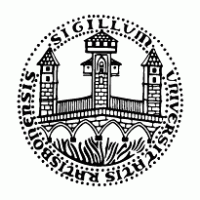
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Globalisation and Democracy

Environmental Policy Support and Political Regime

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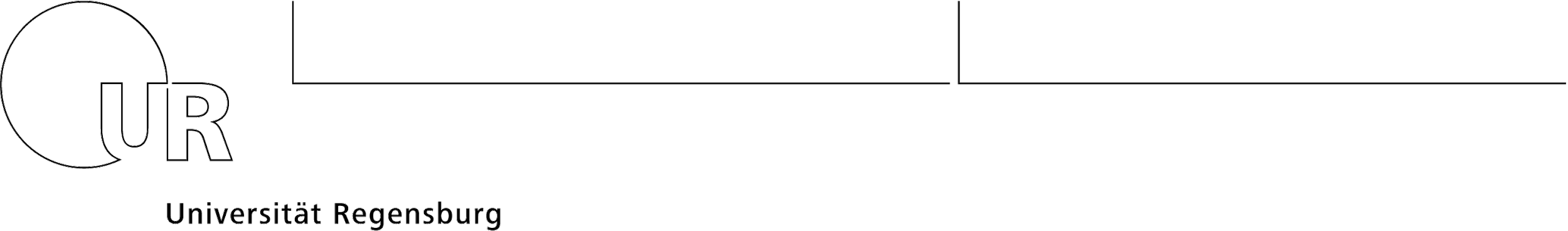
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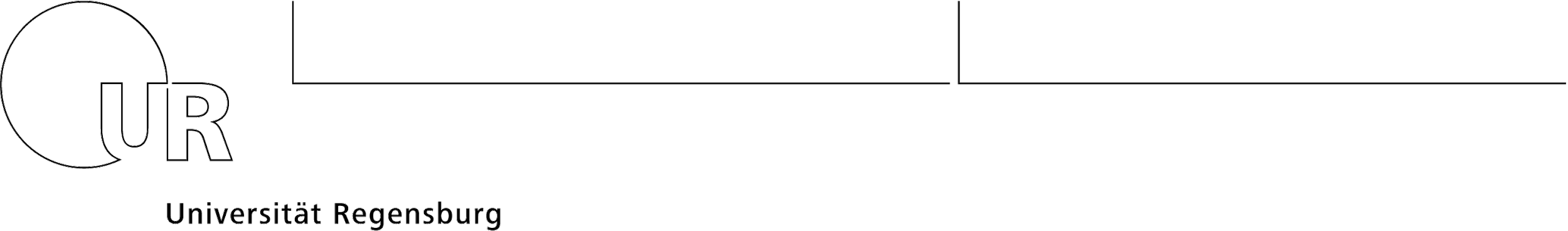
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Abstract

Environmental degradation is a consequence of globalization pressing on today’s global population. In regard to the collective action dilemma, governments are necessary factors in addressing this issue. Regarding the achievement of a country's environmental sustainability, one main argument suggests that governmental regime directly affects efficiency combating environmental degradation. A society’s support of environmental policies depends heavily on said society’s perception of the quality of government. When a government is given a high quality rate, it tends to have more support for environment policies. This paper will contribute to previous research by measuring which type of regime obtains more policy support from citizens, therefore making it more efficient in combating environmental degradation.



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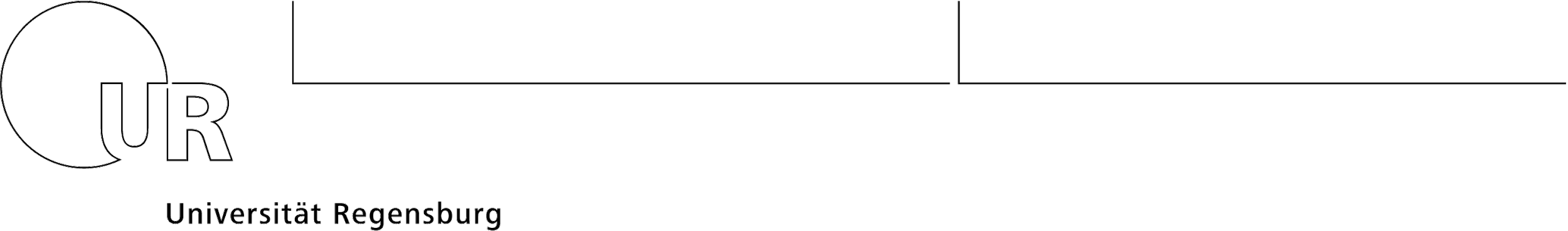
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**I. Introduction**

During the last four decades, an increase in globalization has raised living standards of mankind around the globe, but it has also simultaneously caused high levels of environmental degradation (Gale, 2019, pg. 517). Most current environmental issues are the result of placing temporary individual benefits above long-term consequences shared by the entire population -- known as the collective action problem. This problem in today’s society is proving to be the largest and most severe case to date.

As globalization increases international embeddedness, which has led to the current state of environmental degradation, it also increases international openness. Not only has prosperity spread worldwide but also information. Inevitably, an increase in information leads to an increased awareness and concern for the environment. Moreover, environmental concern does not directly correlate with public support for environmental policies and do not directly reflect progress towards sustainability. Most people worldwide already accept the reality and seriousness of environmental problems. In contrast, many need to become more supportive of effective policy solutions (Fairbrother, 2016).

Among the research on how to best combat environmental degradation, one main argument points to regime-type as being a key factor. Democracies have a clear advantage over autocracies with regard to weak sustainability; however clear evidence claiming democracy the “winner” is still lacking in this field or research (Wurster, 2013). Peter Burnell states that “commitment to taking climate action does not neatly map onto the distinction between democracies and non-democracies or the distinction between developed and developing countries.” (2012, pg. 23). Democracies are more responsive at political commitment, particularly at the international level, as opposed to actual problem-solving in both absolute and relative terms in comparison to non-democracies (Peter, 2012). The liberalization and democratization of a regime, such as an increase in civic associations and political parties, also prove to convert popular concerns about climate-related issues into political demands. However, Gabriele Spilker claims that a democratic regime will only provide environmental public goods to its citizens once it is well established, which does not happen overnight (2013). Furthermore, the growing environmental crisis is likely to undermine the conditions under which democracy and political pluralism flourishes, producing ‘environmental authoritarianism’. This is one reason why Mark Beeson claims that environmental autocracies are more effective than democracies in tackling pressing environmental issues (2010). This is due to the fact that combating environmental issues actually erodes certain democratic liberties & freedoms such as the will of the individual. Democracy places a high value on human life and focuses on the power and will of the individual, sometimes conflicting with the collective interest. Another aspect of democracy that can affect collective interest is the very foundation of this regime, the election process. Being elected by society, democracies are held responsible for their performance. This can prove beneficial regarding the enactment of new environmental sustainability policies; however, due to the political openness of a democracy, policies can be changed. With each new governmental turnover, efforts taken to combat environmental degradation can be revoked & reversed.

However, it is important to consider one aspect that affects a regime’s ability to combat environmental degradation -- the trust individuals place in their governments. The more a government is trusted by its citizens, the better environmental sustainability policies are supported by the population. Public policy support is essential in combating climate change, and the enforcement of collective action through state intervention is more likely to be successful and effective if it is supported by the citizenry (Davidović et al., 2020, pg. 25). In a study from 2019, Davidović et al. show that the quality of government (QoG) has a positive effect on people’s willingness to pay environmental taxes, thus reflecting the trust a society places in its government to act responsibly with governmental revenue. Yet, while QoG and generalized trust are positively linked to support for climate taxes, it is not associated with support for climate subsidies and bans (Davidović et al., 2020, pg. 2).

Testing for a correlation between citizens’ support of environmental policies and the type of regime they live under, takes on a new aspect of current research debating whether democracies or autocracies are better at tackling environmental issues. While obtaining public support for environmental policies is crucial to achieving long lasting sustainability, governments are an essential mediator in this collective action problem through the policies they put into place. If one regime provides more evidence of producing an environmentally supporting society, foreign investment in the governmental systems of developing countries will be justified with the long term goal of global environmental wellbeing, affecting all peoples worldwide.

This research paper attempts to further explore how support for environmental policies differ between people living in democracies and those in autocracies, and whether one type of regime gains more public support for its climate policies, therefore proving more competent in combating climate change. This will be carried out by first defining key terms such as the collective action problem, and regime type, as well as the theory concerning each regime’s capability of addressing environmental degradation. Different theories regarding environmental policy support will then be laid out as well as the measures used to define policy support within the context of this paper, which includes green political parties, recycled waste per capita in proportion to the total waste per capita, and tax evasion. To complete the theoretical section of this paper, the theory behind the control variables used within this framework will also be presented, which include education and reading levels, the quality of government, state social spending in relation to GDP, civil societies, and environmental regulation policies. The empirical section will address the measurements used to determine regime type, public environmental support and the control variables. Following this, the empirical methods used to evaluate any correlation between variables will be presented and evaluated in regard to the hypotheses laid out at the end of the theoretical section. The significance of the data found and the graphs presented will then be interpreted. The paper will end by explaining possible setbacks of this conducted research followed by possible future research opportunities and the drawn conclusions.

**II. Theory**

Despite the scholarly community doing its best to communicate the current environmental state, there is little spontaneous nor organized, collective action regarding the large-scale social dilemma of environmental degradation. This problem can be identified as the collective action problem. As in the case of most large-scale, collective action problems, there is a large number of stressors hampering an individual actor’s willingness to spontaneously start cooperating. This is because individuals must act against their own short-term self-interest in the benefit of the collective good (Jagers et al., 2019, pg. 22). As an example, fast fashion provides cheap, short-term satisfaction at the cost of the long-term environmental state. In the social science literature, a collective action problem is typically understood as a social dilemma, which is present when two premises are true (Dawes, 1980, p. 170). Firstly, when the payoff for each individual actor to act in self-interest (called defecting) is higher than the payoff for acting in the interest of the collective (called cooperating), irregardless of what others do; and secondly, when all individual actors receive a lower payoff if all defect rather than if all cooperate.

Understanding climate change as a large-scale collective action problem identifies the issue, yet, it simultaneously provides a more complex one. Individuals, consumers, and business actors are not prepared to voluntarily reduce their emissions while personal profits accrue and costs are paid by the global collective (Jagers et al., 2019). To overcome larger-scale environmental collective action problems, a third actor facilitator is often necessary. Hence, states play an important role in managing this social dilemma (Davidović et al., 2020, pg. 3).

Having concluded that the state is necessary, it is now being debated which regime is more effective in combating environmental degradation. In the 1990s and early 2000s, most scholars accepted Francis Fukuyama’s declaration of democratic supremacy, mirroring the Churchill hypothesis claiming democracy to be the best political regime. But as China has continued to develop and yet remains an autocracy, the world questions the validity of democracy being the natural end goal in governmental transformation as claimed. Some scholars, including Beeson, even question whether autocracies would prove more beneficial vis-à-vis the current climate crisis (2010). Scientific research on autocracy and the environment has been gaining momentum since the 1970s, and environmental authoritarian literature assumes that autocracies are indeed better equipped at solving the climate change problem, challenging democracy’s legitimacy as the “ideal” regime. Yet, while many scholars agree that democracies are better at dealing with environmental pollution, the bureaucratic aspects of democracy take time therefore hindering quick, efficient solutions to a pressing problem. Current research shows however that both regimes have their own pros and cons; yet, it remains unclear whether one is more efficient than the other (Wurster, 2013). In order to further explore this debate, current literature regarding different theories on regime classification will be well defined.

Taken from the Greek word demokratia, democracy accordingly is a form of government in which the people rule (Held, 2006). Yet, apart from elections, scholars widely disagree on what constitutes democracy, rendering different models with which a government can be deemed democratic (Merkel, 2016, pg. 144). “Electoral democracy embodies the core value of making rulers responsive to citizens through competition for the approval of a broad electorate during periodic elections” (Coppedge et al., 2016). This minimalist approach to democracy fails however to adequately measure the quality of democracy in a country. In contrast to the minimalist approach of electoral democracy, maximalist or participatory democracy addresses this issue. “Participatory democracy embodies the values of direct rule and active participation by citizens in all political processes; it emphasizes non-electoral forms of political participation such as through civil society organizations and mechanisms of direct democracy” (Coppedge et al. , 2016). This measure of democracy is known as de facto democracy and excludes all regimes that rule with de jure democracy, meaning all regimes that have elections in principle but fail to do so in actual terms.

Autocratization is defined as a decline in democratic attributes and as non-democracies (Maerz et al., 2020, pg. 2). However, non-democracies are quite a heterogeneous group, and in recent years, new methods of measuring types of autocracies have begun to develop. Although differentiating between types of autocracies prove relevant to this research topic, this particular paper will not address this differentiation due to time and space constraints. Autocracies do not face the same bureaucratic dilemma that democracies do; however, autocracies do stand at a disadvantage taking environmental protection measures (Wurster, 2013, pg. 4). Coined as the dictator’s dilemma, an autocracy must use repression practices to maintain control of the government, and by doing so, less reliable information actually reaches the government (Wintrobe 2009). Pertaining to its lack in ability to address environmental degradation, the dictator’s dilemma proves problematic for autocracies.

In considering democracies superior autocracies in this debate, one theory often considered is the modernization theory, which claims that economic development leads to political development and in turn leads to democracy. This can be confirmed firstly by the fact that democracies tend to be capitalistic and cooperate more on the international level (Ward, 2008). Secondly, there is a positive correlation between a country’s GDP and its involvement in international organizations. As international markets are left to regulate themselves, a natural tendency towards an open market economy and capitalism will emerge (Clapp & Dauvergne, 2011). This is known as the Market Liberalism worldview on the political economy of global environmental change in politics and science. Capitalism is a common trait of democracy and therefore seems reasonable to predict that democracies would gain more public support in regards to environmental sustainability.

Yet, contradicting the modernization theory, some countries will decide to remain autocratic in order to more efficiently tackle the current environmental crisis facing the world. Beeson argues that autocracies deal better with environmental challenges and can easily create new regulations and laws (2010). The counter point of this argument however points out that autocracies retain power and control through an iron fist and need more efforts and resources to enforce laws and regulations. Whereas a democracy needs more time to increase environmental output, the populace is more willing to accept and self-regulate the laws passed because they were achieved through an democratic process of the majority. Meaning that democracies are more effective in gaining public support for environmental policies. These arguments pro and contra both regime types are expected to reflect the empirical portion of this paper. Since the environment depends on support from the individual level up, the next step in solving this issue is by determining what effects the level of support citizens give for environmental protection policies.

Considering the perception of policy design within a society, it is important to regard institutional trust. Institutional trust refers to individuals’ perception of their national institutions. The quality of government (QoG) is often used to gauge institutional trust within a country and refers to the capacity of the state to perform its activities in an efficient, fair and impartial manner, and without corruption (Rothstein & Teorell, 2008). A society’s support of environmental policies depends heavily on a society's trust in its government and on the quality of government. When a government is given a high quality rate, it tends to have more support for environment policies.

On the international level, the more a country is involved in international organizations -- or the higher its international embeddedness -- the more likely it is to have a higher level of openness and liberalization. The openness of a country is measured by the amount of international trade and media. The higher the openness of a country is, the greater the environmental awareness of a country will increase due to the higher exchange of information. Liberalization increases environmental support due to the greater flow of information from foreign media and research groups.

In order to further understand and better analyse public support, the individual must be considered. An ecologically conscious individual is someone who engages in pro-environmental behaviors and holds coherent values with present theories on the subject, often supporting green political parties. Green political parties are run by citizens who prioritize the environment and who organize public support for environmental policies that are put in place by the government. Public support of environmental policies increases with each additional green political party. This is due to the fact that political parties, that are not in a position of power, reflect the public's policy desires 84% of the time (Romeijn, 2018). A society’s presence of green political parties within the country reflect environmental issues being addressed by the government. When a country has at least one political party that advocates for environmental protection and has a place in government, then environmental policies are more likely to be passed.

Behaviors are also influenced by social expectations and normalities, and people with higher environmental concern tend to have a pro-environmental value-orientation. Those who are more trusting of their government also tend to contribute more to environmental public goods by recycling (Fairbrother, 2016). The percentage of recycled waste per capita in proportion to the total waste per capital reflects governmental trust within a society. Measuring municipal waste is a good determinate of both environmental outcomes and outputs. Municipal waste is typically defined as the waste collected by municipalities; it includes household and commercial waste but generally not waste from major industries and construction or demolition sites (OECD 1999) (Jahn, 2016, pg. 20). While a developed country with a high GDP per capita has a higher consumption level than that of a developing country with a smaller GDP, countries within the same range of economic similarity can be compared with one another. Those that have more municipal waste can be deducted to place more importance on environmental sustainability in both the individual and public sectors. For example in North and Western Europe, an increasing emphasis on reusable household goods such as women’s sanitary products or homemade cleaning products made from organic trash will inevitably decrease municipal waste. However, less municipal waste can also reflect higher taxation or regulation on trash. One great example is southern Istria, Croatia, where citizens are taxed for exceeding the weekly allowance of weight in non-recycled trash. So breaking down municipal waste will not only represent a country’s active environmental support but will also reflect the level of trust the society places in its government (Jahn, 2016, pg. 27).

Lastly, a society’s willingness to pay taxes also reflects public policy support. This can be measured with the percentage of tax-evasion in comparison to the environmental policy stringency in a society. The stringency of environmental policies levied by a government reflect environmental concern, while proportional tax evasion among a country’s citizens reflects policy support (Scruggs, 2003). High tax evasion is common in countries ranking low on the quality of government scale, and low tax evasion is common in countries ranking high on the quality of government scale. This is why the quality of government is relevant when analyzing tax evasion. It is quite difficult to find reliable indicators of tax evasion and to perform adequate statistical extrapolations. However, using top-down methodologies based on data from national accounts, tax gap measurements can effectively reflect tax evasion. This implies that the data included in national accounts is exhaustive, thus meaning that the tax gap estimate within a country covers all economic activities, including those concealed from the tax administration. In other words, the assumption of exhaustiveness implies that a tax gap estimate based on data from national accounts also includes revenue loss caused by tax evasion (Vegh, 2016, pg. 29). Therefore tax gap estimates can be useful to assess the scale of taxpayers' non-compliance or lack of policy support and the need for improving tax policy. When doing so, it is important to take the shadow economy into consideration. The shadow economy includes all market-based legal production of goods and services that are concealed from the government primarily to avoid payment of income, value added or other taxes; to avoid payment of social security contributions; and to avoid having to meet certain legal labor market standards, such as minimum wages, maximum working hours and safety standards (Schneider 2010).

There are different opinions on what causes individuals to be one more environmentally concerned and therefore more willing to support sustainability policies. One perspective holds that support for environmental protection derives from people’s overall socio-political worldviews. Those who prioritize social equality and welfare over industry and commerce and who are less hierarchical and individualistic tend to hold higher concern for the environment. In this view, environmental protection entails interventionist action by a larger, more powerful state. More of a market conservatism that is in favor of a smaller government is from this theory less likely to support environmental protection measures. However, research to date supporting this idea has only considered western, Anglo-Saxon countries creating a lack of unbiased data collected from a broader range of countries (Davidovic et. al., 2019).

Another perspective esteems environmental protection as a good that must be purchased, meaning that its demand should directly correlate with income. Democracy is by definition ruled by the people and therefore gives a voice to the poor. In doing so, with time democracy alleviates poverty and aids the sustainability of a society (Ward, 2008, pg. 2). This is one sign of an increasing awareness and concern for the environment when observing the “prosperity hypothesis”. This “prosperity hypothesis” claims that low support for environmental protection reflects poorer citizens directing their attention at more pressing matters of basic survival. This argument should hold true across individuals and countries on a basis of GDP per capita (Fairbrother, 2016, pg. 6).

An alternative approach states that environmental policy support reflects a broader shift of people’s values, mainly towards “post-materialism”. As living standards rise and people are freed from material concerns about their basic security, attention turns towards higher-level concerns, such as environmental degradation (Fairbrother, 2016, pg. 6). Empirically, a number of studies have found that postmaterialist values correlate remarkably strongly with measures of environmental policy support and preferences with respect to environmental protection, both across nations (Gelissen 2007) and individuals (Kidd and Lee 1997; Fairbrother 2013).

The success and effectiveness of collective action through state intervention relies on public support (Davidović et al., 2020, 25). Governments can influence citizens to become environmentally conscious through taxes, fines and subsidies; however, in order for a policy to be effective, it must be supported by the general populace. There are three factors that affect climate policy support listed by Drew and van den Bergh (2015): the social-psychological factor, the perception of policy design as to whether they are fair and efficient, and the contextual factor such as the economic and political context.

Regarding the individual, the average education and reading levels of a society is correlated with environmental understanding and acceptance of governmental policies that strive to achieve environmental sustainability. Those who are more educated and able to read tend to be more aware of the current climate crisis and more willing to support environmental policies, such as a tax on carbon emissions. The stringency of environmental policies in each country must also be taken into account. The more environmental outputs a country has in place, such as environmental protection policies and regulations, the higher value the government places on current environmental issues. Being elected, in the case of democracies, by the populace, a democratic government with high environmental outputs reflects a high environmental concern among its citizens. Enforcement is just as important, for when a policy --such as a tax-- is not enforced, then there is no reason for evasion. Economic development, economic equality and environmental quality also affect individuals’ environmental concerns and will also be taken as control variables. Here, economic development will be measured by GDP per capita. The GDP per capita is important to consider. Individuals who do not earn enough to afford basic life necessities are less likely to support higher environmental taxes, therefore creating less environmentally concerned citizens, whereas individuals in wealthier countries are more likely to support environmental sustainability. The presence of civil societies is also relevant to appropriately consider the number of green political parties in a country. When a country does not have more than one political party nor a civil society, then it will not have any political green parties. The existence of civil societies reflects countries with more environmental policy support.

In the empirical section, the following hypotheses will be tested. Supporting both the prosperity hypothesis and the post-materialist hypothesis, the richer a country is, the more public support its government will have for environmental policies. The greater the civil society and green political presence is within a country, the more democratic it will be. The democratic a country is, the higher the recycling rates will be. Democracies tend to have higher quality of government; therefore the more democratic a government is, the more likely its citizens will be supportive of environmental sustainability policies. Along the same reasoning, since autocracies tend to rate lower on quality of government, the more autocratic a government is, the less supportive its citizens will be of environmental sustainability policies.The higher the QoG rating a government has, the more democratic it will be. The more liberal a society is, the more democratic the government will be. The more educated and literate a population is, the more supportive the public will be of environmental policies. The larger the tax gap is within a country, the less democratic its government will be. Democracies are reflected by their civil societies, therefore the more present a civil society is in a country, the more democratic it will be.

**III. Empirical Methods**

Data will be observed from 2011-2018; however, the majority of the data will be drawn from 2015 since most of the variables relevant to this study contain the fullest coverage in this year without becoming too out-dated and irrelevant. Being that most less developed countries began liberalizing around the early 1980s (Rudra, 2005, pg. 5), and that global warming has been internationally recognized as a political problem since the early 1990s, observing data in this time period will prove relevant for this study. Data for some variables has not been sufficiently collected in 2015; for this reason, some data will be taken from another year other than 2015, be it from 2011, 2017 or 2018. Albeit, this is not optimal, this analysis will use available data to draw correlations between public environmental policy support and regime type as accurately as possible. All countries with available data for this time period will be included in this quantitative analysis. Instead of focusing on only one region, all countries with data for this time frame will be observed to minimize biased results. A few variables that only have accessible data for OECD countries will be used in lieu of a broader selection of countries. Doing so will better address the previously stated hypotheses.

Different indices will be used to measure the independent variable -- regime type -- in this multivariate regression analysis. Autocracies are often defined as non-democracies and therefore are reflected in the scaling process of the following democratic indices.

As a base measurement of democracy, the V-Dem indices will be used, which covers all five models of democracy: electoral, liberal, participatory, deliberative, and egalitarian. The electoral principle of democracy (v2x\_polyarchy) evaluates governmental responsiveness to the public, which is achieved through extensive suffrage, clean and just elections, and political and civil societies. Each of the remaining four measurements take the first into account in their own calculations. The liberal principle of democracy (v2x\_libdem) focuses on the limits placed on government in order to protect individual and minority rights from the tyranny of the state and the majority. The participatory principle of democracy (v2x\_partipdem) measures active citizen participation in political processes be it electoral or non-electoral and favors direct rule by citizens when applicable. The deliberative principle of democracy (v2x\_delibdem) is concerned with the deliberative process in which political decisions are motivated by the public interest in the common good, therefore measuring a regime by its ability to discuss and implement public preferences. The fifth and final V-Dem index used in this study, the egalitarian principle of democracy (v2x\_egaldem) examines the inequalities within a society by measuring the equal protection of rights and freedoms, the equal distribution of resources, and the equal access to power across groups (Coppedge, 2018). The data used for these indices was collected from 177 countries from 1900 to 2018, giving a broad and temporal spatial scope. For the purpose of this research, data will be observed from 2015. This index places each country on a range from 0 to 1, with 0 being the lowest or least democratic. Not only is disaggregate data publicly available but theoretical justifications of applied measurements and measurement error are also discussed, leaving this index valid and reliable. This measurement of democracy does however have one drawback: there is no clear distinction between de jure and de facto aspects in the data (Boese, 2019, pg. 100).

In order to observe the minimalist approach to democracy, the Revised Combined Polity Score from QoG Data (p\_polity2) will be utilized. This index is similar to the Polity 2 of Polity 5 index by reflecting the de jure democratic institutions by focusing on the contestation of political offices and constitutional constraints placed on the head of state. However, this revised version of the polity variable is designed to facilitate the use of the polity regime measure by modifying the annual polity score to account for transitioning governments. Collected from 1946-2017 for 165 countries, this measurement provides a broad temporal and spatial scope of data. However for the purposes of this research paper, only data from 2015 will be analyzed. This index ranges each country from -10 to 10, with -10 being strongly autocratic and 10 strongly democratic. Due to its exclusion from the Polity2 index, Iceland was assigned a score of 1.0 matching the rest of western europe since the early 2000s (Marshall, 2015). This was done in order to improve the multivariate regression and prevent observations from being deleted due to “NA” . This measurement proves useful for this research because the disaggregate data from this index is publicly available. There are however drawbacks to this index: measurement decisions are not clearly explained, therefore leading to problems with both validity and reliability. Also important democracy quality dimensions, such as participation and civil rights, are not considered in the theoretical concept nor measurement of the Polity 2 index (Boese, 2019, pg. 100). For this reason, this index was chosen to measure electoral democracy, which does not regard participation nor civil rights. For this particular reason, the data from the Polity 2 of Polity 5 index will be cross referenced with that of the V-dem index. This will ensure a clearer understanding of which state institutions can be classified as a democracy from the minimalist --or de jure-- approach, thereby increasing outcome validity.

In contrast to the minimalist approach of electoral democracy, participatory democracy is defined as maximalist. Participatory democracy will be measured using the Freedom House measurement (fhi) which objectively evaluates political rights and civil societies. This study will be utilizing the modified Freedom House index from QoG data, which has been collected from 194 different countries from 1972-2018, covers a variety of democratic features, measures de jure and de facto democracy quality, and is based on evaluations from native country experts, giving it an extra dimension of validity. For the purpose of this study, the data from 2015 will be observed. Each country is placed on a range from 1 to 3, with 1 equating a “free” country, 2 “partly free”, and 3 “not free”. This range is a simplified version of the 1-7 scale from the Freedom House Index. There is however one drawback to the Freedom House Index; it lacks explained measurement decisions. Without both a sufficient explanation of individual factors, weights and indicators being used and the access to a disaggregate dataset, this index loses both validity and reliability (Boese, 2019, pg. 100). These drawbacks will not pose an issue to this analysis, firstly because this index will be cross-referenced to the participatory democracy index from V-Dem, and secondly because the data will also be cross-referenced with that of the Polity 2 of Polity 5 index.

The level of democracy measurement from QoG Data (fhi\_polity2) will be used to further observe the Freedom House and Polity 2 indices. Teorell created this joint index, which performs better both in terms of validity and reliability than either sole index (2020). The variables fh\_pr and fh\_cl from Freedom House and p\_polity2 from Polity are averaged together to achieve this measurement, which ranges from 0-10 with 0 equating the least democratic government and 10 the most democratic. Any missing values from Polity were imputed by regressing Polity on the average Freedom House measure. This joint index will be cross-referenced with the Vdem indices to supply a more accurate analysis for this study.

In order to determine public support of environmental policies, a number of elements will be taken into account. To begin, the quality of government (QoG) refers to the capacity of the state to perform and correlates with public trust and support in a government. The ICRG Indicator of Quality of Government will be used to measure the QoG. This variable contains data from 1984-2018 for 139 countries in the year 2018. The mean value of the International Country Risk Guide (ICRG) variables ``Corruption'', ``Law and Order'' and ``Bureaucracy Quality'', are scaled 0-1, with higher values indicating a higher quality of government. Corruption is an assessment of corruption within the political system. Law and order assesses the strength and impartiality of the legal system and the popular observance of the law. Bureaucracy quality measures the changes in policy or interruptions in government services with each change of government; a higher score is given to countries that minimize the revisions of policy with each governmental change (PRS Group, 2019).

Observing the contextual factor that International embeddedness tends towards liberalization, liberalization will also be used as a dependent variable to measure public governmental support. Data for the Liberal Democracy Index (LDI) is taken from QoG Data, which is available for 173 countries from 1946-2018 on a scale of 0-1 with 0 equating no liberalization and 1 a high liberalization. This research will observe the data from 2015. This variable was chosen because it judges the quality of democracy by the limits placed on government.This is achieved by constitutionally protected civil liberties, strong rule of law, an independent judiciary, and effective checks and balances that, together, limit the exercise of executive power. Being used as control variables, an observed high level of liberalization within a country should correlate with a high number of civil societies and green political parties.

The strength of green political parties (grn.seat) within each state will be observed by measuring the number of effective green parties that have seats in government. Data is collected from 1960-2017 for 35 countries. The number of countries is limited because all countries being observed in this research do not contain parliaments; therefore the presence of a green political party equates zero. Effective number of parties on the seats level according to the formula proposed by Laakso and Taagepera (1979) as used by the QoG world map.

Secondly, the proportion of recycled waste per capita in proportion to the total waste per capita (r.rate) will be evaluated. This variable will be taken from the European Environmental Bureau. This measurement of recycling rate per country has been chosen because it is an adjusted rate, which includes discrepancies in how countries reported waste figures. This set of data has been updated from the version in 2017 and includes new statistics from countries in the OECD. The recycling rate presents the amount of Municipal Solid Waste (MSW) recycled as a proportion of total MSW generated from the top 25 performers. Data from the period 2014-2017 will be observed given that each country only has data from one year within this period, yet the data is not given from all countries within one single year.

Thirdly, due to the lack of statistical data reflecting tax evasion or fraud, the amount of tax evasion in a country will be measured using the tax gap measurement (taxgap.shadow) by Munawer Sultan Khwaja and Indira Iyer (2014). With data from 61 countries in 2014, this tax gap measurement is adjusted to include the shadow economy and is given in proportion to the total GDP of each country. Including the shadow economy in this measurement increases the resulting tax gap in each country, therefore better representing tax evasion within a society. While a positive tax gap shows that the country is not fully utilizing its revenue potential up to its capacity, a negative tax gap indicates that the country is actually collecting above its economic capacity. Although this measurement does not include all countries within the compass of this study nor any data from 2015, it still proves viable in measuring public policy support through the measurement of tax evasion. Thus, the data from 2014 will be observed.

As control variables, the three factors affecting environmental policy support which were mentioned by Drew and van den Bergh will be used to better evaluate the relationship between regime type and social environmental concern. Measuring the education and reading levels will take into account the first factor which addresses the social-psychological side of the individual. Education (mean.schl) will be measured using a dataset from the website, Our World in Data, that combines data from three different sources with a time span of 1870-2017. The mean education of total schooling across all education levels for the adult population in each country is reflected in the data.

Literacy (lit.rate) will be measured using a cross-country dataset also taken from the website, Our World in Data. Compiled data from several, credible sources relays the percentage of populations over the age of 15 that can read and write in order to present data from 156 countries around the world from 1475-2015. However, this dataset is not sufficient enough to use by itself since it does not include developed countries and will therefore be combined with the literacy rates from UNESCO Institute for Statistics, which covers 80 countries and 27 regions from 2014-2018. Since data from 2015 does not represent all countries, data from 2018 will be observed instead. The literacy rate is defined by the percentage of a population over 15 years of age that can read and write. In countries where almost the entire population has completed basic education, there is a general lack of data for literacy rates. In order to observe the literacy rates of the countries that fall into this category, the statistics from the North American and Western Europe region will be observed along with the statistics from a group of countries categorized as developed (see: Appendix I). It is worth noting that some regions in Asia are disputed and literacy rates can vary depending on categorization of a particular nation (Oceanie vs East Asia & the Pacifi vs Asia (Eastern)). This data was mostly collected through self-declaration or through population censuses, whereby some countries applied different literacy definitions from the international standards. Due to this, for the purpose of this study, data from both sources will more accurately cover a wider range of countries, taking the average from any countries represented twice.

The number of civil societies will be measured using the Human Freedom Index 2020 (hfi) which covers 162 countries from 2008-2018. This study will observe the data from 2015. One of the several areas covered by this index is association, assembly, and civil society, which is why this index will be used to measure civil society. This index is on a scale of 0 to 10, where 0 represents, for the relevancy of this paper, no civil society and 10 represents a strong civil society.

In order to ensure the relevancy of this research, the environmental policies (eps\_mean) in place will also be observed. A country with few to no environmental policies in place, or policies without meaning, would skew the correlation between regime type and public environmental policy support. The OECD Environmental Policy Stringency Index (EPS) will therefore be used. It is a country-specific and internationally-comparable measure of the stringency of environmental policy. Stringency is defined as the degree to which environmental policies put an explicit or implicit price on polluting or environmentally harmful behaviour. The index ranges from 0 (not stringent) to 6 (highest degree of stringency). The index covers 28 OECD and 6 BRICS countries for the period 1990-2012. Since no data is available for the year 2015, the year 2012 will be considered.The index is based on the degree of stringency of 14 environmental policy instruments, primarily related to climate and air pollution. Although this index does not cover all the countries in this research paper, nor does it go beyond the year 2012, it still serves as a generic control variable that can help evaluate the relationship between public environmental policy support and regime-type.

The final control variable, gross domestic product per capita (gdp.pc), is taken from Gleditsch’s dataset for the year 2011, which offered a sufficient number of cases closest to the year 2015, being relevant for this study (2014). The figures are given in US dollars. This dataset did not however contain all the countries needed to be compatible with the other variables in this study. To counteract this, the remaining data was pulled off the World Bank website and manually entered in for the same year (2020).

A dichotomous distinction between democracy and autocracy is not sufficient to explain performance results between the regimes (20). For this reason, a continuous concept of democracy will be used, ensuring that all countries are included in the analysis even if they do not fall into a well-defined governmental category. The cross-referencing of regimes defined by different theories is crucial in order to thoroughly evaluate the hypotheses and rule out possible errors. With V-dem index providing valid and reliable data, the Polity 2 of Polity 5 index evaluating the de-jure or minimalist definition of democracy, and the Freedom House index evaluating the de-facto of maximalist definition of democracy, the regime type of states around the world will be both validly and reliably. A multivariate regression will be used to cross-reference the different factors measuring public environmental policy support and the control variables chosen for this study.

Regrettably, due to an insufficient amount of cases within the recovered datasets, a few variables mentioned in the sections of this paper must be left out of the multivariate regression analysis in order to achieve more relevant results. This includes the dependent variables for the green political presence in a country (grn.seat), for the recycling rate in proportion to the total municipal waste (r.rate) due to the inclusion of solely OECD countries, and for the tax gap meant to reflect the tax evasion (taxgap.shadow). The two independent variables that were personally computed for the purpose of this study are also excluded from the multivariate regression analysis. The variable averaging all independent variables mentioned in this study (reg.mean) proved irrelevant in the multivariate regression with the other variables. The same goes as well for the variable reflecting an average of all five V-Dem indices used in this study (vdem.mean). Finally, one control variable, possibly due to a lack of sufficient cases, did not prove relevant for the multivariate regression module. The variable measuring the environmental policy stringency in(eps\_mean) is therefore not included in the empirical section of this study.

While analysing, it is important to consider the different variable scales. Although most of the variables used in the regression do utilize the same scale of 0-1. The literacy variable (lit.rate) reflects the literate percentage of the population, the educational variable (mean.schl) reflects the average number of school years, the variable for human freedom (hfi) is on a scale from 0-10 that could not be rescaled (at least within my own programming ability) without compromising the data, and the GDP variable (gdp.pc) reflects the GDP of a country in US dollars.

Yet, the independent variables (fhi\_polity2 and fhi, p\_polity2) were rescaled to that of the V-Dem indices on a 0-1 scale with 0 being the strongly autocratic or “not free” -- in the case of the variable for Freedom House (fhi) 0.5 equates “partly free”-- and 1 being either strongly democratic or “free”. This eases the cross-referencing between these different political regime measurements in order to compensate for the short-comings of each individual measurement previously mentioned and to more accurately identify a country as either autocratic or democratic.

When observing the multivariate regressions, a few observations stand out in the residual plots. For the QoG dependent variable, Qatar and India appear to be outliers. However, only Qatar proves to be a true outlier that could essentially skew the results by having an underestimated QoG score. That being confirmed, Qatar will be left out of the multivariate regression analysis. Doing so prevents an inaccurate skewing of the data, therefore leaving the analysis more accurate. Similarly, the observations for Senegal, Columbia, and France stand out as outliers. However, after having been further analyzed, only Senegal proves to be a true outlier, meaning that the LDI for Senegal has been overestimated. While Colombia and France will remain in the analysis, the observation for Senegal will be excluded from the multivariate regression for the LDI dependent variable, which will improve regression analysis.

**IV. Results**

As previously stated, some of the dependent variables could not be tested in a multivariate regression model due to an insufficient number of cases. Therefore, three hypotheses could not be addressed, one of which being a control hypothesis. Both regression models (appendix II) prove significant with a very low p-value.

Both regressions have negative estimates for p\_polity2 and lit.rate. This means that as the p\_polity2 rating of a country increases, or rather as a country becomes more democratic, the openness of the country will decrease, which is represented by the LDI dependent variable, along with a decrease in the quality of government measured by the QoG dependent variable. However, it is important to take into account that the probability of this being false stands relatively high with a pr(>t) value of 0.527. Since these results go against current theory, they should be further analyzed before drawing concrete conclusions. On the contrary, all five V-Dem variables are positively correlated with the LDI dependent variable, whereas three of the V-Dem variables correlate positively with the QoG variable. Moreover, the Freedom House measurement of democracy and the crossed measurement of Freedom House and Polity2 from Teorell also depict positive correlations with both dependent variables. For this very reason, this study observes regime type not only from a minimalist but also a minimalist perspective; not to mention the liberal measurement of democracy is also accounted for. The negative estimate for the correlation between in the LDI and the literature rate of a country

The QoG residual also has a negative estimate for v2x\_partipdem, implying that the quality of government decreases as a government shifts away from elective democracy and towards more direct democracy elements with an increased level of civil engagement. The LDI residual also has one more negative estimate for the control variable gdp.pc, implying that as a society has an increased GDP per capita, it becomes less open with a decreasing LDI. This seems counterintuitive and needs to be further observed. Interestingly enough, the QoG variable holds a strong significance of 0.001 with the control variable gdp.pc. This compliments the theory discussed and proves one of the tested hypotheses. As the GDP per capita of a country increases, the quality of government will also see an improvement. The QoG variable also has a somewhat significant correlation of 0.01 with V2x\_polyarchy and v2x\_libdem, suggesting that the quality of government increases with the level of elective --or minimalist-- democracy as well as with the liberal definition of democracy. There exists yet one more significant correlation between QoG and the average years of schooling within a country. This implies that as a population becomes more educated, the quality of government improves, thus proving one control hypothesis. Returning to the LDI dependent variable, a strong significance of 0.001 can be observed with the v2x\_libdem independent variable. This is to be expected as the v2x\_libdem variable measures for the liberal definition of democracy.

**V. Further Research**

This study can be further improved by collecting full datasets for the one control variable and three dependent variables that had to be thrown out of the multivariate regression models. A deeper look into the two outlier observations, Senegal and France, would also undoubtedly prove valuable in regards to the research question handled by this study. In order to take this study one step further, testing not only the support for policy support but also support for climate subsidies and bans would provide an interesting aspect that could better address the research proposal. The data concerning support for climate subsidies and bans is however rather scarce and would most likely need to be collected. A few more control variables, such as income equality, weather and climate, population distribution, age and gender distributions, access to the internet, and infrastructure, would additionally validate these findings, perhaps revealing another aspect not yet conveyed.

**VI. Conclusion**

This study has contributed to current research by proving a positive correlation between democratization and public support for governmental policies. Although this topic requires more data and a deeper analysis, it provides proof that an increase in democracy correlates with an increase of public support, which will prove necessary facing the environmental degradation currently facing our generation.

**Appendix I**

**Regions**

Developed countries: Albania; Andorra; Australia; Austria; Belgium; Bermuda; Bosnia and Herzegovina; Bulgaria; Canada; Channel Islands; Croatia; Czech Republic; Denmark; Estonia; Faroe Islands; Finland; France; Germany; Greece; Hungary; Iceland; Ireland; Isle of Man; Italy; Japan; Latvia; Liechtenstein; Lithuania; Luxembourg; Malta; Monaco; Netherlands; New Zealand; Norway; Poland; Portugal; Romania; San Marino; Serbia and Montenegro; Slovakia; Slovenia; Spain; Sweden; Switzerland; The former Yugoslav Republic of Macedonia; United Kingdom; United States

East Asia and the Pacific: Australia; Brunei Darussalam; Cambodia; China; Cook Islands; Democratic People's Republic of Korea; Fiji; Indonesia; Japan; Kiribati; Lao People's Democratic Republic; Macao, China; Malaysia; Marshall Islands; Micronesia (Federated States of); Myanmar; Nauru; New Zealand; Niue; Palau; Papua New Guinea; Philippines; Republic of Korea; Samoa; Singapore; Solomon Islands; Thailand; Timor-Leste; Tokelau; Tonga; Tuvalu; Vanuatu; Viet Nam

North America and Western Europe: Andorra; Austria; Belgium; Canada; Cyprus; Denmark; Finland; France; Germany; Greece; Iceland; Ireland; Israel; Italy; Luxembourg; Malta; Monaco; Netherlands; Norway; Portugal; San Marino; Spain; Sweden; Switzerland; United Kingdom; United States

Latin America and the Caribbean: Anguilla; Antigua and Barbuda; Argentina; Aruba; Bahamas; Barbados; Belize; Bolivia; Brazil; British Virgin Islands; Cayman Islands; Chile; Colombia; Costa Rica; Cuba; Dominica; Dominican Republic; Ecuador; El Salvador; Falkland Islands (Malvinas); French Guiana; Grenada; Guadeloupe; Guatemala; Guyana; Haiti; Honduras; Jamaica; Martinique; Mexico; Montserrat; Netherlands Antilles; Nicaragua; Panama; Paraguay; Peru; Puerto Rico; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; Suriname; Trinidad and Tobago; Turks and Caicos Islands; Uruguay; U.S. Virgin Islands; Venezuela

Oceania: American Samoa; Cook Islands; Fiji; French Polynesia; Guam; Kiribati; Marshall Islands; Micronesia (Fed States of); Nauru; Niue; New Caledonia; Northern Mariana Islands; Palau; Papua New Guinea; Samoa; Solomon Islands; Tokelau; Tonga; Tuvalu; Vanuatu

Small island developing states: Antigua and Barbuda; Aruba; Bahamas; Bahrain; Barbados; Belize; Cape Verde; Comoros; Cook Islands; Cuba; Cyprus; Dominica; Dominican Republic; Fiji; Grenada; Guinea-Bissau; Guyana; Haiti; Jamaica; Kiribati; Maldives; Malta; Marshall Islands; Mauritius; Micronesia (Federated States of); Nauru; Netherlands Antilles; Niue; Palau; Papua New Guinea; Saint Kitts and Nevis; Saint Lucia; Samoa; Sao Tome and Principe; Seychelles; Singapore; Solomon Islands; Saint Vincent and the Grenadines; Suriname; TimorLeste; Tokelau; Tonga; Trinidad and Tobago; Tuvalu; U.S. Virgin Islands; Vanuatu

Sub-Saharan Africa: Angola; Benin; Botswana; Burkina Faso; Burundi; Cameroon; Cape Verde; Central African Republic; Chad; Comoros; Congo; Côte d'Ivoire; Democratic Republic of the Congo; Equatorial Guinea; Eritrea; Ethiopia; Gabon; Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Madagascar; Malawi; Mali; Mauritius; Mozambique; Namibia; Niger; Nigeria; Rwanda; Sao Tome and Principe; Senegal; Seychelles; Sierra Leone; Somalia; South Africa; Swaziland; Togo; Uganda; United Republic of Tanzania; Zambia; Zimbabwe

**Variables**

dataset Final Merged Dataset

cname Country Name

code Country Abbreviation

v2x\_polyarchy V-Dem Index for Electoral Democracy from 2015

v2x\_libdem V-Dem Index for Liberal Democracy from 2015

v2x\_partipdem V-Dem Index for Participatory Principle of Democracy from 2015

v2x\_delibdem V-Dem Index for Political Democracy from 2015

v2x\_egaldem V-Dem Index for Egalitarian Democracy from 2015

vdem.mean Averaged V-Dem Indices from 2015

p\_polity2 Revised Combined Polity Score from 2015

fhi Freedom House Index from 2015

fhi\_polity2 Freedom House & Imputed Polity 2 from 2015

grn.seat Presence of Green Political Parties in 2015

r.rate Recycled Waste per capita in Proportion to Total Waste per capita

taxgap.shadow Tax Gap in Proportion to GDP including the Shadow Economy

qog Quality of Government Score from 2015

mean.schl Literacy Rates 15+ from 2015 & 2018

lit.rate Average Total Years of Schooling

ldi Liberal Democracy Index from 2015

hfi Human Freedom Index from 2015

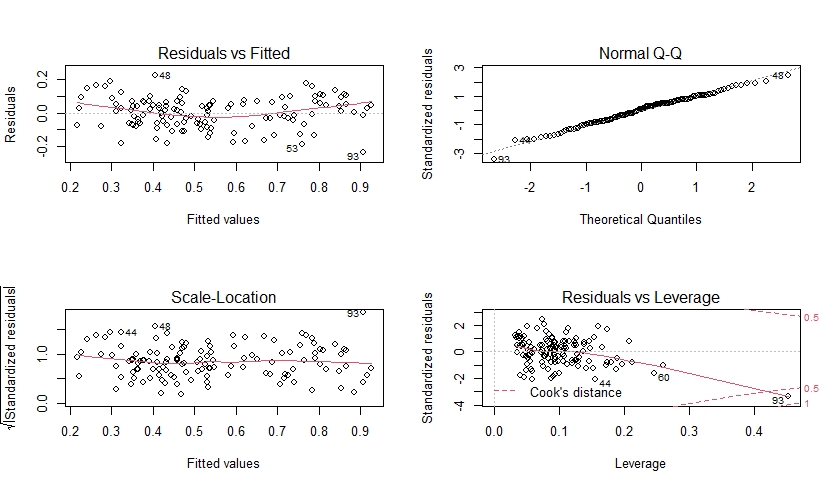
eps\_mean Environmental Policy Stringency in 2015 in OECD & BRICS

gdp.pc GDP per capita in 2011

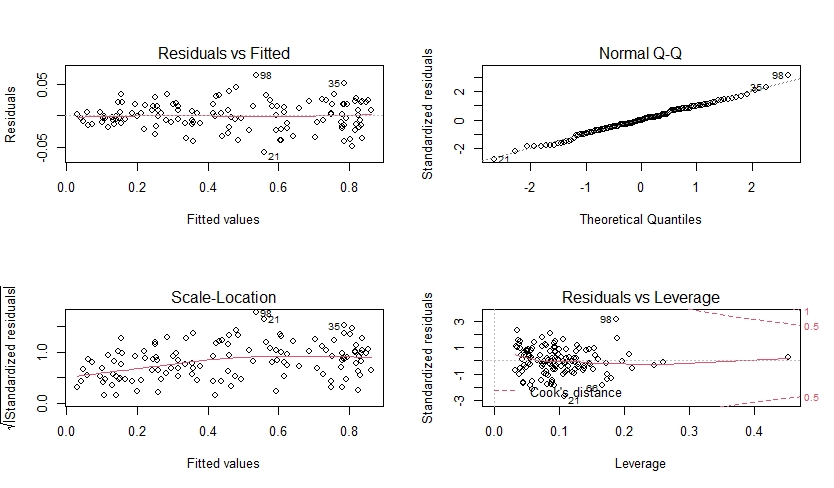
reg.mean Averaged V-Dem Indices, Freedom House & Imputed Polity 2 from 2015

**Appendix II**

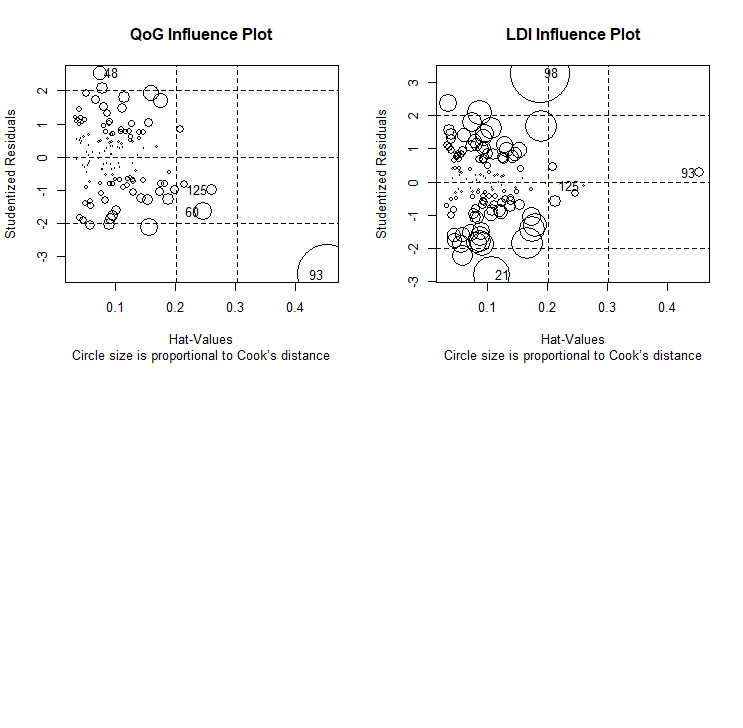
**Residual Plots for QoG:**



**Residual Plots for LDI:**



**Influence Plots**



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PLAGIARISM DECLARATION

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