DISSATISFACTION AND PUBLIC SUPPORT FOR TERRORISM

A Thesis

Presented to

The Faculty of the Department

of Political Science

University of Houston

In Partial Fulfillment

Of the Requirements for the Degree of

Master of Arts

By

Joseph A. Lazzaro

December, 2016

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ABSTRACT

Education is thought to be an important factor in reducing the legitimacy of violence against civilians among a population. Some have argued that this effect is not universal but conditional on other social and demographic factors. This paper examines one such claim, which states that rising education generates "political dissatisfaction" that can lead to increased support for suicide bombing targeting civilians. We reexamine the evidence presented in support of this theory and find that the original analysis does not in fact show a statistically significant interactive effect of dissatisfaction on education. We then decompose the authors' index of dissatisfaction and show that it is the perception of a threat to cultural and religious identity that drives increased support in their findings. Finally, we test different measures of dissatisfaction against a new dataset and find that dissatisfaction over income and government performance have no generalizable effects, while concern with religious or ethnic conflict increases support. We conclude with a brief discussion of the challenges facing the study of education in a cross-country analysis and the importance of spatial correlations that are left unmodeled due to the lack of geocoded survey data.

CONTENTS

1	Introduction	1
2	Replication	3
	2.1 Revisiting Methodology	5
	2.2 Model Respecification	9
3	Exploring Dissatisfaction	12
	3.1 Results	16
	3.2 The Effect of Education on Dissatisfaction	20
4	Other Model Considerations	22
5	Conclusion	26
6	Future Research	27
7	Appendix	29

1 Introduction

Education is commonly thought to be an essential component of a democratic society because it is thought to foster tolerance for diversity and resistance to extremist ideology. Since Seymour Martin Lipset (1959) political scientists have argued that democracy cannot survive without such an educated tolerance, and some have looked to the recently rising levels of education in Muslim countries as a sign that liberal democratic values are all but inevitable. Olivier Roy (1994, 2012) has written on education's role in the creation of a new, secular and liberal generation of Arabs. The sociologist Asaf Bayat (2007, 2013) makes much the same argument, citing increasing education and widespread literacy as responsible for an increasing expectation of individual autonomy and resistance to the radical agenda that seeks to impose piety through the threat of lethal force. The idea is widespread in the popular imagination, in political circles (Roberts-Schweitzer, Greaney and Duer 2006, Barakat and Urdal 2009), and with journalists (Cole 2014, Wright 2011).

The theory that increased education increases tolerance by expanding one's "understanding of diverse cultures, openness to new ideas, and willingness to risk uncertainty and ambiguity" (Moore and Ovadia 2006) is commonplace and has found substantial empirical support, but analysts have also raised questions regarding how generalizable this pattern is across societies. For one thing, it is important to consider that educational curricula vary widely by country. In one, primary school education may be designed to introduce students to a multicultural outlook and build a sense of shared identity and civic engagement. In another, the same primary school education might instead be used to teach students about a history of conflict, separatist identity, or victimization (Barakat and Urdal 2009, p. 3). There ought not to be any expectation that lower levels of education should have a consistent effect in promoting tolerance. On the other hand, higher education promotes critical reasoning and an ability to empathize with others. These traits ought to lead to a near universal rejection of violence directed against civilians for the purposes of enforcing societal norms or protecting economic interests. Acemoglu et al. (2005), however, note that much of the empirical support for education's proposed role in promoting democratic values vanishes when country fixed effects are introduced to multi-national cross sectional analysis. M. Najeeb Shafiq and Abdulkader Sinno (2010) have also challenged the universality of such an effect. Writing on the subject of public support for suicide bombings that target civilians, they argue that the impact of higher education is not universally positive. Instead, they theorize that education increases one's knowledge of world events and the political failings of government, and this leads educated but politically dissatisfied individuals to be more supportive of suicide bombing and other forms of violence against civilians.

Although Shafiq and Sinno report statistical evidence in support of their theoretical link between education and political dissatisfaction in three of the six countries examined, we are motivated by three questions. The first regards the extent to which their theory is generalizable. If the model fits only particular levels of education in particular countries then it is unclear whether the findings are attributable to the effects of education and/or political dissatisfaction or if they are more a reflection of socio-economic class structures in each society. The second question regards the methodology employed in presenting their findings. They do not, however, include an interaction term in their model for a relationship that they believe is conditional, nor do they examine the marginal effects of education conditioned by dissatisfaction to verify that varying levels of dissatisfaction have a statistically significant effect on education. Finally, we note that the index of political dissatisfaction they leverage may have multiple dimensions that may not necessarily interact with education in the same way.

This paper seeks to address these three outstanding issues. First, we replicate the original work and note that upon examination of marginal effects or predicted probabilities we fail to observe a statistically significant interactive effect of political dissatisfaction on education. We then extend their model to an additional dataset that includes twenty countries, leveraging a fixed effects logistic regression with standard errors clustered at the country level in order to ascertain the extent to which education and political dissatisfaction have any generalizable effect. We also decompose Shafiq and Sinno's original measure of political dissatisfaction to examine its constituent elements, then we examine three alternative conceptions of dissatisfaction. We find that, if defined as discontent with government performance or personal economic conditions, dissatisfaction has no predictive power. If defined, however, as worry regarding ethno-religious tensions, then increased dissatisfaction is correlated with a higher probability of supporting suicide bombing. We argue that the statistical findings in the authors' original results were driven primarily by this perception of a threat to cultural identity and demonstrate the effect of existential threat is generalizable across the countries in our expanded sample and that it has no conditional relationship with education.

2 Replication

In this section we replicate Shafiq and Sinno's results, explore the utility of an explicit interaction term for their theoretical relationship between education and dissatisfaction, and examine marginal effects to determine whether the original findings definitively show a statistically significant effect of political dissatisfaction. The authors analyze the 2005 Pew Global Attitudes Project (PGAP) survey results for six countries: Indonesia, Jordan, Lebanon, Morocco, Pakistan, and Turkey. The dependent variable, support for violence against civilians, is based on the following survey question: Some people think that suicide bombing and other forms of violence against civilian targets [in our country] are justified in order to defend Islam from its enemies. Other people believe that, no matter what the reason, this kind of violence is never justified. Do you personally feel that this kind of violence is often justified, sometimes justified, rarely justified, or never justified?

Half of the respondents were asked with the words "in our country" excluded. Responses of "never" were coded as zero, "rarely" as one, "sometimes" as two, and "often" as three. Those responding "don't know" or "refused" were dropped from the sample. The primary variables of interest are the highest completed level of education and income quartile. Each are included as individual dummy variables for each level of education and each income quartile. Education is broken into below primary, complete primary, complete secondary, and a complete higher education. For income quartile, the authors take the mean of the respondent's monthly income range and convert it to 2005 USD. They then divide this by the number of people living in the respondent's household, explaining that this more accurately reflects socio-economic standing because household sizes vary dramatically. Finally, quartile dummies were assigned based on the adjusted household income within each country.

To measure political dissatisfaction, an additive index was created from two survey questions. First, respondents were asked whether they were satisfied or dissatisfied with the way things were going in their country. Second, they were asked whether or not they felt that Islam faced any threats. A negative response to both questions was coded as zero. An affirmative response to one of them was coded as one, and an affirmative to both was coded as two. Other control variables include gender, age cohort, marital status, number of children, and dummy variables indicating the region of the country in which the interview was conducted. The means and standard deviations for each country are reported in the appendix as Table 7. The authors find mixed support for their theorized relationship between education, income, and political dissatisfaction. Comparing models before and after the inclusion of the dissatisfaction variable, they argue that dissatisfaction in Jordan, Morocco, and Pakistan mitigates higher education's effect on support for suicide bombing. In Indonesia, while there is evidence that higher education reduces support, there is no evidence that dissatisfaction influences that relationship. Finally, Lebanon and Turkey exhibit no statistical evidence that education or dissatisfaction have any impact on attitudes towards violence. The replicated results of their fully specified models are presented as Table 1.

2.1 Revisiting Methodology

Shafiq and Sinno offer plausible, intuitive, and important nuance to the literature on the link between education and violence, but we have questions about their methodology. To begin with, raw coefficients in nonlinear models are difficult to interpret directly, and it is not clear from a simple comparison of coefficients with and without the control for dissatisfaction that the differences are statistically distinguishable from a null effect. Additionally, they propose an interaction between education and political dissatisfaction but they do not test any explicit interaction term.

There appears to still be reasonable debate among methodologists whether an explicit interaction term is always required. Kam and Franzese (2007) argue that because the all terms in the nonlinear model are essentially interacted, an explicit interaction term is required when we wish to differentiate between the effects of an interaction and the normal interrelations of the logistic and probit mechanics. Berry, DeMerrit, and Esarey (2010), on the other hand, argue that such a term is only required when our theorized interaction impacts the underlying latent variable, not simply the probability of observing the response of interest. Whichever view one subscribes to, Shafiq and Sinno have not done enough to confirm that an interaction

		Depend	ent variable: Suppor	t for Suicide Bombin	g	
	Indonesia	Jordan	Lebanon	Morocco	Pakistan	Turkey
Education: Primary	-0.069	0.345	-0.263	-0.324	-0.251	-0.561
	(0.274)	(0.184)	(0.349)	(0.304)	(0.186)	(0.437)
Education: Secondary	-0.455	0.674***	-0.307	-0.358	-0.367	-0.590
	(0.280)	(0.193)	(0.374)	(0.338)	(0.275)	(0.457)
Education: Higher	-1.302^{*}	0.566^{*}	-0.566	-0.196	-0.773^{*}	-0.700
1	(0.534)	(0.287)	(0.448)	(0.488)	(0.322)	(0.534)
Income: 2nd Quartile	0.111	-0.361	0.095	0.397	-0.120	0.321
	(0.233)	(0.193)	(0.276)	(0.362)	(0.228)	(0.300)
Income: 3rd Quartile	-0.154	-0.544*	0.265	0.834*	-0.373	-0.257
	(0.227)	(0.214)	(0.290)	(0.375)	(0.230)	(0.324)
Income: 4th Quartile	0.253	-0.987^{***}	-0.034	0.745	-0.584*	-0.507
	(0.242)	(0.251)	(0.365)	(0.414)	(0.274)	(0.391)
Dissatisfaction	0.040	0.382^{***}	0.470^{***}	0.375^{*}	0.186	-0.010
	(0.110)	(0.104)	(0.127)	(0.177)	(0.115)	(0.141)
Male	0.197	0.062	-0.270	0.261	0.477^{**}	0.196
	(0.161)	(0.123)	(0.190)	(0.234)	(0.167)	(0.203)
Age Group	-0.466^{***}	0.395^{**}	-0.167	-0.100	0.113	-0.257
	(0.131)	(0.121)	(0.152)	(0.209)	(0.124)	(0.172)
Married	0.069	-0.339^{*}	-0.130	-0.167	0.252	0.225
	(0.230)	(0.162)	(0.230)	(0.310)	(0.207)	(0.265)
Total Children	0.136	-0.192^{***}	-0.156	-0.001	-0.037	-0.068
	(0.070)	(0.048)	(0.099)	(0.105)	(0.036)	(0.090)
$\tau 1$	0.594	-0.710*	-0.881*	2.050^{***}	0.213	0.324
	(0.382)	(0.315)	(0.445)	(0.505)	(0.318)	(0.573)
τ2	1.546^{***}	0.478	0.352	2.479^{***}	1.193^{***}	0.997
	(0.387)	(0.313)	(0.440)	(0.510)	(0.320)	(0.575)
τ 3	3.631^{***}	2.340^{***}	1.352^{**}	3.202^{***}	2.091^{***}	2.643^{***}
	(0.444)	(0.325)	(0.448)	(0.523)	(0.332)	(0.601)
Observations	767	887	384	534	670	590
Residual Deviance	1,359.963 (df = 749) 2;	304.534 (df = 871) 1	,000.622 (df = 365) 7	'40.759 (df = 517) 1,	474.642 (df = 653) 9	49.274 (df = 569)
Note:					*p<0.05; **p<	(0.01; *** p<0.001
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Table 1: Replication of ordered logistic regressions performed by Shafiq and Sinno, including the control for political dissatisfaction and fixed-effects by region within each country (not shown). Results are based on 2005 PGAP data.

is present, either through the inclusion of an interaction term, the examination of marginal effects, or an analysis of the predicted probabilities of responses at different levels of education and dissatisfaction.

In order to better understand whether the proposed relationship between education and political dissatisfaction exists, we take two additional steps beyond the original work. First, we respecify their models with an interaction term and test both the significance of the term and whether or not its inclusion constitutes a statistically significant reduction in residual deviation. Second, we generate plots of the predicted probabilities of each response with 95% confidence intervals. If the product term is not statistically significant, there could still be an interaction effect that is only readily percieved through such an examination. Across the five countries, the only statistically significant product term is that for secondary school education and dissatisfaction in Indonesia. We also observe some changes to levels of significance for education, with higher education in Indonesia, Jordan, and Pakistan falling below conventional levels after the inclusion of the interaction term. Likelihood ratio tests show that the interacted model improves model fit only in Indonesia,¹ with the difference in Jordan just missing conventional levels of significance tests.² Complete results of the interacted models are reported in the appendix as Table 9.

With no reason to retain the product term in countries other than Indonesia, we may also examine the differences in predicted probabilities for each level of education at each level of political dissatisfaction. An interaction may still manifest itself as a statistically distinguishable difference in the predicted probabilities for satisfied and dissatisfied individuals. As a representative example that Shafiq and Sinno argue supports their theory, Figure 1 shows the predicted probabilities in Pakistan at each level of education, income, and dissatisfaction.

Each color represents a possible response, each shape a level of dissatisfaction.

¹-679.98 to -675.90, Pr(Chi) = 0.043

 $^{^{2}}$ -1152.3 to -1148.5, Pr(Chi) = 0.056



Figure 1: Predicted probabilities of responses in Pakistan, Shafiq & Sinno's model, 2005 PGAP Data

Predictions are grouped by level of education so that we can easily observe the change for each response at each level of dissatisfaction within each educational category. In each model we see weak movement in the direction suggested by the authors, but the broadly overlapping confidence intervals reveal that the effect is not statistically significant. The models including a product term show slightly more intense effects, but we only observe a definitely distinguishable effect in one area: The highest levels of dissatisfaction reduce the predicted probability of responding "never" for individuals with a primary school education in Jordan when compared to the least dissatisfied. Interestingly, although not statistically distinguishable from zero, the effect among dissatisfied individuals at the secondary and higher education levels in Indonesia is in the opposite direction of what the authors suggest, with the probability of responding "never" weakly increasing as dissatisfaction rises. Additional country plots are included in the appendix. With no statistically significant interaction anywhere but for a single level of education in a single country, we find no compelling evidence to back the authors' claim of an effect of education on support for violence against civilians that is conditioned upon political dissatisfaction. Moreover, there does not appear to be much consistent support for the idea that exposure to education itself has any statistically distinguishable effect on levels of support for suicide bombing and other forms of violence against civilians at all. The idea that education is a foundational element of tolerant societies is so well entrenched in literature and popular imagination, however, that we are reluctant to conclude that no such effect exists. Additionally, the theory that an individual's rising dissatisfaction with the political or economic conditions in a country could mitigate the effect of their education is compelling enough that we argue it warrants additional analysis.

2.2 Model Respecification

This section examines the index of political dissatisfaction and respecifies the statistical model in an attempt to achieve more consistent results across countries. The inconclusive results demonstrated thus far could stem from a problem with the index of political dissatisfaction, which may be built upon survey questions that are too broad and vaguely specified to capture the intent behind the theory. Recall the first element of the index: "[a]re you satisfied or unsatisfied with the way things are going in our country today?" While it is true that this measures some form of dissatisfaction, does it give us enough information to assess what the respondent is concerned with? One respondent might report dissatisfaction because he is opposed to the secularization of society or encroaching "Westernization" brought about by the ever-increasing penetration of economic globalization. Another might report dissatisfaction because she worries that the government is not doing enough to prevent fringe Islamist groups from terrorizing citizens that do not subscribe to their strict beliefs. There is no reason to believe that dissatisfaction on these two extremes should move support for violence against civilians in the same direction.

Another potential source of problems for the authors is the fact that their data are segmented in such a way as to pose possible challenges to the stability of their numerical estimates. Table 2 shows the breakdown of responses by level of education for each country. Note the low number of observations in many cells, particularly in more supportive responses at higher levels of education. Once we further divide the data by income level, gender, and political dissatisfaction, the problem becomes apparent; there are many cells with zero or single-digit observations. Additionally, diagnostics of the ordered logistic regressions reveal likely violations of the proportional odds assumption when including the regional dummies within each country (not shown). We now reexamine their theory with some modifications to address these concerns.

		Never	Rarely	Sometimes	Often
Indonesia	Below Primary	49	16	11	0
	Complete Primary	181	47	45	5
	Complete Secondary	263	56	45	13
	Complete Higher	30	4	2	0
Jordan	Below Primary	104	105	119	39
	Complete Primary	62	41	59	27
	Complete Secondary	71	67	101	30
	Complete Higher	17	25	11	9
Lebanon	Below Primary	10	18	9	6
	Complete Primary	48	42	23	27
	Complete Secondary	50	38	26	26
	Complete Higher	26	11	12	12
Morocco	Below Primary	119	7	10	10
	Complete Primary	166	15	15	13
	Complete Secondary	113	8	7	13
	Complete Higher	30	1	3	4
Pakistan	Below Primary	124	54	30	33
	Complete Primary	160	51	35	32
	Complete Secondary	51	19	8	7
	Complete Higher	46	10	6	4
Turkey	Below Primary	14	4	5	1
	Complete Primary	162	19	27	9
	Complete Secondary	201	33	33	10
	Complete Higher	53	6	10	3

Table 2: Responses by Education (2005 PGAP)

First, in order to increase model stability and robustness, we collapse the responses into a dichotomous variable. Although we lose some granularity in the level of support for violence, we greatly increase the number of observations available at each level of education. This loss of granularity does not concern us, since we are only truly interested in a single cut point—either it is never acceptable to kill civilians or it is. If a respondent crosses that initial cut point then there is at least one group of civilians in his or her mind that may be acceptable to perpetrate acts of violence on. We know nothing, however, about their reasoning; a response of "rarely" in their mind might mean that there is a small group of ethnic minorities on whom attacks are always justifiable. Alternatively, it could mean that anyone could be a legitimate target under a very specific set of circumstances. Treating the response as a binary eliminates this ambiguity by classifying anyone that did not respond that it is never justifiable to kill civilians as potentially supportive of violence under the right circumstances. Furthermore, the binary response model has the additional advantage of being much more intuitive in its interpretation.

Next, we note the low correlation of responses to the two terms of the political dissatisfaction index; with a Cronbach's α of only 0.086 there is little reason to suspect these accurately capture a single latent dimension that we can confidently label "political dissatisfaction." Removing the index from the model and replacing it with responses to each survey question (dissatisfaction and threat) will give us a better understanding of how each performs. We report the results in Table 3. As our concern with the dissatisfaction variable above anticipated, in no country does the measure of dissatisfaction reach statistical significance. The threat variable, on the other hand, closely mirrors the authors' original results with positive and statistically significant coefficients in Jordan, Lebanon, and Morocco. This suggests that dissatisfaction in the original analysis is little more than noise and that the findings were in large part motivated by the perception that Islam was under threat. This is consistent with

previous research that finds such a perceived threat to be an important predictor of support (Fair and Shepherd 2006). Models including an interaction term between education and dissatisfaction and education and threat demonstrate no statistically significant reduction in residual deviance. We conclude that there is no interactive effect and have omitted these models for brevity.

3 Exploring Dissatisfaction

Shafiq and Sinno's conceptual model proposes that higher educational attainment leads to increased dissatisfaction with one's government or foreign policy, and that this dissatisfaction can in turn lead to increased support for suicide bombing. The argument rests in part on the assumption that political dissatisfaction includes attitudes towards a government's performance, but we have shown that simply asking respondents whether they are satisfied or not with the conditions in their country cannot predict their attitudes regarding violence towards civilians. This section examines three separate (though not mutually exclusive) conceptions of "political dissatisfaction" in an effort to understand how dissatisfaction on different dimensions relates to the idea that violence against civilians is legitimate.

We test these new measures of dissatisfaction using the PEW Research Center's 2012 World Muslims Dataset (hereafter PWMD). Where the 2005 PGAP contains only six countries, the 2012 PWMD contains significant Muslim populations in twenty countries after dropping those missing the required data. The remaining countries are Afghanistan, Albania, Algeria, Azerbaijan, Bangladesh, Bosnia and Herzegovina, Egypt, Indonesia, Iraq, Jordan, Kosovo, Kyrgyzstan, Malaysia, Niger, Pakistan, Palestine, Russia, Tajikistan, Tunisia, and Turkey. The PWMD thus offers a significantly larger sample and includes very similar survey items, but it is not precisely comparable as it does not ask respondents whether they think Islam faces any threats. Instead, two of our measures are constructed via confirmatory factor analysis.

			Dependent	variable:		
	Indonesia	Jordan	Support for Sui Lebanon	cide Bombing Morocco	Pakistan	Turkey
Education: Primary	-0.162	0.070	-0.528	-0.231	-0.299	-0.598
	(0.285)	(0.222)	(0.458)	(0.314)	(0.199)	(0.467)
Education: Secondary	-0.582^{*}	0.533^{*}	-0.641	-0.319	-0.273	-0.617
3	(0.291)	(0.238)	(0.486)	(0.348)	(0.290)	(0.486)
Education: Higher	-1.397^{*}	0.676	-1.025	-0.180	-0.787^{*}	-0.826
	(0.543)	(0.361)	(0.564)	(0.498)	(0.333)	(0.561)
Income: 2nd Quartile	0.144	-0.308	0.095	0.416	-0.267	0.286
	(0.240)	(0.245)	(0.324)	(0.366)	(0.242)	(0.308)
Income: 3rd Quartile	-0.112	-0.437	0.334	0.869*	-0.430	-0.226
	(0.231)	(0.273)	(0.351)	(0.384)	(0.242)	(0.334)
Income: 4th Quartile	0.292	-0.929^{**}	-0.115	0.808	-0.547	-0.486
	(0.248)	(0.316)	(0.435)	(0.427)	(0.293)	(0.397)
Dissatisfaction	0.057	-0.164	0.164	-0.111	-0.018	-0.143
	(0.167)	(0.167)	(0.259)	(0.233)	(0.170)	(0.208)
Threat	0.025	0.623^{**}	0.572^{*}	1.321^{**}	0.245	0.127
	(0.165)	(0.203)	(0.269)	(0.420)	(0.175)	(0.219)
Male	0.219	0.101	-0.236	0.340	0.426^{*}	0.024
	(0.165)	(0.153)	(0.224)	(0.239)	(0.176)	(0.209)
Age Group	-0.485^{***}	0.397^{*}	-0.061	-0.159	0.125	-0.241
	(0.136)	(0.154)	(0.181)	(0.214)	(0.133)	(0.176)
Married	0.085	-0.404	-0.124	-0.113	0.164	0.172
	(0.236)	(0.215)	(0.269)	(0.317)	(0.222)	(0.274)
Total Children	0.135	-0.134^{*}	-0.162	0.015	-0.050	-0.082
	(0.072)	(0.060)	(0.117)	(0.108)	(0.038)	(0.092)
Constant	-0.528	0.792	1.440^{**}	-2.768^{***}	0.017	-0.217
	(0.393)	(0.416)	(0.557)	(0.606)	(0.344)	(0.600)
Observations	292	887	384	534	670	590
Log Likelihood	-460.157	-510.451	-236.419	-250.680	-434.790	-313.423
Akaike Inf. Crit.	954.314	1,050.903	508.837	533.360	901.580	666.846
Residual Deviance	$920.314 (\mathrm{df} = 750)$	1,020.903 (df = 872)	472.837 (df = 366)	501.360 (df = 518)	869.580 (df = 654)	626.846 (df = 570)
Null Deviance	$959.434 (\mathrm{df} = 766)$	$1,062.376 (\mathrm{df} = 886)$	496.742 (df = 383)	532.204 (df = 533)	916.144 (df = 669)	689.634 (df = 589)
Note:					*p<0.05; **	*p<0.01; ***p<0.001

Table 3: Binary logistic regressions including the constituent elements of the political dissatisfaction index, dissatisfaction with conditions in one's country and the perception that Islam is under threat. Results are based on 2005 PGAP data.

Our first measure of dissatisfaction is income conditional on education. Increased education leads to a greater expectation that one will be successful in life. If those expectations are not met and one sees themselves as falling behind their peers though no fault of their own then this "relative deprivation" may foster a sense of resentment that can lead to increased support for political violence (Gurr 1970, 1972). Given the breadth of the literature on relative deprivation, we expect to find increased support at the highest levels of education paired with the lowest levels of income.

We adhere to Shafiq and Sinno's treatment of income as closely as possible, taking the mean of the respondent's reported income range and converting it to 2012 USD based on the annual average exchange rates for 2012 according to The World Bank³. The original specification divides this by the number of *dependent* children to account for the higher living expenses of larger families, but while the PWMD asks respondents how many children they have had, it does not indicate exactly how many are currently dependent upon the respondent. Instead, we divide income by the number of adults in the household. This does not conform perfectly to recoding used by Shafiq and Sinno but we believe it accurately reflects their original intention of modeling households with large extended families living under one roof. Final categories were calculated by dividing this adjusted income into quartiles within each country.

For the second and third measures of dissatisfaction we leverage factor analysis to create two indices from available survey responses. Using a set of six questions in the survey, we identify two latent factors. The first is a measure of dissatisfaction with government performance on crime, unemployment, and the national economy in addition to the perception of the prevalence of corruption among government officials. We term this first factor "functional dissatisfaction," it being a measure of the respondent's perception of how well their government functions. We believe this to be one dimension of the type of political dissatisfaction that Shafiq and Sinno

³http://www.uis.unesco.org/Education/Documents/isced-2011-operational-manual.pdf

argued can increase support for violence against civilians. If they are correct in their assertion that discontent with the political status quo increases such support, then we would expect to find a positive and statistically significant coefficient here. After Varimax rotation, the functional dissatisfaction variable ranges from -3.664 to 0.952 with a mean 0, median 0.198, and standard deviation of 0.681.

A second factor measures concern with religious and ethnic conflict as well as with extremist groups operating in the country. We term this factor "ethnic dissatisfaction" as it captures a respondent's worry about the possibility of ethno-religious conflict. This variable taps a similar dimension to the original threat variable in that it pertains to the perception of a challenge to a personal or cultural identity. We accordingly expect a positive and significant coefficient here. Note that this is not an argument about the mere presence of ethnic diversity. Although commonly considered a driver of ethnic conflict, empirical evidence indicates that the existence of diversity is not sufficient to explain ethnic conflict. It is more accurate to say that ethnic cleavages can be solidified and exploited when grievances are present and defined along ethnic or sectarian lines (Fearon and Laitin 2003, Houle 2015). Instead, this index simply captures the anxiety respondents feel about the state of ethnic and religious relations. The Varimax rotated index ranges from -1.932 to 1.579 with a mean of 0, median of 0.139, standard deviation of 0.890. A complete table of factor loadings and other diagnostics are provided in the appendix.

We coded educational attainment to match as closely as possible the original study. This poses its own challenges, as educational programs vary greatly between countries and the PWMD questionnaire structured responses to the question differently for each. We have assigned each individual in the PWMD an educational level according to the UNESCO International Standard Classification of Education 2011 guidelines (OECD 2015) based on the respondent's reported educational attainment, then collapsed these into the four categories used by Shafiq and Sinno. ISCED levels 0 and 1 are considered below primary school education. Levels 1 and 2 constitute a completed primary school education. Levels 3 through 5 correspond to a completed secondary school education. Finally, levels 6 and above represent a completed higher education, consisting of a bachelor's degree or higher.

The PGAP includes regional controls within each country, but the closest analog in the PWMD is a dummy variable for urban versus rural, which has been included as a control in our regressions. Finally, we include controls for age group, gender, martial status, and number of children in order to adhere as closely as possible to Shafiq and Sinno's original specification. The means and standard deviations of these variables are reported in Table 4.

3.1 Results

Having collapsed our dependent variable to a binary, we leverage country fixed effects logistic regressions to test the effect of each of these three measures of dissatisfaction. Because observations are nested within countries, we calculate standard errors clustered at the country level. The results are presented in Table 5.

Model 1 includes an interaction between education and income. After adjusting for clustered standard errors the only remaining significant product term is at the primary school level in the third income quartile. To clarify the meaning of these findings we provide in Figure 2 the predicted probability of support at each level of education and income holding all other factors at their means or, in the case of dichotomous variables, medians. At the levels of secondary and higher education there is a gradual falloff of support as income increases from the first quartile, which is supportive of the expectations gleaned from relative deprivation theory. The broadly overlapping confidence intervals, however, challenge the strength of any claim we might make here. Note especially the wide intervals at the highest level of education, attributable to the fact that we have relatively few observations in this category. The patterns for

z	362	1123	275	418	1231	574	1054	1431	842	604	452	848	695	402	390	517	532	847	775	715			
Urban	0.45(0.50)	0.20(0.40)	0.72(0.45)	0.58(0.49)	0.29(0.45)	0.59(0.49)	0.38(0.49)	$0.43 \ (0.50)$	0.67(0.47)	0.80(0.40)	$0.34 \ (0.47)$	0.28(0.45)	0.68(0.47)	0.28(0.45)	0.60(0.49)	0.81(0.39)	$0.61 \ (0.49)$	0.26(0.44)	0.65(0.48)	0.78(0.41)	S.		
Children	2.20(1.25)	3.16(2.09)	1.89(1.72)	2.32(1.34)	2.15(1.24)	2.04(1.21)	3.76(2.25)	2.22(1.49)	3.19(1.97)	4.33(2.19)	3.06(1.61)	3.01(1.83)	3.02(2.08)	3.58(2.72)	3.62(2.05)	4.18(2.71)	2.18(1.53)	3.51(1.89)	2.44(1.71)	2.29(1.59)	1 parenthese	1	
Married	0.94(0.23)	0.96(0.19)	0.90(0.30)	0.86(0.35)	0.99(0.10)	0.82(0.39)	0.98(0.15)	0.93(0.26)	0.94(0.23)	0.95(0.23)	0.95(0.22)	0.82(0.38)	0.90(0.30)	0.90(0.30)	0.98(0.15)	0.91(0.28)	$0.79\ (0.41)$	$0.89\ (0.31)$	0.91(0.29)	0.91(0.28)	deviations ii		
Male	$0.54\ (0.50)$	$0.57\ (0.50)$	0.49(0.50)	0.42(0.49)	0.50(0.50)	0.42(0.49)	0.53(0.50)	0.46(0.50)	0.53(0.50)	0.48(0.50)	0.56(0.50)	0.49(0.50)	0.42(0.49)	$0.57\ (0.50)$	0.59(0.49)	0.49(0.50)	0.50(0.50)	0.58(0.49)	$0.52\ (0.50)$	$0.44 \ (0.50)$	h standard e		
Age	46.33(13.00)	37.11(11.89)	41.99(12.11)	43.99(13.37)	38.34(11.07)	49.26(14.69)	42.02(11.37)	40.14(12.48)	37.97(11.53)	39.69(11.53)	44.27(12.08)	42.65(13.62)	41.97(12.77)	38.33(14.40)	39.01(13.42)	40.50(12.09)	44.72(14.08)	42.91(12.92)	43.64(11.84)	41.88(13.06)	D means wit		
Education	1.88(0.70)	0.46(0.74)	1.44(0.77)	2.11(0.58)	0.81 (0.88)	1.47 (0.57)	1.13(0.99)	1.29(0.69)	1.33(0.92)	1.06(1.08)	1.44(0.72)	2.12(0.57)	1.67 (0.66)	0.49(0.71)	0.92(1.00)	1.79(0.61)	2.07 (0.55)	2.08(0.72)	1.47 (0.91)	1.26(0.60)	: 2012 PWM		
Income	2.46(1.20)	2.41(1.16)	2.43(1.12)	2.47(1.04)	2.45(1.16)	2.20(1.17)	2.37(1.08)	2.42(1.11)	2.46(1.13)	2.32(1.09)	2.36(1.12)	2.36(1.10)	2.26(1.09)	2.22(1.01)	2.49(1.13)	2.55(1.16)	2.29(0.99)	2.48(1.15)	2.33(1.19)	2.51(1.17)	ve Statistics:		
Support	0.13(0.34)	0.59(0.49)	0.37(0.48)	0.08(0.27)	0.49(0.50)	0.13(0.34)	0.64(0.48)	0.19(0.39)	0.13(0.34)	0.47 (0.50)	0.31 (0.46)	0.28(0.45)	0.32(0.46)	0.59(0.49)	0.20(0.40)	0.68(0.47)	0.08(0.27)	0.11(0.32)	0.24(0.42)	0.28(0.45)	4: Descriptiv	I	
Country	Albania	Afghanistan	Algeria	Azerbaijan	Bangladesh	Bosnia and Herzegovina	Egypt	Indonesia	Iraq	Jordan	Kosovo	Kyrgyzstan	Malaysia	Niger	Pakistan	Palestinian Territories	Russia	Tajikistan	Tunisia	Turkey	Table		

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		Dependent variable:	
		Support for Suicide Bombing	g
	(1)	(2)	(3)
Education: Primary	-0.133	0.039	-0.137
·	(0.110)	(0.075)	(0.107)
Education: Secondary	0.107	-0.007	0.095
· ·	(0.145)	(0.108)	(0.133)
Education: Higher	0.327	0.028	0.288
	(0.205)	(0.153)	(0.207)
Income: 2nd Quartile	0.074	0.026	0.049
-	(0.216)	(0.099)	(0.212)
Income: 3rd Quartile	-0.209	-0.034	$-0.210^{-0.210^{-0.210^{-0.210^{-0.200}}}}$
	(0.240)	(0.133)	(0.230)
Income: 4th Quartile	-0.352	-0.234	-0.372
	(0.304)	(0.159)	(0.308)
Functional Dissatisfaction		$-0.127^{'}$	-0.127
		(0.101)	(0.102)
Ethnic Dissatisfaction		0.203**	0.201**
		(0.069)	(0.069)
Male	0.161***	0.161***	0.164***
	(0.032)	(0.035)	(0.034)
Age Group	0.003	0.010	0.013
-o	(0.053)	(0.052)	(0.052)
Married	-0.069	-0.079	-0.075
	(0.095)	(0.097)	(0.095)
Total Children	-0.010	-0.015	-0.014
	(0.012)	(0.012)	(0.012)
Urban	-0.162	-0.164	-0.164^{*}
o i ball	(0.084)	(0.085)	(0.083)
Primary x Income 2	0.110	(0.000)	0.130
r military x meenie 2	(0.210)		(0.207)
Secondary x Income 2	-0.204		-0.181
Secondary x meenie 2	(0.269)		(0.262)
Higher y Income 2	-0.454		-0.403
inglief x fileofile 2	(0.302)		(0.305)
Primary y Income 3	0.494*		0.481*
r mary x meome 5	(0.221)		(0.210)
Secondary y Income 3	0.024		0.028
Secondary x medine 5	(0.24)		(0.262)
Higher y Income 3	-0.174		-0.154
inglief x fileofile 5	(0.402)		(0.402)
Primary y Income 1	0.400		0.409
r mary x meome 4	(0.278)		(0.285)
Secondary y Income 4	0.036		0.024
Secondary x meome 4	(0.284)		(0.282)
Higher v Income 4	0.183		0.137
fligher x flicome 4	-0.183		(0.360)
Constant	0.500)	0.444**	0.474*
Constant	(0.229)	(0.152)	(0.219)
Observations	14.087	14 087	14.087
Log Likelihood	14,007	14,007	14,007
Akaika Inf Crit	-7,000.009	-1,000.409	-1,021.000
Providence IIII. OIII.	10,031.200 15 211 280 (df = 14047)	15,320.900 15,260,080 (df = 14054)	15,320.700 15,343,780 (df = 14045)
Null Deviance $(df = 140\%)$	10,011.200 (dI = 14047) 17 860 170	10,200.900 (dI = 14004) 17 860 170	10,242.700 (df = 14045) 17 860 170
1100000000000000000000000000000000000	11,009.170	17,009.170	17,009.170
Note:		*p<0	.05; **p<0.01; ***p<0.001

Table 5: Results of logistic regressions with fixed effects by country (omitted for clarity) and country-clustered standard errors, 2012 PWMD data.



Figure 2: Predicted probability of approving suicide bombing against civilians given level of education and income, holding all other factors at their means. Predictions based on Model 3 using 2012 PWMD data and include 95% confidence intervals.

the uneducated and those having completed only a primary education are less clear; the confidence intervals are, again, quite broad, but we might suspect that greater income generally decreases support among the uneducated while it factors very little into the rationale of those with a primary education.

Model 2 includes our two alternative measures of dissatisfaction: dissatisfaction with government performance (functional) and worry about ethnic and religious conflict (ethnic). As expected, dissatisfaction with government performance is not a statistically significant predictor of support for violence against civilians. Dissatisfaction with the state of ethno-religious relations, however, is positive and significant. The predicted probability of support for violence against civilians across the range of ethnic dissatisfaction is demonstrated in Figure 3, showing that as concern over ethnic conflict grows so does the probability that individuals will report a more permissive attitude towards violence. Like the original threat variable, this ethnic dissatisfaction variable reveals the willingness of educated and uneducated alike to resort to violence when one believes one's cultural identity faces an existential threat.

Finally, Model 3 includes all three measures, and the inclusion of the product



Figure 3: Predicted probability of approving suicide bombing against civilians given level of ethnic dissatisfaction, holding all other factors at their means. Predictions based on Model 3 using 2012 PWMD data and include 95% confidence intervals.

terms reflecting the interaction between education and income do contribute to a statistically significant reduction in log likelihood.⁴ We note very little change between the coefficients in the model that includes only interacted education and income and the fully specified model, suggesting that income and education are capturing fundamentally different aspects of dissatisfaction than our measures of functional and ethnic dissatisfaction. That is to say that while relative deprivation appears to be an unreliable predictor of support, whatever it does predict appears to be distinct from the more concrete increases that arise with rising ethnic tensions. As was the case with our reexamination of Shafiq and Sinno's work with the 2005 PGAP data, we find no statistical evidence of any interactive effect between our new measures of dissatisfaction and education. We therefore omit the interacted models for brevity.

3.2 The Effect of Education on Dissatisfaction

At the heart of Shafiq and Sinno's conceptual model is the idea that education brings about increased political dissatisfaction as one becomes more aware of world events

⁴-7630.5 to -7621.4, Pr(Chi) = 0.033

and the workings (or failures) of government, and they demonstrate this through auxiliary regressions of education on their index of political dissatisfaction. We perform separate linear regressions of education on our measures of functional and ethnic dissatisfaction, controlling for the same factors as before, in order to ascertain education's effect on these two dimensions of dissatisfaction. The results are shown in Table 6.

	Dependent	ariable:					
	Functional Dissatisfaction	Ethnic Dissatisfaction					
	(4)	(5)					
Education: Primary	0.046^{*}	0.024					
	(0.020)	(0.030)					
Education: Secondary	0.073**	0.052					
	(0.025)	(0.044)					
Education: Higher	0.068*	0.067					
	(0.034)	(0.055)					
Income: 2nd Quartile	-0.015	0.014					
-	(0.019)	(0.046)					
Income: 3rd Quartile	-0.033	-0.010					
•	(0.022)	(0.057)					
Income: 4th Quartile	-0.051	-0.005					
•	(0.028)	(0.054)					
Male	-0.032^{**}	-0.034					
	(0.012)	(0.019)					
Age Group	0.004	-0.034					
0	(0.012)	(0.025)					
Married	0.035	0.030					
	(0.024)	(0.031)					
Total Children	0.0005	0.020					
	(0.005)	(0.012)					
Urban	0.014	0.005					
	(0.026)	(0.034)					
Intercept	-0.160^{***}	0.123^{*}					
1	(0.034)	(0.053)					
Observations	14,087	14,087					
\mathbb{R}^2	0.159	0.184					
Adjusted \mathbb{R}^2	0.157	0.182					
Residual Std. Error $(df = 14056)$	0.626	0.804					
F Statistic (df = 30 ; 14056)	88.500^{***} (p = 0.000)	$105.570^{***} (p = 0.000)$					
Note:	*p<0.0)5: **p<0.01: ***p<0.001					

Table 6: Linear regressions of functional and ethnic dissatisfaction on education using the 2012 PWMD data, standard errors clustered at the country level.

Model 4 regresses functional dissatisfaction on education. The positive and significant coefficients on each level of education indicate that, compared with those with no education, educated individuals are more likely to be dissatisfied with the performance of government. The effect appears to peak at the level of secondary education, making it unlikely that those with a college education are consistently more dissatisfied than those without. Although supportive of Shafiq and Sinno's expectations that education increases dissatisfaction, we have demonstrated that dissatisfaction on this dimension has no distinguishable effect on support for suicide bombings against civilians. Model 5 regresses ethnic dissatisfaction on education. After adjusting for country clustered standard errors we find no statistically significant effect of education on dissatisfaction in this dimension of dissatisfaction, which we have shown is the more reliable predictor of support for violence against civilians. This lends additional support to our earlier claim that ethno-religious tensions can cause both the educated and uneducated alike to legitimize violence.

4 Other Model Considerations

We emphasize the importance of our pooled approach over the individual country models employed by Shafiq and Sinno. Finding support for their theory in only specific contexts in particular countries does not clearly illustrate that their results are driven by an effect of education or political dissatisfaction; it is quite possibly a function of some unmodeled features of these particular societies. In other words, we cannot know that the results in a single country aren't simply attributable to the idiosyncratic dynamics within that country's socio-economic hierarchy. In our pooled model, such differences are allowed to load into the country dummy variables.

This pooled approach fails to find any statistically significant and cross-nationally generalizable evidence that increased exposure to education has any effect on support for violence, and to their credit Shafiq and Sinno are skeptical that such a generalization can be made. We must consider that educational systems in differing countries use schools in different ways to achieve different ends. It is difficult to accept that we can treat with equal weight the effects of a primary school education in countries that use the opportunity to instill values of tolerance and civic duty and those that explicitly propagate a narrative of historical conflict and animosity (Barakat and Urdal 2009). We currently lack an objective and systematic measure of "tolerance" in educational curricula, so these important differences are at present being captured by the country fixed effects.

Also loaded into the country fixed effects are the various and ill-defined "cultural" differences between countries, as well as things that additional quantitative analysis might be able to tease out like polity type and to what extent civilians have direct experience with terrorist attacks. With the small number of countries at our disposal, however, drawing reliable inferences from such models will be challenging. The standard errors on group-level effects in linear hierarchical models, for example, have been demonstrated to be biased downward when there are fewer than 25 groups, and that increases to a minimum of 30 to 35 for the logistic regressions required here (Bryan and Jenkins 2015). Other estimation techniques exist for nested data with a small number of groups (Franzese 2005, Bowers 2005) but are not pursued here because our primary interest is in the effects of dissatisfaction at the individual level rather than the effects of country-level variables on dissatisfaction. The addition of such countrylevel data could in theory reduce the unmodeled variance that is being subsumed by country dummies or left in the error term, but our exploratory analysis has failed to reveal any significant benefit in predictive power over the models thus far presented. Instead, we simply wish to draw attention to the fact that the marginal effects of the country dummies, illustrated in Figure 4, dominate our analysis. Other studies dealing with this subject encounter the same issue; country dummies are treated as simple controls and the extreme between-country differences are not discussed as interesting in their own right (Fair and Shepherd 2006, Tessler and Robbins 2007).

Before assuming that these substantial country-level differences are purely the product of divergent cultures or qualities of government, it is worth pointing out that in regressions using only single countries that regional dummies can still overwhelm the effects of other variables of interest. Shafiq and Sinno do not include the coefficients for their regional controls, but they are substantial. Figure 5 shows the marginal effects in relation to other variables in their model for Pakistan and Turkey using the 2005 PGAP data. How educated you are, what your income level is, and how dissatisfied you are can often unreliable predictors in comparison to where in the country you live. The same is true in other single-country studies (see, for example, Kaltenthaler et al. 2010). Again, where regional controls are present, the between-region differences are not treated as being of substantive value on their own.



Figure 4: Marginal effects with 95% confidence intervals for Model 3 using 2012 PWMD data. Each row illustrates the marginal effects of a variable when holding all other variables at their means. Note that although we find a statistically significant effect for ethnic dissatisfaction, it is effectively swamped by the country dummies.



Figure 5: Marginal effects with 95% confidence intervals for Shafiq and Sinno's original specification using 2005 PGAP data for Pakistan and Turkey. Each row illustrates the marginal effects of a variable when holding all other variables at their means. Note that in Pakistan the marginal effect of being in the Sind province is as large as the effect of the highest level of education, and in Turkey only region dummies are significant predictors of support for violence.

There's good reason to expect that education and income are not independent of geography, but the problem goes beyond over/under representation or dependency in random samples—the concentration of individuals in close geographic proximity to more highly educated people may itself shape the attitudes of even those with lower levels of education. Laura Moore and Seth Ovadia (2006) describe this as the "demographic effects" of geographic spaces with higher densities of educated individuals. Working in the context of the United States, they compare attitudes towards tolerance in the North and South and find that, in addition to individual and social characteristics, the demographic makeup of a respondent's city or town play an important role in promoting more permissive atmospheres towards diversity.

Because the data at our disposal do not include anything resembling a usable geolocation it is impossible to take such demographics into account. This could only be resolved with the collection of new data that included geolocations that were detailed enough to explicitly model such spatial correlations but abstract enough to protect respondent identities. If the recording of geographic location led respondents to fear that their opinions could be discovered by government security forces, however, they might underreport sympathetic attitudes towards behavior that could be considered supportive of terrorist groups. If such an effort were to be undertaken it would be important to consider the use of sensitive survey techniques to obfuscate responses while preserving their statistical utility.

5 Conclusion

Shafiq and Sinno offer an intuitive and plausible narrative to explain how political dissatisfaction can mitigate the benefits of increased education on public support for suicide bombing against civilians. This paper illustrates, however, that not all forms of dissatisfaction are equal. We fail to uncover statistical evidence that dissatisfaction with government performance has any effect on attitudes towards violence against civilians, nor does it appear that dissatisfaction with personal economic conditions have a clear impact. Only dissatisfaction with ethnic and religious relations would appear to have any distinguishable effect in cross-national samples, with increased concern correlating with an increase in support for violence.

Consistent with Acemoglu et al. (2005), we find that level of education alone is not a useful predictor of support for violence against civilians in cross-national study after controlling for country fixed effects. We note that we cannot rule out the possibility that certain kinds of education, such as those that emphasize critical analytical skills or social cohesion, have a significant effect. These differences are presently captured by the country fixed effects, meaning that our education variable is function as an indicator of the simple exposure to educational systems. Education and income may reveal themselves to be useful predictors within a subset of countries as in Shafiq and Sinno's work, but it is more likely that these indicators are only describing the attitudes of the preponderance of members of specific classes in those societies.

Although increased education does seem to correlate with increased dissatisfaction

with the performance of government, it does not appear to be the case that dissatisfaction on this dimension has any effect on public support for violence against civilians. Instead, the perception of threat to ethnic and religious identity appears to be the more salient dimension, and this is not affected by education. We propose, then, that this paper contributes modest support to the body of literature arguing that attitudes towards violence are not generally conditioned by issues of wealth versus poverty but by existential threats to identity. Furthermore, educated and uneducated alike possess the innate psychological need for group identity; the educated are not immune to appeals to violence when they believe this identity is challenged.

6 Future Research

For work on this subject to achieve its fullest potential we require at least two additional pieces of information. First, the field would benefit greatly from the quantification of the educational differences between countries in order to model the effects of curricula that emphasize tolerance and those that focus on historical conflict and narratives of victimization or the scapegoating of ethnic minorities. The quantification of the degree to which each educational system emphasizes different goals, like rote memorization versus critical analytical skills, religious learning, or technical and trade skills, would help analysts begin to untangle the effects of education in these different dimensions.

It is also very likely that analysis on this subject to date, and certainly that leveraging PEW data like the 2005 Global Attitudes Project or the 2012 World Muslims Dataset, fail to take into account important spatial correlations linked to the geographic clustering of highly educated individuals. Modeling these would require fairly granular geocoding, possible only with the collection of new data. This information would also allow analysts to examine how attitudes towards violence are affected by the geographic proximity to recent large-scale terrorist attacks. If executed as part of an ongoing multinational survey, time-series analysis would allow analysts to determine how these attitudes are shaped by sudden increases in terrorist attacks. Although the collection of such data would surely constitute a costly and nontrivial undertaking, it would go far in advancing our understanding of how societies relate to terrorist tactics and potentially provide important guidance for reducing the likelihood of large-scale outbreaks of violence.

Finally, future work should attempt to move beyond the examination of support for violence against civilians strictly within the context of Islamic societies. Terrorism is not a uniquely Islamic phenomenon, and every society has, at one point or another in its history, been subjected to the horrors of civil war, terrorism, or other sporadic civilian-on-civilian violence. With a battery of survey items crafted to measure responses to potential threats to a subject's cultural identity and/or economic stability, we may measure respondents' level of comfort with violence that targets civilians beyond such a limited scope. Doing so may reveal important patterns that span cultural contexts. As an added benefit, expanding the data collection process to include the greatest number of countries possible across a variety of religious and political contexts would allow analysts to leverage hierarchical modeling that introduces country-level determinants, revealing how factors like polity type, economic performance, and comparative institutions impact these attitudes. This enhanced understanding of how citizens relate to the idea that such violence could ever be justifiable would be tremendously useful in the design and implementation of future constitutions, legal and institutional frameworks, and aid programs intended to reduce the stresses that can trigger episodic violent outbreaks.

7 Appendix

	Indonesia	Jordan	Lebanon	Morocco	Pakistan	Turkey
Support	0.50(0.81)	1.28(1.01)	1.20(1.11)	0.41 (0.91)	0.78(1.04)	0.48(0.86)
Dissatisfaction	1.12(0.73)	1.15(0.60)	1.33(0.78)	1.35(0.67)	1.04(0.71)	1.24(0.70)
Income	2.42(1.20)	2.46(1.11)	2.46(1.11)	2.47(1.14)	2.51(1.15)	2.54(1.12)
Education	1.49(0.74)	1.03(1.00)	1.57(0.89)	1.13(0.90)	0.96(0.94)	1.67(0.74)
Age	36.59(11.99)	36.10(12.63)	36.68(12.31)	33.82(12.99)	34.29(13.08)	33.92(12.71)
Male	0.53(0.50)	0.51 (0.50)	0.50(0.50)	0.58(0.49)	0.63(0.48)	0.51 (0.50)
Married	0.82(0.38)	0.63(0.48)	0.60(0.49)	0.48(0.50)	0.73(0.44)	0.58(0.49)
Children	1.70(1.21)	1.53(1.73)	0.98(1.13)	1.37(1.35)	3.44(2.60)	0.98(1.28)
N	767	887	384	534	670	590

Table 7: Descriptive Statistics: 2005 PGAP means with standard deviations in parentheses.



Figure 6: Mean level of support for suicide bombing by country prior to collapsing support to a binary, 2012 PWMD. The vertical lines indicate a single standard deviation within each country, and the overall mean is indicated by the bold horizontal line.

Table 8: Sur dropping ob				Jordan				Iraq				Indonesia				Egypt				Bosnia and Herzegovina				Bangladesh				Azerbaijan				Algeria				Albania				Afghanistan	Country
nmary of resp servations wit	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Education
onses to h missing	41	83	67	132	96	189	310	138	46	369	642	102	47	86	118	127	ω	248	232	14	30	146	174	276	84	266	31	τ	7	92	54	19	58	154	100	2	ယ	60	66	326	Never
support g data, 2	23	35	44	76	9	21	30	10	ယ	52	97	20	47	86	121	84	2	24	33	0	1	53	80	139	6	19	4	0	1	17	13	7	×	16	сл	0	1	22	40	122	Rarely
for violence 2012 PWME	14	9	25	32	1	7	8	2	4	14	45	13	18	30	84	88	0	4	7	2	10	36	65	106	2	1	0	0	2	16	11	υī	1	×	ω	0	1	38	43	162	Sometimes
against).	2	ω	6	12	0	10	4	7	1	12	10	1	12	23	46	37	0	1	သ	1	2	23	39	51	0	0	0	0	1	11	14	υ	1	сл	1	0	4	25	46	164	Often
civilians by level of e				Turkey				Tunisia				Tajikistan				Russia				Palestinian Territories				Pakistan				Niger				Malaysia				Kyrgyzstan				Kosovo	Country
ducation in ea	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Higher	Secondary	Primary	None	Education
ch surve		178	293	42	114	135	276	67	196	447	74	33	89	346	54	2	2	133	16	16	39	28	119	127	0	13	49	103	29	282	141	24	136	415	58	4	6	145	131	31	Never
yed cour		27	36	6	9	26	46	10	20	48	7	ယ	с л	17	2	0	ယ	80	1	7	0	2	6	14	2	8	12	42	1	40	18	ယ	31	94	15	0	6	46	25	11	Rarely
ıtry after	-	25	77	9	9	6	31	сл	4	8	ω	0	τ	6	1	0	ω	123	12	9	×	C7	14	13	1	4	29	35	10	79	34	4	20	55	6	1	0	27	8	2	Sometimes
	0	8	10	1	6	9	20	6	1	ယ	0	0	0	4	1	0		95	сл	11	1		4	9	ယ	8	22	71	0	19	9	2	ယ	9	1	0	0	7	2	сл	Often

		Depende	ent variable: Suppc	rt for Suicide Bombi	ng	
	Indonesia	Jordan	Lebanon	Morocco	Pakistan	Turkey
Education: Primary	0.015	-0.251	-0.192	0.147	-0.321	-0.265
	(0.456)	(0.380)	(0.556)	(0.714)	(0.304)	(0.874)
Education: Secondary	0.266	0.802^{*}	-0.399	0.711	-0.282	-0.568
	(0.448)	(0.344)	(0.601)	(0.787)	(0.549)	(0.902)
Education: Higher	-0.591	-0.119	-1.242	0.226	-1.243	-0.599
	(1.063)	(0.486)	(0.765)	(1.123)	(0.654)	(1.052)
Income: 2nd Quartile	0.116	-0.355	0.100	0.386	-0.119	0.325
	(0.235)	(0.193)	(0.278)	(0.363)	(0.228)	(0.301)
Income: 3rd Quartile	-0.124	-0.555^{**}	0.272	0.797^{*}	-0.370	-0.246
	(0.229)	(0.214)	(0.290)	(0.378)	(0.230)	(0.326)
Income: 4th Quartile	0.283	-0.987^{***}	-0.068	0.697	-0.594^{*}	-0.509
	(0.243)	(0.251)	(0.369)	(0.417)	(0.274)	(0.393)
Dissatisfaction	0.449	0.266	0.388	0.728^{*}	0.123	0.102
	(0.314)	(0.153)	(0.311)	(0.358)	(0.185)	(0.563)
Male	0.192	0.083	-0.267	0.281	0.477^{**}	0.201
	(0.162)	(0.123)	(0.192)	(0.235)	(0.167)	(0.204)
Age Group	-0.469^{***}	0.393^{**}	-0.166	-0.090	0.116	-0.255
	(0.133)	(0.122)	(0.154)	(0.210)	(0.124)	(0.173)
Married	0.010	-0.331^{*}	-0.119	-0.198	0.257	0.222
	(0.232)	(0.163)	(0.231)	(0.314)	(0.208)	(0.266)
Total Children	0.134	-0.197^{***}	-0.167	-0.021	-0.038	-0.070
	(0.071)	(0.048)	(0.101)	(0.107)	(0.036)	(0.092)
Edu: $Pri \times Diss$	-0.127	0.535	-0.038	-0.349	0.082	-0.256
	(0.361)	(0.297)	(0.371)	(0.448)	(0.252)	(0.605)
Edu: Sec x Diss	-0.716^{*}	-0.113	0.093	-0.758	-0.044	-0.021
	(0.351)	(0.244)	(0.380)	(0.505)	(0.414)	(0.602)
$Edu: Hi \times Diss$	-0.662	0.711	0.496	-0.308	0.371	-0.076
	(0.700)	(0.392)	(0.473)	(0.736)	(0.435)	(0.697)
$\tau \ 1$	0.927	-0.842^{*}	-0.972	2.486^{***}	0.166	0.468
	(0.484)	(0.344)	(0.550)	(0.665)	(0.343)	(0.954)
$\tau 2$	1.887^{***}	0.352	0.263	2.918^{***}	1.147^{***}	1.142
	(0.489)	(0.342)	(0.546)	(0.669)	(0.345)	(0.956)
τ 3	3.980^{***}	2.222^{***}	1.265^{*}	3.644^{***}	2.045^{***}	2.788^{**}
	(0.537)	(0.352)	(0.553)	(0.681)	(0.355)	(0.972)
Observations	767	887	384	534	670	590
Residual Deviance	1,351.798 (df = 746) 2;	296.975 (df = 868) 9	98.810 (df = 362) 7	-38.499 (df = 514) 1, 4	473.798 (df = 650) 9	$48.657 (\mathrm{df} = 566)$
Note:					*p<0.05; **p<	(0.01; *** p<0.001

Table 9: Ordered Logistic Regressions with Interactions - 2005 PGAP



Figure 7: Predicted probabilities of responses in Indonesia, Shafiq & Sinno's model, 2005 PGAP Data



Figure 8: Predicted probabilities of responses in Jordan, Shafiq & Sinno's model, 2005 PGAP Data



Figure 9: Predicted probabilities of responses in Lebenon, Shafiq & Sinno's model, 2005 PGAP Data



Figure 10: Predicted probabilities of responses in Morocco, Shafiq & Sinno's model, 2005 PGAP Data



Figure 11: Predicted probabilities of responses in Turkey, Shafiq & Sinno's model, 2005 PGAP Data



Figure 12: Scree plot demonstrating support for at least two dimensions of dissatisfaction. Based on 2012 PWMD. The eigenvalues of the first three dimensions are 2.40, 1.134, and 0.956.

Initial				
MR1	MR2	h2	u2	com
0.21	0.38	0.27	0.73	1.58
0.10	0.50	0.31	0.69	1.08
-0.10	0.54	0.25	0.75	1.07
-0.03	0.23	0.05	0.95	1.04
0.40	-0.04	0.14	0.86	1.02
0.68	0.06	0.51	0.49	1.02
0.90	-0.02	0.79	0.21	1.00
1.53	0.79			
1.00	0.51			
0.51	1.00			
	Initial MR1 0.21 0.10 -0.03 0.40 0.68 0.90 1.53 1.00 0.51	Initial MR1 MR2 0.21 0.38 0.10 0.50 -0.10 0.54 -0.03 0.23 0.40 -0.04 0.68 0.06 0.90 -0.02 1.53 0.79 1.00 0.51	Initial MR1 MR2 h2 0.21 0.38 0.27 0.10 0.50 0.31 -0.10 0.54 0.25 -0.03 0.23 0.05 0.40 -0.04 0.14 0.68 0.06 0.51 0.90 -0.02 0.79 1.53 0.79 - 1.00 0.51 1.00	Initial MR1 MR2 h2 u2 0.21 0.38 0.27 0.73 0.10 0.50 0.31 0.69 -0.10 0.54 0.25 0.75 -0.03 0.23 0.05 0.95 0.40 -0.04 0.14 0.86 0.68 0.06 0.51 0.49 0.90 -0.02 0.79 0.21 1.53 0.79 1.00 0.51 1.00

Table 10: Factor loadings on two dimensions prior to rotation. Results based on 2012 PWMD.

Factor Loadings: Varimax Rotated					
Variable	MR1	MR2	h2	u2	com
worry_crime	0.31	0.42	0.27	0.73	1.86
worry_corrupt	0.24	0.50	0.31	0.69	1.43
worry_unempl	0.06	0.50	0.25	0.75	1.03
worry_economy	0.03	0.21	0.05	0.95	1.05
worry_extreme	0.37	0.06	0.14	0.86	1.05
worry_ethCon	0.67	0.23	0.51	0.49	1.23
worry_relsCon	0.87	0.21	0.79	0.21	1.11
SS loadings	1.5	0.82			

Table 11: Final factor loadings on two dimensions with Varimax rotation used in analysis. Results based on 2012 PWMD.

For each of the survey items "crime," "conflict between religious groups," "corrupt political leaders," "conflict between [ethnic/tribal/nationality groups]," and "unemployment," respondents were asked how big a problem they thought that item was. Responses of "not a problem at all" were coded as zero, "a small problem" was coded as one, "a moderately big problem" was coded as two, and "a very big problem" was coded as three. To measure dissatisfaction with the economy, respondents were asked "how would you describe the current economic situation in our country—is it very good, somewhat good, somewhat bad, or very bad?" Responses of "very good" were coded as zero, "somewhat good" was coded as one, "somewhat bad" was coded as two, and "very bad" was coded as three. To gauge concern with extremist groups, respondents were asked "How concerned, if at all, are you about extremist religious groups in our country these days? Are you very concerned, somewhat concerned, not too concerned or not at all concerned about extremist religious groups in our country these days?" Responses of "not at all concerned" were coded as zero, "not too concerned" as one, "somewhat concerned" as two, and "very concerned" as three. For all questions, responses of "don't know" and refusals were dropped from the sample. MR1 has been interpreted as "ethnic dissatisfaction," and MR2 as "functional dissatisfaction."



(a) Initial (Unrotated).

(b) Varimax Rotated.

Figure 13: Unrotated and Varimax rotated factor loadings. Based on 2012 PWMD.

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