Should I stay or should I go? The effect of London's terrorist attack on the educational choices of Muslims

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Abstract

This paper studies the effect of the London terrorist attacks in July 2005 on the education plans and education decisions of the Muslims teenagers. A backslash of violence against the Muslim community occurred after the London attacks, which could have affected their incentives to continue in full time education. Using panel data on educational attitudes from the 'Next Steps' Survey in England and focusing on the month of the interview to divide individuals between treatment and control groups, I find that the attacks generated a negative impact on the education plans of the Muslims, but not in any other major religion group. This change in education plans, however, did not translate in actual decisions two years later, suggesting that the change in plans was only a momentary reaction that did not last enough to have an impact on the actual education.

Keywords: education, terrorism

JEL codes: I20,I29,J15

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Introduction

Identity - a person's sense of self - is a key factor in the economic decisions made by individuals. Identifying yourself with a group can change individual payoffs not only from one's actions but from others' actions. Akerlof and Kranton (2000) incorporates this reasoning into a simple economic model and arrive to different conclusions from the standard case. In particular, when studying poverty, they find that social exclusion can make agents avoid remunerative activities under a model in which identity plays a role.

This paper focuses on the interaction between identity and education. It studies how do individual's plans of education react to a change in the environment faced by the community or group they associated themselves with. In particular, it centers in the education plans of the Muslim teenagers in England before and after the London terrorist attacks in July 7 of 2005.

The London bombings (called 7/7) in England, were the country's first ever suicide attack. Four British Islamist men detonated four bombs in the center of London; killing 52 civilians and injuring over 700 more. A violent backslash against the Muslim community was reported in the news [1] across UK as response to these attacks. Kielinger and Paterson (2013) and Hanes and Machin (2014) show significant increases of hate crimes against Asians and Arabs in the UK almost immediately after the terror attacks of 9/11 and 7/7. These crimes subsequently decayed, but remained at a higher than pre-attack levels for months after the attacks.

Under this tense environment left by the attacks, I use a survey on educational attitudes of teenagers in England called 'Next Steps' to understand the change in education plans and decisions of the Muslim teenagers.

First, I focus on the education plans of continuing in full time education after the age of 16 of the individuals that identified themselves as Muslims. I rely on the exogenous timing of the attack to divide between treatment (those interviewed in 2005 after the bombings) and control group (those interviewed in 2005, in the months before the attack). As the groups differ in some important characteristics such as family composition and work status of the main parent, I make use of the panel dimension of the data and study the change in education plans of the individual in 2005 with the education plans of the same person but in 2004 in a fixed effect approach. I also use a differences in differences approach as an alternative methodology.

I document a robust negative effect on the education plans of the Muslims because of the

[1] See for example: "Hate crimes soar after bombings" *BBC News*, 4 Aug. 2005. http://news.bbc.co.uk/2/hi/uk_news/england/london/4740015.stm; "Race body reports rise in abuse" *BBC News*, 22 Jul. 2005. http://news.bbc.co.uk/2/hi/uk_news/wales/south_east/4704593.stm

terrorist attack. Average marginal effects suggest that the probability of planning to continue in full time education decreases in around 4.4 percentage points for the Muslim community. This implies a 69 percent increase of individuals that are not really sure whether to continue or drop out of full time education.

As a placebo test, I repeat the same analysis for different religions. There is no effect of the terrorist attack on the education plans of the individuals who identified themselves as Christians, Hindus or Atheist. There is, however, a negative effect for the Sikh religion. This is community was also negatively affected as reported in the news, mainly because of ignorance of the perpetrators and the attention drawn by the turbans they wear.[2] I also do another placebo, by assuming that the attack was not in July but in June. With this fake treatment, I find no effect of the terrorist attacks on the education plans of the Muslims.

Moreover, I find that in magnitude, the effects are pretty similar for both males and females, although the effect for females is the only one to be found statistically significant. I do find a significant effect for both Muslims that were born in the UK and Muslims that were not born in the UK. However, the effects are larger for those who were not born in the UK.

Lastly, I follow the teenagers along the years to see what their main activity is at age 17 (when education is not compulsory). The answers of education plans from 2004 and 2005 do not help to predict the possibility of having education or apprenticeship as a main activity in the Muslim sample, but they do so for the rest of the respondents. Using information form the Census of 2001 and 2011, I analyze the change in educational attainment by age and by religion for cohorts that were close to age 16 (year where the student should make the decision of staying or not in formal education) in 2005. As those cohorts of Muslims seem to be more qualified in 2011, it suggest that the negative effect of the attack on the education plans, was more of a reaction in the heat of the moment that faded as people had more time to think about their actual choices. The data from the Office of National Statistics seems to confirm this result, as there is an increase in the percentage Muslims age 19 to 21 with high qualifications level 4 or more from 2001 to 2011. This increase is even greater than in other religions, which suggest that the initial negative reaction towards continuing in full time education cooled down. the pattern is also consistent with the findings of Zorlu and Frijters (2019) where the happiness of Muslim migrants in Europe fell initially after the 9/11 attacks but it catches up in the subsequent years. However, the greater attrition rate of the Muslim individuals from the

[2]See for example: "Sikh meet police after the attacks" *BBC News*, 12 Jul. 2005. http://news.bbc.co.uk/2/hi/uk_news/4674883.stm

survey makes it difficult to arrive to a definitive conclusion.

Related Literature

Terrorism can have large consequences on aggregate economic outcomes, such as GDP (Abadie and Gardeazabal (2003)), investment (Eckstein and Tsiddon (2004), Abadie and Gardeazabal (2008)), stock prices (Berrebi and Klor (2010), Straetmans, Verschoor and Wolff (2008)) or tourism (Sandler, Enders and Parise F (1992)), for example. More recently, the literature have focused on the effect of terrorism on individual outcomes, such as happiness and well being. Metcalfe, Powdthavee and Dolan (2011) found a decrease in self-reported well-being in the UK after the attacks of September 11th, Ahern (2018) shows evidence of terrorism having a detrimental effect on individual psychological traits, generating less trust, less subjective well-being and a decrease in their opinion of how important are creativity and freedom and Coupe (2017) find a decreased in optimism in France because of the attacks in November 2015 in Paris. Clark, Doyle and Stancanelli (2020) add to this line of research by studying *experienced* well-being, instead of subjective well-being. They document a decreased of happiness and an increase in negative emotions that lasted for at least one week in the US after the Boston marathon bombing of 2013.

More closely to the article, the differential effects of terrorism regarding minorities have been also studied for outcomes outside education. Kaestner, Kaushal and Reimers (2007) find that the attacks of September 11th did not affect employment and working hours of Arab or Muslim men, although it was associated with a 14 to 16 percent decline in their real weekly earnings in the US; Braakmann (2007) finds no impact on hours worked, real wages and employment probabilities in London for Arab and Muslim men. However, Rabby and Rodgers III (2010) focusing on particular age cohorts, report a negative effect of London's metro attacks on the labor outcomes of the Muslims aged 16-25.

Associated to the changes in social environment towards Muslims and their attitudes regarding this change; Hanes and Machin (2014) shows significant increases of hate crimes against Asians and Arabs in the UK almost immediately after the terror attacks of 9/11 and 7/7. These crimes subsequently decayed, but remained at a higher than pre-attack levels a year later. Elsayed and de Grip (2013) shows that Muslims' immigrants perceived integration changed negatively in Netherlands after the terrorist attacks of London, while the effect was not present for the non-Muslim immigrants. Both papers provide support to the idea that after

the attacks, the perceived level of discrimination or segregation against the Muslim community may increased.

Lauderdale (2006) finds that six months after 9/11, Arabic named women in California experienced a moderated increased in the risk of low birth weight compared with similar women who gave birth the year before. Hole and Ratcliffe (2020), focusing on subjective well-being, show a decrease in the self-reported happiness for the Muslims teenagers after the London bombings, specially for girls. Zorlu and Frijters (2019) find a decline, and then a subsequent return to average happiness among the general Muslim migrant population relative to others after 9/11. They also find a persistent decline in happiness for the Muslims migrants coming from the Middle East, which highlights the potential importance of this type of attacks n the integration of migrants to their host society. Romanov, Zussman and Zussman (2012) studies the same question but in the Israel and Palestinian context. They find no effect of the Palestinian terrorism on the happiness on the Jewish Israelis and a negative, but not persistent, effect for more than one day effect on the Arab citizens. They argued that the initial negative reaction of Arabs may be related to increasing concerns of discrimination against them.

This paper enriches this line of research by focusing on the plans and decisions of the Muslim teenagers of acquiring human capital as a reaction of the environment provoked by the attacks. As education is highlighted as one of the main mechanism to foster inter-generational mobility, this outcome is relevant in itself. In fact, much of the literature studying the effects of terrorism on well-being, highlights the idea that more depressed adolescents might decide to study less, as one of the main arguments of why should we care (see for example Hole and Ratcliffe (2020)). However, this channel has not been directly studied.

In terms of identification, it also contributes, as most papers that tries to identify the differential effect of terrorism on the outcomes of the minority identified with the perpetrators vs the rest of the population, use different races or religions as a control group in a differences in differences setting. The results on these papers rely on the assumption of parallel trends for both groups in the absence of treatment. Although I use a similar difference in difference approach for the first set of outcomes, the fact that the timing of the interviews allow me to have a control *within* the same religion and then use other religions as placebos makes the parallel assumption less of a concern. Additionally, I also use a fixed effect approach given the panel structure of the data, which is difficult to obtain regularly in these kind of studies, alleviating furthermore the concern of parallel trends.

More related to education outcomes and violence, Brück, Di Maio and Miaari (2019) study

the effect of the Israeli–Palestinian conflict on various education outcomes for Palestinian high school students in the West Bank during the Second Intifada. They find that the conflict affects negatively their grades and the probability of attending university in the future, with the possible main channels for this results being the conflict-induced deterioration of school infrastructures and the worsening in the student's psychological well-being due to direct exposure to violent events. However, this type of violence could have very different consequences form one such a terrorist attacks. The attacks during the Intifada were more regular and affected the supply of education via infrastructure, whereas the terrorist attacks are infrequent[3]

Finally, Bennett et al. (2015) propose a Becker-style taste discrimination model within a search and wage bargaining setting in which agents have an educational choice to explain the educational gap between migrants and natives. In their model if negative attitudes towards high and low productive immigrants increase, the skill level of immigrants will decrease because of the worst labor outcome perspectives. When only low productivity workers face negative attitudes however, the education can increase for the immigrants. They find that regions in Denmark with more negative attitudes towards immigrants are correlated with a higher probability of staying in high school for immigrants. Although their results are contrary to the suggested results of this chapter, however this could be explain by the nature of a shock such a terrorist attack. If the attack affects initially the attitudes towards both types of Muslims (high and low productivity) then the results could be aligned with the model proposed by the authors.

The rest of the chapter is structured as follows: Section 2 explain the survey of 'Next Steps' in more detail. Section 3 explains the empirical strategy followed and the main specifications. Section 4 presents the results for the education plans and discuss possible mechanism. Section 5 analyzes actual education decisions and Section 6 concludes.

1 Data

The data on the young Muslims is taken from The Longitudinal Study of Young People in England (LSYPE), also known as Next Steps. It is a major panel study of young people containing information of the teenagers and their parents about educational attitudes and family background.

The study began in 2004, when most of its sample of young people were aged between 13

[3]For a general review of the effect of violence in different outcomes see Verwimp, Justino and Brück (2019).

and 14, and up until now it has seven waves (2004-2010) available. From the 15,770 households that started the survey at Wave One (2004), 8,682 households remains at Wave 7 (2010).[4]

A nice characteristic about Next Steps is that deprived schools and minority ethnic group are oversampled. According to the Census data in 2011, 48 percent of the Muslims lived in the 10 percent most deprived zones on England Ali (2015), so the way the panel is constructed helps to have a more representative group of the Muslim community.

I focus on the individuals that defined themselves as Muslims. I define education plans as a dummy of whether the teenager plans to stay in full time education. For this definition, I focused on a question made to all the young persons in the survey at both years 2004 and 2005. The question is as follows:

> When you are 16 and have finished Year 11 at school what do you want to do next...
>
> - ...stay on in full time education, either at the school you are at now or somewhere else
> - ...or leave full time education
> - ...leave ft education but return later (e.g. Gap Year) SPONTANEOUS ONLY
> - Don't know

Year 11 is the last year of compulsory education in England. I group the answers of "don't know" and "leave full time education" to be counted as a 0 for the variable of education plans. I assign a value of 1 if the respondent said she was returning to full time education or if she was planning to take a gap year before returning to full time education.

This variable then should be interpreted as whether the individual is absolutely positive on his intention to continue in full time education after finishing the compulsory years vs being insecure.[5]

Aside from their education plans (whether they plan to continue in full time education after the age of 16), I observed whether they were born in the UK, the education of the main parent and working status.[6] I also focus on household type (whether the teenager lives in a married or cohabiting household or with a single parent).

[4]There was an ethnic boost sample in wave 3 of 352 households.

[5]Results are somewhat stronger if the gap year is counted as a zero, but the interpretation is less clear.

[6]Results do not change if instead of main parents I use information only about the mother (the father have missing information in almost 25 percent of the sample).

Table 1 presents the mean of the variables in the baseline year for the main sample used in the paper. It is divided between those interviewed after the terrorist attack (treatment group) and those interviewed before the terrorist attack (control group).

TABLE 1
DESCRIPTIVE STATISTICS IN 2004-MAIN SAMPLE OF MUSLIMS

	Treatment Group	Control Group	Difference
A. General Information			
Education Plans	0.956	0.931	0.025
Born in the UK	0.832	0.759	0.073**
B. Working Status-Main Parent			
Working Full Time	0.259	0.204	0.055**
Working Part Time	0.097	0.090	0.007
Not Working	0.644	0.706	-0.062**
C. Education Level-Main Parent			
No Qualifications	0.632	0.650	-0.018
Basic	0.050	0.058	-0.008
Intermediate	0.215	0.177	0.038
Advance	0.103	0.115	-0.012
D. Household Type			
Single Parent	0.168	0.225	-0.057**
Married or Cohabiting	0.832	0.775	0.057**
Observations	340	844	

Notes: Treatment group are Muslims that were interviewed after the terrorist attack (August and September of 2005). Control group are Muslims that were interviewed that same year before the attack (April-June). Education Plans is a dummy of whether the teenager plans to stay in full time education (either continuous or after a gap year).

*** p<0.01, ** p<0.05, * p<0.1

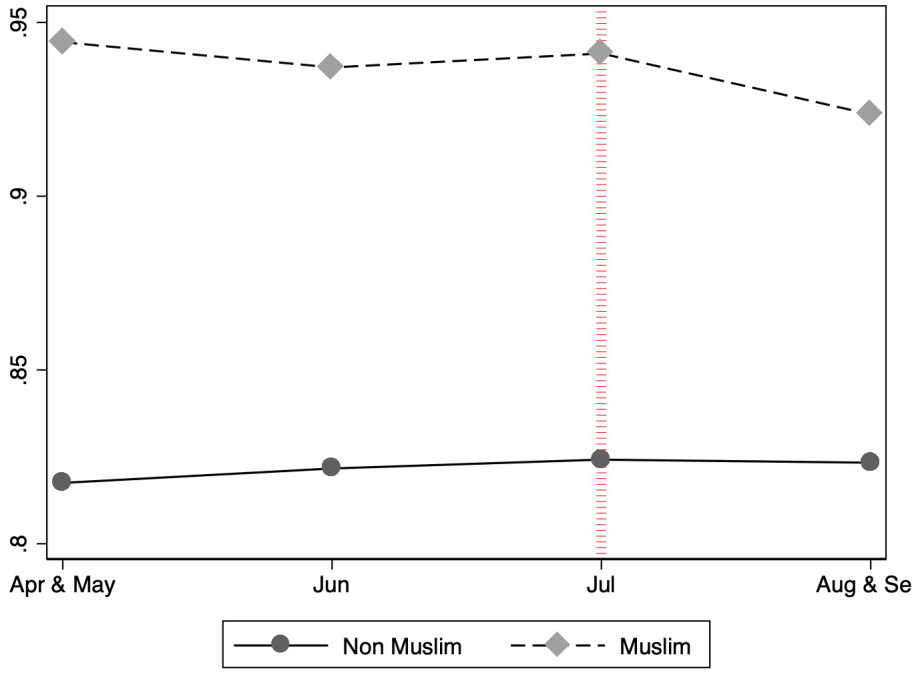
The treatment group has a lower proportion of individuals who were not born in the UK. It also has a larger share of teenagers that have a parent working full time and that live in a married or cohabiting household.

Table 6.1.1 in the Appendix, shows the same variables, but comparing the Muslim population with the non-Muslim one. The Muslims in the sample are on average more positive about their plans of continuing in full time education than the non Muslims.They differ in all the other characteristics from the rest of the population. Fewer Muslims were born in the UK, the

education of their main parent of the Muslims is lower and more of them are not employed. All of these differences signals that using the whole population as a control group for the Muslim community is a hard assumption to make. Although this problem could be address by using a sub-population more similar, the fact that the analysis is within the individuals with the same religion its an improvement to similar studies.

Figure 1, shows the proportion of people that in 2005 planned to continue in full time education by month in 2005. For Muslims, after the attack, there seems to be a decrease in the amount of people that plan to continue in full time education. For the rest of the population in the survey, there is no such a change. Figures 6.1.1 and 6.1.2 in the appendix, presents the distribution of interviewers according to their education plans in 2004 and 2005 by month of interview in 2005. Graphically, they tell a similar story than Figure 1.

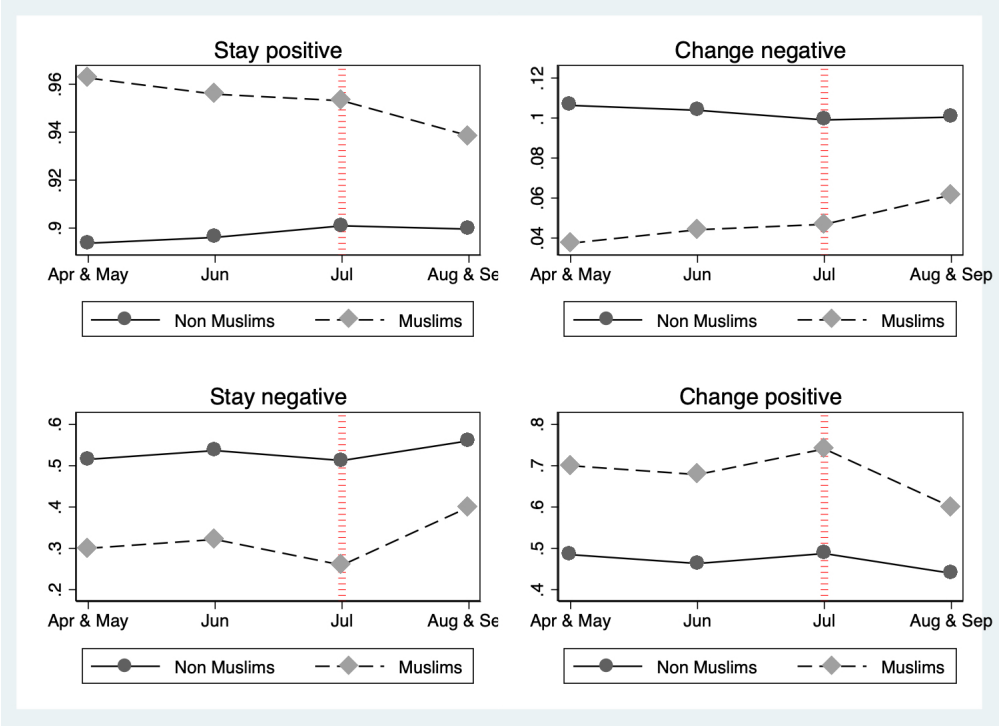
FIGURE 1
PROPORTION OF PEOPLE WITH EDUCATION PLANS =1 BY RELIGION AND MONTH OF INTERVIEW IN 2005



Notes: Education Plans equals 1 if the student expressed the intention of continuing in full time education at the age of 16 years old and 0 otherwise. The solid line is the proportion of non-Muslims in each month with education plans equal to 1 and the dashed line is the case for the Muslim population. The red line in July express the date of the terrorist attack. The months of April and September are stacked with May and August respectively because few Muslims were interviewed on April (26) and September (65).

As Figure 1 exhibit that after the attack, more Muslims express they were unsure about continuing in full time education, Figure 2 condition on the education plans they had in 2004 to study whether the increase in persons being unsure of continuing in full time education comes from people that in 2004 planned to continue studying but after the attack changed their intention (Change negative), or does it comes from an increase of people that expressed in both years they were unsure about their plans to continue studying (Stay negative).

FIGURE 2
DISTRIBUTION OF CHANGE IN EDUCATION PLANS BY MONTH OF INTERVIEW IN 2005-CONDITIONAL ON THE EDUCATION PLANS IN 2004



Note: The upper panel shows distribution of the education plans of Muslims (dashed line) and non-Muslims (solid line) in 2005 by month, conditional of having expressed in 2004 their intention of remaining in full time education at the age of 16. Upper left shows the proportion of people that maintain the same idea in 2005 (Stay positive) and upper right the proportion of people that in 2005 was unsure about continuing in full time education (Change negative). The bottom panel is similar but conditional of having expressed in 2004 being unsure about remaining in full time education at the age of 16. Change negative =1 if they remained unsure in 2005 and Change positive =1 if in 2005 they expressed an intention of continuing in full time education. The red line in July express the date of the terrorist attack. The months of April and September are stacked with May and August respectively because few Muslims were interviewed on April (26) *and September* (65).

Conditional on their answers in 2004, for the Muslims, there seems to be an increase of stu-

dents that changed negatively their education plans (people that in 2004 planned to continue in full time education but in 2005 were not sure anymore) and also, an increase of students that expressed being unsure of their education plans both in 2004 and 2005. For the Non-Muslims again, no clear trend after the attack is revealed. While these graphs present suggestive evidence that the London bombings in July 2005 might have a negative effect on the education plans of the Muslims, I turn to the regression analysis to estimate quantitatively the effect of this attack.

2 Empirical Strategy

2.1 Changes in Education Plans

To see if there was a change on the education plans because of the attack, I divide Muslims between treatment and control groups using as a treatment group precisely those interviewed after July in 2005. The terrorist attack itself is assumed to be unexpected to avoid the problem of endogeneity of the event, which is easier to believe.

The date of the interview in 2005 determines the individual's exposure to the shock introduced by the bombings in London. An individual interviewed after the attacks has, conceptually, a larger set of information to internalize (such as the new environment towards his community) when completing the survey and answering about their future education plans.

FIGURE 3
TREATMENT AND CONTROL GROUPS BY MONTH OF INTERVIEW IN 2005

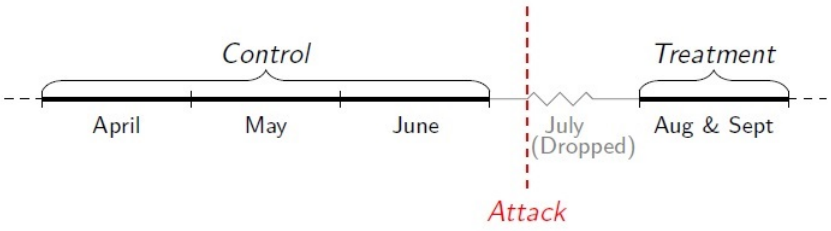


Figure 3 shows the idea explained above. In 2005 there were individuals that were able to rethink their answers in the survey, internalizing the new information after the attacks. If we define the attack as a treatment, these individuals would be the treatment group, and they would be treated only in the year 2005 when the attack actually happen, making 2004 useful as a baseline survey. For the analysis, I don't take in to account the individuals surveyed in July 2005 because I can only distinguished the month of the interview, hence I do not know if

they answered after or before the attack.Results are robust to the inclusion of this month as a treatment group.

Given that the control and treatment group differ in certain baseline characteristics, I use a panel fixed effect approach to identify the effect of the terrorist attack on the education plans of the Muslims.

$$Y_{it} = \beta_1 Year_{2005} + \beta_2 Treated_i * Year_{2005} + X'_{i,2004} * t * \gamma + \lambda_i + \nu_{it} \quad (1)$$

Equation 1 is the main specification for the change in education plans. Y_{it} is a binary indicator that takes value 1 if the individual i at year t plans to continue at full time education after age 16. *Treated* is a dummy indicating assignment to the treatment, $Year_{2005}$ is a dummy with value 1 if the individual was interviewed in 2005, and $X_{i,2004}$ is a vector of individual characteristics at baseline that could affect the plans to keep studying. The controls used are the ones presented in the descriptive statistics in Table 1. The person fixed effect (λ_i) captures all time-invariant unobservables. The baseline characteristics $X_{i,2004}$ are interacted with a trend.

The coefficient of interest is the interaction coefficient β_2 that would capture the effect of answering after the attack. I cluster the standard errors at the school level which was the primary sample unit, but this makes little difference. I also use a difference in difference methodology both in a linear probability model and a probit model as alternative estimations.

$$Y_{it} = \alpha_0 + \alpha_1 Year_{2005} + \alpha_2 Treated_i + \alpha_3 Treated_i * Year_{2005} + X'_{i,2004} * \gamma + u_{it} \quad (2)$$

In Equation 2, the effect of the terrorist attack on education plans would be identified by α_3, either in the case of the probit model or the linear probability model.

One potential concern is the possible effect of the announce of London as the host of the Olympics in 2012. This announce was made one day before the attacks. It could be the news of Olympics might translate into a better expectations in terms of labor opportunities in different sectors. This would increase the outside option of continuing in full time education, making teenagers more likely to change their education plans and drop out full time education. Other concern is about an unobserved fixed characteristic that is correlated with the education plans

and the treatment status (month of interview in 2005) that could drive the results. To address these concerns I propose different placebos:

Effect on other religions: The argument is that after the terrorist attack, the increase in violence was targeted towards the Muslim community, so the most affected students are the ones that identified themselves as Muslims. I estimate Equation 1 separately for every Hindus, Christians, Sikhs and Atheists (as a lack of religion). The effect of the attack should be economically lower and statistically non-significant if the argument in the paper is true. Also, if there was an effect on the education plans of the teenagers because of the announcement of London as host of the Olympics, it is hard to believe that Muslims where affected differently than the other religions.

False treatment- acting like the attack was on June 2005: I also do a second placebo within the Muslim population. From the Control group, I create a false treatment (those who were interviewed in June 2005), and rerun the analysis in Equation 1. Intuitively, if the effect is driven by the actions after the 7/7, then there should be no differential effect in this regression as those interviewed in June and those interviewed in April and May, as both groups are eliciting their education plans in a similar environment.

2.2 Educational Decisions

I start by creating a dummy that takes value 1 if the individual has as a main activity education at age 17. To construct this variable, I used the responses of the individuals on what is precisely their main activity. The available options are Education, Employment, Apprenticeship or Inactive. To avoid seasonality, in the survey it is specified that even if the individual is working on summer, he should respond education if that is his main activity in the rest of the year.

The difference in difference strategy used to determine change in education plans can not be used to assess whether these plans where followed by the Muslim teenagers because of two reasons. First, the information about the main economic activity is cross-sectional, so the time dimension of the panel is lost. Second, the definition of the treatment and control groups was made using the timing of the attack and the timing of the interview in 2005 but that does not mean that the control group was not affected *after* the terrorist attack. In other words the Muslims interviewed before the attack were also exposed to the backslash against their community, so they are no longer a good control group.

For analyzing whether the responses of staying in full time education mattered, I estimate

a probit depending on what was the change in the plans between 2004 and 2005.

$$\begin{aligned} Edu_i = \quad & 1(\alpha_1 + \alpha_2 Change\ negative_i + \alpha_3 Change\ positive_i \\ & + \alpha_4 Stay\ positive_i + X_i'\gamma_2 + \epsilon_i \geq 0) \end{aligned} \tag{3}$$

In Equation 3, the dependent variable Edu_i is a dummy on whether the main activity of the teenager at age 17 is education. $Change\ negative$ takes a value of 1 if initially (2004) the person was planning to stay in full time education but changed her mind in 2005. Similarly, $Stay\ positive$ and $Change\ positive$ take value 1 if she always planned to stay in full time education or if she was not planning to stay in full time education and the next year she changed her mind respectively. $Stay\ negative$ have a value of 1 if the education plans in both years were to leave full time education and is left out as the referenced group in Equation 3.

The idea here is just to compare if the responses of education plans have some predictive power on the actual decisions of the person, for both Muslims and non-Muslims. Although this analysis can not claim causality, is suggestive of the persistence of the responses of the persons in their actual decisions.

3 Results

3.1 Changes in Education Plans

Table 2 reports estimates of Equation 1 in its first three columns. Columns 4 to 7 present the results from Equation 2 in a linear probability model and also a probit. Results are significant and robust to the introduction of controls in each case. Observations are less in Column 3, 5 and 7 because it restricts the sample to the persons that did not move schools (hence we know for a fact they live in the same region). Since this variable of region is only available in 2005 and not in 2004, it is the only way of knowing the individuals have not moved to other region.

TABLE 2
EFFECTS OF THE TERRORIST ATTACK ON EDUCATION PLANS

	Dependent Variable: Education Plans						
	FE			LPM		Probit	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treated				0.026*	0.029**	0.229	0.260*
				(0.014)	(0.014)	(0.140)	(0.144)
$Year_{2005}$	0.009	0.047	0.037	0.009	0.011	0.080	0.092
	(0.010)	(0.031)	(0.029)	(0.010)	(0.011)	(0.085)	(0.087)
Treated*$Year_{2005}$	-0.042**	-0.044**	-0.049**	-0.042**	-0.047**	-0.359**	-0.404**
	(0.019)	(0.019)	(0.020)	(0.019)	(0.019)	(0.162)	(0.166)
Controls	N	N	N	Y	Y	Y	Y
Controls*time trend	N	Y	Y	N	N	N	N
				Average Marginal Effects			
						-0.039**	-0.045**
						(0.019)	(0.018)
Mean of dep. variable	0.937	0.937	0.937	0.937	0.937	0.937	0.937
Observations	2,368	2,368	2,316	2,368	2,316	2,368	2,316
R-squared	0.004	0.012	0.012	0.015	0.016	0.039	0.040
Clusters	302	302	296	302	296	302	296

Notes: Education Plans is a dummy that takes value 1 if the teenager planned to continue in full time education by year 11, independently of taking a gap year or not. Column 3 restricts the sample to non-movers. Controls are baseline characteristics in 2004 presented in table 1: dummies for working status and education level of the main parent, single or cohabiting household, gender and if the individual was born in the UK. Standard errors are clustered at the school level.

*** p<0.01, ** p<0.05, * p<0.1

Our preferred results in Column 2 suggest that, for Muslims teenagers, answering after the attack decreased on average the probability of planning to continue in full time education in around 4.4 percentage points. Since the unconditional mean of the education plans of Muslims in 2004 is 0,937 (only around 6,3% of Muslims did not planned to continue studying in 2004), a decrease of 4,4 percentage points implies a large increase of individuals that were planning to drop out after age 16 or were not sure to continue in full time education at least (69,8% of increase). Results of the linear probability model and average marginal effects found in the probit specification seem to be pretty similar, ranging from 3,9 to 4,7 percentage points.

3.2 Robustness Checks

Placebos: The suggested explanation for the negative change in education plans for Muslims is precisely that after the attacks, the Muslim community suffered a change in environment that no other group experienced. Then, estimating Equation **??** for other group that is not Muslim should indicate zero effect of the terrorist attack.

Also the timing of the interview should not have any effect aside from the events in July. Therefore, the change in plans for the Muslims interviewed in April and May vs the change in plans for the Muslims interviewed in June should not differ significantly.

Table 3 presents evidence on the two placebos. The results are insignificant for both, which reassure that the effect is mainly for Muslim teenagers that were interviewed after the terrorist attack.

TABLE 3
PLACEBO TEST

Dependent Variable: Education Plans				
	FE	LPM	Probit	
	(1)	(2)	(3)	Observations
No religion	-0.031	-0.032	-0.112	5844
	(0.021)	(0.021)	(0.072)	
Christian	0.004	0.005	0.025	8760
	(0.015)	(0.015)	(0.070)	
Hindu	0.004	-0.002	-0.484	574
	(0.030)	(0.030)	(0.515)	
Sikh	-0.068	-0.072	-0.525*	496
	(0.044)	(0.047)	(0.285)	
Other	0.115	0.127	0.594	210
	(0.120)	(0.123)	(0.627)	
False-Treatment	-0.010	-0.009	-0.072	1688
	(0.020)	(0.020)	(0.159)	
Controls	N	Y	Y	
Controls*time trend	Y	N	N	

Notes: The coefficients presented is the interaction between treatment. Education Plans is a dummy that takes value 1 if the teenager planned to continue in full time education by year 11, independently of taking a gap year or not. Controls are baseline characteristics in 2004 presented in table 1: dummies for working status and education level of the main parent, single or cohabiting household, gender and if the individual was born in the UK. Standard errors are clustered at the school level.

*** p<0.01, ** p<0.05, * p<0.1

Not only the results are statistically insignificant, in the case of Christians and Hindu and other religions, the effect is even of a different sign than the one implied for the Muslim community.

There seems to be however a negative and slightly significant effect for the Sikhs, in the probit specification. This effect might a response to religious ignorance. Several reports of attacks to the gurdwara (a Sikh temple) were registered and exposed on the news after the terrorist attack. Referring to this situation, Sikh spokeswoman Mejindarpal Kaur said in July 2005:

"We are a community that gets targeted because of the way we look and because our people wear turbans.[7]

If this sentiment was general among the Sikhs, it could explain why the effect is similar in magnitude and almost significant or significant at the 10% level. However this is suggestive as results are not significant in the fixed effect model and the linear probability model.

The false treatment shows that there is no statistical difference between those Muslims interviewed in April and May and those interview on June. The coefficient in each specification is highly non significant and the magnitude is of the order of 4 times lower than the main results.

3.3 Heterogeneity analysis

I explore if the effects found in the main regression differ on gender or in being born in the UK or not. The first dimension is important as Hole and Ratcliffe (2020). show a decrease in the self-reported happiness for the Muslims adolescents after the terrorist attack of London, which could be a mechanism to explain why their education plans change negatively after the attack. Their results are driven by Muslim teenage girls, so the gender dimension might be important. In addition to this, Zorlu and Frijters (2019) find a temporal decline of happiness in the Muslim population after 9/11, however this decline seems more persistent on Muslims migrants coming from the Middle East. Not being born in the UK and being Muslim might difficult the social integration of this group, potentially making the effects of the terrorist attacks more salient to this group.

[7]Quote from: "Sikh meet police after the attacks" *BBC News*, 12 Jul. 2005. http://news.bbc.co.uk/2/hi/uk_news/4674883.stm

TABLE 4
HETEROGENEITY OF THE EFFECTS - FIXED EFFECTS

	Dependent Variable: Education Plans				
	Baseline	Male	Female	Born UK	Not born UK
	(1)	(2)	(3)	(4)	(5)
$Year_{2005}$	0.047	-0.037	0.026	0.060	-0.004
	(0.031)	(0.035)	(0.046)	(0.039)	(0.045)
Treated*$Year_{2005}$	-0.044**	-0.047	-0.041*	-0.037*	-0.086**
	(0.019)	(0.029)	(0.024)	(0.022)	(0.043)
Controls*time trend	Y	Y	Y	Y	Y
Mean of dep. variable	0.937	0.931	0.943	0.933	0.950
Observations	2,368	1,156	1,212	1,848	520
R-squared	0.012	0.028	0.010	0.007	0.071
Clusters	302	209	210	260	145

Notes: Education Plans is a dummy that takes value 1 if the teenager planned to continue in full time education by year 11, independently of taking a gap year or not. Controls are baseline characteristics in 2004 presented in table 1: dummies for working status and education level of the main parent, single or cohabiting household, gender and if the individual was born in the UK. Standard errors are clustered at the school level.

*** p<0.01, ** p<0.05, * p<0.1

Table 4 present the estimates of 1 for the baseline population and the different groups individually. Results are similar if a linear probability model or a probit model is used. The findings seem to be in line with Hole and Ratcliffe (2020) in the sense that female estimates are the ones to be found significant but in reality not much difference is found between males and females. Estimates for both groups do not vary much in magnitude and although female estimates are the one that are statistically significant at a 10% level, male estimates are very close to being significant at that level.

The estimates are also in line with the results in Zorlu and Frijters (2019). The negative effect of the terrorist attack on education plans seems to be larger on the population of Muslims not born in the UK, as they seem to have a more persistent decrease of happiness and might struggle more with the negative backlash towards their community.

In addition to the decrease in well-being being a mechanism for the change in whether to

stay at full time education or not, another potential channel for the change in education plans is the expectations of a more difficult job market in the future, as suggested by Bennett et al. (2015). Indeed Hole and Ratcliffe (2020) did find an increase the expectations of discrimination in the workplace after the university for Muslims after the attack. This could explain the results as more difficulty in getting a job after university would discourage individuals to make the effort and continuing in full time education.

4 Results on Education Decisions

Table 5 studies whether the answers in 2004 and 2005 actually mattered foe the education decisions at age 17. For the non-Muslim community, the order of magnitudes and signs makes sense. The probability of being in education is the lowest if in both 2004 and 2005 the individual stated plans of not continuing in full time education. The probability starts to increase if at least in 2004 the plan was to continue in full time education, it increases more if the "positive" education plans were at 2005 and finally is the highest if in both years the education plans were positive.

TABLE 5
PROBIT-EDUCATION DECISIONS

Dependent Variable: Education Decisions in 2007						
	Non-Muslims			Muslims		
	(1)	(2)	(3)	(4)	(5)	(6)
Change negative	0.253***	0.206**	0.203**	-0.162	-0.189	-0.145
	(0.083)	(0.084)	(0.087)	(0.381)	(0.386)	(0.388)
Change positive	0.483***	0.437***	0.427***	-0.000	-0.031	-0.060
	(0.083)	(0.083)	(0.084)	(0.364)	(0.372)	(0.370)
Stay positive	1.264***	1.136***	1.137***	0.642**	0.575*	0.593**
	(0.063)	(0.066)	(0.068)	(0.298)	(0.303)	(0.302)
Controls	N	Y	Y	N	Y	Y
Mean of dep. variable	0.676	0.676	0.681	0.837	0.837	0.841
Observations	6,371	6,371	6,193	898	898	883
R-squared	0.0957	0.120	0.117	0.0278	0.0571	0.0563
Clusters	640	640	631	275	275	270

Notes: Education Decisions is a dummy that takes value 1 if the teenager at age 17 have as a mani activity education. Controls are baseline characteristics in 2004 presented in table 1: dummies for working status and education level of the main parent, single or cohabiting household, gender and if the individual was born in the UK. Standard errors are clustered at the school level.

*** p<0.01, ** p<0.05, * p<0.1

For the Muslim community the picture is not so clear. The only coefficient that is statistically different from 0 is $Stay\ positive$, however the magnitude is half of the non-Muslim community. The coefficients of $Change\ negative$ and $Change\ positive$ are very similar to themselves and to the ones of $Stay\ negative$. Because of this, it is very difficult to interpret the results aside for the fact that the answers from the education plans predict less the actual plans for the Muslim community.

This could be interpreted as a positive sign that after more than one year after the attacks, when Muslims had to make their choice of staying or not in full time education, they readjusted their economic perspectives and did not put as much weight in their past responses as the non-Muslims, as many of them were answering in the heat of the moment. This behavior would

be in line with the results of Zorlu and Frijters (2019) as the decrease in happiness was only temporarily.

Also, the response of the police and the government of the United Kingdom, condemning any reprisal against the Muslim community (Winkler (2005)) might have helped to impede the initial negative effect in education plans to be translated in actual education decisions. As stated by Kielinger and Paterson (2013) when studying the hate crimes in London after the terrorist attack of 2005, in London, the patterns of incidents reverted to previous levels, three months after the attack. These patterns can be seen in Figures 6.2.1 and 6.2.2 in the appendix.

However for this claim to be possible, one dimension to take into account is the dropout rates. Around 20% of the non-Muslim teenagers are not present in the wave 4, when education decisions are being recorded.

Table 6
Percentage Out of the Survey by 2007

Change in Education Plans	Muslim	Non-Muslim	Difference
Stay Negative	0.250	0.285	-0.035
Change Negative	0.365	0.272	0.094
Change Positive	0.265	0.253	0.013
Stay Positive	0.234	0.172	0.062***

Notes: Mean of Muslim and Non-Muslim teenagers out of the survey by 2007. The last column is the difference between the mean of both groups.

*** p<0.01, ** p<0.05, * p<0.1

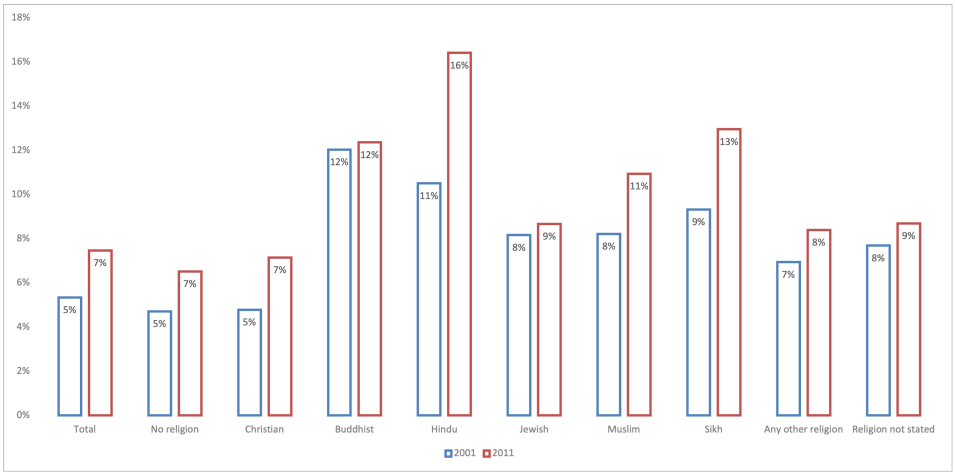
Table 6 presents the proportion of individuals Muslim and non-Muslim out of the survey according to their responses on education plans. It also shows the difference in means between both groups in each category.

The attrition rate of the Muslim is higher in the group that stayed positive in continuing in full time education in both years. A probit on the probability of being out of the survey on the characteristics reveals that is less likely to dropout of the survey the higher the education of the parents, if the individual was born in the UK and if the parent is working whether part time or full time. Since these characteristics are associated with a higher probability of being in education for the Muslim teenagers (with the exception of being born in the UK), then the drop out rate is important. If the ones who are dropping out are the ones that are not staying in full time education then the coefficients for the Muslims in Table 5 can be biased downwards

as the pool of stayers in the Muslim is more selected than in the non-Muslim group.

To further analyze if the terrorist attacks had an effect on the Muslims teenagers continuing in full time education, Figure 4 presents the percentage of people age 19 to 21 that obtained a qualification level 4 or above according to the Official National Statistics in the UK by religion in 2000 and 2011. Usually, level 4 or above qualifications are obtained by continuing in full time education. It is important to note that age 19 to 21 in 2011 are the ones that in 2005 were 13 to 15 years old, precisely the population that was deciding at that time whether to stay or not in further education. If the negative effect on education plans was translated in less Muslims continuing in full time education by the age of 16, then the change in the proportion of people with these qualifications from 2000 to 2011 might be significantly lower for Muslims, compared to other religions. However, this hypothesis is not supported by the figure, suggesting that the change in plans of staying in full time education because of the terrorist attack might has been temporal.

FIGURE 4
PERCENTAGE OF PERSONS AGE 19 TO 21 WITH QUALIFICATION OF LEVEL 4 OR MORE IN THE UK



Note: Regarding what is considering level 4 and above, the Office for National Statistics deine it as : Degree (for example BA, BSc), Higher Degree (for example MA, PhD, PGCE), NVQ Level 4-5, HNC, HND, RSA Higher Diploma, BTEC Higher level, Foundation degree (NI), Professional qualifications (for example teaching, nursing, accountancy)

Source: Office for National Statistics

More research however is needed in this area. Although it seems the terrorist attack did not affect the continuation of Muslims into full time education in the extensive margin, it might have affected the education and career paths of this groups. Carlana, La Ferrara and Pinotti

(2022) for example, find that migrants in Italy enroll on average in more vocational high schools than natives of similar ability that choose more technical or academic oriented high schools. They find that tutoring and career counseling can increase the number of migrants enrolling on high skills track high schools. One potential avenue for further research would be to study this education choices for the Muslim teenagers after the terrorist attack. It is possible to merge the Next Steps survey with the National Pupil Database via request to the UK Department of Education. In this way, the grades and education achievements of the respondents could be explore, plus the choice of subjects that the individual made and the type of education chosen. This could further the analysis of whether the attack had an effect on the actual education of the Muslims aside from their education plans.

5 Conclusions

The study main objective is to see the reaction of the young Muslims to the terrorist acts in London. Specifically, to see if there was an effect on the plans of education of these individuals and if this effect was persistent enough to affect educational choices.

Results indicate that there was indeed a negative effect on the education plans of the Muslims because of the terrorist attack. This effect is not present consistently in any other religious group. Also it seems that the effect of changes in expectations is also not driven by the announce of the Olympic Games in London, or any other individual characteristic.

Even if there was a negative change in education plans, evidence is inconclusive as to whether these plans affected or not actual education outcomes for the Muslims. One potential explanation would be that in the heat of the moment, Muslim teenagers reacted more negative towards education after the attack but later had time to really think about it, making their answers of plans less credible or less binding. This could be due to the efforts of the police and government of the UK to avoid an increasing violence and prejudice towards Muslims because of the terror acts,[8] or even because the economic pay-offs of studying more provided sufficient incentives to overcome the effect of the attack as explained by Becker and Rubinstein (2011). Evidence suggest this might be the case, as responses of education plans have less predictive power in the actual education decisions for the Muslims than for non-Muslims. Furthermore, looking at official national statistics, the percentage of Muslims age 19 to 21

[8] See "Police vows over revenge attacks" *BBC News*, 12 Jul. 2005. http://news.bbc.co.uk/2/hi/uk_news/4674079.stm

accessing qualifications level 4 or more increased from 2001 to 2011, even more than other religions. However, the greater attrition rate of the Muslim individuals from the survey makes it difficult to arrive to a definitive conclusion.

For further research, it would be ideal to understand if the terrorist attack affected the intensive margin of education decisions, the course taken by the different groups, their grades and career paths. It is also important to understand what determines the persistence of education plans on education decisions, like Carlana, La Ferrara and Pinotti (2022) or if the reaction by the police and government in penalizing violence against the Muslim community helped mitigate a potential negative effect in education outcomes.

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6 Appendix

6.1 Descriptive Statistics-Next Steps

Table 6.1.1
Descriptive Statistics-Main Sample

	Muslim	Non-Muslim	Difference
A. General Information			
Education Plans	0.938	0.824	0.114***
Born in the UK	0.781	0.951	-0.170***
B. Working Status-Main Parent			
Working Full Time	0.220	0.412	-0.192***
Working Part Time	0.092	0.342	-0.250***
C. Education Level-Main Parent			
No Qualifications	0.645	0.169	0.476***
Basic	0.056	0.115	-0.059***
Intermediate	0.188	0.450	-0.263***
Advance	0.112	0.266	-0.154***
D. Household Type			
Single Parent	0.208	0.253	-0.045***
Married or Cohabiting	0.792	0.747	0.045***
Observations	1,181	7,932	

Notes: Education Plans is a dummy of whether the teenager plans to stay in full time education (either continous or after a gap year).

*** p<0.01, ** p<0.05, * p<0.1

FIGURE 6.1.1

DISTRIBUTION OF CHANGE IN EDUCATION PLANS BY MONTH OF INTERVIEW IN 2005-MUSLIMS

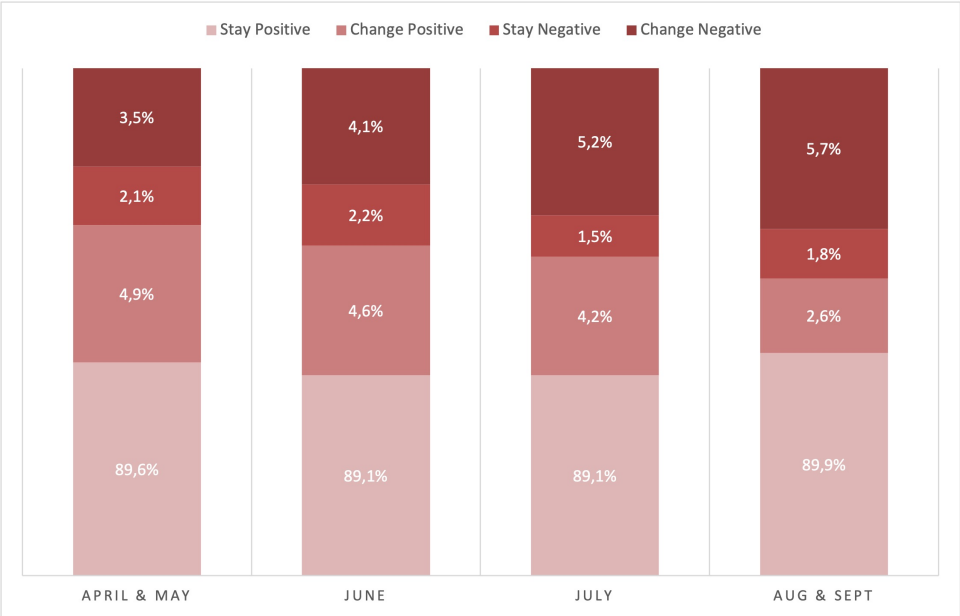
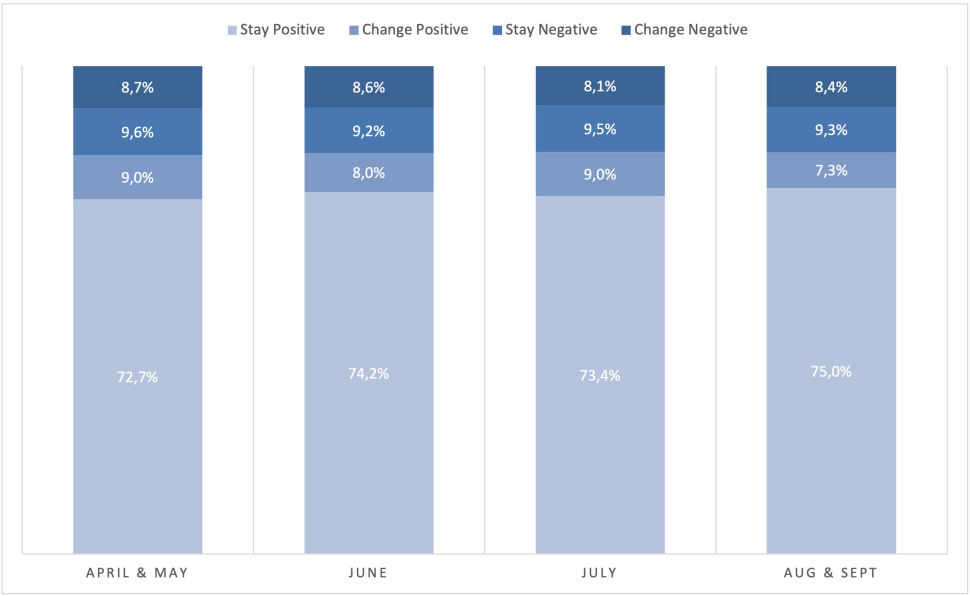


FIGURE 6.1.2

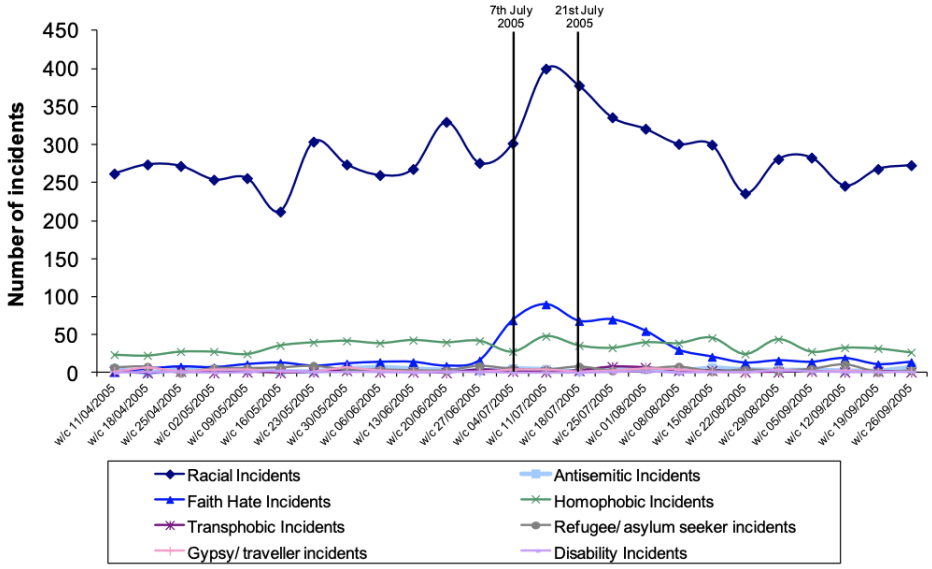
DISTRIBUTION OF CHANGE IN EDUCATION PLANS BY MONTH OF INTERVIEW 2005-NON MUSLIMS



6.2 Figures taken from Kielinger and Paterson (2013)

FIGURE 6.2.1

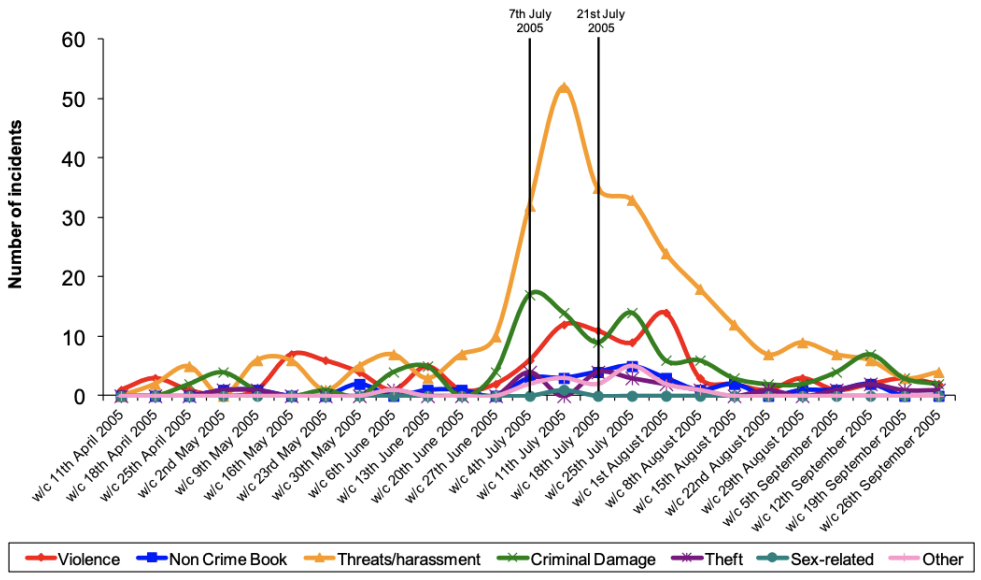
TYPES OF HATE CRIME INCIDENT (11TH APRIL TO 2ND OCT 2005)



(Source: Data extracted from CRIS 27/10/2005)

FIGURE 6.2.2

FAITH INCIDENTS - ALLEGATION GROUPING (11TH APRIL TO 2ND OCT 2005)



(Source: Data extracted from CRIS 27/10/2005)