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Whose Support Matters for the Occurrence of Terrorism?

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Whose support matters for the occurrence of terrorism?

Jitka Malečková and Dragana Stanišić¹

There is no “typical” terrorist. Younger males are certainly disproportionately represented among those known to have committed acts of terrorist violence. Overall, however, terrorists tend to embody the average population of the societies from which they come in their psychological make-up as well as their demographic characteristics, including education and social economic background (Russell and Miller 1977, Merrari 2005, Malečková 2006).

It is similarly difficult to identify a “typical” terrorist sympathizer (Fair and Shepherd 2006). Little is also known about how a positive attitude towards the use of terrorism affects the actual behavior of the sympathizers. The relationship between opinion expressed in surveys and concrete action has so far been explored mainly in research on voting (Crespi, 1988; Freedman and Goldstein, 1996). The importance of public support for terrorism has been increasingly recognized, whether in providing material and financial help, shelter, legitimization or as a potential pool for recruiting future members of extremist organizations (Tessler 2006; Tessler and Robbins 2007; Atran 2003). Recent studies even show that public opinion is directly related to the occurrence of terrorism (Krueger and Malečková 2009, Malečková and Stanišić 2011; Tessler and Robbins 2007). It would therefore be useful to find out whose support is decisive for terrorism to happen. Is it the general level of support for terrorism among the population in a given society? Or is a specific demographically or politically defined group crucial for terrorist attacks to take place?

Studies on public opinion and the occurrence of terrorism point out two types of characteristics of the public – political views and demographic characteristics. Scholars emphasize the importance of negative attitudes towards the target country for the occurrence of terrorism. Tessler and Robins (2007) found that in Algeria and Jordan,

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“terrorism against the United States is disproportionately likely among men and women with negative judgments about their own government and about U.S. foreign policy.” Chiozza (2006), analyzing the combinations of individual and country factors that account for anti-Americanism in the Muslim world, distinguishes two types of attitudes: attitude towards American society and culture and attitude towards U.S. policies; the latter tends to be more negative than the former and is the basis of anti-American opinion expressed in surveys.

Other types of political views examined in relationship to terrorism include public attitudes in one country toward the performance of the leaders of another country. Linking data from 19 Middle Eastern and North African countries on the job performance of the leaders of nine world powers to the number of terrorist acts committed by people from the former countries against targets from the nine powers, Krueger and Malečková (2009) found a robust positive relationship between public opinion regarding the leadership of a country and the occurrence of international terrorism directed against that country.

A follow-up paper (Malečková and Stanišić 2011) focused on two further dimensions of public opinion: opinion of regional powers, expressing the attitude to a country or group of countries that can be considered responsible for regional policy and status quo, and justification of suicide terrorism, which expresses support for extreme violence and for terrorism as a means of solving conflicts. The paper found that justification of suicide terrorism and unfavorable opinion on regional powers are correlated with the occurrence of terrorism and the effect of each of these dimensions of public opinion varies with the level of the other.

The study suggested that for the occurrence of international terrorism it is important that the same people hold negative views on potential targets and approve of suicide terrorism. In the current paper, we intend to further develop this finding and analyze this “critical group”. More detailed knowledge of the sympathizers who have an impact on the occurrence of terrorism can give us an insight into the sources of support for and

assistance to terrorist groups. Moreover, if it is possible to learn more about those whose support for terrorism is crucial, policy can be usefully directed to these people and their grievances.

In his study of anti-Americanism, Chiozza (2006) points out that most of the variation in political views in Muslim countries is explained by individual level variables, including age, education and connection to the global information society. Earlier studies in Europe (Calvi and Martini 1982 in Neuberger and Valentini 1996) suggest that support for political violence in Italy and Germany in the late 1970s and early 1980s was higher among younger population (up to 24) and increased with education. More recent work dealing with Muslim countries shows that support for extremist violence is higher among females and younger persons (Fair and Shepherd 2006).² Other studies (Krueger and Malečková 2003, Berrebi 2007) have shown that higher education does not reduce support for terrorism.

The studies analyzing support for terrorism deal with specific times and situations and often come to different conclusions regarding the characteristics of the supporters of terrorism. According to the summary of the Economic Factors at the Summit on Democracy, Terrorism and Security in Madrid, for example, “[t]he status of women is especially important. Although women are sometimes recruited as suicide bombers, in general they seldom support terrorism. Cross-national studies show that the higher women’s relative educational status and political participation, the less frequent are political violence and instability.” (Gurr 2005: 20) This statement is in contrast with the above-mentioned works, namely those that deal with Muslim or Middle Eastern countries (Fair and Shepherd, 2006; Malečková, 2006). The role of gender and education in support for terrorism thus still remains unclear, though there is an agreement in studies on public opinion and terrorism that these demographic characteristics are among those that matter most and deserve close attention.

²Works on attitudes towards terrorism and towards the West in Muslim countries also examine Islam: while Fair and Shepherd (2006) find that the belief that Islam is under threat is correlated with support for terrorism (Fair and Shepherd 2006), Mark Tessler (2006) finds no relationship between personal religiosity or attachment to Islam and attitudes towards the West and Western policies.

In our analysis of the “critical group”, which we identified in our previous study (2011) based on views on other countries and attitudes towards terrorism, we therefore focus particularly on gender and education. We leave out economic status because data on the economic background and employment of women in the Middle Eastern, African and Asian countries we study are often missing. Economic status in these countries tends to reflect the status of males, rather than women themselves³. The paper starts with a description of the data, followed by the statistical analysis and the article is concluded by a discussion, which suggests possible explanations of our findings.

Data

We use data on public opinion from 16 Middle Eastern, African and Asian countries (Bangladesh, Egypt, Ethiopia, Indonesia, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Nigeria, Pakistan, Palestine, Senegal, Tanzania and Turkey) from the PEW Global Attitudes Project Dataset⁴. We chose two dimensions that represent public support for terrorism and negative views of other countries⁵. The first question concerns the opinion about regional powers. The exact question is: *Please tell me if you have a very favorable, somewhat favorable, somewhat unfavorable or very unfavorable opinion of: (country)?* The particular countries (or groups of countries) about which this question was asked were: China, Egypt,⁶ the European Union⁷, India, Iran, Japan, Russia, Saudi Arabia and the United States. In our dataset these are the target countries. The second dimension of public opinion is justification of suicide bombing as an extreme means of struggle. The exact phrasing of the question is: *Some people think that suicide bombing and other forms of violence against civilian targets 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*

³ On the role of economic factors on supporting terrorism and difficulties of measuring them see Fair and Shepherd (2006). On the effect of economic status on the occurrence of terrorism, see Krueger and Malečková (2003) and Berrebi and Klor (2010).

⁴ PEW <http://www.pewglobal.org/category/datasets/> (Pew Global Attitudes Project: Spring 2007 Survey).

⁵ For explanation of the dimensions, see Malečková and Stanišić (2011).

⁶ We excluded the Egypt – Egypt pair.

⁷ A specific case was the question regarding the European Union since it is not a country, though it can be considered a regional power. For the purpose of calculating the GDP, population and civil liberties, we calculated averages of countries that we assigned to the group E.U. (Germany, France, Belgium, UK, Spain, Italy, Luxemburg and Netherlands). We selected these countries as the oldest and leading members of the E.U. This fact goes in line with the collection of data on the terrorist incidents against these countries in the period from 2004 to 2008.

justified to defend Islam, sometimes justified, rarely justified, or never justified? This question can be considered problematic as it conflates terrorism and suicide terrorism.⁸ Yet, it reflects the approval/disapproval of the use of extreme forms of violence and terrorist means and has been utilized in research to study support for terrorism (Fair and Shepherd 2006).

We use the PEW Survey's individual level data to identify the respondents in the countries from which terrorism emerges (source countries) who both held unfavorable views on target countries and justified suicide bombings. We construct a variable "Justify & Unf.Opinion", which represents the share of people who at the same time ("often" and "sometimes") justify suicide bombing and have ("somewhat" and "very") unfavorable opinion towards the target countries. We construct three additional variables using the two dimensions of public opinion - unfavorable/favorable opinion of a target country and justification of suicide bombing: "Just.&Fav.Opinion" corresponding to those who justify suicide bombing and have favorable opinion towards the target country; "NoJust&Unf.Opinion" to those who do not believe suicide terrorism is justified and have unfavorable opinion towards the target country; and lastly, "NoJust&Fav.Opinion" to those who do not justify suicide terrorism and have favorable opinion towards the target country. In the following estimations we use "NoJust&Fav.Opinion" as a base variable of public opinion and include the other three variables in the estimation model.

The measure of terrorism in our study is the number of international terrorist incidents that occurred from 2004 to 2008 as collected by the National Counterterrorism Center (NCTC)⁹. We created units of observation in pairs of countries ($n_pairs = ij$). In total, we created 121 pairs, where i represents a source country of terrorism and j represents a target country.¹⁰ Since we focus on international terrorism we select only those incidents

⁸ For a discussion on this question, see Fair and Shepherd (2006).

⁹ In the NCTC Worldwide Incidents Tracking System (WITS) a terrorist incident is defined as an incident "in which subnational or clandestine groups or individuals deliberately or recklessly attacked civilians or noncombatants (including military personnel and assets outside war zones and war-like settings)" (The Worldwide Incidents Tracking System).

¹⁰ However, given that the Pakistan and India pair with 310 recorded incidents is an outlier in the sample, we excluded this pair from further analysis. We also excluded the Palestine-US pair given that the share of the critical group is over 70 percent, which makes the pair an outlier.

where the data show that the perpetrator and the victim were from different countries, i.e. the perpetrator from country i and victim (people or property) from country j .

We start our analysis with the description of educational levels and gender across the 16 source countries of terrorism. Using individual level data from the PEW Survey, we find that there are significant differences among the surveyed countries regarding the shares of highly educated respondents. Tanzania has only 0.7 percent of highly educated people in the sample, while in Palestine, 48 percent of the respondents are highly educated (Fig 1.), and on average, across the surveyed countries of the Middle East, Asia and North Africa, 19 percent of the respondents are highly educated¹¹. In most countries, neither men nor women are disproportionately represented among those respondents who have high levels of education (Fig 2.). The bar chart in Fig.2 shows the gender composition of the highly educated respondents when the general level of education increases: there is no change in the balance between men and women (Table 3.). Fig.3 shows that there is no positive correlation between the shares of highly educated and the shares of highly educated women among the highly educated¹². Thus, although countries differ in the shares of highly educated people (the highest share of highly educated men and women in our sample is in Lebanon, and the lowest in Tanzania¹³) they do not significantly differ in the balance between men and women in the category of highly educated.

Turning to the impact of public opinion on the occurrence of terrorism, we found a sizable and positive relationship between the group of people in the source country who at the same time justify suicide bombing and have unfavorable opinion of the target country (i.e. the “critical group”) and terrorist attacks originating from the former country against the latter country. In total, there were 12,321 individuals surveyed in the 16 countries, with 2,338 people (i.e. on average 21 percent across the 16 countries¹⁴) belonging to the critical group. By unit of observation (averaged across country pairs with no population weights), the average size of the critical group is 9.2 percent (s.e. 0.105) of respondents.

¹¹ The shares of highly educated from PEW are similar with shares of tertiary education from WDI data.

¹² For the graph we use columns (1) and (9) from Table 3.

¹³ World Development Indicators www.data.worldbank.org

¹⁴ The same sampling probabilities are used in all 16 source countries.

In order to determine the demographic composition of the critical group, we use gender and the level of education¹⁵ and create the following variables: “Female_LE_CG” is the share of women (among all female respondents per source country of terrorism) with low levels of education who belong to the critical group¹⁶; “Female_ME_CG” is the share of females that belongs to the critical group and has a middle level of education¹⁷ and “Female_HE_CG” is the share of females who belong to the critical group and have a high level of education¹⁸. “Male_LE_CG”, “Male_ME_CG” and “Male_HE_CG” correspond to male shares respectively (Table 2.)

Looking at the composition of the critical group according to gender and level of education, we find that the highest share of highly educated respondents in the critical group relative to surveyed population is in Palestine, followed by Kuwait and Lebanon (Fig.4.). The proportion of highly educated men and women in the critical group is balanced across countries, with the exception of Morocco and Mali where the majority of the highly educated respondents in the critical group are females (Table 3.). We plot the correlation between the share of the critical group and the share of highly educated women belonging to the critical group and find a linear relationship¹⁹ (Fig. 5). This means that when the share of the critical group in the general population increases, the proportion of highly educated women in the critical group increases as well.²⁰ This finding is in contrast with the widespread belief that with increasing education, women will be less likely to support violence as a means of struggle.

We rely on models used in previous studies in order to examine the relationship between the demographic characteristics of the critical group and the occurrence of terrorism. Apart from public opinion, we control for economic, institutional and geographic characteristics. For GDP per capita we use the World Bank Development Indicators

¹⁵ Since the educational system and its division to categories in the survey is not the same across countries we create within the individual level data, the categories of low (finished primary and all below that); middle (finished high school and all classes below finished undergraduate studies); and high education (finished university education and all above).

¹⁶ We identify this group as individuals with primary and lower than primary education.

¹⁷ We identify this group as individuals with secondary education and those with unfinished college and university.

¹⁸ We identify this group as individuals with finished university and above.

¹⁹ To plot the graph we use columns (5) and (6) from Table 3.

²⁰ We used the same analysis to measure the impact of gender and age in the critical group, but found no consistent results.

datasets and calculate the average GDP per capita from 2002 to 2006. For the purpose of calculating the GDP, population and civil liberties, we calculated averages for the countries that we assigned to the group E.U. (Germany, France, Belgium, UK, Spain, Italy, Luxemburg and Netherlands)²¹. We use the World Bank Development Indicators (WDI) datasets to create variables that measure average educational attainment across countries. In respect to gender, the educational attainment is divided in three categories - primary, secondary and tertiary - and the six variables (three levels of education across gender shown in Table 2) represent the gross enrollment ratios, i.e., “the ratios of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown” (World Development Indicators)²².

The data on civil liberties are from the Freedom House’s dataset. The civil liberties index ranges from 1 to 7, where 7 represents a total lack of civil liberties. Data on religion (specifically the percentage of Muslims in the country) are taken from the CIA The World Factbook²³. Geographical characteristics, such as distance between the originating and target capital cities,²⁴ are calculated using Haversine formula and the available online converter²⁵ (Table 2).

Statistics

We follow up on papers that show the effect of public opinion on the occurrence of terrorism (Krueger and Malečková 2009, Malečková and Stanišić 2011). In our previous paper we found that the increase of the share of the critical group (people who at the same time justify suicide bombing and have unfavorable opinion towards the target) in the surveyed population by one standard deviation will result in a 233 percent increase in the number of attacks originating from that country.

²¹See note 6.

²² WDI at <http://data.worldbank.org> Note that regarding the three variables - primary, secondary, tertiary - we control for the source country’s official enrollment statistics, while in the public opinion data (low, middle and high) we control for the respondents’ completed level of education.

²³ www.cia.gov/library/publications/the-world-factbook The World Factbook

²⁴ Brussels was taken as a capital city of the European Union.

²⁵ www.codecadex.com

In order to determine whether the demographic characteristics of the critical group affect the occurrence of terrorism, we disentangled the critical group into six subgroups, using the dimensions of gender and levels of education (low, middle and high). The country pair with the lowest share of the critical group is the Bangladesh/India pair with 0.005 percent, and the pair with the highest share is Palestine/EU: 45 percent of the surveyed individuals in Palestine justify suicide terrorism and have unfavorable opinion towards the EU. The gender ratio in the survey is 50:50. On average, 15 percent of women across the 16 countries are highly educated and belong to the critical group; in total, 275 highly educated women belong to the critical group (30 percent of the highly educated, or 5 percent of the total female population in the survey). Similarly, on average 19 percent of all men are highly educated and belong to the critical group; in total, 339 highly educated men belong to the critical group (28 percent of the highly educated, or 5.4 percent of the male population in the survey).

Table 4. shows a high correlation between several variables, namely highly educated females and highly educated males belonging to the critical group. We perform the Spearman test of independence between the two variables and find that we cannot reject the null hypothesis of independence between variables (Spearman rho=0.80 , p<0.01), which implies that the share of highly educated women does not depend on the existing share of highly educated men. For the rest of the variables with a high correlation²⁶ we also perform the test and find similar results.

Further, we look at the bivariate correlations between the subgroups of the critical group and the occurrence of terrorism. In our sample, the total number of attacks is 120 while the average number of attacks per source country is 7.15. The highest number of terrorist incidents originated from Nigeria,²⁷ which was associated with a total of 32 attacks in this period. No attacks were recorded from Kuwait, Malaysia, Morocco, Senegal and Tanzania. The average number (standard deviation) of terrorist incidents per pair of countries is 0.95 (2.88) , while the maximum is 23 (the Nigeria – E.U. pair) and the

²⁶ “Male LE CG” and “Female LE CG”; “Male LE CG” and “Male ME CG”; “Female ME CG” and “Male HE CG”; “Female ME CG” and “Female HE CG”.

²⁷ Excluding the attacks from Pakistan against India, i.e. 310 incidents.

minimum is no attacks for 73% of the total 120-pair sample. In Table 4. we find that the highest bivariate correlation coefficient is between the number of attacks and highly educated females belonging to the critical group, 0.278 ($p < 0.01$).

The dependant variable takes values from 0 to 23 and the value zero represents almost 73% of the total 119 observations, therefore, we test whether the zero-inflated negative binomial model provides a fit (Krueger and Malečková 2009)²⁸. We performed the Vuong test and found that the negative binomial model is favored at the 10 percent significance level relative to Poisson zero-inflated models.

We use the model from equation (1) to estimate the relationship between the demographic characteristics of the critical group and the occurrence of terrorism (Krueger and Malečková, 2009):

$$(1) E(y_{ij} | X) = \exp(x_{ij}\beta_k + x_i\beta_i + x_j\beta_j)$$

where the (pair-specific) dependent variable y_{ij} is the number of attacks originating from country i towards country j . x_{ij} is a vector of variables referring to public opinion (also pair specific). x_i is a vector of the control variables that are specific to the source country, while x_j are target country specific.

Results

In Table 5. column (1) we estimate the model from our previous study where the critical group was significantly correlated with the occurrence of terrorism. In column (2) we control for “Just.&Fav.Opinion”, “NoJust&Unf.Opinion” and instead of the share of the critical group (“Just.&Unf.Opinion”) we include six subgroups created on the basis of gender and education. The result shows that the share of women with a high level of

²⁸ The fact that the values of dependant variable range from 0 to 23 per pair raises problems of overdispersion and the test for overdispersion in our sample shows that it is significant $V(y|x) = E(y|x) + a \cdot \{E(y|x)\}^2$.

education belonging to the critical group is significantly correlated with the number of terrorist attacks. However, the specification in column (2) will inevitably result in the significance of one or more subgroups since the six variables included are subgroups of the critical group. Therefore, in order to test for the significance of one subgroup within the critical group, we include both the critical group and its subgroups in the same equation.

In Table 5. columns (3), (4) and (5) we control for both groups of variables, i.e. the critical group and the critical group subgroups by education levels and gender. In column (3) we control for the critical group and the highly educated men and women in the critical group: we find a significant positive coefficient of highly educated women belonging to the critical group. In columns (4) and (5) we control for the critical group and the middle and low levels of education by gender within the critical group, respectively, and find negative and insignificant coefficients. In column (6) we repeat the estimation from column (3) and in addition include the country of origin dummies and release the assumption of clustered standard errors by countries²⁹. The coefficient of highly educated women in the critical group remains positive and significant.

In order to calculate the impact of the share increase of the highly educated females in the critical group on the occurrence of terrorism, we firstly look at the distribution (standard deviation) of the shares of highly educated females since outliers can influence the significance of the results (and bias the estimate). Table 2. shows that the average percentage of highly educated women is 2.35 (s.e. 4.35); this indicates a high variation among countries regarding the share of highly educated females in the critical group. The outlier is Palestine (Table 3.; Fig.4.) with significantly higher shares of highly educated women belonging to the critical group than in other countries. In addition, Palestine is an outlier in respect to the share of the critical group relative to the total surveyed population. For Palestine, this share is over three times higher than the average of all other countries (Table 3.). Therefore, we estimate the model excluding Palestine (i.e., excluding all the observations in which Palestine is paired as a source country of

²⁹ In order to estimate the model with country dummies we exclude two variables “Religion Muslim” and logGDPpcX2 .

terrorism) (Table 5. column (7))³⁰. The results remain similar with a positive and significant coefficient of highly educated females belonging to the critical group (0.436 ($p < 0.1$)). Next, we calculate the magnitude of the change in the number of attacks if the share of highly educated females belonging to the critical group increases by one standard deviation: the number of attacks increases by 66 percent.

We test different specifications of the relationship between the critical group's shares and the occurrence of terrorism. In Table 6. column (1), we firstly control for the U.S. and the E.U. as the most common targets in our data set and find no change in our results. In column (2), we control for the Middle Eastern region, perceived as a major producer of terrorism, and find no difference in our findings. We also check if the fact that a country has a large dominant neighbor has any influence on the occurrence of terrorism. We construct a variable Big Neighbors³¹ and find no significant effect (Table 6, column 3). (Malečková and Stanišić 2011)

To further test the results, we use a binary dependent variable that equals 1 if the country pair has a number of attacks higher than zero, and equals 0 if there were no attacks. Applying logit estimation we find a positive coefficient of highly educated women who belong to the critical group ($p < 0.01$). We find similar results using a binary dependent variable and probit estimation, as well as a linear probability model. In both cases, the coefficients of highly educated women in the critical group are positive and statistically significant; ($p < 0.01$) and ($p < 0.05$) respectively.

Our analysis confirms the findings of earlier studies (Krueger and Laitin, 2008; Derin-Güre, 2009; Krueger and Malečková, 2009; Malečková and Stanišić, 2011), according to which increased distance between the source and target country of terrorist incidents decreases the number of attacks. The size of a country's population increases the likelihood of terrorist incidents, that is, the greater the population of a country, the more attacks it will produce. Once we control for civil liberties in the target country, we find a

³⁰ Once Palestine was excluded from the sample, there was a problem of estimation convergence; therefore we excluded one source country specific variable (logGDPpcX2).

³¹ (Population X/Population Y)*Dummy for the same region.

lack of evidence that the richer countries are targets of international terrorism. We also test for a concave relationship of the effect of GDP per capita of the source countries and find that neither the countries with the lowest nor those with the highest GDP per capita in our sample engage in terrorism.

In order to make our results more robust, we apply some additional estimation techniques besides negative binomial. We transform the dependent variable from count to continuous dividing the number of attacks per country pairs by the population in the source country of terrorism (country *i*) (Güre, 2009). Dividing the dependent variable (number of terrorist attacks) by population in millions, we specify the channel by which population size is assumed to affect the number of terrorist attacks; this means that, for example, everything else being constant, a country with twice the population of another country will produce twice as many attacks as the latter country.

Transforming the dependent variable from discrete to continuous enabled us to address concerns regarding estimation models that use survey data. Using shares of respondents to a public opinion survey as control variables can cause a measurement error in the estimation of their effect on the dependent variable since respondent shares are very small cells relative to the total population. If the measurement error is not large, however, it does not lead to attenuation bias of the estimated coefficients. Aydemir and Borjas (2006) argue that in such cases sampling error can be derived from the properties of hypergeometric distribution. Using the suggested percent bias estimation, based on the properties of the hypergeometric distribution, we obtain on average 2.5 percent³² measurement error bias, which should not cause problems of interpretation and attenuation bias in our results.

Performing cross-section analysis, where the dependent variable is “Intensity”, in Table 6 column (4), we find a sizable significant effect of the critical group on the occurrence of terrorism. In column (5) we control, apart from the share of the critical group, for highly

³² $p = \frac{(1 - (0.00563241)) * ((5.2567 * (1 - 5.2567) / (12315 / (16))))}{((1 - 0.9385) * 18.92)}$. For the definition and the variables from the equation (5) see Aydemir and Borjas (2010: 10)

educated males and females and again find a significant effect of highly educated women. Further, in column (6) we exclude Palestine as an outlier and obtain similar results with a positive and significant coefficient (0.096, $p < 0.05$). We calculate the magnitude of change and find that the share increase of highly educated females by one standard deviation will increase the intensity (i.e. the number of attacks per population in millions) by 98 percent.

We acknowledge the possibility of reverse causality between terrorist attacks and public opinion. There is no doubt that terrorist acts can affect public opinion (Berrebi and Klor 2006). For example, state actions, such as repression of civilians or unpopular foreign policy can lead the public to support terrorist actions. However, our analysis does not confirm that reverse causality affects our results. First, for those countries for which we have data from earlier periods, we find justification of suicide terrorism to be relatively constant over time. Second, the sixteen countries in our sample differ in their domestic conditions and foreign policy as well as the occurrence of terrorism, which excludes the possibility that we draw conclusions based on some uniform conditions that necessarily affect support for and/or the occurrence of terrorism.

Discussion

Our analysis shows that gender matters in support for and the occurrence of terrorism. Specifically, we found that in the “critical group” of those who both approve of terrorist methods and hold negative views of potential target(s), educated women play a relevant role. It is not surprising to find proponents of terrorism among the more educated segments of the population. Already in the 1970s, Russell and Miller (1977) noted that the majority of the analyzed sample of terrorists, who came from various countries of the world, were educated and that universities were recruiting grounds for terrorist membership. Some of the recent studies on Middle Eastern and Islamic terrorism emphasize the role of madrasahs in spreading extremist views (Stern 2003), while others show that many of the terrorists in the Middle East have technical education (Roy 2004).

So far, the link between (support for and the occurrence of) terrorism and education has mainly been stressed for men or no gender differences have been noted in this respect.

Our results indicate that it is the combination of gender and education that is crucial, specifically, the support of highly educated women for suicide terrorism and their negative views on target countries have an effect on terrorist acts. Further research is clearly needed to confirm this result and explore the mechanism through which women's support becomes relevant. At this stage, we can only point to some possible interpretations of our results.

There are two possible explanations as to why educated women's support matters for the occurrence of terrorism: It may well be that women's support is just a sign of the radicalization of the whole society. In other words, women are the last to support terrorist activities and thus are a marker, not a cause of the change. The question then arises as to why particularly educated women are a sign of such a radicalization. Given that support for terrorism in general does not decrease with increasing education (Krueger and Malečková 2003, Berrebi 2007) it is a puzzle that educated women in the societies we analyze should support terrorism less or later than other demographic groups. Moreover, previous research on the Middle Eastern and African countries (Fair and Shepherd 2006, Malečková 2006) suggests that women are not less supportive of terrorism than men.

The second possible explanation of our finding is that women, and particularly educated women, do have an impact. This in turn may have various reasons. First, educated women increasingly participate in terrorist activities. Unfortunately, there is a lack of quantitative data on women's participation in terrorist groups and committed terrorist acts.³³ Most datasets of terrorist events do not distinguish whether the perpetrator is male or female.³⁴

³³ For interesting general information on women's participation in terrorism see Margaret Gonzales-Perez (2008).

³⁴ An exception among the terrorist datasets is ITERATE, which includes information on women's participation in attacks, but no details on the actual role women played in these attacks.

Media as well as scholarly studies (often devoted to specific situations or periods) mention that the number of terrorist attacks committed by women has been increasing (Bloom, 2011; Ali, 2005; Grinshpan, 2010). The available information, however, strongly suggests that women still comprise a minority among the perpetrators of terrorist acts. They are somewhat more prominent among those who commit suicide attacks, e.g. among the Tamil Tigers in Sri Lanka, in Chechnya or Palestine). Yet suicide attacks, lethal as they are, still form a fraction of all (international) terrorist attacks. (In our sample, including Palestine, they comprise only 22 percent of all attacks and only 8 percent without Palestine).

The fact that women tend to be represented more prominently among the perpetrators of suicide attacks is relevant, both from the perspective of the terrorist organization and the impact of their acts. Terrorist groups may find it easier to use women for suicide bombing, an act that does not require much training and interaction with male members of the group, thus making this form of violence acceptable even for conservative groups, including some Islamic extremists. At the same time, the impact of suicide attacks is usually larger than that of more conventional terrorist attacks, both due to the number of victims and the importance of the targets and the incomprehensibility of such attacks for larger public and their media appeal. (Media coverage may contribute to the impression that the number of attacks perpetrated by women has been increasing.)

Given that terrorism continues to be perceived as a men's business, attacks by women attract more media attention – one of the aims of terrorist groups. According to some scholars, women, who are less suspicious and can get to places where male attackers have no access, are more efficient as suicide bombers than men and kill more victims (Bloom 2011; Ali, 2005). In any case, it is clear that even a limited number of attacks by women can have a huge impact on the constituent public and on a larger scale, at least partly due to the effect of media, mentioned above. Most importantly, women perpetrators provide inspiration for others. They provide a model for other women who become more likely to support terrorism and even try to emulate them. Concurrently, they can shame men – who are supposed to be protectors of women, the family and the entire society, thus increasing

the recruitment of new members of terrorist groups. This is particularly mentioned in connection with the Muslim societies of the Middle East and North Africa (Bloom, 2011; Davis, 2006), but is true (for some groups) everywhere.

As far as education is concerned, educated women (as well as men) tend to be more interested in politics, including issues that are addressed (or claimed to be addressed) by terrorist groups, and consequently more willing to devote their time and even lives to the struggle. A study comparing Arab/Palestinian women incarcerated for security-related and conventional crimes (Berko, Erez and Globokar 2010) shows that the security violators who were on average more educated (with a mean of 12 years of schooling, compared to 8 years for those incarcerated for conventional crimes) showed a deep interest in and devotion to the Palestinian cause; in contrast, the criminal offenders were not particularly interested in the Arab-Israeli conflict.

Educated women may have a stronger impact on their families, particularly their daughters, than less educated mothers, and can also affect their sons in case they sympathize with the “Cause”. It is true that birthrates tend to decline with women’s increasing education; yet, in cases where women identify with the struggle, whether national or other, even educated women are often willing to have more children to support the struggle. Lindner (2001) describes such an example of an Arab woman who saw her sole role in giving birth to future terrorists. Occasionally, education appears among the reasons given by women for joining terrorist groups, particularly those in Latin America (Stanski 2005). The latter, however, seems to be case specific and can hardly be generalized.

At this stage of research we cannot say whether it is educated women’s participation in terrorist acts, their impact on those (men and women) who commit terrorist acts or, alternatively, their support in legitimizing terrorism and providing financial and other help, that is crucial. It is also possible that women are a sign of a generally strong support for terrorism in a certain society. But educated women’s support clearly matters. Even if their support “just” signals a high appeal of terrorism in a society, our findings have

implications for security policy, which should watch for such cases where educated women's support for terrorism and negative attitude to potential targets of terrorism is high and/or increases.

To be sure, we are not suggesting that increasing women's education or encouraging higher education in the 16 Middle Eastern, North African and Asian countries will result in an increase of terrorism or that attempts to improve women's education should be abandoned. We argue, rather, that efforts to expand higher education should not be undertaken as a policy expected to eradicate terrorism (as it is in the case of crime) or change attitudes towards extremist violence. Our analysis suggests that highly educated women might have a special role in society in the surveyed countries with regard to support for and the occurrence of terrorism - and this role deserves to be analyzed and understood.

Future studies should further develop this line of research, inquiring into the mechanism through which women's support may actually translate to terrorist acts. In order to facilitate these inquiries, the collection of data on terrorism as well as public opinion surveys should pay systematic attention to gender and education.

Literature

Ali, Farhana. (2005). The Bomber Behind the Veil. *The Baltimore Sun*. December 13, 2005.

Atran, S. (2003). Genesis of Suicide Terrorism. *Science*: 1534-1539

Aydemir A. and Borjas G. (2010). Attenuation Bias in Measuring a Wage Impact on Immigration. *NBER Working Paper Series*. WP 16229

Berko, A., Erez, E. and Globokar, J. (2010). Gender, Crime and Terrorism: The case of Arab/Palestinian Women in Israel. *British Journal of Criminology*: 670-689.

Berrebi, C. and Klor, E.F. (2006). On Terrorism and Electoral Outcomes, Theory and Evidence from the Israeli-Palestinian Conflict. *Journal of Conflict Resolution* December 50 (6): 899-925.

Berrebi, C. (2007). Evidence About the Link Between Education, Poverty and Terrorism Among Palestinians. *Peace Science and Public Policy*.

Benmelech, E., Berrebi, C. and Klor, E. (2010). Economic Conditions and the Quality of Suicide Terrorism. *NBER Working Paper Series. WP 16320*

Bloom, M. (2011). Bombshells: Women and Terror. *Gender Issues*: 1–21

Calvi G. and Martini M. (1982). L'estremismo politico: ricerche psicologiche sul terrorismo e sugli atteggiamenti radicali, in Franco Angeli, Milano, *GfK Eurisko*.

Chiozza, G. (2006). Disaggregating Anti-Americanism: An Analysis of Individual Attitudes toward the United States in P. J. Katzenstein, R. O. Keohane (Eds.), *Anti-Americanisms in World Politics, Ithaca (Cornell Univ. Press)*: 93-128.

Crespi, I. (1988). Pre-Election Polling: Sources of Accuracy and Error, New York, Russell Sage Foundation.

Fair, Ch. and Shepherd, B. (2006). Who Supports Terrorism? Evidence from Fourteen Muslim Countries. *Studies in Conflict & Terrorism*: 51-54.

Davis, J. (2006). Women and Terrorism in Radical Islam: Planners, Perpetrators, Patrons? *Centre for Foreign Policy Studies*. <http://cfps.dal.ca>

Derin-Güre, P. (2009). Does Terrorism Have Economic Roots? *Boston University - Department of Economics - Working Papers Series*. Boston University - Department of Economics. wp2009-001.

Freedman, P., and Goldstein, K. (1996). Building a Probable Electorate from Pre-election Polls. A Two-Stage Approach. *Public Opinion Quarterly* 60 (4): 574-587.

Gonzales-Perez, M. (2008). Women and Terrorism: Female activity in Domestic and International Terror Groups. Routledge.

Grinshpan, D. (2010). Hell Hath no Fury like a Woman Scorned: Palestinian Female Suicide Bombers. *World Outlook. An Undergraduate Journal of International Affairs*. www.dartmouth.edu

Gurr, T.R. (2005). Economic Factors, in: *Addressing the Causes of Terrorism I, Club de Madrid*: 19-26.

Krueger, A. and Laitin, D. (2008). *Kto Kogo?: A Cross-Country Study of the Origins and Targets of Terrorism*, in P. Keefer, N. Loayza, Eds. *Terrorism, Economic Development, and Political Openness*, Cambridge (Cambridge Univ. Press): 148-173.

Krueger, A. and Malečková, J. (2003). Education, Poverty and Terrorism: Is There a Causal Connection? *Journal of Economic Perspectives*: 119-144.

Krueger, A. and Malečková, J. (2009). Attitudes and Action: Public Opinion and the Occurrence of International Terrorism”, *Science*: 1534-1536

Linder, G.E. (2001). Women and Terrorism: The Lessons of Humiliation
In: *New Routes: A Journal for Peace Research and Action. Special Issue: Targeting Women*: 10-12.

Malečková, J. (2006). Terrorists and the Societies from Which They Come, in J. Victoroff, *Tangled Roots: Social and Psychological Factors in the Genesis of Terrorism*: 147-161.

Malečková, J. and Stanišić, D. (2011). Public Opinion and Terrorist Acts. *European Journal of Political Economy*: Pages S107-S121

Merrari, A. (2005). Social, Organizational and Psychological Factors in Suicide Terrorism, in T. Bjørgo, *Root Causes of Terrorism: Myths, Reality and Ways Forward*: 70-86.

Neuberger L.C., and Valentini, T. (1996). *Women and Terrorism*. Palgrave Macmillan. ISBN: 978-0-312-12716-2.

Roy, O (2004). *Globalized Islam: The Search for a New Ummah*. New York (Columbia UP).

Russell, Ch.A. and Miller, B.H. (1977) Profile of a Terrorist, *Terrorism. An International Journal* I (1): 17-34.

Shigemuraab, J., Fullertonb, C., Ursanob, R., Leming W., Querci-Danioreb, R., Horikawac N., Yoshinoa, A. and Soichiro N. (2010). Gender Differences in the Fear of Terrorism Among Japanese Individuals in the Washington, D.C. Area. *Asian Journal of Psychiatry*:117-120.

Stanski, K. (2005). Terrorism, Ideology, and Gender: A Case Study of Women in the Revolutionary Armed Forces of Colombia (FARC), in *The Making of a Terrorist* (Westport, CT: Praeger Publishing): 136-150.

Stern, J. (2003). *Terror in the Name of God: Why Religious Militants Kill*. New York (Harper Collins Publishers).

Tessler, M. (2006). Public Opinion in the Arab and Muslim World: Informing U.S. Public Diplomacy, in *In the Same Light as Slavery – Building a Global Antiterrorist Consensus*. *Institute for National Strategic Studies*.

Tessler, M. and Robbins, M.D.H. (2007). What Leads Some Ordinary Arab Men and Women to Approve of Terrorist Acts Against the United States? *Journal of Conflict Resolution*.

Wilcox, P., Ozer, M.M., Gunbeyi, M., and Gundogdu, T. (2009). Gender and Fear of Terrorism in Turkey. *Journal of Contemporary Criminal Justice*: 341-357

Fig. 1. Share of highly educated per country

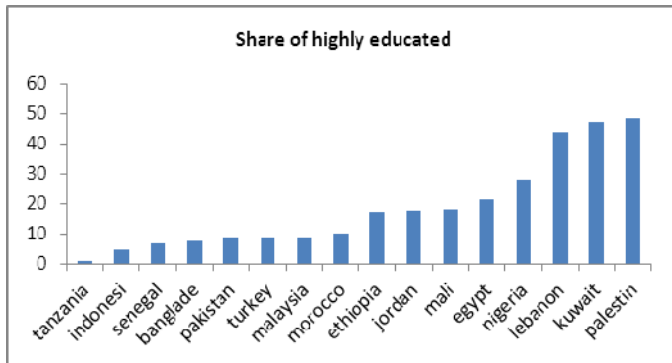


Fig 2. Gender composition within highly educated

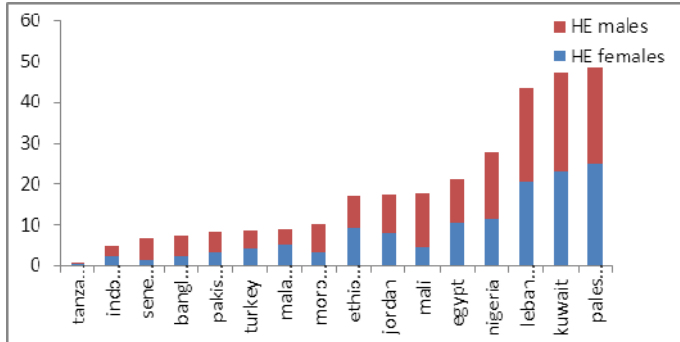


Fig. 3. Shares of highly educated and shares of highly educated females in the highly educated (columns 1 and 9 from Table 3).

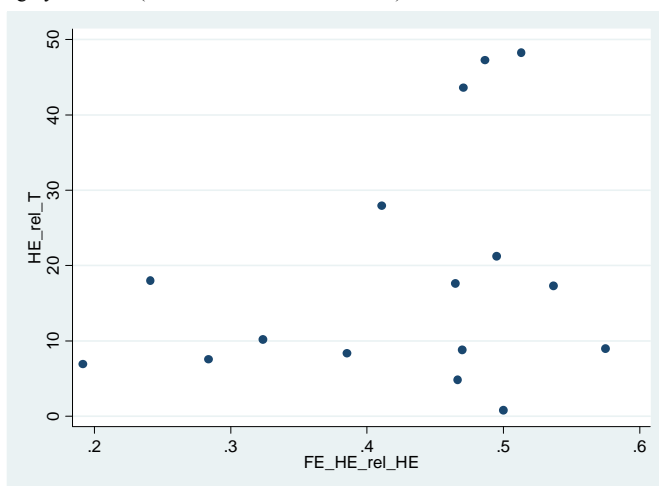


Fig.4 Composition of the critical group by gender and high level of education.

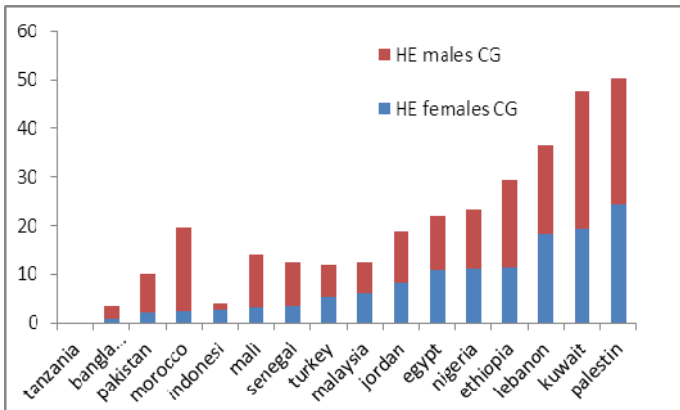
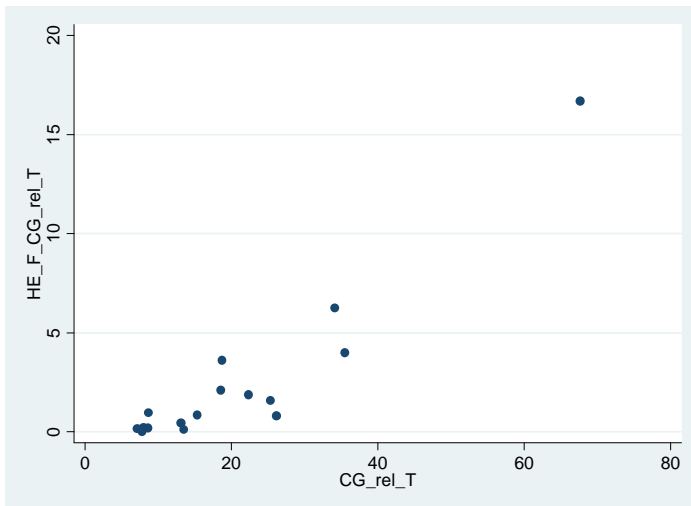


Fig.5. Share of critical group highly educated females and share of the critical group relative to the population (columns 1 and 6 from Table 3)



Data

- The PEW Global Attitudes Project, *Rising Environmental Concern in 47 – Nation Survey, Global Unease with Major World Powers*. www.pewglobal.org/datasets/
- Data on Terrorist Incidents are available at National Counterterrorism Center, *The Worldwide Incidents Tracking System*. www.wits.nctc.gov
- GDP per capita is calculated average from 2002 to 2006. World Bank datasets, WDI World Development Indicators. www.worldbank.org
- Population in Millions. World Bank datasets, WDI World Development Indicators. www.worldbank.org
- Civil Rights. Freedom House, 1 to 7 inverse scale. www.freedomhouse.org
- Muslim percentage in country. CIA The World Factbook. www.cia.gov

Table 1. Description of the Variables

<i>Variable Name</i>	<i>Description of the Variables</i>
Attacks	Number of terrorist attacks from country <i>i</i> towards country <i>j</i>
Intensity	Number of terrorist attacks/ country <i>i</i> population in millions
<i>Public Opinion Shares</i>	
Just&Fav.Op.	Share of those who justify suicide bombing but have favorable opinion of the target country
NoJust&Unf.Op.	Share of those who do not justify suicide bombing but have unfavorable opinion of the target country
Just&Fav.Op.(CG)	Share of those who justify suicide bombing and have unfavorable opinion of the target country
<i>Critical Group (CG) shares by gender and levels of education</i>	
Male_LE_CG	Share of all males that are low educated and belong to the critical group (by country pairs)
Male_ME_CG	Share of all males that are middle level educated and belong to the critical group (by country pairs)
Male_HE_CG	Share of all males that are higher level educated and belong to the critical group (by country pairs)
Female_LE_CG	Share of all females that are low educated and belong to the critical group (by country pairs)
Female_ME_CG	Share of all females that are middle level educated and belong to the critical group (by country pairs)
Female_HE_CG	Share of all females that are higher level educated and belong to the critical group (by country pairs)
<i>Country level variables</i>	
Primary Female	Gross rate enrollment ratio of all males of the relevant age group enrolled in primary level.
Primary Male	Gross rate enrollment ratio of all males of the relevant age group enrolled in primary level.
Secondary Female	Gross rate enrollment ratio of all females of the relevant age group enrolled in secondary level.
Secondary Male	Gross rate enrollment ratio of all males of the relevant age group enrolled in secondary level.
Tertiary Female	Gross rate enrollment ratio of all females of the relevant age group enrolled in tertiary level.
Tertiary Male	Gross rate enrollment ratio of all males of the relevant age group enrolled in tertiary level.
log_distance	Distance between country <i>i</i> and country <i>j</i>
log population <i>i</i>	Log of population in a source country of terrorism
Civil Liberties <i>i</i>	Civil Liberties in a source country of terrorism
log GDP pc <i>i</i>	Log GDP per capita of the source country.
log GDP pc <i>i</i> ²	GDP per capita squared of the source country of terrorism.
log population <i>j</i>	Log of population in a target country of terrorism.
Religion Muslim	Portion of Muslims in a country relative to total population.
Civil Liberties <i>j</i>	Civil Liberties in a target country of terrorism.
log GDP pc <i>j</i>	Log GDP per capita of a target country of terrorism.

Table 2. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>Dependent Variables</i>					
Attacks	119	0.95	2.88	0.00	23.00
Intensity	119	0.05	0.39	0.00	4.25
<i>Public Opinion</i>					
Just&Fav.Op.	119	0.13	0.10	0.01	0.47
NoJust.&Unf.Op.	119	0.22	0.15	0.02	0.64
Just&Unf.Op.	119	0.09	0.09	0.01	0.45
<i>Critical Group by Level of education and gender</i>					
Male LE CG	119	1.62	1.79	0.00	7.63
Male ME CG	119	4.95	4.09	0.31	20.37
Male HE CG	119	2.47	4.00	0	20.54
Female LE CG	119	1.53	1.91	0	10.78
Female ME CG	119	4.45	3.95	0	17.36
Female HE CG	119	2.34	4.35	0	20.94
<i>Country Specific Variables</i>					
Primary female	119	92.97	12.17	70.68	116.83
Primary male	119	98.67	9.89	80.53	120.70
Secondary female	119	57.25	28.16	12.39	95.67
Secondary male	119	59.85	24.47	14.55	90.55
Tertiary female	119	19.68	16.33	0.83	51.18
Tertiary male	119	19.62	13.93	1.86	43.47
log_distance	119	3.70	0.33	2.60	4.21
logPOPX	119	7.50	0.62	6.43	8.35
Civil_Lib_X	119	3.89	0.82	2.00	5.00
logGDPpcX	119	3.09	0.55	2.15	4.31
logGDPpcX2	119	9.84	3.58	4.61	18.57
logPOPY	119	8.14	0.52	7.38	9.12
Religion_M	119	0.78	0.20	0.33	0.99
Civil_Lib_Y	119	3.87	2.14	1.00	6.00
LogGDPpcY	119	3.84	0.72	2.28	5.95

Table 3. Shares of highly educated by gender (within critical group) (PEW Survey, 2007)

country	1	2	3	4	5	6	7	8	9	10	11	12	13
	HE / T	HE F / T	HE M / T	HE F / F	CG / T	HE F CG / T	HE F. CG / F	HE M. CG / M	HE F / HE	HE F CG / HE	HE M CG / HE	HE F CG / CG	HE M CG / CG
Bangladesh	7.55	5.41	2.14	4.33	13.53	0.11	0.23	0.67	0.28	1.49	4.48	0.83	2.50
Egypt	21.23	10.72	10.51	21.06	8.71	0.96	1.92	1.91	0.50	4.50	4.50	10.98	10.98
Ethiopia	17.30	8.02	9.28	18.18	18.57	2.11	4.13	6.90	0.54	12.20	19.51	11.36	18.18
Indonesia	4.85	2.59	2.26	4.55	7.97	0.22	0.43	0.22	0.47	4.44	2.22	2.70	1.35
Jordan	17.62	9.43	8.19	16.92	22.38	1.87	3.85	4.62	0.46	10.59	13.53	8.33	10.65
Kuwait	47.23	24.26	22.98	52.94	18.72	3.62	8.33	9.40	0.49	7.66	11.26	19.32	28.41
Lebanon	43.59	23.08	20.51	44.44	34.14	6.25	13.54	11.61	0.47	14.34	14.34	18.31	18.31
Malaysia	8.97	3.81	5.16	10.00	25.34	1.57	3.04	3.24	0.58	17.50	17.50	6.20	6.20
Mali	17.98	13.64	4.33	10.76	26.16	0.80	1.99	4.84	0.24	4.46	16.07	3.07	11.04
Morocco	10.20	6.90	3.30	6.60	8.60	0.20	0.40	3.00	0.32	1.96	14.71	2.33	17.44
Nigeria	27.91	16.45	11.46	25.65	35.55	3.99	8.92	7.81	0.41	14.29	15.48	11.22	12.15
Pakistan	8.35	5.13	3.21	6.51	7.10	0.16	0.32	1.13	0.39	1.86	6.83	2.19	8.03
Palestine	48.29	23.52	24.78	51.31	67.64	16.69	34.56	33.50	0.51	34.56	35.86	24.67	25.61
Senegal	6.92	5.60	1.33	2.49	13.11	0.44	0.83	2.52	0.19	6.38	17.02	3.37	8.99
Tanzania	0.78	0.39	0.39	0.78	7.81	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00
Turkey	8.83	4.68	4.15	7.86	15.32	0.85	1.61	2.03	0.47	9.64	10.84	5.56	6.25
Average	18.60	10.23	8.37	17.77	20.67	2.49	5.26	5.84	0.43	9.12	12.76	8.15	11.63

Notes: HE-highly educated; T-total surveyed population; F-females; M-males; CG-Critical Group

Table 4. Correlations Table

Attacks	Just&Fav.Op.	Nolust.&Unf.Op.	Just&Fav.Op.	M* LE CG	M ME CG	M HE CG	F* LE CG	F ME CG	F HE CG	Primary F	Primary M	Secondary F	Secondary M	Tertiary F	Tertiary M
Just&Fav.Op.	0.016	1													
Nolust.&Unf.Op.	0.029	-0.513	1												
Just&Fav.Op.	0.304	0.269	0.1244	1											
M* LE CG	0.168	0.143	0.249	0.709	1										
M ME CG	0.299	0.093	0.321	0.878	0.558	1									
M HE CG	0.239	0.314	-0.049	0.938	0.626	0.744	1								
F* LE CG	0.217	0.281	0.18	0.532	0.745	0.502	0.354	1							
F ME CG	0.295	0.223	0.205	0.899	0.565	0.87	0.779	0.58	1						
F HE CG	0.272	0.347	-0.048	0.936	0.584	0.724	0.968	0.348	0.803	1					
Primary F	0.094	-0.333	0.139	-0.136	-0.167	-0.089	-0.171	-0.263	-0.125	-0.125	1				
Primary M	0.001	-0.386	0.114	-0.293	-0.243	-0.197	-0.344	-0.196	-0.299	0.79	0.79	1			
Secondary F	0.003	0.05	0.192	0.42	0.234	0.341	0.427	0.326	0.452	0.449	0.11	0.11	1		
Secondary M	0.023	0.007	0.239	0.407	0.238	0.365	0.399	0.29	0.408	0.388	0.118	0.118	0.972	1	
Tertiary F	0.005	0.188	0.186	0.541	0.341	0.432	0.504	0.494	0.552	0.301	-0.009	0.903	0.854	0.854	1
Tertiary M	0.067	0.12	0.266	0.531	0.367	0.464	0.452	0.46	0.503	0.302	0.026	0.831	0.838	0.931	0.931

*M - Male; *F-Female

Table 5. Negative Binomial Model of the Critical Group and Occurrence of Terrorism by country pairs (clustered by source countries)

VARIABLES	1 Attacks	2 Attacks	3 Attacks	4 Attacks	5 Attacks	6 Attacks	7 Attacks
Just&Fav.Op.	-0.193 3.951	-3.798 7.178	5.579 8.454	9.01 14.44	3.308 10.92	3.633 17.19	4.367 11.77
NoJust.&Unf.Op.	0.575 1.45	1.63 1.449	0.541 1.686	2.144 1.68	0.872 1.292	1.344 1.489	2.136** 1.012
Just&Unf.Op.	10.76*** 3.372		18.35 13.88	45.87 39.35	12.54 16.47	-3.233 25.58	0.841 6.32
<i>Critical Group Variables</i>							
Male LE CG		0.13 0.717	0.26 0.826				
Male ME CG		-0.181 0.152		-0.416 0.304			
Male HE CG		-0.158 0.203			-0.334* 0.201	-0.182 0.278	-0.306 0.214
Female LE CG		0.0302 0.616	-0.223 0.551				
Female ME CG		0.064 0.108		-0.0974 0.301			
Female HE CG		0.462** 0.223			0.432** 0.214	0.764** 0.334	0.436* 0.235
<i>Country Specific Variables</i>							
Primary female <i>i</i>		-0.0228 0.142	0.158 0.197	0.25 0.37	0.114 0.295	-0.0948 0.137	0.213*** 0.0713
Primary male <i>i</i>		0.231 0.162	0.636* 0.359	0.792 0.575	0.505 0.483	0.202 0.154	0.00911 0.0542
Secondary female <i>i</i>		-0.0866 0.168	-0.144 0.174	-0.206 0.283	-0.138 0.25	0.0129 0.153	0.0144 0.0969
Secondary male <i>i</i>		-0.304 0.252	-0.892* 0.472	-1.085 0.743	-0.635 0.594	-0.196 0.122	-0.0636 0.219
Tertiary female <i>i</i>		0.174 0.202	0.152 0.212	0.231 0.19	0.13 0.178	-0.428 0.449	0.573** 0.248
Tertiary male <i>i</i>		0.823 0.615	2.147* 1.187	2.589 1.885	1.617 1.546	0.638* 0.345	0.145 0.455
log distance <i>ij</i>	3.321*** 1.02	3.000*** 1.153	-2.843** 1.126	-2.895** 1.144	-2.767** 1.097	2.885*** 1.034	3.216*** 1.157
log Population of <i>i</i>	3.291*** 0.766	5.917*** 1.588	5.945*** 2.11	7.633*** 2.397	4.855*** 1.074	2.992 2.177	10.03*** 3.037
Civil Liberties <i>i</i>	0.175 0.298	0.416 1.952	4.515 3.677	5.775 6.031	3.586 5.162	0.0977 2.323	-1.725** 0.739
log GDP pc <i>i</i>	3.97 4.796	-70.75 57.98	-191.9 121.1	-266.9 215.3	-157.1 170	0.811 6.406	13.91*** 4.48
log GDP pc <i>i</i> squared	-0.588 0.722	9.325 8.28	26.2 17.2	37.35 30.8	21.57 24.11		
log Population of <i>j</i>	0.700** 0.322	0.861 0.562	0.659 0.526	0.822* 0.469	0.681 0.475	0.654 0.466	0.747 0.455
Muslim religion in <i>i</i>	-0.191 1.852	23.58 20.03	66.04 40.76	86.36 69.29	53.28 57.34		7.652*** 2.322
Civil Liberties <i>j</i>	-0.384** 0.167	-0.387* 0.199	-0.235 0.188	-0.422** 0.204	-0.286 0.2	-0.366** 0.157	-0.345* 0.189
log GDP pc <i>j</i>	0.345 0.454	0.602 0.857	0.78 0.791	0.41 0.773	0.752 0.804	0.556 0.499	0.514 0.689
Constant	-27.77** 11.51	43.68 48.99	153 109.3	221.5 188.9	126.8 148.9	-29.21 32.43	-24.45 23.57
Country Dummies						YES	
Observations	119	119	119	119	119	119	112

Robust standard errors in smaller fonts; *** p<0.01, ** p<0.05, * p<0.1; Note: Due to the convergence difficulties in column (6) with source country dummies we exclude variables logGDPpcX2 and Religion_M; In column (7) we exclude variable logGDPpcX2

Table 6. Negative Binomial Model of the Critical Group and Terrorist Attacks by country pairs (clustered by source countries)

VARIABLES	1 Attacks	2 Attacks	3 Attacks	4 intensity	5 intensity	6 intensity
Just&Fav.Op.	7.122 13.090	-0.773 -11.440	3.221 -11.010	-0.902 -0.947	-1.046 -0.973	-0.0784** -0.034
NoJust.&Unf.Op.	2.283 2.262	1.099 -1.435	0.904 -1.197	-0.646 -0.424	-0.397 -0.352	-0.052 -0.034
Just&Unf.Op.	11 15.030	7.258 -16.050	13.610 -17.050	2.068** -0.908	0.050 -0.634	0.135 -0.125
<i>Critical Group Variables</i>						
Male HE CG	-0.263 0.217	-0.306 -0.203	-0.338* -0.205		0.017 -0.021	-0.004 -0.003
Female HE CG	0.424** 0.206	0.443* -0.226	0.424* -0.224		0.0305* -0.016	0.00880*** -0.003
<i>Country Level Variables</i>						
Primary female <i>i</i>	0.105 -0.307	0.115 -0.244	0.115 -0.295	-0.00577 -0.0067	-0.0068 -0.00759	-0.00141** -0.000532
Primary male <i>i</i>	0.504 -0.514	0.49 -0.373	0.516 -0.492	-4.76E-05 -0.00331	-0.00279 -0.00445	0.00126** -0.000559
Secondary female <i>i</i>	-0.101 -0.272	-0.184 -0.243	-0.134 -0.249	0.0107 -0.0102	0.0063 -0.0111	0.00219** -0.000822
Secondary male <i>i</i>	-0.637 -0.632	-0.729 -0.465	-0.652 -0.605	-0.00531 -0.0086	0.00195 -0.0107	-0.00255** -0.00107
Tertiary female <i>i</i>	0.0762 -0.244	0.488 -0.52	0.116 -0.175	-0.00983 -0.0117	-0.00898 -0.0124	-0.00230** -0.000781
Tertiary male <i>i</i>	1.557 -1.596	1.554 -1.22	1.656 -1.569	0.00123 -0.00829	-0.00494 -0.0109	0.00317** -0.0014
log distance <i>ij</i>	-1.621** -0.722	-2.837** -1.127	-2.531** -1.247	-0.0459 -0.0416	-0.0237 -0.0378	-0.0451 -0.0379
log Population of <i>i</i>	4.729*** -1.257	8.903* -5.397	4.758*** -1.083			
Civil Liberties <i>i</i>	3.746 -5.38	2.118 -4.629	3.678 -5.239	-0.0287 -0.043	-0.0884 -0.0559	-0.00348 -0.00768
log GDP pc <i>i</i>	-159.1 -180.6	-160 -129.8	-160 -172.5	0.875*** -0.282	2.081*** -0.579	-0.0592 -0.258
log GDP pc <i>i</i> squared	22.27 -25.77	20.98 -18.49	21.99 -24.48	-0.140*** -0.0441	-0.323*** -0.0897	0.00992 -0.0404
log Population of <i>j</i>	0.943*** -0.287	0.723 -0.487	0.574 -0.516	-0.0385 -0.0552	-0.0499 -0.0573	0.00435 -0.00299
Muslim religion in <i>i</i>	52.71 -60.09	55.31 -44.44	54.17 -58.1	-0.199 -0.148	-0.484** -0.196	0.00698 -0.0597
Civil Liberties <i>j</i>	0.121 -0.24	-0.291 -0.195	-0.29 -0.192	-0.0255 -0.0211	-0.0233 -0.0204	-0.00655 -0.0051
log GDP pc <i>j</i>	0.931 -0.669	0.76 -0.816	0.711 -0.791	-0.0185 -0.0195	-0.0115 -0.0158	-0.00131 -0.00883
US	0.323 -0.835					
EU	2.278*** -0.578					
Middle East		5.523 -6.963				
Big Neighbor			0.235 -0.279			
Constant	118.8 -159	116.2 -115.2	130.5 -151.4	0.126 -1.087	-1.043 -1.227	0.292 -0.188
Observations	119	119	119	119	119	112
R-squared				0.222	0.239	0.324

Robust standard errors in small fonts; *** p<0.01, ** p<0.05, * p<0.1. Intensity=(Num. of Attacks/Pop in Millions); Variable population of source country is excluded from columns (4),(5) and (6) due to change in dependent variable.