

Original Article

Discretion and fairness in airport security screening

Cynthia Lum*, Peter Zachary Crafton, Rebecca Parsons, Dale Beech, Tarren Smarr and Michael Connors

Department of Criminology, Law and Society, Center for Evidence-Based Crime Policy, George Mason University, 4400 University Drive, MS 6D12, Fairfax, Virginia 22030, USA.

*Corresponding author.

Abstract This study reports the findings of a field survey asking more than 500 passengers at a large East Coast international airport about their experiences while going through airport security. Although existing research shows that metal detectors and baggage screening can be effective in reducing the likelihood of violence at airports and on planes, the fairness of such procedures has yet to be fully examined. While all passengers must be screened, there can also be discretion in airport security regarding whether passengers receive additional screening and how they perceive they are being treated. Findings indicate differences between racial groups and treatment, with nonwhites more likely to receive additional screening, have more items confiscated, feel embarrassed, and less likely to be provided an explanation for searches. Policy recommendations are suggested.

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Introduction

In 2011, the most recent year in which air travel statistics are available from the Federal Aviation Administration (FAA), the number of times an airplane was boarded at any United States airport was 725,262,193.¹ On average, the yearly enplanement since 2000 has been approximately 707 million, with significant declines only in 2001 (−6.9 per cent) and 2009 (−5.2 per cent). This amounts to a large number of people who use airports each day. Even if we assume a proportion of these enplanements are the same people, millions of people each year are screened and searched by Transportation Security Administration (TSA) officers.² These numbers do not include the hundreds of thousands of employees and contractors who are not traveling, but who may also be searched.

Compared with the number of contacts between citizens and local law enforcement in the United States, these numbers seem staggering. For example, the Bureau of Justice Statistics estimates in 2008 approximately 17 per cent of the population (or approximately 51 million people) in the United States reported having some kind of encounter with a law enforcement official (Eith and Durose, 2011).³ However, many of these encounters do not involve a search of persons or property. We do know for certain that at least 13 million arrests took

place in the United States in 2010, which would definitely result in a searchable encounter (US Department of Justice, Federal Bureau of Investigation, 2011). But both arrests and other encounters with the police are qualitatively different than airport security. Unlike police who stop and search some individuals for selective reasons usually due to suspicion, all traveling passengers (and many airport and airline employees and contractors) are screened by airport security, no matter how much or how little suspicion they generate. Searches by police may be more invasive compared with airport searches. In airport searches, the vast majority of people are never physically touched, and technology does most of the searching. Further, a much greater proportion of individuals who come in contact with the police are arrested or given a citation or warning compared with airport searches. Only a very tiny fraction of individuals at airports are ever arrested, detained or further questioned.

While there are differences in the nature and circumstances between airport security and local law enforcement contacts with citizens, there are similar concerns related to the fairness and effectiveness of these searches in the modern democratic context. Both US law enforcement agents as well as the TSA officers operate within a socio-political framework that implicates normative values of balancing concerns of safety and security with fairness and due process (Packer, 1964; Amir and Einstein, 2001). The balance of these values is directly tested during searches of persons and property. The balance can also shift between emphasizing effectiveness or fairness depending on the context. Since airport security is both substantively and symbolically connected to protection against a very frightening event (terrorism), concerns about effectiveness can trump those of fairness or procedural justice.

For instance, in 2011, there were 131 ‘unruly passengers’⁴ reported onboard air flights. The number of reported incidents peaked to over 300 each year between 2001 and 2004, but has been steadily declining since. Even the amount of TSA-reported security violations at all airports in the United States is relatively small compared with enplanements. On average, about 34 500 incidents per year since 2007 have occurred across all airports and most of these incidents are minor and nonterrorism related (Hibdon *et al*, 2012). Despite this low risk, people have much greater fear about being a victim of terrorism at airports and on airplanes than they do other types of crime of which they are most certainly at greater risk. Because of this fear, they are more likely to give federal agents greater latitude to protect them from the potential of even a single incident. Public opinion polls show that individuals are willing to accept a wide range of security measures at airports to protect themselves, even if they view them as overly intrusive (Davis and Silver, 2004). And, unlike local policing, homeland security interventions are rarely subjected to scientific scrutiny or outcome evaluation to determine whether they are indeed effective and fair (Ellis *et al*, 2011; Lum and Kennedy, 2011a).

However, given the volume of people who are screened and searched by airport security every day, and given that airport security casts a very wide net to prevent a very low risk, examining both the fairness and effectiveness of airport security is important and timely. This point has been emphasized in multiple Government Accountability Office (GAO) reports (see US Government Accountability Office, 2003, 2007, 2011). Yet almost a decade after the terrorism events of September 11, 2001 (herein ‘September 11’), there continues to be scant empirical research on either the fairness or effectiveness of homeland security measures (Lum and Kennedy, 2011a). At the same time, recent news stories indicate that people



are concerned about the fairness of airport security, even in light of their fearfulness (*The New York Times*, 2010; Schmidt and Lichtblau, 2012). More research in this area can offer a better understanding of the nature of these interventions and to what extent they adhere to or challenge justice values.

The Procedural Fairness of Airport Security Screening

Although airport security screening can prevent many types of crimes that might occur on airplanes or in airports, it was specifically developed and continues to be developed as a counterterrorism (or homeland security) measure. The most common type of screening mechanisms – metal detectors and baggage X-ray screening – were uncommon in many countries including the United States until the early 1970s, after numerous terroristic hijackings led to increased security at airports (Enders and Sandler, 1993). Before the hijackings of September 11, airport screening security in the United States had also been handled by private companies and contractors, usually governed by individual airport authorities. It was not until November 2001, after the passage of the Aviation and Transportation Security Act⁵ as a response to September 11, that airport security became primarily a federal government responsibility. This resulted in the creation of the TSA, as well as further scrutiny, improvements and funding for airport security screening technology (US GAO, 2003; Gkritza *et al.*, 2006).

Numerous studies have already found that metal detectors and screening at airports can reduce the occurrence of airplane hijacking (Landes, 1978; Cauley and Im, 1988; Enders *et al.*, 1990; Enders and Sandler, 1993, 2000; see also Lum *et al.*, 2006). This is not surprising, given that the prevention mechanism behind metal detectors is theoretically well-developed and empirically supported. Passenger and baggage screening rely on a rational choice model of offender decision-making (Clarke, 1980, 1983; Cornish and Clarke, 1986; Felson, 1994; Clarke and Newman, 2006), which asserts that offenders are most likely deterred when the cost and risk of detection and punishment exceeds the benefits of the crime (Nagin, 1998; Dugan *et al.*, 2005). Evaluations of situational crime prevention measures (Clarke, 1980, 1992, 1995; Eck, 2002) also indicate that target hardening and access control can effectively reduce crime at specific places like airports and airplanes.

While security screening and searches have been shown to be an effective means of preventing violence in airplanes and airports, there is less research knowledge regarding the procedural fairness or the discretion exercised by officers when passengers go through security. At first glance, such a question seems irrelevant, given that everyone must go through the security checkpoint, leaving little room for discretion and inequality of treatment. But this may not entirely be the case. For instance, officers have discretion whether to search individuals more thoroughly after they go through metal detectors if they see suspicious items in X-rays or in body scans. They can choose to engage in conversation with individuals (or not), and they can decide what types of searches and secondary screening actions they will take. Officers operating within TSA's Behavioral Detection Program can also decide whether to surreptitiously observe passengers and search or detain them, using a person's physical appearance and movements to guide decision-making, as Schmidt and Lichtblau (2012) have reported.⁶ Thus, even if basic screening (walking through a metal detector and having one's bag go through an X-ray machine) is given to the entire

population of air travelers, officers can still exercise discretion during searches, which can lead to differential treatment (or perceptions of differential treatment) of passengers.

Discretion in airport security has rarely been studied. Passengers have been surveyed about why and when they fly for marketing purposes or to comment on customer relations or airport services (see, for example, Charles River Associates Inc. and Polaris Research and Development, 2003; JD Franz Research, Inc., 2007). The US Department of Transportation (DOT) (2005, see also Gkritza *et al*, 2006) and the TSA have also conducted passenger surveys that more specifically focus on customer satisfaction with regard to wait times during screening.⁷ But airport survey questions rarely ask about more specific experiences during security screening that go beyond wait times and general customer satisfaction. Additionally, they are almost never asked to report background traits (race, ethnicity, gender, status, age). In American criminal justice, these traits have a long history of being associated with differential treatment by the police, and studies of law enforcement often focus on the impact of such differences on discretion. Further, many surveys are conducted post-travel in either national or mail-back surveys of passengers, resulting in low response rates and long lapses of time between flying and responses. Similar to surveys conducted for police agencies, these surveys often find high levels of citizen satisfaction at aggregate levels and yield little understanding about discretion in security.

Despite this lack of research regarding the fairness of airport security, the research in policing provides many insights into the discretion of law enforcement officers. The potential for differential treatment by law enforcement and other security authorities is not uncommon and regularly researched (see, for example, Smith and Visher, 1981; Smith *et al*, 1984; Fagan and Davies, 2000; Smith and Petrocelli, 2001; Lundman and Kaufman, 2003; Engel and Calnon, 2004; Novak, 2004; Brown, 2005; Brown and Frank, 2005; Durose *et al*, 2005; Farrell and McDevitt, 2006; Reitzel and Piquero, 2006; Schafer *et al*, 2006; Gaines, 2006; Warren *et al*, 2006; Alpert *et al*, 2007). Scholars have examined not only if disparities exist, but also whether perceptions of disparities also exist, which can be just as damaging to the quality of justice systems. Langan *et al* (2001), for example, discovered that perceptions of unfair treatment by nonwhite population groups continue to persist in police-citizen encounters (see also Higgins *et al*, 2008). In addition, the National Research Council's 2004 report on the fairness and effectiveness of policing emphasized the importance for more research to be generated in this area.

One theoretical perspective that has been used to frame the consequences of differential treatment in policing is procedural justice. Procedural justice theory posits that people's perceptions of the fairness of justice interventions can contribute to the legitimacy and compliance that they afford the justice system (Thibaut and Walker, 1975; Leventhal, 1980; Tyler, 1988, 1990). In other words, the way policing and security is implemented could be just as important to detecting, deterring and preventing crime and terrorism as *whether* the security system is effective. This is a more normative justification for compliance and crime prevention compared with an 'instrumental' one (Tyler, 2006), such as whether the intervention is effective (see also Sunshine and Tyler, 2003; Tyler, 2004, 2006; Tyler and Fagan, 2008).

More specifically, Tyler (1990) and Tyler and Huo (2002) emphasize the distinction between distributive and process-based (that is, procedural) justice. Distributive justice, for instance, would focus on the equal distribution of security screening: Do TSA officials search everyone? Do they search all individuals who set off the alarm when walking through



the metal detector? From this notion, distributive justice (and the legitimacy of TSA that arises from it) could be established with consistent and transparent rules about initial and secondary screening. However, Tyler and Huo (2002) note that the procedural justice effect is separate from concerns about outcome favorability or fairness, and therefore 'provides a way for acceptable decisions to be made in situations in which not all participants can be given what they want or feel they deserve' (p. 51). Tyler and Wakslak (2004) continue by arguing that individuals judge fair practices by the police based on three components of procedural justice: '(1) quality of decision making – perceived neutrality and consistency; (2) quality of treatment – being treated with dignity and respect, having one's rights acknowledged; and (3) trustworthiness – believing that the authorities are acting out of benevolence and a sincere desire to be fair' (p. 255).

In the context of airport security, a positive procedural justice effect may occur when an individual, even if incorrectly selected for additional screening, is treated respectfully, with trustworthy motives, and with neutrality and consistency. For example, with regard to quality of decision-making, one might examine whether there is neutrality and consistency in the selection of individuals for additional screening. TSA agents exercise discretion when it comes to secondary, not initial, screening, which may result from metal detector alarms, visual ambiguity about X-rays of bag items or persons, or pre-metal-detector decisions by behavioral detection officers. While selection for additional screening *per se* is not unjust, it may be perceived to be procedurally unjust if it is done without neutrality or consistency.

The second component – quality of treatment – might be gauged by how agents touch individuals or their property, how they speak to them, and what levels of privacy they might afford them during an additional search or pat-down. This can be compared with the quality of treatment by street-level police officers when they decide, after an initial stop, to continue with a 'Terry Frisk'.⁸ Did officers conduct the searches professionally and respectfully? Did they try to afford a suspect privacy if a more invasive search was needed?

Finally, Tyler and Huo (2002) articulate the third component – trustworthiness – in terms of *motive-based trust*. Motives can be guessed, but they can also be verbally relayed. For example, police officers stopping vehicles might provide a detailed explanation to the driver about why his or her car was stopped. In the same vein, TSA agents might tell individuals why they have been chosen for additional searches or screening. According to Tyler and Huo's argument, the communication to citizens about why they are chosen for further searches may assist in developing motive-based trust and contribute further to the acceptance of authoritative decisions.

While these components of procedural justice may appear nuanced, Tyler and his colleagues emphasize that procedural unfairness may have serious consequences with regard to the judgment of a system's legitimacy. Building on early work by Thibaut and Walker (1975), they theorize that unfair practices (such as racial profiling) may result in a judgment that the system is not legitimate, leading to a reduction in compliance with its rules (that is, more offending in the future). Sherman (1998) also adds that tactics that are not fair, despite their effectiveness, can build resentment and defiance for the law and authorities, which also could lead to further lawbreaking.

With airport security, a lack of compliance may manifest during screening by a passenger becoming upset or defiant at the security checkpoint. Or it may result in a more general lack of legitimacy afforded to TSA and future defiance (for example, opting out of certain

types of searches or generating complaints). Passengers may also walk away from the experience feeling embarrassed, upset, humiliated, angered or violated, all negative experiences that TSA may want to avoid. Procedurally just processes can lead to both short-term and long-term acceptance of government authority and compliance with the law, which may prove to be a valuable asset when TSA implements changes in security and needs the public's support. Certainly, the airport authorities who are concerned with passengers from a consumer-relations standpoint seek customer satisfaction as an output and measure of good business practices.

Sindhav *et al* (2006) first used a procedural justice framework to understand the fairness of airport security in the United States (see also Hasisi and Weisburd, 2011, who studied procedural justice in the context of an airport in Israel). Surveying 775 passengers at a gate in a Midwest airport, Sindhav *et al* found a positive relationship between passengers' perceptions of fairness, treatment, and procedural justice and their satisfaction with the airport experience. However, although it appears that race of the respondent may have been collected (that is, '...90 per cent were Caucasian...' [p. 329]), no further information on differences in perceptions across races was given. Nonetheless, both their and Hasisi and Weisburd's study indicate that exploring these aspects of procedural fairness – quality of decisions, quality of treatment and trustworthiness – in airport security may further illuminate discretion in airport security and also the impact of procedural justice on the quality of justice in airport security. In light of the current discourse about both the fairness and effectiveness of airport security, a better understanding of this discretion and its consequences may present TSA with a greater evidence base to develop screening policy.

Toward this end, the current study presents results of a survey of passengers about their security experiences shortly after they had passed through airport security, asking questions that evoke notions of procedural fairness. The purpose of this study is to determine whether there are perceptions of differential treatment by airport security screeners across different gender, racial and age types. And, if such differential treatment is detected, what might be some evidence-based, practical remedies that TSA might take to improve fairness of its actions.

The Current Study: Surveying Passengers at a Major Airport in the United States

The location of this study is a major East Coast airport that serves both international and domestic passenger travel. The airport is labeled as a 'Category X' airport by the TSA, which includes the nation's largest and busiest airports.⁹ Approximately 50 commuter, charter and cargo airline companies use this airport and the average number of daily commercial flights is approximately 700. It is estimated that more than 55 000 travelers pass through this hub airport daily, either as departing or transferring passengers. Because the airport was large and had multiple terminals in different locations, the research team chose a single terminal to collect data. This terminal was serviced by seven major airlines: AirTran Airways, US Airways, America West Airlines, Continental Airlines, Northwest Airlines, United Airlines and Midwest Airlines (domestic flights only). The passenger volume in this terminal accounted for approximately 33 per cent of the total passenger flight volume of the entire airport, and approximately 14 000 passengers used this particular terminal daily.



Permission to conduct the survey was provided by the Airport Authority, a separate entity from TSA that handles the daily business of the airport. The Authority granted the six-person research team permission to conduct a one-day (Saturday), in-person survey of individuals who had just gone through TSA security screening (metal detectors and bag X-ray scanners) as long as the team remained outside of the 50-foot TSA jurisdiction that surrounds the screening checkpoint.¹⁰ The Authority cited good customer service and openness to research as important priorities and values for reasons to work with the research team.

In order to survey as many passengers as possible within this time frame, we used a systematic scheme intended to cover as many departing flights from as many gates as possible. Before our arrival, we discerned all of the departure times and gate locations for flights during the data collection period. Given that there were 37 usable gates in that terminal, we created a timing schedule for teams of two researchers to be at gate 'areas' 45–60 minutes before a plane's departure. The gate area was defined as the general seating section in and around the gate door and the general vicinity of visual contact by the gate agent. No specific distance rule was used, given that gates were close together, and often passengers would sit in empty areas across the walkway from the gate in which they were departing. The 45–60 minute time frame was chosen because most planes board 30 minutes before departure. Had we arrived too early, we might not have been able to catch enough people taking that flight. Had we arrived too late, passengers might already be enplaning, and may not want to be bothered with taking a survey. However, even with this schema, we likely missed individuals in bathrooms, in restaurants, outside the gate area or running late to their flights. In total, 51 of 55 flights (not including those which were canceled) were successfully administered by an assigned research team, and the four missed were when various teams took lunch breaks.

We collected our data through in-person surveys of passengers by approaching passengers directly. The research team wore clearly identifying information and name tags displaying our university affiliation. When approaching groups of individuals, we introduced ourselves, stated our affiliation and explained that we were conducting a research project on their experiences going through airport security. Participants were given a consent document, a single-page, front-back survey (included as the appendix), and a pencil. We restricted our sampling to individuals self-identified as 18 years and older to satisfy human subjects' requirements. The researchers also made general announcements at the gate area, so as to capture as many people at the gate areas as possible to fill out the survey. Researchers remained present in the gate area as individuals filled out the survey but were instructed to provide some physical space for individuals who agreed to answer the survey, so as to not create any pressure for participants. Given these constraints, we were able to survey 505 individuals within the time allowed.

The survey instrument included three types of questions. The first set of questions focused on general satisfaction and experience with airport security and personnel. This included whether passengers went through this particular airport's security screening,¹¹ how long it took them to go through security, and their assessment of the courtesy and professionalism of TSA screeners. We also asked about their perceptions of the level of security and about their emotions when going through security (that is, nervous, embarrassed, annoyed, inconvenienced, angered or humiliated). The second set of questions focused on the additional screening that some passengers may have encountered. We asked whether individuals had been selected for additional screening and, if so, to describe what was done to them. We also

inquired whether they were told by TSA officials why they were selected for additional screening, how they felt about being selected for additional screening and whether any products were taken from them. Finally, the survey had general questions about the participants themselves – their age, gender and how often they travelled. For the last question of the survey, we asked individuals to self-identify their ‘race and/or ethnicity’.

Three aspects of this study stand out compared with previous research. First, unlike the TSA and other customer service surveys, passengers in this study were interviewed shortly after passing through security inside the airport. Like Sindhav *et al*'s work, the immediacy of surveying passengers is important given that people may quickly forget small details of encounters while traveling, as their minds might be focused on getting to their gates on time or the anxieties of travel. Household and mail-back passenger surveys may not capture these nuances about treatment. Secondly, because procedural justice often challenges differential treatment across race, gender and age, fairness in airport security should be examined against these differences, which this survey does. Finally, asking more specific questions about the nature of screeners' decision-making, especially during secondary screening, can help us to better assess the criteria for fair procedures as outlined in Tyler and Wakslak (2004).

Despite these positive aspects, there were also limitations to our approach. For example, the survey could only gauge passengers' experiences per their recollections. Because of the 50-foot rule⁹, we were not able to conduct systematic social observations of TSA actions themselves, which would be ideal in discerning actual versus perceived actions. We were also unable to record exactly how many individuals were in that terminal during our day-long data collection. People were in the bathroom, at restaurants, or on telephones when we approached each gate, and many individuals were not surveyed. However, of those individuals asked to take the survey very few (less than 20) refused to participate, and the vast majority of individuals were more than willing to volunteer to answer the two-page survey.

Other possible concerns involve the characteristics of the sample itself. For instance, there may be possible selection bias given the location and day of our survey. More leisurely, rather than business, travelers may travel on Saturdays, and given fare structures, the choice to fly on Saturdays may also be connected with socioeconomic status, since prices are often lower for Saturday flights. The terminal that we were in excluded one of the largest and lowest-cost carriers servicing this airport – Southwest Airlines. Owing to the affordability of Southwest flights, there may be status, age, gender and racial differences in the passengers that we surveyed. Despite these limitations, the study offers an exploratory basis for examining the procedural justice of airport security, showing that such studies of homeland security are feasible.

Results

General findings across all passengers

Of the 505 passengers who completed this survey, 91 per cent reported beginning their travels at this airport, while 9 per cent said they had gone through security at another airport.

Table 1: How often respondents travel by airplane

	<i>n</i>	<i>Per cent</i>
I rarely travel by airplane (one time or less per year)	89	17.6
I travel by airplane only a few times a year	295	58.4
I travel by airplane approximately 1 time per month	63	12.5
I travel by airplane more than once per month	42	8.3
Missing answer	16	3.2
Total	505	100.0

Table 2: Self-described race or ethnicity of survey respondents

<i>Groupings</i>	<i>n</i>	<i>Per cent</i>
Caucasian, White, Canadian, East and West European, Greek	378	74.9
African, Black, South African Black, Haitian, Jamaican	50	9.9
Asian, Chinese, Japanese, Korean, Thai, Vietnamese, Filipino, Malaysian, South Asian (non Indian), Native American, Pacific Islanders	25	5.0
Hispanic, Latino, Spanish, Mexican, Puerto Rican, Cuban, South/Central American	8	1.6
Middle East Arab, North African	6	1.2
Indian, Sri Lankan, Pakistani	6	1.2
Jewish	1	0.2
Other mixed description	2	0.4
Unknown or missing answer	29	5.7
Total	505	100.0

The respondents were primarily occasional travelers. As Table 1 shows, over three-quarters of those surveyed travel only a few times or less per year.

In terms of gender proportions of our survey respondents, 43 per cent were male and 54 per cent were female. This particular gender mix may provide some clues as to the types of travelers on Saturdays. Previous studies (see Charles River Associates Inc. and Polaris Research and Development, 2003; JD Franz Research, Inc., 2007) indicate that about one-third of business travelers are women, whereas women make up about 55 per cent of individuals traveling for personal reasons. We can only surmise that this gender difference might indicate a greater percentage of non-business travelers flying on Saturdays. The mean age of those who answered the survey was 42 years old (standard deviation = 15.6 years). The youngest person who answered our survey was 18 and the oldest was 82. Gender and age were correlated, with females likely to be older than the males (Pearson's $r=0.111$, $P=0.014$).

The racial and ethnic mix of the sample reflected the diversity of the surrounding area in which the airport is located. Table 2 shows that 74.9 per cent of respondents self-described as white or Caucasian per the categories listed, while 19.4 per cent self-described themselves as nonwhite. Only 5.7 per cent of the respondents chose either not to answer this question or the written response could not be discerned. Table 2 groups the self-described racial groups in our survey into general categories. As with gender, age was correlated to

Table 3: Ordinal regression of respondents rating of the level of courtesy and professionalism of TSA regressed on age, gender and race

	<i>Estimate</i>	<i>SE</i>	<i>Wald</i>	<i>P</i>	<i>95% C.I.</i>
<i>TSA rating (compared with 'Very discourteous and unprofessional')</i>					
Rate TSA=Very courteous/ professional	-0.60	0.29	4.17	0.04	[-1.18, -0.02]
Rate TSA=Somewhat courteous/ professional	1.75	0.32	30.16	0.00	[1.13, 2.38]
Rate TSA=Somewhat discourteous/ unprofessional	4.29	0.64	45.40	0.00	[3.04, 5.54]
Age of respondent	-0.02	0.01	10.71	0.00	[-0.03, -0.01]
Gender=male (compared with female)	0.12	0.19	0.41	0.52	[-0.25, 0.48]
Race=nonwhite (compared with white)	-0.08	0.23	0.11	0.74	[-0.53, 0.38]

Link function: Logit. Gender=female and race=white were excluded due to redundancy. $\chi^2=11.983, P<0.01, DF=3$. Nagelkerke $R^2=0.03$.

general racial groups, with white passengers significantly older than their nonwhite counterparts (Pearson’s $r=0.116, P=0.012$).

In general, overall satisfaction with TSA airport security screening was very similar to the most recent TSA Customer Satisfaction Survey of 2004–2005,¹² as well as the DOT (2005) study. Both TSA and DOT report that high proportions (above 90 per cent, usually) of customers claim to be ‘satisfied or very satisfied’ with the courtesy of TSA screeners. Similarly, when we asked passengers how they would rate the courtesy and professionalism of the security officials they encountered, 55 per cent of our sample stated ‘very courteous/professional’ while 37 per cent said ‘somewhat courteous/professional’. Also similar to the DOT and TSA surveys was our finding that passengers seemed to believe that the time it took them to go through the security process was reasonable (77 per cent) if not shorter than expected (20 per cent). Finally, when asking individuals if they felt the level of security at this airport was appropriate, our findings mirrored the TSA Customer Satisfaction Survey findings. Eighty-three per cent of our respondents felt the level of security was ‘just about right’, similar to the 89 per cent of TSA survey respondents who replied ‘Appropriate’ to a similar question. In the TSA survey, only 4 per cent argued that screening was ‘excessive’, while another 7 per cent felt it to be ‘inadequate’. In our study, 7 per cent stated that security was ‘not enough/too little’ and 8 per cent felt it was ‘excessive/too much’. Multivariate ordinal regression (see Table 3) revealed that personal characteristics were not strongly related to the overall screening experience. Gender and race did not significantly matter, although older customers were more likely to view TSA as more courteous and professional than younger passengers.

We then asked individuals about their emotional states when going through security. Table 4 reports the extent to which individuals felt nervous, embarrassed, annoyed, inconvenienced, angered or humiliated. As these descriptive findings across the sample indicate, negative emotional states were not pronounced in the vast majority of our respondents. If any negative emotion was felt, it was annoyance or inconvenience rather than emotions of nervousness, anger, embarrassment or humiliation.

**Table 4:** Level of various emotions felt during screening

	<i>Did not feel this (%)</i>	<i>Somewhat felt this (%)</i>	<i>Moderately felt this (%)</i>	<i>More strongly felt this (%)</i>	<i>Very strongly felt this (%)</i>	<i>Did not answer (%)</i>
Nervous	72.5	12.9	4.4	4.2	1.4	4.8
Embarrassed	87.5	4.0	2.6	0.8	0.2	5.0
Annoyed	66.3	10.9	9.9	3.6	3.2	6.1
Inconvenienced	61.4	15.4	10.1	5.0	3.0	5.1
Angered	83.2	5.1	2.8	1.2	1.4	6.3
Safe/Secure	22.9	12.4	23.6	26.1	15.1	11.9
Humiliated	89.9	3.4	1.0	0.0	1.0	4.8

However, Table 5 reveals from a multivariate ordinal regression that personal characteristics as well as ratings of TSA's courtesy, professionalism and efficiency were sometimes connected with emotional states. For example, being younger was more likely associated with feelings of nervousness, annoyance or feeling safe. Individuals who felt the time it took to get through security was either 'longer than reasonable' or 'reasonable' (compared with those who felt it took shorter than expected) were also more likely to feel annoyed, inconvenienced, angered and humiliated. (Those who felt it took 'longer than reasonable' also felt embarrassed.) Men were more likely than women to feel more inconvenienced and angered, and those who felt TSA were very discourteous were more likely to feel annoyed or humiliated generally with a few caveats depending on the strength of discourteousness felt.

Specific findings related to additional screening

For many of the general screening questions as reported above, there were no significant differences between responses by those self-described as white versus those who self-described as a race or ethnicity other than our white categories (herein, 'nonwhite'). This was the case for responses regarding the courtesy or professionalism of TSA officials, the amount of time it took to get through security, or the emotional states across the security experience. Similar non-significant findings between racial and gender groups regarding distributive justice were also found in the DOT (2005) surveys of passengers.

However, racial differences were found between white and nonwhite passengers who had experienced additional screening. For example, 12 per cent of our sample (60 individuals) was subjected to additional screening. These additional actions varied widely, from body scanning to searching of persons and property (see Table 6), sometimes with multiple actions taken upon the same individual. But the application and number of additional screening actions were not applied proportionately across race. Although not quite reaching a statistical threshold, nonwhites (16 per cent) were more likely to receive additional screening than white passengers (11 per cent) ($P=0.102$). A notable discrepancy was also indicated in the DOT (2005) study from its Omnibus Household Surveys, where 34 per cent of nonwhites were selected for extended screening versus 27 per cent whites (non-Hispanic).¹³ Furthermore, nonwhites were significantly more likely to report having a greater number of additional procedures performed upon them (Figure 1). While white passengers who

**Table 5:** Ordinal regression of factors associated with emotional states when going through security

	<i>Nervous</i>	<i>Embarrassed</i>	<i>Annoyed</i>	<i>Inconvenienced</i>	<i>Angered</i>	<i>Safe/Secure</i>	<i>Humiliated</i>
Age: Being younger increases the odds of being...	1.02**	NS	1.02**	NS	NS	1.02**	NS
Gender: Odds less than 1.0 mean men are more likely than women to feel greater levels of the emotion indicated ^a	NS	NS	NS	0.56*	0.51*	NS	NS
Race: Being non-white increases the odds of being...	NS	NS	NS	NS	NS	NS	NS
Time through security: Those who felt time was longer than reasonable versus shorter increases the odds of being...	NS	9.57*	30.6**	22.9**	12.4*	NS	15.7*
Time through security: Those who felt time was longer than reasonable versus reasonable increases the odds of being...	NS	NS	13.3**	8.0**	7.8**	NS	6.4*
TSA Professionalism: Those who felt TSA very discourteous versus very courteous increases the odds of being...	NS	NS	104.2**	NS	14.4*	NS	27.9*
TSA Professionalism: Those who felt TSA very discourteous versus somewhat courteous increases the odds of being...	NS	0.21**	40.8*	NS	NS	NS	22.2*
TSA Professionalism: Those who felt TSA very discourteous versus somewhat discourteous increases the odds of being...	NS	NS	NS	NS	NS	NS	NS
-2Log Likelihood (with significance)	620.46	272.18	632.56	749.40	335.44	1181.4	191.17
Nagelkerke R	P=0.07	P=0.01	P=0.00	P=0.00	P=0.00	P=0.08	P=0.00
	0.04	0.09	0.25	0.22	0.15	0.03	0.14

* $P < 0.05$; ** $P < 0.01$; NS=not significant.^aThe actual interpretation is: 'Being male compared to female increases the odds of having a smaller inconvenience score by 0.56'. Recall – emotion scores increase as the emotion becomes more negative.

Table 6: Types of screening activities received by those selected for additional screening ($n=60$)^a

Activity	Per cent
Officer opened bag and removed some or all of its contents	51.7
Officer scanned full body with metal detector wand	36.7
Officer ran a swab/cloth over belongings	26.7
Officer opened bag and looked inside <i>without</i> removing contents	20.0
Officer opened and tested a liquid or gel in your bag	15.0
Officer conducted some other extra screening activity not described above	11.7

^aSixty individuals, of the 505 surveyed, received additional screening.

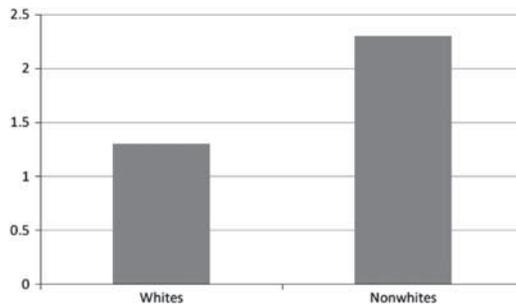


Figure 1: Average number of additional screening procedures reported by whites and nonwhites.

Table 7: Comparison of feelings of embarrassment between whites and nonwhites selected for additional screening

	Nonwhites	Whites	Total
I did not feel embarrassed	9 (50%)	34 (85%)	43
I felt only slightly embarrassed	4 (22%)	6 (15%)	10
I felt moderately embarrassed	2 (11%)	0 (0%)	2
I felt very embarrassed	3 (17%)	0 (0%)	3
Total	18 (100%)	40 (100%)	58 (100%)

Chi squared=13.538 (DF=3, $P < 0.01$), tau $c = -0.335$, $P = 0.005$.

received additional screening reported on average 1.3 additional procedures, nonwhite passengers reported 2.3 additional procedures ($t = 2.755$, $P < 0.001$).

With regard to emotional states during the security screening process, one of the six emotions appeared to be experienced significantly differently between whites and nonwhites. Nonwhites were more likely to feel embarrassed than their white counterparts when selected for additional screening, as indicated in Table 7. Twenty-eight per cent of nonwhites felt moderately to very embarrassed to be selected for additional screening, while none of the white passengers felt similarly. While this does not indicate that the differential treatment caused the differential embarrassment, others have suggested that differential perceptions and feelings cannot be ignored when considering the quality of justice (Langan *et al*, 2001; National Research Council, 2004).

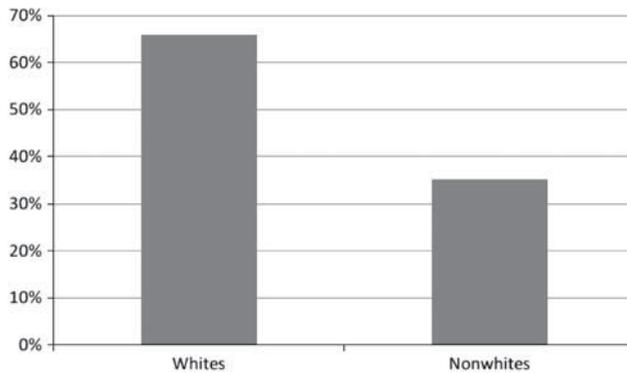


Figure 2: Proportion of individuals who received additional screening who were given a verbal explanation as to why they were being further screened.

Finally, we asked individuals who had been selected for further screening whether security officials explained to them why they had been selected. In total, 58 per cent of the 60 individuals selected for additional screening received some kind of verbal explanation, while 42 per cent did not. Indeed, this in itself is a wide discrepancy. However, what makes this finding more interesting is that of the white passengers who were selected for additional screening, 66 per cent received a verbal explanation. This is compared with only 35 per cent of their nonwhite counterparts who received some explanation (Figure 2). This finding is also interesting because, unlike our questions about feelings, this measure of procedural justice (as well as the number of actions conducted upon individuals) is less reliant on subjective impressions. Although actual systematic social observations would be the best way to validate such findings, the differences nonetheless are notable.

Discussion and Recommendations

Airport passenger screening security is an important part of homeland security measures against hijacking. Although in need of both technological improvement and more research, the evidence base for the deterrent efforts of airport security is supported from specific studies on metal detectors and from situational crime prevention and deterrence studies more generally. However, in advanced democracies, evaluation of criminal justice interventions cannot measure only outcome effectiveness; fairness in implementation is also an equally important value to achieve. Scholars of procedural justice and police legitimacy point to the importance of the process by which interventions are meted out and the effect of the fairness and legitimacy of that process on future compliance and trust in the system and its agents.

The findings from this study yield a number of importance nuances about the discretion of airport security within the theoretical framework of procedural justice. Recall that a positive procedural justice effect may occur when an individual, even if incorrectly selected for additional screening, is treated respectfully, with trustworthy motives, and with neutrality and consistency. In the case of this airport, the TSA screeners generally received satisfactory marks from passengers, consistent with other airport surveys. But at the same time, there is



some evidence of racial disparities in the perception of treatment by passengers, especially during additional screening. For example, with regard to the perceived neutrality and consistency in decision-making, this study indicates that nonwhites are more likely than whites to report being selected for additional screening. Further, nonwhites are more likely to report a greater number of additional search procedures when selected (for example, having their bag opened, swabbing their bag or clothing for explosive residue or being subjected to a body pat-down).

In terms of 'being treated with dignity and respect; having one's rights acknowledged' (Tyler and Wakslak, 2004, p. 255), there are indications that this type of procedural fairness can also be improved during secondary screening. Nonwhites indicated greater feelings of embarrassment during secondary screening, which may be an approximate measure of 'dignity and respect'. The problem with this and other studies is that we do not know the source of this embarrassment, which may be the combined result of the current situation and past experiences and perceptions. Nonwhites may be more sensitive to public scrutiny or connect prior experiences of law enforcement treatment to current ones. Nonetheless, such embarrassment and shame associated with being subject to law enforcement activity can have a significant impact on the relationship between authorities and populations that have historically been treated poorly by authorities.

Further, being told why secondary screening was occurring may also be a proxy measure for 'having one's rights acknowledged' and trustworthiness. Again, nonwhites fare worse at being provided an explanation. Although we do not know from this study whether nonwhites were less likely to ask for an explanation, the stark difference still remains notable. Communication between passengers and screeners can help establish trustworthiness and the motives of screeners in the minds of passengers, an important component of fair procedures. This trustworthiness may in turn temper the negativity of being selected for additional screening in the first place. Although the numbers are very small ($n=15$), those nonwhite passengers who were secondarily screened with no verbal explanation expressed poorer satisfaction with TSA (four as opposed to one person in this specific category expressed dissatisfaction).

These findings, as well as prior research on racial disparities in criminal justice, should be approached cautiously. We should not expect, even in the most free or democratic society, that people can be colorblind or free from conscious or unconscious prejudices. Nor is it fruitful, in this author's view, to make a sweeping statement about the motives or personal beliefs of these TSA officers, many of whom are ethnic minorities. Indeed, in Schmidt and Lichtblau's (2012) article, it appears the TSA officers themselves are reporting racial bias in security procedures. The question is how this research evidence can be best translated into tangible and useful policy recommendations and corrective actions given the environment TSA finds itself in. Without improving practices, complaints may increase, lawsuits may ensue, the TSA's reputation and legitimacy may deteriorate, and the airport may lose business. To conclude, I make three suggestions.

First, the combination of both positive and negative findings about airport screening security in this and other surveys provides an ideal environment for policy change in the area of passenger treatment and TSA customer service. This survey and others indicate that TSA has broad citizen support regarding the time it takes to conduct screening and general satisfaction with officers. Most people, whatever their race, are satisfied overall with the time it takes to go through security. This may indicate that TSA has some leeway in

terms of taking extra care in carrying out their charge. They might take a bit more time to ensure that the implementation of secondary screening is based on coherent and consistent practices. They can also take a few extra seconds to consciously apply similar amounts and types of screening to everyone who receives secondary screening. Further, if they choose to tell individuals why they are being secondarily screened, this study indicates they have the time and the overall support of customers to do this for everyone, not just for 60 per cent of those who are being additionally screened. Further support for this policy suggestion comes from Gkritza *et al* (2006), who found that passenger satisfaction was fairly inelastic to small changes in wait time. Training about these consistent rules for selection for additional screening *and* what to do and say during additional screening could help TSA improve its overall legitimacy, especially with minority travelers.

The second recommendation may seem 'soft' and is not often a focus of law enforcement. Police officers are rarely trained or told that it is fairly common for humans to react in different ways to people who are a different race, ethnicity, religion or gender (Lum, 2010). Rather, the focus is either on citing anti-discrimination law or espousing vague statements about treating everyone the same. Alternatively, an evidence-based approach to law enforcement tactics requires that research on race and criminal justice be reflected upon in training, and that specific evidence in their airports regarding differential treatment across racial, gender or status groups are presented and discussed. This type of information dissemination (as opposed to standard procedures or legal training) may better solidify, in an officer's mentality, the existence and consequences of disparity in the administration of justice. Further, satisfaction surveys that give TSA officers generally high approval ratings may indeed increase morale, but also do a disservice in failing to highlight the differences between people who feel satisfied and those who feel dissatisfied. Findings of general satisfaction can hide significant differences of satisfaction between racial groups, which may be at the core of developing legitimacy and improving the quality of security screening in democracies. As Langan *et al* (2001) reports, racial minorities continue to believe they are not treated the same by law enforcement authorities, which should be a major concern when judging the fairness of justice (National Research Council, 2004). Supervisors also need guidance and supervision about how they might consciously recognize differential behavior toward whites and nonwhites so that they may mentor their officers better in this area.

Finally, to say that 'more research is needed' in the area of homeland security is an understatement (Silke, 2004; Lum *et al*, 2006; Lum and Kennedy, 2011a). This study is only a preliminary examination of the different components of procedural justice in one type of homeland security arena. Future research should replicate surveys like ours in more airports, as well as conduct systematic social observations of TSA officers, comparing them with the perceptions of passengers. Further, research might examine the various aspects of procedural justice and their connection to future compliance with authority to test the full Tyler process-based model in the context of counterterrorism research (Tyler *et al*, 2010). Comparing treatment of more specific racial groups, comparing the exercise of discretion between security and other law enforcement entities, and examining public opinion about discretion in different contexts (see, for example, Johnson *et al*, 2011) are also research projects that can build a sturdier evidence base for understanding discretion in homeland security. Such research can also help TSA build a long-term strategy of establishing their legitimacy, just as it focuses on comprehensive strategies for securing the safety of airports.



Accomplishing all of these research goals also means that researchers and homeland security agents must overcome barriers in collaborating (Lum and Kennedy, 2011b). The fairness and effectiveness of security interventions can only be assessed through good science, which requires exchange of data, access to observations, friendly cooperation and reasonableness on both sides. In the case of this study, we were unable to gain access to observe security screening at checkpoints, but perhaps having researchers standing next to metal detectors may in reality be difficult and intrusive. Homeland security agents also must critically challenge and question their fear that research threatens national security. During our data collection for this study, two US Air Marshals stopped and detained one research team claiming that the survey was possibly a threat to national security. When the author explained the survey to them and showed them documentation of our permission from the Airport Authority to conduct the survey, they still attempted to detain us further, claiming that knowledge from the survey might lead to terrorism.¹⁴ In a current Department of Homeland Security/TSA-supported project, the first author and her colleagues had to redact many findings from their public report of the analysis of existing security measures at airports (see Lum *et al.*, 2011), also due to claims of national security. Both incidents reflect the reality of the environment in which research on homeland security occurs. Yet, future efforts to improve relations between researchers and TSA may lead to greater understanding of the fairness and effectiveness of airport security tactics and strategies, and allow both to benefit from the knowledge gained.

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Notes

- 1 Statistics reflect data collected through 2011. See http://www.faa.gov/data_research/.
- 2 In a few airports (for example, San Francisco International Airport), security screening is not carried out by TSA, but by a private company. However, these security officers still are supervised and managed by TSA officials, and follow similar standard operating procedures as other TSA-employed security officials.
- 3 It is unknown whether any of these encounters occurred at airports. However, given that the 2008 (which is the most recently available) Police-Public Contact Survey of the Bureau of Justice Assistance uses the term 'police' and is a supplement to the National Crime Victimization Survey, the authors suspect that participants of the survey would not likely consider their airport experiences when answering these questions about encounters with the police.
- 4 This is a term the FAA uses to define passengers found 'interfering with the duties of a crewmember violates federal law' or violating Federal Aviation Regulations 91.11, 121.580 and 135.120 which state that 'no person may assault, threaten, intimidate, or interfere with a crewmember in the performance of the crewmember's duties aboard an aircraft being operated'. See http://www.faa.gov/data_research/passengers_cargo/unruly_passengers/, for more information.
- 5 Aviation and Transportation Security Act, Public Law 107-71, S. 1447, 107th Cong., 1st Sess. (2001).
- 6 See http://www.tsa.gov/what_we_do/layers/bdo/index.shtm and U.S. Government Accountability Office (2010).
- 7 The TSA information is only available online at http://www.tsa.gov/press/releases/2005/press_release_0571.shtm.
- 8 *Terry v. Ohio* 392 U.S. 1 (1968).
- 9 The TSA classifies airports in the following order (related to the level of passenger enplanements and other security considerations from highest to lowest): Category X, I, II, III and IV.

- 10 The research team did ask the TSA for permission as well, but was not granted access to observe security inside of their 50-foot jurisdiction.
- 11 Some passengers may have come from another airport and therefore would have gone through security at that airport unless they were international travelers which would require them to go through security again, upon entering the United States.
- 12 The TSA Customer Satisfaction Survey and the full data can be accessed from http://www.tsa.gov/press/releases/2005/press_release_0571.shtm.
- 13 See http://www.bts.gov/programs/omnibus_surveys/household_survey/.
- 14 The researchers ended up just physically walking away from the Marshals, given that they had no grounds to detain us.

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Appendix

The Survey

1. Did you go through security screening lines at [NAME OF AIRPORT] Airport today?
 - Yes
 - No If no, please write the name of the airport where you began your travels at today: _____

 2. Do you think the amount of time it took you to get through airport security today was (please check):
 - Reasonable
 - Longer than reasonable
 - Shorter than reasonable
 3. How would you rate the courtesy and professionalism of the security officials you encountered at the airport screening checkpoint?
 - Very courteous/professional
 - Somewhat courteous/professional
 - Somewhat discourteous/unprofessional
 - Very discourteous/unprofessional
 4. When going through airport security, were you selected for additional screening?
 - Yes
 - No (if 'No', please skip to QUESTION 9 on the next page)
 5. If selected for additional screening today, please mark which of these additional measures you went through: (please mark any which occurred – you may mark more than one)
 - Security officer used a metal detector wand and scanned your entire person
 - Security officer ran a swab/cloth over your belongings
 - Security officer opened your bag and looked inside of it without removing contents
 - Security officer opened your bag and removed some/all of its contents
 - Security officer opened and tested a liquid or gel in your bag
 - Other, please describe here: _____
 6. If you were selected for further screening, did security officials explain why you were selected for further screening?
 - Yes Please write the reason they gave you here: _____
 - No
 7. If you were selected for further screening, why do you feel you were selected? _____
-
-
8. If you were selected for further screening, please choose which response BEST DESCRIBES how you felt:
 - I did not feel embarrassed.
 - I felt only slightly embarrassed.
 - I felt moderately embarrassed.
 - I felt very embarrassed.

9. Did security officials at airport screening take any items from you?

Yes LIST ITEMS HERE: _____

No

10. Do you feel that the level of security you experienced today when going through screening was (please mark only one):

Just about right

Excessive/too much

Not enough/too little

11. For each emotion below, please rate how strongly you felt that emotion when going through airport screening (where '1' means you did not feel this emotion and '5' means you strongly felt the emotion):

Did not feel this emotion —————> Strongly felt this emotion

Nervous	1	2	3	4	5
Embarrassed	1	2	3	4	5
Annoyed	1	2	3	4	5
Inconvenienced	1	2	3	4	5
Angered	1	2	3	4	5
Safe/secure	1	2	3	4	5
Humiliated	1	2	3	4	5

12. Please mark which of the following best describes how frequently you travel by airplane:

I travel by airplane more than once per month

I travel by airplane approximately 1 time per month

I travel by airplane only a few times a year

I rarely travel by airplane (one time or less per year)

13. Your age: _____

14. Your gender:

Male

Female

15. Please describe your race and/or ethnicity here:
