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Political Factors in Environmental Policy Performance

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Abstract

Environmental policy effectiveness is an area of particular interest as environmental problems threaten the lives of millions of people worldwide. This paper examines the impact of political variables including regime type, political openness, and corruption on environmental performance. Democracies are expected to have better environmental policy performance than authoritarian regimes. Regardless of regime type, regimes with greater political freedom are expected to have better environmental policy performance, as are regimes with less corruption. Scatter plots comparing regime type and environmental policy performance show that while democracies do tend to perform better than other types of regimes, authoritarian regimes sometimes also perform well, lending some support to the theory of authoritarian environmentalism. However, a higher level of political freedom does not always lead to better environmental policy performance, while corruption negatively affects the policy performance of all regime types.

1. Introduction

Climate change and other environmental ills threaten the lives and/or livelihoods of millions of people worldwide. Addressing these threats depends on the ability of national governments to pass and implement policies to restrict harmful practices.

The academic literature on the topic of environmental policy breaks down the policy process into two areas: policy creation and policy implementation. While policy creation alone demonstrates a country's commitment to preventing or mitigating the effects of particular environmentally damaging activities, the mere presence of policies does not guarantee their success. Countries create policies for many reasons in addition to environmental protection, such as to demonstrate their commitment to the international community and/or to appease the demands of their populace.[1,2]

Effective implementation is at least as important as policy creation. Even when governments genuinely want to address environmental threats, policies to address environmental problems face a number of political obstacles. For example, other interests such as economic development may remain a greater priority than environmental protection. This is particularly true in developing countries, where the primary role of government is often seen as encouraging further economic and industrial development.[3] To the extent that development and environmental protection are perceived to be contradictory, those policies may not be implemented effectively despite the existence of laws ostensibly to protect the environment.

1.1. The Case for Democracies

The ability of states to generate and implement environmental policy may depend, in part, on political regime type. Traditionally, democracies are hypothesized to be more effective in promoting environmental health.[4] Democracies,

it is argued, must be responsive to the public's concern, including growing environmental problems. However, democracies face significant barriers to policy success. Ironically, democracies are often at a disadvantage when seeking to *pass* rigorous environmental policy, precisely because they are subject to a variety of competing interests. One of the defining features of democratic policy-making is that democratic processes and institutions are open to opponents of environmental policies at least as much as to proponents of those policies.[5] Democratic systems may even give disproportionate power to economic interests. Fears of economic disorder or the failure of business lead the government to consider economic interests even in forming environmental policies. Indeed, the special relationship that business has with government privileges economic interests over those of citizens or other interest groups.[6] Governments have an obligation to protect environmental quality, but governments also have an interest in promoting economic growth. So long as environmentally damaging activities are profitable, economic interests will pressure the government to enact policies that allow those activities to continue for as long as possible. To the extent that governments depend on continued investment of some polluting industries and corporations, environmental policies may be less stringent in order to accommodate the demands of business. Despite the ability of democratic mechanisms to give voice to the public, those same mechanisms can also be manipulated to reflect values that eclipse or weaken environmental pressures. Corporations and other wealthy interests, in particular, have many channels to influence policy, resulting in weaker environmental policies.

Alternatively, democracies are typically viewed as better at *implementing* environmental policy because democratic mechanisms help ensure that governments are held accountable by the public and the media for their policy commitments. In democracies, a free press, citizen's freedom to organize, protest, and ultimately vote, and norms of government transparency all tend to lead to better environmental policy performance. Political freedoms provided in a democracy offer forums through which public preferences can be expressed and ultimately incorporated into policy.[7] When considering the implementation side of environmental policy, all of these mechanisms enable non-government actors to make their opinions known and hold their government accountable for policy failures.

1.2. Authoritarian Environmentalism

While democracies are expected to produce better environmental outcomes than non-democracies, in general, there is a growing body of literature that highlights the phenomenon of "authoritarian environmentalism".[8] Some scholars argue that authoritarian regimes have an advantage in *creating* environmental policy over democracies. While authoritarian regimes are not directly accountable to citizens in the same way democratic leaders are, they must still be aware of the public's preferences. Failing to address environmental issues in a way that aligns with the public mood may increase instability in a regime. In other words, despite the less direct lines of accountability, authoritarian regimes must still address environmental issues in response to popular demands. Authoritarian regimes may also be motivated to create policies to gain the respect of the international community.[9] Policies that reflect a country's desire to address environmental problems enhance a regime's reputation in dealing with international partners.

Authoritarian regimes display several advantages in environmental policy. Authoritarian environmentalism highlights the unique capacity of authoritarian regimes to produce policy addressing environmental threats because they face fewer domestic restrictions on legislating.[10,11] Theoretically at least, authoritarian regimes may be better equipped than democracies to create environmental policies quickly and effectively.[12] The centralized government structures of authoritarian regimes allow for more stringent policies to be created. Additionally, in some developing regions of the world, particularly Asia, it is argued that the centralization of power and authority offered by some authoritarian regimes allows issues of environmental concern to be addressed efficiently once leaders decide to act.[13] Authoritarian regimes offer stability in otherwise unstable regions, allowing those governments to create policy. According to this theory, authoritarian regimes such as China have an advantage in policy creation due to the non-participatory nature of their government.[14] Economic actors with an incentive to slow or weaken environmental policies have fewer avenues to influence policy, enabling regimes to implement policy quickly. In addition, policies do not have to move through multiple levels or bodies of government, enabling authoritarian regimes to adopt policies that address urgent environmental concerns without influence from opposing interests.

Ironically, the same characteristics that allow authoritarian regimes to pass strong environmental policies may undermine effective implementation. Given the centralized nature of authoritarian regimes, the implementation of policy does not necessarily extend to the lowest level of government. The central government creates policy, but local government may be critical for implementing policy. The lack of cohesion between central government and regional and local governments often leads to a gap in implementation.[15] Local governments may have more of an

interest in implementing policies that achieve local goals, including economic development, than in implementing policies set by the central government that may in fact produce significant local costs. In some cases, this can result in the manipulation of data regarding policy implementation and environmental outcomes and can weaken environmental protection. Both the central and local level governments have an interest in appearing as though policies are resulting in the desired outcomes. Since authoritarian regimes typically lack democratic mechanisms, they cannot easily be held accountable by the public for failure to implement policy. Nor can centralized authorities readily monitor local policy implementation and hold local officials accountable. In sum, democracies are expected to have less stringent environmental policies, but implement those policies more reliably with better environmental outcomes while authoritarian regimes can more readily pass environmental protections but implement them less reliably with poorer environmental outcomes.

1.3. The Effect of Political Rights

Despite this generalization about both democracies and authoritarian regimes, variation is likely to exist within each regime category. Based on the premise that democratic regimes are better at implementing policy because of political openness, it stands to reason that authoritarian regimes that offer more political rights to citizens will have more policy implementation success for the same reasons that democratic regimes do. Regimes that face stronger pressure from their citizens to create and implement stronger policies will have better environmental outcomes than those who do not face those pressures. Authoritarian regimes that allow for more participation in their policy creation and implementation are more likely to face pressure from those non-government actors, resulting in better environmental policy performance. The existence of democratic mechanisms and political freedoms is likely to result in better environmental performance regardless of regime type. Likewise, democratic regimes that have fewer protections for political rights and civil liberties may be less responsive to citizen pressures, resulting in weaker policy implementation. Despite the presence of democratic mechanisms, limitations to citizen's ability to use those mechanisms to influence the government will result in worse environmental performance.

1.4 The Effect of Corruption

Regardless of the political structure of a regime, the presence and degree of corruption will impact the effectiveness of environmental policy. Both types of regimes may vary by levels of corruption. Corrupt regimes are less responsive to citizens irrespective of regime type. While corruption is more often associated with non-democratic governments, the presence of corruption in either type of regime influences policy implementation. Through the use of bribery or other types of illegitimate influence, non-government actors are able to influence government officials in the implementation of environmental policy.[16] Corrupt regimes are less accountable to the public for their lack of strong policy or policy implementation. Even in democratic regimes that are typically expected to have better environmental outcomes, the presence of a corruption could result in lower environmental standards than an authoritarian regime with less corruption.[17]

2. Hypotheses

The literature thus leads to three hypotheses. First, democracies will have better environmental conditions than authoritarian regimes due to stronger implementation of environmental policies. Second, within both democratic and authoritarian regimes, those that offer greater political freedom will have better environmental outcomes. Third, within both democratic and authoritarian regimes, those with less corruption will have better environmental outcomes.

3. Methodology

To test these hypotheses, data were collected to measure the variables of regime type, political rights and civil liberties, corruption, and environmental performance.

The Center for Systemic Peace's Polity IV Project was used to measure regime type. The Polity Project describes the authority characteristics of states on a spectrum from institutionalized autocracies to institutionalized democracies. The Polity Project utilizes the term 'autocracy' instead of 'authoritarian regime' as a neutral term for a regime that restricts or suppresses competitive political participation.[18] In this paper, the two terms are used interchangeably. Mixed or incoherent authority regimes are coded as anocracies. The spectrum ranges from -10 to -6, autocracies; -5 to +5, anocracies; and from +6 to +10, democracies. Three additional values, -66, -77, and -88 are used to describe anocracies under specific political conditions: countries where foreign authorities or forces provide support for the local authority (-66), countries with a collapsed central authority or where the government has lost control over most of its territory (-77), or countries with a transitional government (-88).[19] For the purposes of this research, these values are excluded.

Freedom House's Freedom in the World index was used to measure political freedom within each country. The Freedom in the World report categorizes regimes as Free, Partially Free, or Not Free. This categorization is based on the average of each country's political rights and civil liberties scores. Freedom House determines ratings for political rights and civil liberties by looking at 10 indicators of political rights and 15 indicators of civil liberties. The political freedom rating includes topics such as electoral process, political pluralism and participation, and functioning of government. Civil liberties questions include the topics of freedom of expression and belief, associational and organizational rights, rule of law, and personal autonomy and individual rights. Based on the points awarded to countries for these indicators, countries are assigned a rating for both political rights and civil liberties on a scale from 1 to 7. A score of 1 represents the greatest level of freedom while a score of 7 represents the smallest degree of freedom.[20] These values allow for cross-country comparison as well as comparison of regime type changes over time. For the purposes of this paper, the political rights and civil liberties score will be utilized independently of the regime type assigned by Freedom House. Countries with a higher political rights or civil liberties score are less free, while those with lower scores offer more freedom.

Transparency Internationals' Corruption Perceptions Index was used to measure corruption. Transparency International gathers data from a minimum of three data sources drawn from "independent institutions specializing in governance and business climate analysis" to produce scores which measure the perception of corruption in the public sector. Countries are scored on a scale of 0 – 100, where 0 represents the perception of a country as highly corrupt and 100 represents a country that is perceived to be very "clean".[21]

Finally, Yale's Environmental Performance Index (EPI) was used to measure environmental policy performance. Countries are rated based on their environmental performance according to various indicators. The country's actual performance is compared to the policy targets that the country has agreed to at international and national levels. The EPI measures environmental health and ecosystem vitality based on 20 indicators of environmental quality at a national level. Environmental health is defined as the protection of human health from environmental harm and is based on measures of health impacts, air quality, water and sanitation. Ecosystem vitality is protection for ecosystems and resource management and is based on the quality of water resources, agriculture, forests, fisheries, biodiversity and habitat, and climate and energy. Scores fall on a scale from 0 to 100, with 0 representing the farthest from the policy targets and 100 representing close proximity to policy targets.[22]

4. Data Analysis

To evaluate the hypothesis that more democratic regimes will have better environmental performance scores than non-democracies, countries' EPI scores were plotted on a scatter plot.

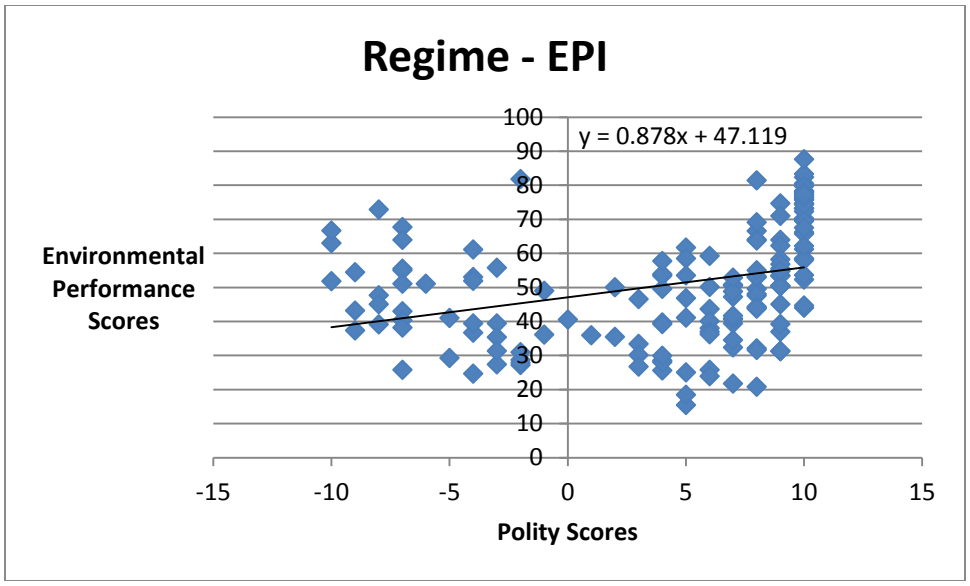

Figure 1.1. regime type and environmental performance

The linear line of best fit supports the first hypothesis. There is a slightly positive relationship that shows that more democratic regimes have better environmental policy performance than non-democracies. According to this analysis, for each unit of increase in Polity score leads to a 0.878 increase in EPI on average, all else being equal. However, this linear analysis of the data does not show the full picture. When the line of best fit is changed to a polynomial line to more accurately fit the data, it suggests something else.

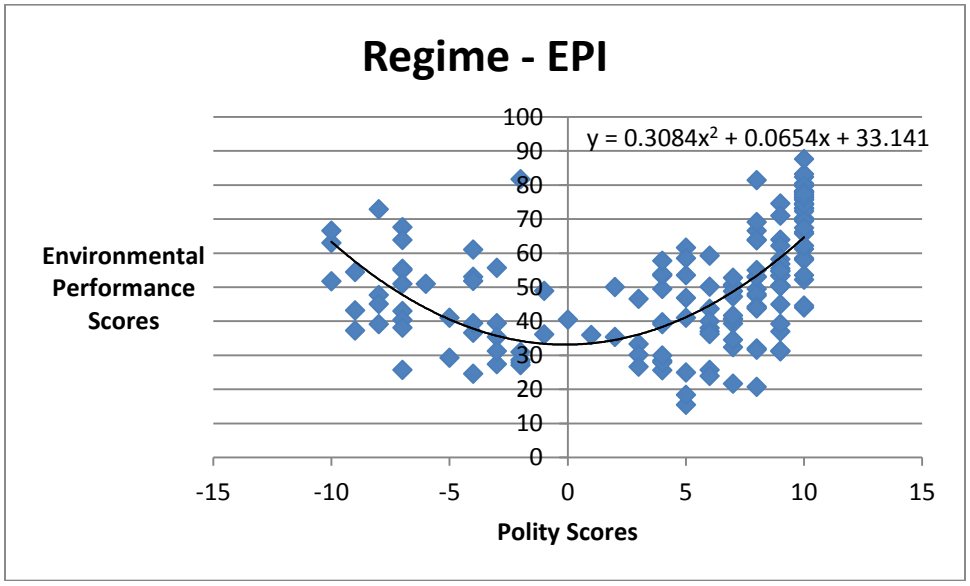

Figure 1.2. regime type and environmental performance

The polynomial trend line reveals that while democracies do have better environmental performance than autocracies and anocracies, both authoritarian regimes and democracies have better environmental performance than anocracies. This also provides support for the theory of authoritarian environmentalism. Authoritarian regimes, while still not achieving environmental outcomes on the level of democracies, are able to implement environmental policies more successfully than anocracies.

In order to test whether or not this outcome is statistically significant, the data were analyzed using a *t*-test. T-tests show whether or not the relationship between two variables could be produced randomly by comparing the difference of means for two variables. In this case, the relationship being tested is that of regime type and EPI. The data were split into three categories: anocracies, democracies, and autocracies. The mean of each regime type's EPI was compared to the others.

Table 1. Data Analysis Using a *T*-test

	Dem	Ano	Auto
N	93	53	21
EPI mean	56.4	39.7	50.7
Standard Deviation	16.5	13.6	12.1

The *t*-test for democracies and anocracies yielded a *t* score of 2.682, which means that there is a 5% chance that a relationship between these variables is due to random chance. In other words, this relationship is statistically significant.

The *t*-test for anocracies and autocracies yielded a *t* score of 3.438, which means that there is a 1% chance that a relationship between these variables is due to random chance. This relationship is also statistically significant.

The *t*-test for democracies and autocracies yielded a *t* score of 3.853, which means that there is a 1% chance that a relationship between these variables is due to random chance. This relationship is statistically significant.

Since the difference of the means is statistically significant, this indicates that there is likely to be a relationship between regime type and environmental performance. This leaves the remaining hypotheses to be tested: do regimes with greater political rights and civil liberties or less corruption have better environmental performance, regardless of regime type? While it is clear that anocracies will generally have weaker environmental policy performance than either democracies or autocracies, democracies have a broader range of environmental performance scores, revealing greater variation within that specific regime type. In order to test the hypothesis that regimes with greater political rights and civil liberties will have better environmental outcomes, regardless of regime type, the political rights and civil liberties (PR/CL) score and EPI are plotted on a scatter plot for each regime type.

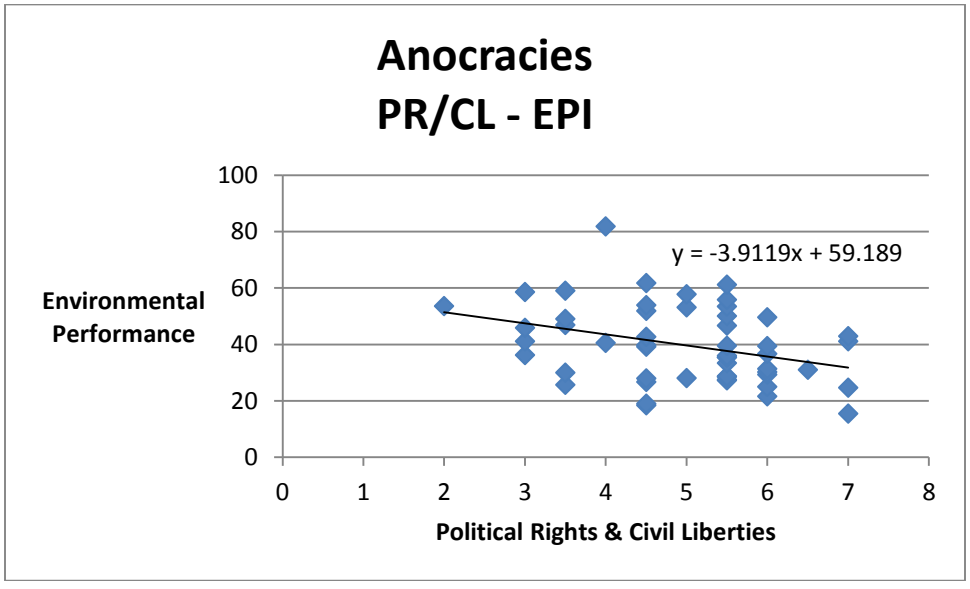

Figure 2.1. political rights/civil liberties and environmental performance, anocracies

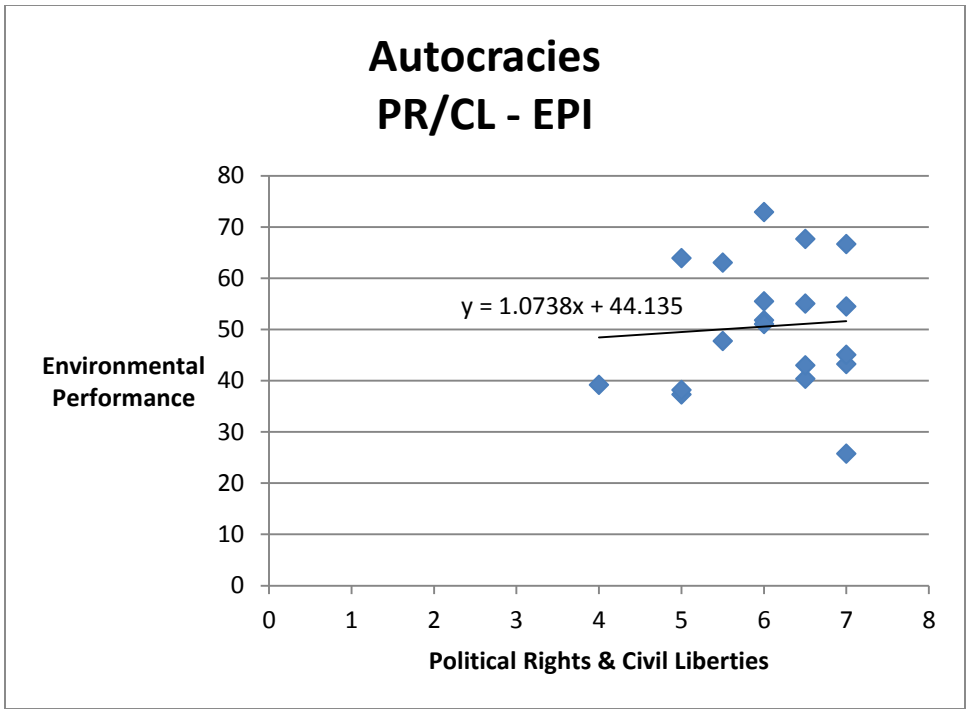

Figure 2.2. political rights/civil liberties and environmental performance, autocracies

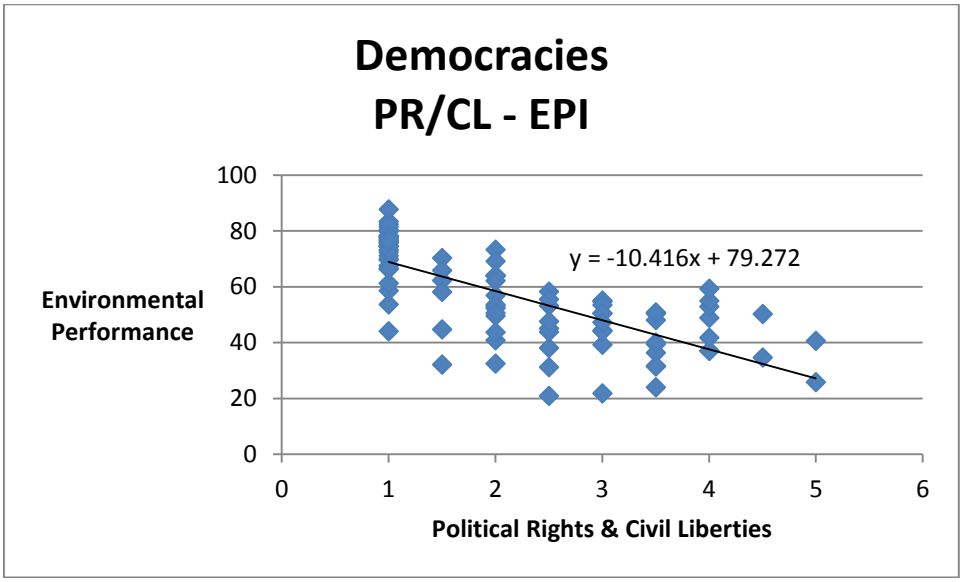

Figure 2.3. political rights/civil liberties and environmental performance, democracies

These graphs indicate that regimes which offer more political rights and civil liberties will have better environmental performance scores, except in the case of autocracies. For anocracies, there is a positive relationship between environmental performance and political rights and civil liberties with a ratio of 3.9119 to 1, which indicates that when the level of political rights and civil liberties decreases by 1, environmental performance scores will decrease by 3.9119 points. For democracies, there is a positive relationship between environmental performance and political rights and civil liberties of 10.416 to 1, which indicates that when the level of political rights and civil

liberties decreases by 1, environmental performance scores will decrease by 10.416 points. However, there is no clear relationship between environmental policy performance and political freedoms in autocracies. Thus, while more political rights and civil liberties within democracies and anocracies are associated with better performance, ironically fewer political rights and civil liberties are associated with better environmental performance in autocracies.

A similar approach is used to look at how corruption affects environmental performance within each regime type. For each regime type, the corruption perception (CPI) score and EPI were plotted on a scatter plot.

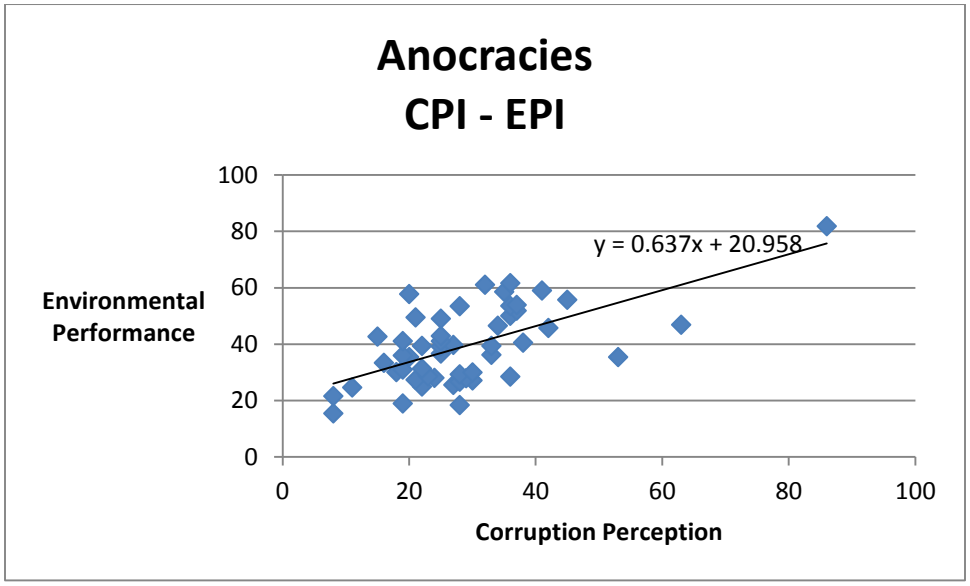

Figure 3.1. corruption and environmental performance, anocracies

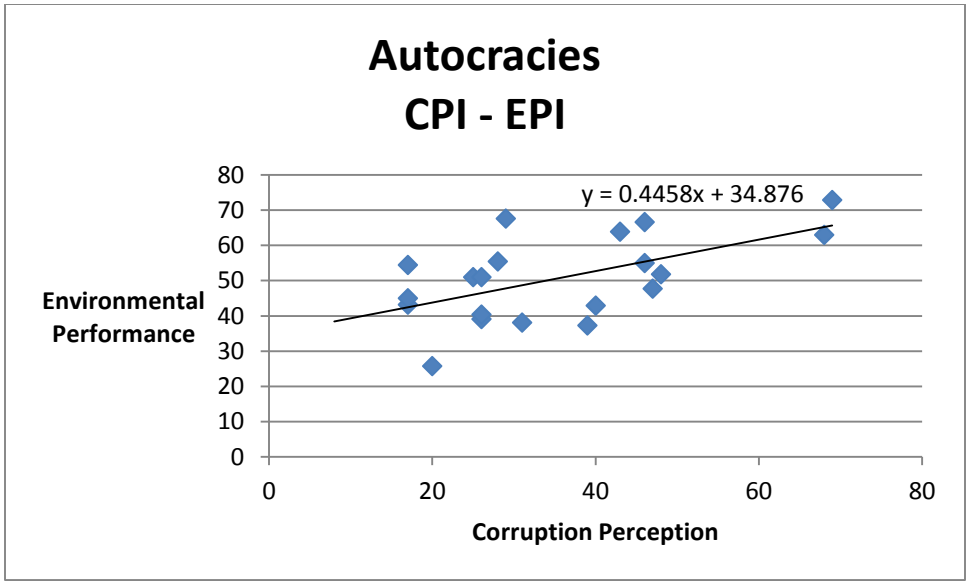

Figure 3.2. corruption and environmental performance, autocracies

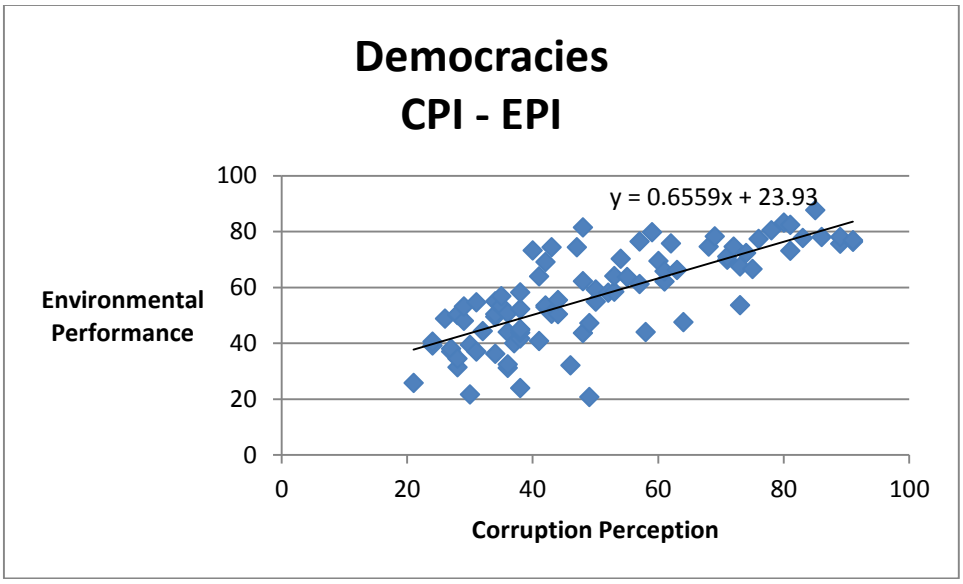

Figure 3.3. corruption and environmental performance, democracies

For every regime type, the evidence supports the hypothesis that the cleaner the regime is perceived to be, the better the environmental performance. Thus, the hypothesis that regimes with less corruption will have better environmental policy performance is supported by the data.

5. Conclusions

Initially, this paper proposed three hypotheses. The first was that democracies would have better environmental policy performance than authoritarian regimes. The second was that within those regimes, those that offer greater political freedom will have better environmental outcomes. The third was that those with less corruption will have better environmental outcomes. These hypotheses received mixed support. Overall, democracies generally do have better environmental policy performance than either autocracies or anocracies. However, autocracies and democracies both have better environmental policy performance than anocracies. While this supports the idea of authoritarian environmentalism, it does not explain why anocracies have weaker environmental performance. It is possible that this is due to the nature of anocracies. As regimes with mixed characteristics of authoritarian and democratic structures, these regimes could be described as weak authoritarian regimes or weak democracies.

In either case, anocracies lack the advantages of both authoritarian regimes and democracies in policy creation and implementation. For example, compared to democratic regimes, anocracies are less responsive to the public's demands, resulting in weaker policy implementation. At the same time, since anocracies are less capable of imposing high costs upon polluters, unlike authoritarian regimes, they cannot enact policies that are as strong as those of autocracies.

The second hypothesis, that countries with greater political freedom would have better environmental policy performance regardless of regime type, does not hold true for authoritarian regimes. The strength of authoritarian regimes in environmental policy implementation does not come from the citizens' participation, but rather from the centralized structure of those regimes. Thus, autocracies with less political rights and civil liberties are more capable of attaining better environmental performance. In anocracies and democracies, more political freedom is associated with better environmental policy performance. For those regimes, having more political freedom provides a stronger democratic structure with more citizen participation, which is associated with better environmental outcomes. Increasing political rights and civil liberties in regimes with at least a partially democratic structure of government increases the ability of citizens to utilize those structures to demand better environmental outcomes. Democratic and partially democratic regimes are strengthened by greater political freedom. Since there already exists a correlation between regime type and environmental policy performance, this aligns with the first hypothesis as well. Regimes

that display stronger democratic structures in non-autocratic regimes will benefit from citizen participation and oversight in environmental policy.

The third hypothesis appears to be supported. Regardless of regime type, a lower level of corruption appears to be related to better environmental policy performance. For all regimes, a relationship clearly exists between the two. This is a common connection to make in environmental policy. Regimes with a higher level of corruption are not as effective in implementing environmental policy due to the influence of polluters. Less corrupt regimes are able to punish polluters and implement policies more effectively, leading to better environmental policy performance and better environmental outcomes.

While these relationships between environmental policy performance and some political factors are indicative of interesting trends, this research could be expanded to address other aspects of environmental policy. Most notably, this research does not address the topic of policy creation or state strength. Stronger environmental policies would yield better environmental outcomes but may be difficult to accomplish, while weaker policies may be easier for states to accomplish due to less ambitious policy goals. While there is a difference between policy creation and implementation, there is not a universal scale to measure policy strength. If such a scale were created, policy strength could be measured across regime type and compared to environmental policy performance. By measuring policy creation in terms of how ambitious a policy is for a country, the policy strengths of different regime types would be clearer. Comparing policy performance without examining policy strength leaves gaps in understanding how dedicated countries are to pursuing environmental improvements.

Further research could also be conducted on the topic of state strength. State strength could be an indicator of a country's capacity to implement environmental policy effectively. A country's ability to implement policy effectively could be limited by the strength of the state in other areas, such as economics. Looking at a state's economic ability to address environmental problems could reveal other relationships in this data. For example, GDP is examined as a factor that influences environmental quality, since economic development is often related to an increase in environmental problems. Similarly, GDP or environmental management budgets could reveal complexity in a state's ability to implement policy. In the same way that policy strength could show a country's commitment to environmental goals, so could a measure of economic commitment. Including an economic measure of policy performance could also reveal policy efficiency.

6. Acknowledgements

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