

AN ANALYSIS ON THE IMPACT OF THE URBAN AREA SECURITY INITIATIVE
ON TERRORIST ATTACKS IN URBAN AREAS

by

Ambrozie Ayers
A Thesis
Submitted to the
Graduate Faculty
of
George Mason University
in Partial Fulfillment of
The Requirements for the Degree
of
Master of Arts
Criminology, Law and Society

Committee:

_____ Director

_____ Department Chairperson

_____ Dean, College of Humanities
and Social Sciences

Date: _____ Spring Semester 2021
George Mason University
Fairfax, VA

An Analysis on the Impact of the Urban Area Security Initiative on Terrorist Attacks in
Urban Areas

A Thesis submitted in partial fulfillment of the requirements for the degree of Master of
Arts at George Mason University

by

Ambrozie Ayers
Bachelor of Science
George Mason University, 2015

Director: Sue-Ming Yang, Associate Professor
Department of Criminology, Law and Society

Spring Semester 2021
George Mason University
Fairfax, VA

Copyright 2021 Ambrozine Ayers
All Rights Reserved

DEDICATION

This is dedicated to my parents, James and Cassondra Ayers.

ACKNOWLEDGEMENTS

I would like to thank the many friends, relatives, and supporters who have made this happen. My loving parents, James and Cassondra, who assisted me in my many read throughs and edits. Faith Myrick who was there whenever I needed to talk. Drs. Yang, Lum, and Koper as members of my committee were of invaluable help and infinite patience. Finally, thanks go out to F. D. C Willard for being a co-author in spirit to all scientific endeavors.

TABLE OF CONTENTS

	Page
List of Tables	vi
List of Figures	vii
Abstract	viii
Chapter One: Introduction	1
Chapter Two: Literature Review	3
Importance of Evidence-Based Policies.....	3
Evidence-Based Policy and Terrorism.....	7
Counterterrorism Measures	10
Terrorism as a Definition	13
Target Hardening.....	15
UASI.....	22
UASI Changes.....	25
Potential Lack of Effectiveness.....	32
Research Questions	38
Chapter Three: Data, Analysis, and Methodology.....	44
Data	44
Variables.....	48
Methodology	52
Chapter: Results	53
H1	54
H2.1	55
H2.2.....	56
Chapter Five: Discussion	58
Limitations	62
Chapter Six: Conclusion	64
Appendix A.....	65
Appendix B	60
Appendix C	65
References.....	72

LIST OF TABLES

Table	Page
Table 1: Summary of Descriptive Statistics.....	54
Table 2: Model Summary of H1	55
Table 3: Correlations and Results for H1 (Predicting Total Number of Attacks)	55
Table 4: Results Summary H2.1	56
Table 5: Model Summary for H2.2.....	57
Table 6: Correlations and Results for H2.2: Predicting Total Number of Casualties.....	57

LIST OF FIGURES

Figure	Page
Figure 1: UASI Funding 2003-2020	31

ABSTRACT

AN ANALYSIS ON THE IMPACT OF THE URBAN AREA SECURITY INITIATIVE ON TERRORIST ATTACKS IN URBAN AREAS

Ambrozine Ayers, M.A.

George Mason University, 2021

Thesis Director: Dr. Sue-Ming Yang

Since the September 11 terror attacks, there has been a significant increase in counterterrorism policies and programs in the United States. The Urban Area Security Initiative (UASI) is a program that was enacted in the post-9/11 spread of counterterrorism programs to provide grants to high-risk urban areas to help reduce the risk of terrorism. However, the effectiveness of the program is largely unknown. Basing policies and programs in evidence is important to ensure the best practices are in place. Recent incidences have led to questions about UASI's effectiveness at reducing the risk of terrorism in urban areas. An analysis is conducted on UASI funding from 2006 to 2010 to predict the effectiveness of UASI on terrorism incidents, fatal attacks, and casualties between 2011 and 2015. The analysis found a blowback effect in urban areas that received UASI funding resulting in an increase in terrorism incidents. Analysis on fatal incidents and casualties indicated UASI had no effect on their outcome. This analysis

overall indicates a lack of effectiveness in the UASI program in meeting its original goal of reducing the risk of terrorism.

CHAPTER ONE: INTRODUCTION

The events of September 11 have greatly influenced public perception of terrorism. The sizeable loss of lives and live media coverage of the events as they unfolded deeply impacted the world. In response to the events on September 11th, there has been a significant increase in the spread of counterterrorism policies and practices (Lum et al., 2006). It is important for policies to be based in evidence as it avoids potential harms and ensures effectiveness. However, the effectiveness of these counterterrorism policies is largely unknown.

Silke (2008) has estimated that at the time of his study close to 90% of available terrorism studies were published after September 11. Since the time of his analysis, the number of publications has certainly grown, and the percentage of studies post-September 11 is most likely higher. However, this research has not always translated to counterterrorism policy. As Lum et al. (2006) has found in a Campbell Collaboration Review of counterterrorism measures, there is a significant lack of research on the effectiveness of counterterrorism interventions.

One program that falls into this category is the Urban Area Security Initiative (UASI). UASI is a grant program designed to help build and maintain the preparedness capabilities of urban areas against terrorism attacks and other disasters (FEMA, n.d.). However, only one analysis into its effectiveness is available as of the time of this paper.

Rebecca Nash (2017) conducted an analysis on UASI's ability at reducing terrorism attacks through a time-series analysis and found UASI was not effective. In addition, recent events in areas currently funded by UASI bring into question the program's effectiveness. This paper will further the research on the effectiveness of the UASI program in reducing the threat of terrorism.

CHAPTER TWO: LITERATURE REVIEW

Importance of Evidence-Based Policies

Experience, tradition, and common-sense have long been used as the basis for many policies. However, these factors do not necessarily facilitate the creation of policies that are effective in achieving their end goal or goals. Using evidence as the foundation for policies is crucial. As Lum et al phrases it, “Evidence-based policies are ones that have been shown to be effective through systematic and scientific tests so to assure that the most appropriate treatments and interventions are used” (2006, p.490). Evidence-based policies are founded on the use of scientific evidence to make informed the decisions on policy matters.

The push for evidence-based policy and practice is often credited to the medical field with its push toward evidence-based medicine and its use of evaluating practice with rigorous standards of evidence (Parkhurst, 2016). Within the last twenty years there has been a significant rise in the call for evidence used as the basis for policy and practice across a myriad of fields (Sherman, 1998; Davies et al., 2000; Nutley et al., 2010, Parkhurst, 2016). These fields include education, policing, legislation, environmental sciences, and business management. Both government and non-governmental agencies have been established to increase the use of evidence in policymaking (Parkhurst, 2016). One example is the Coalition for Evidence Based Policy, a “nonprofit, nonpartisan organization that seeks to increase government effectiveness through the use of rigorous evidence about what works” (Coalition for Evidence-Based Policy). The Coalition would

their operations down in 2015 and was rolled into the Laura and John Arnold Foundation under their newly opened Evidence-Based Policy and Innovation division. This continuation even after 14 years of operation demonstrates the ongoing need to push for evidence-based policy.

Policymakers and practitioners are often resistant to changing known practices. Despite the plethora of research available, medical doctors “rarely read the 2,500 medical journals available, and instead base their practice on local custom” (Sherman, 1998, p.2). Practitioners are often entrenched in the current practices. New evidence that changes current practices challenge long-held beliefs and so practitioners are resistant. This reluctance to change is true of practitioners in any field, not just medical. Ignaz Semmelweis, an obstetrician in the mid-1800s, discovered evidence that death of mothers in childbirth could be decreased if the doctors were to wash their hands before delivery. Yet, when he attempted to apply this evidence into practice, he was driven out of town. It would take another forty years and an untold number of women’s deaths before his research was put into practice (Sherman, 1998).

The key argument for implementing evidence-based policy by its proponents is that following scientific evidence leads to doing what is most effective. Policy and practice must be based on scientific evidence of what works best (Sherman, 1998). What works best can be found through scientific research. However, application of scientific evidence for policy involves correct usage of said research. Policy decisions need to be made from “rigorous and accurate uses” of scientific evidence, rather than the manipulation of evidence through “cherry-picking, manipulation, or obfuscation of pieces

of evidence to serve political goals” (Parkhurst, 2016, p.4). This implementation can translate to achieving the best results or best achieving the end goal or goals.

Another reason for implementing evidence-based policy is fiscal concerns. Policies not based in evidence cannot be guaranteed to be effective in achieving their end goal. By implementing evidence-based policies, funding goes toward something effective rather than practices that may not be reaching the end goals. Proven methodology is a better guarantee of effective use of resources than hypothetical reasoning that some measure may be effective.

A final reason for advocating evidence-based policy is that it helps avoid unnecessary harm. In many cases, the practices involved in a policy may result in unknown or unseen consequences. A way to prevent harm is by ensuring the policies are backed by scientific research. Through the research process, outcomes of the practices are observed and studied so that damages that result can be known. This also helps combat the belief that implementation of any practice or method is better than none.

Evidence, in essence, points to what is effective. Overall, the consensus among scholars is that policy should be informed by rigorously researched and scientifically backed evidence. However, the creation of policy does not exist in a vacuum. There are many other factors that influence and will continue to influence the creation of policy. Policymakers set the goals for what policies should achieve and allocate what are often limited resources. Policies generally involve multiple competing social concerns (Parkhurst, 2016). From broad constraints like the law, public norms, and ethics, to more

specific ones such as funding, these concerns will all have an impact on the creation of policy.

For example, in 2013 a policy was enacted that set a minimum age restriction on access to emergency contraception despite the U.S. Food and Drug Administration (FDA) stating the pills were safe for all ages (Parkhurst, 2016). This divergence in policy from the available evidence was attributed by many to political motivations and shows how social norms and political motivations can influence the formation of policies. However, what is important is that the core of the policy be based in evidence. From there, policymakers weight the costs and benefits to ensure the best practices are put into place while adhering to the constraints. The realities and complexities of policymaking do not lessen the importance of using scientific evidence to form policy. The increased use of evidence in the formation of policy can improve the decision making for the policies' effectiveness.

What sort of scientific research should inform policies? Not all research is equivalent. Often research studies lack scientific rigor and so it is necessary to sift through and identify what can reliably inform "what works" (Bridges, Smeyers, & Smith, 2009). Controlled experiments are considered the gold standard in scientific evidence (Parkhurst, 2016). Sherman points out the large body of randomized control trials available in the medical field as to what has helped to guide the formation of medical practices (1998). It has been argued that all evidence must conform to the highest scientific regimen (Davies et al., 2000). The rigorous methodology of randomized control trials from their random assignment to groups and comparison with control groups allows

for the best observation of cause and effect. However, not all research studies can be the highly sought after randomized control trials. Many topics of research do not lend themselves to this kind of research process because of the subject matter's certain restrictions or peculiarities. The specificity of what is being studied may only translate itself to case studies.

It is important to note that the evidence-based policy should be based on the best available research. The best available research is constantly evolving. As more research is conducted, better understanding and greater knowledge is garnered. This translates to evidence-based policy evolving along with the research so that it reflects what the most current evidence demonstrates. The best available research continuously evolves with ongoing feedback from current research being conducted (Sherman, 1998). As such, research needs to be constantly conducted to help inform policy and practices so it can continually be updated with the best evidence of what is effective. This is particularly important for policies already in place.

Evidence-Based Policy and Terrorism

September 11, 2001 was a significant catalyst in research on terrorism and redefined the concerns of most people in the United States and the rest of the Western World (Vasterman, Yzermans, & Dirkzwager, 2005; LaFree & Bersani, 2014; Freilich & LaFree, 2016). Previous events such as the World Trade Center bombing in 1993 or the Oklahoma City bombing in 1995 did not garner as much interest in their aftermath as the September 11th events (Lum et al, 2006). The September 11th events carry a highly symbolic meaning. The actions took place not only within the United States, which

served as a symbol to the free world, but a significant portion took place in New York City, the most populous city in America, a significant influence culturally and economically, and the location of the United Nations Headquarters. This translates to high visibility on a global scale.

In addition, the extent of the death toll in a single event brought considerable global media attention. The attacks resulted in 2,753 deaths from the initial attacks and the final death totaled at 2,977 fatalities as of 2020 (CNN Editorial Research, 2020). It still is the single deadliest terrorist attack in the world.

Since the events on September 11th, general interest and government spending on counterterrorism has substantially increased (Lum et al, 2006; Deflem 2011, Coats et al., 2006). In addition, there has been a significant rise in the number of policies and programs implemented to combat terrorism (Lum et al, 2006). Matters of conveying the importance of evidence-based policy is often related with medical examples due to the directly apparent implications with the patients' lives. The importance of human life is one of the universally agreed morals that can be effectively used to convey the importance of a cause. In this case, evidence-based policy is important within the field of medicine because the outcomes and potential consequences concern human life.

Evidence-based policy within counterterrorism policy is similarly as vital as medical evidence-based police because of the implications not only for national security but with the potential impact on human life. While the risk of a terrorist attack is statistically small, the consequences are significant and far-reaching. As seen with the September 11th attacks, there is great potential for loss of life in terrorist attacks. The

consequences from terrorist attacks have the potential to be far-reaching. It has been estimated that in the following two to four weeks after the September 11th attacks, there was an economic loss estimated around \$123 billion dollars. In addition, the estimated damages to the World Trade Center and the surrounding infrastructure including buildings and the subway were \$55 billion dollars (CNN Editorial Research, 2020).

These consequences from the attack were severe and wide-reaching.

In addition to the importance of counterterrorism policy for its potential mediation in consequences from terrorist attacks is the financial implications in funding these policies. The Department of Homeland Security (DHS) was created in direct response to the September 11 attacks. From fiscal year 2002 until 2018, the DHS awarded over \$50 billion dollars in preparedness grants alone (U.S. Government Accountability Office, [U.S. GAO], 2018a). However, the allocation of said funds has not been without disapproval. The DHS was repeatedly criticized for inadequately calculating risk and as a result failing to properly distribute resources (Willis, 2007). This brings into question whether these funds were adequately spent. If the projects and policies are not supported by evidence, it is possible these funds might have been better used in other ways.

Evidence-based policy in matters of counterterrorism is important due to the expense of its funding as well as the gravity toward the potential loss of human life and other consequences from a terrorist attack. Counterterrorism policies need to be the appropriate intervention or methodology to achieve its intended goals but do not cause unintentional harm (Lum et al., 2006). It is critical to evaluate counterterrorism policy to

ensure the best research is being utilized. However, the research used as a basis for counterterrorism policy is lacking.

Counterterrorism Measures

The word “counterterrorism” lends itself to an expansive range of interventions. Counterterrorism strategies vary from pre-event prevention to combat early risk factors, detection and direct measures for the event itself, and responses for post-event (Lum et al, 2006). Pre-event prevention interventions include target-hardening measures such as deployment of metal detectors or use of security camera systems to more person-centered measures such as increases in penalties for crimes that are determined to be terrorist acts (Enders & Sandler, 1993; LaFree & Dugan, 2009) or efforts to de-radicalize individuals who may be part of terrorist groups. Detection strategies include measures to detect current ongoing terrorist attacks such as improvement in border-security or import inspections. Many of the detection strategies fall into the preventative category as well. Finally, post-event measures include actions such as clean-up measures and emergency services responses.

These measures are by no means an exhaustive list but an effort to show the expansive nature of counterterrorism measures. The possibilities for research within the study of counterterrorism are wide ranging. Despite this, the availability for current research on counterterrorism is lacking.

Research conducted on systematic empirical analysis is limited (LaFree & Dugan, 2009). Lum et al. (2006) conducted a Campbell Collaboration review of the available counterterrorism interventions between 1971 and 2004 to examine their effectiveness.

After examining more than 20,000 articles on terrorism, the review indicated that only 7 moderately rigorous evaluations on counterterrorism intervention exist despite the proliferation of counterterrorism policies. The limited viable studies Lum et al. reviewed collectively shows that the effectiveness of counterterrorism strategies is not known.

The lack of research leads to ambiguity and doubt on the effectiveness of counterterrorism measures (Lum et al., 2006). While there has been an exponential increase of research and interest in terrorism and counterterrorism in the wake of September 11, there is still a deficit of empirical research that needs to be bridged. Resources are funneled to counterterrorism measures and practices and yet there is little empirical research illuminating which strategies are most effective and under what circumstances (LaFree & Dugan, 2009).

The reason for the lack of research can be attributed to several issues that create serious hurdles to consider in the evaluation of counterterrorism strategies. Firstly, an issue in counterterrorism research is that “terrorism” itself is not clearly defined. Across most countries, there is no definition of terrorism that is universally accepted (Freilich & LaFree, 2016). Even among academics and policymakers, there are diverging definitions of terrorism which directly affects the methodology for assembling counterterrorism strategies (Ekici et al., 2011). Authors of works related to terrorism will dedicate at least a small part of their papers on its discussion (e.g., Lum et al., 2006; LaFree, Yang, & Crenshaw, 2009; LaFree & Bersani, 2014). Oftentimes, the word “terrorism” is encumbered with political and emotional implications (LaFree & Dugan, 2009).

Secondly, terrorist attacks are statistically infrequent events. This creates significant issues in the research of counterterrorism attacks because the analysis is more challenging due to the lack of data points to identify patterns and be a representable sample (Lum et al., 2006; Freilich & LaFree, 2016).

Finally, there is a large hurdle collecting and using valid data in terrorism research. There are three traditional forms of data: official data, victimization data, and self-report data. For criminologists, data sources often come from legal actors that collect and maintain the data such as the Uniform Crime Report (UCR) by the FBI (LaFree & Dugan, 2009; Freilich & LaFree, 2016). There is significant doubt on the accuracy of terrorism data from government entities because they could be influenced by political considerations. In addition, this data also suffers from a lack of detailed data or even missing data because of the nature of the justice system. The government does collect data on terrorism, but many suspected terrorists are not tried for acts of terrorism but rather for the related acts they conducted (LaFree & Dugan, 2009; Freilich & LaFree, 2016). As a result, these suspected terrorists would not be categorized under the definition of terrorism and not be included in this data. This lack of inclusion ultimately skews the data by not providing a clear picture of terrorism.

Regarding victimization data, it is generally irrelevant when studying terrorist attacks. Victimization data involves asking the victims questions about the crime as well as offender information such as through the National Crime Victimization Survey (NCVS), a major source of victimization data in the United States (LaFree & Dugan, 2009; Freilich & LaFree, 2016). However, victimization data is especially ill-suited for

terrorism research. One of the most important hallmarks of terrorism is that its victims are often chosen at random. In addition, the victims are often killed by their attackers. As such, victimization data is largely unfruitful when studying terrorism.

These hurdles in the evaluation of counterterrorism interventions have negatively impacted the research by stunting the growth on the subject. There is a significant lack of counterterrorism research available despite the impetus of 9/11 and the subsequent push toward implementation of counterterrorism policies. As previously stated, billions of dollars have been spent funding counterterrorism policies, but this lack of research brings into question their effectiveness. It may be possible that the funding could have been put to better use through different counterterrorism policies than what are currently in place. Part of understanding the lack of counterterrorism research, besides its hurdles, is understanding the inherent broadness of terrorism and how it is defined.

Terrorism as a Definition

As previously stated, there are many diverging definitions of terrorism. According to Krieger and Meierrieks (2011), “It is commonly defined as the deliberate use of violence and intimidation directed at a large audience to coerce a community (government) into conceding politically or ideologically motivated demands” (p.4). The goals of terrorism are “to inflict casualties, to create a climate of fear, and to attract media attention” (Newman & Clarke, 2008, p.28).

Terrorism is used as a blanket term to cover a variety of actions. Broadly, terrorism can be classified into two categories: domestic terrorism and international or transnational terrorism. “In general, transnational terrorist attacks are those involving a

national or a group of nationals from one country crossing international borders and attacking targets in another country. Domestic attacks are those involving a national or a group of nationals attacking targets in their home country” (LaFree & Dugan, 2009). The FBI has denoted domestic terrorism and transnational terrorism as two separate entities with their own definitions (FBI, n.d.).

Within these two denotations, there are innumerable actors with an immeasurable number of reasons spanning economic, political, institutional, and demographic factors. Terrorism is an umbrella term with a menagerie under its scope: from right-wing to left-wing extremists, Islamic extremists to white nationalists. Prominent nationalist terrorist organizations include the Irish Republican Army (IRA) of Ireland, the Liberation Front of Quebec in Canada, and Hizbullah of Lebanon. Domestic groups fall into broader groups of demarcation including anti-abortion terrorism, eco-terrorism, and right-wing terrorism. Domestic terrorism groups in the United States include the Animal Liberation Front, the Aryan Nations, the Earth Liberation Front, and the Atomwaffen Division (AWD). The theories on the causes of terrorism, like the many varied counterterrorism strategies, are lacking in research and often have limited or conflicting conclusions on their link to causing terrorism (Krieger & Meierrieks, 2011).

However, the many varied theories of terrorism are important to consider when attempting to put into place evidence-based policies for counterterrorism. It is functionally impossible to have only one single counterterrorism strategy because it is a catch-all term for a varied phenomenon. Regardless of the ideology of the intervention, there is no one intervention that can be used for all the needs in counterterrorism. As

such, a necessary compromise is needed. While it is not correct to say that any intervention is better than nothing, it is possible to find an intervention that fits most of the needs for counterterrorism.

Catching terrorists is not a simple task. Both identifying the terrorists and tracking them down is difficult due to their strategic nature to conceal their efforts. There are also significant issues when dealing with international actors as they may reside in areas that are sympathetic to their cause (Newman & Clarke, 2008). In addition, acts of terrorism come in many different forms including hacking or computer attacks, sniper attacks, kidnappings, airline hijackings, and bombings. The decision as to which attack will be chosen is dependent on the actors as much as the opportunity of carrying out a successful attack. As such, generalizable efforts of counterterrorism need to focus on the targets of terrorist attacks rather than the many varied perpetrators. One such strategy that can focus on the targets rather than the perpetrators is target hardening.

Target Hardening

When examining previous successful terrorist attacks, while they differ in aspects such as their motivations, actors, and methodology, many hold a common theme. The terrorists take advantage of poor defenses of the selected targets to commit acts of terrorism. The World Trade Bombing of 1993 was made possible by taking advantage of poor security in the parking garage. The 1995 Oklahoma City bombing of the Alfred P. Murrah Federal Building involved leaving a Ryder truck with a bomb in the drop-off zone near the facility's daycare center. The 9/11 attacks involved the terrorists taking advantage of lax airport and airplane security. Terrorist targets are not chosen randomly,

and it is understanding this that can lead to considering target hardening as a suitable counterterrorism strategy that can be universally proliferated.

Opportunity theory is based on the concept that “routine activities” of their everyday life influence the opportunity for offenders. As such, changes in these “routine activities” can influence crime rates. Cohen and Felson (1979) introduced that crime occurs on the convergence of three items: 1) a motivated offender, 2) a suitable target, and 3) the absence of capable guardians against a violation (p.589). Building on the idea of Routine Activities Theory, Sherman et al. (1989) examined police calls of the Minneapolis Police Department for one year and found crime is not randomly dispersed across an area but is in fact concentrated geographically in what they termed “hot spots.” While the motivations differ, terrorism is a form of crime (Clarke & Newman, 2006) and research indicates that terrorism is similarly concentrated in time and space (LaFree et al., 2012).

LaFree and Bersani (2014) examined the frequency of terrorist attacks by location in the United States at the county-level from 1990 to 2011. They used social disorganization theory to form their hypothesis on the concentration of terrorist attacks. Generally, the theory relates that areas with greater social disorganization will have higher crime rates due to the lack of social control thus freeing up actors to engage in antisocial behavior, including terrorism. There are four markers of social disorganization: population heterogeneity, residential instability, concentrated disadvantage, and percent population in urban areas. Overall, they found that the counties with the greatest number of attacks are those that were “characterized by greater language diversity, a larger

proportion of foreign-born residents, greater residential instability, and a greater proportion of urban residents” (p.456). In the United States, 92% of the counties experienced no attacks between 1990 and 2011. Of the remaining 8%, 58% of those counties experienced one attack. This is significant when considering the county with the highest number of attacks had 30 attacks within that same time frame (LaFree & Bersani, 2014).

As stated, LaFree and Bersani found that percent population in urban areas, population heterogeneity, and residential instability are predictors, but concentrated disadvantage is not. While this is not consistent with social organization theory, however, it seems to be consistent with the goals of terrorism. It makes sense that terrorism does not coincide with concentrated disadvantage because attacking places of poverty does not help achieve their end goal of garnering media attention toward their cause.

While there is utility in the use of social organization theory to explain terrorist attacks, the gaps present in the evidence lend itself to looking toward alternate means to explain the concentration of attacks to urban areas. Significant attractions of cities for terrorist attacks are its renown, importance, and accessibility. Cities generally have large populations with landmarks of cultural or historical significance and serve as centers for tourism. They also can have financial, commercial, or manufacturing significance and have ease of access due to their nature as transportation hubs with accessibility to ports or nearby international airports (Newman & Clarke, 2008). There is a high impact potential in urban landscapes and that potential devastation from an attack attracts attention.

With the identification of cities as the “hot spots” for terrorist activity, and with the understanding that cities have varying risk associated with the likelihood of an attack, counterterrorism strategies need to be concentrated in these regions to be following the best available evidence. However, any counterterrorism strategy being implemented in all these diverse places needs to be generalizable in concept. One strategy that can be easily molded to fit each city’s unique needs is target hardening. Target hardening focuses on reducing the opportunities of successful terrorist attacks from occurring by protecting vulnerable targets (Clarke & Newman, 2006; LaFree & Dugan, 2009). It follows the concepts of routine activity theory by removing one of the three components of convergence: a suitable target.

While they are often not portrayed as such by the media due to the display of extremist values, those involved in terrorism are rational actors. The rational choice theory has been applied to a wide range of criminal behavior including that of terrorism (LaFree et al., 2012). When looked at through the lens of rational choice theory, these actors are attempting to achieve a shared goal but are subject to constraints (Enders and Sanders, 1993) and thus evaluate the cost and benefits associated with their offending (LaFree & Dugan, 2009). The decisions of terrorist groups are strategic (LaFree et al., 2012). Their resources are finite and as such must consider the logistical issues when mounting an attack. They must conserve their resources to strike where they believe the attack will serve the greatest utility for their cause (Newman & Clarke, 2008). As such, they make use of long-term planning as well as choose to change their attack or not carry out the attack at all if the risk outweighs the benefits. This use of strategy demonstrates

terrorists as rational actors. And as such, the removal of a suitable target through target hardening may lead to the crime not occurring.

However, the cost-benefit analysis of terrorism does differ from that of regular crime. Terrorists are often willing to accept extreme consequences to advance their goals, most obviously seen in suicide bombers. And yet, they can still be understood as rational actors with a different weight to their cost-benefit analysis. When looked under the frame of rational choice, terrorists have a shared goal where they gain utility through their acts of terrorism through concepts such as achieving political recognition. Therefore, target hardening can still be effective as it can reduce the opportunity to potential targets and deter terrorists when considering their options.

While the task of directly combatting terrorism seems insurmountable, the use of target hardening focuses on what the city government can do to minimize opportunity and alleviate the consequences from an attack. Strategies following this concept include identifying vulnerable targets, analyzing their specific weaknesses, considering the tools and weapons needed to attack, and assessing access to the targets (Clarke & Newman, 2006). Using measures that protect identified targets by making carrying out the attacks more difficult or risky can help to reduce the number of attacks (Newman & Clarke, 2008). The city government can fortify to enhance the strength of their cities and their resilience post-attack.

There are some potential downfalls to target hardening. Enders and Sanders (1993) evaluated six counterterrorism strategies including installing metal detectors and fortifying embassies. They found that while there were significant deterrent effects due to

the employment of these measures, there was an increase in assassinations and other hostage-focused attacks. The displacement of the attack from one target to another is inherent in the aspect of opportunity. Targets that are more attractive to an offender, such as those not as well guarded and more accessible, are more likely to be victimized (LaFree & Dugan, 2009). Taking away the opportunity for one target forces the terrorists to move on to a more accessible target. For example, Enders and Sandler (1993) conducted a time series analysis on terrorist attack methods between 1968 and 1988 and found that the placement of metal detectors in airports decreased skyjackings but resulted in a substitution of kidnappings.

In addition, there is the constant development of new technology which changes the terrorists' perception of what is a suitable target. As such, constant reevaluation of the vulnerability of targets needs to be undertaken to ensure proper steps have been taken to reduce opportunity as time goes on. This can easily be seen with the 1993 World Trade Center bombing and the subsequent 9/11 attacks. The original 1993 plan was to blow up one of the twin towers and topple that into the other. In this sense, it was a failed attack even though it caused significant damage and significant casualties. The attacks on 9/11 were a second attempt to overcome their first "failure" by coming up with a new way to achieve their objectives. The long time spent in preparation allowed Al-Qaeda to strategize and come up with an alternate method of attack. Target hardening is not infallible, but it does allow measures to be taken that make it more difficult for attacks to occur. However, an important goal with target hardening is not only deterrence but also the potential to minimize and alleviate the damage if an attack occurs.

Terrorism is a form of crime and just like general crime will never be eliminated despite the many efforts to combat it, terrorism will still occur. A lesson that was learned in the period following the September 11 attacks is the cascading effects these events have. As a result of the attack, communications were down not only for the general populous but also among emergency responders crippling the effectiveness of their immediate response. In addition, the heavy reliance on subway transportation with no viable alternative exit strategy was apparent as many struggled to get out of the immediate area. Counterterrorism measures can be taken not only to prevent an attack but also to mitigate the potential consequences. Preparations can be taken to prepare for an attack including the development and updating of plans to follow post-attack.

Many cities need outside funding to finance the projects necessary for target hardening. Directly funding the city rather than having a larger government organization come in to take control of counterterrorism measures is important. The local police and emergency services are the first line of defense and necessary for coordinating first responses to attacks. Local responders are in the best position to know about local threats and vulnerable targets (Newman & Clarke, 2008). Funding local governments allows for the development and maintenance of local intelligence capabilities (Newman & Clarke, 2008).

Currently, one such program that funds local city governments is the Urban Area Security Initiative (UASI). UASI provides money to help areas formulate and maintain preparedness measures which includes target hardening of targets to prevent or mitigate terrorist attacks. Specifically, UASI utilizes a risk assessment that includes a measure for

targets in its evaluation. As such, the effectiveness of UASI in preventing and preparing urban areas for terrorist attacks can help in the evaluation of target hardening as an effective counterterrorism strategy.

UASI

In 2001, Congress passed the United and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act (USA PATRIOT Act), which put into place several grant programs to increase homeland security¹. As of 2021, the Homeland Security Grant Program (HSGP) consists of three programs that allocate grants to state and local areas to assist in efforts that “help prepare for, prevent, protect against, respond to, recover from and mitigate terrorist attacks or other disasters” (U.S. GAO, 2018a, p.1). UASI is a grant allocation program under the DHS’ HSGP and administered by the Federal Emergency Management Agency (FEMA). The original intention of UASI was the enhancement of state and local governments to prepare and respond to terrorist attacks (Coats et al., 2006). The current goal of UASI is building and sustaining regional preparedness capabilities in “high threat, high density urban areas” through financial assistance (FEMA, n.d.).

UASI began its allocation process in 2003 with its initial funding allocation of \$96.5 million to 7 urban areas: New York City area, the Washington D.C. area, the Los Angeles Area, the Seattle Area, the Chicago Area, the San Francisco Area, and the Houston Area (U.S. GAO, 2009a). From there, the number of urban areas receiving

¹ Section 1014 of the Patriot Act set up the grant programs for local domestic preparedness support.

grants expanded with varying amounts year to year. UASI funds may be used for planning, equipment acquisition, training, exercises, management and administration, and operational activities (U.S. GAO, 2007).

The methodology for grant allocations has three main steps. First an empirical risk analysis model is performed to calculate the relative risk of urban areas based on a combination of threat, vulnerability, and consequences (U.S. GAO, 2018a). Then an Effectiveness Assessment is conducted where a peer review of the effectiveness of the investment justifications that were submitted by the urban area with their applications to UASI. Finally, there is the final allocation decision which is determined by the areas risk score and then adjusted based on the effectiveness assessment (U.S. GAO, 2008).

Eligibility for the UASI grant was determined by assessing the relative risk of terrorism in the 100 most populous metropolitan statistical areas (MSAs). As such, eligibility for funding can and has changed from year to year based on the changes to relative risk assessment. Relative risk considers threat, vulnerability, and consequences to the urban area. The current risk assessment model is shared with another grant program under HSGP, the State Homeland Security Program (SHSP). Once the relative risk scores are determined, the areas that qualified for a grant are sorted into groups. There are two tiers eligible area are divided into based on their relative risk scores: Tier 1 and Tier 2. Tier 1 has the highest relative risk areas with Tier 2 categorizing the remaining urban areas. The tiers also equate to a difference in grant amounts with the reasoning that those that qualify as higher risk need a greater amount in their grant to help towards reducing that risk.

The effectiveness assessment is conducted by state and urban area representatives and examines the proposed investments submitted by the grant applicants for their anticipated effectiveness. Each year, FEMA issues guidance for the priorities and requirements for that grant cycle. Each UASI region must submit a strategic plan that outlines the goals, objectives, and necessary steps required to implement the programs for enhancing regional capabilities. These plans, referred to as the Urban Area Homeland Security Strategy, are what the urban area follows when conducting activities under the UASI grant (U.S. GAO, 2009a). The Investment Justification discusses the need for and how the federal assistance will be used to meet the National Security Strategy. The criteria these reviewers must consider includes sustainability, relevance to security plans and policies such as the National Preparedness System or the local state and urban areas' security plans, and the planned implementation of the proposed investment. Every six months, the areas must report on their progress to FEMA for review and validation.

The final allocation is based on the calculated risk scores of the urban areas and then adjusted based on their effectiveness assessments. Those with higher effectiveness scores receive an additional amount and those areas with lower effectiveness scores have their allotments lowered. The grants, however, cannot be lowered below a certain threshold. This current methodology for grant allocation has been in place since 2008, with few changes since then. However, the formative years of the UASI grant program was faced with significant changes in both who it falls under and its allocation methodology.

UASI Changes

The history of UASI involves a long list of acts that helped shape the grant into its current state. The Homeland Security Act of 2002 secured the DHS as a separate cabinet-level department to coordinate domestic preparedness in a cohesive fashion. Among this move to consolidate different federal agencies under one roof, the Department of Justice's Office for Domestic Preparedness grant programs was moved into the DHS. This move includes oversight of the grant making process for domestic preparedness programs and so the inception of UASI fell under the DHS's responsibilities. However, as later reported by the Committee on Homeland Security and Governmental Affairs (2005), the Homeland Security Act of 2002 provided little guidance² as to how grant decisions should be made. At the time, the intention of UASI was to protect and enhance the preparedness of high-threat, high-density urban areas against acts of terrorism.

The Post-Katrina Emergency Management Reform Act of 2006 moved responsibility for allocating and managing DHS grants under FEMA. The development of the risk analysis model still comes from DHS components such as the National Protection and Programs Directorate (NPPD) and the Office of Intelligence and Analysis (I&A). This move under FEMA marks the shift in the UASI goal toward preparedness and response to major disasters and not just acts of terrorism. This consolidation of responsibilities allows the organizational capacities of states and urban areas to

² The Homeland Security Act of 2002 provided only a single paragraph of guidance for grant decisions. In a Committee Report (S. Rept. 109-71) that accompanied the Homeland Security Enhancement Act of 2005 (S.21), this fact is given as the main reasoning for the creation of the 2005 Act which provided guidance on the allocation of grants for state and local governments.

coordinate emergency preparedness and responses such as planning, equipment, and training for response to natural and accidental disasters. The Implementing Recommendations of the 9/11 Commission Act of 2007 (9/11 Act) further defined FEMA's role in awarding grants. This includes allowing the urban areas to send in relevant information for FEMA to consider in its assessment of risk (U.S. GAO, 2008).

Not only has the responsibility for the UASI shifted since its conception, the process for its grant allocation has also undergone many changes since its inception in 2003. The first risk analysis model estimated risk directly from population measurement, or $R = P$. For 2004 and 2005, the risk is defined as the sum of threat (T), critical infrastructure (CI), and population density (PD) ($R = T + CI + PD$). In 2006, the risk analysis model was changed to adopt the assessment of threat (T), vulnerability (V), and consequences (C) of a terrorist attack in assessing risk ($R = T * V * C$). They also added the effectiveness assessment.

For FY 2007, risk was defined as the product of threat (T) times vulnerability (V) and consequences (C), or $R = T(V+C)$. However, the actual mathematical analysis was still conducted as the product of the three for FY 2007 despite the change. This is also the year that introduces the three-step allocation process as well as the tier system for eligible areas.

Threat is calculated by the DHS's Office of I&A who conducts the threat index based on threat information for multiple years of all the candidate urban areas. The urban areas are then categorized into four tiers with Tier I as the highest and Tier IV as the lowest threat risk. The specifics as to what goes into the threat score is kept vague, citing

“credible reporting” and “relevant investigations” (U.S. GAO, 2008, p.10). The final threat assessment is approved by the intelligence community including the FBI, CIA, DIA, Secretary of DHS, and Under Secretary of I&A.

Vulnerability and Consequences are measured by four indices: Population Index, Economic Index, National Infrastructure Index, and National Security Index (U.S. GAO, 2009b). Population Index incorporates information on the areas’ population density, commuters, visitors, nighttime population, and military dependent populations gathered from census data and information given by the Department of Defense. Economic Index is formed based on the urban areas’ percentage of contribution of the state to the Gross Domestic Product (GDP) and Gross Metropolitan Product of the urban area.

National Infrastructure Index is based on 2,000 key assets and critical infrastructure identified by the DHS’s Office of Infrastructure Protection. These assets fall under the categories of Tier I and Tier II which indicate that if attacked they could trigger major national or regional impacts or potential national and regional impacts, respectively. Most assets used in the risk assessment fall under what could be considered critical infrastructure (i.e., aqueducts, health stockpiles, levees, etc.), however, it does account for theme parks and stadiums (U.S. GAO, 2007). National Security Index is calculated based on the presence of military bases, the number of defense base facilities, and the number of people crossing international borders.

These indices heavily focus on the consequences and not the vulnerability. In fact, the GAO (2008) reported the DHS considered most of the United States equally vulnerable to a terrorist attack and focused instead on the consequences of a successful

terrorist attack. In addition, this assessment has a noticeable gap due to its lack of soft targets. The inclusion of population density, commuters, and visitors indirectly accounts for these targets through the likely aggregation of people near significant places. But overall, the risk assessment fails to include symbolic targets in the equation, like the Liberty Bell or Statue of Liberty.

In response to the 9/11 Act, FEMA was required to change their assessment of risk by altering the size of the geographical areas used in assessment of a region's risk for UASI. They were now required to use the MSAs of the 100 most populous areas to estimate risk beginning FY 2008. MSAs are geographic areas designated by the Office of Management and Budget (OMB). Since the geographic area was previously determining the areas based on a ten-mile radius around the center city's boundaries, this change marks a more standardized definition of an urban area. It also better reflects the urban area as this change generally led to an increase in the geographic area and thus better incorporates the surrounding communities that are linked to the city both socially and economically and that will be affected in the event of a terrorist attack. To accommodate for the change to MSAs, officials increased the number of UASI grantees to address this and allowed all those that received funding in 2007 to receive it in 2008.

Over time, the DHS evolved a more sophisticated model in determining risk as well as adopted a more complex allocation model since its inception. The process and components for UASI allocation have not been without criticism. In 2007, the GAO was required to review the methodology the DHS uses to allocate funds in their HSGP grants as part of the Omnibus Appropriations Act of 2007. They found that measurement of

vulnerability is limited in that it does not measure for each state and urban area but rather assigns a blanket vulnerability score that assumes all states and urban areas equally vulnerable (U.S. GAO, 2008). For FY 2007 and 2008, the vulnerability score had the constant value of 1.0 across all the areas. This score does not reflect the geographical differences. This also indicates that the relative risk scores are determined by threat and consequences alone.

The GAO also found that FEMA lacked the means to measure the achievement of desired program outcomes. When the GAO looked at the relevant documents, budget data did not list grant expenditures by fiscal year (U.S. GAO, 2008). This makes it difficult to examine the effectiveness of the allocations in reducing risk. In 2008, the GAO concluded that although FEMA established goals and took steps to monitor progress, these efforts gave no information on the effectiveness of the grant allocations in reducing risk. And while FEMA developed a Cost-to-Capability (C2C) initiative to assess jurisdictions' capabilities, the assessment does not measure preparedness and its use is not mandatory (U.S. GAO, 2009a).

When the GAO examined the risk assessment for the UASI grant allocations from FY 2008 to FY 2018, they found that while there have been steps to strengthen its risk assessment model, but it has not added additional scientific practices (U.S. GAO, 2018a).

Nearly all information concerning the risk assessment and allocation process is accrued from reports by the GAO, not from information provided by FEMA or the DHS. The information itself is vague and makes replicability of the risk assessment process difficult. In addition, there is a significant possibility that changes have been made since

the publication by the GAO. The information was obtained from a document published in 2008. As previously stated, the allocation process and risk assessment changed over time. But according to the available information, no substantial changes have occurred since the alterations in 2007 to the risk analysis formula. All available Notices of Funding Opportunity only inform that allocations are based on risk and anticipated effectiveness of the proposals³.

It is important to note that adjustments could have been made in more recent years that have the potential in changing UASI's effectiveness. Since 2011, the total funding from UASI grants has decreased. The fiscal year totals remained in the range of 570 million to 580 million from 2014 to 2019, a significant decrease to the program's high in 2010 at \$832,000,000. Figure 1 demonstrates the trend in UASI funding through all its years.

³ Examined Notices of Funding Opportunity for FY 2017 to FY 2021. Documents retrievable from FEMA at <https://www.fema.gov/grants/preparedness/about/informational-bulletins>

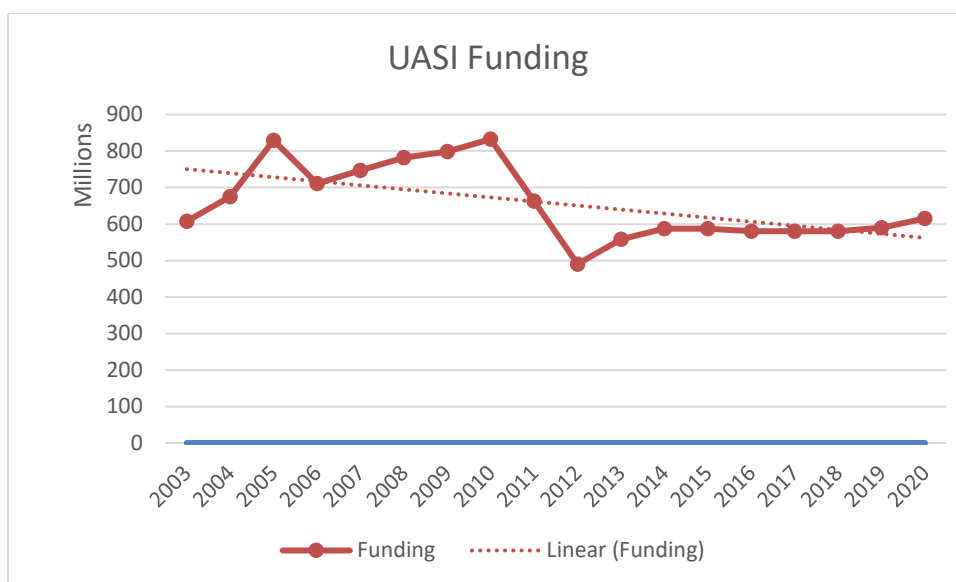


Figure 1: UASI Funding 2003-2020

Risk assessments are not infallible. Any risk model has inherent uncertainty due to the models estimating the likelihood of future events. Perfect threat assessments would be capable of accounting for all variables and possibilities in the determination of risk. However, risk assessments are not able to account for all variables because not all information is knowable or accessible. Even in a perfectly encompassing risk assessment, the information used in risk assessments is imperfect or incomplete lending a certain amount of uncertainty in the assessment. As such, assumptions need to be made when forming and using risk assessments. It is vital that the effectiveness of these programs be determined, specifically for matters involving risk assessments that influence decisions for allocation of finite resources.

Potential Lack of Effectiveness

The goal of UASI is building and sustaining regional preparedness capabilities to prevent and respond to terrorist attacks and other disasters. However, the GAO reported that FEMA does not have the capability to measure the effect projects have on building regional preparedness capabilities (U.S. GAO, 2018b). They had taken steps to establish goals and measure progress but did not establish measures to evaluate if the progress helped meet the desired outcome for preparedness capabilities.

Regional preparedness capabilities are a matter for both within an urban area and greater regional collaboration. Preparedness capabilities can cover information gathering, search and rescue, citizen evacuation, and structural damages assessment (U.S. GAO, 2009a). Specific measures to build regional preparedness capabilities include forming relationships and agreements with nearby jurisdictions to promote the sharing of resources, the formation of training and exercises between departments and regions to enhance response times and procedures during and post-incidents, and the increase and ease of information sharing between departments and jurisdictions.

The 2013 National Preparedness Report⁴ from the GAO indicated measures do not exist to evaluate the performance of preparedness programs like UASI in their performance over time. FEMA has taken step to assess preparedness capabilities, and as of 2018 had plans to implement a national preparedness assessment of capability gaps with complete results in 2020 (U.S. GAO, 2018b). FEMA has developed the National

⁴ US Government Accountability Office (2013). National Preparedness: FEMA Has Made Progress in Improving Grant Management and Assessing Capabilities, but Challenges Remain. (Publication No. GAO-13-456T). Washington, D.C.: U.S. Government Printing Office.

Preparedness System to promote the National Preparedness Goal⁵ which defines preparedness for disasters and emergencies “to prevent, protect against, mitigate, respond to, and recover” (FEMA, 2020). According to the 2020 National Preparedness Report⁶, FEMA is working on collecting data on the capabilities at the state and local levels. However, this does not account for the effectiveness of the programs in meeting said goal, an issue pointed out by the GAO about UASI in 2011.

UASI has funded urban areas for 18 years. Only one evaluation of the effectiveness of UASI in reducing terrorist incidents exists. Nash (2017) conducts time series analysis to describe, forecast, and evaluate effects of interventions on 7 urban areas: The Bay Area (San Francisco, Oakland, and San Jose), CA, Los Angeles/Long Beach, CA, Washington D.C., Chicago, IL, New York, NY, Houston, TX, and Seattle, WA. They begin with an analysis of terrorism trends from 1970 to 2010 using data from the Global Terrorism Database (GTD). They use the results to forecast terrorism incidents in 2011 and 2012. Finally, they test the effectiveness of UASI in preventing future terrorist incidents. Overall, they found a decrease in the number of terrorism incidents between 1970 and 2010 which is consistent with previously conducted research (i.e., LaFree, Dugan, & Miller, 2012). The forecasts similarly display the downward trend

⁵ The second edition of the National Preparedness Goal was published in 2015. It describes FEMA’s approach for a national foundation by focusing on the core capabilities: prevention, protection, mitigation, response, and recovery. Document can be retrieved at <https://www.fema.gov/emergency-managers/national-preparedness/goal>

⁶ US Government Accountability Office (2020). National Preparedness: Additional Actions Needed to Address Gaps in the Nation’s Emergency Management Capabilities. (Publication No. GAO-20-297). Washington, D.C.: U.S. Government Printing Office.

in terrorist incidents. However, the analysis on UASI grant's ability to reduce terrorism incidents indicates no significant effect.

Overall, they determine the program is not effective at meeting its goals in terrorism preparedness and prevention and that the allocation of funds through this program does not match the current threat of terrorism in the United States. And yet, DHS and FEMA have recently released a Notice of Funding Opportunity for the fiscal year 2021 HSGP grants declaring a total of \$615 million available funding from the UASI grant program⁷.

There have also been several recent incidents that bring into question the effectiveness of the UASI risk assessment and how effectively funds were used in mitigating and preparing for disasters. In particular, the mass shooting at the Pulse Night Club in 2016 and the situation in Texas following the winter storm in early 2021.

On June 12, 2016, 49 people were killed and 53 wounded in a mass shooting conducted at Pulse, a well-known gay night club. The shooter had previously been under investigation for their connection to al-Qaeda and Hezbollah in 2013 and 2014 (Zambelich & Hurt, 2016). This very instance is addressed in a Joint Hearing for the Oversight of the UASI Grant Program (2017). The Orlando urban area did not qualify for the grant in 2013, 2015, and 2016. However, it did meet the qualifications from 2004 until 2012 and in 2014. This is not the only urban area to have a change in their eligibility for funding between fiscal years. The Kansas City Area, the Sacramento Area of

⁷ DHS (2021). The Department of Homeland Security (DHS) Notice of Funding Opportunity (NOFO) Fiscal Year 2021 Homeland Security Grant Program. Retrieved from <https://www.fema.gov/grants/preparedness/about/informational-bulletins>

California, and the San Antonio Area of Texas have all at one point been ineligible for UASI funding in the past.

There are several urban areas that have been consistently funded year to year by UASI since its inception including the New York area, Los Angeles area, and Washington D.C. area. The omission of areas from funding does not outright indicate problems with the risk assessment model. This occurrence could be a matter of their risk of terrorist attack changing year to year and thus not meeting the criteria for an UASI grant. However, the loss of funding for the Orlando area is noteworthy and concerning as Governor Ron DeSantis, then Representative DeSantis and Chairman of the Subcommittee on National Security, points out in the Joint Hearing on UASI. Orlando contains a significant concentration of well-known soft targets most obvious being the amusement parks. It is a highly trafficked urban area where large numbers of people congregate. Given the goals of UASI as well risk assessment that is intended to calculate vulnerability and consequences, it brings into question the effectiveness of the grant process due to this apparent high risk urban area being left out of the funding allocation for those years. Additionally, Representative John Mica, the Chairman of the Subcommittee on Transportation and Public Assets stated during the joint hearing that his committee investigated UASI allocation and discovered that \$1.1 billion of the \$2.8 billion awarded since 2011 had yet to be spent (U.S. House, 2017). This surplus of money in allocated urban areas, while other urban areas receive no funding at all, can be seen as questionable. It is important to note that a surplus of money in these areas can be conducive to preparedness to prevent and respond to terrorist attacks and disasters. This

allows the urban areas to respond in ways that could not be prepared ahead of time to provide disaster relief. However, this surplus could still indicate flaws in the allocation process.

More recently, a major winter storm and cold wave had devastating consequences in Texas. Around mid-February of 2021, a winter storm hit North America. The neighboring states of Louisiana and Oklahoma declared states of emergency, but the effects of the storm hit Texas the hardest. Nearly 14 million were left without clean drinking water. The Electric Reliability Council of Texas had to take emergency measures to keep the entire power grid from crashing and initiated rolling black outs (Inskeep, 2021). When Steve Inskeep of National Public Radio (NPR) spoke to Mayor Michael Evans of Mansfield, one of the suburbs of the Dallas area, he discussed the issues with the current application of the rolling blackout. Mayor Evans cited issues with these rolling blackouts and their failure to truly be rolling as some homes had never lost power while others had been without electricity for three to four days. In addition, nursing facilities and convalescent homes lost power when in theory they should receive priority (Inskeep, 2021). This has left millions without heat during a period of freezing cold temperatures, at times record-setting lows. The Department of State Health Services (DSHS) stated that at least 57 people have died because of the winter storm, the majority of which were hypothermia related (NBC 5 Dallas-Fort Worth, 2021).

The power plants and natural gas pipelines can operate in cold weather, but they must be prepared ahead of time (Davis, 2021). This disaster brought to light that Texas has generally not chosen to do that. The Perryman Group (2020), a team of analysts who

do analysis for economic insight, estimated \$197 billion to \$295 billion in property and economic damages from the storm. Now Texas is faced with months of costly recovery spent fixing the damages caused by the storm. The question then becomes, why were measures not taken ahead of time to prevent or mitigate the consequences from the storm. The process to prepare power plants and natural gas pipelines for cold weather is a costly one. However, this is one of the very natural disasters FEMA is meant to help prepare for with its grant allocations. While it is true to say that disasters such as the occurrence of this winter storm cannot be averted, providing federal assistance is to help build the regional capabilities not just to prevent but also to protect, respond to, and recover from disasters as stated in the goals of UASI. And yet with total failure of the power grid and months of recovery on the horizon, it seems that the only conclusion that can be drawn is a failure to meet this goal.

The disaster following the winter storm in Texas is not a terrorist attack, however, it does show the capabilities of the area in its preparedness for disasters and their abilities to respond. In FY 2020, a total of \$45 million was allocated to the urban areas within the state of Texas: the combined Dallas/Fort Worth/Arlington area, the Houston area, and the San Antonio area. This cost is justifiable if it was effective in assisting Texas and the MSAs of Texas that were awarded if the grant is effective in helping with their preparedness. However, this case brings into question that belief.

These individual cases have brought questions to the effectiveness of UASI toward preventing terrorist attacks. However, these are individual incidents. A single failure does not mean UASI has failed overall toward its goal. But the allocation of funds

through the UASI program has led to a significant number of financial resources being allocated on a yearly basis. Considering this, and the issues with UASI, such as the specific incidences as listed above or the general grievances with the allocation methodology over the years, the effectiveness of the UASI program must be determined to see if the program is meeting its intended goals. The effectiveness of the program needs to be determined. The amount of money granted to urban areas or the allocation at all does not equate to effectiveness. Grant allocation does not mean the grants were effectively used by the awarded areas. Have the choices of the awardees of the grants reduced risk?

Evaluations of currently implemented policies are necessary to ensure their success. From its inception in 2003 until the most recently available allocation as of this paper, just under \$12 billion dollars⁸ have been awarded through the UASI grant program. However, there have been few evaluations on the program's effectiveness. The GAO has provided feedback for the granting process multiple times over the years that have resulted in changes being adapted to meet these criticisms. While the intricacies in process of allocation have evolved over the years, the general idea behind UASI has not.

Research Questions

This paper intends to examine whether the UASI grant program has achieved its goals. Specifically, to investigate the effectiveness of UASI in reducing the risk of terrorist attacks and building preparedness through its allocation of grants to urban areas.

⁸ From FY 2003 to FY 2020 \$ 11,681,368,599 have been awarded through the UASI grant program according to the available data.

As previously stated, the initial goal for UASI was to prevent, prepare for, and respond to terrorist attacks. Over time, this evolved in enhancing the preparedness of urban areas to prevent, mitigate, and respond to disasters. As such, to evaluate the effectiveness of UASI in achieving its goals, the effect UASI funding has had on reducing terrorism attacks in MSAs that have been funded is not the only item that needs to be examined. Measures for the effect UASI funding has had on the number of terrorism incidents and the preparedness of UASI granted areas needs to be examined. To do that, this paper intends to answer two research questions: Have MSAs that received UASI funding have a lower risk of a terrorist incident? Did the allocation of UASI grants help in the preparedness of the urban area to prevent and respond to terrorism attacks?

Years Used for Analysis

To answer these questions, separate time periods for the UASI funding and outcome variables needed to be chosen. However, the availability of the years is limited from the 18 available years of grant allocations due to the initial period of instability in the grant allocation process, the need for a period to pass for the grant allocations to take effect, and the potential outside influence of former President Trump's influence that could potentially influence terrorism incidents.

As previously mentioned in this paper, UASI's risk analysis model has changed since its inception in 2003. However, 2006 was the first year the FEMA adopted the usage of threat, vulnerability, and consequences for the risk analysis model. While changes were still made in UASI's risk analysis, the assessment did not diverge from

using these three factors in its calculation since their adoption in 2006. As such, the model has remained relatively consistent since 2006.

Even after funding is awarded, time is needed for the local governments of the urban areas to begin implementing the changes they proposed in the strategic plan sent in with their application. Bureaucracy is known to move slowly. Meetings must take place between the necessary officials to strategize implementation, training needs to occur for newly enacted practices, and installation of physical measures must occur. As such, this needs to be taken into consideration when choosing the years of UASI funding to be analyzed for their effectiveness.

The years 2016 and beyond are intentionally avoided for the analysis due to the inception of former President Trump's campaign and subsequent election. Former President Trump's rhetoric has been connected to the incitement of extremist violence both in the media and in research. Dugan and Chenoweth (2020) conducted a study of hate crimes based on Blalock's ideas of intergroup power contests: political threat and emboldenment. Political threat theory predicts positive government attention toward marginalized groups will lead to backlash in the form of more hateful violence against them. Emboldenment theory predicts that negative government attention towards marginalized groups will lead to emboldening of the dominant group to commit more hateful violence towards them. They found that African Americans were more susceptible to hate crimes motivated by political threat and Latinx persons were more susceptible to hate crimes motivated by emboldenment. This conclusion is consistent with the FBI's Hate Crime Statistics report that hate crimes rose 17 percent between 2016

and 2017 (FBI)⁹. As such, the period from 2016 on needs to be excluded to prevent contamination from former President Trump's antagonistic rhetoric.

All three of these factors were considered when choosing appropriate years of this analysis. For UASI funding, the years 2006 to 2010 were chosen as they avoid the initial years of the UASI program. The years 2011 to 2015 were chosen for the outcome variables to avoid the Trump era. By 2011, the funding from 2006 and 2007 will have the time needed to begin taking effect on the outcome variables.

Research Question 1

A multiple regression analysis is conducted to see whether the sum of UASI funding from 2006 to 2010 for an urban area has influenced the number of terrorist attacks from 2011 to 2015. A decrease in the number of terrorist attacks in an urban area would demonstrate the UASI grant program has been effective at reducing risk.

HI: As UASI funding between 2006 to 2010 in an MSA increases, the number of terrorism incidents between 2011 and 2016 decreases.

Research Question 2

The purpose of analyzing fatal incidents and casualties is two-fold. First, it helps to indicate the preparedness of an urban area. Terrorist attacks are not only rare but very difficult to prevent in advance. Even with practices in place to prevent terrorist attacks, the number of attacks may not have a discernable decrease. However, UASI is not only involved in the prevention from terrorist attacks but also preparedness. If an urban area is

⁹ The FBI provides Hate Crime Statistics on a yearly basis as part of the UCR Program. Further information and yearly publication can be found at <https://www.fbi.gov/services/cjis/ucr/publications>

correctly using funds for preparedness against a terrorist attack, there should be a decrease in the number of incidents that have a fatality and the number of casualties resultant from an incident.

Second, is to further understand the capabilities of the risk assessment used in the allocation process. It is possible that the risk assessment is so effective at determining the risk of terrorist incidents for allocating funds to urban areas that it is mitigating terrorist attacks. As such, this measure is to show the effectiveness at the UASI program allocation in helping urban areas in their preparedness by evaluating the outcomes of attacks that do occur. In this way, the effectiveness of UASI can be determined if the program is having a successful mitigating effect on consequences of terrorism incidents. If the harm and damage caused by terrorist incidents have been minimized, then UASI could still be considered as successful, even without a reduction in terrorist incidents.

As such, two analysis, a logistic regression and another multiple regression, were conducted to assess the preparedness of an urban area. The first analysis evaluates the effect, if any, UASI funding from 2006 to 2010 had on if a fatal attack occurred from terrorism incidents between 2011 to 2015. UASI grants will have been successful in their enhancement of regional preparedness if urban areas that received funding are less likely to have fatalities if a terrorist attack occurs.

H2.1: As UASI funding in an MSA between 2006 and 2010 increases, the likelihood of a fatality from a terrorism incident between 2011 to 2015 decreases.

The second analysis evaluates the effect UASI funding from 2006 to 2010 has on the number of casualties resultant from terrorist attacks that occurred between 2011 to

2015. A decrease in the number of casualties indicates that regional preparedness has been successful.

H2.2: As UASI funding between 2006 to 2010 for an MSA increases, the number of casualties between 2011 to 2016 decreases.

CHAPTER THREE: DATA, ANALYSIS, AND METHODOLOGY

Data

This study draws from three main sources: UASI allocation data, Global Terrorism Database (GTD), and the Census. The data was gathered for the top 100 most populous MSAs as of 2010 based on previous research by LaFree and Bersani (2014) on the concentration of terrorism to urban areas. The remaining data is drawn from publicly sourced information to accumulate information on landmarks and state capitals.

UASI Grant Allocation

UASI funding is drawn from government publications distributed by the DHS and FEMA to announce allocations each fiscal year¹⁰. Funding for all available fiscal years was gathered to understand a general picture of UASI funding. From 2003 to 2020, a total of \$ 11,681,368,599 ¹¹ has been awarded through the UASI grant program.

For the purposes of the analysis, allocations from 2006 to 2010 are being used. From 2006 to 2010 a total of \$3,870,301,250 was provided by the UASI grant. Between 2006 and 2010, the total amount of UASI grants steadily increased with the highest year awarded at \$832,520,000 in 2010. Of this period, New York City, NY was awarded the highest amount in allocations with \$699,445,846, nearly double of the next closest MSA,

¹⁰ FY 2003 supplemental retrieved from a CRS Report for Congress (Order Code RL33770). FY 2009 and 2010 were retrieved from a search on DHS.gov for HSGP grant allocations. FY 2016 to 2020 were retrieved from Information Bulletins provided by FEMA and found at <https://www.fema.gov/grants/preparedness/about/informational-bulletins>. FY 2004-2008 and 2011-2015 were from documents previously downloaded from the FEMA website but no longer available. Document available upon request.

¹¹ This figure includes the initial awards given to the 7 urban areas.

Los Angeles/Long Beach, CA, at \$361,805,096. In comparison, the MSA that received the least in grant awards was Bakersfield, CA with \$1,014,919.

The number of MSAs awarded by the UASI grant also increased during this period with a peak in 2010 of 64 areas. All but one (Bakersfield, CA) of the MSAs received funding from UASI at least twice during this period. Full information on funding by the UASI program between 2006 to 2010 is available in Table 1 of the appendices.

During UASI funding, the definition for individual urban areas used by FEMA for their allocation changed slightly. As previously mentioned, FEMA adopted the use of statistical MSAs for their risk analysis. Specifically, there are two cases where urban areas were defined as individual areas then later combined with other urban areas after this change. Norfolk, VA was awarded individually for several years until it was expanded into the greater area known as the Hampton Roads Area. The Hampton Roads Area consists of Norfolk, Virginia Beach, and Newport News. The change was done very early in the UASI process and the other two cities that were added to form the Hampton Roads Area were not funded previously by the grant. As such, the decision was made to treat the Norfolk area as the combined statistical Hampton Roads area from the beginning of allocation to ensure consistency for the entire grant.

The other issue of urban area change is with Miami and Fort Lauderdale, Florida. Miami and Fort Lauderdale are both provided grants separately until 2011 where they are combined into a single statistical area. FEMA provides no information on what the split for the grants might be between these two areas when they are allotted as an MSA. As

such, the decision was made to treat these cities as individual areas. As such, for the dataset created for analysis, it includes the 100 most populous MSAs and Fort Lauderdale. A listing of all MSAs used in this paper can be found in the appendices.

Global Terrorism Database (GTD)

The GTD is a database on terrorist attacks compiled by National Consortium for the Study of Terrorism and Responses to Terrorism, also known as START. START is a DHS Emeritus Center of Excellence led by the University of Maryland established in 2005. Each terrorist attack is logged as its own separate event and given an identification number for easy distinction. For each identified terrorist incident, the database includes information on location, weapons, nature of target, number of casualties, and the identity of the perpetrator when possible, for both international and domestic incidents.

Data on terrorism incidents were downloaded from the GTD website.¹² The initial downloaded database included 201,184 incidents from 1970 to 2019. From there, the data was culled for any incidents that occurred within the geographic borders of the United States. This data was filtered to include data from the years 2002 to 2015. Finally, the data was searched for terrorism incidents that fell in the 101 locations used in this study. From that information, a data set was made on the number of attacks, fatalities, and casualties.

In total, between 2011 and 2015 there were a total of 101 incidents that occurred within the United States. Of these, 41 incidents occurred in the 100 most populous

¹² GTD can be found here <https://start.umd.edu/gtd/>

MSAs. Between 2011 and 2015, the number of terrorism incidents in the 100 most populous MSAs steadily increased, with the highest in 2015 at 15 incidents. Between 2011 and 2015, New York City had the greatest number of attacks totaling 8 incidents. A total of 19 of the 41 terrorism incidents had at least one fatality. Information on the breakdown of GTD data can be found in the appendices.

The total number of casualties between 2011 and 2015 was 347. However, there is a significant outlier that skews data on this measure. The Boston Marathon Bombing occurred on April 15, 2013 and resulted in a total of 267 casualties. This brings the total number of casualties from terrorism in Boston between 2011 and 2015 to 268. When looking at the data for casualties occurring from terrorism incidents between 2011 and 2015 for all the most populous MSAs, the next closest MSA for number of casualties for this period is Riverside/San Bernardino, CA at 33 casualties. Looking at casualties from 2011 to 2015, the total number of casualties, when excluding the Boston Marathon bombing, is 79. This is a significant difference.

The GTD has two variables in their database that pertain to the nature of this paper: ambiguous cases and unsuccessful cases. Ambiguous cases are cases that are likely terrorist incidents but there is some level of uncertainty. Due to the rarity of terrorism as well as the small number of cases within the 2011 to 2015 period, ambiguous cases were included in the analysis. Unsuccessful cases are cases that did not come to fruition as they were stopped during some point of their process. Between 2011 and 2015, a total of 17 incidents were unsuccessful.

Additional data was gathered from 2006 to 2006 to obtain a moving average of attacks before the outcome variable. From 2002 to 2006 a total of 123 terrorism incidents occurred in the United States. Within the 101 locations used in this study, a total of 27 terrorist incidents occurred during this period.

Census

Census data was drawn from the 2010 census located through a search on the U.S. Census Bureau's data website.¹³ The census data is used to control for the existing risk of attack.

State Capitals and Landmarks

Data on major landmarks and state capitals was obtained through publicly available information about the 101 urban areas included in this study. A major landmark is defined as a natural or manmade feature that has significant cultural, historical, or symbolic meaning.

Variables

The variables in this study are number of terrorist incidents, fatal attack, casualties, UASI funding, population density, capitals and significant targets, and past risk.

Outcome Variables

Number of Terrorist Incidents. This variable is the outcome variable. It is measured by the number of terrorist incidents that occurred between 2011 and 2015 in the

¹³ <https://data.census.gov/cedsci/>

100 most populous MSAs. As previously mentioned, this paper is defining terrorism by START's GTD definition: "The threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation" (START, n.d.). As such, a terrorist incident is defined as any incident whose perpetrator's motivation falls into this definition.

Fatal Attack. Fatal attack is a dichotomous variable measuring if any fatalities occurred because of a terrorist incident between 2011 and 2015. The variable is indicated in the analysis by a 0 if no fatalities occurred and 1 if at least one single fatality occurred from a terrorist attack in that period.

Casualties. Casualties is the sum across 2011 to 2015 that occurred from a terrorist incident. A casualty is defined as an individual killed or injured by a terrorist incident.

UASI Funding

The predictor variable is the sum of total amount of funding for each MSA between 2006 and 2010.

Controls

Social Disorganization Theory Measures. As previously mentioned, LaFree and Bersani (2014) used the Social Disorganization framework to create predictors for characteristics to understand the geographic concentration of terrorism in urban areas. They found a link between the concentration of terrorism attacks to high levels of population heterogeneity, residential instability, and population density. As such, these will be controlled for in this paper to accurately evaluate UASI funding effects. In

keeping with the general goals of terrorism, terrorist attacks were less common in areas of high concentrated disadvantage. Considering this, concentrated disadvantage will not be used in this paper. All social disorganization theory control variables were taken from the 2010 U.S. Census.

Residential Instability. Residential Instability is influenced by the changes in a neighborhood due to high mobility in the population. High mobility results in an area results in an inability to establish norms and weakens the social controls. As a result, this increases the likelihood of deviance and thus crime increases. Operationalizing residential instability must measure for geographic mobility. For this study, percent of households that are owner-occupied will be used and percent that moved since the previous year. As a greater number of owner-occupied households increase, terrorist attacks will increase. As the percentage of persons that moved in the past year increases, terrorist attacks will increase.

Population Heterogeneity. Population heterogeneity goes to the cultural changes of a community, specifically those brought through immigration. Immigrants that move into a neighborhood bring with them different rules and norms. The argument is that the higher the population heterogeneity, the greater the social disorganization in a community. The idea is that as population heterogeneity in a community increases, individuals feel marginalized from their community and thus increases their change in participating in crime. As such, areas that are characterized by large concentrations of immigrants or ethnic diversity should be characterized by greater instability. Measurement for this figure must measure the concentration of immigrants in an area.

Operationalization of this measure for this paper will be through the percent of population that is foreign born. The percent foreign born measures for the immigrant population that settled in the urban area.

Population Density. The concentration of people living in an urban area is commonly used in studies using social disorganization theory (LaFree and Bersani, 2014). FEMA's risk analysis model includes measures to account for the population, including the urban areas' population density. For this study, census data on the population density was calculated based on the population of the MSA and the square mile land area of said MSA.

State Capital and Significant Targets. The importance of an urban area to the government can serve as a significant attractor to terrorists. In addition, significant targets are extremely attractive to terrorists due to the potential visibility and shock value that an attack on or near this item can garner. For example, in 2019 Notre Dame cathedral in Paris garnered significant media coverage when it caught fire. While not a terrorist attack, this goes to show the response that can occur for disasters than take place at a significant target. Examples for significant targets used in this paper include the Statue of Liberty in New York, Golden Gate Bridge in San Francisco, California and Silicon Hills in Austin, Texas. To control for that, the variable capital is included in the analysis. Capital and Significant Targets is a dichotomous variable that is coded as 0 for not a capital of a state and no considerable targets and as 1 if the urban area is a capital of a state or has at least one significant target.

Past Risk. Since the 1970s, there has been a general downward trend in the number of terrorist attacks that occur within the United States (LaFree, Dugan, & Miller, 2012). There were spikes in both the 1990s and immediately following September 11. However, research shows this downward trend has overall continued since 2001 (LaFree, Dugan, & Miller, 2012). In addition, the risk assessment conducted by UASI is vague in what it considers for risk. Due to the lack of information about the risk assessment, a proxy is used to control for the past risk of attack. As such, a moving average of past terrorist attacks from 2002 to 2006 was taken to account for an urban area's risk of past terrorism attacks.

Methodology

Three tests were conducted in the analysis of UASI: two multiple regressions and a logistic regression. A multiple regression was conducted to analyze the effect UASI funding has on the risk of terrorism incidents. The sum of UASI data between 2006 and 2010 was used to predict the number of terrorism incidents that occurred between 2011 and 2015.

A logistic regression was conducted to predict the occurrence of a fatal attack between 2011 and 2016 given the sum of UASI funding between 2006 and 2010. Finally, a multiple regression was performed to predict the total number of fatalities from terrorist attacks between 2011 to 2015 using UASI funding from 2006 to 2010.

CHAPTER FOUR: RESULTS

Three analyses (two multiple regressions and a logistic regression) were conducted to answer this paper's research questions. First examined whether the sum of UASI funding in an urban area between 2006 to 2010 has influenced the number of terrorist incidents that occurred between 2011 to 2015. Second, if the sum of UASI funding between 2006 and 2010 influenced whether a fatal attack would occur in terrorism incidents between 2011 and 2015. Finally, whether the sum of UASI funding from 2006 to 2010 influenced the number of casualties resultant from terrorism incidents between 2011 and 2015.

The sum of attacks from 2011 to 2015 has a mean of 0.41 attacks ($SD = 1.051$) demonstrating the low number of attacks per urban area that occurred in this period. Sum of casualties from 2011 to 2015 has a mean of 3.44 casualties per urban area with a standard deviation of 26.839. For UASI funding, the mean funding amount was \$38,237,396.780 ($SD = \89101710.310). The average population density of an MSA was 951.887 people per square mile with a standard deviation of 2985.872. Table 1 summarizes the descriptive statistics.

Table 1: Summary of Descriptive Statistics

Variable	mean	Std
Sum of Attacks 2011-2015	0.410	1.051
Sum of Casualties 2011-2015	3.440	26.839
UASI Funding (in dollar amount)	38237396.780	89101710.310
Population Density (people per sq. mi)	951.887	2985.872
Average Attacks 2002-2006	0.053	0.160
% Foreign Born	12.227	9.695
% Moved w/in Last Year	13.368	2.362
Capital and Significant Targets	0.440	0.498

H1

A multiple regression model was conducted to examine the relationship between UASI funding and risk of terrorism attack. Table 3 summarizes the analysis results. Both the percent moved in last year and capital and significant targets are negatively correlated with the sum of attacks, indicating that as these values increase the risk of terrorism attacks decreases. UASI funding, population, average attacks, and percent foreign born are all positively correlated with the sum of attacks 2011-2015. This indicates that MSAs with higher values on these variables tend to have more risk of terrorist attacks. However, only UASI funding and Population Density are statistically significant at $p < .001$ and $p < .05$, respectively.

The multiple regression model produced $R^2 = .494$, $F(6,94) = 15.265$, $p < .001$ as seen in Table 2. As can be seen in Table 3, UASI funding and population density have a significant positive regression weight, indicating MSAs that received UASI funding and have a greater population density are expected to have higher risk of terrorist attacks,

after controlling for the other variables in the model. None of the other variables were statistically significant in their contribution to the model.

Table 2: Model Summary of H1

R²	Sig	Std. Error of the Estimate
0.494***	<.001	0.771

* p < .05 ** p < .01 ***p<.001

Table 3: Correlations and Results for H1 (Predicting Total Number of Attacks)

Variable	Correlation with Sum of Attacks 2011-2015	b	p-values	Std. Error
UASI Funding	0.653	5.19E-09***	<0.001	0.500
Population Density	0.631	0.000**	0.008	0.000
Average Attacks 2002-2006	0.132	0.535	0.282	0.494
% Foreign Born	0.351	0.000	0.972	0.010
% Moved w/in Last Year	-0.036	0.061	0.078	0.034
Capital and Significant Targets	-0.074	-0.073	0.642	0.156

* p < .05 ** p < .01 ***p<.001

H2.1

A binary logistic regression model was conducted to examine the relationship between UASI funding and the outcome of a fatality occurring from a terrorist attack between 2011 and 2015. The logistic regression model was statistically significant, $\chi^2(5) = 16.833$, $p < .005$. The model explained 30.8% (Nagelkerke R^2) of the variance in fatal attacks and correctly classified 91.1% of the cases. Table 2 shows the Beta, significance, and Exp(B). Both percent foreign born and percent moved within the last year

significantly contributed to the model, with an increase in the chance of the outcome exhibiting a fatal attack. However, UASI funding did not have a significant effect on explaining whether a city will experience a fatal attack ($p = 0.145$).

Table 4: Results Summary H2.1

Variable	B	sig	Exp(B)
UASI Funding	0.000	0.145	1.00
Population Density	0.000	0.884	1.00
% Foreign Born	0.083*	0.04	1.086
% Moved w/in Last Year	0.508**	0.009	1.661
Capital and Significant Targets	0.362	0.626	1.436

* $p < .05$ ** $p < .01$ *** $p < .001$

H2.2

A multiple regression model was conducted to examine the relationship between UASI funding and the sum of number of casualties resultant from terrorist attacks between 2011 and 2015. The multiple regression model produced $R^2 = .105$ $F(5,95) = 2.237$, $p = .057$ as seen in Table 5. UASI funding, percent foreign born, and capitals and significant targets are positively correlated with the sum of casualties. This indicates that as these values increase the casualties increase. Population density and percent moved in the last year are negatively correlated which indicates that as these values increase the casualties decrease. However, only percent foreign born was found to be statistically significant ($p = 0.003$). Table 6 summarizes the analysis results.

Table 5: Model Summary for H2.2

r2	Sig	Std. Error of the Estimate
0.105	0.057	26.046

* p < .05 ** p < .01 ***p<.001

Table 6: Correlations and Results for H2.2: Predicting Total Number of Casualties

Variable	Correlation with Sum of Attacks 2011-2015	b	p-values	Std. Error
UASI Funding	0.038	-2.59E-08	0.605	0.000
Population Density	-0.19	-0.001	0.55	0.001
% Foreign Born	0.259	0.996*	0.003	0.331
% Moved w/in Last Year	-0.33	.134	0.907	1.151
Capital and Significant Targets	0.108	6.964	0.188	5.254

* p < .05 ** p < .01 ***p<.001

CHAPTER FIVE: DISCUSSION

Although the UASI program has been in existence since 2003, only one evaluation on the effectiveness of UASI in meeting its goals have been conducted (Nash, 2017). This paper investigates UASI's effectiveness in preparing urban areas to prevent and respond to terrorist attacks. Based on the analysis conducted, UASI funding resulted in an increased risk of terrorist attacks. This finding is the opposite of what would be commonly expected and is in opposition to the goal of UASI to reduce the risk of terrorism in these urban areas.

As noted earlier, the only known research evaluation of the UASI program on its effectiveness in reducing terrorist attacks is by Rebecca Nash (2017) whose paper conducts a multiple time-series analysis on seven urban areas to examine the effectiveness of UASI in the prevention of future terrorist attacks. In her paper, she used information of past attacks from 1970 to 2010 for Los Angeles/Long Beach area, Washington, D.C., Chicago, The Bay Area, New York City, Houston, and Seattle to forecast attacks in 2011 and 2012. Overall, she finds that UASI has no impact on the terrorism incidents in these 7 urban areas. The analysis of this paper continues beyond her analysis by expanding from 7 areas to 101 and expanding the years to 2011 through 2015. Nash did not find any significant impact of UASI funding. This paper also did not find any beneficial impact from the UASI program, and in fact, found a backfire impact. That is, places receiving more UASI funds also tend to have more terrorist attacks. This paper is not saying funding leads to more attacks. It is possible that the risk assessment

measures that DHS/FEMA used correctly identify places with high risks of terrorist attacks. However, as previously stated, FEMA has not provided detailed information on their risk assessment and allotment process. All information has been gathered from information provided by GAO. Again, it is possible that FEMA was able to forecast the cities that were more likely to be attacked through the risk assessment. Without the information of their exact risk assessment, their process cannot be exactly recreated.

To see if FEMA were achieving a mitigation of risk through their risk assessment, this paper also examined the effect of UASI on fatal incidents and the number of casualties. The analysis for fatal attacks indicated the likelihood of a fatal attack is not affected by UASI funding. Similarly, the analysis for casualties revealed that the sum of the number of casualties is not affected by UASI funding. Based on these findings, it cannot be said that FEMA was able to mitigate the risk from terrorism attacks.

UASI is strictly a grant allocation program. As such, there is an inherent weakness in UASI due to the lack of information provided on how the money is being spent by these urban areas. FEMA mainly provides information on the dollar amount allocated to each urban area and the process by which the dissemination of said funds occurs. In 2019, FEMA Grants Program Directorate published the *Preparedness Grants Manual* to clarify the process for with all their grants under the Preparedness Grants Program. Once the money is awarded to the urban area, responsibility for the funds falls on the state's OMB. From there, urban areas disseminate the funds to different programs through working groups set up in the urban areas that oversee the implementation of the funds. As an example, New York has the New York City Urban Area Working Group

(UAWG) that coordinates the regional implementation and activities under the UASI program (New York City Office of Management & Budget, 2019). In addition, many of these Urban Area Working Groups have further processes for sub-recipients to apply for grant money. This process is not unique to 2019 as similar dissemination processes have occurred in previous years¹⁴.

These working groups and subcontractors are required to comply with the regulations set up by the urban areas and the UASI program. Their compliance is assured through audits and quarterly updates on progress back to the funding recipients. However, information about the exact inner workings of how the money is spent is vague. With matters involving counterterrorism, resources are often shrouded in secrecy (Kennedy & Lum, 2011). This lack of knowledge on how the money is being spent makes it difficult to truly evaluate the effectiveness of UASI. However, a study conducted by Lum et al. (2017) shed light on this process. When Lum et al. (2017) conducted evidence assessments of the Federal Protective Services (FPS) security approach by comparing its methods with research that covers similar prevention mechanisms, they found that the decisions behind the deployment of these measures are through a majority agreement. Rather than use evidence-based research or data, they based decisions on subject matter expert's guidance and anecdotal evidence. It is likely that a similar decision process is conducted when urban areas make the determination for how they plan to spend the UASI funds.

¹⁴ The Arizona Department of Homeland Security Subgrantee Agreement form for FY 2010 HSGP Grants is one of several documents that refer to further subcontractors.

In addition to this lack of use in empirical evidence (or the lack of documentation) in the decision-making by the urban areas, it is likely the actual programs and practices the funding is being spent on are vastly disparate in their functions. As previously mentioned, counterterrorism measures cover a wide range of interventions. With the expansion of UASI from terrorism preparedness to disaster preparedness, the scope of interventions applicable for UASI funding has vastly expanded. There is no way to know what types of strategies the money is being spent on. Both the broadness of the programs likely being used and the lack of information about the specificities on how the money is being spent makes it difficult to determine the effectiveness of the UASI program. UASI could be better focused with evidence-based research to help achieve its intended goals.

Programs and policies need to be based in evidence to help best achieve their intended goals. Little is known on what preventative strategies can be used to counteract terrorism (Lum & Koper, 2011). However, the most promising appears to be measures of target-hardening largely due to its reliance on theory frequently used in crime prevention and the prospective availability for wide-spread dissemination. UASI has included indicators for critical infrastructure as seen in their risk assessment. However, UASI could be better focused by concentrating on the implementation of target-hardening measures to better achieve effectiveness.

In addition, there should be better performance measures to evaluate the effectiveness of the UASI program. If this significant amount of money will continue being spent through this program, there should be measures to assure that the practices being funded are effective, especially given the continuing gaps in counterterrorism

research. Those who funnel significant funding towards counterterrorism strategies should be required to assess the effectiveness of the programs (Kennedy & Lum, 2011). The assessments of effectiveness provide justification for the use of funds in this manner.

Limitations

There are limitations to the analysis. It is important to mention the small sample size used in this paper. With only 101 cases being examined (100 most populous MSAs and Fort Lauderdale), this significantly narrows the number of terrorism incidents in the analysis. Only 41 incidents of terrorism occurred between 2011 and 2015. Of the 41 incidents, only 19 had at least one fatality. While there were 347 casualties, a significant percentage of that total is due to a single event. The small sample size could translate to a peculiarity of the selected years and/or these locations.

However, part of the issue in the analysis of terrorism is the rarity of terrorist attacks. Terrorism's statistical rarity makes it a difficult subject to analyze in comparison to other forms of crime. This study looked at 101 urban areas and the terrorism that occurred between 2011 to 2015. The majority of the MSAs (76.2%) had no terrorism attacks. Of the 24 MSAs that had a terrorist incident, 70.8% had only 1 incident. Overall, this translates to uncertainty in the findings as the sample size might not have been large enough to ascertain the true picture. However, a more accurate analysis may be difficult to conduct given the previously mentioned advent of former President Trump's rhetoric that could further skew the data from a true picture.

To account for the rarity of terrorism, this paper tried to be as inclusive as possible. As previously mentioned, the GTD indicates when an incident has a level of

ambiguity as to its inclusion as a terrorism incident. With the knowledge that terrorism incidents are rare, the decision was made to be liberal with the definition of terrorism in this paper and include ambiguous cases in the analysis.

Open-source databases, like the GTD, have been condemned by critics for potential drawbacks. LaFree and Dugan (2007) state as the GTD heavily relies on news sources for their information, this may bias the gathered information towards newsworthy events and leaves out attacks that do not meet the media's criteria for publication or did not garner public attention. These realities of the GTD and other open-source terrorism databases make it likely that terrorist attacks are underrepresented. While being underrepresented could be a concern, this criticism is not particularly relevant to this paper as it focuses on urban areas within the United States. The United States is known worldwide for its free press because of the First Amendment and the overall prevalence of the media. The criticism cited by LaFree and Dugan (2007) is more relevant for areas that have low media presence or have governmentally suppressed press such as found in China, Saudi Arabia, or Libya. This is confirmed by Chermak, Freilich, Parkin, and Lynch (2012) who found that open-source terrorism databases have considerable variation in their inclusion of events. In some cases, the inclusion or exclusion is in direct contrast to their inclusion criteria. However, they go on to state that, overall, these open-source databases are representative of the larger terrorism whole.

CHAPTER SIX: CONCLUSION

Since September 11th, there has been an influx in counterterrorism programs and policies. UASI is a counterterrorism program that has provided over 11 billion dollars in funding allotments since its inception in 2003. But the question must be asked if it is reasonable to spend the amount of money on the UASI program. The goals and parameters of UASI has changed several times over the years to be more inclusive. This paper's focus was on UASI's original goal of preventing terrorist attacks in high-risk urban areas. Overall, there is no indication that UASI is effective in its goal.

While it might be limited, the purpose of this paper is to investigate the effectiveness of UASI under its original intention. Future research should investigate the effectiveness of UASI on its expansion. They should consider the response of urban areas to natural disasters. In addition, they should consider the inclusion of mass shootings in their analysis. It is likely that the effects of the preparedness measures funded by UASI could affect prevention and intervention of mass shootings. However, that is beyond the scope of this paper.

APPENDIX A

List of Metropolitan Statistical Areas (MSA)

1. Akron, OH
2. Albany-Schenectady-Troy, NY
3. Albuquerque, NM
4. Allentown-Bethlehem-Easton, PA-NJ
5. Anaheim-Santa Ana-Irvine, CA
6. Atlanta-Sandy Springs-Alpharetta, GA
7. Augusta-Richmond County, GA-SC
8. Austin-Round Rock-Georgetown, TX
9. Bakersfield, CA
10. Baltimore-Columbia-Towson, MD
11. Baton Rouge, LA
12. Birmingham-Hoover, AL
13. Boise, ID
14. Boston-Cambridge-Newton, MA-NH
15. Bridgeport-Stamford-Norwalk, CT
16. Buffalo-Cheektowaga, NY
17. Cape Coral-Fort Myers, FL
18. Charleston-North Charleston, SC
19. Charlotte-Concord-Gastonia, NC-SC
20. Chicago-Naperville-Evanston, IL
21. Cincinnati, OH-KY-IN
22. Cleveland-Elyria, OH
23. Colorado Springs, CO
24. Columbia, SC
25. Columbus, OH
26. Dallas-Fort Worth-Arlington, TX
27. Dayton-Kettering, OH
28. Deltona-Daytona Beach-Ormond Beach, FL
29. Denver-Aurora-Lakewood, CO
30. Des Moines-West Des Moines, IA
31. Detroit-Warren-Dearborn, MI
32. Durham-Chapel Hill, NC
33. El Paso, TX
34. Fort Lauderdale, FL
35. Fresno, CA
36. Grand Rapids-Kentwood, MI
37. Greensboro-High Point, NC
38. Greenville-Anderson, SC
39. Harrisburg-Carlisle, PA
40. Hartford-East Hartford-Middletown, CT
41. (Urban) Honolulu, HI
42. Houston-The Woodlands-Sugar Land, TX
43. Indianapolis-Carmel-Anderson, IN
44. Jackson, MS
45. Jacksonville, FL
46. Jersey City-Newark, NJ
47. Kansas City, MO
48. Knoxville, TN
49. Lakeland-Winter Haven, FL
50. Las Vegas-Henderson-Paradise, NV
51. Little Rock-North Little Rock-Conway, AR
52. Los Angeles-Long Beach-Glendale, CA
53. Louisville-Jefferson County, KY-IN
54. Madison, WI
55. McAllen-Edinburg-Mission, TX
56. Memphis, TN-MS-AR
57. Miami-Fort Lauderdale-Pompano Beach, FL
58. Milwaukee-Waukesha, WI
59. Minneapolis-St. Paul-Bloomington, MN-WI

60. Nashville-Davidson--Murfreeseboro--Franklin, TN
61. New Haven-Milford, CT
62. New Orleans-Metairie, LA
63. New York, NY
64. North Port-Sarasota-Bradenton, FL
65. Ogden-Clearfield, UT
66. Oklahoma City, OK
67. Omaha-Council Bluffs, NE-IA
68. Orlando-Kissimmee-Sanford, FL
69. Oxnard-Thousand Oaks-Ventura, CA
70. Palm Bay-Melbourne-Titusville, FL
71. Phoenix-Mesa-Chandler, AZ
72. Philadelphia-Camden-Wilmington, PA-NJ-DE-MD
73. Pittsburgh, PA
74. Portland-Vancouver-Hillsboro, OR-WA
75. Poughkeepsie-Newburgh-Middletown, NY
76. Providence-Warwick, RI-MA
77. Provo-Orem, UT
78. Raleigh-Cary, NC
79. Richmond, VA
80. Riverside-San Bernardino-Ontario, CA
81. Rochester, NY
82. Sacramento-Roseville-Folsom, CA
83. Salt Lake City, UT
84. San Antonio-New Braunfels, TX
85. San Diego-Chula Vista-Carlsbad, CA
86. San Francisco-Oakland-San Jose, CA (Bay Area)
87. Seattle-Tacoma-Bellevue, WA
88. Spokane-Spokane Valley, WA
89. Springfield, MA
90. St. Louis, MO-IL
91. Stockton, CA
92. Syracuse, NY
93. Tampa-St. Petersburg-Clearwater, FL
94. Toledo, OH
95. Tulsa, OK
96. Tucson, AZ
97. Virginia Beach-Norfolk-Newport News, VA-NC (Hampton Roads Area)
98. Washington-Arlington-Alexandria, DC-VA-MD-WV(National Capital Region)
99. Wichita, KS
100. Winston-Salem, NC
101. Worcester, MA-CT

APPENDIX B

UASI Funding 2006-2011 (in USD)

Table B1

Urban Area	2006	2007	2008	2009	2010	Total
Akron, OH	-	-	-	-	-	0
Albany, NY	-	-	1,757,000	1,924,250	1,011,141	4,692,391
Albuquerque, NM	-	-	-	-	-	0
Allentown, PA	-	-	-	-	-	0
Anaheim/Santa Ana, CA	11,980,000	13,840,000	13,425,000	12,753,750	12,773,050	64,771,800
Atlanta, GA	18,660,000	14,660,000	14,220,000	13,509,000	13,522,973	74,571,973
Augusta, GA	-	-	-	-	-	0
Austin, TX	-	-	1,822,500	2,922,550	2,931,990	7,677,040
Bakersfield, CA	-	-	-	-	1,014,919	1,014,919
Baltimore, MD	9,670,000	11,910,000	11,552,500	10,974,900	10,975,050	55,082,450
Baton Rouge, LA	3,740,000	-	1,786,500	3,048,900	2,978,768	11,554,168
Birmingham, AL	-	-	-	-	-	0
Boise, ID	-	-	-	-	-	0
Boston, MA	18,210,000	14,210,000	13,783,500	14,564,400	18,933,980	79,701,880
Bridgeport, CT	-	-	1,967,000	2,807,300	2,812,361	7,586,661

Urban Area	2006	2007	2008	2009	2010	Total
Buffalo, NY	3,710,000	5,470,000	5,306,000	5,040,700	5,544,750	25,071,450
Cape Coral, FL	-	-	-	-	-	0
Charleston, SC	-	-	-	-	-	0
Charlotte, NC	8,970,000	4,970,000	4,821,000	4,579,950	4,583,712	27,924,662
Chicago, IL	52,260,000	47,280,000	45,861,500	52,320,650	54,653,862	252,376,012
Cincinnati, OH	4,660,000	5,240,000	5,083,000	4,969,150	4,977,643	24,929,793
Cleveland, OH	4,730,000	5,520,000	5,354,500	5,086,800	5,094,390	25,785,690
Colorado Springs, CO	-	-	-	-	-	0
Columbia, SC	-	-	-	-	-	0
Columbus, OH	4,320,000	4,720,000	4,578,500	4,349,600	4,247,100	22,215,200
Dallas/Fort Worth/Arlington, TX	13,830,000	20,950,000	20,321,500	19,305,450	25,097,410	99,504,360
Dayton, OH	-	-	-	-	-	0
Deltona, FL	-	-	-	-	-	0
Denver, CO	4,380,000	7,850,000	7,614,500	7,233,800	7,064,120	34,142,420
Des Moines, IA	-	-	-	-	-	0
Detroit, MI	18,630,000	14,630,000	14,191,000	13,481,450	13,481,600	74,414,050
Durham, NC	-	-	-	-	-	0
El Paso, TX	-	5,840,000	5,665,000	5,381,750	5,389,900	22,276,650
Fort Lauderdale	9,980,000	6,580,000	6,382,500	6,063,400	6,067,168	35,073,068
Fresno, CA	-	-	-	-	-	0
Grand Rapids, MI	-	-	-	-	-	0
Greensboro, NC	-	-	-	-	-	0
Greenville, SC	-	-	-	-	-	0
Harrisburg, PA	-	-	-	-	-	0
Hartford, CT	-	-	1,997,000	2,747,000	2,752,043	7,496,043
Honolulu, HI	4,760,000	5,160,000	5,005,000	4,754,750	4,754,800	24,434,550

Urban Area	2006	2007	2008	2009	2010	Total
Houston, TX	16,670,000	25,000,000	37,500,000	39,555,450	41,452,916	160,178,366
Indianapolis, IN	4,370,000	7,710,000	7,478,500	7,104,600	7,104,700	33,767,800
Jackson, MS	-	-	-	-	-	0
Jacksonville, FL	9,270,000	5,900,000	5,723,000	5,436,850	5,355,350	31,685,200
Jersey City/Newark, NJ	34,330,000	36,070,000	34,988,000	35,298,150	37,292,205	177,978,355
Kansas City, MO	9,240,000	8,350,000	8,099,500	7,694,550	7,706,200	41,090,250
Knoxville, TN	-	-	-	-	-	0
Lakeland, FL	-	-	-	-	-	0
Las Vegas, NV	7,750,000	9,310,000	9,030,500	8,579,000	8,150,150	42,819,650
Little Rock, AR	-	-	-	-	-	0
Los Angeles/Long Beach, CA	80,610,000	72,580,000	70,402,500	68,290,450	69,922,146	361,805,096
Louisville, KY	8,520,000	-	1,421,500	2,198,500	2,205,723	14,345,723
Madison, WI	-	-	-	-	-	0
McAllen, TX	-	-	-	-	-	0
Memphis, TN	4,200,000	4,590,000	4,452,500	4,229,900	4,169,183	21,641,583
Miami, FL	15,980,000	11,980,000	11,620,500	11,039,500	11,039,650	61,659,650
Milwaukee, WI	8,570,000	4,630,000	4,491,000	4,266,450	4,159,850	26,117,300
Minneapolis/St. Paul, MN (Twin Cities)	4,310,000	8,460,000	8,206,000	8,248,000	8,263,207	37,487,207
Nashville, TN	-	-	1,783,500	2,986,200	2,844,065	7,613,765
New Haven, CT	-	-	-	-	-	0
New Orleans, LA	4,690,000	4,380,000	4,248,500	5,429,600	5,440,364	24,188,464
New York, NY	124,450,00	134,090,00	144,189,00	145,137,75	151,579,09	699,445,846
North Port, FL	-	-	-	-	-	0
Ogden, UT	-	-	-	-	-	0
Oklahoma City, OK	4,100,000	4,780,000	4,636,500	4,404,700	4,404,750	22,325,950

Urban Area	2006	2007	2008	2009	2010	Total
Omaha, NE	8,330,000	-	-	-	1,013,087	9,343,087
Orlando, FL	9,440,000	5,600,000	5,432,000	5,160,400	5,090,188	30,722,588
Oxnard, CA	-	-	-	2,502,950	2,507,575	5,010,525
Palm Bay, FL	-	-	-	-	-	0
Phoenix, AZ	3,920,000	11,920,000	11,562,500	10,984,400	10,832,667	49,219,567
Philadelphia, PA	19,520,000	18,700,000	18,139,000	17,950,450	23,335,845	97,645,295
Pittsburgh, PA	4,870,000	6,940,000	6,732,000	6,395,400	6,398,705	31,336,105
Portland, OR	9,360,000	7,790,000	7,556,500	7,178,700	7,178,800	39,064,000
Poughkeepsie/Newburgh, NY	-	-	-	-	-	0
Providence, RI	-	5,170,000	5,015,000	4,764,250	4,764,300	19,713,550
Provo, UT	-	-	-	-	-	0
Raleigh, NC	-	-	-	-	-	0
Richmond, VA	-	-	1,721,500	2,710,700	2,675,561	7,107,761
Riverside/San Bernardino, CA	-	-	3,251,500	5,277,100	5,286,378	13,814,978
Rochester, NY	-	-	1,466,000	2,342,900	2,314,601	6,123,501
Sacramento, CA	7,390,000	4,170,000	4,045,000	3,938,300	3,947,286	23,490,586
Salt Lake City, UT	-	-	1,845,000	2,938,300	2,900,078	7,683,378
San Antonio, TX	4,460,000	6,750,000	6,547,500	6,220,150	6,229,550	30,207,200
San Diego, CA	7,990,000	15,990,000	15,510,500	14,735,000	16,208,500	70,434,000
San Francisco/Oakland/San Jose, CA (Bay Area)	28,320,000	34,130,000	37,155,000	40,638,250	42,827,663	183,070,913
San Juan, PR	-	-	2,032,500	3,183,250	3,108,425	8,324,175
Seattle, WA	9,150,000	10,660,000	10,340,000	11,313,600	11,053,806	52,517,406
Spokane, WA	-	-	-	-	-	0
Springfield, MA	-	-	-	-	-	0
St. Louis, MO	9,200,000	9,260,000	8,982,000	8,532,900	8,533,000	44,507,900

Urban Area	2006	2007	2008	2009	2010	Total
Stockton, CA	-	-	-	-	-	0
Syracuse, NY	-	-	1,601,000	1,869,300	1,010,475	4,480,775
Tampa, FL	8,800,000	8,610,000	8,351,500	7,933,950	7,815,050	41,510,500
Toledo, OH	3,850,000	-	1,264,500	2,287,550	2,291,708	9,693,758
Tulsa, OK	-	-	-	2,160,450	2,164,490	4,324,940
Tucson, AZ	-	4,900,000	4,753,000	4,515,350	4,515,400	18,683,750
Virginia Beach/Norfolk/Newport News, VA (Hampton Roads Area)	-	8,000,000	7,760,000	7,372,000	7,372,100	30,504,100
Washington, DC (National Capital Region)	46,470,000	61,650,000	59,800,500	58,006,500	59,392,477	285,319,477
Wichita, KS	-	-	-	-	-	0
Winston/Salem, NC	-	-	-	-	-	0
Worcester, MA	-	-	-	-	-	0
Total	710,620,00	746,900,00	781,630,00	798,631,25	832,520,00	3,870,301,25
	0	0	0	0	0	0

APPENDIX C

Terrorist Incidents 2011-2015

Table C1

MSA	2011	2012	2013	2014	2015	2011-2015	Fatal Incident	Casualties
Akron, OH	0	0	0	0	0	0	0	0
Albany-Schenectady-Troy, NY	0	0	0	0	0	0	0	0
Albuquerque, NM	0	0	0	1	0	1	0	0
Allentown-Bethlehem-Easton, PA-NJ	0	0	0	0	0	0	0	0
Anaheim-Santa Ana-Irvine, CA	0	0	0	0	0	0	0	0
Atlanta-Sandy Springs-Alpharetta, GA	0	0	0	0	0	0	0	0
Augusta-Richmond County, GA-SC	0	0	0	0	0	0	0	0
Austin-Round Rock-Georgetown, TX	0	0	0	3	0	3	1	1
Bakersfield, CA	0	0	0	0	0	0	0	0
Baltimore-Columbia-Towson, MD	0	0	0	0	0	0	0	0
Baton Rouge, LA	0	0	0	0	0	0	0	0
Birmingham-Hoover, AL	0	0	0	0	0	0	0	0

MSA	2011	2012	2013	2014	2015	2011-2015	Fatal Incident	Casualties
Boise, ID	0	0	0	0	0	0	0	0
Boston, MA	0	0	2	0	1	3	1	268
Bridgeport-Stamford-Norwalk, CT	0	0	0	0	0	0	0	0
Buffalo-Cheektowaga, NY	0	0	0	0	0	0	0	0
Cape Coral-Fort Myers, FL	0	0	0	0	0	0	0	0
Charleston-North Charleston, SC	0	0	0	0	1	1	1	0
Charlotte-Concord-Gastonia, NC-SC	0	0	0	0	1	1	0	0
Chicago-Naperville-Evanston, IL	0	0	0	0	0	0	0	0
Cincinnati, OH-KY-IN	0	0	0	0	0	0	0	0
Cleveland-Elyria, OH	0	0	0	0	0	0	0	0
Colorado Springs, CO	0	0	0	0	2	2	1	12
Columbia, SC	0	0	0	0	0	0	0	0
Columbus, OH	0	0	0	0	0	0	0	0
Dallas/Fort Worth/Arlington, TX	0	0	0	0	0	0	0	0
Dayton-Kettering, OH	0	0	0	0	0	0	0	0
Deltona-Daytona Beach-Ormond Beach, FL	0	0	0	0	0	0	0	0
Denver-Aurora-Lakewood, CO	0	0	0	0	0	0	0	0

MSA	2011	2012	2013	2014	2015	2011-2015	Fatal Incident	Casualties
Des Moines-West Des Moines, IA	0	0	0	0	0	0	0	0
Detroit-Warren-Dearborn, MI	0	0	0	0	0	0	0	0
Durham-Chapel Hill, NC	0	0	0	0	1	1	1	3
El Paso, TX	0	0	0	0	0	0	0	0
Fresno, CA	0	0	0	0	0	0	0	0
Grand Rapids-Kentwood, MI	1	0	0	0	0	1	0	0
Greensboro-High Point, NC	0	0	0	0	0	0	0	0
Greenville-Anderson, SC	0	0	0	0	0	0	0	0
Harrisburg-Carlisle, PA	0	0	0	0	0	0	0	0
Hartford-East Hartford-Middletown, CT	0	0	0	0	0	0	0	0
Honolulu, HI	0	0	0	0	0	0	0	0
Houston-The Woodlands-Sugar Land, TX	0	0	0	0	1	1	0	0
Indianapolis-Carmel-Anderson, IN	0	0	0	0	0	0	0	0
Jackson, MS	0	0	0	0	0	0	0	0
Jacksonville, FL	0	0	0	0	0	0	0	0
Jersey City/Newark, NJ	0	0	0	0	0	0	0	0
Kansas City, MO	0	0	0	1	0	1	0	0
Knoxville, TN	0	0	0	0	1	1	0	0

MSA	2011	2012	2013	2014	2015	2011-2015	Fatal Incident	Casualties
Lakeland-Winter Haven, FL	0	0	0	0	0	0	0	0
Las Vegas-Henderson-Paradise, NV	0	0	0	1	0	1	1	5
Little Rock-North Little Rock-Conway, AR	0	0	0	0	0	0	0	0
Los Angeles-Long Beach-Glendale, CA	0	0	1	1	0	2	1	5
Louisville/Jefferson County, KY-IN	0	0	0	0	0	0	0	0
Madison, WI	0	0	0	0	0	0	0	0
McAllen-Edinburg-Mission, TX	0	0	0	0	0	0	0	0
Memphis, TN	0	0	0	0	0	0	0	0
Miami-Fort Lauderdale-Pompano Beach, FL	0	0	0	0	0	0	0	0
Milwaukee-Waukesha, WI	0	0	0	0	0	0	0	0
Minneapolis-St. Paul-Bloomington, MN-WI	0	0	0	0	1	1	0	5
Nashville-Davidson--Murfreesboro--Franklin, TN	0	0	0	0	0	0	0	0
New Haven-Milford, CT	0	0	0	0	0	0	0	0
New Orleans-Metairie, LA	0	0	0	0	2	2	1	3
New York, NY	0	4	0	3	1	8	1	8

MSA	2011	2012	2013	2014	2015	2011-2015	Fatal Incident	Casualties
North Port-Sarasota-Bradenton, FL	0	0	0	0	0	0	0	0
Ogden-Clearfield, UT	0	0	0	0	0	0	0	0
Oklahoma City, OK	0	0	0	0	0	0	0	0
Omaha-Council Bluffs, NE-IA	0	0	0	0	0	0	0	0
Orlando-Kissimmee-Sanford, FL	0	0	0	0	0	0	0	0
Oxnard-Thousand Oaks-Ventura, CA	0	0	0	0	1	1	0	0
Palm Bay-Melbourne-Titusville, FL	0	0	0	0	1	1	0	0
Phoenix-Mesa-Chandler, AZ	0	0	0	0	0	0	0	0
Philadelphia, PA	0	0	0	0	0	0	0	0
Pittsburgh, PA	0	0	0	0	0	0	0	0
Portland-Vancouver-Hillsboro, OR-WA	0	0	1	0	0	1	0	0
Poughkeepsie-Newburgh-Middletown, NY	0	0	0	0	0	0	0	0
Providence-Warwick, RI-MA	0	0	0	0	0	0	0	0
Provo-Orem, UT	0	0	0	0	0	0	0	0
Raleigh-Cary, NC	0	0	0	0	0	0	0	0
Richmond, VA	0	0	0	0	0	0	0	0
Riverside-San Bernardino-Ontario, CA	0	0	0	0	1	1	1	33

MSA	2011	2012	2013	2014	2015	2011-2015	Fatal Incident	Casualties
Rochester, NY	0	0	0	0	0	0	0	0
San Juan, PR	0	0	0	0	0	0	0	0
Sacramento-Roseville-Folsom, CA	0	0	0	0	0	0	0	0
Salt Lake City, UT	0	0	0	0	0	0	0	0
San Antonio-New Braunfels, TX	0	0	0	0	0	0	0	0
San Diego-Chula Vista-Carlsbad, CA	0	0	0	0	0	0	0	0
San Francisco/Oakland/San Jose, CA (Bay Area)	0	0	1	0	0	1	0	0
San Juan, PR	0	0	0	0	0	0	0	0
Seattle-Tacoma-Bellevue, WA	1	0	2	2	0	5	1	3
Spokane-Spokane Valley, WA	0	0	0	0	0	0	0	0
Springfield, MA	0	0	0	0	0	0	0	0
St. Louis, MO-IL	0	0	0	0	0	0	0	0
Stockton, CA	1	0	0	0	0	1	0	0
Syracuse, NY	0	0	0	0	0	0	0	0
Tampa-St. Petersburg-Clearwater, FL	0	0	0	0	0	0	0	0
Toledo, OH	0	0	0	0	0	0	0	0
Tulsa, OK	0	0	0	0	0	0	0	0
Tucson, AZ	0	0	0	0	0	0	0	0

MSA	2011	2012	2013	2014	2015	2011-2015	Fatal Incident	Casualties
Virginia Beach/Norfolk/Newport News, VA (Hampton Roads Area)	0	0	0	0	0	0	0	0
Washington, DC (National Capital Region)	0	1	0	0	0	1	0	1
Wichita, KS	0	0	0	0	0	0	0	0
Winston/Salem, NC	0	0	0	0	0	0	0	0
Worcester, MA	0	0	0	0	0	0	0	0
Total	3	5	7	12	15	42	11	347

REFERENCES

- Bridges, D., Smeyers, P., & Smith, R. (2009). *Evidence-Based Education Policy: What Evidence? What Basis? Whose Policy?* Wiley-Blackwell.
- Chermak, Steven M., Freilich, Joshua D., Parkin, William S., & Lynch, James P. (2012). American Terrorism and Extremist Crime Data Sources and Selectivity Bias: An Investigation Focusing on Homicide Events Committed by Far-Right Extremists. *Journal of Quantitative Criminology*, 28(1), 191–218.
<https://doi.org/10.1007/s10940-011-9156-4>
- CNN Editorial Research. (2020, September 18). September 11 Terror Attacks Fast Facts. Retrieved March 13, 2021, from <https://www.cnn.com/2013/07/27/us/september-11-anniversary-fast-facts>
- Coalition for Evidence-Based Policy. (n.d.). Retrieved March 13, 2021, from <http://coalition4evidence.org/>
- Cohen, D. (2015, March 4). Understanding Population Density. Retrieved March 25, 2021, from <https://www.census.gov/newsroom/blogs/random-samplings/2015/03/understanding-population-density.html>
- Cohen, Lawrence E. & Felson, M. (1979). Social Change and Crime Rate Trends: A Routine Activity Approach. *American Sociological Review*, 44(4), 588–608.
<https://doi.org/10.2307/2094589>
- Coats, R. M., Karahan, G., & Tollison, R.D. (2006). Terrorism and Pork-Barrel Spending. *Public Choice*, 128(1/2), 275–287. <https://doi.org/10.1007/s11127-006-9054-8>
- Clarke, R., & Newman, G. (2006). *Outsmarting the terrorists*. Praeger Security International.
- Davies, H., Nutley, S., & Smith, P. (2000). Introducing evidence-based policy and practice in public services. In Amann R. (Author) & Davies H., Nutley S., & Smith P. (Eds.), *What works?: Evidence-based policy and practice in public services* (pp. 1-12). Bristol, UK; Chicago, IL, USA: Bristol University Press.
[doi:10.2307/j.ctt1t892t3.7](https://doi.org/10.2307/j.ctt1t892t3.7)

- Davis, S. (Host). (2021, February 19). What Happened in Texas and Who Is To Blame [Audio Podcast Episode]. In *The NPR Politics Podcast*. NPR.
- Deflem, M. (2011). Policing the Modern City: Local Counterterrorism in the USA. In Ekici, S. (Ed.), *Counter Terrorism in Diverse Communities* (261-267). Retrieved from <https://ebookcentral-proquest-com.mutex.gmu.edu>
- Ekici, S., Akdogan, H., & Kapti, A. (2011). Factors Affecting Rates of Terrorism Incidents in Diverse Communities. In S. Ekici (Ed.), *Counter Terrorism in Diverse Communities* (p.16-29). Amsterdam: IOS Press. Retrieved from ProQuest Ebook Central.
- Enders, Walter, and Todd Sandler. 1993. "The Effectiveness of Antiterrorism Policies: A Vector-Autoregression Intervention Analysis." *American Political Science Review* 87:829-44.
- FBI (n.d.). Terrorism. Retrieved March 13, 2021, from <https://www.fbi.gov/investigate/terrorism>
- FEMA. (n.d.). Homeland Security Grant Program. Retrieved March 16, 2021, from <https://www.fema.gov/grants/preparedness/homeland-security>
- FEMA. (2020, July 20). National Preparedness Goal. Retrieved March 29, 2021, from <https://www.fema.gov/emergency-managers/national-preparedness/goal>
- FEMA Grants Program Directorate. (2019, April). *FEMA Preparedness Grants Manual*. FEMA. <https://www1.nyc.gov/assets/omb/downloads/hsgu/fy19-FEMA-preparednessgrantsmanual.pdf>
- Freilich, J., & LaFree, G. (2016). Measurement Issues in the Study of Terrorism: Introducing the Special Issue. *Studies in Conflict and Terrorism*, 39(7-8), 569–579. <https://doi.org/10.1080/1057610X.2016.1140998>
- Homeland Security: The Balance Between Crisis and Consequence Management Through Training and Assistance. Congressional Hearing, 2003-11-20, 2003-11-20. (2003).
- Inskip, S. (Host). (2021, February 18). People in Texas Suffer Through Coldest Temperatures in A Generation [Audio Podcast Episode]. In *Morning Edition*. NPR.
- Kennedy, L., & Lum, C. (2012). Evidence-Based Counterterrorism Policy. In *Evidence-based counterterrorism policy* (pp. 3-9). Springer.

- Krieger, T. and Meierrieks, D. (2011). What Causes Terrorism? *Public Choice*, 147(1/2), 3–27. <https://doi.org/10.1007/s11127-010-9601-1>
- LaFree, G., & Dugan, Laura (2007) Introducing the Global Terrorism Database, *Terrorism and Political Violence*, 19:2, 181-204, DOI: 10.1080/09546550701246817
- LaFree, G. & Dugan, L. (2009). Research on Terrorism and Countering Terrorism. *Crime and Justice* (Chicago, Ill.), 38(1), 413–477. <https://doi.org/10.1086/599201>
- LaFree, G., Yang, S., & Crenshaw, M. (2009). Trajectories of Terrorism: Attack Patterns of Foreign Groups That Have Targeted the United States, 1970-2004: Homeland Security and Terrorism. *Criminology & Public Policy*, 8(3), 445–473.
- LaFree, G., Dugan, L., & Miller, E. (2012). Integrated United States security database [IUSSD]: Data on the terrorist attacks in the United States homeland, 1970 – 2011. Retrieved from National Consortium for the Study of Terrorism and Responses to Terrorism (START) website: https://www.start.umd.edu/sites/default/files/files/publications/START_IUSSDDataTerroristAttacksUS_1970-2011.pdf
- LaFree, G., Dugan, L., Xie, M., & Singh, P. Min Xie, (2012). Spatial and Temporal Patterns of Terrorist Attacks by ETA 1970 to 2007. *Journal of Quantitative Criminology*, 28(1), 7–29. <https://doi.org/10.1007/s10940-011-9133-y>
- LaFree, G., & Bersani, B. (2014). County-Level Correlates of Terrorist Attacks in the United States. *Criminology & Public Policy*, 13(3), 455–481. <https://doi.org/10.1111/1745-9133.12092>
- Lum, C., Kennedy, L., & Sherley, A. (2006). Are Counter-Terrorism Strategies Effective? The Results of the Campbell Systematic Review on Counter-Terrorism Evaluation Research. *Journal of Experimental Criminology*, 2(4), 489–516. <https://doi.org/10.1007/s11292-006-9020-y>
- Lum, C., & Koper, C. (2011). Is Crime Prevention Relevant to Counterterrorism? In *Criminologists on Terrorism and Homeland Security* (pp. 129–150). Cambridge University Press. <https://doi.org/10.1017/CBO9780511976384.008>
- Lum, C., Cave, B., & Nichols, J. (2017). Are federal security efforts evidence-based? *Security Journal*, 31(1), 139-162. doi:10.1057/s41284-017-0092-3

- Nash, Rebecca M. (2017). Predicting the Impact of Urban Area Security Initiative Funding on Terrorist Incidents in the United States. *Criminology, Criminal Justice, Law & Society*, 18(2), 1–20.
- NBC 5 Dallas-Fort Worth. (2021, March 15). At least 57 killed in Texas' February Winter storm: DSHS. Retrieved March 16, 2021, from <https://www.nbcdfw.com/news/local/texas-news/at-least-57-killed-in-texas-february-winter-storm-dshs/2579867/>
- Newman, G., & Clarke, R. (2008). Policing Terrorism: An Executive's Guide. U.S. Dept. of Justice, Office of Community Oriented Policing Services, Center for Problem-Oriented Policing.
- New York City Office of Management & Budget. (2019, May 3). *Grants Management Policies & Procedures (Sub-recipient Requirements): Homeland Security Grants Program*. <https://www1.nyc.gov/assets/omb/downloads/hsgu/HomelandSecurityGrantsManagementPoliciesProcedures-external.pdf>
- Nutley, S., Morton, S., Jung, T., & Boaz, A. (2010). Evidence and Policy in Six European Countries: Diverse Approaches and Common Challenges. *Evidence & Policy*, 6(2), 131-144.
doi:<http://dx.doi.org/mutex.gmu.edu/10.1332/174426410X502275>
- Oversight of the Urban Area Security Initiative grant program: joint hearing before the Subcommittee on Transportation and Public Assets and the Subcommittee on National Security of the Committee on Oversight and Government Reform, House of Representatives, One Hundred Fourteenth Congress, second session, July 15, 2016. (2017). U.S. Government Publishing Office.
- Parkhurst, J. (2016). *The Politics of Evidence (Open Access): From evidence-based policy to the good governance of evidence* (1st ed.). London: Routledge.
doi:<https://doi.org/10.4324/9781315675008>
- Sherman, Lawrence W, Patrick Gartin, and Michael Buerger. 1989. Hot Spots of Predatory Crime: Routine Activities and the Criminology of Place. *Criminology*, 27: 27-55.
- Sherman, Lawrence W. (1998). Evidence-Based Policing. Ideas in American Policing Series. Washington, DC: The Police Foundation. Available at <https://www.policefoundation.org/wp-content/uploads/2015/06/Sherman-1998-Evidence-Based-Policing.pdf>

- Silke, A. (2008) Research on terrorism: a review of the impact of 9/11 and the global War on terrorism. In: Chen H. et al (eds) *Terrorism informatics: knowledge management and data mining for homeland security*. Springer, New York, pp 27–50
- START. (n.d.). START. Retrieved March 16, 2021, from <https://www.start.umd.edu/>
- U.S. Census Bureau. (2019, October 25). *U.S. Census Bureau at a Glance*. Retrieved March 18, 2021, from <https://www.census.gov/about/what/census-at-a-glance.html#censuses>
- U.S. Government Accountability Office (2007). *Homeland Security Grants: Observations on Process DHS Used to Allocate Funds to Selected Urban Areas*. (Publication No. GAO-07-381R). Washington, D.C.: U.S. Government Printing Office.
- US Government Accountability Office (2008). *DHS Improved its Risk-Based Grant Programs' Allocation and Management Methods, But Measuring Programs' Impact on National Capabilities Remains a Challenge*. (Publication No. GAO-08-488T). Washington, D.C.: U.S. Government Printing Office.
- US Government Accountability Office (2008). *DHS Risk-Based Grant Methodology Is Reasonable, But Current Version's Measure of Vulnerability is Limited*. (Publication No. GAO-08-852). Washington, D.C.: U.S. Government Printing Office.
- US Government Accountability Office (2009a). *FEMA Lacks Measures to Assess How Regional Collaboration Efforts Build Preparedness Capabilities*. (Publication No. GAO-09-651). Washington, D.C.: U.S. Government Printing Office.
- US Government Accountability Office (2009b). *Homeland Security Grant Risk Assessment*. (Publication No. GAO-09-168R). Washington, D.C.: U.S. Government Printing Office.
- US Government Accountability Office (2018a). *Additional Actions Could Further Enhance FEMA's Risk-Based Grant Assessment Model*. (Publication No. GAO-18-354). Washington, D.C.: U.S. Government Printing Office.
- US Government Accountability Office (2018b). *FEMA Has Taken Steps to Strengthen Grant Management, But Challenges Remain in Assessing Capabilities*. (Publication No. GAO-18-512T). Washington, D.C.: U.S. Government Printing Office.

- U.S. Congress., House. (2017). *Oversight of the Urban Area Security Initiative Grant Program: Joint hearing before the Subcommittee on Transportation and Public Assets and the Subcommittee on National Security of the Committee on Oversight and Government Reform, House of Representatives, One Hundred Fourteenth Congress, second session, July 15, 2016*. Washington: U.S. Government Publishing Office.
- US Senate, Committee on Homeland Security and Governmental Affairs (2005). *Report of the Committee on Homeland Security and Governmental Affairs United States Senate to Accompany S. 21 Together with Additional Views to Provide for Homeland Security Grant Coordination and Simplification, And for Other Purposes* (109 S. Rpt. 71).
- Vastermann, P., Yzermans, C., & Dirkzwager, A. (2005). The role of the media and media hypes in the aftermath of disasters. *Epidemiologic Reviews*, 27(1), 107–114. <https://doi.org/10.1093/epirev/mxi002>
- Willis, H. H. (2007). Guiding Resource Allocations Based on Terrorism Risk. *Risk Analysis*, 27: 597–606. doi:10.1111/j.1539-6924.2007.00909.x
- Zambelich, A., & Hurt, A. (2016, June 26). 3 hours In Orlando: Piecing Together An Attack and its Aftermath. Retrieved March 16, 2021, from <https://www.npr.org/2016/06/16/482322488/orlando-shooting-what-happened-update>

BIOGRAPHY

Ambrozone Ayers graduated from North Stafford High School, Stafford, Virginia, in 2011. She received her Bachelor of Science with honors from George Mason University in 2015. She was employed as a Receptionist at EagleBank Arena for four years. She coauthored the article published “Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: An Updated Examination of Local and National Sources” in the *Journal of Urban Health*.