041	,695	12,241	<,001

a. Dependent Variable: EPI

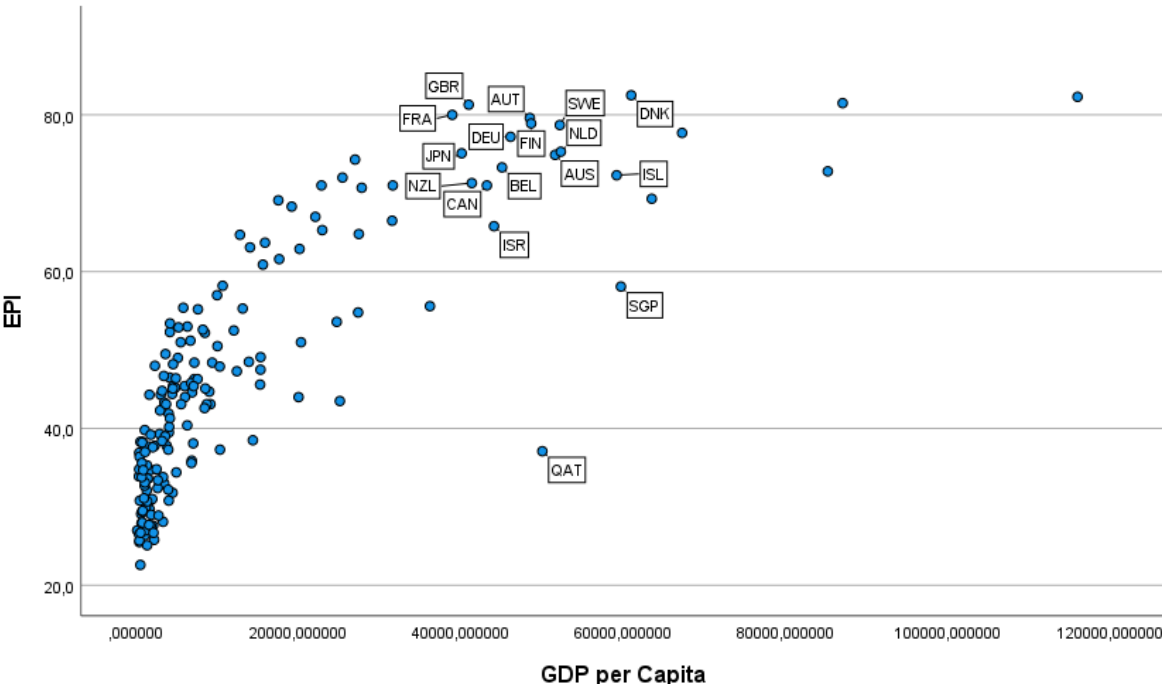
The correlation between democratic strength and environmentalism is also highly significant, with a p-value < 0,001. The R Square is lower in this case, however, meaning that variations in rankings on the democracy index explain a bit less of the variation in environmental performance than variation in GDP per capita did. The R Square is 0,484 compared to the 0,637 in the first analysis. This could mean that democracy is a somewhat weaker explanation than wealth.

Of course, democracy is only one potential factor that might lie at the bottom of these results instead of wealth. As was made clear in the EPI report, factors of governance such as the level of corruption have been shown to have a high correlation to environmental performance. The problem with all these alternative explanations, however, is that they're in turn strongly correlated to wealth. Democracy and economic growth has a well established and strong correlation, although an argument that wealth would bring about stronger democracy is highly disputed (Knutsen, 2012). Because of this correlation, insight into the causal mechanism is blurred. It could be the case that wealth affects both levels of democracy and the postmaterialist value of environmentalism, in which case the causal link between wealth and postmaterialism would hold true. Or it could be the case that environmental performance

actually relies on levels of democracy. But since levels of democracy and wealth are so heavily correlated the correlation would appear to apply to wealth as well.

4.3 A potential case for postmaterialism by virtue of the socialisation hypothesis

As has been shown above, it's hard to say whether postmaterialism can be said to lie behind differences in performance on the EPI without seeking further analysis on the individual level. If we return to graph one, however, an opportunity to make the postmaterialism theory relevant for analysis presents itself. As there are countries that vary on environmental performance even though they are of comparable wealth. If we are to highlight a few of these countries in a rough GDP per capita span of around 4000 to 6000 USD, the first scatterplot introduced looks like this:



The vast majority of the highlighted countries rank quite high on the EPI, with only Qatar and Singapore falling below a score of 60. The best performers on the other hand, contain countries such as the UK, Austria, Sweden and Denmark.

By further analysing such a subset of countries, the postmaterialism framework could again prove useful. The relation between the scarcity and socialisation hypotheses dictate that a considerable time-lag is to be expected from the conditions that produce postmaterialist populations, and the effect of that value change on the systemic level. Because of this, one

would expect to find differences between populations on the basis of how long these conditions have existed in each country.

When choosing which countries to compare, it's advantageous to pick ones with a limited variation on the independent variable so as to lessen the risk of selection bias inherent when taking a non-randomised sample. Although the risk of this is already low, seeing as this is a strategic selection of two cases (Teorell & Svensson, 2007, pp. 221–224). Similarities in GDP per capita might also mitigate the argument about there simply being a difference in ability to invest in environmental measures, since these two countries are roughly equally wealthy. Of course there are other factors that could affect the state's abilities to spend their country's overall levels of wealth. Such factors could be the size of government and its budget. Unfortunately, a rigorous analysis in this direction lies beyond the scope of this thesis, although there is room for the argument. When making the selection, I'll therefore select two countries of comparable wealth with differences in environmental performance.

The top performers of the highlighted countries seem to fit into the category that Inglehart describes as countries where postmaterialist values would be the most prevalent. Let's take Sweden as an example. Sweden's been wealthy for a considerable amount of time, and the country enjoyed the economic prosperity that followed the second world war. Its citizens have lived under a comprehensive welfare state for the better part of the 1900s, with many social security nets to provide social security (Britannica, n.d.-b). Another factor that might be relevant is that Sweden is also a prevalent democracy, with a score of 92,6 on the democracy index (Economist Intelligence Unit, 2021).

Qatar is one of the worst performers on the EPI. The country owes its wealth to the vast amounts of oil found within its borders in 1939, and produced for the first time in 1949. Before its GDP soared because of its energy exports, Qatar was ranked as one of the poorest countries in the world. Its economy is still dependent on the energy sector to a very large extent, although attempts at diversification have been made. The Qatari economy and its citizens' income has varied as the oil price has fluctuated (Britannica, n.d.). Qatar is also very un-democratic, scoring only 32,4 on the democracy index (Economist Intelligence Unit, 2021). The Qatari state does provide welfare services, however, such as free education and health services (Britannica, n.d.-a).

A comparison between the longevity of these countries' wealth can be made so as to reason about their proclivity to postmaterialism, in accordance with the time-lag implied by the postmaterialism theory. Below are charts detailing Qatar and Sweden's GDP per capita in USD from the span 1970-2020, with five year intervals (The World Bank, n.d.). Note that the time-span is long enough to account for the theorised time-lag between conditions that produce postmaterialism and its effects:

Year:	1970	1975	1980	1985	1990	1995
Qatar	2755,5564 85	15292,57	35010,40	16590,80	15454,18	15849,57

Sweden	4736,2171 54	10117,31	17097,83	13666,86	30593,67	30282,96
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Year:	2000	2005	2010	2015	2020
Qatar	29976,17	51455,95	67403,09	63039,11	50124,39
Sweden	29624,91	43437,06	52869,04	51545,48	52274,41

From the chart above, we can tell that Qatar has fluctuated more in terms of GDP per capita than Sweden, owing to its dependency on oil prices. Qatar drastically increased in GDP per capita to around 35 000 USD around 1980, to then fall back to 15-1600 USD levels up until the year 2000, from which the country had a steadier growth. Sweden on the other hand seems less volatile, albeit with a dip around 1985 also. The more volatile nature of Qatari wealth could be said to add to a sense of insecurity, which would make its population more materialist according to the postmaterialism theory.¹⁰

Comparing these two countries in terms of GDP per capita might be misleading, though. As pointed out by Nový et al. (2017), GDP per capita says little to reflect factors that influence a country's living standard such as infrastructure and social welfare. Instead, it's plausible for a country to be "rich" in terms of GDP per capita, but fall short in terms of living standards depending on how the money is spent. An alternative and better indicator suggested by Nový et al. would be something like the Human Development Index (HDI), which might better reflect the existential security through which postmaterialism is said to arise (pp. 686-687).

Below is a comparison of the two countries using the HDI instead of GDP per capita (United Nations Development Programme, n.d.). Again five year intervals are used, but with a more limited span between 1980-2015 due to a lack of data.

Year:	1980	1985	1990	1995	2000	2005	2010	2015
Qatar	0,790	0,752	0,754	0,784	0,810	0,831	0,825	0,854
Sweden	0,786	0,797	0,816	0,856	0,897	0,899	0,905	0,929

As we can see from the chart above, however, there doesn't seem to be great differences between Sweden and Qatar in terms of HDI either. The two countries even seem to compare better to each other using this metric than when compared using GDP per capita, as the HDI fluctuates less. In this sense the HDI seems to make for a poorer indicator than GDP per capita when predicting postmaterialism. As such, the Qatari population shouldn't differ as

¹⁰ Resource dependency might be a possible system level indicator which could influence postmaterialist attitudes, as this could lead to a sense of economic insecurity. Again an elaboration of this is unfortunately beyond the scope of this thesis, but it might prove an interesting subject for future research.

drastically from Sweden in environmental performance as it does, if postmaterialism indeed could be said to produce this difference. If the HDI correctly indicates the context in which postmaterialism is supposed to arise, then the difference between these two cases can't be explained by the theory.

Several conclusions can be drawn from this comparison. One is that Qatar can be said to have experienced less security in its economic development, at least when GDP per capita is compared. In this context the postmaterialism theory could be said to explain a difference in environmental performance on the systemic level. On the other hand, this fluctuation in GDP per capita hasn't had a considerable impact on the HDI score for the country, which makes it unsure whether the population's sense of security has really been affected. Of course, the alternative explanation of people's ability to influence their government is still relevant. Qatar ranks significantly lower on the democracy index than Sweden, meaning that the Qatari population can be said to be severely limited in its ability to influence political outcomes. As outlined previously, however, the difficulty in discerning whether wealth or democracy would impact environmental performance makes such an analysis difficult. Qatar could also be an outlier, meaning that an unaccounted-for variable has a great effect on their environmental performance. In order to rectify such uncertainties, a greater number of countries should be compared. By systematically comparing cases in this manner, which exact differences between populations that lead to different outcomes could be better understood. As has been argued in this thesis, if those differences are along the lines of how long these countries have enjoyed their current levels of economic and physical security, then a case for the postmaterialism theory can be made.

5. Summary and conclusion

Although controversial in many aspects, Inglehart's theory of value change among affluent populations makes for a compelling argument. The intuition inherent in the theory, however, also makes it susceptible to critique aimed at its simplicity. An influential aspect of this critique has been the method Inglehart developed so as to measure postmaterialist attitudes among populations. And it's from this critique my thesis has departed. Begging the question: if this supposedly intuitive theory has been criticised because of its method, are there alternative ways one could measure the supposed value change among populations?

Doing so can't be done without first making clear one's assumptions. The matter of whether postmaterialism should be only regarded as a theory on the individual level, or if it can entail changes on the systemic level has been a point of contention. In this context, by modifying the theory this thesis has kept an understanding of the Inglehart's theory as wide reaching. It understands the postmaterialism theory as stemming from factors on the systemic level, which influence individuals, who's aggregate value change reflects on their political institutions. Through such an understanding, not only people can be regarded as postmaterialist, but populations and states. Inglehart's theory about individual value change can readily imply a noticeable difference on the systemic level. This is because of a process where postmaterialist generations start to exert influence on political institutions, at the expense of previously

established materialist values. I make the argument that one should be able to measure their influence on the systemic level depending on how long the conditions that produce postmaterialism have been present in a country.

So as to signal these theorised differences among populations, a particular postmaterialist value was chosen as an indicator of postmaterialist attitudes at large. Once again, Inglehart's theory has been a matter of contention. There are arguments that the explanation is too simplistic, not properly taking the nature of environmental problems into consideration. People from affluent as well as less affluent countries have shown concern about environmental problems. This criticism has been met by Inglehart and others, who mean that although people from different backgrounds seem to show concern about environmental issues, they do so because of different reasons. According to this argument, people from affluent countries more readily prioritise environmental issues at the expense of other matters, such as the economy.

If one takes environmental performance as an indication of environmentalism, a strong positive correlation between it and wealth can be found. The countries that perform the best are wealthy countries, which could speak in favour of these populations prioritising the environment to a greater extent. It could also be the case, however, that these differences in performance don't reflect differences in prioritisations after all. Instead it's possible that different populations prioritise the matter to an equal extent, but they're faced with an unequal ability to put their priorities into action. To test this alternative explanation, the same measurement of environmentalism was instead compared to the levels of democracy each country enjoys.

There was also found to be a significant and strong correlation between democratic strength and environmental performance. Which could indicate that differences in environmental performance isn't a matter of wealth but ability of the population to enforce their priorities. The validity of this alternative explanation is dubious, however, as democracy and wealth are in turn positively correlated.

It could also be the case that wealthier countries perform better by virtue of being wealthy, instead of this being the matter of different prioritisation. This certainly could be the case, as wealthier countries simply have greater means when it comes to addressing their issues. So as to test this alternative explanation, two countries with comparable wealth but vastly different environmental performance were more closely analysed. The countries of Sweden and Qatar showed a mostly similar economic development, however, at least during the time span that is relevant in the postmaterialism theory. Albeit that Qatar's economy has shown a greater propensity to fluctuate, which could be said to bring about a lesser sense of economic security. This was not reflected in terms of the HDI, however, which has been argued to be a better indicator of such. Qatar is also very different from Sweden in terms of democracy, again lending weight to this as an alternative explanation.

The matter of finding valuable indicators on the systemic level is difficult. This is probably due to a significant descriptive grey area that lies between individually held values and political outcomes. It's difficult to discern whether differences in environmental performance are the result of differences in value orientations between populations, or something else. This thesis has provided an attempt at analysing the output of states, in order for conclusions about the populations to be made.

The analyses made are insufficient in so far as they can't properly support arguments regarding the postmaterialism theory on the systemic level. This would require a more rigorous analysis, which would include a number of omitted factors as well as greater consideration for, and mitigation of, alternative explanations. I do believe that this thesis might readily serve as a precedent for future studies, however, and the reasonings presented within could prove valid if elaborated upon. As such, the thesis has presented the potential of measuring postmaterialism on the systemic level, albeit that this potential is as of yet unrealised.

References

Literature

- Brechin, S. R. (1999). Objective problems, subjective values, and global environmentalism: Evaluating the postmaterialist argument and challenging a new explanation. *Social Science Quarterly*, 80(4), 793–809. <https://doi.org/10.2307/42864406>
- Brooks, C., & Manza, J. (1994). Do changing values explain the new politics? A critical assessment of the postmaterialist thesis. *The Sociological Quarterly*, 35(4), 541–570. <https://doi.org/10.2307/4121518>
- Carter, N. (2018). *The Politics of the Environment: Ideas, Activism, Policy*. Cambridge University Press.
- Davis, D. W., & Davenport, C. (1999). Assessing the validity of the postmaterialism index. *American Political Science Review*, 93(3), 649–664. <https://doi.org/10.2307/2585580>
- Diekmann, A., & Franzen, A. (1999). The wealth of nations and environmental concern. *Environment and Behavior*, 31(4), 540–549. <https://doi.org/10.1177/00139169921972227>
- Dietz, T., Fitzgerald, A., & Shwom, R. (2005). ENVIRONMENTAL VALUES. *Annual Review of Environment and Resources*, 30(1), 335–372. <https://doi.org/10.1146/annurev.energy.30.050504.144444>
- Dunlap, R. E., & Mertig, A. G. (1995). Global concern for the environment: Is affluence a prerequisite? *Journal of Social Issues*, 51(4), 121–137. <https://doi.org/10.1111/j.1540-4560.1995.tb01351.x>
- Dunlap, R. E., & 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), 529–563.

<https://doi.org/10.1111/j.1533-8525.2008.00127.x>

Economist Intelligence Unit. (2021). *Democracy Index 2020: In sickness and in health?* The Economist Intelligence Unit.

<https://www.eiu.com/n/campaigns/democracy-index-2020/>

Inglehart, R. (1995). Public support for environmental protection: Objective problems and subjective values in 43 societies. *PS: Political Science and Politics*, 28(1), 57–72.

<https://doi.org/10.2307/420583>

Inglehart, R. (2007). *Postmaterialist values and the shift from survival to self-expression values*. Oxford University Press.

<http://dx.doi.org/10.1093/oxfordhb/9780199270125.003.0012>

Inglehart, R. (2015). *The Silent Revolution: Changing values and political styles among Western publics*. Princeton University Press. (Original work published 1977)

Inglehart, R. (2008). Changing values among Western publics from 1970 to 2006. *West European Politics*, 31(1–2), 130–146. <https://doi.org/10.1080/01402380701834747>

Kidd, Q., & Lee, A.-R. (1997). Postmaterialist values and the environment: A critique and reappraisal. *Social Science Quarterly*, 78(1), 1–15. <https://doi.org/10.2307/42863668>

Knutsen, C. H. (2012). Democracy and economic growth: A survey of arguments and results. *International Area Studies Review*, 15(4), 393–415.

<https://doi.org/10.1177/2233865912455268>

Nový, M., Smith, M. L., & Katrňák, T. (2017). Inglehart's scarcity hypothesis revisited: Is postmaterialism a macro- or micro-level phenomenon around the world? *International Sociology*, 32(6), 683–706. <https://doi.org/10.1177/0268580917722892>

Teorell, J., & Svensson, T. (2007). *Att fråga och att svara: Samhällsvetenskaplig metod* (1st ed., Vol. 5). Liber AB.

Databases

The World Bank. (n.d.). *GDP per capita (current US\$)*. Data. Retrieved April 14, 2022, from

<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

United Nations Development Programme. (n.d.). *Human Development Reports*. Human

Development Reports. Retrieved May 7, 2022, from

<https://hdr.undp.org/en/indicators/137506>

Wendling, Z. A., Emerson, J. W., de Sherbinin, A., Esty, D. C., & et al. (2020). 2020

Environmental Performance Index. In *epi.yale.edu*. Yale Center for Environmental

Law & Policy. epi.yale.edu

Encyclopaedia

Britannica. (n.d.-a). Qatar. In *Encyclopedia Britannica*. Retrieved May 16, 2022, from

<https://www.britannica.com/place/Qatar>

Britannica. (n.d.-b). Sweden. In *Encyclopedia Britannica*. Retrieved May 16, 2022, from

<https://www.britannica.com/place/Sweden>