A Multilevel Model of Interpersonal Trust and Protest Participation

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Paper Prepared for Presentation at the 2008 Annual Meeting of the American Political Science Association

Abstract
Benson and Rochon (2004) find a correlation between interpersonal trust and the level of protest participation in the 1990 World Values Survey data. I build on their statistical model, accounting for the multilevel structure of the data by looking at country-by-country regressions and running a series of multilevel models. I am able to confirm Benson and Rochon’s original finding—that there is a positive correlation between interpersonal trust and protest participation—and I also provide evidence that this relationship is stronger in countries that ranked higher on the Freedom House scale in 1990. Finally, I provide evidence challenging the claim in the original article that the effect of trust increases as the intensity of the protest action increases.
Explaining political participation is a challenging endeavor. For decades, political science has wrestled with the question of why people turnout to vote when an individual’s vote is so likely to be inconsequential (Downs, 1957; Riker and Ordeshook, 1968; Aldrich, 1993). The rational choice argument is that the costs of learning about an election and then going to the polls are surely greater than the expected benefits of doing so, since one’s vote will only change the outcome of an election in the event of a tie. Similarly, it is unclear why individuals would opt to join in costly acts of political protest given that there is only a very small likelihood of their personal participation yielding the desired result of the protest, while there is perhaps a much greater potential cost to such participation.

Over time, the literature has come to regard certain individual characteristics as important predictors of participation: individuals who are more educated, wealthier, older or more religious are more likely to participate in politics in one fashion or another (Verba, Schlozman and Brady, 1995). Individuals embedded in social networks are also more inclined toward political participation (Lake and Hukfledt, 1998). The most recent work has proposed that there might be a genetic predisposition toward political participation (Fowler, Baker and Dawes, 2008). The current paper builds on recent work by Michelle Benson and Thomas Rochon (2004). These authors propose that levels of interpersonal trust might contribute to individual willingness to participate in protests. The authors hypothesize “that a high level of trust should make individuals more likely to anticipate low expected costs of participation while leading to optimistic estimates of the potential benefits of protest” (Benson and Rochon, 2004, 437). Using data from the 1990 wave of the World Values Survey, the authors find evidence that interpersonal trust does correlate positively with protest action. Using an index of protest participation and a multinomial logistic regression model, they find that trust matters increasingly as individuals consider more extreme forms of protest action.

In this paper, I briefly summarize Benson and Rochon’s reasons for arguing that interpersonal trust will predict more intense protest action at the individual level, and I approximate—although I cannot exactly replicate—their empirical results. Then I break
down the multilevel structure of their data, exploring the variation that we see across countries first in a series of individual-level regressions broken down by country and then in a multilevel model. The multilevel model confirms the earlier finding—that individuals with a greater amount of interpersonal trust are more likely to participate in protest actions—and provides some evidence that the effect was more pronounced in the 1990 World Values Survey data among more free countries. I also provide evidence that challenges their claim that trust matters increasingly as the magnitude of protest action increases. This paper presents only a preliminary analysis, and much additional work remains to be done to explore this relationship in more depth and also in more recent data.

1 Interpersonal Trust and Protest

In his book *Collective Action and the Civil Rights Movement*, Dennis Chong (1991) challenges the idea that a straightforward cost-benefit analysis can explain individual participation in social movements. He concedes that, because social movements aim to provide public goods (e.g. a clean environment, women’s rights), rational individuals should find themselves in prisoner’s dilemma situations when asked to participate in some sort of social movement action: although the end result that might be produced if everyone participated is desirable, fearing that others will not participate, each individual should decide herself not to participate. As per Mancur Olson (1971), a common argument is that this prisoner’s dilemma situation should be alleviated as group size decreases. Chong, however, points out that the incentive to not participate in a risky protest action also can be alleviated as group size increases. He portrays protest as an assurance game in which a larger number of participants creates a greater amount of assurance for any individual participant that (1) the goal of the protest might be realized and that (2) the threat of retaliation against any particular protest participant is less.

Building in part off Chong’s idea that larger groups might make individual citizens more
likely to participate in protests, the crux of Benson and Rochon’s theoretical argument is that “trust ing individuals will be more likely than less trusting individuals to deem movement participation safe and worthwhile” (Benson and Rochon, 2004, 437). Relying on theoretical literature on social capital (e.g. Coleman, 1990), the authors assert that trusting individuals will make more resolute cost-benefit calculations. That is, if someone is a trusting individual and they believe that the expected benefits from a protest action will outweigh the potential costs from that action, they will have less uncertainty about that calculation and therefore more willingness to engage in the action. Benson and Rochon are careful to note that trustingness is only one characteristic that contributes to an individual’s decision regarding protest participation—level of grievances, available resources, specific interpersonal connections and fear of government sanctions or retaliation all matter—but on average, they assert, more trusting individuals will be more likely than less trusting individuals to engage in protest actions.

In addition, the authors argue that this effect will increase as the scale of the protest action increases. In the case of signing a petition—where the fear of retaliation is relatively low—being a trusting individual is likely to have little effect on one’s decision, whereas for a more serious action, like participating in an illegal strike or occupying a factory, where there is more uncertainty in the cost-benefit calculation, Benson and Rochon argue that trustingness will alleviate some of this uncertainty, leading trusting individuals to engage in the action where untrusting individuals will not. Although I confirm their main finding that trusting individuals are more likely to participate in protest, I provide evidence that this effect does not increase across categories of protest action. The relationship between being a trusting individual or not and protest participation is relatively consistent across all categories of protest.
2 Data on Trust and Protest Participation

Benson and Rochon (2004) use data from the 1990 wave of the World Values Survey (WVS). They use individual-level observations from 33 countries. The authors operationalize the outcome variable, protest participation, as a six-category Guttman-scaled variable based on a series of WVS questions asking respondents whether or not they have ever (1) signed a petition, (2) joined a boycott, (3) attended a lawful demonstration, (4) joined an unofficial (wildcat) strike or (5) occupied a building or factory. According to Benson and Rochon, they use a perfect Guttman scaling in which an individual receives a five if and only if she has signed a petition, joined a boycott, attended a lawful demonstration, participated in a wildcat strike and occupied a building. It is not clear from the text of the article how observations are coded when an individual has participated only in some intermediate action. (That is, if an individual has attended a lawful demonstration but never joined a boycott or signed a petition, then she should not—according to a perfect Guttman scale—score a three on the dependent variable, but it is not clear what score she should be given instead.) Therefore, in my attempt to replicate Benson and Rochon’s main findings (2004: table 1), I show results both using the perfect Guttman scaling—dropping from the dataset all cases where there is not a perfect score on less extreme actions—and also using a variable where the individual is given the score for the most extreme action in which they have participated. In subsequent sections of the paper, I will prefer this latter coding, as it does not necessitate dropping observations from the dataset. Using the latter coding also improves the efficiency of some of the estimates.

The main explanatory variable of interest is trust. Benson and Rochon operationalize trust using the WVS question asking individuals if they felt that generally speaking, “most

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1 Argentina, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, India, Ireland, Italy, Japan, Latvia, Lithuania, Mexico, the Netherlands, Nigeria, Norway, Poland, Portugal, Russia, South Africa, Spain, Sweden, Turkey, the United Kingdom and the United States. In my attempts to replicate the original study, I am unable to use the data from Turkey because of complete missingness on the education variable that the authors report using. As I describe below, however, I believe that they may use a different version of the education variable from the one that they describe in their paper.
people can be trusted” or that “you can’t be too careful in dealing with people”; the former answer is coded as one and the latter answer is coded as zero. Citing Putnam’s (2000) claim that “an individual’s level of trust is relatively stable throughout his or her lifetime” (Benson and Rochon, 2004, 440, n.5), the authors argue that this single question sufficiently separates trusters from non-trusters. Figure (1) shows the variation across countries in the percentage of people answering that “most people can be trusted.”

As control variables, the original study includes age, gender, education level and Inglehart’s (1997) four-item index of postmaterialism (WVS variable y002), since “individuals with postmaterialist value orientations are much more likely to engage in protest than people with materialist value orientations” (Benson and Rochon, 2004, 440). According to the
article, education is measured as a 10-point scale based on the respondent’s answer to the question about the age at which they finished school: those 12 or younger receive a 1, and those 21 or older receive a 10, with the remaining points of the scale filled-in for the intervening years. My replication attempts, however, cause me to question whether or not this is really the way that Benson and Rochon (2004) operationalize this variable. Finally, they also include a national-level measure of freedom based on the Freedom House index. It is not clear from the article if the authors use the political rights component, the civil liberties component, or an average of the two. In my replication results, I use an average of the two.

3 Approximate Replication of the Original Study

Benson and Rochon (2004) use a multinomial logistic regression model to examine the impact of trust and the other covariates on each of the protest actions. Using the constraint that the parameter vector for the first outcome (i.e. no protest activity) is equal to zero in order to obtain identification, the model can be written as:

\[
Pr(y_i = 0|\mathbf{x}_i) = \frac{1}{1 + \sum_{j=2}^{J} \exp(\mathbf{x}_i \beta_j)}
\]

\[
Pr(y_i = m|\mathbf{x}_i) = \frac{\exp(\mathbf{x}_i \beta_m)}{1 + \sum_{j=2}^{J} \exp(\mathbf{x}_i \beta_j)} \text{ for } m > 0
\]

I have not been able to precisely replicate their results. Figure (2), therefore, plots the coefficient estimates and standard errors as reported in table (1) of Benson and Rochon (2004), as well as my replication results using both the perfect Guttman scale coding of the outcome variable and the alternative, highest-level-of-protest coding. Looking at the first two models—their original results and mine using the perfect Guttman scale—there is a great deal of similarity among the point estimates, even though I cannot perfectly replicate their results. As hypothesized, trust is a significant positive predictor of protest action, and
the magnitude of the coefficient increases in size with the intensity of the protest action. The same is true of the postmaterialism index. The national-level variable freedom is positive and significant in most specifications. Gender is coded one for men and two for women; the coefficient estimates suggest that women are less likely to participate in protest as compared to men.

The biggest distinction between the original results and the first replication model is that, whereas Benson and Rochon (2004) consistently achieve statistically significant estimates on the age variable and insignificant estimates on the education variable, I obtain the opposite: consistently significant estimates for the effect of education and consistently insignificant estimates for the effect of age. I suspect that this has something to do with the coding of the education variable.

When I use the highest-level-of-protest outcome variable instead of the perfect Guttman scale—as in the third model presented in figure (2)—the magnitude of a number of the parameter estimates attenuate toward zero. Note also that the standard errors of the estimates for this outcome variable tend to be smaller. For the reason stated above—that this imperfect Guttman scale retains observations in the dataset that are lost with a perfect Guttman coding—I believe that this coding of the outcome variable is superior, and the increased efficiency of the estimators would seem to support this claim.

The point estimate magnitudes for both the trust variable and the postmaterialism index decrease. In terms of the trust variable, the point estimates under this alternative specification of the outcome variable challenge the claim in Benson and Rochon (2004) that trust has an increasing effect on the probability of protest participation as the protest action being

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2And where the significance level is different, it may be due to the fact that I have not used robust standard errors clustered by country as Benson and Rochon do.
3I maintain this coding here for the purpose of replication. Below, I turn this into a 0/1 indicator for female.
4They discuss this “interesting and somewhat unexpected result” in the article (Benson and Rochon, 2004, 447-448).
5Again, because Benson and Rochon (2004) use robust standard errors clustered by country, the appropriate comparison case for the uncertainty in the point estimates is my replication result using the perfect Guttman scale.
Figure 2: Coefficient Plot for Multinomial Logistic Regressions. Dots represent coefficient estimates, and lines represent 95 percent confidence intervals. The constant terms and their standard errors have been divided by 10 to put them on the same scale as the other variables.
<table>
<thead>
<tr>
<th>Outcome</th>
<th>Odds Ratio 1</th>
<th>Odds Ratio 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petition</td>
<td>1.26</td>
<td>1.26</td>
</tr>
<tr>
<td>Boycott</td>
<td>1.78</td>
<td>1.62</td>
</tr>
<tr>
<td>Demonstration</td>
<td>1.76</td>
<td>1.29</td>
</tr>
<tr>
<td>Strike</td>
<td>1.93</td>
<td>1.47</td>
</tr>
<tr>
<td>Occupation</td>
<td>1.91</td>
<td>1.31</td>
</tr>
</tbody>
</table>

Table 1: Odds Ratio on Trust from Models with Different Outcome Variables. The first column is the odds ratio from the model using the perfect Guttman scale as the outcome variable, and the second column is the odds ratio from the model using highest-level-of-protest as the outcome variable.

The first column is the odds ratio from the model using the perfect Guttman scale as the outcome variable, and the second column is the odds ratio from the model using highest-level-of-protest as the outcome variable.

considered becomes more extreme. In this model, the coefficient for trust is largest in the parameter vector referring to whether or not an individual will participate in a boycott, the second of the five protest actions.

The odds ratios—the odds of someone who is trusting as compared to someone who is not trusting, holding all other variables at their mean values—for the two replication models are presented in table (1). These figures again make obvious that, when using the highest-level-of-protest outcome variable as compared to the perfect Guttman scale, the change in odds is not monotonically increasing in the magnitude of the protest action and also is of a consistently smaller magnitude.

3.1 Ordered Logistic Regression

Although Benson and Rochon (2004) make use of a multinomial logistic regression model, the outcome variable categories have a clear order to them, suggesting that an ordered logistic regression model might be preferable.\(^6\) The ordered logistic model assumes that there is an unobserved latent variable, \(z_i\)—in this case, the highest tolerable degree of protest—that determines the category into which a given individual sorts. A series of cut-points, \(c_m\), exist to distinguish the categories. The latent variable model looks like this:

\(^6\)On the other hand, as discussed below, a multinomial logistic regression model is preferable—even for clearly ordered data—if the parallel regression assumption is violated. See Long (1997, ch. 5).
\[
y_i = \begin{cases} 
  \text{no protest} & \text{if } -\infty \leq z_i < c_1 \\
  \text{petition} & \text{if } c_1 \leq z_i < c_2 \\
  \text{boycott} & \text{if } c_2 \leq z_i < c_3 \\
  \text{demonstration} & \text{if } c_3 \leq z_i < c_4 \\
  \text{strike} & \text{if } c_4 \leq z_i < c_5 \\
  \text{occupation} & \text{if } c_5 \leq z_i < \infty 
\end{cases}
\]

\[z_i = x_i \beta + \epsilon_i\]

Since we only observe \(y_i\), the model is evaluated using the difference between the cumulative density function defining the probability of observing a certain outcome, assuming that \(\epsilon\) follows a logistic distribution:

\[
Pr(y_i = m| x_i) = \Lambda(c_m - x_i \beta) - \Lambda(c_{m-1} - x_i \beta)
\]

where \(\Lambda()\) is the cumulative density function for a logistic distribution.

Figure (3) shows the parameter and cut-point estimates for three different ordered logistic regression models. The first uses the perfect Guttman scale as the outcome variable, whereas the second and the third use the highest-level-of-protest scale. The first and second models include the country-level freedom variable, whereas the third model includes country fixed effects instead. (As can be seen, the coefficient estimates change minimally when the country fixed effects are used instead of the country-level freedom variable.)

The parameter estimates in all three models are consistent with those from the multinomial logistic regression above. Interpersonal trust and postmaterialist values both have a significant positive impact on the likelihood of protest participation, as does the level of freedom in a country. In these models, both age and education level are significant with older people being less likely to participate in protest actions, and more educated people being more likely. The results again suggest that women are less likely to participate in protests.
Figure 3: **Coefficient Plot for Ordered Logistic Regressions.** Dots represent coefficient estimates, and lines represent 95 percent confidence intervals.
As compared to the multinomial logistic regression, the ordered logistic regression does not allow us to observe any movement in the parameter estimates across categories. The cut-point estimates, however, suggest that an individual’s latent willingness to participate in a protest goes through several stages. This willingness must increase to a certain point for an individual to be willing to sign a petition, and then it must further increase for an individual to be willing to join a boycott. However, citizens who are willing to participate in a boycott essentially are also willing to participate in a demonstration. (That is, the cut-points from these two categories are barely distinguishable.) For an individual to participate in a wildcat strike, there again needs to be a significant increase in their willingness to protest, and to occupy a building or factory takes another additional boost.

That the coefficients do not vary by category is known as the parallel regression assumption. Speaking in terms of the latent variable—the willingness to protest—this assumption says that being female has the same impact on an individual’s likelihood of joining a boycott if she already is a petition-signer as on an individual’s likelihood of taking part in a strike if she already is willing to take part in demonstrations. That is, the increase in the odds of participating in one action due to a certain characteristic does not depend on the category in which an individual currently finds herself. The multinomial logistic model, on the other hand, allowed variables to have different effects on the odds for different outcome categories. The claim that the effect of trust on participation depends on the outcome category under consideration is, in effect, a claim that the parallel regression assumption is violated. As I show above, there is some evidence for this when using the perfect Guttman scaling of the outcome variable but less evidence when using the highest-level-of-protest coding.

In sum, my analysis generally replicates the main result of the original Benson and Rochon (2004) article. In all of the models above, I reproduce the finding that interpersonal trust correlates positively with protest participation. This finding holds both in my replication of the multinomial logistic regression that they use and in an ordered logistic regression. My results, however, challenge the claim in the original article that the relationship between
trust and protest participation increases in magnitude with the intensity of the protest action. When I use the highest-level-of-protest outcome variable, which I argue is a more correct measurement of individual protest participation, I find that trust has an equivalent effect on the likelihood of protest participation across almost all categories of protest.

Is this relationship consistent across countries? In their original analysis, the authors use only pooled data—taking information from all 32 countries and combining it in a single regression model. However, it is possible that the relationship may exist only in some of the countries included in the WVS data. Therefore, in the following section, I use a series of ordered logistic regression models to look at individual country-by-country regression results in order to gain a sense of how much variation there is in the trust-protest relationship across countries. Then, in the following section, I model country-level variation in the context of pooled data using a series of multilevel models.

4 Country-by-Country Results

In order to get a sense of how much variation there is across countries in these relationships, I run individual ordered logistic regressions of the protest participation index on the explanatory variables in each of the countries in the data. (For obvious reasons, I cannot include the freedom variable in these single country regressions.) The results are summarized in figure (4).

When the data is not pooled into a single regression, there is significantly more uncertainty in the estimation of the relationship between trust and protest participation. Although the coefficient estimate is almost always positive, it is statistically significant only in one-third of the countries included in the analysis. This does not provide disconfirming evidence with regard to the claim that trust positively predicts protest participation; it does, however, show the advantages of pooling together the data to obtain a more precise coefficient.

7 Canada, France, Iceland, Italy, Lithuania, the Netherlands, Norway, Poland, Russia, Spain, Sweden and the United States.
Figure 4: **Coefficient Plot for Country-by-Country Ordered Logistic Regressions.** Dots represent coefficient estimates, and lines represent 95 percent confidence intervals. For each of the 32 countries in the dataset, there are 10 parameter estimates from a single ordered logistic regression represented in the figure.
estimate and also presents the possibility that the relationship between trust and protest participation might vary across countries.

The country-by-country regressions strongly confirm the relationship between postmaterialism and protest participation and generally support the relationships for age, education and gender found in the pooled data, although in five countries the reverse relationship between age and protest participation seems to hold: in Argentina, India, Japan, Mexico and Portugal, older people are more likely to participate in more extreme forms of protest. Japan consistently has a notably high cut-point for any protest action above signing a petition, suggesting that only select individuals participate in the more intense forms of protest activity there. Russia, on the other hand, has consistently low cut-points, suggesting that many people surveyed for the 1990 WVS engaged in petition-signing, boycotts and demonstrations. (This finding is somewhat surprising given that the data was collected before the final dissolution of the Soviet Union.)

Given this evidence of variation in these relationships, it seems appropriate to more directly model the multilevel structure of the data and investigate the country characteristics that correlate with variation in the individual-level parameters within a given country. Ideally, this would be done using a multilevel ordered logistic regression model. However, because of current computational constraints\(^8\), I instead use, in the following section, a series of regular logistic regressions across the ordered categories.

5 Multilevel Analysis

One approach to modeling ordered categorical data is to use a series of logistic regressions with the outcome variable increasingly dividing the data in a given direction. In this case, I use a series of five logistic regressions in which I distinguish survey respondents who have participated in some form of protest from those who have not participated in any form of

\(^8\)Using R and either WinBUGS or OpenBUGS, I have been unable to run even a multilevel ordered logistic regression that completely converges.
protest, then those who have participated in a boycott or a more extreme form of protest from those who have only signed a petition or have not participated at all, then those who have participated in a demonstration or a more extreme form of protest from those who have only boycotted or signed a petition or not participated at all, then those who have participated in a strike or an occupation from all others and finally those who have participated in an occupation from all others. Using this set of five logistic regressions, I am able to run both classical and multilevel models and compare the results to those from the multinomial logistic regression on which Benson and Rochon (2004) base their claims.

The estimating equation for the classical logistic regression models is

\[
Pr(y_i = 1) = \logit^{-1}(\alpha + x_i'\beta)
\]

where \( x_i \) is a vector of individual-level (and possibly country-level) characteristics.

For the multilevel models, I present results for both varying-intercept and varying-intercept/varying-slope models. The estimating equation for the varying-intercept models is

\[
Pr(y_i = 1) = \logit^{-1}(\alpha_{j[i]} + x_i'\beta)
\]
\[
\alpha_j = z_j'\gamma + \epsilon_j
\]

and for the varying-intercept/varying-slope models is

\[
Pr(y_i = 1) = \logit^{-1}(\alpha_{j[i]} + x_i'\beta_{j[i]})
\]
\[
\alpha_j = z_j'\gamma + \epsilon_j
\]
\[
\beta_j = r_j'\theta + \nu_j
\]
where $z_j$ and $r_j$ are vectors of country-level characteristics. (They are named differently to suggest that they do not necessarily need to include the same variables.) $\epsilon_j$ and $\nu_j$ are normally distributed country-level errors.

For the models in this section, I have used the same set of variables as in the regressions above, except that I have standardized the age variable by subtracting the mean and dividing by two standard deviations. This puts it on a scale comparable to the dichotomous variables in the model.

Figure (5) displays coefficient estimates from five classical logistic regressions, five varying-intercept multilevel logistic regressions in which freedom is used as a country-level predictor of the varying intercept and five varying-intercept models with both freedom and GDP per capita as intercept predictors. The coefficient point estimates are very similar across the three models, as we would expect. (In fact, if anything, we see more variation than we would anticipate.) The most substantial change is to the significance level on the freedom variable. Whereas freedom obtains statistical significance at the 95 percent level in three of the five classical regressions (similar to its consistent statistical significance in the Benson and Rochon (2004) model), once it has been correctly specified as a country-level variable, it obtains statistical significance only in one of the five multilevel models. Specifically, whereas the level of freedom in a country is a positive predictor of individuals partaking in any sort of protest, it is not a significant predictor of individuals moving from one form of protest to another. This result contrasts with the consistently significant positive effect of freedom on participation found in Benson and Rochon (2004).

The third model demonstrates that the freedom variable also can be made to lose significance as an intercept predictor for all levels of protest by controlling for a country’s level of development. When GDP per capita is included as an intercept predictor, it obtains statistical significance and is a positive predictor of a country’s intercept in the logistic regression predicting the probability of participating in any protest action; freedom meanwhile becomes statistically insignificant in this same regression. However, GDP per capita is not a
Figure 5: Coefficient Plot for Classical and Multilevel Logistic Regressions. Dots represent coefficient estimates, and lines represent 95 percent confidence intervals. In the classical regression, freedom is included as an individual-level predictor, whereas in the multilevel regressions, it is included at the country-level as an intercept predictor. GDP per capita is also a country-level intercept predictor.
significant predictor in any of the other four regressions (and freedom remains insignificant in these regressions).

The results presented in figure (5) also confirm the general findings with regard to age, gender and education from other models. Women are increasingly less likely to participate in a protest action as the magnitude of the action increases. The changes in other variables across the five cut-points is minimal.

Figure (6) presents the fixed effect estimates from a varying-intercept/varying slope model in which I use freedom as a country-level predictor of both the intercept and the slope on the truth variable. Because the value of the coefficient estimate for trust varies by country, I do not report it in figure (6); instead, these estimates can be found in figure (7). As we would expect, the coefficient estimates here are the same as in the varying-intercept model with only freedom as an intercept predictor in figure (5). The key result to note is that freedom is also a significant positive predictor of the size of the country slope for the no protest versus any protest and petitioning versus more extreme protest regressions. (The significance level is $p < .10$ for the first regression.) That is, the relationship between trust and protesting—the size of the coefficient on the trust variable—is increasing in the level of freedom in the country for these two categories. Also, as compared to the changes to freedom as an intercept predictor upon the introduction of GDP per capita as a second intercept predictor, when the country’s level of development is introduced as a second slope predictor, the effect of freedom remains largely unchanged in the second through fifth regressions—in the first regression, the inclusion of GDP per capita does cause freedom to lose all significance.

The relationship between a country’s level of freedom and the slope on the trust variable can be seen in figure (7), where I plot the coefficient estimates for all countries in increasing order of the country’s freedom score. For the first and second regressions, there is a clear positive trend in the point estimate of the trust coefficient as the level of freedom in a country increases. This pattern also exists to a lesser extent in the third regression (which contrasts individuals who have not participated or have only petitioned or boycotted against
Figure 6: Coefficient Plot for Multilevel Logistic Regressions. Dots represent coefficient estimates, and lines represent 95 percent confidence intervals. Freedom is included as a country-level predictor for both a varying-intercept and a varying-slope. Log(GDP Per Capita) is included as a slope predictor in the second model.
individuals who have joined demonstrations or strikes or occupied a factory). In the fourth regression, a number of the coefficient estimates have become negative, and in the fifth regression, the trend in the coefficient estimates appears to be in the opposite direction: the effect of being a trusting individual on one’s likelihood of occupying a factory decreases as freedom increases.

The varying-intercept/varying-slope results, then, continue to confirm that more trusting people are more likely to participate in more extreme forms of protest but add the nuance that this is increasingly true as the level of freedom in a country increases.

6 Conclusions and Future Research Goals

This paper starts from the conclusion of Benson and Rochon (2004) that more trusting people are more likely to participate in political protest. The authors hypothesize that this is because more trusting people assess the costs and benefits of protest participation with less uncertainty. In the first section, I approximate their original result using a multinomial logistic model. Changing the definition of the outcome variable leaves the main result unchanged but does challenge the claim in Benson and Rochon (2004) that the relationship between trust and participation is greater for more intense forms of protest action. Using an ordered logistic regression also confirms the main finding that trusting individuals are more likely to participate in protest actions.

Regressions at the level of individual countries suggest that there is some variation in the effect of trust across the countries in the dataset. I investigate this variation further using a series of multilevel models. A varying-intercept model that uses freedom as a country-level intercept predictor suggests that whereas there is a higher probability of some form of protest in more free countries, the level of freedom does not help us to distinguish the probability of one form of protest from another. In addition, once GDP per capita is included as an intercept predictor, this variable takes precedence over the freedom variable, which becomes
Figure 7: **Slope Coefficients on Trust from Multilevel Logistic Regressions**. Dots represent coefficient estimates, and lines represent plus or minus one standard error in the estimate. The countries are listed in increasing order of their score on the freedom variable.
insignificant even in the logistic regression distinguishing protest participants from total non-participants.

I use a varying-slope multilevel model to explore what determines the magnitude of the coefficient on trust. I find that for the model distinguishing protest participants who have participated in a boycott or participated in a more extreme action from those who have only signed a petition or not participated at all, freedom is a positive predictor of the size of the slope coefficient on trust. This effect is robust to the inclusion of GDP per capita as a slope predictor, although a similar relationship between freedom and the size of the coefficient on trust in the initial regression distinguishing participants from non-participants is not.

Therefore, I have generally confirmed the main result from Benson and Rochon (2004). In addition, by using a varying-slope multilevel model, I have added the nuance that the level of freedom in a country may affect the intensity of the relationship between trust and protest participation, and by using a superior definition of the outcome variable, I have challenged their assertion that the relationship between trust and participation is increasing in the intensity of the protest activity. As this research progresses, I aim to make use of additional slope predictors to further explore the relationship between trust and political participation, and I also intend to expand the data to include other years of the World Values Survey to see if this relationship has held consistently over time.
References


