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Intelligence, democracy, and international environmental commitment

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ABSTRACT

This paper investigates the determinants of nations' commitment to environmental protection at the international level by focusing on the role of national intelligence and the level of democracy. The national intelligence is measured by nation's IQ scores. The findings based on a sample of 152 nations provide strong evidence that intelligence has statistically significant impact on ratification of international environmental agreements, and the countries with IQ 10-points above global average are 23% more likely to sign multilateral environmental agreements than others. The findings also demonstrate that it is the combination of high-level of intelligence of nations and democracy, that likely result in international environmental commitments.

1. Introduction

Over the past 250 years, the global temperature has risen by 0.85 °C and "the period from 1983 to 2012 was likely the warmest 30-year period of the last 1400 years" (Ahrens and Henson, 2015, p. 507). This had crucial impact on biodiversity and ecosystem processes. For example, the ice thickness in the central Arctic has fallen by nearly 50% (Kwok and Rothrock, 2009). The average mean ocean level has increased by 20 cm over the past century and this increase has been greater than the average rate in the course of past two thousand years. As a result, this has intensified extreme weather events, such as tornadoes, floods and wildfires. The economic cost of changing weather with respect to agriculture is incomputable, and consequently, the food security in many countries is at risk.

Scholars are in general consensus that the driving force of the global climate change has been the rapid greenhouse gas (GHG) emissions over the past century. Indeed, over the past five decades GHG emissions per capita in developed nations have been four times higher than discharges per capita in low-income nations. Moreover, the forecasts suggest that these emissions will rise up to 90% by 2030 and the GHG discharges from developing nations are projected to accelerate by more than 2% per annum (Tamiotti et al., 2009).

As a result, GHG emissions have developed into far-reaching problem in both high and poor income countries, as air pollution has been related to decreased life satisfaction, increase in suicide rates and poor health (Ferreira et al., 2013; Yang et al., 2011). For example, Wen and Gu (2012), using multilevel prospective cohort study based a nationally representative sample of Chinese elders, show that exposure to air pollution may reduce life expectancy by almost 4 years. Similarly, the negative effect of air pollution on life expectancy has also been documented for Canada (Coyle et al., 2003), the United States (Nevalainen and Pekkanen, 1998) and Netherlands (Brunekreef, 1997).

The warnings of scholars and environmentalists concerning greenhouse gas emissions have risen over the last decade as well as appeals for the international commitment to reduce GHG emissions and to foster multilateral response to climate change. Consequently, a new set of studies has emerged that attempted to shed light on the potential determinants of environmental policy and multilateral cooperation regarding climate change (e.g. Fredriksson and Neumayer, 2013; Fredriksson and Wollscheid, 2014; Neumayer, 2002a). By and large these studies document that democratic and political institutions, globalization and external pressures have positive impact on environmental cooperation. However, the nexus between democracy, intelligence, and environmental policy remain inconclusive.

In this study, we pursue to provide a novel evidence on the

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empirical effect of intelligence on current GHG emission policies and cooperation on climate change. Notably, we explore the effect intelligence on cooperation on climate change, where intelligence is measured, following Lynn and Vanhanen (2002), as nation's average IQ. There are very scarce studies dedicated to the topic so far. One of them provides an important first exploration of IQ-emissions nexus, albeit concludes with the statement "intelligence is not necessarily a mitigating factor of *greenhouse gas emissions*… [and] we hope that this paper represents *a foundation for future research establishing clear causality between intelligence environmental emissions*, if any [cursive is ours]." (Squalli, 2014, p. 38). Indeed, there is a clear need to investigate further the nexus of intelligence and environment from various perspectives. This paper aspires to contribute to further development of the discussion by looking into the impact of intelligence on commitment to international treaties aimed to improve environment. This is a very new aspect in environmental policy that had not yet been raised in research or investigated otherwise: it calls into question the relationship between intelligence, democracy, and environmental protection.

Moreover, the interrelationship between intelligence and GHG are far from being simple. On the one hand, the intelligence is strongly correlated with economic development (GDP per capita) across nations. In its' turn, as statistics presented above demonstrated, developed nations have four times higher GHG emissions per capita than low-income nations. Therefore, it is possible to conjecture that intelligence may indeed be negative or neutral in relationship to this aspect of environment. On the other hand, intelligence is also considered as a measure of human capital across nations (Meisenberg and Lynn, 2011). Indeed, past explorations document that willingness to contribute to environmental quality is directly linked to the human capital stock of individuals (Blomquist and Whitehead, 1998). Similarly, more recent studies report that intelligence and education predicts political orientations (Rindermann et al., 2012) such as likelihood to vote for a party with environmental agenda (Deary et al., 2008).

Next, intelligence is also positively correlated with higher level of democracy. The results of the debates on the nexus of intelligence, democracy and environment remain inconclusive so far, pending for further investigation. Back to the 1990s, Ostrom (1990) developed theory of polycentric governance that combines aspects from both centralized non-democracies with decentralized democracies. Further on, this discussion was deepened Ostrom (2011) and her theory of "local tyrannies": the case when *political regimes* are solely "responsible" for environmental protection and that might result in privileged access to resources. Indeed, recent studies demonstrated that democracy may hypothetically have different impact on environment. Democracy may increase search for populism, on the one hand, but it may decrease rent-seeking, on the other hand (Libman and Obydenkova, 2014).

As to democracy and populism, here the results can be more ambiguous. Populism may encourage government to spend money on *more visible* for electorate policies. That can be even more important objective within the context of the Great Recession started in 2008 that still have its negative impacts on the population of democratic states (especially democracies within the European Union that faced austerity measures imposed by their own national governments). On the other hand, the civil society as an element of democratic regime, is associated with environmental activism and ecological thinking. Thus, populism may still encourage the democratic government to take care of environmental issues.

In contrast to consolidated democracies, in a weak democracy (or hybrid regimes) the efficiency of environmental protection can be ambiguous and depends on responsibility of national government and its attention to environmental issues (Libman and Obydenkova, 2014).

Still, while the past research suggests that the ruling elite tends to under-evaluate environmental goods to achieve rapid economic growth and benefit from foreign direct investments (FDI), there is robust evidence that "more intelligent [bureaucrats] demonstrate less of a preference for smaller, immediate rewards versus larger, delayed rewards" (Shamosh and Gray, 2008; p. 296). Indeed, if environmental quality is a luxury good, we may then conjecture that its demand rises more than proportionally with regard to intelligence. Indeed, the environmental protection has also long-term benefit and might have lower visibility for electorate (even more though within the context of the Great Recession).

Recent studies demonstrated close interaction between international politics and governmental actions and national support in the regions with various levels of democracy (Obydenkova, 2008, 2012). Based on the nexus of international level and national support, we conjecture that the factor that has high visibility is the commitment to environmental protection at the *international* level. Therefore, signing *international* treaties might increase the popularity of the national government (democracy search for popular support) as long as the population of this state has higher level of intelligence and therefore can evaluate positively the governmental environmental commitments at the international level. In other words, the intelligent population will understand the importance of long-term benefit commitments even if they result in short-term economic pitfalls. Thus, a *democratic* government might wish to increase its' popularity for *intelligent* population and to gain their support and credibility. This conjunction is even more important within the context of Great Recession, where the choices of the national democratic governments are very important and risk-prone in terms of gaining popularity. Based on this discussion, we conjecture the main hypothesis of this study:

The national government of a *democratic* state with *high* level of *intelligence* of population, will be more supportive to demonstrate to this population its commitment to international agreements on environmental protection. Consequently, high-IQ societies would be inclined to pledge more resources to ecological conservation (Salahodjaev, 2016) and to follow consumption patterns less destructive to the ecosystem vitality as intelligent individuals have longer time horizons (Potrafke, 2012). Similarly as suggested by (Squalli, 2014, p. 34), "more intelligent people are less wasteful because they predict the long-term financial (and by extension potentially environmental) benefits of current investments on environmentally friendly technologies, thus potentially contributing to lower environmental emissions".

On the other hand, existence of market failures leads to inefficient use of natural resources that promotes rent seeking, hinders welfare and reduces quality of life. And collective intelligence may effectively direct the actions of self-centered economic agents and may prevent bureaucrats from ignoring environmental concerns of the population (Minowitz, 2004). On the other hand, past research suggests that cognitive able individuals aim to achieve the efficient, competitive markets (Lynn and Vanhanen, 2012) and "more likely to see the invisible hand, supporting policies that create prosperity" (Jones, 2011, p. 53). For example, on the macroeconomic level, intelligence is negatively correlated with corruption, crime and shadow economy – factors that are positively associated with greenhouse gas emissions (Salahodjaev, 2015a).

Finally, Kanazawa's (2010, 2012) Savanna-IQ Interaction Hypothesis (otherwise known as the "intelligence paradox") posits that more intelligent individuals are more likely to acquire and espouse evolutionarily novel preferences and values that our ancestors did not possess. Concerns for the environment are distinctly evolutionarily novel. Our ancestors during the Pleistocene Epoch were not concerned about the environment at all, because