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**HUMAN CAPITAL AND THE SUPPLY OF HOME-GROWN
ISLAMIC TERRORISTS IN THE UK**

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Abstract

We compare the characteristics of 77 convicted home-grown Islamic terrorists in the UK to a representative sample of 858 UK Muslims. UK Muslims are more likely to be convicted of terrorism if they are better educated and young, which accords with findings from recent research on the behaviour of Muslims in the US. Other predictors of UK Muslims being convicted of terrorism are employment, marital status, citizenship, and ethnic origin.

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1. Introduction

The emerging consensus in the literature on the determinants of the supply of terrorists is to shift the focus from the importance of poverty and lack of education. This shift has been driven by the finding in several studies that terrorists are often drawn from well-educated, middle class or high-income families (Berman, 2009; Berrebi, 2003; Krueger and Maleckova, 2003; Krueger, 2007; Krueger and Laitin, 2008; Sageman, 2004; Schelling, 1991). Most of these studies examine the economic characteristics of terrorists operating in non-Western countries. A notable recent exception is Krueger (2008) who focuses on the supply of alleged home-grown US Islamic terrorists. He compares their characteristics with those of the general population of US Muslims and finds that a better than average education is an important predictor of becoming a terrorist. Krueger interprets his finding as reflecting supply factors, which are likely to include their desire to pursue a political agenda. He also concludes that the supply of potential Islamic terrorists is greater among more highly educated US Muslims. Krueger's (2008) finding is important and controversial, with potentially wide-ranging policy implications for foreign policy-making, the focus of foreign and domestic aid programs, and for the activities of domestic security activities.

In this paper, we assess the robustness of Krueger's (2008) findings by examining the role of education and other factors in the supply of home-grown Islamic terrorists in the UK. Our objective is to determine whether the same economic forces that appear to have been important in driving the supply of US home-grown terrorists also account for their supply in the UK. Specifically, we compare the characteristics of 77 Muslims convicted of terrorist offences in the UK during 2001-2009 with those of the general population of Muslims residing in the UK. Our results strongly reinforce Krueger's (2008) findings for the US. The convicted UK terrorists appear to be better educated than the general population of UK Muslims. Other predictors of UK Muslims being convicted of terrorism are employment, marital status, citizenship, and ethnic origin.

2. Data

We searched for predictors of an individual Muslim participating in terrorist acts by comparing the characteristics of home-grown UK Islamic terrorists to those of Muslims residing in the UK. Our sample of home-grown terrorists is made up of the individual Muslims convicted of terrorist acts in the UK.¹ A list of the major convictions is given in Gartenstein-Ross and Grossman (2009), which we supplemented with information publicly available from UK Home Office documents, Wikipedia links, Google searches, and press reports. We identified 77 Muslim individuals convicted of a wide range of terrorist activities during

¹ We follow Krueger (2008) and define a home-grown terrorist act as having been conceived in the UK and having a substantial involvement of UK residents.

2001-2009.² Once the names of individuals were identified, we assembled information on their educational attainment, recent employment status, age and residence at the time they undertook the terrorist activity for which they were convicted, citizenship status, sex, ethnic background, again by conducting Google and press searches, and reviewing publicly available Home Office reports. We acknowledge that there are many shortcomings in our dataset. In particular, we were not able to track down all the information for all convicted terrorists, particularly with respect to specific educational attainment, employment history, and marital status. In the case of education, the legal requirement (since 1972) for UK residents to remain in school until they reach 16 years of age allowed us to place a floor on educational attainment (in terms of years of schooling) of convicted terrorists for whom we did not have other sources of information.³ In addition, the accuracy of our data set is also dependent on the accuracy of the press reports and Wikipedia entries from which we drew information.

It was more straightforward to assemble data on the characteristics of the UK Muslim population. For this we drew on the annual British Crime Survey (BCS). This survey is aimed at measuring the amount of crime in England and Wales and understanding the nature of and challenges to policing in the UK, but it also contains a considerable amount of background information on the individuals interviewed, including their religion, age, education level, citizenship, birthplace, recent employment status, and marital status. The survey is designed to be representative of private households, and of adults aged 16 and over. Responses are obtained from face-to-face interviews with participants selected randomly on the basis of their postal codes. We drew on the 2006/07 BCS (see Nicolas et al., 2007), which provides the responses of 47,203 individuals given in interviews held during April 2006 and March 2007, of which 880 stated that they were Muslims.⁴ Our sample of UK Muslims comprises those Muslims that participated in the 2006/07 BCS aged between 16 and 55 years (the age range of the convicted terrorists), which numbered 781, and which we take to be a representative sample of the UK Muslim population, and the 77 Muslim individuals convicted of terrorist offences during 2001-2009. The home-grown terrorists, therefore, represent about 10 percent of our pooled sample.

3. Results and Discussion

Table 1 presents summary statistics of the key characteristics of the UK Muslim population and male Muslim population (as all but two of the convicted terrorists were males) from the pooled sample, and of

² The individuals in the sample were convicted of a variety of terrorist acts, including: a 2004 plot to set off a wave of fertilizer bombs around the UK; a 2004 dirty bomb plot to flood the London Underground with the River Thames; the July 7, 2005 London bombings that killed 52 people; the July 21, 2005 failed London bombings; a 2006 plot to blow up transatlantic airlines; the June 2007 attack on Glasgow International Airport; and many lesser acts such as fundraising, recruitment and training for terrorism, and abetting terrorists.

³ Since 1972 UK residents have been required to remain in school until the last Friday in June in the school year they turn 16 years of age. In practice, this means that some students leave school aged 15.

⁴ The 2006/07 British Crime Survey can be downloaded from the UK Home Office web link <http://www.crimereduction.homeoffice.gov.uk/statistics/statistics066.htm>; and a discussion of the design and objectives of the Survey can be found on <http://www.homeoffice.gov.uk/rds/bcs1.html>.

the convicted terrorists. The terrorists received about $\frac{3}{4}$ of a year of additional education compared to the average for all UK Muslims (statistically significant with $p < 0.03$), and more education than the average for the male Muslim population. The convicted terrorists were also substantially younger than the average resident Muslim (26 years compared to 32 years), a larger proportion of them were UK citizens, and a smaller proportion had been employed recently, or was married. In addition, African and mixed (i.e., at least one white British parent) South Asian ethnic origins were heavily over-represented among the home-grown terrorists. All these differences between the terrorists and the general population of UK Muslims are statistically significant (all at $p < 0.0001$).

Figure 1 gives a more detailed picture of the differences in educational attainment. We categorize educational attainment in terms of: post-graduate (MA/MSc and higher), undergraduate (BA/BSc), university entry level ('advanced' or 'A' level general certificate of education (GCE)), other qualifications, (including trade-related), school completion (education to 16 years of age, including 'ordinary' or 'O' level GCE), and no qualification (education ended before 16 years of age). The home-grown terrorists have a higher proportion of graduate, undergraduate, and 'A' level qualifications than the average for the UK Muslim population, and a large proportion of them remained in school until 16 years of age, with these differences being statistically significant ($p < 0.0001$).⁵ The profile of UK home-grown terrorists relative to the UK Muslim population with respect to education and age is very similar to that for US home-grown terrorists relative to the US Muslim population reported by Krueger (2008).

Table 2 presents probit regression estimates of the effect of the different characteristics on the likelihood of a UK Muslim being convicted of domestic terrorist activities. Column 1 of the table focuses on education, citizenship and ethnic origin with additional personal characteristics added in columns 2 and 3. The results for education are robust to the addition of more variables. A better than average education increases the likelihood that a UK Muslim will be convicted of domestic terrorist acts by 7 to 9 percentage points. The likelihood of being convicted also rises sharply if UK Muslims are male (which is not surprising given that all but two of the convicted terrorists are male), have not been employed recently, are married, and are UK citizens. Ethnic origin is also a statistically significant predictor of being convicted, with this most likely if UK Muslims are of African and mixed Southeast Asia-White ethnic origin. The relatively high pseudo R-squares indicate that personal characteristics provide an important input into determining the likelihood of a UK Muslim being convicted of domestic terrorism. In column 3, for example, 45 percent of the variability in the likelihood of being convicted is explained by personal characteristics. The results from our probit estimates accord with Krueger's (2008) finding that the likelihood of US Muslims being charged with being a home-grown terrorist is increased if they are better educated and younger than the average for US

⁵ The greater likelihood of UK home-grown terrorists remaining in school until 16 years of age compared to the rest of the UK Muslim population may partly reflect the younger average age of the terrorists, which would have made almost all of them subject to the legal requirement to remain in school until they had reached 16 years of age.

Muslims. Our main differences with the findings reported by Krueger are with respect to the role of employment, which he finds not to be a significant predictor of being charged as a terrorist, and citizenship, which he finds to be a statistically significant negative predictor.

4. Conclusions

Dealing effectively with terrorism requires, among other things, a good understanding of the determinants of the supply of terrorists. Our results support placing less emphasis on poor education as a main driver of terrorist supply: convicted home-grown UK Islamic terrorists have a better education than the average for UK Muslims. Accordingly, the supply potential for home-grown UK Islamic terrorists appears to be greater among more highly educated Muslims, just as in the US such terrorists appear to come mainly from the better educated resident Muslim population. An area for further research on the supply of UK home-grown Islamic terrorists is the apparent coexistence of better educational attainment but worse recent employment experience compared to the average for the UK Muslim population.

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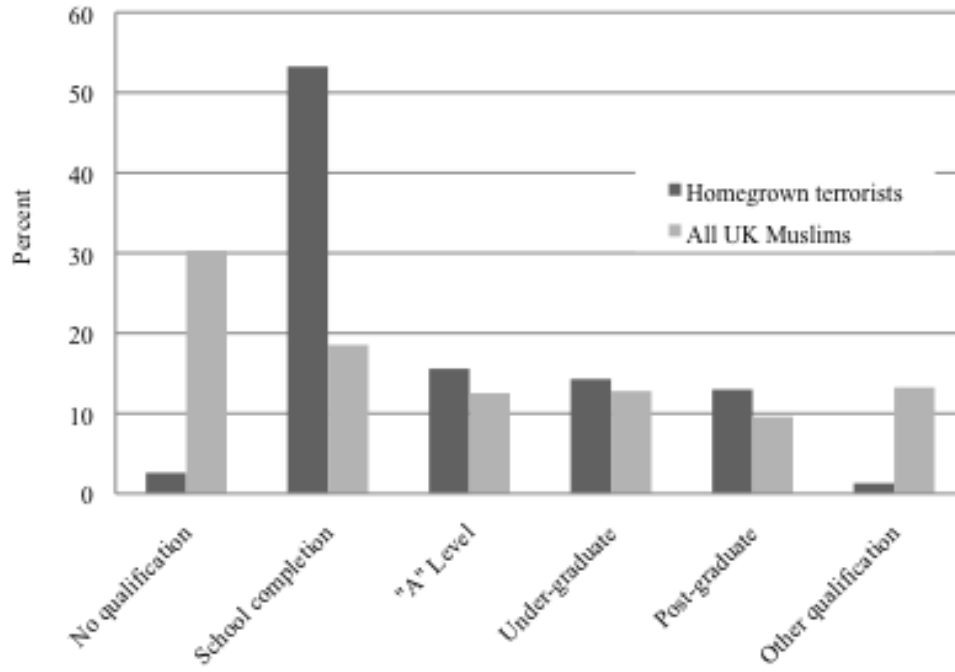


Figure 1. Educational attainment of homegrown terrorists vs. UK Muslim population. Chi-square test of independence = 70.4; p -value < 0.001

Table 1
Sample averages for UK Muslims

	UK Muslims		Convicted homegrown Islamic terrorists	<i>p</i> -value
	All	Male		
Education (years)	12.5 (3.41)	12.9 (3.51)	13.2 (3.10)	0.030
Employed (percent)	49.8	65.6	37.7	0.030
Age (years)	32.3 (9.62)	31.85 (10.22)	25.9 (6.61)	0.000
Male (percent)	49.7	100.0	96.1	0.000
Married (percent)	54.5	51.6	37.7	0.000
UK citizen (percent)	60.4	59.7	79.2	0.000
Ethnic origin:				
Africa	10.8	10.4	29.9	0.000
Mixed South Asia-White	4.0	5.6	23.4	0.000
India	11.1	10.8	3.9	0.000
Pakistan	54.6	53.1	27.3	0.000
Other	19.6	20.1	15.5	0.000

Notes: Sample size is 858 UK Muslims of which 77 were convicted homegrown Islamic terrorists. The final column is the *p*-value of test of the independence of the characteristics of homegrown Islamic terrorists versus those of all UK Muslims. Values in parenthesis are standard deviations

Table 2

Probit estimates for likelihood of being convicted a homegrown Islamic UK terrorist

	(1)	(2)	(3)
Constant	-1.2986*** (0.2631)	-0.9967*** (0.2844)	-0.8519 (0.5451)
Education	0.0707** (0.0264)	0.0926*** (0.0280)	0.0946** (0.0362)
Employment		-0.4744*** (0.1467)	-0.7928*** (0.1755)
Age			-0.0591*** (0.0127)
Male (1=yes)			2.0299*** (0.3141)
Married (1=yes)			0.4797** (0.2096)
UK citizen (1=yes)	0.5643*** (0.1616)	0.6049*** (0.1661)	0.7061*** (0.1982)
<i>Ethnic origin</i>			
Africa	0.7279*** (0.2379)	0.7310*** (0.2418)	0.8572** (0.2976)
Mixed South Asia- White	1.1861*** (0.2880)	1.1736*** (0.2917)	0.9228** (0.3451)
India	-0.6621** (0.3131)	-0.6510** (0.3206)	-0.9440** (0.3877)
Pakistan	-0.4841** (0.2141)	-0.5169** (0.2206)	-0.8157** (0.2767)
Other	-0.3815 (0.3415)	-0.3982 (0.3493)	-0.4468 (0.4304)
Pseudo R-square	0.208	0.228	0.452
Chi-square	107.55	118.41	234.16
<i>p</i> - value	0.000	0.000	0.000
Sample size	858	858	858

Notes: Dependant variable equals 1 for convicted terrorists and 0 for others. Robust standard errors are in parenthesis. ***, **, and * indicate statistical significance at the 1, 5, and 10 percent levels.