

Terrorism and the Integration of Muslim Immigrants

Ahmed Elsayed^{1*} and Andries de Grip²

¹ Institute for the Study of Labor (IZA)

² Maastricht University and IZA

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Abstract

We study the effect that a series of fundamentalist-Islamic terrorist attacks in Europe had on the integration of Muslim immigrants in the Netherlands. Using a difference-in-difference approach we show that shortly after the attacks, Muslim immigrants' perceived integration decreased significantly compared to that of non-Muslim immigrants with no evidence for the existence of a negative trend in the integration of Muslims prior to the attacks. Labour market outcomes of Muslims were not negatively affected by the attacks. However, their geographic segregation increased significantly. We show that while low-skilled Muslims became particularly more geographically segregated, it is the high-skilled Muslims whose perceived integration is affected most negatively due to the attacks. The latter could be explained by their higher expectations on integrating in the host country, whereas the increase in geographic segregation of low-skilled Muslims might have been a buffer that mitigated the effect of terrorism on their perceived integration. We finally show that low perceived integration is associated with the intention to permanently re-migrate to the country of origin.

Keywords: Terrorism, integration, Muslim immigrants

JEL Classification: F22, J15, R23, Z13

*Corresponding author at: Institute for the Study of Labor (IZA), Schaumburg-Lippe-Strasse 5-9, 53113 Bonn, Germany. Phone: +49 (228) 3894-161; Fax: +49 (228) 3894-510; E-Mail: elsayed@iza.org

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1. Introduction

An emerging body of economic literature deals with the impact of fundamentalist Islamic terrorism on the different outcomes of Muslim immigrants (e.g. Cornelissen and Jirjahn 2012; Gautier et al. 2009; Goel 2010; Hanes and Machin 2014; Johnstan and Lordan 2011; Kaushal et al. 2007; Shannon 2012). The literature shows increasing discrimination against Muslims as a result of terrorism (Gautier et al. 2009; Goel 2010; Hanes and Machin 2014), as well as negative impacts of this discrimination on Muslim immigrants' health (Johnston and Lordan 2011) and labour market outcomes (Dávila and Mora 2005; Kaushal et al. 2007).¹ However, there are few studies on the impact of fundamentalist Islamic terrorist attacks on the integration of Muslim immigrants in Western societies.

This paper assesses the relationship between terrorism and the integration of Muslim immigrants, using subjective measures of integration. The paper investigates to what extent these subjective measures of integration could reveal more than objective measures such as labour market outcomes and geographic segregation, which are affected by various other determinants. For this purpose, we follow people before and after terrorist attacks using a unique panel dataset that oversampled immigrants in the Netherlands, with detailed information on their attitudes and feelings towards their host country. The dataset consists of two waves. The first wave was collected during the years 2002–2003, while the second wave was collected over the period 2006–2007. Between the two waves, Western Europe witnessed the first and most violent wave of Islamist terrorism since September 11, 2001 (Bakker 2006). This began with the Madrid bombings on the 11th of March 2004, which were shown to have been directed by an Al Qaeda-affiliated group, killing 191 people and injuring 1,841.² The

¹ The effects of terrorism on Muslim immigrants' labour market outcomes in the literature are, however, not clear-cut. While some studies find that terrorism negatively affects the labour market outcomes of Muslim immigrants (e.g. Dávila and Mora 2005; Kaushal et al. 2007), other studies find little or no evidence (e.g. Åslund and Rooth 2005; Braakmann 2010; Shannon 2012). Others find negative effects for particular groups of Muslims, such as the young (Rabby and Rodgers 2009, 2010) and low skilled (Cornelissen and Jirjahn 2012).

² See <http://news.bbc.co.uk/2/shared/spl/hi/guides/457000/457031/html>.

wave ended with the London bombings on the 7th of July 2005, which were committed by four Islamist suicide bombers, raised in the United Kingdom, leaving 52 people dead, as well as the four bombers, with over 700 injured.³

In this period, the Netherlands was also heavily affected by this wave of radical Islamic terrorism when Theo van Gogh, a famous Dutch film director, TV interviewer, and writer, was murdered on the 2nd of November 2004 by a young man of Moroccan origin who had recently converted to radical Islam.⁴ This attack received enormous media attention and triggered nationwide outrage against Muslims (Gautier et al. 2009). In the weeks following the murder, there were several attacks on mosques and other Islamic institutions in the Netherlands (Gautier et al. 2009). The survey *Leefsituatie Allochtone Stedelingen* collected data on city dwellers of various ethnic minorities in the Netherlands directly after the murder of Theo van Gogh and asked their opinions on the murder's influence on the relationship between Muslims and non-Muslims. The great majority of the respondents, both native and foreign, reported that the murder had affected this relationship, and 20% of the respondents of Moroccan origin and 13% of the respondents of Turkish origin reported that their lives, as well as those of their families, had been affected by the murder (Gijsberts 2005).

We analyse changes in Muslim immigrants' integration in the Netherlands relative to those for non-Muslim immigrants before and after the attacks, using subjective measures of integration for the same individuals.⁵ We find that Muslim immigrants' integration into Dutch society declined much more than that of non-Muslim immigrants following the terrorist

³ Detailed coverage of the 2005 London attacks can be found at the BBC website at http://news.bbc.co.uk/2/hi/in_depth/uk/2005/london_explosions/default.stm.

⁴ With the exception of some terrorist conspiracies and threats, there were no high-profile terrorist attacks in Europe from 11 September 2001 to 10 March 2004 (Nesser 2008). According to the Global Terrorism Database (2012), the three attacks listed above were the most significant Islamic terrorism attacks in Europe. For extensive details on fundamentalist Islamic terrorism in Europe over this period, see Bakker (2006, pp. 3–4).

⁵ Traditional measures of integration (e.g. language use, importance of religion, attitudes towards intra-marriage) were not available in the two waves of data. However, given that the social integration process of foreign minorities can take generations, assessing changes in immigrants' integration over a short period of time would be difficult using these traditional measures of integration. Our measures represent the basis of the integration process and could therefore capture immigrants' integration potential. Georgiadis and Manning (2013) show that immigrants who are treated with respect and feel tolerated by natives are more likely to identify with the host country.

attacks. This pattern is robust to the inclusion of a large set of controls, such as socio-demographics, employment status, share of the respondent's ethnic group in the municipality, and length of stay in the Netherlands. The pattern is also robust after controlling for selection bias. Since our data consist of only two waves, it is difficult to attribute the decline in the integration pattern of Muslims solely to discrimination associated with terrorism. Other factors might affect the speed at which different immigrant groups integrate. To check this possibility, we exploit the relatively long timeframe during which the data were collected in the first wave and use the timing of interviews to estimate whether a declining trend in the integration of Muslims, relative to non-Muslims, is already observed prior to the terrorist attacks. This analysis shows no evidence of a decline in Muslim immigrants' integration before the terrorist attacks, suggesting that it was the terrorist attacks that caused the change in the integration pattern of Muslim immigrants in the Netherlands.⁶

To show the relevance of subjective measures in assessing the effect of terrorist attacks on the level of immigrant integration, we also estimate the effect of terrorist attacks on objective measures of immigrant integration: the labour market outcomes and geographic segregation of Muslim immigrants. Similar to other studies that find no strong evidence of negative labour market outcomes due to terrorism (e.g. Åslund and Rooth 2005; Braakmann 2010; Shannon 2012), we find that neither unemployment nor working hours are negatively affected by the attacks. However, we find that the geographic concentration of Muslim immigrants increased after the attacks. The latter is in line with the findings of Gautier et al. (2009) that housing prices in Amsterdam declined in neighbourhoods with a large share of

⁶ This, however, does not exclude the possibility that other events which took place between the two waves of the panel could have affected the strong decline in the integration of Muslims. Two major events could have played a role in this respect. First, in September 2004, Member of Parliament Geert Wilders formed a new political party – the *Partij Voor de Vrijheid* (PVV), or Party for Freedom – with strong opinions against Muslim immigrants. Second, in March 2006, a new immigration law was introduced with stricter requirements for immigrants coming into the country with the purpose of family reunification/formation, including a civic integration exam in Dutch. Given the data, we cannot disentangle the negative impact of the terrorist attacks from the impact of these two events. However, both events can clearly be placed in the context of the changing cultural climate against Muslim immigrants in the Netherlands.

Muslim immigrants after the murder of Theo van Gogh.⁷ Our analyses on the heterogeneous effects of the terrorist attacks show that low-educated Muslims are affected slightly more negatively in terms of labour market outcomes and get more geographically segregated, while highly educated (as well as employed, language proficient, and less religious) Muslims are affected most negatively with respect to their perceived integration. Moreover, we find that perceived integration is negatively associated with migrants' intention to return to their native country. This emphasizes the economic relevance of perceived integration of migrants as it is the most productive immigrants who perceive the strongest decline in integration.

The remainder of the paper is organized as follows. Section 2 discusses the literature. Section 3 describes the data and variables used in the paper. Section 4 explains the empirical strategy, reports the results of the data analyses, and describes the robustness checks. Finally, Section 5 summarises the findings and concludes the paper.

2. Related studies

2.1. Terrorism and discrimination

The economic literature identifies two major types of discrimination: taste-based discrimination (Becker 1957) and statistical discrimination (Arrow 1973; Phelps 1972). Becker's theory of taste-based discrimination provides a plausible framework for our analysis. If members of the majority group are prejudiced against a minority group, the former will prefer not to interact with the latter (Cornelissen and Jirjahn 2012). Hence, as a consequence of the terrorist attacks, locals might have developed a (greater) distaste for Muslims, one that induces them to reduce their interaction with Muslims, ignore them, or commit hate crimes against them in the extreme case. This distaste increases the level of perceived discrimination by Muslim immigrants and decreases their integration within the host country. The concept of

⁷ Opposed to Gautier et al. (2009) who studied the effect of terrorism on Muslim immigrants at the neighbourhood level, we show changes in geographic segregation of Muslims using data at the individual level. One advantage of our approach is the ability to study heterogeneous treatment effects of the impact of terrorism on Muslim immigrants.

taste-based discrimination is closely related to in-group preference. Shayo and Zussman (2011) find evidence for this in-group preference bias by showing that Palestinian terrorist attacks in Israel have a significant impact on judicial in-group bias in small claims courts, where the assignment of a case to an Arab or Jewish judge is random.

Recent studies exploit exogenous shifts in natives' ethnic preferences to study taste-based discrimination. Moser (2012) uses data from opera programs, census records on first names, and food purchases in the United States to show that World War I created a preference shock against German Americans. The author uses this shock to ethnic preferences to identify the effects of taste-based discrimination in the application for seats on the New York Stock Exchange: The war more than doubled the probability that German applicants would be rejected relative to Anglo-Saxons. In a similar vein, Michaels and Zhi (2010) find that deterioration in the attitudes of Americans towards the French in 2002–2003 due to different stances on the war on Iraq had a significantly negative effect on the trade volume between the two countries.

Guryan and Charles (2013) show that loss of trust could be a “root cause” of discrimination. This loss of trust could explain the change in perceptions of the native population towards Muslims. Due to the salience of terrorist attacks, terrorism could have negatively affected mutual trust between natives and Muslim immigrants and therefore increased the perceived discrimination of Muslims; that is, the natives' perception that Muslim immigrants are dangerous and the Muslims' perception that natives are prejudiced against them could have been enhanced by the terrorist attacks.⁸

⁸ In this case, statistical discrimination could be an additional mechanism to explain the change in attitudes towards Muslims.

2.2. Impact of terrorism on Muslim immigrants

The exogeneity of terrorism has been exploited in the literature to study the impact of fundamentalist Islamic terrorist attacks on Muslim immigrants. For example, Kaushal et al. (2007) study the impact of September 11 on the labour market outcomes of Muslims in the United States and show that it was associated with a temporary 9–11% decline in earnings, though it did not significantly affect the employment and hours worked of Arab and Muslim men. However, Rabby and Rodgers (2009) find that the employment–population ratios and hours worked of young Muslim men in particular decreased significantly in the United States after September 11. Cornelissen and Jirjahn (2012) show that September 11 negatively affected the earnings of low-skilled Muslim workers in Germany, especially those employed in small and medium-sized firms. However, other studies do not find any impact of terrorism on the labour market outcomes of Muslims in Sweden (Åslund and Rooth 2005) or Canada (Shannon 2012). In the United Kingdom, the pattern is less clear-cut. While Braakmann (2010) finds no evidence of negative labour market outcomes for Muslims after September 11 and the July bombings, Rabby and Rodgers (2010) find a decrease in the employment of young Muslim men relative to non-Muslim immigrants after the July bombings and a weak association between September 11 and the employment of Muslim immigrants.

The impact of terrorism on the health outcomes of Muslim immigrants has also been investigated. Johnston and Lordan (2011) find evidence of increased blood pressure, cholesterol levels, BMI, and self-assessed general health for Muslims relative to non-Muslims as a result of September 11. The underlying mechanism described in these studies is increased discrimination against Muslims due to the anger caused by terrorism. Gautier et al. (2009) show strong evidence of this discrimination by documenting a decline in housing prices in Amsterdam neighbourhoods with a large share of Turks and Moroccans following the

assassination of Theo van Gogh.⁹ Furthermore, hate crimes against Asians and Arabs increased immediately in England after September 11 and the July bombings (Hanes and Machin 2014). The impact that large-scale fundamentalist Islamic terrorist attacks have on discrimination is not limited to the country in which the attacks take place. For example, Schüller (2012) shows that September 11 resulted in a significant increase in negative attitudes towards immigration and decreased concerns over xenophobic hostility among the native German population.

While the integration of Muslim immigrants into Western societies has started to receive considerable attention in the economic literature (e.g. Arai et al. 2011; Battu and Zenou 2010; Bisin et al. 2008, 2011; Georgiadis and Manning 2011, 2013; Manning and Roy 2010), no studies have used a panel structure to estimate changes in the integration of Muslim immigrants over time and account for unobserved heterogeneity. Goel (2010) estimates changes in perceptions of discrimination among Muslims following September 11. The author uses a set of interviews conducted before and after September 11 to estimate how Muslim-looking immigrants to Australia perceive intolerance relative to other immigrants. She finds that Muslim-looking immigrants report higher intolerance and discrimination than other immigrants.¹⁰ Gould and Klor (2015) exploit variations across U.S. states in the number of hate crimes against Muslims in the wake of September 11 and show that September 11 had long-term effects on intermarriage, fertility, female labour force participation, and English proficiency among Muslim immigrants. The authors argue that a major goal of terrorist attacks is to induce a backlash against Muslim immigrants to radicalize moderate supporters who live in the same country as the perpetrators. In addition to this strategic objective for

⁹ More general geographical implications of terrorism have been addressed by Gleaser and Shapiro (2002), who study the impact of terrorism on “urban form” and find a positive but weak effect of terrorism on cities such as Jerusalem and London.

¹⁰ Goel’s (2010) results are based on a cross section of recently arrived immigrants (the second wave of a longitudinal survey of immigrants to Australia), making it difficult to account for unobserved immigrant heterogeneity. In addition, the measures used in that study are limited to binary perceptions of intolerance and discrimination in Australia. Our study differs in that it goes one step further, beyond perceptions of fair/unfair treatment, and assesses changes in immigrants’ feeling at ease with natives and attitudes towards living in the host country.

terrorism, the literature discusses several other political objectives such as changing standpoints of governments (Kydd and Walter 2006), or switching political attitudes of locals leftwards (Gould and Klor 2010), in addition to economic objectives such as causing large movements of capital across countries (Abadie and Gardeazabal 2008).

2.3. Subjective versus objective measures of integration

Labour market outcomes could provide objective measures for the integration of immigrants in host countries; however, they fail to measure discrimination in the highly regulated European markets (Åslund and Rooth 2005; Cornelissen and Jirjahn 2012). Furthermore, immigrants generally participate in networks of the same ethnic minority. Participation in these networks is usually associated with positive labour outcomes. Dustmann et al. (2009) show evidence of the existence and productivity of referral-based job search networks of ethnic minority workers. Casey and Dustmann (2010) show that immigrants who actively participate in ethnic networks are more likely to find jobs through informal referrals. This suggests that the identification of immigrants with their home country, as opposed to the host country, is positively associated with labour market outcomes. Countervailing mechanisms could explain why, overall, evidence of the impact of terrorism on the labour market outcomes of Muslims is mixed.

The geographic segregation of migrant groups provides another objective measure of integration. The dislike of Muslims due to terrorist attacks could make natives move out of municipalities with high concentrations of Muslims, while Muslims could be more eager to move to such areas to obtain social support from being in a community of the same ethnic or religious background. Both scenarios will lead to higher levels of segregation of Muslim immigrants.

Subjective measures of integration could potentially reveal more than objective outcomes. The perceived discrimination of Muslim immigrants could increase due to the

terrorist attacks, even if they are not personally affected by this discrimination in objective (direct) ways. The rise in hate crimes against Muslims in the wake of the terrorist attacks could be a basis for increased perceived discrimination (Johnston and Lordan 2012). In addition, everyday discriminatory experiences (which arguably increase after the terrorist attacks) such as being stopped by the police, verbal attacks, or disrespectful treatment in public particularly increase the likelihood of one's perception of belonging to a discriminated minority (Brüß 2008). Georgiadis and Manning (2013) show that immigrants' feeling of disrespect and intolerance by natives has negative implications on their identifying with the host country.

While the impact of terrorist attacks on objective outcomes is expected to be more pronounced for low-skilled immigrants (Cornelissen and Jirjahn 2012), discrimination is more likely to be perceived by highly skilled immigrants because of their high expectations of integration in the host country. Banerjee (2008) indeed finds that immigrants' perceived discrimination is not related to objective measures of income inequity. She shows that, in workplace settings, long-term immigrants and highly skilled immigrants perceive discrimination more than new immigrants and low-skilled immigrants because of their expectations of equitable treatment. The literature shows that perceived discrimination is negatively associated with both mental (Kessler et al. 1999) and physical health (Johnston and Lordan 2012) and has a negative impact on life satisfaction (Redman and Snape 2006).

3. Data and descriptive statistics

The Netherlands Kinship Panel Study consists of two datasets. The first dataset covers the Dutch native population, while the second oversamples immigrants from the four largest immigrant groups in the Netherlands: Turks, Moroccans, Surinamese, and Dutch Antilleans. The data were collected from 13 Dutch cities in which at least half of the immigrant population lives (Dykstra et al. 2005; 2012). We use data from the second dataset, which

oversamples immigrants. The panel dataset consists of two waves. The first wave was collected between April 2002 and October 2003, while the second was collected between May 2006 and June 2007.¹¹ The dataset contains individual information about religion, age, ethnic group, employment status, marital status, year of immigration, whether or not the individual was born in the Netherlands, and so forth. Furthermore, we include information about the share of the individuals' own ethnic groups in the municipalities in which they live, drawn from Statistics Netherlands.¹²

The dataset also includes information about immigrants' attitudes towards integration. The respondents were asked eight questions on the extent to which they agree with each of the following statements: (1) "In the Netherlands foreigners have excellent opportunities"; (2) "The Dutch are hostile to foreigners"; (3) "In the Netherlands your rights as a foreigner are respected"; (4) "The Dutch are hospitable to foreigners"; (5) "In the Netherlands people are indifferent to foreigners"; (6) "Foreigners are treated fairly in the Netherlands"; (7) "Foreigners face many restrictions in the Netherlands"; and (8) "The Dutch are open to foreign cultures". The answers were given on a five-point scale, ranging from one ('strongly disagree') to five ('strongly agree'). Respondents were also asked about their appreciation of living in the Netherlands – (9) "How do you like living in the Netherlands?" (with answers ranging from one, "very fine", to five, "very annoying") and their social experience with locals – (10) "Do you feel at ease in the company of Dutch people?" (with answers on a four-point scale, with one for "no, not at all", two for "no, not really", three for "yes, a little", and four for "yes, very much so").¹³

¹¹ The long period over which the data were collected is due to the difficulty in reaching the target groups (Dykstra et al. 2005, 2012).

¹² See the Statistics Netherlands website: <http://statline.cbs.nl/StatWeb/>

¹³ The first eight items are used in the sociological literature as a measure of perceived acceptance by the host country (Huijnk et al. 2012). The scale for items (2), (5), (7), and (9) is reversed so that the higher the value, the better the outcome in terms of integration.

Our sample consists of 1,085 observations for which we have full information on all integration attitudes, demographics, and religion.¹⁴ Of this set, 476 observations are for Muslim immigrants (160 in the first wave and 316 in the second wave) and 609 observations are for non-Muslim immigrants (309 in the first wave and 300 in the second wave). For 432 individuals (152 Muslims and 280 non-Muslims), data exist in both waves of the panel.

Table A1 in the Online Appendix provides an overview of the single items of integration, as well as the variables used in the study. The table shows that non-Muslim immigrants score significantly higher than Muslims in most of the integration items. In our sample, 56% of non-Muslims and 46% of Muslims are females. The share of second-generation respondents (i.e. those born in the Netherlands) is small (6% of the Muslims and 8% of the non-Muslims). This low share is due to the fact that the survey only includes individuals who are 18 years or older. Muslims are, on average, less educated than non-Muslims. In addition, they are less likely to have received education abroad or in the Netherlands than non-Muslims. While the majority of Muslims belong to the Turkish and Moroccan ethnic minorities, the majority of non-Muslims belong to the Surinamese and Dutch Antillean ethnic minorities. Geographic concentration in municipalities is higher for Muslim than for non-Muslim immigrants. Non-Muslims are more likely to be employed (63%) than Muslims (46%). In addition, a greater percentage of Muslims in our sample are married and have children.

Figure 1 shows the changes in the level of integration for both Muslim and non-Muslim immigrants between the two waves of the study (the integration items are standardized for ease of comparison). The figure shows that, between the two waves, integration measures declined for both groups. However, the decrease is much more pronounced among Muslims than among non-Muslims. Table A2 in the Online Appendix summarises the changes and

¹⁴ Running the analysis without sample restrictions yields similar results.

shows the difference-in-difference estimates of the integration items. The difference-in-difference coefficients show that the decline was more significant for Muslims than for non-Muslims in five out of the 10 measures of integration, namely, excellent opportunities for foreigners, fair treatment of foreigners in the Netherlands, Netherlands is open to foreign cultures, feeling at ease with Dutch natives, and appreciation of living in the Netherlands.

We use an integration index that is constructed by grouping the 10 individual items.¹⁵ Following Kling et al. (2007), we estimate an index of the equally weighted averages of the z-scores of the 10 items. The z-scores are calculated by subtracting the control group (Non-Muslims) mean and dividing by the control group standard deviation. Therefore, for Non-Muslims in our sample, each item in the index has mean zero and standard deviation one.¹⁶

4. Empirical model and analysis

4.1. Main analysis

To identify the effect of the terrorist attacks in Western Europe on the integration of Muslim immigrants, we estimate the following equation:

$$Y_{it} = \alpha + \beta_1 M_{it} + \beta_2 PA_t + \beta_3 [M_{it} * PA_t] + \beta_4 X_{it} + u_i + \varepsilon_{it}$$

where Y_{it} is the integration level of immigrant i at time t , M is a dummy variable that takes the value one if the respondent is Muslim and the value zero if the respondent is non-Muslim, PA is a dummy variable that takes the value one if the observation is from the second wave of the study (after the terrorist attacks) and equals zero otherwise, the parameter β_3 for the interaction between M and PA is our measure of change in Muslims' integration compared to

¹⁵ This has the advantage of reducing the likelihood of type I error (that the result for any single item is due to chance), as well as type II error (the risk of low statistical power) (Clingsmith et al. 2009).

¹⁶ An alternative approach is to compute the average effect size across items within the integration index, using seemingly unrelated regression for the 10 items to estimate the covariance of the effects and then calculating the mean effect size for the 10 items in a second step (Clingsmith et al. 2009; Kling et al. 2004). Since we use a consistent number of observations across the 10 items of integration and there are no regression adjustments, the two approaches give identical results (Kling et al. 2007). Without a consistent number of observations, the results would remain very similar. The advantage of the average z-score index used in this paper is that it is much simpler to work with, especially when using panel data (Kling et al. 2007).

that of non-Muslims, X_{it} is a set of controls, u_i is an individual fixed effect that we assume to be uncorrelated with the timings of the terrorist attacks, and ε_{it} is a time-varying error term.

We estimate both a fixed effects (FE) and a generalised least squares model with random effects (RE) clustered on personal identification. Table 1 shows the coefficients of the two models¹⁷. Column 1 shows the FE model estimates and Column 2 shows the RE model estimates after controlling for a large set of control variables: ethnic group, gender, dummies for marital status and employment status, whether or not the respondent was born in the Netherlands, length of stay in the Netherlands, length of stay in the Netherlands squared, education level, whether or not the respondent received education abroad, whether or not the respondent received education in the Netherlands, the municipality in which the immigrant lives, the share of the respondent's ethnic minority in the municipality, and the number of children.¹⁸ The table shows that perceived integration of Muslim immigrants in the Netherlands decreased significantly after the terrorist attacks relative to non-Muslim immigrants. This can be seen in the interaction coefficients between *Muslim* and *Post-attacks*, which are negative and statistically significant in the two columns.¹⁹

4.2. Selection bias

We acknowledge the potential for selection bias due to panel attrition in the dataset; out of the 469 respondents for whom we have information on integration and background characteristics in the first wave, only 216 continued to appear in the second wave. It is reasonable to assume

¹⁷ In the regressions, the respondent's age is removed because of potential collinearity with length of stay in the Netherlands. However, adding the variable yields similar results.

¹⁸ Unconditional regressions with no control variable give similar results. In addition to the set of controls included in Table 1, we estimate a model that controls for the partner's birthplace, family income (available only in the first wave), fluency in Dutch, and speaking Dutch when communicating with their children (only available in the second wave). Although the number of observations declines sharply when these variables are included, the results are robust. We also estimate a RE model in which we control for pre-attack levels of all control variables as well as a model that controls for interaction between the survey wave and employment status, marital status, and education level to account for any possible differences between Muslims and non-Muslims in the changes of these variables over time. All these different model specifications yield similar results.

¹⁹ To account for the possibility that the decrease in integration is affected by a different pattern of extreme answers for the integration questions by Muslim and non-Muslim immigrants, we re-estimate the model after removing the extreme answers. The results remain unchanged.

that immigrants absent from the second wave of the sample would have reported lower integration than those who remained. Since Muslims' perceived integration would be affected by the terrorist attacks more than that of other immigrants, Muslims may also have been more likely to drop out of the study (or even leave the country). However, this panel attrition would lead to under-estimation of the decline in the integration of Muslim immigrants, accentuating the actual decrease in the integration pattern of Muslims.²⁰ To account for selection bias into the second wave, we replicate the analysis using a balanced sample made up of respondents for whom we have complete information in the two waves of the study. However, contemporaneous shocks could have affected participation in the second wave of the study. For example, as stated earlier, those most affected by the terrorist events may have been less likely to participate in the second wave of the survey (or may even have left the country). For this reason, even a balanced panel estimate may not truly reflect the actual change in Muslims' integration. To correct for this, we compute a Mills ratio using a selection variable that equals one if the individual is observed in the two waves of the study as our dependent variable in the selection equation. Table A3 in the Online Appendix shows the estimates from the selection equation as a function of all independent variables, as well as a dummy variable that takes the value one if the number of missing items in the respondents' answers to all the questions in the first wave is above the median and zero otherwise.²¹ This variable is used to satisfy the exclusion restriction, which is possible since the likelihood that a respondent will be absent from the second wave should be correlated with the number of questions the respondent did not answer in the first wave. That is, immigrants who answered fewer questions in the first wave should be more likely to drop out in the second wave. However,

²⁰ However, it could also be the case that non-respondents are busier than respondents and therefore do not show up in the second wave. In this case, the direction of the bias is difficult to determine a priori (Heffetz and Rabin 2013).

²¹ The median in the sample is 10 unanswered questions out of 97 asked in the first wave of the questionnaire. We re-estimated the analysis using the actual number of unanswered questions as an alternative to the dummy variable and found similar results.

the number of missing answers should not be correlated with the timing of the terrorist attacks.

Table 2 shows the FE and RE model estimates from the balanced sample after accounting for the inversed Mills ratio and all the other relevant variables. The table shows results similar to those in Table 1. The coefficients of the inversed Mills ratio are not significant. This shows that selection bias does not drive our results. However, this assumes that the number of missing answers in the first wave of the study is the only (substantive) reason for presence in the second wave. To better capture the bias, an ideal experiment would be to randomly assign respondents to participation in the second wave of the study and test whether the estimated impacts (including attrition) are similar in the treatment group (participants) and the control group (non-participants), that is, whether the three-way interaction between a dummy variable for above-median missing answers in the first wave, a dummy variable for being a Muslim, and a dummy variable for the post-attacks is statistically insignificant. Table A4 in the Online Appendix shows that the three-way interaction term is not statistically significant, suggesting that there no evidence of observed selection bias in our analysis.

4.3. Possible trend prior to the terrorist attacks

Since our analysis begins after the September 11 attacks, the effect we find may be biased. As indicated above, some studies show that September 11 was associated with labour market discrimination against certain minority groups and changed attitudes towards immigrants not only in the United States, but also in other Western countries (e.g. Cornelissen and Jirjahn 2012; Goel 2010; Schüller 2012). Since fundamentalist Islamist terrorism affects the integration of Muslim immigrants, it is likely that the perceived integration of Muslim immigrants had already been negatively affected by September 11 before our analysis started. However, the analysis above (Table 1) does not show strong evidence of differences in

integration between Muslims and non-Muslims before the wave of terrorist attacks in which we are interested. Furthermore, even if Muslims are less integrated, this would make our point stronger, since this underestimates our coefficients on the decrease in Muslims' integration.

However, if a pattern of change in Muslim immigrants' integration began before the wave of terrorism of interest (i.e. before March 2004), this would imply that the change in Muslim immigrants' attitudes is not a result of the terrorist attacks but could, instead, be due to endogenous factors that affect the speed of integration differently for Muslim and non-Muslim immigrants. To account for the possibility that the negative trend in the integration pattern of Muslim immigrants pre-dates the terrorist attacks that hit Western Europe, we exploit the timing of interviews during the first wave of the dataset to analyse whether Muslims interviewed late in the first wave are less integrated than those interviewed earlier. If such a pattern is already observed before the terrorist attacks, it would be difficult to attribute the decline in the integration of Muslim immigrants to the terrorist attacks. Since the first wave of the data was collected over quite a long timeframe, a trend could be identified.

Figure 2 shows the trends in the integration of Muslim and non-Muslim immigrants in the two waves of the study. The graph shows that during the first wave of the survey, the integration of Muslims was increasing relative to that of non-Muslims. This suggests no pre-trend in the relative decline in the integration of Muslims.²² The figure also clearly shows a drop in the integration for the two groups of immigrants between the two waves. During the second wave, the integration level of non-Muslims was increasing, which does not hold for Muslim immigrants.

Table A5 in the Online Appendix shows the coefficients for the regression of perceived integration on the times of the interviews, measured in year quarters, in the first

²² A regression of the times of the interviews on all variables of interest shows no significant differences between Muslim and non-Muslim immigrants in the times of the interviews. This suggests that the trend is not driven by a non-random pattern in collecting the data.

wave (Column 1) and the second wave of the study (Column 2). The table shows that, after all relevant information is controlled for, the increasing pattern of integration for Muslims during the first wave as shown in Figure 2 is not significant, while the decreasing pattern of integration for Muslims compared to non-Muslims during the second wave is significant.²³ This shows that the decline in Muslims' integration started in the 2004–2005 period of terrorist attacks.

4.4. Heterogeneous effects

In this subsection, we study whether the attacks had a uniform impact across the entire group of Muslim immigrants or whether the impact varied across subgroups. We examine whether there is any heterogeneity in the decline of integration with respect to the pre-attacks covariates of gender, age, level of education, labour market status, language proficiency, and degree of religiosity. Table 3 shows the results of the FE and RE estimations from Table 1 for split samples by gender (Panel A), age (Panel B), education level (high vs. low education) (Panel C), labour market status (employed vs. unemployed) (Panel D), language proficiency (Panel E), and degree of religiosity (Panel F).²⁴

The table shows that the decrease in the integration of Muslims is more pronounced for males and young, highly educated, employed, fluent, as well as less religious Muslims. These findings show that particularly Muslim immigrants with high potential for integration are affected more negatively. This could be explained in light of their expectations of integration in the host country. These groups of Muslims are more likely to expect to be dealt with similarly to natives (Banerjee 2008). Deviations from this expectation due to perceived discrimination may lead them to feel unintegrated in the host country. Moreover, those who

²³ The same pattern appears when we limit the analysis to individuals who participated in both panel waves.

²⁴ We assess religiosity by the frequency the respondent reports for going to the mosque. We create a dummy variable for being religious that takes the value zero if the person hardly ever goes to the mosque and one if the respondent goes to the mosque frequently. We limit the analysis of this heterogeneity check to Muslims. Therefore, the coefficient for *Post-attacks* will capture the changes for less religious Muslims (Columns 1 and 3) and more religious Muslims (Columns 2 and 4). We also replicated the analysis while limiting the sample to men, because women (even the most religious) are less likely to go to the mosque than men are. The results do not change.

are employed are more likely to encounter harassments and perceive discrimination because they more often interact with natives than those who are not employed, while those who are fluent are more likely to understand any verbal attacks in streets and in the media of the host country and, therefore, are more likely to perceive discrimination. Furthermore, the decrease in integration is more pronounced for less religious Muslims who already have higher potential for integration in the host country compared to more religious Muslims. To check the possibility that selection bias into the second wave of the study could be driving these results, Table A6 in the Online Appendix shows the heterogeneous treatment effects for observations that appeared in the two waves of the study after accounting for the inverted Mills ratio as well as other relevant controls. Despite, the lower number of observations, the estimates are similar to those obtained from the whole sample.

4.5. Objective versus subjective measures of integration

In this subsection, we estimate the effect of the terrorist attacks on the Muslim immigrants' objective outcomes of unemployment, working hours, as well as geographic concentration.²⁵ Table 4 shows the difference-in-difference estimations. Columns 1 and 2 show the RE and FE estimates for unemployment, respectively; Columns 3 and 4 show the RE and FE estimates for working hours, respectively; and Columns 5 and 6 show the RE and FE estimates for geographic concentration of immigrants, respectively. Similar to Åslund and Rooth (2005) and Braakman (2010), the table shows that the labour market outcomes of Muslim immigrants were not negatively affected by the terrorist attacks. As mentioned above, labour market regulations and networking within ethnic minorities are possible explanations for not finding any effect of the terrorist attacks on the labour market outcomes of Muslims (Cornelissen and Jirjahn 2012).²⁶ However, the table shows that the geographic concentration of Muslim immigrants relative to non-Muslim immigrants significantly increased over time.

²⁵ We could not use wages here since our dataset does not contain a consistent measure of labour income across the two waves of the study.

²⁶ Similar patterns appear when we compare the labour market outcomes of Muslim immigrants to those of natives.

The share of people with the same ethnic background increased by about 0.3 (0.2) percentage points for Muslims compared to non-Muslims after the attacks. Table A7 in the Online Appendix shows the heterogeneous treatment effects for labour market outcomes and geographic concentration. The effect of terrorist attacks seems to be more pronounced for low-educated Muslims who witnessed a relative increase in unemployment (significant only at the 10% level) as well as a significant increase in geographic concentration.

The difference in the impact of terrorist attacks on geographic concentration between low-skilled and high-skilled Muslims could be due to the fact that low-educated immigrants who are more often unemployed are less constrained to move than highly educated immigrants who are more likely to be employed. Moreover, low-skilled migrants usually participate in ethnic networks and find jobs through informal referrals (Casey and Dustman 2010; Damm 2009; Edin et al. 2003). This suggests that low-skilled Muslims might compensate the negative effects of terrorist attacks on unemployment by grouping together. Furthermore, the increase in geographic concentration of low-skilled Muslims after the attacks could be a buffer that mitigates the effect of terrorism on their integration as they could obtain social support from being in a community of the same ethnic background. This could explain why low-skilled migrants do not perceive discrimination as much as the highly skilled do.

4.6. Economic relevance of subjective measures of integration

Our findings show that terrorism has a negative effect on perceived integration of Muslim immigrants. To analyse the economic relevance of perceived integration, Table 5 shows the relationship between perceived integration and the intention to permanently return to the native country.²⁷ The table shows that perceived integration is negatively associated with the intention to permanently re-migrate to the country of origin. One standard deviation

²⁷ Respondents in the second wave of the survey were asked “Do you plan to go back to your country of origin for good?” 18% of the respondents answered yes.

decline in perceived integration is associated with a 10% higher probability of intending to permanently leave the country. However, the objective measures of integration – unemployment and geographic concentration – are not significantly related to the intention to re-migrate to the country of origin. This result suggests that this subjective measure of integration may better predict re-migration than objective aspects of integration do.

5. Conclusion

In this paper we use data from the Netherlands that oversample the four largest ethnic minorities in the country (Turks, Moroccans, Surinamese, and Dutch Antilleans) to analyse the integration patterns of Muslim and non-Muslim immigrants before and shortly after a violent wave of Islamist terrorist attacks hit Western Europe. The wave began with the Madrid bombings in March 2004 and extended to the London bombings in July 2005. The assassination of Theo van Gogh in Amsterdam by an Islamic fanatic of Moroccan origin took place in the middle of this wave, triggering nationwide outrage and increasing discrimination against Muslims in the Netherlands (Gautier et al. 2009).

We show that Muslim immigrants' perceived integration declined much more after the terrorist attacks than did that of non-Muslim immigrants. This pattern holds after including a large set of control variables and accounting for selection bias, and is not driven by any existing negative trend in the integration of Muslim immigrants prior to the attacks. Our findings suggest that perceived integration could potentially reveal more than objective measures of integration. We find that unemployment and working hours of Muslims are not negatively affected by the attacks. However, the geographic segregation of Muslim immigrants increased after the attacks. Our analyses on the heterogeneous effects of the terrorist attacks show that while the highly educated are affected most negatively with respect to their perceived integration, the low-educated became more geographically segregated. The decline in perceived integration of the highly skilled Muslim migrants can be explained in

light of their higher expectations on integration in the host country compared to the low-skilled. Meanwhile, the increase in geographic segregation of low-skilled Muslims after the attacks could be a buffer that mitigated the effect of terrorism on their perceived integration as they could have obtained social support from being in a community of the same ethnic background.

We further find that perceived integration is negatively associated with migrants' intention to return to their native country. This emphasizes the economic relevance of perceived integration of migrants. Given that those who arguably have strong potential for integration (i.e., the highly educated, employed, and less religious) are the ones who witness the greatest decline in perceived integration, these are the ones who are most likely to permanently re-migrate to their country of origin. This suggests that discrimination associated with terrorism could have a negative impact on the prospective stay of the most productive Muslim immigrants in the host country, which could have negative economic implications for the knowledge economy of Western societies.

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Figure 1: Changes in integration attitudes for Muslim and non-Muslim immigrants between the two panel waves.

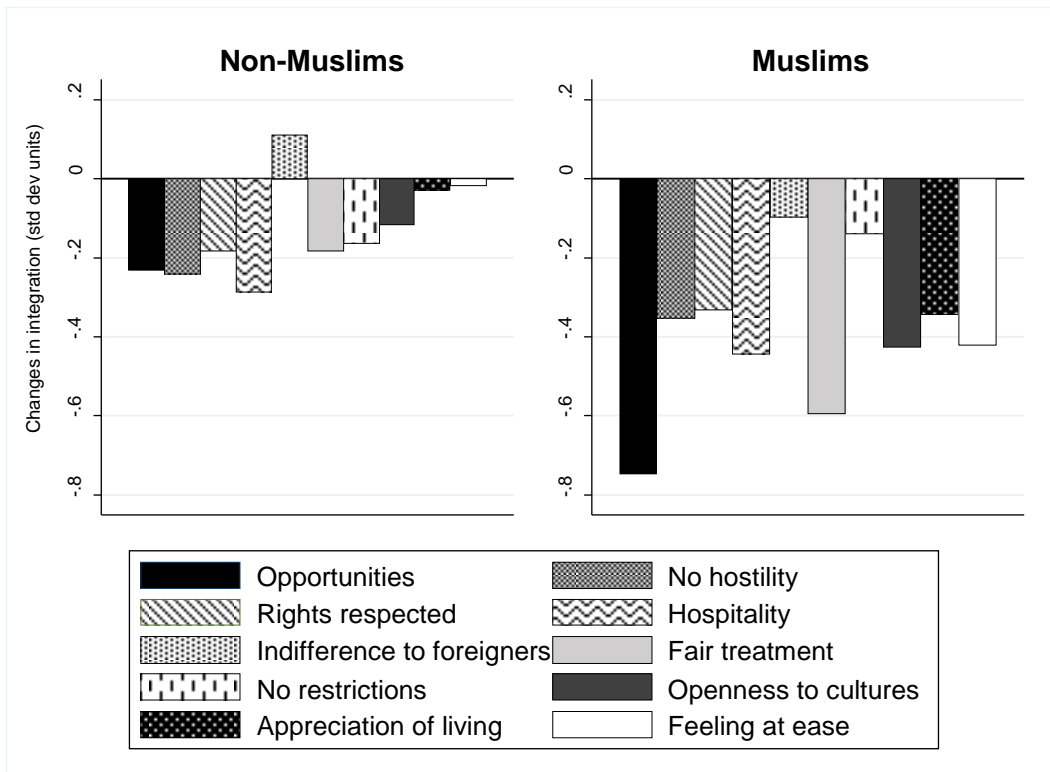
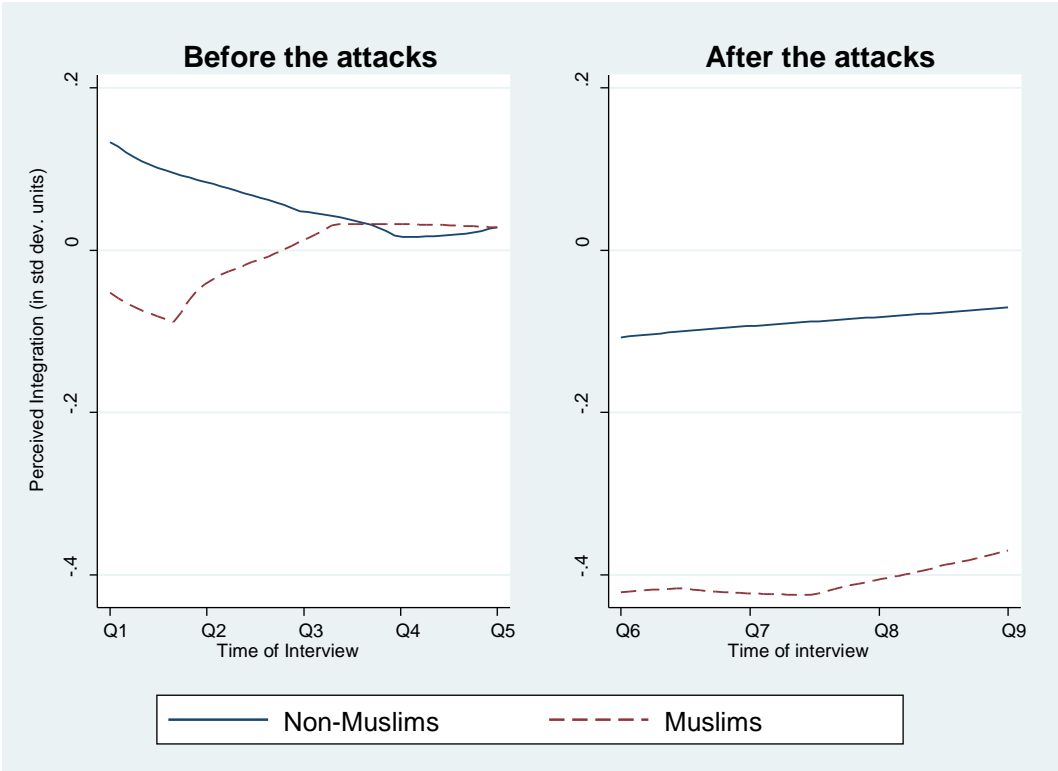


Figure 2: Trends in the integration of immigrants before and after the terrorist attacks.



Note: The graph is based on an unbalanced panel of 448 observations before the attacks and 599 observations after the attacks. Time of interview is in year quarters. Q1= April-June 2002, Q2= July-Sep. 2002, Q3= Oct.-Dec. 2002, Q4=Jan.-March 2003, Q5=April-July 2003, Q6=June-Aug. 2006, Q7=Sep.-Nov. 2006, Q8= Dec. 2006-Feb. 2007, Q9=March 2007-May2007, The trend is similar when using a balanced sample of observations participating in the two waves of the study

Table 1: Change in the Integration of Muslim and non-Muslim immigrants after terrorist attacks (unbalanced panel data).

VARIABLES	Perceived integration	
	(1) RE	(2) FE
Muslim	0.173* (0.097)	
Post-attacks	-0.167*** (0.048)	-0.283*** (0.073)
Muslim * Post-attacks	-0.270*** (0.072)	-0.320*** (0.110)
Constant	-0.221 (0.149)	0.081 (0.519)
Controls	Yes	Yes
Observations	1,085	1,085
Number of individuals	869	869

Note: RE= Generalised least squares with random effects, FE= Fixed Effects. Perceived integration is measured by an index of the equally weighted averages of the z-scores (based on mean and standard deviation of non-Muslim group) of the 10 integration items. Muslim is a dummy variable for being Muslim, post-attacks takes the value one if the observation is from the second wave (after terrorist attacks), and zero otherwise. Controls include gender, employment status, education, marital status, ethnic group, number of children, a dummy for being born in the Netherlands, a dummy for having had education in the Netherlands, length of stay in the Netherlands, length of stay squared, share of migrants with the same ethnic background in the municipality, and regional dummies. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.10

Table 2: Change in the Integration of Muslim and non-Muslim immigrants after terrorist attacks (balanced panel data).

VARIABLES	Perceived integration	
	(1) RE	(2) FE
Muslim	0.034 (0.194)	
Post-attacks	-0.213*** (0.061)	-0.283*** (0.069)
Muslim * Post-attacks	-0.318*** (0.114)	-0.321*** (0.113)
Inverse Mill's ratio	-0.067 (0.160)	-0.322 (2.824)
Constant	-0.012 (0.315)	0.264 (2.026)
Controls	Yes	Yes
Observations	432	432
Number of individuals	216	216

Note: RE= Generalised least squares with random effects, FE= Fixed Effects. Perceived integration is measured by an index of the equally weighted averages of the z-scores (based on mean and standard deviation of non-Muslim group) of the 10 integration items. Muslim is a dummy variable for being Muslim, post-attacks takes the value one if the observation is from the second wave (after terrorist attacks), and zero otherwise. Controls include gender, employment status, education, marital status, ethnic group, number of children, a dummy for being born in the Netherlands, a dummy for having had education in the Netherlands, length of stay in the Netherlands, length of stay squared, share of migrants with the same ethnic background in the municipality, and regional dummies. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 3: Change in the Integration of Muslim and non-Muslim immigrants after the terrorist attacks. Heterogeneity by gender, age ,education, labour market status, language proficiency, and religiosity.

VARIABLES	Perceived integration			
	RE		FE	
	(1)	(2)	(3)	(4)
A) Gender	Men	Women	Men	Women
Muslim* Post-attacks	-0.333*** (0.101)	-0.188* (0.110)	-0.338** (0.152)	-0.257 (0.175)
Observations	530	555	530	555
Number of Individuals	423	446	423	446
B) Age	Below 40	Above 40	Below 40	Above 40
Muslim* Post-attacks	-0.350*** (0.102)	-0.215** (0.107)	-0.389** (0.174)	-0.123 (0.167)
Observations	491	590	491	590
Number of Individuals	417	468	417	468
C) Education	High	Low	High	Low
Muslim* Post-attacks	-0.537*** (0.115)	-0.087 (0.101)	-0.682*** (0.158)	-0.119 (0.155)
Observations	429	481	429	481
Number of Individuals	328	366	328	366
D) Labour market status	Employed	Unemployed	Employed	Unemployed
Muslim* Post-attacks	-0.352*** (0.096)	-0.115 (0.112)	-0.433*** (0.135)	-0.026 (0.163)
Observations	594	488	594	488
Number of Individuals	466	400	466	400
E) Language proficiency	Proficient	Non-proficient	Proficient	Non-proficient
Muslim* Post-attacks	-0.305*** (0.084)	-0.330 (0.293)	-0.428*** (0.116)	0.027 (0.634)
Observations	808	262	808	262
Number of Individuals	631	225	631	225
F) Religiosity	Less religious	More religious	Less religious	More religious
Post-attacks	-0.720*** (0.156)	-0.447*** (0.074)	-1.058*** (0.234)	-0.447*** (0.074)
Observations	126	345	126	345
Number of individuals	105	290	105	290

Note: Controls as in Table 1. Low education group is the group with elementary education, lower vocational, or lower secondary education. High education group is the group with intermediate vocational education, intermediate and upper general secondary, higher vocational education, or university education. Employed takes the value 1 if the individual was employed in the first wave, and 0 otherwise. Language proficiency is a dummy for being proficient in Dutch. Religiosity is a dummy variable that takes the value one if the Muslim respondent went to the mosque frequently, and 0 if the respondent hardly went to the mosque. For all variables of division, we use the pre-attacks level of the variable as a basis for the division. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Terrorism and change in objective measures of integration.

	Unemployment		Working hours		Geographic concentration	
	RE (1)	FE (2)	RE (3)	FE (4)	RE (3)	FE (4)
Muslim	-0.047 (0.051)		-1.348 (1.677)		-0.001 (0.004)	
Post-attacks	0.003 (0.023)	-0.012 (0.034)	1.339* (0.777)	0.989 (1.061)	0.001 (0.001)	0.001 (0.001)
Muslim *Post- attacks	0.001 (0.036)	0.061 (0.048)	-1.180 (1.227)	-1.072 (1.479)	0.003*** (0.001)	0.002*** (0.001)
Constant	0.120 (0.078)	0.182 (0.234)	46.551*** (2.680)	46.720*** (4.356)	0.021*** (0.006)	0.034*** (0.003)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,085	1,085	580	580	1,085	1,085
Number of individuals	869	869	470	470	869	869

Note: RE= Generalised least squares with random effects, FE= Fixed Effects. Unemployment is a dummy variable that takes the value 1 if the respondent is unemployed, and 0 otherwise. Working hours refers to the actual working hours. Geographic concentration is the share of people with the same ethnic background in the municipality where the respondent lives. Controls include gender, employment status, education, marital status, ethnic group, number of children, a dummy for being born in the Netherlands, a dummy for having had education in the Netherlands, length of stay in the Netherlands, length of stay squared, and regional dummies. The working hours estimates are conditional on being employed. Replicating the analysis using a sample that included observations with zero working hours gives similar results. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5: OLS regression for the relationship between perceived integration and intention to return to native country.

Variables	(1) Intention to return to native country
Perceived Integration	-0.096*** (0.026)
Muslim	-0.020 (0.080)
Unemployed	-0.075 (0.055)
Female	0.011 (0.034)
Born in NL	-0.047 (0.067)
Married	-0.003 (0.049)
Divorced	0.038 (0.053)
Widowed	-0.039 (0.090)
Number of children	0.005 (0.010)
Length of stay in NL	0.004 (0.005)
Length of stay in NL (squared)	-0.011 (0.010)
Education in NL	0.017 (0.042)
Educated	-0.010 (0.038)
Education abroad	0.021 (0.041)
Turkish	-0.055 (0.097)
Moroccan	-0.064 (0.104)
Surinamese	-0.073 (0.066)
Geographic concentration	-0.011 (0.009)
Constant	0.404*** (0.127)
Regional dummies	Yes
Observations	616
R-squared	0.135

Note: this regression is based on data from the second wave of the survey. Intention to return to native country is measured by a dummy variable the takes the value one if the respondent is planning to go back to the country of origin for good, and zero otherwise. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.00

Online Appendix

Table A1: Descriptive statistics.

Variable	Non-Muslim	Muslim	P value
<u>Integration items:</u>			
Excellent opportunities for foreigners	3.11	3.04	0.318
No hostility against foreigners	3.45	3.21	0.000
Rights of foreigners are respected	3.36	3.25	0.062
Netherlands is hospitable to foreigners	3.45	3.07	0.000
People in the Netherlands are not indifferent to migrants	3.03	2.92	0.038
In the Netherlands fair treatment to foreigners	3.28	3.10	0.002
In the Netherlands foreigners are not restricted	3.21	2.68	0.000
The Netherlands is open to the foreign cultures	3.62	3.51	0.050
Feeling at ease with Dutch natives	3.51	3.14	0.000
Appreciation of living in the Netherlands	3.89	3.72	0.000
<u>Demographic variables:</u>			
Female	0.56	0.46	0.001
Age	42.66	42.24	0.585
Education (6 levels)	3.12	2.10	0.000
Education abroad	0.84	0.73	0.000
Education in the Netherlands	0.70	0.34	0.000
Born in the Netherlands	0.08	0.06	0.273
Length of stay in the Netherlands	22.22	21.32	0.145
<u>Employment status:</u>			
Employed	0.63	0.46	0.000
Unemployed	0.08	0.11	0.163
Housewife	0.09	0.20	0.000
Disabled	0.08	0.14	0.001
Student	0.06	0.03	0.027
Retired	0.07	0.07	0.971
<u>Ethnic minority:</u>			
Turkish	0.01	0.58	0.000
Moroccan	0.00	0.33	0.000
Surinamese	0.42	0.07	0.000
Dutch Antilleans	0.57	0.03	0.000
Share of ethnic group in municipality (geographic concentration)	0.04	0.05	0.000
<u>Marital status:</u>			
Never married	0.42	0.08	0.000
Married	0.30	0.77	0.000
Divorced	0.25	0.12	0.000
Widowed	0.04	0.03	0.844
Number of children	2.01	2.66	0.000

Table A2: Difference in difference estimates of integration items before and after the terrorist attacks.

Variables	Non-Muslims		Muslims		Diff in diff
	Before N=309	After N=300	Before N=160	After N=316	
(1) Excellent opportunities for foreigners	3.24 (1.08)	2.98 (1.16)	3.60 (1.09)	2.76 (1.18)	-0.58***
(2) No hostility against foreigners	3.56 (0.81)	3.34 (0.97)	3.43 (0.96)	3.11 (0.94)	-0.1
(3) Rights of foreigners are respected	3.45 (0.84)	3.28 (0.98)	3.46 (0.92)	3.15 (1.06)	-0.14
(4) NL is hospitable to foreigners	3.59 (0.91)	3.31 (1.03)	3.36 (0.94)	2.93 (1.08)	-0.15
(5) People in NL are not indifferent to migrants	2.98 (0.90)	3.08 (0.90)	2.98 (1.01)	2.89 (0.91)	-0.19
(6) In NL fair treatment to foreigners	3.36 (0.88)	3.19 (0.90)	3.45 (0.86)	2.92 (0.98)	-0.37***
(7) In NL foreigners are not restricted	3.29 (0.97)	3.13 (0.99)	2.78 (1.07)	2.64 (1.04)	0.03
(8) The NL is open to the foreign cultures	3.67 (0.85)	3.57 (0.93)	3.76 (0.82)	3.38 (1.03)	-0.28**
(9) Feeling at ease with Dutch natives	3.52 (0.60)	3.51 (0.65)	3.32 (0.72)	3.06 (0.80)	-0.25***
(10) Appreciation of living in the Netherlands	3.90 (0.75)	3.88 (0.72)	3.89 (0.79)	3.63 (0.93)	-0.23**

Note: Diff in diff= (Muslim_{after} - Muslim_{before}) - (non-Muslim_{after} - non-Muslim_{before}). NL= the Netherlands. Standard deviations in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table A3: Probit estimations for selection bias.

VARIABLES	(1) Participates in the two waves
Above-median missing answers	-0.883*** (0.085)
Muslim	-0.156 (0.103)
Unemployed	-0.461*** (0.150)
Housewife	-0.083 (0.141)
Disabled	-0.015 (0.144)
Student	-0.464** (0.219)
Retired	-0.027 (0.190)
Female	-0.118 (0.092)
Born in NL	-0.005 (0.190)
Married	-0.311** (0.123)
Divorced	-0.106 (0.134)
Widowed	0.273 (0.253)
Number of children	0.062** (0.027)
Length of stay in NL	0.021 (0.014)
Length of stay in NL squared	-0.039 (0.030)
Educated	0.032 (0.027)
Educated in NL	-0.085 (0.107)
Educated abroad	-0.019 (0.117)
Geographic concentration	-0.021 (0.014)
Observations	1,085
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1	

Table A4: Change in the integration of Muslim and non-Muslim immigrants after terrorist attacks controlling for selection.

VARIABLES	Perceived integration	
	(1) RE	(2) FE
Muslim	0.158 (0.101)	
Post-attacks	-0.183*** (0.070)	-0.309*** (0.085)
Muslim *Post-attacks	-0.338*** (0.116)	-0.363** (0.145)
Above-median missing answers	-0.091 (0.062)	
Muslim *Above-median missing answers	0.027 (0.110)	
Post- attacks *Above-median missing answers	0.053 (0.093)	0.064 (0.120)
Muslim *Post-attacks*Above-median missing answers	0.098 (0.154)	0.098 (0.221)
Constant	-0.186 (0.147)	0.404 (0.389)
Controls	Yes	Yes
Observations	1,085	1,085
Number of individuals	869	869

Note: See Table 1. *Above-median missing answers* is a dummy variable that takes the value one if the number of questions left unanswered in the first wave is above the median, and zero otherwise. Controls include gender, employment status, education, marital status, number of children a dummy for being born in the Netherlands, having had education in the Netherlands, length of stay in the Netherlands, and length of stay squares, share of migrants with the same ethnic background in the municipality, dummy for municipalities, and ethnic minority. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table A5: OLS estimates of trends in perceived integration before and after the attacks.

VARIABLES	Perceived integration	
	(1) Before	(2) After
Muslim	-0.223 (0.214)	0.861*** (0.260)
Time of interview (in quarters)	-0.039 (0.040)	0.218*** (0.046)
Muslim* Time of interview (in quarters)	0.098 (0.061)	-0.251*** (0.061)
Constant	0.186 (0.255)	-1.501*** (0.272)
Controls	Yes	Yes
Observations	448	599
R-squared	0.175	0.293

Note: Time of interview is measured in year quarters. The number of observations is slightly smaller as for 38 interviews we have no information on the timing. Controls include gender, employment status, education, marital status, ethnic group, number of children, a dummy for being born in the Netherlands, a dummy for having had education in the Netherlands, length of stay in the Netherlands, length of stay squared, share of migrants with the same ethnic background in the municipality, and regional dummies. Standard errors in parentheses*** p<0.01, ** p<0.05, * p<0.1

Table A6: Change in the Integration of Muslim and non-Muslim immigrants after terrorist attacks. Heterogeneity by gender, age, education, labour market status, language proficiency, and religiosity (balanced sample)

VARIABLES	Perceived integration			
	RE		FE	
	(1)	(2)	(3)	(4)
A) Gender	Men	Women	Men	Women
Muslim* Post-attacks	-0.312* (0.170)	-0.302 (0.186)	-0.336** (0.158)	-0.261 (0.178)
Observations	214	218	214	218
Number of Individuals	107	109	107	109
B) Age	Below 40	Above 40	Below 40	Above 40
Muslim* Post-attacks	-0.360* (0.188)	-0.242 (0.169)	-0.343* (0.185)	-0.118 (0.170)
Observations	167	264	167	264
Number of Individuals	93	142	93	142
C) Education	High	Low	High	Low
Muslim* Post-attacks	-0.659*** (0.169)	-0.065 (0.155)	-0.697*** (0.166)	-0.144 (0.156)
Observations	202	230	202	230
Number of Individuals	101	115	101	115
D) Labour market status	Employed	Unemployed	Employed	Unemployed
Muslim* Post-attacks	-0.437*** (0.139)	-0.112 (0.195)	-0.433*** (0.138)	-0.026 (0.167)
Observations	256	176	256	176
Number of Individuals	128	88	128	88
E) Language proficiency	Proficient	Non-proficient	Proficient	Non-proficient
Muslim* Post-attacks	-0.415*** (0.113)	-0.291 (0.430)	-0.428*** (0.116)	0.027 (0.634)
Observations	354	74	354	74
Number of Individuals	177	37	177	37
F) Religiosity	Less religious	More religious	Less religious	More religious
Post-attacks	-1.119*** (0.333)	-0.408*** (0.117)	-1.058*** (0.260)	-0.408*** (0.117)
Observations	42	110	42	110
Number of individuals	21	55	21	55

Note: See Table 3. Controls as in Table 3 in addition to inverse Mill's ratio. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A7: Change in unemployment, working hours, and geographic concentration after the terrorist attacks.
Heterogeneity by gender, age, and education, FE estimates.

Variables	Gender		Age		Education	
	Male (1)	Female (2)	< 40 age (3)	>= 40 age (4)	Low educ. (5)	High educ. (6)
<u>Unemployment</u>						
Muslim*Post-attacks	0.095 (0.065)	-0.048 (0.059)	0.033 (0.061)	0.047 (0.069)	0.153* (0.083)	0.018 (0.049)
Observations	527	558	524	557	481	429
Number of individuals	423	450	448	442	366	328
<u>Working hours</u>						
Muslim*Post-attacks	-1.263 (1.884)	-3.561 (2.193)	-2.123 (3.302)	-0.010 (1.799)	-1.721 (1.953)	-1.117 (2.147)
Observations	344	236	306	272	227	271
Number of individuals	277	194	265	223	178	210
<u>Geographic concentration</u>						
Muslim*Post-attacks	0.003* (0.002)	0.003*** (0.001)	0.001 (0.002)	0.002*** (0.001)	0.003*** (0.001)	0.001 (0.001)
Observations	527	558	524	557	481	429
Number of individuals	423	450	448	442	366	328

Note: See Table 4. Controls as in Table 4. Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.00