Terrorism in aviation: going on holiday? Young travellers take longer to pass through security.

Aviation, Security, passenger experience, Terrorism

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TERRORISM IN AVIATION: GOING ON HOLIDAY? YOUNG TRAVELLERS TAKE LONGER TO PASS THROUGH SECURITY.

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Abstract

The focus of this paper is to share research carried out over a four year period to assess passengers experience and opinions of security measures’ Airside’ at UK airports introduced as a result of terrorism since 9/11. The respondent profile was university students, 93% of whom were aged between 18-25. A survey was carried out between 2011 and 2014 at Leeds Beckett University of 711 respondents who have had 3867 security experiences, both leaving and returning to UK airports. All major UK airports were included in the survey. The data suggests younger passengers do take longer to pass through security and there are significant differences of opinion between whites and non-white on who should be profiled for security screening.

Introduction

Since 9/11, security at airports globally has changed significantly for all travellers including tourists.² Security measures have been introduced in attempt to prevent another 9/11 hijacking by securing cockpit doors, preventing liquid bombs by limiting liquids,³ checking shoes⁴ and full-body scanning passengers for hidden explosive devices.⁵ The latest

¹ Leeds Law School. Leeds Beckett University. s.m.wood@leedsbeckett.ac.uk
⁴ United States of America v. Richard Colvin Reid, [2002] US District Court, District of Massachusetts. 16 January 2002. 11 Facts Richard Reid known as the Shoe Bomber, is an Englishman who attempted to detonate explosives packed into the shoes he was wearing, while on American Airlines Flight 63 from Paris to Miami in December 2001 <http://www.justice.gov/sites/default/files/ag/legacy/2002/01/16/reidindictment.pdf> (accessed 24/01/12)
inconvenience to air-passengers travelling to the UK is the restriction on laptops being allowed into the aircraft cabin from certain countries.6

These measures have one thing in common, they are focused on countering terrorism as passengers pass through electronic security and onto the aircraft, the part of the airport known as ‘Airside.’ Since 2007, however some terrorists have changed tack, exploding or attempting to detonate bombs ‘landside’ at airports departure and arrival gates. Glasgow 2007,7 Russia in 20118 and more recently Brussels9 and Istanbul's Ataturk 201610 have used a different terrorist methods. These soft landside targets have given terrorists a unique opportunity to load large amounts of explosives onto airport trolleys, cars or in suicide vests with terrifying consequences for passengers.

Following 9/11, the new security measures at airports has affected the passenger experience, whether it is the time it takes them to clear security, items that have been confiscated, professionalism and empowerment of security staff, or the perceived treatment of ethnic minorities, particularly the Muslim community.11 These recent attacks have had another but more profound effect on passenger experience at airports. Beck (2009) suggests that terrorism, like global warming, is a new paradigm of risk assessment.12 Risk assessment of terrorism can no longer be attributed just to Governments or insurance provides, indeed it is

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the passengers who must also consider and measure the risk of terrorism to their journey and destination before they travel.

Reviewing passenger experience of security UK airports is not unique to the research reported in this paper. The UK Civil Aviation Authority (CAA) have been researching passenger experience of security yearly since 2008 at a number of major UK airports to find out what passenger think of such things as items they are required remove, the professionalism of security staff or the time it had taken them to clear security. However, there are significant differences between the CAA surveys and this study. This survey asked respondents their opinions on whether ethnic minorities warranted further attention and respondent attitude towards profiling passengers in general. In this research the age profile was unique. The CAA surveys have a varied age group, but terrorists who have carried out attacks against the West since 9/11 have commonly been Muslim males aged between 18 -35. Therefore age was an important factor in choosing the respondents for this survey. That is not to suggest there is no female participation in terrorism, historically women have played both supporting and leading roles in terrorist conflicts. However, in the new war of Al-Qaida inspired terror threats, between 1999 and 2009 only five women have been convicted of terrorist related offences in the UK. It has been suggested that there is no gender imbalance for the support of extremist views and many females have travelled to Syria in support of Isis since the conflict started.

**University students**

Many terrorists have attended UK universities consequently the rationale for using this profile was to consider whether this had any bearing in the respondents experiences at UK airport security. The following individuals are a small sample of students who have attended universities in the UK and gone onto commit a terrorist offence.

- Kafeel Ahmed died following an attack on Glasgow airport in July 2007 in which his jeep packed with incendiary material exploded. Ahmed was originally from Bangalore but studied engineering at Queens University Belfast and had a PhD in computational fluid dynamics at Anglia Ruskin University.

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14 Margaret Gonzalez-Perez.(2009) ‘Women and Terrorism: Female Activity in Domestic and International Terror Groups, (Routledge)


• Umar Farouk Abdulmutallab a Nigerian who, at the age of 23, was convicted of attempting to detonate plastic explosives hidden in his underwear while on board Northwest Airlines Flight 253, from Amsterdam to Detroit, Michigan, on Christmas Day, 2009. He studied Engineering and Business Finance at University College London (UCL) in September 2005. From 2006-2007 he was the president of the Islamic society at UCL.

• Abdulla Ahmed Ali, the leader of the liquid bomb plot in 2006, which intended to bring down aircraft flying from the UK to the U.S. He was an engineering graduate at City University in 2002. Involved in the same plot was Assad Sarwar who had turned down a place at university in Chichester because he was homesick. But his second attempt at higher education was at Brunel, first with a sports science course, then earth sciences, also failed because he found the work too hard.

• The masked Islamic State militant known as "Jihadi John", who has been pictured in the videos of the beheadings of Western hostages, named as Mohammed Emwazi from London. He was raised in a middle class area of West London and studied computer programming at the University of Westminster.  

• Suicide bomber, 22-year-old Salman Abedi, in May 2017, detonated a home-made device at Manchester Arena killing 22 and injuring 64 people. Abedi attended Salford University in 2014.

A report published by the Home Affairs Select Committee, ‘Roots of Violent Radicalisation’, it suggested that the internet plays a far greater role in radicalisation than universities, prisons or mosques. It added that the focus placed on university campuses by the government's ‘Prevent’ strategy has been "disproportionate" which may suggest that the role universities have in promoting terrorism is overstated. However, the report accuses some universities of being "complacent" about their role in confronting violent extremist views. It adds: ‘universities are ideal places to confront extremist ideology, [but] we are not convinced that extremists on campus are always subject to equal and robust challenge’. Professor Geoff Petts, representing Universities UK suggested that ‘universities acknowledge the threat, but I do not see any evidence to support that’. Some students who have taken interest in courses

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19 Mathew Weaver and Claire Phillips ‘Manchester attack: police raids continue in hunt for terror network’ The Guardian 24th May 2017


22 ibid 14
related to foreign affairs appear to have been unjustly treated by xenophobic university staff and police.23

There is little evidence to suggest that UK universities are a fertile ground for recruiting terrorists or that campus extremism is prevalent. Universities will always remain an opportunity to connect young impressionable individuals throughout the world of different faiths and of different political views. This is one rational why the British government in 2015 introduced positive duties on universities to prevent students becoming radicalised in their institutions.24

There are around 2.3 million students in higher education in Britain, approximately 90,000 are Muslim.25 Universities are places of student vulnerability, because students are of an impressionable age and it is where many students are away from home for the first-time.26 Radical thinkers can prey on weaker students or students who are looking for more purpose in life becoming susceptible to radical views. This process radicalisation of young men is made much easier with Muslim students because it is possible to point to perceived and actual examples discrimination, harassment and occupation of Muslim lands by Western forces. This is an irony for a country and university population culture that is both diverse and largely welcoming of multi faiths with the concept of free speech endorsed in the Education (No 2) Act 1986.27

**Aviation security**

UK airport security, as in many other countries, operates in two ways: electronic screening and policing. The former is the focus of the CAA research on passenger experience, the latter has had less scientific enquiry28 until recently (Choudhury and Fenwick (2011),29 Hurrell

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23Thornton, R (2011) ‘Radicalisation at universities or radicalisation by universities?: How a student’s use of a library book became a “major Islamist plot” Paper prepared for the Critical Studies on Terrorism on Teaching About Terrorism panel at the British International Studies Association Conference, University of Manchester, April.

24 Counter-Terrorism and Security Bill, Part 5, Risk of Being drawn Into Terrorism. Chapter 1, Preventing people being drawn into terrorism part 25. A General Duty on specified authorities

25The Higher Education Statistics Agency <https://www.hesa.ac.uk/content/view/3129/#eth> (accessed 10/10/14)


These two processes are controlled by airport governance through local risk assessment policies. Risk assessment policies have been developing in the UK and elsewhere since the Lockerbie incident in 1989, following which it was decided that luggage could not be transported without the passenger, referred to as ‘Accounting and Authorising for Carriage’ or the ‘Triple A’. Security reviews of UK aviation and broader modes of transport carried out by Sir John Wheeler (2002) and Boy Smith in 2006 resulted in legislative changes to aviation security. ‘The Policing and Crime Act 2009’ (PCA) highlights the principle of joint accountability from different security stakeholders and endorsed the Multi-Agency Threat and Risk Assessment (MATRA). The MATRA approach was designed to enhance liaison between key stakeholders of security in aviation to assess risks.

Risk assessment in the UK is required to comply with EU Regulation 300/2008 which harmonises airport security across the EU. The details of what action is required is contained in regulation 2015/1998 and compliance is governed by Regulation 72/2010. Security Management System (SeMS) and ‘Outcome Focused Risk Based’ security are the latest risk assessment strategies to engage UK airports operators. SeMS is not an EU requirement, and is likely to survive Brexit. It is supported by the CAA who are interested in developing this risk assessment tool across the UK aviation sector.

Screening passengers applies to everyone wanting to enter Airside. Passengers are asked to remove items and place them in a plastic tray for screening. Liquids of 100ml or less are to be placed in a clear plastic bag and passengers are required to pass through a metal detector. Any person triggering the metal detector is patted down and frequently full-body scanned this includes shoes being removed for screening. Data from the CAA passenger experience surveys support high levels of security. The challenge for UK airports is to process more than


220 million passengers a year as quickly and as safely as possible. This is why a significant investment has been made in new technology at airports, trialling new security methods such as remote screening of passenger’s hand luggage. This effectively means airports such as Gatwick can now screen carry-on baggage anywhere in the world.

Profiling passengers

Following 9/11, the US has become the leading force against terrorism and military action in the Middle East, which makes it the desired target of militants. In October 2003, the US Transport Security Association (TSA) piloted a programme in three airports called Screening of Passengers by Observations Techniques (SPOT) carried out by Behaviour Detection Officers (BDO) for the purpose of counter-terrorism. The US Government Accountability Office’s (GAO) report suggested that SPOT was carried out without any scientific basis, and questioned the programme’s reliability. The TSA responded by identifying that no other programme of this nature had ever been scientifically assessed prior to implementation. The GAO acknowledged the difficulties in measuring the success of such a programme, because profiling passengers is not based on science but on the judgements of individual security staffs, which can be at times unreliable and create inconsistencies. Despite these concerns, in 2007 the programme was up-scaled and rolled out to 42 airports employing 644 BDO officers. By 2012 the programme had increased staffing in excess of 2800 at 142 airports. No terrorist has been caught at an airport as a result of the SPOT programme, despite 199 arrests for other crimes. In 2013 the programme was reviewed as lacking a clear strategic plan to identify priorities and establish clear outcomes, when costs having increased to $878 million. A report sent to the GAO recommended that future funding for the programme needed to be limited.

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38 ibid

39 ibid


41 ibid


43 ibid p5

44 ibid

the refresher courses, were identified as ineffective,\textsuperscript{46} questioning the professionalism of officers in stopping passengers and running a real risk of ethnic profiling. A programme that had grown out of 9/11 for very good reasons has become dysfunctional and lacks real purpose of what its objectives are more than a decade after 9/11.

In 2006, the UK contemplated a greater use of passenger profiling for stop and search following the liquid bomb attempt on aviation.\textsuperscript{47} In July 2009, Lord Carlile who was then the Independent Reviewer for Terrorist Legislation, published his report.\textsuperscript{48} Commenting on Schedule 7 of the Terrorism Act 2000 (TA 2000), he said ‘In the past I have suggested repeatedly that the number of random or intuitive stops could be reduced considerably.’\textsuperscript{49} Indeed, David Anderson, the current Independent Reviewer of Terrorism confirmed in his June 2012 report that the majority, if not all, of examinations were intelligence led or had some element of intelligence that had resulted in convictions, rather than relying on intuition, profiling or a “coppers nose” hunch.\textsuperscript{50}

Schedule 7 of the TA 2000 applies to ‘ports’ which includes both seaports and airports. The examining officer can either be a constable, immigration officer, or a customs officer who is designated by the Secretary of State.\textsuperscript{51} The examining officer can detain a passenger and ask questions for a maximum period of 6 hours\textsuperscript{52} and detain property up to 7 days to determine whether or not the passenger is a terrorist.\textsuperscript{53} However, there is no need for the examining officer to have reasonable suspicion or grounds for suspecting the passenger is a terrorist at the point the passenger is stopped.\textsuperscript{54} Parliament has set the bar for the exercise of Schedule 7 power at quite a low level.\textsuperscript{55} Passengers who wilfully fail to comply with or wilfully obstruct, the examining officer can be liable on a summary conviction to up to three month imprisonment.


\textsuperscript{47} Webster, B (2006) ‘Muslims face extra checks in new travel crackdown’ The Times August 15 p1

\textsuperscript{48} Terrorism Act 2000 and part 1 of the Terrorism Act 2006


\textsuperscript{51} Schedule 7 TA 2000 1 (1)

\textsuperscript{52} Schedule 7 TA 2000 6 (4)

\textsuperscript{53} Schedule 7 TA 11. (2) (a)

\textsuperscript{54} Schedule 7 TA 2000 2 (4)

\textsuperscript{55} David Miranda v SSHD [2016] EWCA Civ 6 para 58
Schedule 7 has proved controversial and although a stream of cases has been brought forward to challenge its legal authority none has yet succeeded in establishing that the scheme is flawed or does not offer sufficient legal protection against individual Human Rights abuses at UK boarders. Schedule 7 may be less of a concern following a public consultation and subsequent changes to Schedule 7 to allow greater accountability with a new Code of Practice. The 2014 Code of Practice makes some important changes in the way screening and recording of passengers should be carried out under Schedule 7. The emphasis here is the accountability between initial screening and the point when the matter becomes an examination and then a detention. The Code of Practice is clear in encouraging officers to undertake examinations quickly and draw conclusion early to determine whether any further examination is necessary. Examinations should be able to ascertain within the hour whether or not it will be necessary to detain a person. Detention must now be exercised before the first hour of the examination has been completed. The operational application of Schedule 7 in a manner envisaged by governmental officials can only be realised by continued professional development of examining officers. A failure to do so may see similar mistakes as was experienced in the US SPOT programme. There has to be some latitude and autonomy of the application of a system that is difficult to audit and reliant on professionalism of security offices, particularly at the screening stage when screening becomes an examination. The list of examples in the Code is not exhaustive. The triggers to detain a person for examination, range from the obvious obstructive person, who is uncooperative in being screened, to the officer’s intuition or ‘gut reaction’.

Schedule 7 still remains a powerful tool to stop, search and detain passengers. Tensions between ethnic communities are likely to continue particularly in light of Muslim British Nationals traveling to Syria to fight and the risk of them returning to the UK. The introduction of the Counter-Terrorism and Security Act 2015, designed to strengthen the prevention of individuals going to fight abroad will focus on Muslims at airports, consequently their community is likely to be targeted on flights traveling near the Syrian region. It is likely both this Act and Schedule 7 will work together rationalising their use at airports, particularly in light of recent terrorist attacks on airports.

**Hypotheses testing**

This project reviewed three research questions covering both ‘Airside’ and ‘Landside’ security at UK airports.

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• Do younger passengers take longer to go through security and if so why?
• Do younger passengers accept the levels of security at UK airports?
• What has been the impact of terrorism on the attitudes of young passengers?

From these research question three hypotheses were designed. The legitimacy of profiling foreign nationals or British Asians Muslims to determine whether they are terrorists or have links with terrorists has gained traction since 9/11. For these reasons the survey does in part ask the respondents their views about these ethnic groups, albeit indirectly, for example asking who should be profiled at UK airports. This will allow an insight of opinion, belief and perception of respondents as well and actual experience for those who have been stopped and asked questions at UK airports.

Ethnic profiling is supported by qualitative and quantitative data to suggest that there is some evidence profiling ethnic minorities does occasionally occur.58 Events such as 7/7 and in 2006 the liquid bomb attempt, do suggest that following 9/11 male Muslims are more likely to carry out terrorist attacks than white British Nationals.59 Data is available on a broader qualitative basis regarding the use of terrorism legislation and general stop and search powers with negative effects on Muslim communities.60 Choudhury and Fenwick’s qualitative data study reviewed the effects of UK terrorism legislation following 9/11. Although their research covers a relatively small group of individuals on a wide range of terrorist powers. It is widely referenced because there are so few projects of a credible nature that have conducted in depth focus group discussions with the Muslim community.61 Choudhury and Fenwick state that no non-Muslim participants in their data collection were stopped under Schedule 7, but that Schedule 7 is having a negative effect on the Muslim community.62

In 2012 Leda and others carried out individual and group interviews with 38 Scottish Muslims concerning their encounters with authority, especially those at British airports.63 In general relationships between minorities and the police have often been difficult, created mistrust and data suggests Muslims are stopped by the police more often than the non-

58 Greer, S ‘The myth of the ‘securitised Muslim Community’ The Social Impact of post-9/11 counter-terrorism law and policy in the west, ch 26 400 in Routledge Handbook of law and Terrorism 2015
59 Webster, B (2006) ‘Muslims face extra checks in new travel crackdown’ The Times August 15th 1
61 ibid p22
62 ibid p28
Muslim majority. Their findings were more than often negative encounters at airports with authority based on their respondents’ perception of being Muslim.

Langley’s work on policing Schedule 7 was carried out in 2013 with 775 respondents at West Midlands Airport. Langley reviewed using the scientific method of a random control test ‘The effects of procedural justice to experienced utility theories in airport security’ with a central focus ‘legitimacy’. Langley’s unique research complements the 2012 public consultation of Schedule 7 outcome. Langley’s research supports the procedural justice theory of policing i.e. trust, relationships, or ‘the way in which legislation was practically implemented and applied by officials’ The new 2014 code of practice is focussed on a more considered approach to the application of Schedule 7 with better training for officers. Langley was testing methods of policing against two models rather than the notion of ethnic profiling, nevertheless his work is of rigorous scientific value for policing at UK boarders.

Hurrell has undertaken experimental quantitative research into how Schedule 7 is being applied, drawing upon secondary data from the CAA, the national census and the police. Hurrell suggests there is statistical evidence, albeit reducing since 2011, that the Asian community is more likely than the white British to undergo Schedule 7 questioning. The analysis is without a definitive significance level because of the nature of the experimental research using secondary statistics and trying to triangulate them. It could therefore be argued that if there is ‘some’ evidence to suggest discrimination in the aviation security process and this could be used to develop an alternative hypothesis rather than suggesting, as this research does, the null hypotheses there is no difference in treatment between white and non-white passengers.

Government literature and the Codes of Practice in 2009 and 2014 relating to the implementation of Schedule 7 clearly state that no-one should be stopped and searched solely on the grounds of ethnicity. David Anderson, the Independent Reviewer of Terrorism Legislation, suggested in a number of his reports that the statistics so far concerning Schedule


65 Leda and others 1103-1107

<http://www.crim.cam.ac.uk/alumni/theses/Langley,%20B.%20A%20randomised%20control%20trial%20comp aring%20the%20effects%20of%20procedural%20justice%20to%20experienced%20utility%20theories%20in%2 0airport%20security%20stops.pdf> (accessed 01/08/16)

67 ibid 25

68 Chapter 1 ‘Risk Assessment at airports as result of 9/11’ pp 17 - 21


For this reason the hypothesis in this survey is:

- **Airports security applies risk assessment equally to all passengers at UK airports.** 
  
  \(H_0\) null

The hypothesis relating to the time it takes passengers to go through security at UK airports (set out below) is based upon the commercial interests of airport operators to process passenger numbers efficiently and the specific respondent profile used in this research that might draw attention from security. Time and security are competing factors for passengers and airport operators. Millions of pounds are spent every year nationally improving technology to screen passengers and their luggage for security threats as quickly as possible. In order to test this hypothesis there will be a descriptive analysis between this research and that of the CAA.

- **Age is not a factor in the time it takes to go through UK airport security.** 
  \(H_0\) null

The third hypothesis makes the presumption that following 9/11 and other terrorist attempts and attacks passengers are accepting of the level of security at UK airports even though it can lead to longer waiting times and the use of new technology such as full-body scanners. Because of the respondent age profile it is possible to review a unique insight into their opinions of UK airport security.

- **Young passengers are supportive of high levels of security at UK airports.** 
  \(H_0\) null

The CAA established from 2008-2012 that there was a high level of passenger support for tight security at UK airports. However, this data had was drawn from all passengers’ ages, rather than a particular age profile. This hypotheses will be analysed through cross tabulated data from a number of question that have been asked of the respondents in the questionnaire and through their open comments.

**Summary of data**

- 711 respondents participated in the survey.
- 64% of all 3867 security experiences were from Manchester and Leeds Bradford airport.

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72 Alternatively - there is no association between ethnicity and security checks


74 Data percentage was rounded up for the purpose of this section
• Ethnicity, age, sex remained consistent and stable throughout the survey with averages of 62% female 38% male 42% non-white and 93% respondents in the age bracket of 18-25.

• 27% of respondents who said they were aware of airport security requirements incorrectly answer questions relating to airport security.

• 96% of respondents agree with the current level of security checks.

• 62% of respondents agreed that security staff were right to confiscate items while 38% disagreed.

• 18% of respondents had been stopped by customs officers. Females suggested that they were 7% more likely to be treated professionally than male respondents. Those respondents who claimed unprofessional behaviour suggested either attitude or simply being picked out whilst other passenger had not as their reasons.

• 20% of respondents claim profiling is a good idea because it is obvious who the likely terrorists are.

• 18% female and 36% males disagree that profiling is good to target passengers acting suspiciously. The majority agree.

• 21% male and 11% female agree that profiling is an opportunity to harass ethnic minorities and that more ethnic minorities have agreed with the statement than white British. The majority disagree.

• Males suggest they go through passport control and security quicker than females.

• The majority of males and females expect to wait between 10 to 20 minutes to go through passport control and security. The majority expected it to take between 15-20 minutes and most believed it did take 15 to 20 minutes to go through security and passport control.

• 83% female and 77% males find airport security an important part of their air travel.

Hypotheses testing

• Age is not a factor in the time it takes to go through UK airport security. $H_0$(null)

The basis of measuring this hypothesis was reviewing the data set in this research (ITR) and measuring it against the CAA data set. In both sets of data ‘time’ is that perceived by the respondent rather than independently measured. The CAA states that respondents tend to overestimate their queuing time and placed caution on their data time. The analysis is descriptive using cross tabulated data ITR and from the CAA.
Table 1 below indicates CAA sample age group in 2014 and shows the high level of young passengers travelling through Stansted. ITR 93% of the respondents were aged between 16-25.

<table>
<thead>
<tr>
<th>Age</th>
<th>Heathrow</th>
<th>Gatwick</th>
<th>Stansted</th>
<th>Luton</th>
<th>Manchester</th>
<th>All 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-24</td>
<td>14%</td>
<td>16%</td>
<td>19%</td>
<td>11%</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>25-34</td>
<td>25%</td>
<td>21%</td>
<td>31%</td>
<td>23%</td>
<td>17%</td>
<td>23%</td>
</tr>
<tr>
<td>35-44</td>
<td>21%</td>
<td>16%</td>
<td>17%</td>
<td>19%</td>
<td>17%</td>
<td>18%</td>
</tr>
<tr>
<td>45-54</td>
<td>18%</td>
<td>18%</td>
<td>15%</td>
<td>18%</td>
<td>24%</td>
<td>19%</td>
</tr>
<tr>
<td>55-64</td>
<td>13%</td>
<td>17%</td>
<td>11%</td>
<td>16%</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>65 &amp; over</td>
<td>8%</td>
<td>12%</td>
<td>7%</td>
<td>12%</td>
<td>11%</td>
<td>10%</td>
</tr>
</tbody>
</table>

The CAA data from 2008 to 2014 shows a steady but small increase in waiting times, particularly in the latter years.\(^75\) The CAA data from 2008 to 2012 showed that the biggest marked increase in waiting time was at Manchester which in 2008 was 3.8 minutes increasing to 7.0 minutes in 2012\(^76\) and 9.8 minutes in 2014.\(^77\) Since 2008 the CAA respondent average perceived queuing time has gradually increased, with the exception of Gatwick, to 7.1 minutes in 2013 and to 7.0 minutes in 2014.\(^78\)

The majority of respondents ITR claimed to have taken between 10 and 20 minutes\(^79\) to pass through security suggesting that younger passengers take longer to go through security when measured against the CAA data outlined above.

The CAA have a wide age range of respondents as seen in Table 1, however the age profile at Stansted is relatively young, with 50% respondent’s in 2014 aged between 16- 34 years.\(^80\) Stansted has consistently returned higher waiting times than the other four airports used by the CAA in their data collection. Stansted in 2014 returned an average waiting time of 10.1 minutes.\(^81\) Therefore based on frequency statistics the null hypotheses can be rejected, that

\(^75\) Department of Transport ‘Air passenger experience of security screening’ 2012, 2013 and 2014
\(^76\) ibid 2012 p6
\(^77\) ibid 2014 p8
\(^78\) ibid 2014 p6
\(^79\) See Table p24,25 and 26 pp 238-240
\(^80\) ibid p12
\(^81\) ibid 2014 p6
is, that age is not a factor in going through security, consequently meaning that younger passengers take longer to go through security.

- **Airports security applies risk assessment equally to all passengers in UK airports ($H_0$ null)**

The assessment of this hypothesis is from respondents opinions. The data set was recoded from a long list of ethnicity to just two category’s White and non-white to enable a Pearson Chi-Square $x^2$ (Nonparametric test).

**Question** when stopped were you dealt with professionally?

<table>
<thead>
<tr>
<th>White and Non-white categories</th>
<th>Were you dealt with professionally?</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>White</td>
<td>206</td>
<td>12</td>
</tr>
<tr>
<td>Non-white</td>
<td>81</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>287</td>
<td>24</td>
</tr>
</tbody>
</table>

**Case Processing Summary**

<table>
<thead>
<tr>
<th>White and Non-white categories * Were you dealt with professionally?</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>White and Non-white categories * Were you dealt with professionally?</td>
<td>311</td>
</tr>
</tbody>
</table>

**Chi-Square Tests**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.011</td>
<td>1</td>
<td>.025</td>
</tr>
<tr>
<td>Continuity Correctionb</td>
<td>4.026</td>
<td>1</td>
<td>.045</td>
</tr>
</tbody>
</table>

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.18.

b. Computed only for a 2x2 table
Although the overwhelming majority of respondents who had been stopped (287 or 92%) agree that they were dealt with professionally, differences are observed in the proportions of White and Non-White who disagreed. A Chi-square test was carried out to see if these differences were significant. The expected count in all cells was five or more so the test is valid. According to the test ($P = .025$) which is less than the specified $.05$ ($\alpha = .05$). Therefore from this example the $H_0$ is rejected, consequently risk assessment does not apply equally to all passengers in the experience of these respondents. However, more ethnicity tests will be carried out on different ethnicity questions in an attempt to triangulate this data.

### Case Processing Summary

<table>
<thead>
<tr>
<th></th>
<th>Valid</th>
<th></th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>N</td>
<td>Percent</td>
</tr>
<tr>
<td>White and Non-white categories Question Profiling gives an opportunity for security to harass ethnic minorities</td>
<td>709</td>
<td>99.7%</td>
<td>2</td>
<td>0.3%</td>
<td>711</td>
</tr>
</tbody>
</table>

**Question** Profiling gives an opportunity for security staff to harass ethnic minorities?

<table>
<thead>
<tr>
<th>White and Non-white categories</th>
<th>Disagree</th>
<th>Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>410</td>
<td>30</td>
<td>440</td>
</tr>
<tr>
<td>Non-white</td>
<td>195</td>
<td>74</td>
<td>269</td>
</tr>
<tr>
<td>Total</td>
<td>605</td>
<td>104</td>
<td>709</td>
</tr>
</tbody>
</table>

### Chi-Square Tests

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>57.099*</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>Continuity Correction</td>
<td>55.458</td>
<td>1</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 39.46.

b. Computed only for a 2x2 table
Although the overwhelming majority of respondents (605 or 85%) disagree that profiling gives an opportunity to harass ethnic minorities, differences are observed in the proportions of White and Non-White who disagreed. A Chi-square test was carried out to see if these differences were significant. The expected count in all cells was five or more so the test is valid. According to the test ($P = .000$) which is less than the specified .05 ($\alpha = .05$). Therefore from this example the $H_0$ would be rejected and consequently risk assessment does not apply equally to all passengers in the opinion of these respondents.

### Case Processing Summary

<table>
<thead>
<tr>
<th></th>
<th>Cases</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Valid</td>
<td>Missing</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Percent</td>
<td>N</td>
<td>Percent</td>
</tr>
<tr>
<td>White and Non-white</td>
<td>709</td>
<td>99.7%</td>
<td>2</td>
<td>0.3%</td>
</tr>
<tr>
<td>categories * Airport</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>security legitimises</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>discrimination against</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ethnic minorities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Do you agree or disagree that airport security legitimises discrimination against ethnic minorities? |
|-----|-----|-----|-----|
|     | Disagree | Agree | Total |
|     | White     | Non-white |     |
| White and Non-white categories | 428 | 248 | 676 |
| Total | 12 | 21 | 33 |
| Airport security legitimises discrimination against ethnic minorities | 440 | 269 | 709 |

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>9.706*</td>
<td>1</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>Continuity Correction</td>
<td>8.595</td>
<td>1</td>
<td>.003</td>
<td></td>
</tr>
</tbody>
</table>
Although the overwhelming majority of respondents (676 or 95%) disagree that airport security legitimises discrimination against ethnic minorities, differences are observed in the proportions of White and Non-White who disagreed. A Chi-square test was carried out to see if these differences were significant. The expected count in all cells was five or more so the test is valid. According to the test \( P = .002 \) which is less than the specified .05 \((\alpha = .05)\). Therefore from this example the \( H_0 \) would be rejected and risk assessment does not apply equally to all passengers in the opinion of these respondents.

Finally, it is worth noting that whilst there are significant differences set out above in these three examples between White and Non-White groups the rejection of the hypotheses should be set in context to overwhelming responses to these questions. The example below emphasises this point. Here a Chi-square test was carried out to consider the significant differences between Whites and Non-Whites on the question whether ethnic minorities should be subject to a higher level of checks. The test was not valid because one cell (25%) had a count of less than 5 or \( N \geq 5 \) that three White respondents had agreed with the question from a possible 440 respondents. Surprisingly more Non-white respondents (six) from 269 agreed that ethnic minorities should be subject to higher levels of security checks.

<table>
<thead>
<tr>
<th>Do you agree or disagree that only ethnic minorities should be subject to higher level checks?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disagree</strong></td>
</tr>
<tr>
<td>White and Non-white categories</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Non-white</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

- **Passengers are supportive of high levels of security at UK airports (\( H_0 \)null)**

To measure this hypothesis it was necessary to review a number of questions in the questionnaire. The matter of security and being secure was the most popular concern to respondents responding to the open comments at the end of the questionnaire. One respondent said ‘Every single and necessary check should be carried out to make everyone feel safe, regardless!’ another ‘High security is important to all our safety those that complain are idiotic’ and ‘I believe that security is needed throughout the airport and the more the better’. There are other supportive comments of security, clearly there are many passengers that want to see high levels of security to re-assure themselves of safety. Only forty eight respondents participated in the open comments. Table 26 asked respondents
whether there were too many unnecessary security checks. 680 or 96% of respondents disagreed and when asked about particular security processes respondents also appeared supportive. For example in Table 34 79% of the 709 respondents agreed that the amount of items they were asked to place in plastic trays was about right. In Table 35 73% of all respondents agreed with been searched if they triggered the metal detector and 79% welcomed additional security such as body scanning. In Table 41 respondents were asked whether security was an important part of air travel, 81% agreed that it was and in Table 42 96% disagreed that security was disproportionate to the purported risks.

The data suggests that the hypothesis ‘passengers are supportive of high levels of security at UK airports should be accepted. Young passengers are supportive of high level of security, there was some indication, albeit small, that males are less supportive than females. This conclusion needs to take into context the hypothesis that passengers are treated the same. A more accurate account might suggest young passengers are supportive of high levels of security but there are differences in this support with gender and ethnicity.

The data analysis over a period of four years rejected two null hypotheses and accepted one. The data suggested that younger passengers do take longer to go through security. However, rather than being under suspicion because their age is similar to that of terrorists who have carried out terrorist attacks, any delay is more likely to be attributed to their disregard and objection to security rules. 37% of respondents in this research disagreed with rules on the confiscation of liquids, including perfumes. Another factor was that 27% of them when asked questions relating to security measures answered incorrectly, yet 93% claimed to know the security rules. These reasons appear to have had an impact of delaying respondents passing through security. One more matter for consideration is the proportion of females in this survey and the high level of liquids, aerosols and gels (LAGs) were the items most frequently confiscated. Females made up 62% of the respondents in this survey and LAGs was most frequent items to be confiscated. This might indicate that young females may take longer to go through security than males. Data from the CAA at Stansted airport in 2014 showed a significant differences in the time their respondents went through security than the other four UK airports in their survey. Stansted, did have younger passengers than the other UK airports supporting the findings in this research.

Younger passengers do appear to take more time to go through airports than older passengers. They appear to be aware of security issues but relatively casual about certain rules that might impinge on their travel experience and they are prepared to question whether certain rules are necessary. This information can provide the sector with valuable evidence in designing security processes at airports to ensure resources are allocated proportionally to the threat and risk.

82 See Summary of data and Table 18 of the data output
83 See Table 9 of the data output
84 See Table 7 of the data output
85 See Table 15 of the data output
Recommendations

The following recommendations are based on the data analysis and wider findings from the CAA and other scientific research into UK airport security. In addition these recommendations take into account changes that have occurred since 2011 and recommendation made by the Independent Reviewer of Terrorism.

In response to the first hypothesis, the research findings showed that young passengers do take longer to go through UK airport security, which was established in this research, and corroborate research carried out by the CAA. In addition, that the reasons why this profile of respondents did take longer apparently was by displaying some resistance to confiscation of items and those items were more akin to female than male. In a global business where time is critical to operations this is an important finding for the sector. There is a need for:

- Better education and training of airport security officers who are responsible for electronic screening to focus on passengers aged between 16 and 35 i.e. clear verbal warnings particularly to females, This strategy would reduce younger passenger times
- Better security design for electronic screening so security requirements can be better communicated before passengers arrive in the area where items are to be removed. This can save time by preparing passengers.

Since starting this research there have been noticeable improvements at a number of UK airports in preparing all passengers for electronic security. This has included better signage, strategic displays of prohibited items as well as web pages for most airports outlining their policy on security and prohibited items. Improvements to waiting times for young passengers may require a more far-reaching approach as it appears from this research some young passengers object to certain items being removed because they are not entirely convinced that security requirements are necessary. The EU Commission in 2013 authorised a new programme to investigate whether the restrictions on passengers who continue to carry liquids, aerosols and gels (LAGs) can be managed with the use of technology. In the meantime a pragmatic approach to this problem is the education of security staff to ensure they explain to young passengers which items must be removed whilst they are queuing for security checks.

In response to the second hypothesis the findings showed there is a significant difference between white and non-white passengers’ opinion of profiling passengers and treatment when they have been stopped. The suggested recommendations are based on this research which suggests further work needs to be done to ensure fairness, transparency and equality of security:

- Training for police and designated persons who operate Schedule 7 to include issues of ethnic profiling and professionalism (refresher course every 12-16 months).

87 European Commission ‘Mobility and Transport’ ‘Air’
• Intelligence led operations to determine suspected terrorists and further reduction of intuitive stops at airports.
• A higher representation of ethnic minority police officers carrying out Schedule 7 screening.

In response to the third hypothesis that passengers generally accept high levels of security the recommendation is:

• Review existing security process, consider whether they are legally compliant but also whether they are necessary, possibility of different security processes for very young and old passengers.

Following the 2012 review of Schedule 7, a number of improvements have been made to Schedule 7. The 2014 Code of Practice provides better guidance to police officers, requiring more officers to be trained, with the aim of reducing the number of other airport security personal who might be designated with the authority carry out Schedule 7 screening. The reduction in recorded Schedule 7 screening is a good indication that there is now a more focused approach to its use. The facts in this research suggests there is still work to be done particularly when reviewing the respondent in the research experience of Schedule 7 and the series of questions he was asked that appeared ethnically driven ‘which Mosque did he pray at’ However since this research started there have been several terrorist attacks in Europe that have proved Schedule 7 is necessary.

Conclusion

The Brussels and Istanbul airport attacks in 2016 have shown that providing security for airports is challenging, with attacks been carried out prior to airport security processes in the case of Brussels and at the entrance of the airport checking bags in the case of Istanbul. These attacks are similar to those carried out in Glasgow in 2007 and Domodedovo Airport in Russia in 2011 all of which were committed ‘Landside’. Security planning and policing of UK airports through SeMS will need to consider how to respond to these new threats.

After the Brussels attack, the CAA decided not to implement security prior to entering a UK airport. There is no current requirement to screen passengers at UK airports prior to entering an airport building and such an idea was rejected by the UK government in favour of using extra police and dogs after the Brussels attack.88

Security was in place before entering Istanbul's Ataturk airport but unlike Brussels airport, which only partially re-opened after 12 days, Ataturk was able to be open within 5 hours. There are arguments to suggest the Turkish authorities may have acted too quickly because of evidential issues. However, in opening the airport the Turkish authorities made an important

88 Tom Whitehead 'UK airports will not see entrance scanners but extra police and dogs likely in wake of Brussels attacks' The Telegraph 30 March 2016 <http://www.telegraph.co.uk/news/2016/03/30/uk-airports-will-not-see-entrance-scanners-but-extra-police-and/> (accessed 12/07/16).
statement to other potential terrorists, which is that such bombings will not make major
disruptions to their airports or way of life.

The security impact on aviation and terrorism co-operation in general in the context of the
UK’s decision to withdraw from the EU, will not be known for several years to come and
whether matters such as aviation security will still require joint co-operation with the EU and
beyond.89 Since 9/11, terrorism has no borders. This new paradigm has global reach and
responses have required international collective action and strategies. As Beck states, since
9/11 terrorism has become a new world risk.90 Airlines and airport operators are stakeholders
in developing more business and security is a necessary but expensive counter weight to that
development. Aviation business needs a risk assessment model that complements both
security and passenger flow, which is likely to require new technology coupled with
professional staff.

Since carrying out this research terrorist attacks have become more audacious and
unpredictable. The attacks in Paris, Brussels, Istanbul and London, for example, have shown
that terrorism cannot be contained or controlled via security processes like those at airports
alone. The UK response since 9/11 to counter-terrorism has been to adopt a reactive
legislative approach to a series of events in the attempt to prevent further attacks. However,
the recent attacks at airports are likely to require more than just legislation. The government
states that it is prepared to take whatever necessary measures are required to protect its
citizens. This utilitarian approach to governance of security is likely to provide some
satisfaction to the majority at the expense of the minority, which has consequences for not
only relationships with the Muslim communities but for their human rights. There is a need to
ensure government policy to counter terrorism can be put into practice in a way that more
effectively targets those at whom it is aimed.

89 EC Regulation No 300/2008 amended by (EC) Regulation No185/2010