The Relationship Between Policy and Disaster Economic Recovery:

A Case Study of the 2011 Joplin, Missouri Tornado

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DEDICATION

Train up a child in the way he should go: and when he is old, he will not depart from it.

--Proverbs 22:6

I dedicate this work to my parents, Larry and Glenda Richmond, who have never wavered in their adherence to the above. From the early morning trips to the airport, dog sitting, and never-ending complaints, your love and support through the years has never faltered. My accomplishments over the years could not have been possible without you. Thank you for all you do and for always being there; I love you both.
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ABSTRACT

This study utilizes a qualitative case study with one-on-one, semi-structured interviews to analyze the relationship of law and policy to disaster economic recovery following the 2011 Joplin, Missouri Tornado. Disasters are growing, they are affecting more populated areas, and as a consequence, the economic losses from disaster are growing as well. This case study intended to determine if and how economic recovery occurred following the 2011 Joplin tornado disaster and how law and policy related to disaster economic recovery as viewed through the lived experiences of government and other officials that were involved in the response and recovery in Joplin. In the context of the Joplin disaster, themes that emerged from the data centered around the prevention of population losses, collaboration for recovery, disparities in policy, and policy adaptability and flexibility. Participants believed that in the context of the Joplin disaster, certain policy measures were essential for recovery, collaboration among stakeholders was essential for recovery, policy flexibility was key in recovery, and supporting the local economy was key in recovery. However, red tape in some cases hindered recovery, unclear policies in some cases hindered recovery, and recovery policies were not equitable for all stakeholders following the Joplin disaster. While qualitative case study research is often not generalizable to future events beyond the particular case that is studied, this case study can be utilized as the foundation for future research when studying law, policy, and disaster economic recovery. In utilizing survey research that can be more broadly generalized to a broader range of communities and disaster events, future research can be used to close the gaps in this topic area by bringing in the whole community, including individual private businesses, residential stakeholders, and religious entities, as well as the stakeholder groups that participated in this case study.

Keywords: Joplin tornado, disaster recovery, economic recovery, FEMA
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LIST OF ACRONYMS

ACA: Arkansas Code Annotated
CDBG: Community Development Block Grant
EPA: Environmental Protection Agency
FEMA: Federal Emergency Management Agency
IRB: Institutional Review Board
IRS: Internal Revenue Service
PILOT: Payment in Lieu of Taxes
SBA: Small Business Administration
SRIA: Sandy Recovery Improvement Act
Chapter 1: Introduction to the Study

Disasters are growing, they are affecting more populated areas, and as a consequence of the growing rate of disasters and damages, the economic losses from disaster are growing as well. Evidence in the literature shows that economic losses from disasters are growing and represented 60 percent of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007). More recent information regarding economic losses from global disasters shows that such losses continue to grow; in 2017, $306 billion in economic losses were incurred globally from natural and man-made disasters, which represented a 63 percent increase from 2016 and is higher than the previous ten-year average (McCarthy, 2017). The global economic impact in 2018 reached $160 billion; while less than 2017, it is still above the overall yearly loss average of $140 billion, and 2018 was the fourth costliest year on record since 1980 (Low, 2019). Given such increasing losses in the face of disaster, there has been little discussion in the literature of how policy can be utilized to improve economic recovery from disaster impacts (Ash, Cutter, & Emrich, 2013). The economics of disaster is a critically important piece of the disaster recovery puzzle, considering the “economics of disasters is a relatively new and emerging branch of economics” (Stevenson, Noy, McDonald, Seville, & Vargo, 2016, para. 1). There have been arbitrary uses of policy, and alterations to policy, in certain disaster occurrences to help spur post-disaster economic recovery but there are no uniform and automatic policy channels geared toward ensuring that a local or regional economy will bounce back following a disaster. More research and information can potentially determine if or how new policies or policy alterations can stimulate and ensure economic resilience. If local, state, and federal policy can be utilized to reduce disaster losses pre-disaster and ensure economic recovery post-disaster, it is possible that government and business officials can reduce economic losses and potentially reverse the trend of increasing losses seen over the past years.
Disaster recovery is often the longest and most expensive piece of the disaster cycle and bringing the economy back online is a vital component of a recovering community. This research has the potential to benefit government officials and the business community by improving the long-term economic recovery of communities from natural disaster occurrences by ensuring a better understanding of how policy influences economic recovery. By understanding how policy influences economic recovery, there is the potential that policy can improve recovery outcomes.

The policy problem is evident in looking at tornado occurrences from 2011, in both Joplin, Missouri and Tuscaloosa, Alabama. In Joplin, the community was allowed to take the lead in the recovery process, guided by a 21-page recovery plan that allowed businesses and citizens to do whatever possible to rebuild and recover; on the other hand, in Tuscaloosa, the mayor placed “a 90-day construction moratorium in the disaster area, restricting commercial and residential redevelopment until officials could craft and adopt a long-term master plan” (Beito & Smith, 2012, para. 5). The plans in Joplin, the focus of the case study, appear on the surface to be conducive to recovery, while Tuscaloosa’s plan was not. Understanding Joplin and the lived experiences of those that were responsible for recovery may lead to an understanding of the deeper relationship between policy and recovery.

Chapter One of this study presents the research issue, the background and context used for the study, a review of the relevant law and policy framework that provides a foundation for the research, the problem and justification for the research, purpose of the study, research questions, theoretical framework, relevant definitions, and the overall scope and limits of the research. This discussion will continue in Chapter Two and include a review of the literature relevant to the research.
Background and Context

Again, evidence in the literature shows that both disaster occurrences and economic losses are growing and that such losses represented 60 percent of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007). Such losses continue to grow as well, in 2017, $306 billion in economic losses were incurred globally from natural and man-made disasters, which represented a 63 percent increase from 2016 and is higher than the previous ten-year average (McCarthy, 2017). The global economic impact in 2018 reached $160 billion; while less than 2017, it is still above the overall yearly loss average of $140 billion, and 2018 was the fourth costliest year on record since 1980 (Low, 2019). Given major losses, even from events in the U.S. such as the 1994 Northridge Earthquake, Hurricane Katrina in 2005, and the 2011 Joplin, Missouri Tornado, the focus of this study, little discussion in the literature has been had about how policy can be utilized to improve economic recovery from disaster impacts (Ash, Cutter, & Emrich, 2013). Increasing disaster occurrences and financial losses have the potential to disrupt economies at every level, and therefore, considering potential policy changes can reduce future losses and improve recovery from such events.

The 1994 Northridge Earthquake is being utilized as a historical event in the research to gauge how economic recovery has occurred in past natural disasters. The 2011 Joplin Tornado is being utilized as a more recent event where new research into economic recovery can be conducted and where research findings can be generally applied across a broader range of future disasters and the steering of economic recovery. There is considerably less literature available from the more recent Joplin event and there is much room for expansion of future research; however, what literature is available for Joplin can provide some guidance for future research and it does fit well within the policy area of economic recovery from disaster.
There is considerably more scholarly literature available when looking at economics and disaster recovery from a general sense and the available literature covers many niches of the recovery process. However, a downfall of many previous studies into general economic recovery, is that many of the studies are closely tied to particular regions and disasters and are not necessarily generalizable to future disaster events. While this research will not be generalizable in and of itself, especially when attempting to build a recovery model that is broadly applicable to future events, it will be used to build future research studies that can be broadly applicable. Many of the articles discussed in the realm of general recovery could easily fit into several of the subcategories discussed below and those with the strongest correlations to multiple categories are discussed in multiple sections. However, the literature discussed here is primarily included in the subcategory that is most closely related to the primary topic of the research discussion included in a particular article.

A post-disaster economy in some cases depict a pattern of destruction, renewal, and then improvement; however, evidence shows that this does not occur in all cases and is affected by characteristics such as literacy rates, institutional competency, per capita income, and governmental spending, etc. (McDonald, Seville, & Vargo, 2016), with many of the characteristics being linked to economic and disaster policy. Policies that are tailored to account for the varying demographics of a disaster-affected area could potentially result in better recovery outcomes, by directing limited resources to areas that are more likely to benefit from such resources.

Therefore, this study sought to understand the relationship between policy and disaster economic recovery.
Law and Policy Review

Global economic losses from disaster continue to increase (Ville de Goyet & Griekepoor, 2007, & McCarthy, 2017), and little has been discussed in the realm of policy utilization to reduce such losses and promote recovery (Ash, Cutter, & Emrich, 2013). While all disasters are local events, they begin locally and end locally, policies that drive the response and recovery during any event is placed at every level, federal, state, and local. The legal framework for disaster policy includes constitutional requirements, local, state, and federal laws and policies, and agency regulations/guidelines. However, while policy at every level works with/coexists with each other, policies are often developed at lower levels by utilizing higher levels as models.

The policy focus for this research was on disaster and economic policies and laws, and how those laws and policies influence the overall economic recovery of a community and the wider region, both short- and long-term, following a major disaster occurrence. Major disaster occurrences are those meeting the guidelines for a presidential declaration of major disaster under the Stafford Act at the federal level and those meeting similar criteria for declarations under individual state disaster declaration guidelines. Economic recovery following a disaster is critical for the long-term sustainability of communities and their surrounding regions, ensures they continue to operate, and ensures the business community does not close; therefore, “disaster and economic policies must be tailored in such ways that are supportive of post-disaster economic recovery” (U.S. Economic Development Administration, 2018).

Issues of Economic Development and Sustainability

In researching major disaster occurrences and economic recovery, economic factors that were considered, both pre- and post-disaster, included employment and unemployment rates, business and industry continuity of operations and re-openings, tax collection rates (sales,
property, and income), business failures statistics, real-estate/housing statistics, and bankruptcy occurrences. These factors are those that are most indicative of the economic conditions at a local, state, and federal level at any given time and those that did not limit the economic picture to a certain community, region, or level of government.

Economic development and the long-term sustainability of U.S. economies is a critical focus for policymakers. Policymakers are continually searching for methods that develop and sustain the economy in order to maintain competitive edges in the face of increasing global competition and ever-tighter budgets. It often takes very little disruption to impact an economy in the current economic climate of the United States and this is noticeable in disaster occurrences such as Hurricane Katrina in 2005, which decimated the local economy of the City of New Orleans. Coastal regions are prime examples of where disasters affect economic conditions, primarily concerning the tourism industry. The coastal community is “highly sensitive to natural and human disasters and those do correlate to changes in economic conditions” (Guo, Robinson, & Hite, 2017, p. 52). A 2013 study in the coastal states of Mississippi and Alabama found that visitor spending in that region led to a combined total of $32.9 billion in revenue, not counting the hundreds of thousands of jobs tied to the tourism industry (Guo, Robinson, & Hite, 2017). If policies are not in place to ensure the resiliency of a region and sustainability of the economy in the face of disaster, then regional economies stand to lose billions.

It is not only natural disasters that threaten the economy and economic recovery, human-caused events, especially large-scale events, have major impacts as well. This is evident in the billions of dollars of financial impact the September 11th terror attacks had on the economy of New York, the U.S., and the wider world, both in terms of direct losses and employment impacts
While an extreme example of a human-caused event, localized events can be just as devastating for local and regional economies.

Understanding how disaster events impact our economy and how policies influence the economy following disaster occurrences can help ensure that policies are tailored in ways that promote the resilience of economics; including the continuation and rebuilding of business and industry, employment and reemployment of disaster-affected individuals, the continuation of tourism, and ensuring there is a sustainable tax base. Having proper economic policies in place as they relate to disaster resilience can ensure communities and regions do not fail and are able to return to or improve upon pre-disaster economic conditions.

**Key Federal and State Laws**

While all disasters are local, and disaster recovery is often a local issue, policy that drives recovery is at the state and federal levels, and funding is often provided from the state and federal governments. This section provides an overview of the key federal laws that were utilized in the context of the study and provides Arkansas as an example of relevant state level law and policy that is a representative mirroring of federal policy and is utilized to supplement federal assistance or utilized in absence of federal assistance. The State of Missouri does not appear to utilize standing government assistance programs, that mirror federal programs, at the state level and only provides federal individual and public assistance programs with funding made available through FEMA.

**Stafford disaster relief and emergency assistance act of 1988.** The principal federal law in disaster response and recovery is the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. This federal law contains many of the provisions related to the federal disaster declaration process, preparedness and mitigation programs, and how the federal
government will handle major disasters and emergencies administratively. The primary provisions related to economic recovery under the Stafford Act are the major disaster and emergency assistance programs that it authorizes under a presidential disaster declaration. Section 406 of the Act provides for the “repair, restoration, and replacement of public facilities and infrastructure” (Robert, 2016, p.33), and sections 408 and 410 provide the guidelines for “distributing federal assistance to individuals and households and unemployment assistance to displaced workers” (Robert, 2016, p. 39).

**U.S. small business administration.** The U.S. Small Business Administration (SBA) authorizes and administers the majority of disaster assistance for both individuals and businesses; the Code of Federal Regulations, Title 13, Chapter I, Part 123 outlines the SBA Disaster Loan Program. The Small Business Act authorizes the disaster loan programs provided by the SBA and the SBA “reserves the right to change the rules under the disaster loan program, without advance notice, by publishing interim emergency regulations in the Federal Register” (Disaster Loan Program, 1996, subsection 123.1). Assistance programs under the SBA Disaster Loan Program work in conjunction with programs and administrative processes included in the Stafford Act and include some stand-alone provisions that make assistance available without invoking a major disaster declaration. The loan process takes place under the SBA through declarations invoked under the individuals and households assistance programs of the Stafford Act, based on a percentage of damage to homes and businesses and projected lengths of unemployment for community workforces, or by a direct request from the governor of a state for a physical disaster declaration from the SBA (Disaster Loan Program, 1996).

The SBA loan program authorized under the Small Business Act and the Stafford Act are both laws that were created by and must change through traditional legislative processes;
however, both include administrative policies that allow for the arbitrary application of certain provisions authorized under each of the acts. Arbitrary policies related to disaster assistance programs may lead to the discriminatory application of assistance programs.

**State disaster laws.** In lieu of, or in conjunction with federal programs, some states, such as Arkansas as an example, have disaster laws that authorize declaration procedures and assistance programs at the state and local level. Arkansas Code Annotated (ACA) 12-75-108 authorizes the declaration process for local disaster emergencies within the state and authorizes other measures necessary to provide assistance for a disaster. A key aspect of the Arkansas statute that warrants further review as related to economic recovery is subsection 2.a. This section, in addition to the other powers conferred on the state’s chief executive for declaring emergencies, allows the chief executive to “suspend the provisions of any local regulatory ordinances or policies for up to thirty days if strict compliance with the provisions would prevent, hinder, or delay necessary actions to cope with the disaster emergency” (Ark. Code Ann. 12-75-108, para. 6). The regulations that may be temporarily suspended under the Arkansas legislation include zoning and subdivision regulations, building codes, regulations controlling the development of land, historic district ordinances and any other regulatory type ordinances that could hinder the recovery process following a disaster.

**Supplemental appropriation acts.** Many of the funding streams for disaster recovery at the federal and state levels is provided by the way of supplemental appropriation acts, such as Public Law 110-252 that allowed the State of Arkansas to utilize supplemental Community Development Block Grant funding for disaster recovery from storms that occurred in Arkansas during 2008 (Public Law 110-252, 2008). In Arkansas, “supplemental appropriations are generally made to cover emergencies, such as disaster relief or other needs deemed too urgent to
be postponed until the enactment of the next year’s regular appropriations act” (Supplemental, 2018).

A final Arkansas program, with a primary focus on economic development within the State, has some application in the disaster economic recovery arena. Under the authority granted by ACA 19-1-208, 25-15-203 and Act 1629 of 2009, the Director of the Arkansas Department of Finance and Administration and the Director of the Arkansas Department of Economic Development can govern the “application for and approval of certain payments in lieu of ad valorem taxes under Arkansas Code Annotated 14-164-703” (Arkansas, 2002). The primary purpose of the in-lieu-of-tax payment program (PILOT) in Arkansas is to secure and develop new industry within the state by allowing new, and in some cases existing businesses, to forego property tax payments for a predetermined period of time provided the entity is making capital investments in the business in order to ensure its long-term viability within the community. With some minor modifications to the provisions under the PILOT program in Arkansas, the application can apply to disaster economic recovery, which can often directly correlate to economic development within the state.

While the focus of this case study was on the 2011 Joplin tornado in the state of Missouri, Missouri appears to have ad hoc disaster relief programs that they primarily consider on a disaster-to-disaster basis. Arkansas disaster relief programs are modeled after their federal counterparts, have standardized implementation criteria, and provided a model for discussions of disaster law and policy at the state level.

The Stafford Act and Small Business Act are the premiere pieces of disaster legislation at the federal level for federally declared disasters and include significant regulations for most state declared disasters. Arkansas’ programs are unique to the state; however, similar state programs
exist elsewhere and will be explored within the context of disasters in those states, if applicable to this study.

Other state and federal laws and policies, without a clear disaster assistance focus, were also explored in the context of disaster and economic recovery. The research also considered regulatory policies and laws under the Environmental Protection Agency (EPA) and state environmental regulatory agencies, employment incentive and unemployment assistance programs, and tax laws and policies through the IRS and other relevant state agencies. As many federal and state laws and policies as possible that ultimately correlate with disaster economic recovery were incorporated; as long as there was a clear financial or economic aspect of the law or policy, it was considered as applicable in the research and was considered as having the potential to promote economic recovery.

Key Links Between the Research and Law and Policy

This research determined how laws and policies affected the economic recovery of communities and regions following disaster occurrences, if those laws and policies negatively impacted economic recovery, and how alterations can potentially improve economic recovery. The focus was on how these laws and policies influence lower level economies, as the consensus from associations such as the National Association for Business Economics is that while natural disasters do cause large-scale destruction and disruption to economic activities, that effect is not likely to extend to influence and affect national economic factors (Papatheodorou, 2005).

A concern of the overall economic vitality of a community following disaster is ensuring that individual assistance and housing needs are provided for individuals in order to return them to a sense of normalcy and ensuring disaster resiliency. There are programs under the Stafford Act that become available to assist individuals with recovery and provide assistance with
housing. Through this study and future research, it will hopefully be determined if these programs are adequate by looking at the long-term population rates and permanent housing units in a community, as they relate to the overall economic conditions of a community, and if changes to the programs can be made to increase their effectiveness. There is a concern that in the U.S., and globally, that such programs are not available or adequate, and case studies have proven that “many communities live in a permanent state of recovery because temporary relief becomes a permanent coping strategy and temporary housing becomes permanent housing for the poor”; allowing a cycle of vulnerability to continue (Arnold, 2006, p. 272).

A primary concern of this research was how public infrastructure funds available under the Stafford Act and loans available from the Small Business Administration allow a community’s infrastructure and businesses to reopen and continue operations following a disaster occurrence; this is often a concern of many small communities, will the business community return following a disaster? There should be opportunities to ensure that assistance under the current programs, or alterations to the current programs, is adequate to ensure that business and industry can recover following a disaster, which directly correlates to the economic recovery of a community. It is mentioned that economic development is the primary focus of many governmental entities and given the significant role that disasters play in our current society, there are opportunities for laws and policies related to disasters to not only focus on disaster recovery but the overall economic wellbeing of a community. For example, some studies find that disaster recovery funding is far outpacing traditional community development resources; the “Community Development Block Grant (CDBG) funding level in the fiscal year 2013 was $2.9 billion but the CDBG funding level for areas affected by Hurricane Sandy was $16 billion” (Gilmore & Standaert, 2013, p. 62). Laws and policies, whether dealing with
disaster assistance or economic development, should be developed in ways that ensure both are provided following a disaster. “Regions with stronger economies prior to disaster are shown to have lower disaster losses than regions with weaker economic characteristics, which correlate with the need to improve regional economic conditions prior to disaster occurrences” (Kim & Marcouiller, 2014, p. 945). How tax incentive programs and regulatory policies impact the business community prior to a disaster occurrence could affect how economic recovery of a community and region occurs; for example, if there is too much industrial regulation affecting business prior to a disaster or excessive tax rates, will a business have the capital necessary to recover following a disaster or will a business be willing to relocate in an area that is too heavily taxed or regulated? Laws and policies should be tailored in such ways that ensure businesses do not use disaster as a reason to close.

There is a common perception among disaster survivors that they receive more financial and social disaster relief and support from their social networks as opposed to relief from government sources (Forgette, et al, 2009). A primary issue with this approach to providing disaster relief is that social networks seem to weaken as time following a disaster moves forward, and when combined with the absence of strong disaster relief programs, recovery may not fully occur following a disaster. If laws such as the Stafford Act and Small Business Act at the federal level, disaster relief acts at the state level, tax incentive programs, and regulatory laws can be used to help promote financial recovery following a disaster occurrence and ensure the long-term viability of a community or region, then those policies should be tailored in such a way that efficiently and effectively promotes the economy and recovery.

Again, the predominant focus of this research was to determine how relevant disaster, business, regulatory, and financial policies contributed to the long-term economic recovery of a
community or region following a major declared disaster occurrence. Economic sustainability of U.S. economies is a primary focus of many governments and ensuring that law and policy at all levels and within all disciplines contributes to that sustainability should be a focus. Many of the laws and policies in this research area have a clear disaster focus; however, some without a clear disaster focus have an equally important impact on the recovery of a community.

Problem Statement

Evidence in the literature shows that economic impacts from disaster are growing and represented 60% of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007), including losses from events such as the 2011 Joplin tornado. More recent information regarding economic losses from global disasters shows that such losses continue to grow; in 2017, $306 billion in economic losses were incurred globally from natural and man-made disasters, which represented a 63 percent increase from 2016 and is higher than the previous ten-year average (McCarthy, 2017). Given such impacts, there has been little discussion in the literature of how policy can be used to improve the economic recovery from disaster impacts (Ash, Cutter, & Emrich, 2013). Prior studies have looked at certain aspects of disaster recovery with aspects that relate to economic recovery, but there have been no comprehensive studies that look at policy and disaster economic recovery within a broader context. For example, there have been studies that looked at business recovery as a condition of economic recovery, as following Northridge it was determined that business losses were less dependent on the losses of utility lifelines and were more dependent on the overall resilience of a particular area affected by the earthquake and by the array of public and private decisions that were made following the disruption of utility services (Rose & Lim, 2002), and that there are likely gaps in the “perceptions of small business owners and government officials as to the availability and
effectiveness of both support and assistance programs following an earthquake” (Furlong & Scheberle, 1998, para. 1). While no studies have specifically looked at the relationship of a wide variety of policies as they related to disaster economic recovery, the key findings from at least one study suggested that, “catastrophic events are rising faster than premiums and higher losses will lead to increased claims, higher premiums and deductibles, lower limits, and broader coverage restrictions, which will increase the burden on governments to find solutions to those gaps” (Mills, Roth, & Lecomte, 2006, p. 111).

There have been arbitrary uses of policy, and ad hoc alterations to policy, in certain disaster occurrences to help spur post-disaster economic recovery but there are no uniform and automatic policy channels geared toward ensuring that a local or regional economy will be resilient following a disaster (Institute of Medicine, 2015). More research is needed in order to determine how new policies or policy alterations can stimulate and ensure economic resilience.

Therefore, this research utilized a case study of the 2011 Joplin, Missouri tornado disaster to better understand the relationship of policy and its influence on disaster economic recovery. The Joplin, Missouri tornado disaster occurred on May 22, 2011, included 50,000+ in the affected population, over 8,000 affected structures, which included 7,500 residential dwellings (4,000 destroyed), 531 destroyed or severely damaged businesses and other organizations, 4,500 to 5,000 affected employees, $2.8 billion in losses (2011 USD), 161 fatalities, and 1,100 non-fatal injuries. By interviewing governmental and business officials involved in the recovery of Joplin, it was determined how the laws and policies described in this study, or similar laws and policies directly affected the economic recovery of the Joplin community and surrounding region following the 2011 disaster, and how those laws and policies impacted economic recovery, and/or how they can be altered in order to improve economic recovery in the future.
Purpose of the Study

Given the increasing global economic losses from disaster over the previous decades, no previous recent studies have sought to determine how economic recovery occurs post-disaster inside the law and policy context of the lived experience of those involved in the recovery processes. This is particularly true of how individuals with lived experiences of the disaster recovery process perceive and correlate law and policy to the overall economic recovery of a community or region.

Therefore, the purpose of this qualitative exploratory case study was to determine if and how economic recovery occurred following the 2011 Joplin, Missouri, U.S. tornado, and the relationship between policy and recovery through the lived experiences of selected government officials, local policymakers, and business/commerce officials.

Benefits of this research will be the improved long-term economic recovery of communities from natural disaster occurrences and a better understanding of how policy influences economic recovery.

Research Question(s)

The overarching research question for this study was, what does the lived experience of government officials, local policymakers, and business/commerce officials and owners in Joplin, Missouri tell us about the relationship between local, state, and federal economic and disaster policy, and economic recovery following the 2011 Joplin, Missouri tornado?

Sub-questions that helped answer the research question were: To what extent, if any, will policy revisions ensure that the business community continues operation after a disaster occurrence? And, to what extent, if any, can policy measures be undertaken to ensure that tax
revenues to local governments continue at an equal or greater rate following a disaster occurrence?

**Theoretical Framework**

When thinking about a theory and a theoretical framework for law, policy, and economic recovery from disaster, perception of a particular law and policy by the business and governmental community has as much to do with recovery as the tangible aspects of the law and policy itself. Law and policy have an impact on the economic recovery of communities, and it is just as likely how business and government officials view a law and policy as related to economic recovery may influence economic recovery just as much as the policy itself. A theory that fits into this mindset of how officials view policy and its effect on recovery, and that was utilized in this research, was the theory of Reasoned Action.

Martin Fishbein and Icek Ajzen developed the theory of Reasoned Action and this theory “uses two elements, attitudes and norms, or the expectations of other people, to predict behavioral intent,” specifically, “Reasoned Action predicts that behavioral intent is created or caused by two factors, attitudes and subjective norms” (Communication, 2018, para. 3). “Attitudes have two components, evaluation and strength of a belief, and the second component influencing behavioral intent, subjective norms, also have two components, normative beliefs and motivation to comply” (Communication, 2018, para. 2).

In utilizing this theory for disaster economic recovery as it related to how officials used disaster and assistance law and policy, Fishbein and Ajzen have somewhat provided a framework that allowed this theory to be applied to this research. The ultimate goal of law and policy related to disaster economic recovery should be the recovery of a community or regional economy to conditions, at a minimum, as they were prior to a disaster occurrence. The theory, as
applied to the ultimate goal of economic recovery from disaster, centers around if law and policy either strengthens or weakens officials attitudes that disaster and assistance law and policy supports the goal of economic recovery, and if it does not, how can those be altered to either support the goal or have officials believe that the goal is being supported by what is available.

The theory of Reasoned Action has previously been utilized for understanding how the public perceives risk prior to disseminating risk messages (Sheppard, Janoske, & Liu, 2012), and that provided the potential that it could be utilized to understand how business and government officials perceived how law and policy influenced and affected post-disaster economic recovery.

The Theory of Reasoned Action incorporated well with the chosen methodology of a qualitative case study and the constructivist worldview. In utilizing a qualitative approach for this research, the constructivist worldview, or social constructivism is “typically seen as an approach to qualitative research” (Creswell & Creswell, 2018, p. 7). How policy related to disaster economic recovery and how lived experiences of government and business officials led to their interpretations of policy and recovery can be complex issues to understand and the constructivist worldview allowed for a look at these complex issues rather than “narrowing the meanings to a few categories or ideas” (2018, p. 8). “Constructivism assumes that individuals construct the meaning of experiences and events, and therefore people construct the realities in which they participate” (Lauckner, Paterson, Krupa, 2012, p. 6).

In further solidifying the decision to utilize the methodological approach and theoretical framework chosen for this research, one can turn to the metatheoretical stance of postpositivism, or the view that reality is socially constructed rather than objectively determined, which through research allows a researcher to appreciate the different constructions and meanings that people place upon their experiences (Baharein Mohd Noor, 2008, p. 1602). This research allowed
participants to discuss their personal experiences with law and policy as it related to disaster economic recovery and provide their ideas of recovery, rather than strictly objectifying a law or policy and tying it to a particular recovery outcome.

**Critics of the Theory of Reasoned Action**

While the theory of Reasoned Action has been influential, there have been several authors that criticized this theory since its founding by Fishbein and Ajzen.

Initial criticism of this theory is, “the theory of Reasoned Action is not falsifiable, and because a theory must be falsifiable to be a good theory” (Trafimow, 2009, p. 502).

In general, those that criticize the theory of Reasoned Action usually focus on three key issues; the relationships between attitudes and normative beliefs, whether the components of the theory of Reasoned Action are sufficiently good at predicting intentions and behaviors, and the narrow range of meaning encompassed by the theory (Hale, Householder, & Greene, 2002).

While associated with quantitative research, for which this study provided the foundation for such future research, the theory of Reasoned Action also does not generate testable hypotheses about when which variable being used in a particular study is most likely to predict a particular behavior (Yzer, 2017).

This particular theory is in direct contrast to the theory it was developed to improve, Information Integration theory. The theory of Reasoned Action is concerned with the behaviors of individuals rather than an attempt at predicting attitudes (Communication, 2018).

**Rationale for Utilizing Reasoned Action**

The recovery from disaster, economic or in general, has much to do with how community leaders perceive policy will help a community recovery following a disaster as it does the tangible benefits that come from laws and policies following a disaster. As found in the
literature, in the context of the Northridge disaster in 1994, a study suggests that there are gaps in the “knowledge of small business owners and government officials as to the availability and effectiveness of both support and assistance programs following an earthquake” (Furlong & Scheberle, 1998, para. 1). Furlong & Scheberle conducted a series of interviews with officials from the Small Business Administration (SBA), the Federal Emergency Management Agency (FEMA), and small business owners, and the findings were that communications about assistance programs between key players in the disaster recovery process needed improvement and that assistance funding should be distributed in the form of grants and not loans (1998). It is commonly misunderstood in both the individual and business communities that funding is first offered as a loan, and grants are an exception rather than a rule in disaster recovery, an improved discussion between the providers of assistance and those seeking assistance, including clarified policies, could help provide a dialogue that will ensure that any shortcomings in business recovery are adequately addressed. Whether or not an individual receives a grant or loan is based on their personal financial situation and personal assets; grants are provided without an expectation of repayment and loans, while often with a low-interest rate, must be repaid in a specified amount of time.

While the primary intention of this study was to determine how policy influenced economic recovery following the 2011 Joplin, Missouri tornado, equally important was the perceptions that the official being interviewed had of the policies related to recovery and whether that perception was conducive to proper preparation before the disaster that led to positive outcomes following the disaster.
Applying the Theory of Reasoned Action to this Study

In addition to asking specific law and policy questions related to economic recovery in the semi-structured interviews, a general question asked participants their thoughts on disaster and assistance law and policy and if they believed such law and policy, as a whole supported the overall goal of economic recovery from disaster. This open-ended questioning allowed respondents the opportunity to discuss how law and policy related to disaster recovery influenced their behaviors as they prepared to recover from disasters generally as well as how they recovered from the 2011 disaster.

Definitions

The definitions included here are terms that were included in this research study and are those that often have ambiguous meanings in the fields of both emergency management and disaster recovery. They are provided here in the context that they were utilized in the study.

**Disaster**-A disaster is “a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed an individual’s, community’s, or society’s ability to cope using its own resources” (Haddow, Bullock, & Coppola, 2017, p. 473).

**Disaster Assistance (Relief)**- “Monies or services made available to individuals and communities that have experienced losses due to disasters such as floods, hurricanes, earthquakes, drought, tornadoes, and riots” (Free Dictionary, 2018, para. 1).

**Preparedness**-Preparedness is “a state of readiness to respond to a disaster, crisis, or any other type of emergency situation” (Haddow, Bullock, & Coppola, 2017, p. 476)
Recovery-Recovery is “the restoration of business and economic services, providing of assistance programs, and the short- and long-term care of affected individuals, businesses, and infrastructure following a disaster” (Haddow, Bullock, & Coppola, 2017, p. 476).

Stafford Act-This Act “constitutes the statutory authority for most Federal disaster response activities especially as they pertain to FEMA and FEMA programs” (Robert, 2016, para. 1).

Assumptions

In utilizing one-on-one, semi-structured, in-depth interviews in the context of this case study research within a singular disaster, with anonymity and confidentiality of participants being assured, there are certain assumptions made about the research and the data collected. It was assumed in the course of the interviews that the participants were answering the interview questions honestly, that the individuals included in the study (the inclusion criteria) were all appropriate, that the participants all experienced the same or similar phenomenon in the context of the case and the study (the disaster and recovery process), and that the participants had a sincere interest in participating in the research and that they possessed no ulterior motives for participating (Wargo, 2015).

It was also assumed that this singular case study while providing the foundation for future quantitative research that is generalizable to a wider geographic area and population, will not be generalizable to the U.S. population when looking at the relevance of policy to disaster economic recovery. Case studies, as within the context of this research study are not generalizable, as generalizing is difficult in that small groups of purposively selected participants cannot represent all similar groups and situations (Writing, 2019).
Scope and Delimitations

The scope of this research was limited to the geographical area affected by the 2011 Joplin, Missouri tornado disaster, and to the participants were directly affected by that disaster and involved in the recovery processes that followed. The scope of this research utilized purposive sampling to identify the participants that included individuals representing Joplin government, public schools, the business community, higher education, non-profits, and healthcare providers. Participants included individuals from Missouri Southern State University, which took on a significant role in the days following the disaster, and administration and from Mercy Hospital, which took a direct hit from the tornado.

Participants for this study were required to be at least 18-years-old at the time of the disaster event on May 22, 2011 and were required to be involved in the disaster and the disaster recovery functions for either their organization or the Joplin community at large. Participants were directly involved in business or government operations before and during the Joplin tornado and must have been involved in the recovery process, or in the cases of business, put out of business due to the tornado. No specific demographical information or parameters were set for participation in the study.

While generalizing in qualitative research is generally not possible due to a small group being unable to represent all similar groups or situations, the Joplin disaster was chosen for the overall scope of the event and the ability for a case study of event of this size that struck the center of the U.S. to be utilized to build future research to garner data on disaster economy recovery that can be generalized to Anytown, USA. Transferability of this case study research is made through suggestions for future research studies based on the findings of this case, as well
as using this case study for hypotheses building in quantitative research that will seek to
determine the causes and effects of law and policy on disaster economic recovery.

Limitations

A significant limitation of this research is the passage of time between the event’s
occurrence in 2011 and the semi-structured interview process in 2019. No matter the
participants’ involvement in the disaster and recovery processes, time is bound to alter their
memories of the events as well as their perceptions about how policy influenced recovery during
that time. Limitations also existed when considering the participants that were willing to
participate in the study may not have had the most direct involvement in the disaster and
recovery processes, and the questions asked may not have been all-encompassing of how policy
influenced disaster economic recovery in the context of the Joplin disaster.

Potential limitations in this case study were minimized by providing inclusion and
exclusion criteria to potential participants to ensure that they were directly involved in the
disaster and recovery of the 2011 Joplin tornado. Outreach to potential participants also
attempted to capture a complete cross-section of the Joplin community that was involved in the
recovery of the community. Participants contacted for this study included governmental, non-
profit, private businesses and advocates for private business, religious organizations, and
educational entities; since this research was focused on policy and the economics of recovery
members of the community were excluded from this case study as their inclusions would have
moved past the proposed scope. A full discussion of the participant outreach undertaken for this
study is found in the methodology and findings chapters of this document.

Significance

The rationale and significance for this research study were evident in the problem
presented for consideration, Evidence in the literature shows that economic impacts from disaster are growing and represented 60% of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007), including losses from events such as the 2011 Joplin tornado. Given such impacts, there has been little discussion of how policy can be used to improve the economic recovery from disaster impacts (Ash, Cutter, & Emrich, 2013). There have been arbitrary uses of policy, and alterations to policy, in certain disaster occurrences to help spur post-disaster economic recovery but there are no uniform and automatic policy channels geared toward ensuring that a local or regional economy will bounce back following a disaster. More research and information is needed in order to determine how new policies or policy alterations can stimulate and ensure economic resilience.

This research was utilized to gain an understanding of how policy influenced disaster economic recovery through in-depth interviews with government and business officials and how potential alterations to policy can increase community resilience in the face of disaster.

**Summary**

In summary, evidence in the literature shows that economic impacts from disaster are growing and represented 60% of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007), including losses from events such as the 2011 Joplin tornado. Such losses have increased in both 2016 and 2017, and while decreasing in 2018, are presumed to continue increasing or at the very least remain steady in the future if action is not taken. Given such impacts, there has been little discussion of how policy can be used to improve the economic recovery from disaster impacts (Ash, Cutter, & Emrich, 2013). There have been arbitrary uses of policy, and alterations to policy, in certain disaster occurrences to help spur post-disaster economic recovery but there are no uniform and automatic policy channels geared toward
ensuring that a local or regional economy will bounce back following a disaster. The purpose of this research was to study the relationship between policy and disaster economic recovery in the context of the 2011 Joplin, Missouri Tornado and to determine how policy can be utilized to improve recovery from future disaster events, as well as provide the foundation for a quantitative study from which the results can be generalized to a broader population and wider geographical regions. Aligning with the theory of Reasoned Action, this research not only attempted to determine how policy influenced economic recovery following the 2011 Joplin, Missouri tornado but also attempted to determine the perceptions that the individuals being interviewed had of the policies as related to recovery and whether that perception was conducive to proper preparation before the disaster that led to positive outcomes following the disaster.

Chapter 2 and the literature review examines various aspects of disaster recovery and economics through the lenses of the 1994 Northridge Earthquake, which provides a historical overview of this research area, the 2011 Joplin Tornado, and disaster economics and recovery in a general context. The literature review revealed previous work that has been completed in this area and revealed the gaps where future research needs to be conducted to have a comprehensive overview of how policy influences disaster recovery.
Chapter 2: Literature Review

Evidence in the literature shows that economic impacts from disaster are growing and represented 60% of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007), including losses from events such as the 2011 Joplin tornado. More recent information regarding economic losses from global disasters shows that such losses continue to grow; in 2017, $306 billion in economic losses were incurred globally from natural and man-made disasters, which represented a 63 percent increase from 2016 and is higher than the previous ten-year average (McCarthy, 2017). Given such impacts, there has been little discussion in the literature of how policy can be used to improve the economic recovery from disaster impacts (Ash, Cutter, & Emrich, 2013).

The purpose of this qualitative exploratory case study was to determine how economic recovery occurred following the 2011 Joplin, Missouri, U.S. tornado, and the relationship between policy and recovery through the lived experience of selected government officials, local policymakers, and business/commerce officials.

Benefits of this research will potentially be the improved long-term economic recovery of communities from natural disaster occurrences and a better understanding of how policy influences economic recovery.

The literature review chapter of the doctoral dissertation initially included approximately 65 peer-reviewed articles, books, research studies, and governmental sources that had varying levels of relevance to the research topic and to general disaster economic recovery, recovery and economic related issues associated with the 1994 Los Angeles area Northridge Earthquake, and issues associated with the 2011 Joplin, Missouri Tornado. While many of the articles were peer-reviewed, scholarly sources written by leading experts in the field of disaster response, recovery, or economics, some of the available information was in the form of government documents and
other non-scholarly sources that were either used to guide future research or that simply had a significant relevance to the overall topic. This literature review section is divided into the themes of the types of disaster recovery, the economics of disaster losses and recovery, and key stakeholders in recovery, with each section discussing previous research in that particular area and the gaps and potential future directions for research.

**Literature Search Strategy**

Certain terms, ideas, and methods were used to search the literature and these search terms and methods were included in both the research and writings. Search terms included economic recovery, economic recovery from disaster, disaster recovery and economic policy, and terms that were specific to recovery and the Joplin and Northridge disasters. Many of the terms and methods centered around their meaning in the context, which was economic recovery and disaster, of this research and how governmental programs and policies are defined within this specific research topic of disaster economic recovery. Given that little current literature was available on the topic of the relationship between law and policy and disaster economic recovery through the lived experience of individuals responsible for recovery; the literature search was expanded to encompass all available literature on the subjects of economics as related to disaster recovery.

In the context of this research, a disaster is “a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed an individual’s, community’s, or society’s ability to cope using its own resources” (Haddow, Bullock, & Coppola, 2017, p. 473). This research focused on natural disasters rather than man-caused events, as natural disasters usually give lead-time for preparedness activities. Preparedness is “a state of readiness to respond to a disaster, crisis, or
any other type of emergency situation” (Haddow, Bullock, & Coppola, 2017, p. 476). Recovery is “the restoration of business and economic services, providing of assistance programs, and the short- and long-term care of affected individuals, businesses, and infrastructure following a disaster” (Haddow, Bullock, & Coppola, 2017, p. 476); however, recovery in the sense of most assistance programs and policies is just providing basic needs and not returning the economy and society to pre-disaster conditions. Federal, state, and local post-disaster assistance are programs that are made available under the Stafford Act, and typically include grants, loans, and forms of monetary aid to individuals and communities. All policy aspects included in the research are noted in the relevant disaster and economic recovery policies section that follows.

Databases and search methods included the use of general research databases, such as Northeastern University’s Scholar OneSearch and other scholarly search engines, including LexisNexis and JSTOR, and general search engines such as Google and Google Scholar. Search terms used centered on the Northridge and Joplin disasters, economics, federal, state, and local disaster recovery policy, financial policy, and general disaster, law, and policy terms.

**Literature Review Related to Key Concepts and Variables**

Much of the previous research surrounding policy and disaster economic recovery revealed shortcomings in how communities and regions recover from disaster, particularly shortcomings as related to economic recovery, as well as the many factors playing into, and falling under, the generalized heading of economic recovery. This literature review provides a broad overview of a sampling of the previous studies conducted in the arena of disaster recovery and the lack of generalizable results from those studies that could influence policy across a broad range of disaster occurrences and not be dependent on the location or disaster type. The 1994 Northridge earthquake is utilized as a historical context of economic recovery in disaster and the
2011 Joplin tornado is being researched in a current context; with future research focusing on a case study of the Joplin disaster.

Themes found in the literature included *types of disaster recovery, the economics of disaster losses and recovery,* and *key stakeholders in recovery.* These themes were explored in the literature through the historical context of the 1994 Northridge earthquake, the current context of the 2011 Joplin tornado, and through general disaster recovery outside of a disaster context.

**Types of Disaster Recovery**

The literature from the 1994 Northridge earthquake, 2011 Joplin tornado, and from the general viewpoint of disaster recovery discussed various types of disaster recovery in broad contexts. The types of disaster recovery discussed in the literature included residential recovery, commercial real estate and recovery, business recovery, response and recovery programs, and insurance programs.

**Residential recovery.** While it should be thought of as a critical area of disaster recovery, residential recovery needs are often inadequately addressed following natural disasters. Kamel and Loukaitou-Sideris discussed residential recovery programs available from the federal government for reconstruction following Northridge and through a “series of regressions to test the significance of housing and demographic variables, it was determined that housing policies were inadequate for addressing survivors needs” (2004, p. 533). While this research can be applied to a broader community, the study determined that areas with higher concentrations of marginalized populations, such as those who rented or were in lower socio-economic groups, received less federal assistance when compared with other areas and there were direct correlations between the receipt of federal assistance and positive outcomes in residential
recovery (Kamel & Loukaitou-Sideris, 2004). Damage from natural disaster occurrences often does not follow any particular patterns or associate with particular neighborhoods or demographic factors but it seems that federal assistance programs do and this study of residential recovery programs following the Northridge quake highlights just some of the limitations associated with current programs and the gaps that appear in post-disaster assistance policies.

Residential recovery is certainly a key component of the overall recovery of a community following a disaster occurrence; however, while previous research into residential recovery revealed strengths and weaknesses as they related to recovery, previous research failed to incorporate a broad overview of how those responsible for recovery policy implementation viewed this aspect of the recovery process. Previous research into residential recovery focused on the socioeconomics of recovery and issues with individual programs, and not on the lived perceptions of how broad policies at all levels contributed to the recovery of the residential aspects of a community.

Commercial real estate and recovery. Another potentially critical area of disaster recovery, especially economic recovery, is the reconstruction and continued vitality of the commercial sector of a community and region. Real estate data from the commercial sector seems to be an important component of judging overall economic recovery and a single study from the Northridge event addresses commercial recovery by examining commercial real estate returns for evidence of impacts from the earthquake. This examination is conducted through the lens of case studies associated with the 1989 San Francisco Bay Area Earthquake, 1992 South Florida Hurricane Andrew, and the Northridge quake. The study does note that having a diverse real estate portfolio was a way to spread disaster risk over a large geographic area; however, the sample sizes used in this study were too small to take into consideration the larger regional
economies that were at play in the disasters and that the earthquake disasters were ultimately too small to have a widespread impact on the overall appraised value of an area’s commercial real estate (Brunette, 1995). The finding of the diversification of commercial risks for disasters is critical for future research as well as addressing the need to utilize studies and disaster occurrences in which resulted can be generalized and applied to future events.

**Business recovery.** One of the most critical components of economic recovery following a disaster is the recovery and continuing operations of the business community. Business recovery is not only critical to the overall economy of a community but also critical for individual recovery, as individuals must have a continuing income, and several articles discussed the recovery of the business community within the context of Northridge. A primary focus here was on how utility interruptions, or lifeline interruptions, which include electrical power, water and sewer services, and gas supplies, following a disaster affected the continuity of operations, losses, and recovery of the business community. Following Northridge, it was determined that business losses were less dependent on the losses of utility lifelines and were more dependent on the overall resilience of a particular area affected by the earthquake and by the array of public and private decisions that were made following the disruption of utility services (Rose & Lim, 2002). The primary conclusion of the article by Rose and Lim holds that future concentrations in this area should focus on the overall resilience of a community and on the areas of mitigating losses and increased financial incentives to prevent the losses of businesses and business revenues.

A secondary study in the area of business recovery strongly suggested that there are gaps in the “perceptions of small business owners and government officials as to the availability and effectiveness of both support and assistance programs following an earthquake” (Furlong &
Scheberle, 1998, para. 1). Furlong & Scheberle conducted a series of interviews with officials from the Small Business Administration (SBA), the Federal Emergency Management Agency (FEMA), and small business owners, and the findings were that communications about assistance programs between key players in the disaster recovery process need to be improved and that assistance funding should be distributed in the form of grants and not loans (1998). It is commonly misunderstood in both the individual and business communities that funding is first offered as a grant and loans are an exception rather than a rule in disaster recovery, an improved discussion between the providers of assistance and those seeking assistance, including clarified policies, could help provide a dialogue that will ensure that any shortcomings in business recovery are adequately addressed.

In using existing research on disaster and organizational recovery and survival, a final article discussing business recovery and Northridge, worked to develop a model of business recovery by testing the data associated with those previous research studies against a random sampling of data collected from 1,110 business in the Los Angeles area that were affected by the 1994 quake. This research, which utilized “four independent and intervening variables, or firm characteristics, direct and indirect disaster impacts, loss containment measures, and previous disaster experiences, on the wellbeing of businesses”, “it was determined that the size of a business firm, location of the businesses in relation to earthquake intensity, actual physical damages, and sheer number of problems that a business suffered as a result of the disaster, the study found that all were all indicators of how a business is expected to recover following a disaster occurrence” (Dahlhamer & Tierney, 1998, p. 135). Suggestions for future research and models are that business recovery should focus on a broader business community approach and not on any single business.
In similar importance to the Northridge disaster, literature associated with the Joplin event provides some insight into the importance of business recovery following a disaster and how future policy directions could help improve such recovery. An article in this category, while not scholarly, provided some future guidance for research into the area of business recovery by discussing a comparison of the April 2011 tornado in Tuscaloosa, Alabama and the May 2011 tornado in Joplin. In Joplin, the business community was allowed to take the lead in the recovery process, guided by a 21 page recovery plan that allowed businesses and citizens to do whatever possible to rebuild and recover; on the other hand, in Tuscaloosa, the mayor placed a “90-day construction moratorium in the disaster area, restricting commercial and residential redevelopment until officials could craft and adopt a long-term master plan” (Beito & Smith, 2012, para. 5). In ensuring that the business community was able to recover, Joplin utilized a model that should be studied further and developed in such a way as to become applicable and adaptable to other disasters and jurisdictions; Tuscaloosa, on the other hand, sought to use a disaster as an opportunity to redevelop the community and not as an opportunity to strictly recover and continue. The success of Joplin can be a focus for the research going forward and for how future recovery plans for the business community should be crafted.

As discussed within the context of both Northridge and Joplin, a critical subtopic when discussing economic recovery from disaster involved recovery within the business community and a significant amount of the literature discussed recovery from the perspective of the business community.

The literature in this area discussed the importance of linking the recovery of both households and the business community following a disaster, as those are not mutually exclusive undertakings in the recovery process, and this was critical for the research going forward as
neither of those factors was studied completely independent of one another. The “return of households and businesses are mutually dependent and the reopening of businesses can influence nearby households’ decisions to return to their homes,” and potentially vice versa (Xiao & Van Zandt, 2001). This study has been replicated in more recent years and has found that while business recovery has typically focused on just businesses at a single point in time, looking at business recovery from the context of business, individual, and community recovery over time and developing a shared framework and vocabulary for a whole community recovery will likely be necessary going forward (Marshall & Schrank, 2014).

Existing resilience indexes have also been examined “in relation to economic principles and evaluated against their potential to gauge and improve post-disaster economic recovery, with a primary focus on the business community” (Rose & Krausmann, 2013, p. 73). The findings in this area, similar to allowing the business community to take the lead in recovery following the Joplin Tornado, are “that business behavior is the key to short-term recovery and while a framework has been proposed for the short-term, long-term recovery models still need to be developed” (Rose & Krausmann, 2013, p. 73).

Several studies have been conducted on predicting long-term business recovery following specific events, namely Hurricane Katrina as well as a comparison on recovery between the Loma Prieta earthquake and Hurricane Andrew. The study of Loma Prieta and Andrew examined “long-term recovery outcomes of businesses by using OLS regression models and found that long-term recovery experiences of businesses are affected by the economic sector in which a business operates, age and financial condition, primary market scope, direct and indirect disaster impacts, and the broader economic climate, but is not significantly influenced by previous disaster experience, level of preparedness or the use of external sources of aid” (Webb,
Tierney, & Dahlhamer, 2002, p. 52). The study of Katrina focused on the survivability of businesses following “one of the most extreme population dislocations in U.S. history” (Dietch & Corey, 2011, p. 311) and, through a survey of 186 business in the New Orleans area, found that organizational performance following the disaster was strongly tied to population-related issues, namely the loss of customers, with the limits being that the study only focused on surviving businesses and did not discuss why businesses may have failed to return (Dietch & Corey, 2011).

While previous research into the commercial and business recovery following a disaster is more comprehensive and included fewer gaps than residential recovery, there are still opportunities to address gaps and the how the relationship of law and policy contributes to the recovery of these sectors following a disaster. Previous studies have discussed the diversification and spreading of risk across a diverse real estate portfolio, which is not always possible in the small business community and discussed the perceptions of business owners about recovery and resilience of the business community. Future studies in this area should provide an opportunity to address the perceptions of those responsible for recovery view gaps in recovery programs for the business community, as well as strengthen previous research into perceptions about gaps in recovery programs.

**General disaster response and recovery.** Another type of disaster recovery in the literature that is within the Joplin tornado context discussed the overall response and recovery to the disaster event.

As discussed minimally in the Northridge category, a thorough understanding of the policies and programs available for disaster recovery is often an impediment to recovery for both individuals and the business community. Following the Joplin Tornado, Legal Aid of Western
Missouri took a critical role in helping individuals navigate the legal issues surrounding insurance, federal disaster assistance, and other policies and programs of the recovery process (Rodriguez, 2013). While not a scholarly source of information or discussion, this article could help steer future research and help build a portion of the model that shows the importance of using available legal assistance to help those recovering from disaster understand the processes, which could help spur recovery more quickly than having disaster survivors simply navigating the recovery systems without guidance.

A final response and recovery study of Joplin presented a case study of the response and recovery efforts and explored those efforts from the perspective of the private sector and the role of the institutional environment which impacted the pace of recovery in Joplin when compared with the pace of recovery with 2005’s Hurricane Katrina in New Orleans. The findings of this case study suggest, similarly to Bieto and Smith, that “partnerships between the public and private sectors resulted in the successful response and recovery efforts in Joplin and a failure to build those partnerships following Katrina revealed a gap” (Smith & Sutter, 2013, p. 185).

A thorough discussion of the recovery process associated with Joplin is lacking in the currently available literature. However, the lack of available literature leaves much room for future expansion and what literature is available provided some guidance for research into the Joplin event that can be used to develop recovery models for future natural disaster events. Future research can be critical in this area in order to determine what individuals, through their lived experiences of the recovery process, believe the weaknesses are in navigating recovery policies and how collaboration impacts disaster recovery.

**Insurance.** The availability of insurance plays a critical but often misunderstood role in the disaster recovery process, especially at the individual level; however, within the literature,
there is considerable discussion about the role of insurance in mitigating disaster losses and the broader role that insurance plays into recovery from disaster. Insurance should be generally thought of as being a particular piece to the recovery process and not the end means to recovery, economic or otherwise; however, insurance is a piece that will be built into my overall model for this research. The current literature discusses an overreliance on insurance as a means to fully recover from disaster and much of it refutes insurance as being the singular best means to recovery, either economically or otherwise.

Much of the discussion into the realm of insurance and disaster recovery centers around the impact of natural disasters on the profitability of insurance companies, the role of insurance, and how insurance will remain affordable and available in the face of increasing natural disaster and climate change. One of the first articles in this category discussed the economic losses incurred from catastrophic events and the corresponding increase in the insured losses associated with those events. The article does discuss the role of insurance in spreading risk over wider areas and categories of potential loss; however, the primary purpose of this research was, “to investigate the impact of natural disasters on the profitability of property and casualty insurance companies in the United States and analyze their capabilities to respond to catastrophic events going forward” (Benali & Feki, 2017, p. 1399). The research mentioned a reliance on theory and previous literature but no specific theoretical framework could be identified within the article, but multiple tests, both multicollinearity and regression, were used to test six hypotheses and the results of those tests found that that the “volume of capital and surplus premium have a positive impact on profitability; however, loss ratio, Blockbuster and unexpected frequency have a negative impact on profitability” (Benali & Feki, 2017, p. 1399). The primary recommendations from this research were that insurance companies “should not fund the majority costs of a post-
disaster reconstruction or to even play a major role in disaster mitigation” (2017, p. 1399). This previous research is likely steering future research in the direction to find alternatives for recovery funding outside of heavy reliance on the insurance industry.

A secondary analysis in the insurance subcategory discusses the availability and affordability of insurance going forward under the increasingly frequent occurrence of catastrophic events. The findings of this study essentially mirrored the first by strongly suggesting that alternatives should be found to both insurance and government funding, as FEMA becomes an insurer of last resort for so many individuals following a disaster. Key findings were that “catastrophic events are rising faster than premiums and higher losses will lead to increased claims, higher premiums and deductibles, lower limits, and broader coverage restrictions, which will increase the burden on governments to find solutions to those gaps” (Mills, Roth, & Lecomte, 2006, p. 111).

There is also discussion in the literature about using insurance as a mitigating agent through either migrating the losses from disaster or mitigating the adverse economic effects of natural disasters. First, Kunreuther discussed the fact that losses from natural disasters have increased in recent years, primarily due to population growth in hazard-prone areas and that going forward disaster-management programs that utilize “insurance coupled with well-enforced building codes are needed to reduce future damages from disaster” (1996). The secondary finding in the area of insurance mitigation discussed the impact of disasters on income and that the impact is often dependent on the “type and severity of the disaster, as well as on the economic and institutional environment that is affected by the event” (Breckner, Englmaier, Stowasser, & Sunde, 2016, p. 106). Using a panel data set with annual data from 129 countries from the period 1980-2011, the authors of this article investigated the “effects of natural disasters
on income using an estimated empirical model and found that the economic effects of disasters were negative and were consistent with the findings in earlier literature” (2016, p.108).

A final article in the insurance subcategory, which has some carryover to the business recovery subcategory discussed earlier, discussed the role of insurance in post-disaster recovery planning within the business community. Using purposive sampling, this study, in order to gain an overall perspective of an insurer’s perception of insurance and an insured individual’s perception of insurance, used a survey delivered to individuals with experience in both disaster insurance and disaster management within the business community. The recommendations from this research were to “enhance disaster insurance penetration to the business community by encouraging a strong relationship between the insurer and insured, increasing awareness programs and public education, increasing government involvement, encouraging risk assessments, having risk based premiums that are affordable, extra attention for business communities that are in high risk areas, and an increased effectiveness of insurers” (Kaushalya, Karunasena, & Amarathunga, 2014, p. 627). While this research could in part be used to develop a similar model in the United States, the authors have noted that one of the limitations of this particular research is that it is not applicable outside of their study country, Sri Lanka.

There are comprehensive discussions in the literature about the role the insurance plays in a wide variety of disaster recovery scenarios, both in general and in the context of a particular disaster event. Future research needs to provide an opportunity to see how insurance is perceived by those responsible for disaster recovery and potentially how insurance fits with other public and private recovery resources.

**Conclusion.** While the first strand of literature focused on a discussion of the types of recovery from disaster including residential recovery, commercial real estate and recovery,
business recovery, general disaster response and recovery programs, and insurance programs in relation to how law and policy has been utilized in a historical event, current event, and in a general sense and how economic recovery following disaster occurred after disaster events, there are few to no discussions in this section of how policy has been utilized to improve recovery or how those with lived experiences view each piece of the recovery puzzle, whether individually or collectively. The next strand of literature discusses the specific literature that is related to disaster losses and recovery in the realm of economics.

**The Economics of Disaster Losses and Recovery**

The literature from the 1994 Northridge earthquake, 2011 Joplin tornado, and from the general viewpoint of disaster recovery also discussed various issues and topics dealing with disaster economics, disaster losses, and disaster recovery. The issues discussed here in the literature included economic losses and estimations, impacts of hazards, and general economic recovery.

**Economic losses and estimations.** An initial subcategory of literature available under this theme and the Northridge earthquake is general discussions about the losses from the disaster, including economic losses, and the social impacts of the earthquake. While being a relatively small disaster when compared to a broader sense of disaster occurrences in the United States, the “financial impact of the Northridge event makes it one of the worst disasters in U.S. history and ultimately revealed a need for greater controls to reduce future losses from similar events” (Petak & Elahi, 2001, p. 23). Petak and Elahi also revealed that “non-reimbursed losses totaled almost half of the total losses from the earthquake and that future funding for such events will depend on many factors including the availability of insurance and federal funding levels” (2001, p. 24). In addition to these findings, Petak and Elahi included a detailed account of the
Northridge quake and the response to the event, the direct and indirect economic losses, and the reimbursed losses from governmental and private entities; some social and mitigation aspects of the event are discussed as well (2001). Future directions in this arena should focus on the utilization of mitigation measures to reduce economic and social costs to communities, as current policies and building codes are not enough to address losses (2001, p. 24).

A secondary article in the economic loss subcategory of Northridge discussed similar direct economic losses from a three-year post-event perspective. By utilizing new methods of data collection, this article was an attempt at assembling a diverse picture of the economic, political, and sociological factors that play roles in disaster recovery. The article discussed the estimated and actual losses from Northridge, the assistance programs and amounts that were made available from both governmental and non-governmental entities and provided comparisons of the Northridge losses to other damaging earthquakes in California and the United States. Primary considerations from this article raised the question of whether or not an accurate final financial loss figure ever becomes available following a disaster because so much pressure is placed on getting an initial loss figure out to the public so quickly following a disaster occurrence, and that it is unlikely much effort is expended on continued research of losses to gain a complete and accurate estimate of economic losses or how a complete estimation of losses would even be obtained (Eguchi, Goltz, Taylor, Chang, Flores, et al, 1998). This is a critical gap in economic recovery, if an accurate picture of losses is not available then an accurate picture of what is needed to recover cannot be made available.

The preceding literature provided some insight into the extent of the research that has been conducted into economics, losses, and recovery associated with the 1994 Northridge earthquake. Further research is needed in order to determine how an array of hazards affects
losses and the economy and how recovery models can be developed that can be applied across a broad spectrum of future disasters. A critical missing piece in previous research is the perceptions of what economic recovery is through the lens of individuals that direct the recovery process. What economic recovery is and whether or not a community has recovered economically is somewhat subjective and future research needs to consider that subjectivity when considering economic recovery from disaster.

**Impact of natural hazards.** As the research moves forward into economic recovery from disaster, there should be a thorough overall understanding of the impacts that natural disasters have had on the United States during recent years and how the funding and assistance for those events have been distributed and how it will likely be distributed in the future. A full array of losses from natural hazard events in the United States from 1980 to 2009 is included in the literature and included a discussion of the funding that was made available for those events from state and federal programs, how such funding was distributed based on past hazard frequencies, future mitigation plans, and how the funding will be likely prioritized in the future. A study by Ash, Cutter, and Emrich utilized direct losses at the county level for the above-mentioned time period and correlated those losses with the GDP of a particular region in order to construct hazard loss ratios for a particular region; in doing so, suggestions were made that in order to strengthen future studies, the U.S. government and other entities must actively collect and analyze disaster and economic data that is not currently being actively collected on a wider scale (2013).

**General economic recovery.** There have been numerous studies conducted in the general area of disaster recovery and economics, with a small sampling of those discussed here due to the limitations of this document.
The literature in this area generally found that natural disasters do in fact influence economic development, it is often just a question of what the actual losses to a particular event will be. Toya and Skidmore found that countries, such as the United States, that have “higher incomes, higher educational attainments, more complete financial systems, and smaller governments, experience fewer losses” (2007). However, this research left the opening to determine if those findings are applicable to individual communities and regions within a country and how development and recovery occur at more micro rather than macro levels. A later study by Schumacher and Strobl found similar results in a “strong relationship between the relative wealth of a country and the incidence of natural hazards faced by that county” (2011). Again, this research left gaps for future research to determine if such correlations are applicable to the community and regional levels.

Several articles also discussed economic modeling and the impact modeling of natural disasters has on income distribution in the United States. While initially developed against a hurricane backdrop for the coastal U.S., models developed for those purposes also find that “damages from all natural hazards impact distribution across the United States” (Fang, Wu, & Milijkovic, 2017, p. 435). While adding in an aspect of social disasters with the natural disaster backdrop, “social disasters such as the King riots in Los Angeles also had a long-term negative effect on the economy of that city, however, Hurricane Andrew had a short-term positive effect for the regional economies affected by that event” (Baade, Baumann, & Matheson, 2006, p. 2061). These studies could be expanded to see if they could be applicable to events and regions outside of hurricane-prone areas and to other types of social events. In utilizing modeling, it may be possible to determine where previous economic recovery from disaster has been the most stagnant and utilize such data to concentrate resources and improve outcomes after future events.
A final paper discussed in the context of general disaster recovery and economics looks at the literature and modeling techniques used in the past and suggests that the “future research on economic modeling of disasters needs to focus on more plausible theoretical foundations” (Okuyama, 2007, p. 122).

A critical gap in the literature and previous research when discussing general economic recovery deals with the perceptions of those responsible for recovery perceive personal economics and disaster types on the overall recovery of a community.

**Conclusion.** The second strand of literature focused on a discussion of recovery economics, including economic losses and estimations, the impact of natural hazards on economics, and general economic recovery but again includes few to no discussions of how in this section of how policy is related to economic recovery. The next strand of literature discusses the key stakeholders that are involved in the disaster recovery processes.

**Key Stakeholders in Recovery**

The final strand of literature focuses on a discussion of the key stakeholders in recovery economics, including the role of government and unmet recovery needs that bring stakeholders outside of the government into the recovery processes.

**The role of government.** Regardless of the perceived or actual effectiveness of the government at all levels in disaster response and recovery, governments do play critical roles in the processes. This subcategory of literature discussed the role of the government in recovery and the governmental expenditures for disaster response and recovery. Much of the literature in this category either discussed how government funds are expended for disaster recovery or the changes that should be made to improve government actions and funds in the face of natural disasters.
Two of the primary articles here discussed government budgeting and the impact of disasters and other events on government expenditures. The first article discussed the increased call for the government to respond to disaster events and the potential for flexible budgeting programs to be utilized to help deal with the government’s response in a timely and efficient way. This study utilized data sets of state and federal expenditures from 1972 to 2008 and provides an analysis of where those expenditures occurred in major policy areas, including public safety and defense and economic development. The study found that while emergency management and homeland security are shared responsibilities across all levels of government, there remains an unevenness in the way those activities are funded and that future studies need to highlight the consideration of budget methods that have sufficient flexibility to better respond to major budget shocks and catastrophic events such as natural disasters (Choi & Coffey, 2011).

The second article discussed the approach that many governmental entities have when it comes to budgeting for disaster, do what is necessary to mitigate the event and recovery and then worry about how to pay for the response and recovery at a later date. The conclusions are that budgeting for recovery and reconstruction need to be a part of normal operating budgets in order to create sound budgets for disaster situations (Smith, 2006).

The next sections of literature discussed how changes in government actions and the Stafford Act can improve governmental actions when looking at disaster recovery and the reduction of the impact of natural disasters. The first article discussed the costs and benefits associated with the Stafford Act’s clause that provides preference to local contractors when recovering and reconstructing from disasters. The findings are that the local preference may hinder a proper federal response to a disaster but there are some community benefits to be gained by this clause within Stafford, and that preference should be given to businesses whose recovery

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will best benefit community revitalization (Morrison, 2008). The second article discussed how building codes and code enforcement can be utilized to reduce the impacts of natural disasters, which in turn will reduce the economic losses from a disaster. Improved codes and financial incentives to improve codes may be necessary to stimulate recovery and to reduce disaster losses (Spence, 2004).

**Unmet recovery needs.** A critical issue that is found across the natural disaster spectrum, and highlighted with Northridge, is the unmet recovery needs of disaster survivors, which must often be met by entities outside of government. Disaster survivors often discover they have unmet needs during the recovery process and unmet needs are often the result of poor personal preparedness, a lack of available resources generally and within the disaster area, or inadequate government policies and programs that should be in place for disaster recovery. The inadequacy in governmental programs for recovery is highlighted following the Northridge Earthquake; despite the “flow into Los Angeles and Ventura counties of $11 billion in federal disaster aid, not all of the recovery needs of the disaster survivors were met” (Bolin & Stanford, 1998, p.21). Bolin and Stanford examined the “responses to housing and recovery issues in two ethnically mixed communities in southern California through a review of the records of community-based organizations (CBO’s), non-governmental organizations (NGO’s), and government agencies involved in the recovery process”, and they were able to “ascertain that recovery needs were not adequately met through the conventional disaster relief channels of those organizations, which are most often on the front lines of disaster recovery” (1998, p. 34). Their suggestions for future research show that a focus should be on collaborative efforts between governmental and non-governmental actors and how those actors will need to work together in order to fully address disaster recovery needs, especially since the level of federal
disaster relief spending seen following the Northridge Earthquake is unlikely to be duplicated in most future disaster occurrences (1998). Elements of the research going forward will focus on the inadequacies of recovery resources, if individuals perceive this being a gap in disaster recovery, and how policy can be altered to address those gaps.

**Conclusion.** The final strand of literature focused on a discussion of the key stakeholders in recovery economics, including the role of government and unmet recovery needs that bring stakeholders outside of the government into the recovery processes. This section highlighted the critical but misunderstood roles of government in the recovery processes and unmet recovery needs that could potentially be addressed with future policy changes.

**Summary and Conclusions**

Evidence shows that economic losses from disasters are growing and there are no automatic policy measures to ensure economic resilience. This research focused on local, state, and federal policies and how those influenced disaster economic recovery through a case study of the lived experience of governmental and business officials in Joplin, Missouri in the context of the 2011 Joplin tornado. The literature also showed historically through the Northridge disaster that economic policy measures are lacking in the context of disaster economic recovery and that policy has not improved since that time. This research will potentially contribute to the literature by showing how policy influences recovery and provide governmental and business officials with the information they need to have a more disaster resilient community by taking a lived experience, holistic approach to determining what recovery is and how it occurs post-disaster. This research attempted to blend the following major themes from the literature into a comprehensive view of the recovery process and provide a foundation for future research studies.

Below are the key points from each of the three themes of literature for this research:
Types of Disaster Recovery

The first strand of literature focused on a discussion of the types of recovery from disaster including residential recovery, commercial real estate and recovery, business recovery, general disaster response and recovery programs, and insurance programs in relation to how law and policy has been utilized in a historical event, current event, and in a general sense and how economic recovery occurred following disaster.

Residential recovery. Residential recovery needs are often inadequately addressed following natural disasters and are critical aspects of overall recovery. Kamel and Loukaitou-Sideris discussed residential recovery programs available from the federal government for reconstruction following Northridge and utilizing a series of regression tests they attempted to determine the significance of housing and demographic variables following the Northridge quake; it was determined that housing policies were inadequate for addressing survivors needs (2004).

Commercial real estate and recovery. Another potential critical area of disaster recovery, especially economic recovery, is the reconstruction and continued vitality of the commercial sector of a community and region. Real estate data from the commercial sector seems to be an important component of judging overall economic recovery and a single study from the Northridge event addressed commercial recovery by examining commercial real estate returns for evidence of impacts from the earthquake. This examination is conducted through the lens of case studies associated with the 1989 San Francisco Bay Area Earthquake, 1992 South Florida Hurricane Andrew, and the Northridge quake.

Business recovery. One of the most critical components of economic recovery following a disaster is the recovery and continued operations of the business community. Business recovery is not only critical to the overall economy of a community but also critical for
individual recovery, as individuals must have a continuing income, and several articles discussed the recovery of the business community within the context of Northridge.

In similar importance to the Northridge disaster, literature associated with the Joplin event provided some insight into the importance of business recovery following a disaster and how future policy directions could help improve such recovery. As discussed within the context of both Northridge and Joplin, a critical subtopic when discussing economic recovery from disaster involves recovery within the business community and a significant amount of the literature discussed recovery from the perspective of the business community.

**General disaster response and recovery.** Literature in the general sense of economic recovery from disaster provided evidence that there is a need for a greater understanding of the influence of policy on a wide variety of disaster occurrences that vary by geographical region.

**Insurance.** The availability of insurance plays a critical and often misunderstood role in the disaster recovery process, especially at the individual level; however, within the literature, there is considerable discussion about the role of insurance in mitigating disaster losses and the broader role that insurance plays into recovery from disaster.

**The Economics of Disaster Losses and Recovery**

The second strand of literature focused on a discussion of recovery economics, including economic losses and estimations, the impact of natural hazards on economics, and general economic recovery.

**Economic losses and estimations.** A subcategory of literature available under the Northridge earthquake is some general discussions about the losses from the disaster, including economic losses, and the social impacts of the earthquake.
Impact of natural hazards. Provided an overall understanding of the impacts that natural disasters have had on the United States during recent years and how the funding and assistance for those events have been distributed and how it will likely be distributed in the future.

General economic recovery. There have been numerous studies conducted in the general area of disaster recovery and economics, with a small sampling of those discussed in the literature here due to the limitations of the document.

Key Stakeholders in Recovery

The final strand of literature focused on a discussion of the key stakeholders in recovery economics, including the role of government and unmet recovery needs that bring stakeholders outside of the government into the recovery processes.

The role of government. Regardless of the perceived or actual effectiveness of the government at all levels in disaster response and recovery, governments do play critical roles in the processes. This subcategory of literature discussed the role of the government in recovery and the governmental expenditures for disaster response and recovery.

Unmet recovery needs. A critical issue that is found across the natural disaster spectrum, and is highlighted with Northridge, is the unmet recovery needs of disaster survivors. Disaster survivors often discover they have unmet needs during the recovery process and unmet needs are often the result of poor personal preparedness, a lack of available resources generally and within the disaster area, or inadequate government policies and programs that should be in place for disaster recovery.
The above themes emerged from the literature in the context of the historical Northridge earthquake, current Joplin tornado disaster, and general disaster recovery, and they provided a template for policy focuses in both the literature review and research case study.

When looking at recovery from disaster it is important that disaster recovery research be approached from a holistic perspective, and “it has become imperative that we look at solutions systematically and holistically in order to avoid unintended consequences and make sure that we do not just rebuild but preserve the wellbeing of people as well (Cimons, 2018, para. 3).

Previous research in the literature often focused on individual pieces and perceptions of recovery and recovery processes. This research attempted to fill some previous gaps in the research by looking at the lived experiences of individuals that have been through the disaster and recovery process and determining their holistic beliefs of what recovery is and how recovery is related to a broad spectrum of law and policy.
Chapter 3: Methodology

Evidence in the literature shows that economic impacts from disaster are growing and represented 60% of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007), including losses from events such as the 2011 Joplin tornado. More recent information regarding economic losses from global disasters shows that such losses continue to grow; in 2017, $306 billion in economic losses were incurred globally from natural and man-made disasters, which represented a 63 percent increase from 2016 and is higher than the previous ten-year average (McCarthy, 2017). Given such impacts, there has been little discussion in the literature of how policy can be used to improve the economic recovery from disaster impacts (Ash, Cutter, & Emrich, 2013).

The purpose of this qualitative exploratory case study was to determine how economic recovery occurred following the 2011 Joplin, Missouri, U.S. tornado, and the relationship between policy and recovery through the lived experience of selected government officials, local policymakers, and business/commerce officials. The question the research attempted to answer was, what does the lived experiences of government officials, local policymakers, and business/commerce officials in Joplin, Missouri tell us about the relationship between local, state, and federal economic and disaster policy, and economic recovery following the 2011 Joplin, Missouri tornado?

Chapter 3 provides a discussion of how the case study was designed and the rationale for utilizing a qualitative exploratory case study, with in-depth, one-on-one interviews to determine how law and policy relate to disaster recovery in the context of the 2011 Joplin, Missouri tornado disaster. This chapter further provides an in-depth look at research methodology in general and the methods utilized for determining why a qualitative case study was chosen to answer the
research question in the context of this study. It discusses the selection of the participants for the study, how they were recruited, how data was collected from the selected individuals, the basic plan for coding and analyzing the data after collection, and the trustworthiness of the data and research in the context of a qualitative study.

In closing chapter 3, a discussion of the ethical procedures utilized in the research is provided, along with how the integrity of the study was maintained and how ethical dilemmas in the study were identified and handled.

**Research Design and Rationale**

The research question for this study was, what does the lived experiences of government officials, local policymakers, and business/commerce officials in Joplin, Missouri tell us about the relationship between local, state, and federal economic and disaster policy, and economic recovery following the 2011 Joplin, Missouri tornado?

Sub-questions that helped answer the overarching research question were: To what extent, if any, will policy revisions ensure that the business community continues operation after a disaster occurrence? And, to what extent, if any, can policy measures be undertaken to ensure that tax revenues to local governments continue at an equal or greater rate following a disaster occurrence?

When conducting research in social science research, there are various research methodologies utilized to answer a research question(s) in the particular context of a problem that exists.

Quantitative research is generally focused on quantifying or identifying relationships between variables, which are separated into descriptive or experimental designed, and then expressing the relationship between the variables using statistics (Hopkins, 2008). According to
the definition in Social Research Methods, “quantitative research often emphasizes quantification in the collection and analysis of data and, as a research strategy, it is deductivist and objectivist and incorporates a natural science model into the research process” (Bryman, 2016, p. 694). In order to explain a particular phenomenon, quantitative research collects and utilizes numerical data.

According to Creswell and Creswell, “qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem,” and those that conduct this type of research are usually focused on the individual meaning that participants bring to the research (Creswell & Creswell, 2018, p. 4). According to Social Research Methods, “qualitative research generally emphasizes words rather than the quantification of numbers in the collection and analysis of data and, as a research strategy, it is inductivist, constructionist, and interpretivist” (Bryman, 2016, p. 694). This research into the relationship between law and policy and economic recovery from disaster was not about looking at any singular variable and how that variable may or may not have influenced recovery in the context of the 2011, Joplin tornado; perceptions about recovery are often as important as quantifiable recovery statistics and this research was conducted to search for a deeper meaning of recovery and how individuals that lived through the event viewed the relationship of law and policy to recovery. Therefore, given the need to understand the meaning that individuals ascribe to how law and policy influence disaster economic recovery, a qualitative approach was selected. This approach allowed the research questions and theories to evolve as the research progressed, giving it a flexible structure in order to arrive at generalized conclusions about the topic of policy and economic disaster recovery. This approach was utilized as a foundation for future, continued research that goes beyond the scope of the research and thesis for this program; building the
foundation for a quantitative survey in order to have knowledge about policy that is generalizable across jurisdictions.

A mixed-methods approach was considered initially; however, this approach was abandoned due to both time constraints and the desire to use the in-depth knowledge gained from a qualitative approach to build the foundation for future quantitative survey research.

Within the general methodology of qualitative research, an exploratory case study approach was selected, which utilized semi-structured, in-depth interviews to collect data from participants about their lived experiences with economic recovery following the 2011 Joplin Tornado. The choice of which methodology to employ in a given research study is often centric upon the problem and purpose of the research being conducted. As with the 2011 Joplin event, a case study was not intended to be a study of the entire event but was rather a focus on a particular issue surrounding the event, which was the relationship of law and policy to recovery. As was done with the context of the Joplin Tornado, “case studies are particularly useful when a need to understand some particular problem or situation in great-depth exist, and where one can identify cases rich in information” (Baharein Mohd Noor, 2008, p. 1603). In utilizing semi-structured interviews, with open-ended questions, the participants were able to stray from the interview guidelines and follow relevant topics that allowed for the identification of new ways of seeing and understanding the relationship of law and policy to disaster recovery.

The rather broad research topic concerned laws and policies at the local, state, and federal levels that affected economic disaster recovery at the community or regional level. Recovery is the longest and most critical issue arising after the occurrence of a natural disaster and ensuring that effective recovery can occur is often ignored from an economic viewpoint; failure to focus on rebuilding a community’s economy can often result in a failure to recover from a disaster.
The focus with this research was not simply on economic policy or disaster policy, but on all policy, that could influence how a community’s economy recovers.

In utilizing a qualitative approach for this research, the constructivist worldview, or social constructivism is “typically seen as an approach to qualitative research” (Creswell & Creswell, 2018, p. 7). How policy is related to disaster economic recovery and how lived experiences of government and business officials lead to their interpretations of policy and recovery can be complex issues to understand and the constructivist worldview allowed for a look at these complex issues rather than “narrowing the meanings to a few categories or ideas” (2018, p. 8). “Constructivism assumes that individuals construct the meaning of experiences and events, and therefore people construct the realities in which they participate” (Lauckner, Paterson, Krupa, 2012, p. 6).

In further solidifying the decision to utilize the methodological approach chosen for this research, one can turn to the metatheoretical stance of postpositivism, or the view that reality is socially constructed rather than objectively determined, which through research allows a researcher to appreciate the different constructions and meanings that people place upon their experiences (Baharein Mohd Noor, 2008, p. 1602). This research allowed participants to discuss their personal experiences with law and policy as it related to disaster economic recovery and allowed them to provide their ideas of recovery, rather than strictly objectifying a law or policy and tying it to a particular recovery outcome.

**Methodology**

This research utilized a qualitative design by way of a case study utilizing one-on-one interviews. This approach was utilized as a foundation for future, continued research that goes beyond the scope of this research and thesis for this program; building the foundation for a
quantitative survey in order to produce knowledge about policy that is generalizable across jurisdictions.

According to Creswell, “qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem” (Creswell & Creswell, 2018, p. 4). This approach allowed the research questions and theories to develop as the research progressed, giving it a flexible structure in order to arrive at generalized conclusions about the topic of policy and economic disaster recovery.

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Positionality Statement

I am fully aware that my research and questions about post-disaster economic recovery of communities and regions following a disaster will be shaped by both my personality and positionality, as well as the bias I have from being both a previous practitioner and current academic in the realm of disaster and emergency management. While I generally do not advocate for government solutions (financial solutions) to private problems such as personal and business disaster recovery from an economic standpoint, I have personally watched the failures of the system as it currently operates, and I am of the belief, biased or not, that if the programs are going to be available they should work as the people believe they should. My political views play some role in that previous statement as I believe we should be fiscally conservative when it comes to government funding, unless it, selfishly, benefits me, and there should be much more personal preparedness for disaster response and recovery, including financial recovery. Through my background, I have been taught to be reasonable financially conservative and to save for the so-called rainy day and wonder why others have not. I am concerned that that will bias my research and lead to my being cynical toward those I may be researching.

I also have an extreme amount of skepticism when it comes to what I read, including some peer-reviewed material, and of the information provided by political and elected officials; I feel that this will lead to an over-questioning of much of what I research on this or any topic. While my core values and principles remain steady and unchanged, I am not opposed to changing beliefs when I have been given what I feel is good information and solid reasoning for doing so, this could be an issue, for the better or worse, as I proceed through research.

I also hope to research and provide a perspective and solutions to disaster recovery from a broad range of backgrounds and to a broad range of potential disaster areas, including urban,
rural, poor, affluent, etc. However, the objectivity I hope to have in this research will likely be tainted by my white, male, middle-class background that has never personally been the subject of a major disaster or in need of assistance. My background as discussed here, in many ways, makes me an outsider to this research topic; however, my personal experiences in working such events from a governmental standpoint, in some ways, makes me an insider, and I will need to ensure I find an objective position when designing this program of research.

**Participant Selection (Qualitative)**

In utilizing a qualitative approach with one-on-one interviews within the context of a case study, purposive selection of the participants was used. In qualitative research, “purposeful sampling is the most common sampling strategy, and in this type of sampling, participants are selected or sought after based on pre-selected criteria based on the research question” (Lavrakas, 2008, para. 2). In utilizing a case study of the 2011 Joplin, Missouri tornado in order to understand the lived experiences of governmental and business officials and their observations of policy on disaster economic recovery, purposeful sampling was needed to select individuals that were directly affected by or involved in the disaster and recovery processes in Joplin.

The “prevailing concept for sample size in qualitative studies is saturation” (Malterud, Siersma, & Guassora, 2015, p. 1573), sample size in Joplin was determined by the number of types of entities that were directly involved in the disaster and recovery process in order to ensure that all possible viewpoints were covered and considered.

**Procedures for Recruitment**

The overall goal of this research was to improve the long-term economic recovery of communities from natural disaster occurrences by better understanding how law and policy
influences such economic recovery. In order to achieve this goal, the research attempted to determine what the lived experience of government officials, local policymakers, and business/commerce officials in Joplin, Missouri tells about the relationship between local, state, and federal economic and disaster policy, and economic recovery following the 2011 Joplin, Missouri tornado.

Institutional Review Board (IRB) approval for this study was sought according to the guidelines maintained by Northeastern University (NU) and in accordance with Human Subject Research Protection. The IRB application was initially submitted and received by NU IRB in November 2018, and approval to conduct the study according to the submitted IRB protocols was received in December 2018.

Participant selection for this qualitative, exploratory case study was carried out utilizing purposive selection. “The purposive sampling technique, also called judgment sampling, is the deliberate choice of a participant due to the qualities the participant possesses” (Etikan, Musa, & Alkassim, 2016, p. 2), and was utilized in the context of this research study for the knowledge and perspective that each participant possessed in regards to the 2011 disaster event.

Participant selection and recruitment for this qualitative case study research began with the development of inclusion and exclusion criteria, which was utilized to determine the individuals in Joplin that would be able to provide the richest information for the study through their participation in the semi-structured, in-depth interviews. Individuals considered for inclusion in this research must have been directly involved in business, government, or other organizational operations before and during the Joplin tornado, must have been directly involved in the recovery process, or, in the case of a private business, have been put out of business due to the tornado. Individuals selected for the research were not considered based on a specific
gender, ethnicity, race, or socioeconomic status, and no individuals were discriminated against or
disallowed to participate based on any protected or unprotected classifications such as race,
gender, ethnicity, etc. In complying with Northeastern University’s Institutional Review Board
(IRB) requirements for Human Subjects Research, individuals included in this research were 18+
years of age at the time of the event occurrence in 2011 and they provided signed informed
consent prior to their participation in the research.

Individuals were excluded from participating in this research if they were unable to provide informed consent to participate, if they were not directly involved with the disaster and/or recovery processes in Joplin, if they in any way felt that answering questions related to the disaster would cause undue harm to themselves or others, or if they in any way may have had information about the event that was not reliable. Although it was unlikely that any individual meeting this exclusion criterion would have been identified for the study, as they all were individuals with positions of responsibility within government or an organization, but individuals were to be excluded if they were determined to have a literacy level below the U.S. average which could potentially have led them to misunderstand or misinterpret the purpose of the study, the consent process, or the questions asked.

Potential participants for this research, based on the inclusion and exclusion criteria discussed previously, were preliminarily identified by extensively searching governmental and organizational websites, government and organizational documents, and the literature. Searches for potential participants included websites and information for the City of Joplin, Missouri and city government, Missouri Southern State University, the Mercy Hospital System, and the Joplin Area Chamber of Commerce and associated business and organizational websites.
After individuals were identified and preliminarily screened according to the inclusion and exclusion criteria, they were contacted via email, utilizing the script information included in Appendix D, and their participation in the research study was requested. If individuals agreed to participate in the research study, they were directly asked the inclusion questions included in Appendix D and were asked to discuss and sign the informed consent form, Appendix E, before proceeding with the research study. When signed, informed consent was obtained from participants, a mutually agreeable date and time for the interview was scheduled and the questions included in Appendix C were asked of the participant, either via a recorded telephone interview or a face-to-face Zoom video interview.

After interview data was collected and recorded, interviews were transcribed via IRB protocols utilizing the online transcription service Temi. Participants were allowed to review their transcript to ensure the accuracy of the transcription and information included, as well as to clarify and further explain points that they believed needed further explanation or more information.

Participants were not offered any incentives for their participation in this research study; however, they were informed that their participation could potentially help the understanding of how policy influences disaster recovery and help determine if there are changes that can be made that will improve recovery following future disaster events.

Participant confidentiality was ensured to the extent possible by coding participants, interview transcripts, and data sets with numbers that are known only to the researcher, and information about the research participants and collected data is being maintained on a password protected USB drive that only the researcher has access to. Data is being utilized through the end of the study and will be destroyed at the end of the 3-year period following the close

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of the study. While extensive efforts are being utilized to maintain the confidentiality of participants in this research study, participants were notified prior to their participation that their confidentiality could not be fully guaranteed in all circumstances as others within the Joplin community, or otherwise connected to the 2011 event, may be able to determine their identity through the discussions and findings included in the finished study.

Data Collection

The purpose of this case study was to determine how economic recovery occurred following the 2011 Joplin tornado by determining the relationship between policy and economic recovery by looking at the lived experiences of individuals through the lens of that disaster. This section will describe the instrument development, participant selection and outreach, and data collection processes for the qualitative exploratory case study utilized for the study.

In utilizing a qualitative approach, with one-on-one interviews within the context of a case study, purposive selection of the participants was used. In qualitative research, “purposeful sampling is the most common sampling strategy, and in this type of sampling, participants are selected or sought after based on pre-selected criteria based on the research question” (Lavrakas, 2008, para. 2). In utilizing a case study of the 2011 Joplin, Missouri tornado in order to understand the lived experiences of governmental and business officials and their observations of policy on disaster economic recovery, purposeful sampling was needed to choose individuals that were directly affected by or involved in the disaster and recovery processes in Joplin.

While interviews are an effective way to gain insights into the perceptions of the participants, there are several advantages and disadvantages to utilizing interviews in qualitative research. The advantages of using interviews include a high-rate of return, fewer incomplete answers to questions, a control over the order in which questions are answered, and flexibility if
a semi-structured interview approach is taken; however, interviews are also time consuming, they only allow for a small-scale study that is likely not generalizable to a larger population, there is a lack of anonymous results, the potential for increased bias, and potential inconsistencies (Alshenqeeti, 2014, p.43).

The “prevailing concept for sample size in qualitative studies is saturation” (Malterud, Siersma, & Guassora, 2015, p. 1573), sample size in Joplin was determined by the number of government and business types that were directly involved in the disaster and recovery process in order to ensure that all possible viewpoints were covered and considered.

Participants. Participants ultimately included seven government officials, business officials, and business owners from Joplin, Missouri that were in their official positions during the 2011 Joplin tornado disaster and who continued in those positions through the post-disaster recovery period. Participants in this study included two individuals involved in government administration from the City of Joplin, two individuals responsible for the recovery of the public school system, one individual involved in the recovery from the perspective of higher education, one individual representing advocates for the business community, and one individual responsible for the recovery of a major healthcare organization.

Saturation and sample size. Saturation in qualitative research is the goal, and saturation occurs when adding more participants to a survey or study does not yield any additional perspectives or new information. When conducting case study research, Creswell suggests a sample size of 5 to 25 participants, dependent upon the case and research questions to be answered (Creswell, 2008). In this case study of the 2011 Joplin tornado, the seven participants met at least one expert’s threshold for the number of required participants in case study research. The emerging themes and findings from the semi-structured interviews began to reveal many
similar answers across the varying disciplines chosen for the study, leading to the assumption that saturation for this study occurred with the number of participants chosen and included.

**Participant selection.** Participants for this study included seven government, policy, and business officials that were in office, or owned/managed an organization, during the 2011 tornado and were actively involved in the recovery processes that followed. Participant outreach included current and former administrative staff for the City of Joplin, key leaders from business alliances, administrators from educational institutions and healthcare organizations, leaders of religious organizations, and owners/managers of private business entities. Multiple factors for inclusion were developed to determine if potential participants met the minimum knowledge about the 2011 disaster in order to be included in the study. At the minimum level for inclusion, participants must have been at least 18-years-old at the time of the disaster and must have been directly involved in business, policy, or governmental operations before and during the event, and must have been directly involved in the recovery processes following the event. Participants were not screened based on any protected class criterion, such as gender, ethnicity, race, socioeconomic status, nor were they selected or disqualified from participation for any unprotected criterion or classifications. Potential participants that were unable to give informed consent, not directly involved in the disaster or recovery processes, felt that they would suffer undue harm by participating or that may have had unreliable information, were excluded from participation in the study. Potential participants were sent full disclosures of the inclusion and exclusion criteria before determining if they wished to participate and move ahead in the research process.

Potential participants for the study were preliminarily identified by reviewing various websites associated with government and business in Joplin, online documents highlighting
individuals that were involved with the disaster, as well as suggestions about potential participants as the interviews progressed. Sources of information about potential participants included the City of Joplin website, Joplin Area Chamber of Commerce website, the Joplin Proud site that included biographical information about individuals that were involved in the recovery processes in Joplin, and various fact sheets that included information about the individuals, businesses, and organizations impacted by the 2011 disaster. After potential individuals were identified, Internet searches for publically available contact information, which included emails, phone numbers, and addresses, were conducted and compiled into an Excel spreadsheet for organizational and data management purposes.

**Participant outreach.** Once potential participants were identified through the above-mentioned selection processes, outreach was made in order to determine which individuals would be willing to take part in the interviews for this study. Potential participants were sent an initial email briefly outlining the purpose of the research study, their reason for selection, and requesting their participation. (See Appendix D). Participants were contacted according to the following criterion:

1. An initial email was sent to potential participants requesting an interview. Participants that agreed to be interviewed were giving further information, provided with inclusion and exclusion criteria, and informed consent information; this information was reviewed with the participant further at the time of the interview.

2. Participants that did not respond to the initial interview request were sent a second outreach email approximately one week after the initial outreach. Participants that agreed to be interviewed at this time were giving further information, provided with inclusion
and exclusion criteria, and informed consent information; this information was reviewed with the participant further at the time of the interview.

3. Participants that did not respond to the two initial outreach emails were sent a follow-up email approximately two weeks after the second outreach and if they failed to respond this outreach they were removed from the list of potential participants. Participants that agreed to be interviewed at this time were giving further information, provided with inclusion and exclusion criteria, and informed consent information; this information was reviewed with the participant further at the time of the interview.

4. If email outreach and recruitment of individuals resulted in too few participants for a viable case study, then recruitment through participants that did agree to be interviewed or in person recruitment would have been conducted. Recruiting through participants that did agree to be interviewed did result in additional participants.

Participants that agreed to be interviewed were given multiple options for dates and times in order to provide scheduling that aligned best with their availability. Scheduling and interviewing will be discussed more in the data collection portion of this section.

Data collection. Data for this research study of the relationship of law and policy to economic recovery in the context of the 2011 Joplin tornado was primarily in the form of one-on-one semi-structured interviews. (See Appendix C). Interviews were conducted utilizing Zoom video conferencing software with or without the video component, at the discretion of the interviewee, and recorded into MP3 files to be reviewed and analyzed. Handwritten notes were taken during the interviews to make note of significant points the participant made or about points that were deemed worthy of follow-up.
Documents were collected over the course of the case study from Internet searches and through participant contacts. Documents primarily consisted of information of disaster damages and economic/financial statistical information about the Joplin tornado found on various web sources, and documents that were sent voluntarily by the participants in the interviews.

Interview transcripts and documents related to the case study and individual participants were stored in files according to a pre-developed file naming protocol developed for this research. Files related to the semi-structured interviews were stored in electronic, password protected folders according to a naming protocol of “Transcript_Last Name” for interviewees that allowed for the disclosure of their name and “Transcript_Confidential” for those interviewees that did not allow for the disclosure of their name. However, while no participant wished to remain confidential, all possible efforts were made to ensure anonymity for the participants. Case files for related documents were stored in protected folders and were named using a similar protocol, organized by the last name of the individual or organization whose case files and documents were utilized in the study.

**Participant debriefing and follow-up.** Following the interviews and data collection from the participants, they were informed of the transcription and review processes going forward. Participants were allowed multiple opportunities to review transcript data before finalization and publication. Participants were not required to conduct any follow-up interviews; however, they were informed that they would be contacted if any aspect of their interview needed to be clarified or explained.

**Instrument development.** The questions for the semi-structured interviews were developed in collaboration with the principal investigator and second reader. Questions were developed with the core definitions of the economic recovery of disaster in mind, in conjunction
with the various levels of law, policy, and disaster recovery programs identified through the literature and law and policy reviews of the thesis process.

With the core goal of obtaining the lived experiences and personal perceptions of those that were responsible for the recovery following the 2011 Joplin tornado, the semi-structured interview questions were developed in order to get the richest descriptions of those experiences possible. Therefore, the survey questions were developed not only with questions related to their perceptions of how local, state, and federal policy related to the recovery of Joplin, but questions also allowed participants the opportunity to speak of their personal experiences with the disaster and post-disaster recovery, what they believed economic recovery from disaster to be, and if they personally believed that Joplin has recovered from the 2011 disaster.

Instrument development, participant recruitment and selection, and data collection for the case study of the 2011 Joplin tornado disaster were developed and implemented according to predefined IRB protocols. The following section discusses the analysis of the data collected from the semi-structured interviews utilized in this case study.

**Validity.** Validity is difficult to maintain in qualitative research; however, in qualitative studies, logic is utilized to ensure that research tools are valid and reliable if statistical analysis cannot be used to determine validity (Research Articles, 2017). According to Kerlinger, “the best definition of validity is the question of are we measuring what we think we are measuring,” and according to Babbie (1990) “validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration” (Research Articles, 2017, para. 3). In this case study of the 2011 Joplin tornado, the purpose was to determine the relationship between law and policy and disaster economic recovery through the lived experiences and personal viewpoints of the individuals involved in the disaster and the recovery.
The questions for the semi-structured interviews were developed in order to as accurately as possible capture the experiences of the participants in the disaster and recovery processes, the relationships of policy at the local, state, and federal levels to recovery, their beliefs about recovery and if it has occurred in Joplin, and open-ended questions for them to discuss any points of view they feel are relevant.

The concept of consideration for this case study was again the personal, lived experiences of individuals involved in the 2011 Joplin tornado and their perceptions of recovery from that event; validity can be assumed based on the nature of the study and the relationship of the questions to the concept under consideration.

**Data Analysis Plan**

The case study of the 2011 Joplin tornado disaster utilized semi-structured interviews for data collection. This methodology was chosen in order to better understand the relationship between law, policy, and economic recovery from disaster through the lenses of the lived experiences of policy, government, and businesses officials in Joplin, Missouri.

Data collection for this research was primarily in the form of one-on-one interviews via Zoom video conferencing software, either with or without video at the discretion of the interviewee and recorded for later transcription and analysis. Interviews were conducted with seven individuals that were directly involved in policy, governmental, or business positions before and during the 2011 Joplin tornado and were involved in the recovery processes for the community or an organization following the disaster; or in the case of a private business, have been put out of business by the disaster. Scripts for all communications, informed consent documents, and questions for the semi-structured interviews were included with the IRB application for approval prior to study implementation. Interview questions were asked in the
same format and order for each of the study participants and all questions were open-ended to ensure the comparability of responses, to ensure the completeness of data for each participant, and to lessen the effects of interviewer bias, as well as to better facilitate data organization and analysis. (Hancock & Algozzine, 2017).

Qualitative Data Analysis (QDA) is, “the range of processes and procedures whereby one moves from the qualitative data that have been collected and into some form of explanation, understanding, or interpretation of the people and situations we are investigating; QDA is usually based on an interpretative philosophy, and the idea is to examine the meaningful and symbolic content of the qualitative data collected” (Qualitative Data Analysis, 2012, para. 4).

As the interviews for this research were conducted, they were recorded, transcribed, cleaned, coded, and entered into Excel. As the data was coded and entered, a mode of interview analysis needed to be determined; as an analysis of interview data focuses on either an analysis of meaning or a focus on language (Brinkmann & Kvale, 2015). Primarily, for the purposes of this research study, the interview data was analyzed in order to identify salient themes, the reoccurring ideas or language, and belief patterns that linked the participants to the issues of law, policy, and disaster economic recovery (O’Connor & Gibson, 2003). The analysis involved looking for words and phrases that were used frequently in the participants’ answers, coding those words and phrases, and then analyzed for significance.

With the types and amounts of data collected for this case study, it was determined that analysis software would not be needed in order to find the relevant phrases and themes that emerged from the interviews and documents and were coded for analysis.

Discrepant, or negative cases, were not found during the data collection for this case study.
**Data cleaning.** Primarily, the two types of issues encountered in cleaning data obtained in qualitative research result from missing data and errors in the data. In order to protect against errors of this type in this research, interview recordings were electronically transcribed utilizing the online transcription service Temi. After transcription, participants were sent rough drafts of the complete transcriptions for the opportunity to review the transcripts for anomalies and incorrect information, which provided an opportunity to correct any issues before data analysis.

The handwritten notes collected during the interviews were searched for missing or incomplete information as well, and participants were asked about missing or incomplete answers to interview questions immediately following the interviews and again as they reviewed the transcripts. It was easier to correct for missing data and data errors immediately, or soon after the interviews, rather than allowing for a longer passage of time between data collection (interview) and initial review by participants (Salkind, 2010). Interviews from the individual respondents were transcribed immediately following the interview with that respondent and cleaned at that time, rather than waiting for the completion of all interviews.

**Data organization.** Interview data collected on the Zoom platform was immediately moved to a password-protected computer and backed up on a password protected USB storage device; both of which were secured in a locked fire-safe in my home office. Physical data, including handwritten notes from the interviews and transcripts of the interviews, were stored in the fire-safe as well. A robust and efficient File Naming Protocol was utilized in accordance with the data collection and management plan in order to effectively and efficiently organize the interview data. Data was stored in a master folder titled “JOSEPH RICHMOND THESIS,” which includes subfolders titled “semi-structured interviews” and “case files,” with file names for both electronic and physical information corresponding for the same participant. Files of
transcripts from semi-structured interviews are stored in the “Semi-Structured Interviews” subfolder and are titled “Transcript_Last Name” for those interviewees that allowed for the disclosure of their name. For confidential interviewees, the files of transcripts are titled “Transcript_Confidential.” If there is more than one confidential interviewee, an ordinal number will be used (Transcript_Confidential_1, Transcript_Confidential_2). Case Files are stored in the “Case Files” subfolder ordinarily, alphabetically by the last name of the individual whose case files are utilized: “Case File_1” (last name ending in A), “Case File_2” (last name ending in Ab), etc. Subject’s names are not used in Case File naming. All physical data is stored with the same name as the electronic file associated with that data (ex. “Case File_1” / “Transcript_Confidential_1”).

**Approach to analysis.** Content analysis in qualitative research is divided into one of three distinct approaches: conventional, directed, or summative. In conventional content analysis, “coding categories are derived directly from the text data, in a directed approach, analysis starts with a theory or relevant research findings as guidance for initial codes, and a summative content analysis involves counting and comparisons, usually of keywords or content, followed by the interpretation of the underlying context” (Hsieh & Shannon, 2005, para. 1). This research used a directed approach by utilizing the Theory of Reasoned Action as guidance and comparing keywords and themes identified in the interviews to that theory.

**Analysis.** Qualitative Data Analysis (QDA) is again, “the range of processes and procedures whereby one moves from the qualitative data that have been collected into some form of explanation, understanding or interpretation of the people and situations we are investigating, QDA is usually based on an interpretative philosophy, and the idea is to examine the meaningful and symbolic content of qualitative data” (Qualitative Data Analysis, 2012, para. 4).
After the interviews were conducted, transcribed, and the data cleaned, data was entered into Microsoft Excel. As the data was coded and entered, a mode of interview analysis was determined, either with a focus on the meaning of what was said in the interviews or a focus on the words, or language itself. An analysis of interview data focuses on either an analysis of meaning or a focus on language (Brinkmann & Kvale, 2015). Primarily the analysis of the interview data was to identify salient themes, recurring ideas or language, and patterns of belief that linked the interviewees to the issues of policy and disaster economic recovery (O’Connor & Gibson, 2003). The analysis involved looking for words and phrases that were used frequently in the participants’ answers, and then those words and phrases were coded, categorized, and analyzed for the most frequently occurring ideas.

**Steps in the data analysis process.** The steps and processes for the analysis of data for this case study included the following:

1. Interviews were conducted and recorded utilizing Zoom video conferencing software; with the utilization of handwritten notes to record aspects of the interviews that the audio would not capture.
2. The interview recordings were transcribed utilizing the online transcription service Temi.
3. Data was coded according to reoccurring words, phrases, and overarching themes.
4. Generalizations about the words, phrases, and themes were drawn, by clustering similar findings and themes together, about the issues in question and issues were interpreted with the help of available literature.

The findings of the qualitative case study of the 2011 Joplin tornado and how law and policy related to disaster economic recovery will be discussed in chapter 4.
Trustworthiness (Qualitative)

This section discusses the steps that were taken to maintain the trustworthiness of the study, the threats to validity that arose, and limitation and delimitations.

Ensuring that a research study is trustworthy, and the research and findings have validity is something that takes place throughout the entire research process. These were critical in this case study utilizing one-on-one interviews to gather data. Creswell states that “validity is one of the strengths of qualitative research” and defines “validity in qualitative research as being based on determining whether the findings are accurate from the standpoint of the researcher, the participants, or the readers of an account” (2018, p. 199). Ensuring validity in qualitative research is all the more critical as “qualitative research is based on subjective, interpretive and contextual data, making the findings are more likely to be scrutinized and questioned” (CIRT).

There are “multiple procedures that can be utilized to ensure validity and check the accuracy of the findings from a research study and these should be incorporated into the proposal and study” (2018, p. 200). Creswell and others point out that serious consideration should be given to the credibility of a study, or the “internal validity, transferability, or external validity, the dependability or reliability, and the confirmability” (Creswell & Creswell, 2018, p. 200).

Credibility, Triangulation, and Richness of the Data

In order to ensure the validity of the research in the context of the above factors, it was important to ensure that the participants in my interviews felt that the data being collected and the findings through the data are credible and accurate. Data and findings were verified by cross-checking the information gathered from multiple perspectives. If emerging themes, coming from “several sources of data or similar perspectives coming from multiple participants is found” (Creswell, 2009, p. 191), this is likely a sign that validity can be claimed for the study.
Several one-on-one interviews from officials in governmental, non-profit, and business positions were conducted for this case study and that provided multiple sources of data and perspectives. In this case, “data source triangulation involves the collection of data from different types of people, including individuals, groups, families, and communities, to gain multiple perspectives and validation of data” (Carter, 2014, p. 545).

**Transferability**

In qualitative research, “transferability does not involve broad claims but invites readers of research to make connections between elements of a study and their own experience” (Barnes et al., 2012, para. 3). In this research, by utilizing semi-structured, open-ended interview questions, participants were able to provide personal and in-depth accounts of their lived experiences with the 2011 Joplin tornado and its recovery, and this provides an opportunity for readers of this study to relate their own personal experiences to those of the participant in this study. In order to further this concept in this case study, a broad spectrum of participants from Joplin that were involved in the disaster and recovery were chosen, to include those representing government, non-profits, education, and private business. This was done in order to ensure as much external validity as possible in the context of this case study of the 2011 Joplin tornado and the lived experiences of its participants.

**Confirmability**

Qualitative research tends to assume that, “each researcher brings a unique perspective to the study; therefore, confirmability refers to the degree to which the results could be confirmed or corroborated by others” (Trochim, 2006, para. 7). In order to minimize the outside influence that could potentially alter the results of this case study, participants in the study were given the opportunity to review their individual transcript following the interview and were provided the
opportunity to review quotes and findings before publication. Data and themes throughout the study were compared to the literature and data collected in order to minimize research bias.

Bias

In this research, a framework had to be established in order to distinguish between a biased viewpoint and a viewpoint supported by carefully gathered evidence through the interviews; it was carefully documented how the data was gathered during the interviews to ensure that research can be judged as robust enough to support the findings discovered through the research process (Barnes, 2014).

While researcher bias has been discussed at some length in the context of this project, clarifying the bias that was brought to the study will “create a more open and honest narrative for the readers of the study and contribute to the overall validity of the study” (Creswell & Creswell, 2018, p. 200). In having previous practitioner experience in disaster management and recovery, considerable personal bias was brought into this research, primarily preconceived beliefs about how the processes should work and how policy should work to help the recovery process. In qualitative research, unlike quantitative, there was not an option to apply statistical methods for establishing reliability and validity of my findings. Therefore, in order to account for the personal biases that could potentially influence the findings (Noble & Smith, 2015), documents and notes are being kept about how the findings, and my interpretation of the findings, was shaped by my personal and professional backgrounds (Creswell & Creswell, 2018, p. 200).

The validity of the study was further ensured by presenting information, if present, that was not in line with the overall, dominant themes. By presenting evidence that is “contradictory to the dominant themes, the more realistic and valid findings become and discussing contrary information adds to the credibility of a study” (Creswell & Creswell, 2018, p. 201).
Peer Reviews and External Auditors

By utilizing a peer reviewer/peer review process and external auditors, the accuracy and validity of this study were further ensured. By bringing someone on board that would be familiar with the topic but not with the research or researcher, “an objective assessment of the project throughout the research process,” was gained (Creswell & Creswell, 2018, p. 201).

In utilizing a case study approach, reliability was ensured in this approach by documenting the procedures taken and keeping detailed enough records that future researchers can duplicate the research.

In order to ensure rigor in qualitative analysis, “it is essential for the researcher to ‘immerse’ themselves in data, to explore all the possible nuances and relationships, to view data from a variety of perspectives, and to move from micro to macro view, in order to support the analytic imagination necessary for understanding and theory generation” (Maher, Hadfield, Hutchings, & de Eyto, 2018, p. 12).

Ethical Procedures

This section discusses the ethical procedures undertaken in this study and how those ethical procedures align with protocols included through the IRB.

Risks (IRB Submitted)

There was potential that confidentiality could be compromised since the interviews were conducted remotely and the information was initially recorded electronically. To mitigate this risk, all typed and recorded data is maintained on a password protected USB drive and the seriousness of this risk, given the minimally identifiable information collected, and the likelihood of it occurring was minimal at best. There was potential for psychological harm to survivors of the disaster as they were made to relive the disaster; however, while a serious risk, the risk was
low as the interview was recovery and policy focused. Participants were warned of the dangers of psychological harm and they were allowed to opt out before being interviewed and at any time during the interview process. This was discussed during the informed consent process. This research was conducted as in-depth interviews in the context of a case study, the physical risk to participants was extremely low. Social risks for participants was extremely low; participant confidentiality and privacy were maintained in order to minimize social harms. However, in the case of Joplin, the potential does exist that those reading the final report of this research will be able to figure out the participants by the information they provided and the very context of the research; this is minimized to the extent possible by eliminating or coding as much identifying information as possible. Data was coded with numbers known to the researcher only in order to maintain the anonymity of the research participants and collected data is maintained on a password protected USB drive that only the researcher has access to. The data will be utilized through the end of the study and then will be destroyed at the end of the 3-year period following the study.

In order to minimize risk to participants, their written informed consent was obtained. If any of the above risks did cause harm to participants, additional necessary procedures would have been taken, in consultation with the principal investigator for this study, to correct such harms. No information was collected that could result in personal or identity theft to the participants and no vulnerable populations were included in the interviews or data collection. Informed consent was obtained in writing and in accordance with the methods stated in the IRB application for this research.
Codes and Policies for Ethics

Given the importance of ethics in research, many professional organizations, including those in emergency management, and universities have adopted codes, rules, and policies relating to research ethics and ethics in general (Resnik, 2015). Northeastern University has a code of ethical conduct in research that was followed, and both the International Association of Emergency Managers and Federal Emergency Management Agency have ethical codes that guide the profession that were incorporated into the research as well.

Ethical Decisions

In relating the case scenarios from Resnik to my research, I did not manufacture data in the situations where I was unable to get completed interview data from a particular participant; any participants that were unable to complete the interview were not included in the study. If errors were discovered at any point during the research process or with the results, corrections were made and concerned individuals were notified of the errors and the corrections.

No results of the research were fabricated and none of the data was fabricated or falsified; no part of the proposal, research, or thesis was plagiarized. Negative results or results that did support researcher preconceived bias are reported as true findings of the research; negative findings are not hidden because they are unpopular or disliked.

Summary

Evidence in the literature has shown that economic impacts from disaster are growing; therefore, the purpose of this qualitative exploratory case study was to determine how economic recovery occurred following the 2011 Joplin, Missouri, U.S. tornado, and the relationship between policy and recovery through the lived experience of selected government officials, local policymakers, and business/commerce officials. Through the purposive selection of seven
policy, government, and business officials that were directly involved in the recovery of the 2011 tornado an in-depth understanding of law and policy in relation to disaster economic recovery was determined through the lens of the Joplin event. A qualitative case study using semi-structured interviews allowed for richness in the data collection processes that would not have otherwise occurred with differing methodologies.

Interview data was collected utilizing the Zoom video conferencing software, transcribed using Temi transcription software, and analyzed using qualitative coding methods and analysis. Allowing participants to review collected data and transcripts at multiple intervals in the research process ensured validity of the data and research processes. Participant confidentiality was ensured to the extent possible by coding participants, interview transcripts, and data sets with numbers that are known only to the researcher, and information about the research participants and collected data is maintained on a password protected USB drive that only the researcher has access to.

The following chapter discusses the findings from this case study research and further explores the relationships of law and policy to economic disaster recovery in the context of the 2011 Joplin tornado disaster.
Chapter 4: Findings

Evidence in the literature shows that economic impacts from disaster are growing and they represented 60% of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007), including losses from events such as the 2011 Joplin tornado. More recent information regarding economic losses from global disasters shows that such losses continue to grow; in 2017, $306 billion in economic losses were incurred globally from natural and man-made disasters, which represented a 63 percent increase from 2016 and is higher than the previous ten-year average (McCarthy, 2017). The global economic impact in 2018 reached $160 billion; while less than 2017, it is still above the overall yearly loss average of $140 billion, and 2018 was the fourth costliest year on record since 1980 (Low, 2019). Given such impacts, there has been little discussion in the literature of how policy can be used to improve the economic recovery from disaster impacts (Ash, Cutter, & Emrich, 2013).

The purpose of this qualitative exploratory case study was to determine how economic recovery occurred following the 2011 Joplin, Missouri, U.S. tornado, and the relationship between policy and recovery through the lived experiences of selected government officials, local policymakers, and business/commerce officials and owners. The question the research attempted to answer was, what does the lived experience of government officials, local policymakers, and business/commerce officials and owners in Joplin, Missouri tell us about the relationship between local, state, and federal economic and disaster policy, and economic recovery following the 2011 Joplin, Missouri tornado?

Data from in-depth interviews was collected from seven participants associated with the disaster and recovery in Joplin through the use of video conferencing software. These participants also provided other documentation and data from their respective organizations that they believed might be helpful in answering the central research question of this study. After
interviews were conducted, transcribed, and reviewed for accuracy by the participants, they were
coded and analyzed to determine reoccurring themes from the participants about how law and
policy related to disaster recovery following the 2011 Joplin disaster.

This chapter provides an in-depth look at the participants, analysis, and findings of the case study of the 2011 Joplin tornado disaster and the recovery that followed.

The Data Collection

The data collection portion of this chapter discusses the location and context of the case utilized for the research, the sources of the data, participant demographics, as well as the data outreach process for the case study.

Case Study Location and Event

The location for the case study in this research was the City of Joplin, Missouri, USA, and participants for the research study were both current officials and residents of the city or were officials and residents at the time of the focal event. Joplin, Missouri is a city in southwest Missouri with a population of 50,175 as of the 2010 Census, and population of 240,000 during the day; the population within a 40-mile radius of Joplin is 400,000, which makes it Missouri’s fourth largest metropolitan area (Joplin, 2016).

The event that was the focus of this case study in Joplin was the EF-5 tornado that struck the city on May 22, 2011. This disaster event led to 161 fatalities and 1,000 injuries within the city of Joplin, damaged or destroyed 7,500 homes, and damaged or destroyed 531 businesses and other organizations (Joplin, 2016). This event was the most damaging tornado economically, with final damage and economic impacts of $2.8 billion, and the deadliest event on record since 1950 (Amadeo, 2019).
This research focused on both the economic and overall recovery from this disaster in Joplin and included participants from the public, private, for-profit, and non-profit sectors. Participants were required to have been directly involved in the disaster and recovery processes that followed the 2011 disaster, and documents from a variety of sources were reviewed that provided information about the disaster and the recovery.

**Data Collection Methods**

Data was collected for this case study through the utilization of semi-structured, in-depth, one-on-one interviews conducted through the use of Zoom Video Conferencing software.

Potential participants were sent an initial outreach email according to the required guidelines submitted to the Institutional Review Board. (See Appendix D). This initial outreach informed the potential participants of the purpose of the research, and if they agreed to participate, they were further sent inclusion information and a consent form requiring their signature.

Data was also obtained through document reviews by utilizing web and database searches.

**Chain of Evidence**

A principle to be followed in conducting a case study in order to increase and maintain the validity of the information in the case study is to maintain a chain of evidence (Yin, 2018). In order to reduce the chances that relevant data would be lost in the case study processes, or that bias would be allowed to influence the findings of the case study, a chain of evidence was followed and is represented by Figure 1 below.

Figure 1 shows that through the semi-structured interviews and document reviews of the Joplin tornado case study, that across the sectors that were included in the study, the public and
non-profit, governmental, and private business sectors, that the themes included in the analysis were found in the data from across the sectors and led to the findings listed being drawn from the data.

**Figure 1.** Chain of evidence.

**Data Sources**

The case study of the 2011 Joplin tornado disaster utilized two data sources: (a) semi-structured interviews and (b) document reviews. The number and nature of data items are
displayed below in Table 2 and Table 3, with information about the semi-structured interviews and participants listed first and information about the documents review process listed second. A total of seven semi-structured interviews were conducted with individuals that had a direct relationship and lived experience of the 2011 disaster; these produced audio files that were transcribed utilizing an electronic transcription service. A total of 13 documents were reviewed as part of the document review portion of the data collection. Data was obtained from web searches for governmental documents related to the disaster and recovery processes in Joplin, fact sheets about the disaster, news sources, and documents and reports from entities involved in the disaster and recovery.

Semi-Structured Interview Participant Outreach

Participant outreach for the semi-structured interviews was conducted between February and May 2019. Through the course of the outreach twenty-six individuals representing the government for the City of Joplin, public primary, secondary, and post-secondary educational institutions, healthcare institutions, private business, religious organizations, and the Joplin Area Chamber of Commerce were contacted.

All potential participants were sent an initial email providing the purpose of the study and requesting their participation, if participants responded and agreed to participate, communication followed in regard to inclusion/exclusion criteria, informed consent, and scheduling the interview. If no response from a potential participant was received, they were sent a follow-up request within a week of the initial outreach; if no response was received, a third request was sent; no contact after the third request resulted in removal from the list of potential participants.

The following table shows the full list of potential participants that were contacted and the outcome of the outreach.
Table 1

Potential Participants Contacted

<table>
<thead>
<tr>
<th>Entity</th>
<th>Position</th>
<th>Contact Date</th>
<th>Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Joplin</td>
<td>Administration</td>
<td>1/29/2019</td>
<td>Provided Lead</td>
</tr>
<tr>
<td>City of Joplin</td>
<td>Administration</td>
<td>1/29/2019</td>
<td>Yes</td>
</tr>
<tr>
<td>City of Joplin</td>
<td>Administration</td>
<td>1/29/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>MSSU</td>
<td>Administration</td>
<td>1/29/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>MSSU</td>
<td>Administration</td>
<td>1/29/2019</td>
<td>Yes</td>
</tr>
<tr>
<td>Joplin Public</td>
<td>Administration</td>
<td>1/29/2019</td>
<td>Yes</td>
</tr>
<tr>
<td>Schools</td>
<td>Administration</td>
<td>2/26/2019</td>
<td>Yes</td>
</tr>
<tr>
<td>City of Joplin</td>
<td>Administration</td>
<td>2/26/2019</td>
<td>Provided Lead</td>
</tr>
<tr>
<td>City of Joplin</td>
<td>Faculty</td>
<td>2/26/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>MSSU</td>
<td>Administration</td>
<td>2/26/2019</td>
<td>Provided Lead</td>
</tr>
<tr>
<td>Chamber of Comm.</td>
<td>Administration</td>
<td>2/26/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Chamber of Comm.</td>
<td>Senior Leadership</td>
<td>2/26/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Church</td>
<td>Senior Leadership</td>
<td>2/26/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Church</td>
<td>Administration</td>
<td>2/28/2019</td>
<td>Yes</td>
</tr>
<tr>
<td>Chamber of Comm.</td>
<td>Administration</td>
<td>4/2/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>EMA</td>
<td>Administration</td>
<td>4/3/2019</td>
<td>Yes</td>
</tr>
<tr>
<td>Joplin Public</td>
<td>Administration</td>
<td>4/13/2019</td>
<td>Yes</td>
</tr>
<tr>
<td>Schools</td>
<td>Administration</td>
<td>4/13/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Mercy Hospital</td>
<td>Senior Leadership</td>
<td>4/13/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Mercy Hospital</td>
<td>Senior Leadership</td>
<td>4/13/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Church</td>
<td>Senior Leadership</td>
<td>4/13/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Church</td>
<td>Senior Leadership</td>
<td>4/13/2019</td>
<td>No Reply</td>
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<tr>
<td>Church</td>
<td>Owner</td>
<td>4/13/2019</td>
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<tr>
<td>Church</td>
<td>Owner</td>
<td>4/13/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Private Business</td>
<td>Owner</td>
<td>4/13/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Private Business</td>
<td>Owner</td>
<td>4/13/2019</td>
<td>No Reply</td>
</tr>
<tr>
<td>Private Business</td>
<td>Owner</td>
<td>4/13/2019</td>
<td>No Reply</td>
</tr>
</tbody>
</table>

The participants in the table below ultimately agreed to participate in the research.
Participants

Participants for this case study were individuals that were directly involved in business, government, or other organizational operations at the time of the 2011 tornado and were in some way involved with the recovery process that followed. Participants were ensured to be 18+ years old at the time of the event and involved directly in the disaster and recovery but no demographical information was needed or collected. Participants signed and returned an informed consent form prior to their participation. There were seven participants included in the semi-structured interview portion of the study and the following table provides participant characteristics.

Table 3
Participant Characteristics

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Years of Experience</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews (7)</td>
<td>Not Specified (3) 0-5 years (1) 5-10 years (1) 10+ years (2)</td>
<td>Administrative (7)</td>
</tr>
</tbody>
</table>
The following is a more comprehensive discussion of the participants’ association with the event, their organizational information, and their respective roles related to the event and recovery processes.

**Participant 1.** The first participant was an administrator at an institution of higher education in Joplin, Missouri that was involved in the post-disaster recovery efforts. This participant worked with government relations following the event and as a representative of the organization to keep communications flowing between the institution and governmental actors, including emergency management. The institution this participant was associated with played a critical role as a shelter site following the 2011 disaster.

**Participant 2.** The second participant was a government official with the City of Joplin. This participant worked to interface with the many actors and agencies that were involved in the response and recovery of Joplin following the 2011 disaster. This individual also worked with the recovery funds provided by local, state, and federal agencies to ensure they were handled and utilized in accordance with existing policies and established procedures.

**Participant 3.** The third participant was an administrator with the Joplin School District. With the damages that occurred to the district in the 2011 disaster, this individual assisted in the recovery of the school district, ensuring that educational services would resume at the beginning of the next school year and that facilities could be rebuilt in the long-term.

**Participant 4.** The fourth participant was a government official with the City of Joplin. This participant worked with both the financial aspects of the recovery process for the City and worked to assist in the coordinating of the volunteer efforts following the 2011 disaster.

**Participant 5.** The fifth participant was an official with the Joplin Area Chamber of Commerce. This individual worked to coordinate and provide services to the business
community that was impacted by the 2011 disaster; specifically, the more than 500 businesses that were immediately impacted by the tornado.

**Participant 6.** The sixth participant was an administrator with the Joplin School District. With the damages that occurred to the district in the 2011 disaster, this individual assisted in the recovery of the school district, ensuring that educational services would resume at the beginning of the next school year and that facilities could be rebuilt in the long-term.

**Participant 7.** This participant was an administrator at Mercy Hospital, which had to be entirely rebuilt in the recovery effort.

**Other Types of Data**

Throughout the course of the semi-structured interview processes, many participants volunteered to provide documentation from their organization related to their organization’s role in the 2011 disaster. Other documentation was also discovered through the literature review portion of this research about the relationship of law and policy to recovery from the 2011 disaster. This documentation was reviewed for relevance to the study and relevant information was analyzed along with the interview data. The table below provides a breakdown of the documentation reviewed and its type.

Table 4

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Number of Items</th>
<th>Types of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Reviews</td>
<td>13</td>
<td>Government Documents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>After Action Reports</td>
</tr>
<tr>
<td></td>
<td></td>
<td>News Articles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Websites</td>
</tr>
</tbody>
</table>

**Document review.** In addition to the data collected from the seven semi-structured interviews with individuals that experienced the disaster and recovery processes in Joplin, data
analysis involved also involved the analysis of various documents that were both found by the researcher and provided by the interview participants. The documents reviewed included a review of the Joplin, Missouri website containing information about the disaster, news articles, fact sheets dealing with the recovery and economics of the disaster, lessons learned documentation, and governmental and non-profit reports about the event and recovery. These documents were reviewed, coded, and combined with the interview data to support the overall themes that emerged from the following data analysis processes.

**Data Analysis**

This research of the 2011 Joplin tornado utilized a qualitative methodology with semi-structured, one-on-one interviews, and document reviews. This methodology and the data collected from the interviews and documents were used to better understand the relationship between law and policy and the economic recovery from disaster through the lived experiences of the participants in this research.

**Overview of Qualitative Data Analysis**

Qualitative Data Analysis (QDA) is, “the range of processes and procedures where by one moves from the qualitative data that have been collected and into some form of explanation, understanding, or interpretation of the people and situations we are investigating; QDA is usually based on an interpretative philosophy, and the idea is to examine the meaningful and symbolic content of the qualitative data collected” (Qualitative Data Analysis, 2012, para. 4).

As the interviews for this research were conducted, they were recorded, transcribed, cleaned, coded, and entered into Excel. As the data was coded and entered, a mode of interview analysis needed to be determined; as an analysis of interview data focuses on either an analysis of meaning or a focus on language (Brinkmann & Kvale, 2015). Primarily, for the purposes of
this research study, the interview data was analyzed in order to identify salient themes, the reoccurring ideas or language, and belief patterns that linked the participants to the issues of law, policy, and disaster economic recovery (O’Connor & Gibson, 2003). The analysis involved looking for words and phrases that were used frequently in the participants’ answers, coding those words and phrases, and then analyzed for significance.

**Collection and Analysis Approach**

Content analysis in qualitative research is divided into one of three distinct approaches: conventional, directed, or summative. In conventional content analysis, “coded categories are derived directly from the text data, in a directed approach, analysis starts with a theory or relevant research findings as guidance for initial codes, and a summative content analysis involves counting and comparisons, usually of keywords or content, followed by the interpretation of the underlying context” (Hsieh & Shannon, 2005, para. 1). This research used a blended approach to analysis but primarily focused on a directed approach utilizing the Theory of Reasoned Action as guidance and then comparing keywords and themes identified in the interviews to that theory. Under this theory, the beliefs of the individual participants were as important to recovery as the tangible aspects of the law and policy as related to the recovery of Joplin.

**Conceptual Framework**

Initially a conceptual framework was developed, which is a framework specifying “who and what will and will not be studied in a research project” (Miles, Huberman, & Saldana, 2014, p. 21) The conceptual framework for the data analysis of the Joplin case study was constructed from the literature review and the established semi-structured interview questions. It is represented below by Figure 2. The associated figure was designed to represent the hierarchal...
nature of government and the tiered design of disaster response and recovery. As noted in Miles, Huberman, and Saldana, “there is a general clustering of whos and whats by level, state, district, and local, and an implied hierarchy of authority and distribution of power from top to bottom” (2014, p. 21). The overall goal is economic recovery from disaster, and while all disasters are local, they begin locally and they end locally, it takes a multidimensional response to make recovery a reality. Recovery is driven by multiple programs and policies at the local, state, and federal levels of government but is also impacted by various factors outside of government, such as private and personal inputs and programs. Politics and rule changes sometimes influence recovery and determine if the policies and programs at the various levels worked as intended. The entire framework is tied to the Theory of Reasoned Action, which was the theoretical framework for this study. While policies and programs are focused on the tangible aspects of disaster recovery, individuals lived experience and perceptions of whether or not recovery occurred are often as important as the tangible aspects of recovery.
Figure 2. Conceptual framework for data analysis

Data Analysis Process

The following is a discussion of the data collection, transcription, cleaning, condensation, and coding undertaken within the interview data prior to a detailed discussion of the findings.

Data collection. The following provides details on how the data was collected from each of the participants in the study; this includes the who, what, when, where, and how of the data collection from each participant.
Participants 1. Participant 1 was an administrator in higher education with an institution that was directly involved in the recovery processes, namely sheltering survivors, following the 2011 disaster. The interview with this participant was conducted on February 5, 2019, with only the audio portion of the Zoom software. The interview was 47:44 in length and was transcribed utilizing Temi, an online advanced speech recognition software, on February 23, 2019. This participant did review and provide feedback about the interview transcription and did not provide documentation other than the interview.

Participants 2. Participant 2 was in administration with the City of Joplin and was directly involved in the recovery processes for the city, including the financial aspects of the recovery as well as working with the various levels of actors. The interview with this participant was conducted on February 13, 2019, with only the audio portion of the Zoom software. The interview was 55:57 in length and was transcribed utilizing Temi, an online advanced speech recognition software, on February 23, 2019. This participant did review and provide feedback about the interview transcription and did not provide documentation other than the interview.

Participants 3. Participant 3 was in administration with the City of Joplin School District and was directly involved in the recovery processes for the district, including ensuring that school operations continued. The interview with this participant was conducted on February 13, 2019, with the audio and video portion of the Zoom software. The interview was 34:29 in length and was transcribed utilizing Temi, an online advanced speech recognition software, on February 23, 2019. This participant did review and provide feedback about the interview transcription and did not provide documentation other than the interview.

Participants 4. Participant 4 was in administration with the City of Joplin and was directly involved in the recovery processes for the city, including financial operations and the
management of volunteer resources. The interview with this participant was conducted on March 6, 2019, with the audio and video portion of the Zoom software. The interview was 42:11 in length and was transcribed utilizing Temi, an online advanced speech recognition software, on March 10, 2019. This participant was unable to review and provide feedback about the interview transcription and did not provide documentation other than the interview.

**Participant 5.** Participant 5 was in administration with the Joplin Area Chamber of Commerce and was involved in the recovery of the business community following the disaster. The interview with this participant was conducted on March 7, 2019, with the audio only portion of the Zoom software. The interview was 59:55 in length and was transcribed utilizing Temi, an online advanced speech recognition software, on March 10, 2019. This participant was unable to review and provide feedback about the interview transcription in the timeframe provided for this study but did provide additional documentation.

**Participant 6.** Participant 6 was in administration with the City of Joplin School District and was directly involved in the recovery processes for the district, including ensuring that school operations continued. The interview with this participant was conducted on April 9, 2019, with the audio and video portion of the Zoom software. The interview was 55:05 in length and was transcribed utilizing Temi, an online advanced speech recognition software, on April 9, 2019. This participant was provided an opportunity to review and provide feedback about the interview transcription and did not provide documentation other than the interview.

**Participant 7.** Participant 7 was in administration for the Mercy Hospital-Joplin and had responsibility for the rebuilding and recovery of that facility. The interview with this participant was conducted on April 29, 2019, with the audio and video portion of the Zoom software. The interview was 33:46 in length and was transcribed utilizing Temi, an online advanced speech
recognition software, on May 2, 2019. This participant was provided an opportunity to review and provide feedback about the interview transcription and did not provide documentation other than the interview.

**Data Transcription**

The audio portion of the interview recordings was transcribed following the individual interviews using Temi, an online transcription service. After the initial transcription, the interview transcripts were reviewed for high-level errors in transcription and then sent to the respective participants for review and cleaning.

**Data Cleaning**

The two types of issues encountered in data collection often result from missing data and errors in the data. After the interview data was collected from the individual participants in this research is was transcribed utilizing Temi, an online transcription service, and the raw transcripts were sent back to the participants. This provided the participants with the opportunity to review the transcribed data for anomalies and incorrect information and correct such issues before coding and analysis.

Participants were asked about missing items/answers to questions immediately following their interview and again after they returned the reviewed transcripts. It was easier to fill in missing data and correct errors immediately after the data was collected, or soon after the interviews, rather than allowing a longer passage of time (Salkind, 2010). The best time to clean the data was while the study was underway (Salkind, 2010); interviews from a particular respondent were transcribed immediately following their interview and then cleaned immediately after transcription, rather than waiting until after the completion of all interviews.
Data Condensation

Data for the next portion of the analysis, data was coded and then condensed. Data sources, the semi-structured interviews and documents, were coded individually utilizing the conceptual framework as a guide. After each of the relevant sections of data were coded by hand, meaningfully chunks of data that go together were pulled together and assembled in Excel to see what the reoccurring themes were.

Coding

The individual transcripts were initially pre-coded, which involved highlighting significant quotes from participants that were viewed as “codable moments” worthy of future attention (Saldana, 2016). Following the pre-coding, preliminary codes were developed from the emerging themes, and those were then narrowed to final codes and passages to be included as themes and findings.

Themes Identified in the Data

Consistent with the analysis processes utilized for qualitative data analysis, themes were developed by reviewing and categorizing semi-structured interview and document review data. Themes were developed by organizing data in an Excel Spreadsheet, after highlighting data within the interviews and documents, then looking for categories and descriptive codes that occurred most frequently across the data sets. Themes were generated for: (a) the prevention of population loss, (b) collaboration for recovery, (c) disparities in policy, and (d) policy adaptability and flexibility. The superordinate and subordinate themes that emerged from the data will be discussed below; both organized into tables and expanded upon with narrative descriptions.
Prevention of Population Loss

Many of the participants in the semi-structured interviews felt that preventing population loss was a key element in ensuring that Joplin recovered following the 2011 disaster. City officials researched previous disasters, including Hurricane Katrina and the Greensburg, Kansas tornado, and found that those communities lost anywhere from 45 percent to 90 percent of their populations respectively following the natural disasters that occurred in those areas. With the realization that Joplin was hovering around the 50,000 mark in population, officials knew that losing those levels of percentages would not be conducive to long-term recovery.

The first superordinate theme that emerged from the data was the belief that policies, programs, and actions taken post-disaster should ensure that a community’s population does not decline and inhibit the community’s ability to recover long-term. The four subordinate themes that emerged from the data and were established in regard to the superordinate them of the prevention of population loss are shown in the following table.

Table 5

<table>
<thead>
<tr>
<th>Subordinate Theme 1</th>
<th>Ensure there is housing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subordinate Theme 2</td>
<td>Ensure people have financial resources.</td>
</tr>
<tr>
<td>Subordinate Theme 3</td>
<td>Maintain the tax base.</td>
</tr>
<tr>
<td>Subordinate Theme 4</td>
<td>Expedited recovery.</td>
</tr>
</tbody>
</table>

First, many participants in the case study, across disciplines, believed that a key to ensuring that Joplin would recover from the tornado was the prevention of population losses that occurred in both similar and other types of previous disasters, and a key to this was ensuring there would be housing to supplement what was lost in the disaster. For example, entities
involved in the recovery were committed to helping those affected by the disaster find housing and were committed to getting FEMA to step outside the traditional timeframes that were established for bringing in temporary housing and expediting that process. The table below provides relevant quotes from the data that supports the subordinate theme of ensuring there is housing following a disaster.

Table 6

*Subordinate Theme of Ensuring there is Housing*

```
“Tried to keep the people located nearby.”

“Have people built their houses back?”

“Urgency of placing FEMA trailers.”

“(FEMA) if we hustle, we can have these trailers in here by first frost” “that’s unacceptable, I’m going to lose people and never get them back if that happens.”

“We’ll help you find housing so that you can stay.”
```

Second, the primary goal of keeping people located in Joplin was supplanted by ensuring that people not only had housing in order to stay but that they would have the financial resources to stay as well. This was supported by the belief that many, if not almost all, businesses in Joplin committed to keeping employees on the payroll regardless of the status of the business, including Mercy keeping their entire staff on the payroll throughout the recovery process. The table below provides relevant quotes from the data that supports the subordinate theme of ensuring people have financial resources following a disaster.
Table 7

*Subordinate Theme of Ensuring People have Financial Resources*

<table>
<thead>
<tr>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Businesses guaranteeing pay for their employees kept people nearby, they didn’t have the financial urgency to have to move to another town to start work to feed their families.”</td>
</tr>
<tr>
<td>“Reassured the community that we were going to rebuild the hospital, and that we would also keep every coworker, physician and every other coworker on the payroll at their full salaries.”</td>
</tr>
<tr>
<td>“A lot of employers stepped up and agreed to continue to pay wages or benefits or some combination…”</td>
</tr>
</tbody>
</table>

Third, keeping people located in Joplin was felt to be essential to maintaining the community’s tax base, which was essential to the recovery of the community. This was supported by the desire to keep as much spending in Joplin as possible during the recovery phase. The table below provides relevant quotes from the data that supports the subordinate theme of ensuring that a community’s tax base is maintained following a disaster.

Table 8

*Subordinate Theme of Maintaining the Tax Base*

<table>
<thead>
<tr>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>“We made sure that we didn't lose any of our residents because they’re our tax base, we’re a sales tax driven community, probably 80 percent of our budget comes from sales taxes; so, if we were going to see a mass exodus of residents, that was going to severely hamper our ability to recover.”</td>
</tr>
<tr>
<td>“Donate to a local charity that’s helping them, because that’s going to help your tax base.”</td>
</tr>
<tr>
<td>“The goal that we set in terms of minimizing population [loss]…definitely guided policy decisions.”</td>
</tr>
<tr>
<td>“Everything that I did, and things that happened organically separate from that, were geared around that particular goal of minimizing population loss”</td>
</tr>
</tbody>
</table>
Finally, the overall goal was an expedited recovery, with the belief that an expedited recovery would keep people located in the community. The table below provides relevant quotes from the data that supports the subordinate theme of ensuring there is expedited recovery following a disaster.

Table 9

*Subordinate Theme of Expedited Recovery*

<table>
<thead>
<tr>
<th>Subordinate Theme of Expedited Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>“[Council] made a policy decision that they wanted to get back to normal as soon as possible.”</td>
</tr>
</tbody>
</table>

**Collaboration for Recovery**

The second superordinate theme that emerged from the data was the belief that collaboration among stakeholders contributes to an expedited recovery. The six subordinate themes that emerged from the data and were established in regard to the superordinate theme of the collaboration for recovery are shown in the following table.

Table 10

*Theme of Collaboration for Recovery*

<table>
<thead>
<tr>
<th>Subordinate Theme 1</th>
<th>MOU’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subordinate Theme 2</td>
<td>Public/private partnerships</td>
</tr>
<tr>
<td>Subordinate Theme 3</td>
<td>Public/private funding</td>
</tr>
<tr>
<td>Subordinate Theme 4</td>
<td>Relationships</td>
</tr>
<tr>
<td>Subordinate Theme 5</td>
<td>Research of previous disasters and lessons learned</td>
</tr>
<tr>
<td>Subordinate Theme 6</td>
<td>Strong local leadership</td>
</tr>
</tbody>
</table>

First, several participants in the case study, across disciplines, mentioned that memorandums of understanding and mutual aid agreements were pieces of the response and
recovery puzzle following the Joplin disaster; and policy alterations were made in order to ensure that aid was available for the response and recovery processes. For example, entities mentioned MOU’s and agreements for sheltering after the disaster as well as the need for agreements to move human resources across state lines following an event, including those for medical, law enforcement, and public works projects. The table below provides relevant quotes from the data that supports the subordinate theme of MOU’s.

Table 11

Subordinate Theme of MOU’s

“Signed a memorandum with the Red Cross that we would serve as a shelter site.”

“[The state] changed some of the rule and regulations that make it easier for medical personnel to move from, across state jurisdictional boundaries in these kinds of situations.”

Second, partnerships between the public and private sectors were key to ensuring that certain entities were able to continue their mission and recover following the disaster. This theme was especially noteworthy in the education arena, where partnerships allowed the continuation of school functions while the district recovered. The table below provides relevant quotes from the data that supports the subordinate theme of public/private partnerships.

Table 12

Subordinate Theme of Public/Private Partnerships

“We ended up with a school in the Joplin mall, we ended up with a 90,000-square foot box store to have the 11th and 12th grade campus.”

“We negotiated with [a] company to let that building go and let the school rent the building, I believe to house the middle school.”
Third, not only did public and private partnerships emerge as critical, funding from both public and private sources were required to recover. While governmental and nonprofit programs and funding streams are critical for recovery, private capital and insurance policies are critical pieces of the economic recovery puzzle for many entities. The table below provides relevant quotes from the data that supports the subordinate theme of public/private funding.

Table 13

Subordinate Theme of Public/Private Funding

“We had good insurance, but we worked very closely with FEMA and those folks as we put things together.”

“We are fortunate to be part of Mercy, so we had some access to capital…or would have had to wait to see what FEMA was going to do or personal insurance might do.”

“Business interruption [insurance] was huge.”

Fourth, the terms collaboration and relationship emerged across the spectrum of participants. Relationships and knowing who to contact and where to go both prior to the disaster, during the response and during the recovery were essential in contributing to the recovery that Joplin experienced after the disaster. The table below provides relevant quotes from the data that supports the subordinate theme of relationships.
Fifth, utilizing lessons learned from previous disasters and actively researching the recovery processes from previous disasters were a key component of recovery in the context of Joplin. In utilizing lessons learned and researching previous events, community leaders across the board in Joplin were able to utilize best practices in their recovery and take what worked and what did not work in previous events and apply it to their current situations. The table below provides relevant quotes from the data that supports the subordinate theme of research of previous disasters and lessons learned.

### Table 14

**Subordinate Theme of Relationships**

<table>
<thead>
<tr>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Planning with the city and county…what are the next steps?”</td>
</tr>
<tr>
<td>“We hired [a private consultant] to make sure we got through the FEMA paperwork correctly.”</td>
</tr>
<tr>
<td>“A group out of one of the universities in Texas…flew up on their own dime and jumped in and helped us navigate some of those pieces.”</td>
</tr>
<tr>
<td>“One thing that enhanced our ability to recover was our ability to use community development block grants for our new early childhood center [collaboration between the school district and the city].”</td>
</tr>
<tr>
<td>“Relationships were key in enabling to help with the expedited recovery that we saw.”</td>
</tr>
</tbody>
</table>
Table 15

Subordinate Theme of Research of Previous Disasters and Lessons Learned

<table>
<thead>
<tr>
<th>Quote</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Four or five other people had been through this with other communities that we ended up using as consultants.”</td>
<td></td>
</tr>
<tr>
<td>“HUD officials...were planting a seed to some of the incredible amounts of money that other disasters...received...and that served as the basis for the request that I made of the federal government for assistance.”</td>
<td></td>
</tr>
<tr>
<td>“Research on how other cities handled their disasters...some of the mistakes and missteps that maybe they made that we could avoid...”</td>
<td></td>
</tr>
</tbody>
</table>

Finally, strong local leadership emerged as a final theme for the collaboration of recovery. There is a misconception that “other” will do all of the work during the recovery processes from a disaster and that is not the case; it is a partnership that is built on strong foundations at each of levels in the process. The table below provides relevant quotes from the data that supports the subordinate theme of strong local leadership.

Table 16

Subordinate Theme of Strong Local Leadership

<table>
<thead>
<tr>
<th>Quote</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>“The number three guy [from FEMA] came into see me and said, we’re only as good as what we find when we get on the scene.”</td>
<td></td>
</tr>
<tr>
<td>“[FEMA] we can’t supplant local leadership, which is what some people expect, but we can build on what’s there.”</td>
<td></td>
</tr>
<tr>
<td>“FEMA’s efforts were so successful because there was sound leadership in place...as opposed to the expectation that they would do the work.”</td>
<td></td>
</tr>
</tbody>
</table>

Disparities in Policy

The third superordinate theme that emerged from the data was the idea that while overarching changes do not need to be made to policy at any level, there are disparities in policies, as they exist. Participants were not willing to suggest that strong changes were needed
when asked but they were willing to broadly and generally mention that issues are present in the current systems. The six subordinate themes that emerged from the data and were established in regard to the superordinate theme of the disparities in policy are shown in the following table.

Table 17

*Disparities in Policy*

<table>
<thead>
<tr>
<th>Subordinate Theme 1</th>
<th>Inequality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subordinate Theme 2</td>
<td>Unclear</td>
</tr>
<tr>
<td>Subordinate Theme 3</td>
<td>Red tape and regimented</td>
</tr>
<tr>
<td>Subordinate Theme 4</td>
<td>Cumbersome/Burdensome</td>
</tr>
<tr>
<td>Subordinate Theme 5</td>
<td>Lack of human support.</td>
</tr>
<tr>
<td>Subordinate Theme 6</td>
<td>Lack of training/planning for ALL stakeholders</td>
</tr>
</tbody>
</table>

First, several of the participants believed that there was inequality in some of the policies, programs, and decisions that were made in the recovery of Joplin following the disaster. Issues with Tax Increment Financing (TIF) zones led to some funding that would have been useful for entities recovering and shifted it to others in the short-term; while recovery occurred, not all policies and programs supported that recovery at the same rate. Private businesses also felt the inequality in recovery programs as they were only eligible for low-interest loans, and not grants, that may have filled recover gaps between what private insurance paid and what they fully needed to recover. The table below provides relevant quotes from the data that supports the subordinate theme of inequality.
Table 18

Subordinate Theme of Inequality

“The real estate tax forgiveness was put into place to help reinvigorate the economy, so the school district was not getting the tax revenue in those areas that it would have received in the past.”

“The one chief complaint of businesses was there wasn’t a fund for them to tap into without taking out SBA loans.”

Second, for a variety of reasons, policies, particularly at the state and federal level, were not always clear beforehand and, while recovery occurred, may have been impeded somewhat due to these issues. The lack of understanding of how resource requests work and the lack of knowledge of what resources are available, particularly through the federal government, are felt to be an issue and impediment to the recovery processes in Joplin. FEMA’s arbitrary rule changes and the cycling of people frequently through the recovery process was an issue following the event as well. The table below provides relevant quotes from the data that supports the subordinate theme of unclear.

Table 19

Subordinate Theme of Unclear

“There wasn’t a protocol…wish the city wouldn’t have brought in all these extra resources, without running it through the state emergency agency.”

“FEMA needs a booklet, menu; here’s what FEMA can do, not what will do but can do, we need that because we don’t know any better and we don’t have time.”

“They [FEMA] cycle through the people pretty quickly.”

“It was really difficult to work with FEMA you know; rules change pretty frequently.”

“Relationships were key in enabling to help with the expedited recovery that we saw.”
Third, the regimented nature of governmental processes, particularly at the federal level, was an issue with the recovery. While Joplin officials felt that the federal government was able to cut through some of the red tape for them, they felt that the impediments were in place unnecessarily so in the first place. The table below provides relevant quotes from the data that supports the subordinate theme of red tape and regimented.

Table 20

*Subordinate Theme of Red Tape and Regimented*

<table>
<thead>
<tr>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>“FEMA is very regimented.”</td>
</tr>
<tr>
<td>“You got to cut through the red tape sometimes in emergency situations.”</td>
</tr>
</tbody>
</table>

Fourth, almost across all of the officials, the sentiment was that recovery paperwork, particularly at the federal level and through FEMA, was unnecessarily burdensome and cumbersome. Some participants felt that the paperwork burden was a strain already thin human resources during the recovery, some were waiting on reimbursements from previous disasters, and some felt that the projects needed to be tailored to the programs, rather than the recovery programs supporting the recovery. The table below provides relevant quotes from the data that supports the subordinate theme of cumbersome and burdensome.
Table 21

*Subordinate Theme of Cumbersome and Burdensome*

“The paperwork is pretty intense…our school system struggled with some of the FEMA paperwork and some of the requirements.”

“It was sometimes a little slower than you’d like…the FEMA reimbursements took a couple of years to kind of come in.”

“Using some of the FEMA dollars for infrastructure commingled with HUD dollars gets a little bit tricky.”

“So, having to fit your projects and your plans within those grant dollars could be tricky and cumbersome.”

Fifth, it was mentioned by several participants, in multiple ways, that there is a lack of emotional support and support for people in general during recovery. Recovery involves and requires people, and some did not feel that people were adequately supported after the disaster.

The table below provides relevant quotes from the data that supports the subordinate theme of the lack of human support.

Table 22

*Subordinate Theme of Lack of Human Support*

“You can’t talk about recovery if you’re not taking care of people because it’s people that make the recovery happen.”

“Emotional scars are still there and pretty deep.”

“You have to sublimate your feelings.”

Finally, there was a sentiment that there was a lack of training and planning for events of this scale for all stakeholders that are involved. Several participants felt there was a lack of planning for the event and did not fully understand what their roles would be in the recovery of the disaster. The table below provides the subthemes that emerged regarding collaboration and
text examples from the data that support themes around collaboration following a disaster and the recovery from a disaster. The table below provides relevant quotes from the data that supports the subordinate theme of the lack of training/planning for all stakeholders.

Table 23

*Subordinate Theme of Lack of Training/Planning for ALL Stakeholders*

<table>
<thead>
<tr>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>“We never obviously been through any training, no exercises, so we were hitting the ground running with no idea of what was coming our way.”</td>
</tr>
</tbody>
</table>

**Policy Adaptability and Flexibility**

The final superordinate theme that emerged from the data was the belief that policies need to be adaptable and flexible to meet the needs that are encountered. The three subordinate themes that emerged from the data and were established in regard to the superordinate theme of policy adaptability and flexibility are shown in the following table.

Table 24

*Theme of Policy Adaptability and Flexibility*

<table>
<thead>
<tr>
<th>Subordinate Theme 1</th>
<th>Ability to waive regulations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subordinate Theme 2</td>
<td>Flexibility is better than specific policy measures.</td>
</tr>
<tr>
<td>Subordinate Theme 3</td>
<td>Disasters are unique circumstances.</td>
</tr>
</tbody>
</table>

First, the ability to waive specific regulations in the post-disaster environment seemed to be key to skirting regulations and policies that would have delayed or significantly slowed the recovery processes. The ability to waive regulations, particularly those related to procurement guidelines seemed to be critical in allowing Joplin the ability to recovery; however, at least one participant found that while local and state levels are likely to waive procurement guidelines, the federal government is not as flexible and special requests were required. The table below
provides relevant quotes from the data that supports the subordinate theme of the ability to waive regulations.

Table 25

*Subordinate Theme of Ability to Waive Regulations*

<table>
<thead>
<tr>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>“The state of Missouri relaxed some things for us when it comes to…in terms of procurement and everything like that early on to get us back going.”</td>
</tr>
<tr>
<td>“Our charter gave us the authority to sort of bypass our normal purchasing policies and procedures.”</td>
</tr>
<tr>
<td>“We are a chamber membership organization, immediately a decision was made that we don’t care if you are a member or not, we’re going to serve you as a business just the same.”</td>
</tr>
</tbody>
</table>

Second, and in line with the first theme, the ability for policies to be flexible was thought to be more important than specific policy measures that drive the recovery process. Having general policies or the ability for policies and programs to conform to the situation that is encountered help expedite the recovery process. The table below provides relevant quotes from the data that supports the subordinate theme of flexibility is better than specific policy measures.

Table 26

*Subordinate Theme of Flexibility is Better than Specific Policy Measures*

<table>
<thead>
<tr>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Our council can declare an emergency and that gives the city manager the author to spend dollars…that was helpful to have that flexibility at the local level to be able to do that.”</td>
</tr>
<tr>
<td>“[FEMA] needing to be flexible to accommodate the circumstances they encounter.”</td>
</tr>
<tr>
<td>“FEMA…pretty tight rules that they live by, but they had enough latitude to do the right thing for us in many cases, and they weren’t bound strictly to policy and procedure.”</td>
</tr>
</tbody>
</table>

Finally, it was determined that disasters are unique circumstances and that policies and programs should consider them as such. Policies and programs that were created for “blue sky
days” should not be evaluated in a disaster situation and how such policies were applied following the Joplin disaster should not be judged after the event in how they were utilized in the recovery processes. The table below provides the subthemes that emerged regarding collaboration and text examples from the data that support themes around collaboration following disaster and the recovery from a disaster. The table below provides relevant quotes from the data that supports the subordinate theme of disasters are unique circumstances.

Table 27

*Subordinate Theme of Disasters are Unique Circumstances*

“You’re thrust into circumstances you can’t even imagine…you got to make a decision based on as much information as you have available at the time and then move on to the next one.”

“You can’t judge what happened during a natural disaster of that proportion and use the standards of exactly how it should be based on stuff that was in place and ordinances written prior to that happening.”

**Findings**

Finally, conclusions were drawn based on the data analysis processes discussed in this chapter and the chain of evidence that was developed for this case study. The following section discusses the findings of the case study of the 2011 Joplin, Missouri tornado. The discussion of the findings represents the recovery of the Joplin community and the beliefs of the individuals that lived the event. Below is an overview of the findings related to the case study of the relationship between policy and disaster economic recovery in the context of the 2011 Joplin, Missouri tornado.

- Finding 1: Policy was essential for recovery. Policies and actions geared around preventing population loss were key in ensuring that recovery occurred in Joplin.
Supporting the tax base and local revenue streams post-disaster, in a variety of ways, helped ensure that the Joplin community recovered and moved forward.

- Finding 2: Collaboration was essential for recovery. Collaboration among stakeholders was key to ensuring that economic recovery occurred. Collaboration and relationships, both pre- and post-disaster, among actors in each level of government, among affected populations, and public and private entities helped ensure that the community recovered and moved forward.

- Finding 3: Policy flexibility was key in recovery. Policies at each level needed to have flexibility in order to meet the needs of the event and disaster context that was encountered. Overall, massive sweeping changes to policies were not felt to be needed at any level; flexibility in existing policies and programs was more important than attempting to implement hard policy lines to effect recovery.

- Finding 4: Red tape hindered recovery. Federal level disaster programs/FEMA were felt to be overly burdensome and cumbersome; overly bureaucratic in nature. While no sweeping changes were recommended, programs seemed to be overly labor intensive and stretched human resources.

- Finding 5: Supporting the local economy was key in recovery. Volunteers, responders, donations, and keeping financial resources local were an integral part of disaster recovery for the Joplin community. Ensuring that spending continued in an affected area supported the tax base and helped offset government funding matches.
• Finding 6: Unclear policy inhibited recovery. Federal programs/FEMA guidelines were unclear and difficult to navigate; frequent turnover of recovery personnel brought varying levels of process knowledge to the Joplin community.

• Finding 7: Recovery policy was not equitable. Policies and programs were not equitable for all stakeholders in the context of the Joplin disaster, some stakeholders, such as residential and governmental entities, were eligible for grants, other stakeholders, such as private businesses, were only eligible for low-interest loans. Needs of the whole community, residential, private business, non-profit, and government, were not considered and the conduciveness of recovery varied across programs and stakeholders.

Collectively, while no broad overarching changes to policies were found to be needed at any level in the context of the Joplin disaster, the findings do show what allowed Joplin to recover from the disaster, as well as the fact that recovery occurred despite some observed flaws in policies and programs. Namely, policies and programs that prevent population losses are key, policy adaptably and flexibility are key when encountering unknown circumstances, and policies at the federal level a burdensome and not all policies exhibit equitable results for all stakeholders.

Summary

Again, the purpose of this qualitative exploratory case study was to determine how economic recovery occurred following the 2011 Joplin, Missouri, U.S. tornado, and the relationship between policy and recovery through the lived experiences of selected government officials, local policymakers, and business/commerce officials and owners. The question the research attempted to answer was, what does the lived experience of government officials, local policymakers, and business/commerce officials and owners in Joplin, Missouri tell us about the
relationship between local, state, and federal economic and disaster policy, and economic recovery following the 2011 Joplin, Missouri tornado?

Based on the findings of this case study through the lived experiences of those individuals involved in the disaster and recovery, there is a better understanding of how law and policy related to the recovery in Joplin and now can be utilized as a framework for further quantitative research.

Chapter 5 will now place these findings within the existing literature that was found during the literature review portion of this research project and how the findings align with the Theory of Reasoned Actions, on which this research study was grounded. The upcoming chapter will further discuss how these findings will be utilized to further build a quantitative study in order to have findings that are generalizable to the broader realm of disaster recovery and law and policy.
Chapter 5: Conclusions and Recommendations

The global economic impact in 2018 reached $160 billion and was the fourth costliest year on record for disasters since 1980 (Low, 2019). In 2017, $306 billion in economic losses were incurred globally from natural and man-made disasters, which represented a 63 percent increase from 2016 and is higher than the previous ten-year average (McCarthy, 2017). Evidence in the literature shows that both disaster occurrences and economic losses from disasters are increasing and that such losses totaled 60 percent of global economic losses from 1991 to 2005 (Ville de Goyet & Griekspoor, 2007).

In order to better understand the relationship between policy and disaster economics, a case study of the 2011 Joplin, Missouri tornado was conducted; in order to both understand the context of the relationships in that event and to build upon future quantitative research that can be more broadly applied.

Summary of the Study

The following is a brief recap of the study conducted, including the problem statement surrounding a lack of literature on disaster economic recovery, the purpose of determining if a relationship exists between policy and recovery, and the questions used to determine the relationship through the lens of a case study of the 2011 Joplin, Missouri tornado disaster.

Problem Statement

Little discussion in the literature has occurred of how policy can potentially be utilized to improve economic recovery from such impacts (Ash, Cutter, & Emrich, 2013), and increasing disaster occurrences and financial losses have the potential to disrupt economies at every level and consideration is warranted as to how policy may be utilized to reduce future losses and improve economic recovery from such events.
Prior studies have looked at certain aspects of disaster recovery with smaller pieces that relate to economic recovery, but there have been no comprehensive studies that looked at policy and disaster economic recovery through a broader context of the lived experiences of individuals that responded to and recovered from a particular disaster occurrence.

There have been arbitrary uses of policy and policy alterations in certain disaster occurrences to help spur post-disaster economic recovery, but there does not appear to be any uniform and automatic policy channels geared toward ensuring that a local or regional economy will be resilient and recover following a disaster. Therefore, more research and information were needed in order to determine how new policies or policy alterations can stimulate and ensure economic resilience.

In order to address the problem, this research utilized a case study of Joplin, Missouri to better understand the relationship of policy and its influence on disaster economic recovery in the context of that event. By interviewing governmental officials and other individuals involved in the recovery of Joplin, it was determined how the laws and policies described in this study directly affected the economic recovery of that community following that disaster and how a basis is provided for future research studies.

Purpose of the Study

The purpose of this qualitative exploratory case study is to determine how economic recovery occurred following the 2011 Joplin, Missouri, U.S. tornado, and the relationship between policy and recovery through the lived experience of selected government officials, local policymakers, and business/commerce officials and owners.
Benefits of this research will be the improved long-term economic recovery of communities from natural disaster occurrences and a better understanding of how policy influences economic recovery.

**Research Question(s)**

The research question for this study was, what does the lived experience of government officials, local policymakers, and business/commerce officials and owners in Joplin, Missouri tell us about the relationship between local, state, and federal economic and disaster policy, and economic recovery following the 2011 Joplin, Missouri tornado?

Sub-questions that helped answer the overarching research question were: To what extent, if any, will policy alterations ensure that the business community continues operation after a disaster occurrence? And, to what extent, if any, can policy measures be undertaken to ensure that tax revenues to local governments continue at an equal or greater rate following a disaster occurrence?

**Summary of the Literature**

The literature review for this study searched for and parsed articles of varying levels of relevance to the research topic of disaster economic recovery; and was conducted with a historical and current focus utilizing the 1994 Los Angeles area Northridge Earthquake and the more recent 2011 Joplin tornado, the focus of this study. Many of the articles utilized for the literature review were peer-reviewed, scholarly sources written by leading experts in the professions of disaster response, recovery, or economic. However, given the law and policy focus of the study, some of the available, and needed information was found in the form of government documents and non-scholarly sources.
The themes that emerged in the literature were the *types of disaster recovery*, the *economics of disaster losses and recovery*, and *key stakeholders in recovery*. The following provides a discussion of the key points from these themes from the literature.

**Types of Disaster Recovery**

The first theme in the literature focused on a discussion of the types of recovery from disaster, including residential recovery, commercial real estate and recovery, business recovery, general disaster response and recovery programs, and insurance, as they relate to law and policy and disaster recovery generally, historically, and recently.

According to the literature, residential recovery needs are often inadequately addressed following natural disasters and residential recovery is a critical piece of the overall recovery from a disaster occurrence. As an example, Kamel and Loukaitou-Sideris discussed residential recovery programs available from the federal government for reconstruction following Northridge and through a series of regressions to test the significance of housing and demographic variables, it was determined that housing policies were inadequate for addressing survivors needs (2004).

Another potential critical area of disaster recovery, especially economic recovery, is the reconstruction and continued vitality of the commercial sector of a community and region. Real estate data from the commercial sector seems to be an important component of judging overall economic recovery and a single study from the Northridge event addressed commercial recovery by examining commercial real estate returns for evidence of impacts from the earthquake. This examination was conducted through the lens and comparison of case studies associated with the 1989 San Francisco Bay Area Earthquake, 1992 South Florida Hurricane Andrew, and the Northridge earthquake.
One of the most critical components of economic recovery following a disaster that emerged from the literature was the recovery and continued operations of the business community. Business recovery is not only critical to the overall economy of a community but also critical for individual recovery, as individuals must have a continuing income, and several articles discussed the recovery of the business community within the context of Northridge.

In similar importance to the Northridge disaster, literature associated with the Joplin event provides some insight into the importance of business recovery following a disaster and how future policy directions could help improve such recovery. As discussed within the context of both Northridge and Joplin, a critical subtopic when discussing economic recovery from disaster involves recovery within the business community and a significant amount of the literature discusses recovery from the perspective of the business community.

Literature in the general sense of economic recovery from disaster provided evidence that there is a need for a greater understanding of the influence of policy on a wide variety of disaster occurrences that vary by geographical region.

Lastly, under this theme in the literature, it was found that the availability of insurance played a critical and often misunderstood role in the disaster recovery process, especially at the individual level; however, within the literature, there is considerable discussion about the role of insurance in mitigating disaster losses and the broader role that insurance plays into recovery from disaster.

**The Economics of Disaster Losses and Recovery**

The second theme in the literature focused on a discussion of recovery economics, including economic losses and estimations, the impact of natural hazards on economics, and general economic recovery.
A final subcategory of literature available under the Northridge earthquake was some general discussions about the losses from the disaster, including economic losses, and the social impacts of the earthquake.

Another category in the literature under this theme provided an overall understanding of the impacts that natural disasters have had on the United States during recent years and how the funding and assistance for those events have been distributed and how it will likely be distributed in the future.

A final category under this theme discussed the numerous studies conducted in the general area of disaster recovery and economics, with a small sampling of those discussed in the literature here due to the limitations of the document.

**Key Stakeholders in Recovery**

The final theme in the literature focused on a discussion of the key stakeholders in recovery, including the role of the government and how stakeholders perceive unmet needs following a disaster.

Regardless of the perceived or actual effectiveness of the government at all levels in disaster response and recovery, governments do play critical roles in the processes. This subcategory of literature discussed the role of the government in recovery and the governmental expenditures for disaster response and recovery.

A critical issue that was found across the natural disaster spectrum, and was highlighted with Northridge, was the unmet recovery needs of disaster survivors. Disaster survivors often discover they have unmet needs during the recovery process and unmet needs are often the result of poor personal preparedness, a lack of available resources generally and within the disaster
area, or inadequate government policies and programs that should be in place for disaster recovery.

The above themes emerged from the literature in the context of the historical Northridge earthquake, current Joplin tornado disaster, and general disaster recovery, and they provided a template for policy focuses in both the literature review and case study.

**Methodology**

A qualitative, exploratory case study was utilized in order to determine how economic recovery occurred following the 2011 Joplin, Missouri tornado, and the relationship between policy and recovery through the lived experiences of government officials, local policymakers, and the business community. According to Creswell and Creswell, “qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem,” and those that conduct this type of research are usually focused on the individual meaning that participants bring to the research (Creswell & Creswell, 2018, p. 4). In utilizing semi-structured interviews, with open-ended questions, participants in this study were able to stray from the interview guidelines and follow relevant topics that allowed for the identification of new ways of seeing and understanding the relationship of law and policy to disaster recovery.

This qualitative case study was grounded in the theory of Reasoned Action, which, “predicts that behavioral intent is created or caused by two factors, attitudes and subjective norms” (Communication, 2018, para. 3). The theory, as applied to the ultimate goal of economic recovery from disaster, centered around if law and policy either strengthens or weakens officials attitudes that disaster and assistance law and policy supports the goal of economic recovery, and
if it does not, how can those be altered to either support the goal or have officials believe that the
goal is being supported by what is available.

The theory of Reasoned Action incorporates well with the chosen methodology of a
qualitative case study and the constructivist worldview. In utilizing a qualitative approach for
this research, the constructivist worldview, or social constructivism is “typically seen as an
approach to qualitative research” (Creswell & Creswell, 2018, p. 7). How policy is related to
disaster economic recovery and how lived experiences of government and business officials lead
to their interpretations of policy and recovery can be complex issues to understand and the
constructivist worldview allowed for a look at these complex issues rather than “narrowing the
meanings to a few categories or ideas” (2018, p. 8). “Constructivism assumes that the meaning
of experiences and events are constructed by individuals, and therefore people construct the
realities in which they participate” (Lauckner, Paterson, Krupa, 2012, p. 6).

This research into the relationship between law and policy and economic recovery from
disaster was not about looking at any singular variable and how a particular variable may or may
not have influenced recovery in the context of the 2011, Joplin tornado; perceptions about
recovery are often as important as quantifiable recovery statistics and this research was
conducted to search for a deeper meaning of recovery and how individuals that lived through the
event viewed the relationship of law and policy to recovery, with a grounding in the theory of
Reasoned Action. Therefore, given the need to understand the meaning that individuals ascribe
to how law and policy influences disaster economic recovery, a qualitative approach was
selected. This approach allowed the research questions and theories to develop as the research
progressed, giving it a flexible structure in order to arrive at generalized conclusions about the
topic of policy and economic disaster recovery. This approach is being utilized as a foundation
for future, continued research that goes beyond the scope of the research and thesis for this program; building the foundation for a quantitative survey in order to have knowledge about policy that is generalizable across jurisdictions.

Utilizing the inclusion and exclusion criteria developed for this study, including in Appendix E, participants were contacted via email utilizing the script information included in Appendix D, and their participation in the research study was requested. Of the 26 individuals contacted for participation in the study, seven ultimately agreed to be interviewed and those individuals represented government, higher education, healthcare, public schools, and the business community. Interview data that was collected and recorded from the participants was transcribed utilizing Temi, sent to participants for review, and then coded and reviewed for emerging superordinate and subordinate themes.

Following an analysis of the data and documents from the research, the following findings were found and are provided in the next section.

**Summary of the Findings**

The superordinate themes that emerged following an analysis of the research data were: (a) the prevention of population loss, (b) collaboration for recovery, (c) disparities in policy, and (d) policy adaptability and flexibility. Below is an overview of the finding related to the case study conducted in the context of the 2011 Joplin, Missouri tornado.

- **Finding 1:** Policy was essential for recovery. Policies and actions geared around preventing population loss were key in ensuring that recovery occurred in Joplin.
  
  Supporting the tax base and local revenue streams post-disaster, in a variety of ways, helped ensure that the Joplin community recovered and moved forward.
• Finding 2: Collaboration was essential for recovery. Collaboration among stakeholders was key to ensuring that economic recovery occurred. Collaboration and relationships, both pre- and post-disaster, among actors in each level of government, among affected populations, and public and private entities helped ensure that the community recovered and moved forward.

• Finding 3: Policy flexibility was key in recovery. Policies at each level needed to have flexibility in order to meet the needs of the event and disaster context that was encountered. Overall, massive sweeping changes to policies were not felt to be needed at any level; flexibility in existing policies and programs was more important than attempting to implement hard policy lines to effect recovery.

• Finding 4: Red tape hindered recovery. Federal level disaster programs/FEMA were felt to be overly burdensome and cumbersome; overly bureaucratic in nature. While no sweeping changes were recommended, programs seemed to be overly labor intensive and stretched human resources.

• Finding 5: Supporting the local economy was key in recovery. Volunteers, responders, donations, and keeping financial resources local were an integral part of disaster recovery for the Joplin community. Ensuring that spending continued in an affected area supported the tax base and helped offset government funding matches.

• Finding 6: Unclear policy inhibited recovery. Federal programs/FEMA guidelines were unclear and difficult to navigate; frequent turnover of recovery personnel brought varying levels of process knowledge to the Joplin community.

• Finding 7: Recovery policy was not equitable. Policies and programs were not equitable for all stakeholders in the context of the Joplin disaster, some stakeholders, such as
residential and governmental entities, were eligible for grants, other stakeholders, such as private businesses, were only eligible for low-interest loans. Needs of the whole community, residential, private business, non-profit, and government, were not considered and the conduciveness of recovery varied across programs and stakeholders.

Collectively, while no broad overarching changes to policies were found to be needed at any level in the context of the Joplin disaster, the findings show what led to Joplin’s recovery from the disaster, as well as the fact that recovery occurred despite some perceived flaws in policies and programs. Namely, policies and programs that prevent population losses are key, policy adaptably and flexibility are key when encountering unknown circumstances, and policies at the federal level are burdensome, and not all policies exhibit equitable results for all stakeholders.

**Conclusions**

Based on the findings drawn from the analysis of the case study of the 2011 Joplin, Missouri tornado, the following are the conclusions drawn from each of the findings.

**Finding 1.** Policy was essential for recovery. Policies and actions geared around preventing population loss were key in ensuring that recovery occurred in Joplin. Supporting the tax base and local revenue streams post-disaster, in a variety of ways, helped ensure that the Joplin community recovered and moved forward.

From this finding, the following conclusions were drawn: If policies and programs are not in place to prevent population losses following a disaster or are at the very least existing policies are not flexible enough to prevent population losses following a disaster, then an affected area will lose population and economic recovery will be inhibited. The people of a community are the heart of the economy and without them, the financial processes of a
community will not continue functioning. Policy should ensure that individuals have access to post-disaster housing, capital, and finances that will allow them to stay in a community post-disaster.

**Finding 2.** Collaboration was essential for recovery. Collaboration among stakeholders was key to ensuring that economic recovery occurred. Collaboration and relationships, both pre- and post-disaster, among actors in each level of government, among affected populations, and public and private entities helped ensure that the community recovered and moved forward.

From this finding, the following conclusion was drawn: Policies and programs should be designed in a way that encourages relationship building and that provide and require opportunities for the many actors required for recovery to work together.

**Finding 3.** Policy flexibility was key in recovery. Policies at each level needed to have flexibility in order to meet the needs of the event and disaster context that was encountered. Overall, massive sweeping changes to policies were not felt to be needed at any level; flexibility in existing policies and programs was more important than attempting to implement hard policy lines to effect recovery.

From this finding, the following conclusions were drawn: Policies and programs that specifically address or anticipate every disaster scenario dealing with recovery are not possible or needed. Policies and programs need to address the basic tenets of disaster recovery and then maintain enough flexibility to address situations as they come up in a particular disaster context.

**Finding 4.** Red tape hindered recovery. Federal level disaster programs/FEMA were felt to be overly burdensome and cumbersome; overly bureaucratic in nature. While no sweeping changes were recommended, programs seemed to be overly labor intensive and stretched human resources.
From this finding, the following conclusions were drawn: Policies and programs often address disaster economic recovery but do so at the cost of taxing human capital or requiring extra human resources. Policies and programs require more paperwork and regulatory burdens than are necessary.

**Finding 5.** Supporting the local economy was key in recovery. Volunteers, responders, donations, and keeping financial resources local were an integral part of disaster recovery for the Joplin community. Ensuring that spending continued in an affected area supported the tax base and helped offset government funding matches.

From this finding, the following conclusion was drawn: funds that are spent for recovery and rebuilding should be spent locally when possible; this supports the tax base, keeps governmental revenues up, and potentially prevents the population drop discussed in finding 1.

**Finding 6.** Unclear policy inhibited recovery. Federal programs/FEMA guidelines were unclear and difficult to navigate; frequent turnover of recovery personnel brought varying levels of process knowledge to the Joplin community.

From this finding, the following conclusion was drawn: those individuals in communities that are responsible for the local economic recovery of a community following a disaster occurrence are not keenly familiar with the policies, procedures, and technical jargon of FEMA programs.

- **Finding 7.** Recovery policy was not equitable. Policies and programs were not equitable for all stakeholders in the context of the Joplin disaster, some stakeholders, such as residential and governmental entities, were eligible for grants, other stakeholders, such as private businesses, were only eligible for low-interest loans. Needs of the whole community, residential,
private business, non-profit, and government, were not considered and the conduciveness of recovery varied across programs and stakeholders.

From this finding, the following conclusion was drawn: Policies and programs geared toward recovery do adequately support the recovery of the whole community, and some individuals and entities are left to fill in gaps as they can. This was primarily seen in the business community in Joplin, where the lack of grants and adequate insurance coverages left some businesses to rely solely on low-interest loans from the SBA.

These conclusions show, that while Joplin has recovered well from the 2011 disaster, there are some inequalities in the policies and recovery programs, as they currently exist. Residential entities are eligible for both loans and grants, dependent upon financial needs, governmental entities and non-profits are eligible for grants, and the private sector businesses are left to rely solely on loans or private insurance programs.

Discussion of the Findings

The discussion of the findings of the case study of the 2011 Joplin, Missouri tornado is rooted in both the findings from the literature review of previous disaster studies, both historical and current, as well as in the Theory of Reasoned Action utilized for this research study. The findings are first discussed in relation to the literature and then in relation to the theoretical framework of the study.

In Relation to the Literature Review

The following relates the themes and findings of the case study of recovery following the 2011 Joplin, Missouri tornado to the overall themes that emerged from the literature review for the study. This section provides a brief synopsis of the themes from the literature review and the relevant findings that tie back to the themes found in the literature.
The primary themes that emerged from the literature review were types of disaster recovery, the economics of disaster losses and recovery, and key stakeholders in recovery.

**Types of disaster recovery.** The literature review pulled in a broad spectrum of the types of recovery and programs that need to occur after a disaster occurrence. The subthemes that emerged under types of recovery included residential recovery, commercial real estate and recovery, business recovery, general aspects of disaster response and recovery, and the private insurance aspect of recovery.

The literature revealed that there are not always equitable outcomes in recovery for residential areas affected by a disaster occurrence (Kamel & Loukaitou-Sideris, 2004), and there are inadequacies in existing policies and programs (2004, p. 533). Similar findings were found in the Joplin case study, which revealed that policies and programs in the context of the Joplin disaster were not equitable for all stakeholders involved in the recovery processes.

When looking to the recovery of the business community, a major reveal from the literature review was the gaps in the perceptions of business owners and government officials as to what is available and how effective assistance will be following a natural disaster (Furlong & Scheberle, 1998), and the literature also revealed that the business community needed recovery funds in the form of grants and not necessarily loans (1998). Emerging ideas from the literature surrounding recovery also revealed that residential and business recovery are mutually dependent on one another (Xiao & Van Zandt, 2001), and that organizational performance of business organizations following a disaster are tied strongly to population-related issues, namely the loss of customers following a disaster occurrence (Dietch & Corey, 2011). These literature review findings were also supported by the findings in the case study of Joplin in that population losses need to be minimized following a disaster occurrence in order for recovery to occur, programs
and policies are unclear and difficult to navigate, and that policies and programs again are not equitable for all stakeholders.

The literature review revealed that legal assistance is sometimes needed to navigate the legal issues surrounding the policies and programs of the disaster recovery process (Rodriguez, 2013). The requirement of legal assistance found in the literature review was also supported by the findings of the Joplin case study in that individuals felt that federal level disaster programs were overly burdensome and cumbersome, and that federal programs and FEMA guidelines were unclear and difficult to navigate.

**The economics of disaster losses and recovery.** The second theme of the literature focused on the economics of disaster losses and recovery, including economics losses and estimations, the impact of natural hazards, and general economic recovery.

A key finding in this theme from the literature review focused on the actual effect that a disaster occurrence has on the recovery and economics of an area that is affected by the disaster occurrence. Some events, such as social disasters, have a long-term negative effect on the economy of an affected community, while some events, such as Hurricane Andrew, had a short-term positive effect for the regional economies affected by that event (Baade, Baumann, & Matheson, 2006). This theme from the literature was supported by the Joplin case study findings in that Joplin did see an uptick in tax revenues following the disaster occurrence and that was likely due to the volunteers, responders, and keeping financial resources conducive to recovery in the community.

**Key stakeholders in recovery.** The third theme in the literature focused on the key stakeholders that are involved in the recovery of a disaster occurrence and discussed the role of government and the unmet recovery needs of the community.
When looking to governmental actors in disaster recovery, the literature review revealed that emergency management is a shared responsibility across all levels of government and that all entities need to have sufficient flexibility to better respond to major budget shocks and catastrophic events such as natural disasters (Choi & Coffey, 2011). This theme from the literature was supported by both the Joplin case study findings of policies at each level need to have flexibility in order to meet the needs of the event and disaster context that is encountered, and that collaboration among stakeholders is key to ensuring that economic recovery occurs. Another finding from the literature held, that while having a local preference for effecting recovery may hinder a proper federal response, there are community benefits to be gained from utilizing local individuals to effect recovery (Morrison, 2008). This theme in the literature again supports the Joplin findings of minimizing population losses and keeping financial resources local are integral parts of ensuring that disaster recovery will occur for a community.

The literature also revealed that not all of the recovery needs of disaster survivors were met following a disaster occurrence and that recovery needs were not always adequately met through conventional disaster relief channels (Bolin & Stanford, 1998), and that future research should be on collaborative efforts between governmental and non-governmental actors. This theme in the literature was also supported by the case study findings from Joplin in that policies and programs were not equitable for all stakeholders and that not all of those affected by the event felt that the various levels of assistance available met their needs.

While not all of the themes that emerged from the literature review were supported by the findings of the Joplin case study, and not all of the findings found in Joplin were found in the literature, a strong correlation between the literature and the case study of Joplin was found. The
literature review across disaster occurrences and the case study findings from Joplin revealed similar themes and findings, which support the overall validity of the Joplin research.

**In Relation to the Theory of Reasoned Action**

The theory utilized for this research study was the theory of Reasoned Action, which is concerned with the behaviors of individuals rather than an attempt at predicting attitudes (Communication, 2018). The recovery from disaster again, whether economic or in general, has much to do with how those that are responsible for carrying out the recovery processes perceived policy will help a community recover following a disaster as the tangible aspects and benefits that come from the policies.

This case study was of the lived experiences of individuals that were involved in the disaster and recovery from disaster in Joplin, Missouri, and was heavily focused on how they perceived the recovery occurred in Joplin and how they viewed the recovery in relation to the policies and programs responsible for that recovery. This section will discuss the relationship of the findings to the theory of Reasoned Action and the beliefs of those that were involved in the Joplin recovery.

While there may not have been tangible policies and programs in place in Joplin to prevent population losses in the context of a natural disaster occurrence, the individuals responsible for recovery in Joplin believed that preventing a sharp drop in population was an initial key to recovery in that community. Therefore, because those responsible for recovery in Joplin perceived recovery to be based heavily on preventing population losses, they made this a goal in their recovery focuses and further looked toward a goal of increasing their population 5-years post-disaster.
Programs and policies utilized in Joplin may or may not have required collaboration and relationship building in the pre- or post-disaster recovery stages; however, those individuals responsible for Joplin’s recovery believed that relationships at each stage and level of the recovery were beneficial for the ability of the community to recover.

Those involved in Joplin’s recovery believed that the ability to be flexible with policy and program regulations also contributed to Joplin’s recovery. They also believed that programs and policies at the federal level were overly cumbersome and labor intensive as far as local human capital and resources were concerned. The processes and paperwork may have very well met the standard guidelines for the federal Paperwork Reduction Act; however, those responsible for using the programs felt they were not adequately free of burdens on their abilities.

Those involved in Joplin’s recovery also believed, similarly to the ensuring there were no population losses, that keeping financial resources local was a key part of the community’s ability to recover. It was the perception of those involved that the cash flow of those that worked to effect recovery was key in the recovery.

Those involved in recovery felt that federal policies and FEMA guidelines were unclear, difficult to navigate, and those that were brought in to effect recovery had varying levels of knowledge when it came to the programs. While the tangible aspects of the policy might have been enough to provide resources to ensure a recovery from the event, the individuals’ beliefs that there were issues was enough to hurt the recovery processes from their points of view.

Finally, in relating research findings to the theory utilized for the study, those involved in Joplin’s recovery believed that policies and programs in place for recovery did not provide equitable opportunities for all stakeholders or for all entities that needed to recover from the event. While programs and policies are in place that provide some recovery assistance to the
majority of individuals and entities that are affected by a disaster occurrence, Joplin officials believe that inequalities do exist and that in some ways impacted the recovery of that community.

The theory of Reasoned Actions, as it applied to this research, was about how those involved in Joplin’s recovery perceived the recovery processes occurring with the policies and programs that were in place, and not about the tangible aspects of the policy as they relate to recovery. Recovery from a disaster can be subjective and whether not recovery occurs, or how it occurs, is based solely on the perceptions of those that are involved in the disaster and its aftermath.

Implications for Practice and Additional Research

The implications for practice from this case study of the 2011 Joplin tornado are limited due to the inability of case study research to be broadly generalized beyond the context of the case being studied. Further limitations on the findings of this case study may potentially be linked to outside factors and discrepancies from previous disaster occurrences. FEMA and the federal government received poor reviews of their response and recovery efforts following Hurricane Katrina in 2005 that affected New Orleans and the Gulf Coast, and there is the underlying thought that the federal government used the 2011 Joplin event to redeem their public image and did whatever necessary to ensure that Joplin recovered, even if it was outside the scope of policies and programs in place at the time. This is certainly not backed by the literature but is worth considering when thinking about how to apply findings from this study to future disaster occurrences, without having data that can be generalized to a broader region and population.
A significant limitation of this research was the passage of time between the event’s occurrence in 2011 and the semi-structured interview process in 2019. No matter the participants’ involvement in the disaster and recovery processes, time was bound to alter their memories of the events as well as their perceptions about how policy influenced recovery during that time. Limitations also involve the participants that were willing to participate in the study may not have had the most direct involvement in the disaster and recovery process, and the questions asked may not have been all-encompassing of how policy influences disaster economic recovery. Case study research is also not broadly generalizable to events outside of the particular case being studied, and that is a significant pitfall of applying this research to future events and points to the need for future studies that will be generalizable across jurisdictions.

However, while this case study and its findings cannot be generalized to the broader realm of disaster occurrences outside the contest of the 2011 Joplin tornado, it does lay the groundwork for future research and potential findings that can be generalized to the broader population. It is suggested that the data and findings from this case study research can be utilized to build a quantitative survey that can be distributed to multiple jurisdictions that have experienced disasters and losses in order to determine what factors in policies and programs affected their recovery. The future research will hopefully yield results that are generalizable and that can be used to determine if policy and program changes are needed in the realm of disaster economic recovery.

**Recommendations**

While recommendations are difficult to make from this case study due to the narrow focus of the context of the Joplin disaster, there are some recommendations for practice that can be made as a result of the correlation between the literature review and the findings of the Joplin
case study. These recommendations cannot be applied to the larger realm of disaster recovery but may be useful in events that are similar in scope and context of Joplin.

**Recommendations for Practice**

Given the broad findings and the limited generalizability given the context of the case study methodology utilized, the following recommendations are made for future practice and research.

1. Focus financial resources locally during similar events. If disaster occurrences are similar in context and scope to the Joplin disaster, economic recovery may be best ensured by focusing resources on preventing population losses, ensuring that recovery dollars are spent locally to support the tax base.

2. Ensure information sharing and competence during similar events. If disaster occurrences are similar in context and scope to the Joplin disaster, ensuring that collaboration among all recovery actors occurs both pre- and post-disaster is key, which includes having knowledgeable actors in place that can ensure that all stakeholders involved in recovery are able to successfully navigate all pieces of the process.

3. Design and conduct a quantitative study using this case as a foundation. Since this research study used a qualitative case study methodology, future research studies can utilize the findings of this case study to build a quantitative research study that will yield results that may potentially lead to findings that can lead to more effective policies and programs that spur economic recovery following a disaster.

The primary purposes of this case study of the lived experiences of those that recovered from the 2011 Joplin tornado were to contribute meaningfully to the literature and historical
disaster studies, as well as provide the basis for future research. By having a solid foundation of a successful disaster recovery on which to build future research will ensure that future studies are firmly grounded and generalizable across disaster occurrences.

**Concluding Thoughts**

This case study of the 2011 Joplin, Missouri, U.S. tornado disaster and, the relationship of law and policy to disaster recovery in the context of that event, is significant in that it contributes the lived experiences of individuals involved in disaster recovery to the available literature. In keeping with the constructivist worldview of this case study, constructionism emphasizes that knowledge is actively constructed by humans, not passively received, and understanding the lived experiences of individuals is how we create new knowledge (Ritchie, Lewis, Nicholls, & Ormston, 2014); this was accomplished in the context of the Joplin disaster and this case study through the lenses of those that experienced the event.

One of the most critical aspects of this research is just getting the word out of how real individuals lived through the recovery of a major disaster occurrence in the United States. An individual participant in the study mentioned the countless decisions that must be made to the best of one’s ability following a disaster occurrence and that those decisions need to be made without second-guessing. He believes that improving recovery outcomes in the future is getting the lived experience stories out there, “it’s just getting the story out in terms of the actual experience that you go through…and helping people understand what it’s like.”

A good qualitative analysis often yields conclusions and results that were not expected and produces a new and useful way to view old problems (Suter, 2012). As discussed, there was considerable bias brought to this research project, with beliefs of how recovery processes should work and with expectations that participants would advocate for sweeping changes to current
policy surrounding disaster response and recovery. However, by carefully documenting how the data was gathered in this study through interviews and document collection and utilizing only evidence found in the data collection process, this study’s findings were in sharp contrast to the expected findings based on preconceived viewpoints. The lack of findings in line with the stated bias supports the findings of the study being drawn from the data and the lived experiences of the individuals involved in the Joplin disaster and its recovery, and not researcher personal and professional beliefs.

While the findings of this study are not generalizable to the broader realm of disaster occurrences in the U.S., a foundation is in place and the findings can be utilized as the basis for future survey research on disaster recovery and its relationship to law and policy generally. By using the findings of the lived experiences of individuals that recovered from a major disaster in the U.S., survey questions can be developed that will determine how recovery occurred and how policy related to recovery across a broad spectrum of disaster occurrences.

In utilizing both the findings of this case study’s lived experiences and future research of law and policy’s relationship to disaster recovery, communities affected by a disaster in the U.S. have the potential benefits of being in an economic position post-disaster that is either fully recovered to pre-disaster conditions or potentially stronger economically.
References


Center for Innovation in Research and Teaching. Retrieved from https://cirt.gcu.edu/research/developmentresources/research_ready/qualitative/validity


Suter, W.N. (2012). Introduction to educational research: A critical thinking approach. DOI: https://dx.doi.org/10.4135/9781483384443.n12


Appendix A

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that Joseph Richmond successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 07/24/2017.

Certification Number: 2440172.
Appendix C

Interview Questions
Semi-Structured Interview: Case Study Analysis of 2011 Joplin, Missouri, U.S., Tornado

Before we begin, I’d like to remind you that you have given your written informed consent to participate in the study, and that you have a copy of that consent form. In addition, the consent form informed you that the interview will be recorded for transcription purposes, and that giving consent includes consenting to the recording of our interview today.

1. What were your personal experiences with the 2011 Joplin tornado disaster?
   a. What were your roles before, during, and after the disaster?

2. How do you as a (government, business, etc. official) define economic recovery from disaster or what does economic recovery from disaster mean to you?
   a. Do you believe that Joplin, Missouri has fully recovered from the 2011 tornado according to your definition of economic recovery?
   b. Do you believe that Joplin, Missouri has, at a minimum, has returned to the economic conditions that were present prior to the 2011 disaster?

3. As a general rule, do you think disaster and assistance law and policy as a whole supports the overall goal of economic recovery from disaster?

4. In recovering from the 2011 disaster, what about local law and policy, at the city or county level enhanced the ability to recover economically? Did anything about local policy inhibit your ability to recover?
   a. Same questions with state policy?
   b. Same questions with federal policy?

5. What changes to local policy, if any, would help enhance recovery following a similar event?
   a. State policy?
   b. Federal policy?

6. What are any other thoughts about how law and policy can be utilized to help the economic recovery process following a disaster occurrence?
Appendix D

Interview Telephone and Email Script

Hello, I am Joseph Richmond, a doctoral student in law and policy at Northeastern University in Boston, Massachusetts. For my research and dissertation, I am conducting a case study of the 2011 Joplin, Missouri tornado disaster in order to determine the relationship between law and policy and disaster recovery, and to see if law and policy can be utilized to improve recovery for individuals, communities, and regions following disaster occurrences.

I have selected you because you are a government, business or policy official to take part in a brief hour-long, semi-structured telephone interview where we will discuss how economic recovery occurred following the 2011 Joplin, Missouri, U.S. tornado. We will also discuss the relationship between policy and recovery through your lived experience.

If you choose to take part in this study, it will take place either in person OR via phone interviews and will take about an hour. If you decide to take part in this study, I will ask you to answer a series of questions about disaster recovery and policy following the 2011 Joplin, Missouri Tornado disaster.

To determine if you meet the inclusion criteria for the study, would you mind if I ask you a few questions?

1. Were you at least 18 years old at the time of the 2011 Joplin Tornado?

2. Were you in some way involved directly in the 2011 Joplin tornado disaster?
   a. If a business, were you in business during and after the tornado or were you put out of business by the disaster?
      - If yes, were you directly involved in the recovery process following the disaster?
   b. If government official, were you in office during or after the disaster?
      - If yes, were you directly involved in the recovery process following the disaster?

3. Do you feel that answering questions related to the disaster will cause you undue harm to yourself or others?

Thank you. Based on the inclusion criteria, I would like to invite you to participate in the study. OR Thank you for your time. You do not meet the inclusion criteria for the study, but I thank you for your time.

End of conversation (for those who do not meet the criteria)
If you choose to participate, we may conduct the interview at this time, or I can schedule a date and time that will be more convenient for you.

If you choose to participate, I will now review and send you a consent form via email that provides more information about the study and your participation. You will be asked to sign the consent form and return it to me by email before we proceed.

After the interview, I will provide a copy of the interview transcript via secure means in order for you to have an opportunity to review and provide feedback or suggest corrections to any possible transcription errors.

May I go ahead and send you the informed consent form?
Appendix E

Northeastern University, Department of: College of Professional Studies, Doctor of Law and Policy Program
Name of Investigator(s): Dr. Stacy-Ann Christian, JD, MPH, DrPH and Joseph L. Richmond, MPA
Title of Project: The Relationship Between Policy and Disaster Economic Recovery: A

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<thead>
<tr>
<th>Informed Consent to Participate in a Research Study</th>
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<td>We are inviting you [or your child] to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.</td>
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<tr>
<th>Why am I being asked to take part in this research study?</th>
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<tr>
<td>You are being asked to take part in this study because you have direct knowledge of the 2011 Joplin Tornado and the recovery process and/or you were directly involved in the recovery process following the event.</td>
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<th>Why is this research study being done?</th>
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<td>This research is being conducted in order to gain an understanding of how policy, if at all, influences disaster economic recovery and if potential policy alterations can increase community resilience in the face of a natural disaster.</td>
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<th>What will I be asked to do?</th>
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<td>If you decide to take part in this study, we will ask you to take part in an in-depth interview and ask you a series of questions relating to your involvement in the recovery process and about the recovery process following the 2011 tornado.</td>
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<th>Where will this take place and how much of my time will it take?</th>
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<td>The interview will take place at a time that is convenient for both of us and will either take place face-to-face or via telephone if necessary, and have you answer a series of questions about the 2011 tornado. It is anticipated that it will take no more than one hour of your time.</td>
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<th>Will there be any risk or discomfort to me?</th>
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<tr>
<td>There are no foreseeable risks or discomfort anticipated due to your participation in this research; however, if you experience any discomfort, you may discontinue your participation at any point.</td>
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<th>Will I benefit by being in this research?</th>
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<tr>
<td>There are no direct or personal benefits to you for your participation in this research; however, there is the potential that information gained through this research can help understand how policy influences disaster recovery and if changes can be made that will improve recovery following future disaster events.</td>
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<th>Who will see the information about me?</th>
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<tr>
<td>Your part in this study will be confidential. Only the researchers on this study will see the information about you. No reports or publications will use information that can identify you in any way or any individual as being of this project.</td>
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</table>
Data will be coded with numbers known to the researcher only that will maintain the anonymity of the research participants and collected data will be maintained on a password protected USB drive that only the researcher will have access to. The date will be utilized through the end of the study and then will be destroyed at the end of the 3-year period following the study.

Data, including interview notes and transcripts, will be stored on a password protected USB drive and will not be made available to those outside of the PI or student researcher. Electronic data with personally identifiable information will not be encrypted nor will it be shared electronically via the Internet.

Data and other required documents will be kept for 3 years following the end of the study, they will be maintained on the same USB drive and kept in a safe of the student researcher. Identifiers and links to personally identifiable information will be destroyed after the end of the study.

If you chose not to take part in this study, you may decide to do so at this time.

This research is conducted as in-depth interviews in the context of a case study, the physical risk to potential participants is extremely low.

Social risks for potential participants are extremely low. Participant confidentiality and privacy will be maintained in order to minimize social harms.

Who can I contact if I have questions or problems?
If you have any questions about this study, please feel free to contact Joseph Richmond at richmond.jo@husky.neu.edu, the person mainly responsible for the research. You can also contact Dr. Stacy-Ann Christian at schristian@northeastern.edu the Principal Investigator.

Who can I contact about my rights as a participant?
If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection, Mail Stop: 560-177, 360 Huntington Avenue, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: n.regina@neu.edu. You may call anonymously if you wish.

Will I be paid for my participation?
You will not be paid/compensated for your participation in this study.

Will it cost me anything to participate?
You will not incur a cost for your participation in this study.

Is there anything else I need to know?
You must be at least 18 years old to participate and have been a18 years old at the time of the disaster in 2011.

**I agree to [have my child] take part in this research.**

Signature of person [parent] agreeing to take part

Date

Printed name of person above

Signature of person who explained the study to the participant above and obtained consent

Date

Printed name of person above

depending upon the nature of your research, you may also be required to provide information about one or more of the following if it is applicable:

1. A statement that the particular treatment or procedure may involve risks to the subject (or to the embryo or fetus, if the subject is or may become pregnant) which are currently unforeseeable.
2. Anticipated circumstances under which the subject’s participation may be terminated by the investigator without regard to the subject’s consent.
3. Any additional costs to the subject that may result from participation in the research.
4. The consequences of a subject’s decision to withdraw from the research and procedures for orderly termination of participation by the subject.
5. A statement that significant new finding(s) developed during the course of the research which may be related to the subject’s willingness to continue participation will be provided to the subject.
6. The approximate number of subjects involved in the study.