

## *Socio-demographics and Political Ideology: A Multinational Analysis*

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### **Abstract**

With an increasingly polarized nature of interparty conflict in politics across the world, researchers in the fields of political science and psychology are eager to determine the antecedents of individuals' attachment to either liberal or conservative ideologies. While some recent developments illustrate the relationship between political attitudes and biological genes, others associate liberalism and conservatism with personality traits such as adventurousness and conscientiousness. In this paper, I aim to explore the influence of socio-demographic factors on individual's political attitudes. An ordinal logistic model is estimated using the 2010-2014 World Values Survey data, which was collected from 90,350 individuals in 55 different countries. This data contains information on self-reported political position (on the liberal-conservatism continuum), country of residence, income, gender, age, and education level. Results show that males are more likely to possess a conservative view, while individuals with lower income tend to be liberals. I also find that country of residence plays a vital role in determining one's political attitude. A positive relationship between liberalism and education level is evident. More importantly, the aging population is associated with conservativeness. As these socio-demographics vary over time, these findings imply that political attitudes are not stable but indeed malleable.

Keywords: Political Ideology, Socio-demographics, Liberalism, Conservatism, Multinational

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## **Introduction**

Across the world, citizens are observed with a deep divide in terms of political ideologies. In the United States, for instance, “Republicans and Democrats are more divided along ideological lines – and partisan antipathy is deeper and more extensive – than at any point in the last two decades (Pew Research Center, 2014).” Based on a survey conducted by Pew Research Center (2014), Americans consistently express themselves as either conservative or liberal had increased by twofold over the past two decades. Strikingly, more than 90% of Republicans are to the right of the median Democrat, whereas 94% of Democrats are to the left of the median Republican. With an increasingly polarized nature of interparty conflict in politics across the world, researchers in the fields of political science and psychology are eager to determine the antecedents of individuals’ attachment to either liberal or conservative ideologies (Feldman, 1988; Fiorina, Abrams, & Pope, 2005; Jost, 2006; Jost, Federico, & Napier, 2009; Layman, 2001; McCarty, Poole, & Rosenthal, 2008).

Amongst numerous potential factors, biological traits are often claimed to be the key determinants of political orientation. In particular, Alford, Funk, & Hibbing (2005) showed that approximately 50% of variation in political attitudes can be explained by heritable traits. Moreover, biological genes can interact with social environment to influence political attitudes (Settle et al, 2010). On the other hand, another stream of researches focuses on psychological factors. These researches argue that variation in motivations across individuals (Jost, 2006; Jost, Glaser, Kruglanski, & Sulloway, 2003; Jost, Nosek, & Gosling, 2008). For instance, conservatives are associated with heightened needs for certainty, openness to experience and conscientiousness (Carney, Jost, Gosling, & Potter, 2008; Gerber, Huber, Doherty, Dowling, & Ha, 2010; McCrae, 1996; Mondak, 2010; Thorisdottir, Jost, Liviatan, & Shrout, 2007).

As extant researches often investigate determinants of political ideologies in a single nation, results may suffer from external validity. Therefore, in this paper, I contribute to literatures by using the 2010-2014 World Values Survey data, which includes 90,350 individuals in 55 different countries across the world. Socio-demographic variables are particularly interesting not only because they have been widely discussed by previous researches, but also because of its time-varying characteristics. In sum, I would like to answer the following research questions:

1. Do socio-demographic variables influence political orientation?
2. Does country of residence have an impact on political attitude?

## **Data**

The data employed by this study is the 2010-2014 World Value Survey conducted by the World Value Survey Association. The data is collected from 90,350 individuals residing in 60 different countries. This data contains information on self-reported political position (on the liberal-conservatism continuum), country of residence, income, gender, age, and education level. Age of respondents ranges from 16 to 99 with the mean of 42.05 years old and the standard deviation of 16.48 years old. Detailed characteristics of respondents are shown in Tables 1 and 2.

| <b>Attributes</b>  | <b>%</b> |
|--|----------|
| <b>Income</b>  |          |
| 1st Decile   | 7.7      |
| 2nd Decile   | 7.2      |
| 3rd Decile   | 11.5     |
| 4th Decile   | 13.8     |
| 5th Decile   | 21.4     |
| 6th Decile   | 15.5     |
| 7th Decile   | 12.2     |
| 8th Decile   | 7.0      |
| 9th Decile   | 2.0      |
| 10th Decile  | 1.5      |
| <b>Education Level</b>                                     |          |
| No Formal Education  | 6.2      |
| Incomplete Primary School                                  | 5.8      |
| Complete Primary School                                    | 11.1     |
| Incomplete Secondary School:<br>Technical/Vocational Type  | 7.4      |
| Complete Secondary School<br>Technical/Vocational Type     | 18.6     |
| Incomplete Secondary School<br>University Preparation Type | 7.9      |
| Complete Secondary School<br>University Preparation Type   | 17.6     |
| Some University-level Education                            | 7.7      |
| Complete University-level Education                        | 17.6     |
| <b>Gender</b>  |          |
| Male   | 48.1     |
| Female   | 51.9     |

Table 1: Characteristics of Respondents – Income, Education Level and Gender

| Attributes                  | %   |                     | %   |
|-----------------------------|-----|---------------------|-----|
| <b>Country of Residence</b> |     |                     |     |
| Algeria                     | 1.3 | Malaysia            | 1.4 |
| Azerbaijan                  | 1.1 | Mexico              | 2.2 |
| Argentina                   | 1.1 | Morocco             | 1.3 |
| Australia                   | 1.6 | Netherlands         | 2.1 |
| Bahrain                     | 1.3 | New Zealand         | .9  |
| Armenia                     | 1.2 | Nigeria             | 1.9 |
| Brazil                      | 1.6 | Pakistan            | 1.3 |
| Belarus                     | 1.7 | Peru                | 1.3 |
| Chile                       | 1.1 | Philippines         | 1.3 |
| China                       | 2.5 | Poland              | 1.1 |
| Taiwan                      | 1.4 | Qatar               | 1.2 |
| Colombia                    | 1.7 | Romania             | 1.7 |
| Cyprus                      | 1.1 | Russia              | 2.8 |
| Ecuador                     | 1.3 | Rwanda              | 1.7 |
| Estonia                     | 1.7 | Singapore           | 2.2 |
| Georgia                     | 1.3 | Slovenia            | 1.2 |
| Palestine                   | 1.1 | South Africa        | 3.9 |
| Germany                     | 2.3 | Zimbabwe            | 1.7 |
| Ghana                       | 1.7 | Spain               | 1.3 |
| Hong Kong                   | 1.1 | Sweden              | 1.3 |
| India                       | 6.3 | Thailand            | 1.3 |
| Iraq                        | 1.3 | Trinidad and Tobago | 1.1 |
| Japan                       | 2.7 | Tunisia             | 1.3 |
| Kazakhstan                  | 1.7 | Turkey              | 1.8 |
| Jordan                      | 1.3 | Ukraine             | 1.7 |
| South Korea                 | 1.3 | Egypt               | 1.7 |
| Kuwait                      | 1.4 | United States       | 2.5 |
| Kyrgyzstan                  | 1.7 | Uruguay             | 1.1 |
| Lebanon                     | 1.3 | Uzbekistan          | 1.7 |
| Libya                       | 2.4 | Yemen               | 1.1 |

Table 2: Characteristics of Respondents – Country of Residence

### Model

In order to investigate impacts of socio-demographics on political attitudes, an ordinal logistic model is estimated. More specifically, I let  $Y_i$  be the  $i^{\text{th}}$ 's level of conservatism. This implies that an individual with a low value of  $Y_i$  is a liberal. Let the probability that an individual  $i$  self-indicates that his/her level of conservatism is at the  $j^{\text{th}}$ -level,  $Pr(Y_i = j)$ , be represented by  $\pi_{ij}$ . It follows that the cumulative probability can be denoted by  $\theta_{ij} = Pr(Y_i \leq j)$ :

$$\text{logit}(\theta_{i1}) = \log\left(\frac{\pi_{11}}{\pi_{12} + \pi_{13} + \pi_{14} + \pi_{15} + \pi_{16} + \pi_{17} + \pi_{18} + \pi_{19} + \pi_{10}}\right) \quad (1)$$

$$\text{logit}(\theta_{i2}) = \log\left(\frac{\pi_{11} + \pi_{12}}{\pi_{13} + \pi_{14} + \pi_{15} + \pi_{16} + \pi_{17} + \pi_{18} + \pi_{19} + \pi_{10}}\right) \quad (2)$$

$$\text{logit}(\theta_{i3}) = \log\left(\frac{\pi_{11} + \pi_{12} + \pi_{13}}{\pi_{14} + \pi_{15} + \pi_{16} + \pi_{17} + \pi_{18} + \pi_{19} + \pi_{10}}\right) \quad (3)$$

$$\text{logit}(\theta_{i4}) = \log\left(\frac{\pi_{11} + \pi_{12} + \pi_{13} + \pi_{14}}{\pi_{15} + \pi_{16} + \pi_{17} + \pi_{18} + \pi_{19} + \pi_{10}}\right) \quad (4)$$

$$\text{logit}(\theta_{i5}) = \log\left(\frac{\pi_{11} + \pi_{12} + \pi_{13} + \pi_{14} + \pi_{15}}{\pi_{16} + \pi_{17} + \pi_{18} + \pi_{19} + \pi_{10}}\right) \quad (5)$$

$$\text{logit}(\theta_{i6}) = \log\left(\frac{\pi_{11} + \pi_{12} + \pi_{13} + \pi_{14} + \pi_{15} + \pi_{16}}{\pi_{17} + \pi_{18} + \pi_{19} + \pi_{10}}\right) \quad (6)$$

$$\text{logit}(\theta_{i7}) = \log\left(\frac{\pi_{11} + \pi_{12} + \pi_{13} + \pi_{14} + \pi_{15} + \pi_{16} + \pi_{17}}{\pi_{18} + \pi_{19} + \pi_{10}}\right) \quad (7)$$

$$\text{logit}(\theta_{i8}) = \log\left(\frac{\pi_{11} + \pi_{12} + \pi_{13} + \pi_{14} + \pi_{15} + \pi_{16} + \pi_{17} + \pi_{18}}{\pi_{19} + \pi_{10}}\right) \quad (8)$$

$$\text{logit}(\theta_{i9}) = \log\left(\frac{\pi_{11} + \pi_{12} + \pi_{13} + \pi_{14} + \pi_{15} + \pi_{16} + \pi_{17} + \pi_{18} + \pi_{19}}{\pi_{10}}\right) \quad (9)$$

, where

$j \in \{1 = \text{extremely liberal}, 2, 3, 4, 5, 6, 7, 8, 9, 10 = \text{extremely conservative}\}$ .

This is commonly known as the cumulative logit link. Specifically, this methodology contrast the lower level of  $Y$  with the higher levels of  $Y$ .

As the dependent variables are interval in nature, the general ordinal logistic regression model is simplified to the proportional odds model. In essence, the two response functions denoted by equations (1)-(9) are assumed to have the same slope parameters. Additionally, this particular simplification constrains the intercepts to gradually increase ( $\alpha_1 < \alpha_2 < \dots < \alpha_9$ ). Mathematically, equations (1)-(9) become:

$$\text{logit}(\theta_{ij}) = \alpha_j + X'\beta \quad (10)$$

The most notable advantage of this specification is the ease of interpretation of slope parameters,  $\beta$ , which remain constant throughout equations. That is, the incremental impact of an increase in the independent variables on the log odds or logits.

Therefore, based on the proportional odds model, I estimate the following equation:

$$\text{logit}(\theta_{ij}) = \alpha_j + \mu + \beta * Z_i + \varepsilon_{ij} \quad (11)$$

, where  $\alpha_j$  are intercept terms.  $\mu$  are country-specific constants.  $Z_i$  is a vector of demographic variables: gender indicator, age, income level in deciles, and education level.

## Results

| Parameter              | Estimate       | Std. Err. | Wald Chi-Square | P-value |
|------------------------|----------------|-----------|-----------------|---------|
| <b>Intercepts</b>      |                |           |                 |         |
| Intercept 1            | <b>-2.4773</b> | 0.1158    | 457.72          | 0.0000  |
| Intercept 2            | <b>-1.9288</b> | 0.1153    | 279.74          | 0.0000  |
| Intercept 3            | <b>-1.2909</b> | 0.1150    | 125.94          | 0.0000  |
| Intercept 4            | <b>-0.7762</b> | 0.1149    | 45.64           | 0.0000  |
| Intercept 5            | <b>0.5672</b>  | 0.1149    | 24.38           | 0.0000  |
| Intercept 6            | <b>1.1840</b>  | 0.1149    | 106.11          | 0.0000  |
| Intercept 7            | <b>1.7298</b>  | 0.1151    | 226.04          | 0.0000  |
| Intercept 8            | <b>2.4440</b>  | 0.1153    | 449.34          | 0.0000  |
| Intercept 9            | <b>3.0165</b>  | 0.1156    | 680.52          | 0.0000  |
| <b>Gender</b>          |                |           |                 |         |
| Male                   | <b>0.0364</b>  | 0.0138    | 7.00            | 0.0081  |
| <b>Age</b>             |                |           |                 |         |
|                        | <b>0.0040</b>  | 0.0000    | 68.77           | 0.0000  |
| <b>Education Level</b> |                |           |                 |         |
|                        | <b>-0.0390</b> | 0.0030    | 134.03          | 0.0000  |
| <b>Income</b>          |                |           |                 |         |
|                        | <b>0.0830</b>  | 0.0040    | 558.89          | 0.0000  |

\* *Boldface denotes estimates which are statistically significantly different from zero at the significance level of 0.05*

Table 3: Estimation Results

The ordinal logistic model described in the previous section is estimated using IBM SPSS Statistics version 21. The -2 Log Likelihood measure is calculated to be 256,714.50, which supports the significance of the model. Parameter estimates are shown in Table 3. As there are over 59 country-specific constants, these estimates are not shown in the table. However, it is important to note that these constants are statistically significant at the significance level of  $\alpha = 0.05$ . This implies that country of residence remains a potential factor influencing an individual's political attitude.

Overall, socio-demographic variables are found to be statistically significant at the significance level of  $\alpha = 0.05$ . In particular, results show that males are more likely to possess a conservative view (0.0364), while individuals with lower income tend to be liberals (0.0830). A positive relationship between liberalism and education level is evident (-0.0390). More importantly, the aging population is associated with conservativeness (0.0040).

## Conclusion

In line with extant researches, socio-demographics are key determinants of political ideology. This supports that biological genes as well as the social environment work hand-in-hand to shape individual's political attitudes. More importantly, as these variables do mature over time, political parties must be aware that their current supporters may "party switch" in the future. This inevitable implies that the political ideology gap may continue to widen.

More interestingly, country of residence proves to be another determinant of one's political attitude. Therefore, developments of political polarization will vary depends on the nature of nation's context.

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