Logistic Regression Shows Ethnic Fractionalization as a Potential Factor in Adherence to the Rule of Law

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Abstract

Strong adherence to the rule of law is important for state development. Present global challenges to the rule of law undermine this potential development. This paper attempts to understand how ethnic fractionalization interacts with rule of law through logistic regression. The developed model suggests a negative relationship between high ethnic fractionalization and high adherence to the rule of law. Possible causes and avenues for future research are discussed.

Introduction

The rule of law is generally defined as the practice of supporting the equality of all citizens under the law. While this means that the law is enforced in an unbiased way, it also “implies certain qualities about the characteristics and content of the laws themselves,” according to Encyclopaedia Britannica. And “In particular, laws should be open and clear, general in form, universal in application, and knowable to all.” Present threats to the rule of law have been identified in the countries of the United States, Hungary, Poland, and Turkey among others. Ethnic differences within a state can have a present and demonstrative effects on the structure and utilization of power in that state. A clear example of this is the case of Bosnia and Herzegovina. Bosnia and Herzegovina is a state within the former Yugoslavia and has significant populations of ethnic Bosniaks, Serbs, and Croats. The Presidency in the state is a three-member council which is required to have a member from each of the major ethnic groups. Using the Quality of Government Institute dataset from the University of Gothenburg, this paper aims to understand if ethnic differences within a state can predict the organization and utilization of power more generally, specifically in the case of the rule of law.

Methods

Data Acquisition and Processing

Data is collected for the Quality of Government Institute dataset from many sources. The degree of ethnic difference was measured using the Ethnic Fractionalization statistic from “Ethnic and Cultural Diversity by Country” authored by James Fearon and published in Journal of Economic Growth. In that paper, Ethnic Fractionalization was defined as the probability that
two randomly selected people from a given country would belong to different ethnic groups.\textsuperscript{5} Adherence to the Rule of Law was measured using the Freedom in the World report from Freedom House.\textsuperscript{5} According to the Quality of Government codebook, the variable takes into consideration many aspects of the rule of law and each country is graded from 0 to 16, with 0 being low rule of law and 16 being high.\textsuperscript{5} The rule of law variable was used to divide countries into three groups with scores 0 to 5 being considered low rule of law, scores 6 to 10 being considered medium rule of law, and scores 11-16 being considered high rule of law.

**Statistical Analysis**

After excluding countries with missing data for either rule of law or ethnic fractionalization, 153 countries remained for analysis. A boxplot of ethnic fractionalization by rule of law grouping was run to determine if a relationship existed. This plot can be seen in Figure 1.

*Figure 1.*

![Boxplot of Ethnic Fractionalization by Rule of Law Grouping](image)

As can be seen from the plot, the low and medium rule of law groupings had similar ranges, quartiles and medians. High rule of law countries were noticeably less ethnically fractionalized than the low or medium groupings. Because of this, the rest of this analysis focused on high rule of law countries compared to non-high rule of law countries.

As high rule of law is a categorical variable and ethnic fractionalization is a continuous variable, logistic regression was chosen as the method for analysis.

**Results**
Ethnic fractionalization was found to be a statistically significant predictor of whether a country had high adherence to the rule of law at the $\alpha < .0001$ level of significance. This can be seen in Table 1 below.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>z score</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic Fractionalization</td>
<td>-2.5366</td>
<td>0.4192</td>
<td>-6.052</td>
<td>1.43e-9</td>
</tr>
</tbody>
</table>

A plot of the resulting function along with observations can be seen below in Figure 2.

![Figure 2.](image)

The resulting ROC curve and AUROC of 0.792 from the logistic model using a computer optimized cutoff of .405 can be seen below in Figure 3.

![Figure 3.](image)
Discussion

The low observed p-value for Ethnic Fractionalization suggests it is a useful predictor of high adherence to the rule of law. This can also be seen in Figure 2, the plot of the resulting function, where the probability of high adherence to the rule of law is roughly 50% in a completely ethnically homogenous country, while approaching 0% as a country approaches complete ethnic heterogeneity. Figure 3 also demonstrates the ability to predict high rule of law adherence correctly using only Ethnic Fractionalization about 79% of the time by the resulting AUROC.

This does not establish a causal relationship between low ethnic fractionalization and high adherence to the rule of law. As can be seen in the plotted points in Figure 2, there are non-high rule of law countries that are ethnically homogenous and a handful of countries that have high adherence to the rule of law while also fairly heterogeneous with Ethnic Fractionalization scores of greater than 60%.

Given this observation, it might be that high levels of ethnic fractionalization create additional hurdles in implementing the rule of law and conversely that low levels of ethnic fractionalization allow states to focus on other important areas of implementing the rule of law without having to focus on ethnic differences.

Another possibility is that ethnicity is correlative with national identity and what is being detected is multiple nations competing within a state. A nation being a cultural group making their identity a political reality. For example, ethnic Bosniaks, Serbs, and Croats within Bosnia-Herzegovina do not share a national identity. In contrast, the United States is often argued to be a single nation with many ethnic identities. What may be causal is separate nations within a
state competing for state power. Future research on this topic seems warranted and results could be important for foreign policy approaches that focus on state-building activities.

Another factor that may be considered in future analysis is the ethnic fractionalization when the state would have been considered to have attained strong rule of law principles. As migration patterns change the ethnic makeup of a state, especially as the world becomes more globalized, it may be that some relatively ethnic diverse states had the benefit of developing strong rule of law practices while more ethnically heterogenous.

One interesting observation from the data is that of states considered to have high adherence to the rule of law, four of the top five in ethnic fractionalization are former British colonies. These are Ghana, Namibia, Mauritius, and Canada. It is possible that these states with high rule of law and high ethnic fractionalization benefit today from British cultural diffusion. This would make sense as Britain’s historical and philosophical contributions to the modern understanding to the rule of law include important documents and thinkers such as The Magna Carta and John Locke among others.

This analysis determined a statistical relationship between ethnic fractionalization and adherence to the rule of law, but more research is required to understand the exact nature of that relationship.

References


