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Social Vulnerability and Hurricane Evacuation Behavior in Hampton Roads, VA: Emergency Management Stakeholders' Perceptions of Low-to-Moderate Income Households in a Social Construction Paradigm

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SOCIAL VULNERABILITY AND HURRICANE EVACUATION BEHAVIOR IN HAMPTON ROADS, VA: EMERGENCY MANAGEMENT STAKEHOLDERS' PERCEPTIONS OF LOW-TO-MODERATE INCOME HOUSEHOLDS IN A SOCIAL CONSTRUCTION PARADIGM

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ABSTRACT

SOCIAL VULNERABILITY AND HURRICANE EVACUATION BEHAVIOR IN HAMPTON ROADS, VA: EMERGENCY MANAGEMENT STAKEHOLDERS' PERCEPTIONS OF LOW-TO-MODERATE INCOME HOUSEHOLDS IN A SOCIAL CONSTRUCTION PARADIGM

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The purpose of this research is to examine current emergency management (EM) evacuation policies and practices with respect to vulnerable populations' hurricane evacuation behaviors. The response of vulnerable households and local and state governments' implementation of emergency evacuation policies and practices provide possible linkages to continual problems faced by local governments in addressing its most vulnerable residents. Using social construction as a theoretical foundation provides context for the consideration of vulnerable populations in emergency management policy and hurricane evacuation.

This research is a qualitative case study of emergency management policies, practices, and perceived household evacuation behaviors in several cities of Hampton Roads, Virginia. The research area consists of Virginia Beach, Norfolk, Chesapeake, Portsmouth and Hampton. This study uses the phenomenological method of inquiry to obtain information about experiences and practices of EM practitioners and stakeholders.

During this research process, areas are identified where social construction theory provides efficacy in explaining the findings. During the interviews with emergency management practitioners and stakeholders, the conclusion was although other socially vulnerable populations such as the elderly, homeless, disabled, and medically fragile receive EM policy considerations, income, specifically, low-to-moderate income households, is not considered as a resource base or

identified as its own group for social vulnerability in EM policies and practices. This research finds this to be the case even though throughout the research literature, income is a primary factor for social vulnerability in environmental hazards and natural disasters (Blaikie, Cannon, Davis, & Wisner, 1994; Bergstrand, Mayer, Brumback, & Zhang, 2018; Buckle, 1998; Cutter, 1996, Cutter & Emrich, 2006; Gooden, Jones, Martin, & Boyd, 2009; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015).

This research informs policy decision making and implementation at local government's multiple levels. Additionally, this study informs research disciplines rooted in policy theory about how social construction theory affects policy creation and implementation. Lastly, this case study's research findings will better inform the planning and implementation of current and future EM and other related policies and practices to allow more inclusive considerations for Hampton Roads' diverse populations.

This dissertation is dedicated to the Great I AM, the ONE who sits high and looks low. Special dedication goes to my Village and the women on whose shoulders I stand.

[S]he is like a tree planted by water, that sends out its roots by the stream,
and does not fear when heat comes, for its leaves remain green,
and is not anxious in the year of drought, for it does not cease to bear fruit.

Jeremiah 17:8

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CHAPTER I

INTRODUCTION

The impacts of climate change are multi-dimensional and will increase in the future (Reidmiller, et al., 2018). The severity of climate change ranges from impacts on the environment and economy to overall citizens' well-being (Haddow, Bullock, & Coppola, 2017; Petak, 1985; Reidmiller, et al., 2018; Talen, 2008; Wuebbles, et al., 2017). Climate change events and conditions often trigger other serious weather-related events. More frequent hurricanes, longer droughts, extended precipitation seasons, high heat indexes, and sea level rise all represent climate change outcomes (Wuebbles, et al., 2017).

Other climate-induced impacts involve social and economic factors increasing the risk of people and communities already considered vulnerable (Bryant & Mohai, 1992; Bergstrand, Mayer, Brumback, & Zhang, 2018; Bullard, 1990; Cutter, 1996, 2003; Cutter, Boruff, & Shirley, 2003; Cutter & Emrich, 2006; Dash, McCoy, & Herring, 2010; Gooden, Jones, Martin, & Boyd, 2009; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Reidmiller, et al., 2018; Talen, 2008; Wisner, Blaikie, Cannon, & Davis, 2004). These factors include poverty, gender, and race which often result in reduced-response capacities (Bryant & Mohai, 1992; Bergstrand, Mayer, Brumback, & Zhang, 2018; Bullard, 1990; Cutter, 1996, 2003; Cutter, Boruff, & Shirley, 2003; Cutter & Emrich, 2006; Dash, McCoy, & Herring, 2010; Gooden, Jones, Martin, & Boyd, 2009; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Reidmiller, et al., 2018; Talen, 2008; Wisner,

Blaikie, Cannon, & Davis, 2004). The social construction of vulnerable populations affects emergency management policy, planning, and implementation. As a result, it affects the assessment of needs and equitable distribution of pre- and post-disaster services. Therefore, if there is a failure by policymakers to acknowledge and address inequities existing in current policies and practices, then marginalized populations are disproportionately affected by actions addressing climate change causes and impacts (Reidmiller, et al., 2018).

HURRICANES

This research focuses on hurricanes as a severe weather-event requiring local government emergency management and residents' response. Hurricanes are the focus because other weather events and conditions, such as nor'easters, tornados, and flooding, often occur before or after hurricane events. Hurricanes bring torrential rains, storm surges, winds and massive flooding in low lying and coastal areas, all of which have negative societal effects (Reidmiller, et al., 2018; Talen, 2008; Wuebbles, et al., 2017). Negative societal effects are present when an area experiences an actual hurricane or other hurricane-related weather events. For example, although Hurricane Florence made landfall in North Carolina, areas of southeastern Virginia experienced Hurricane Florence weather-related effects such as storm surges and tidal flooding. High flood waters from storm surges, high winds during high tides or other conditions conducive to flooding make it difficult for residents to leave their homes, places of work or maneuver using personal vehicles and other private or public transportation (Petak, 1985; Reidmiller, et al., 2018; Talen, 2008; Haddow, Bullock, & Coppola, 2017; Wuebbles, et al., 2017). Some residents heed warnings and go to shelters prior to serious weather events while others choose to ignore warnings, altogether (Reidmiller, et al., 2018). Therefore, evacuating residential households is essential in mitigating lives lost. In order to decrease fatalities resulting from hurricanes, it is

important that emergency management policies, planning, and practices for prevention, preparedness, response, and recovery are current, practical, and just. As a result, emergency management policies and practices become instrumental in decreasing property loss and fatalities. In the effort to better inform future emergency management policy, there is a need to provide explanations as to how emergency management practitioners, policymakers and other stakeholders 1) identify and ensure inclusiveness in policies and practices, 2) determine low-to-moderate income household needs when planning and implementing policy; and, 3) understand residential households' behavioral responses to emergency management policies and actions.

RESEARCH QUESTIONS

The research questions start with an overarching question that operationalizes into three (3) additional sub-questions. The overarching question is broad and explores EM policy considerations of socially vulnerable people. Social vulnerability is operationalized based on income, with low-to-moderate income residents defined as being socially vulnerable. [1] The overarching research question is: To what extent do local government policies and practices address the evacuation behaviors of socially vulnerable populations facing the threat of a hurricane? Specifically, to what extent do local government policies and practices address the evacuation behaviors and needs of low-to-moderate income households facing the threat of a hurricane? The sub-questions focus on emergency evacuation policies and practices, and low-to-moderate income household responses. The questions are: 1) How are low-to-moderate income households considered in local evacuation plans? 2) What are the local emergency evacuation

[1] The terms "social vulnerability" and "socially vulnerable" are both present throughout the research literature as a descriptor of vulnerable populations. However, for the purpose of this study, socially vulnerable will be used to describe this research's vulnerable population and social vulnerability describes the concept.

policies and practices that are related to low-to-moderate income households? 3) How do local EM policymakers, practitioners, and stakeholders perceive low-to-moderate income households' evacuation behavior when faced with the threat of a hurricane? Specifically, based on EM policymakers', practitioners', and stakeholders' professional and other lived-experiences with hurricane evacuation, what are the perceptions of how low-to-moderate income households respond and why? Additionally, how does this perception connect with local evacuation policy?

The first question queries the existence of the policy considerations for low-to-moderate income households. The second question queries the existence of emergency management policies and practices that specifically address low-to-moderate income households. The last question asks about EM professionals' perceptions of low-to-moderate income households' evacuation behavior.

CONTEXT

The general focus area is cities in the Hampton Roads region of southeastern Virginia. The research area consists of Virginia Beach, Norfolk, Chesapeake, Portsmouth, and Hampton. The Hampton Roads region is the research choice due to its coastline location and vulnerability to climate change weather events (Kleinosky, Yarnal, & Fisher, 2007). More so, the cities of Hampton Roads provide a broader research lens than a single city.

STATEMENT OF THE PROBLEM

Changing climate events cause negative societal impacts (Bergstrand, Mayer, Brumback, & Zhang, 2018; Cutter, 1996, 2003; Cutter & Emrich, 2006; Dash, McCoy, & Herring, 2010; Reidmiller, et al., 2018; Talen, 2008). The Department of Homeland Security (2018) notes that as of 2015, there continues to be a lack of emergency management program practices that sufficiently supports and fulfills the need for approximately 80% of the national population

(DHS, 2018). Whether an individual resident decides to implement any type of EM preparedness or evacuation plan is affected by cultural and personal views toward the need for disaster preparedness (Bergstrand, Mayer, Brumback, & Zhang, 2018; Dash, McCoy, & Herring, 2010; Grote, 2015; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Lindell, Lu, & Prater, 2005).

The economic costs of climate-change, weather-related events for the United States is upward of $1 trillion dollars (Wuebbles, et al., 2017). These events affect governmental operations from the federal to the most local levels through service delivery and mitigation protections (Buckle, 1998; Wuebbles, et al., 2017). From the regional and local government perspectives, service delivery and emergency management mitigation is a necessary safeguard to all residents for reducing natural disaster fatalities and property loss (Wuebbles, et al., 2017).

Local governments are key players in EM by developing the necessary policies and procedures for responding effectively to local community emergencies (Henstra, 2010). At the local levels, delivery and protection systems are critical to local households and communities. Local levels are most important to this research because local households are first impacted (Buckle, 1998; Cutter & Emrich, 2006; Kleinosky, Yarnal, & Fisher, 2007; Talen, 2008). Loss of property, communication, food, transportation, and life are immediate impacts. Local governmental operations experience negative impacts, as well. However, there are financial and other resources available to local governments through taxes and federal support to protect physical and technical infrastructures (Buckle, 1998; Cutter & Emrich, 2006; Kleinosky, Yarnal, & Fisher, 2007; Talen, 2008).

Negative impacts of serious weather events affect some households more than others. Specifically, households that have less financial and other resources to include money for gas, food, emergency lodgings, and other emergency preparation items. Even though local

governments have policies and practices in place for the most socially vulnerable residents, its practicality is not always suitable for this population because of limited organizational budgets, resources, and implementation strategies (Buckle, 1998; Cutter & Emrich, 2006).

PURPOSE OF THE STUDY

The purpose of this qualitative case study is to link the social construction of low-to-moderate income households and their behavioral needs when responding to hurricane evacuation to local emergency management policies and practices. The perceived behavioral response of vulnerable households, and local and state government's implementation of emergency evacuation policies and practices, provides possible linkages to continual problems faced by local governments in addressing its most vulnerable residents. Continual problems include residents' mistrust of emergency management policies, practitioners, the media, and other sources that inform evacuation decisions (Elliott & Pais, 2006; Grote, 2015; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Lindell, Lu, & Prater, 2005). Other governmental challenges of addressing vulnerable households include the lack of financial, transportation and other resources vital to hurricane evacuation.

SOCIAL VULNERABILITY

Social vulnerability is a group's susceptibility to hazards along with their resiliency and recovery ability (Blaikie, Cannon, Davis, & Wisner, 1994; Bergstrand, Mayer, Brumback, & Zhang, 2018; Buckle, 1998; Cutter, 1996, Cutter & Emrich, 2006; Gooden, Jones, Martin, & Boyd, 2009; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015). Social vulnerability is based on factors, such as age, race, income and other demographics (Blaikie, Cannon, Davis, & Wisner, 1994; Bergstrand, Mayer, Brumback, & Zhang, 2018; Buckle, 1998; Cutter, 1996, Cutter & Emrich, 2006; Gooden, Jones, Martin, & Boyd, 2009; Myers, Slack, &

Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015). Socially vulnerable populations with low income levels become more susceptible to risks from hurricanes and hurricane-related weather events. The emergency evacuation behavior of low-to-moderate income households in conjunction with the examination of emergency management policies and practices provide a better understanding of state, regional and local EM policymakers' decision-making processes. The use of Cutter and Emrich's (2006) social vulnerability index (SVI) further defines a vulnerable population. For the purpose of this research, vulnerability is based on economic and financial resources. This research focuses solely on low-to-moderate income households.

Social vulnerability promotes the necessity to shift power structures and change political ideologies to decrease the disaster vulnerability of certain groups (Gooden, Jones, Martin, & Boyd, 2009; Wisner, Blaikie, Cannon, & Davis, 2004). Local governments, in the implementation of policies, are viewed as the entities that decrease social vulnerability and increase social equity (Frederickson, 1990, 2005, 2010, 2015; Gooden, Jones, Martin, & Boyd, 2009). According to Frederickson (2005), social equity in public administration includes the elements of fairness, justice, and equality. Queries about EM policies and practices and low-to-moderate income household perceptions help to determine whether these elements are present or lacking.

Links between evacuation behavior and emergency management policy responses provide research evidence that can be used by practitioners and stakeholders to determine whether current policies and practices are inclusive to low-to-moderate income households. More so, relationships between EM policies and household evacuation response may provide better perspectives to the research and practice communities about a fundamental issue underlying this research, social equity.

SOCIAL EQUITY

Understanding social equity is important in this research. Social equity provides some contexts in reference to how populations such as low-to-moderate income households may be excluded from policy decisions. Equity is distinct from equality. Equity means treating people fairly and equality is treating people the same (Gooden, Jones, Martin, & Boyd, 2009). Social equity in this context is fairness and justice in "the formulation of public policy and the management and distribution of public services to citizens" (Gooden, 2019, p. 13). An example of social equity in this dissertation includes people residing in high-risk zones during the threat of a hurricane. Many households located in these zones are low-to-moderate income households in need of more resources and services than higher-income households located in the same zones (Gooden, Jones, Martin, & Boyd, 2009). Additional resources and services may include free transportation to evacuate lower-income residents to safer locations, shelters equipped for residents who are medically fragile, emergency food, water and supply kits for residents who are unemployed, underemployed and receiving public assistance.

THEORETICAL FRAMEWORK

This study uses social construction theory as its framework. Social construction, as a theoretical foundation, provides context for public policy considerations of vulnerable populations. Social construction determines policymakers' perceptions of people and how much of a benefit they receive (Ingram, Schneider & Deleon, 2007; Schneider & Ingram, 1993). In this dissertation, social construction frames emergency management policies and practices relating to the amount of hurricane evacuation assistance low-to-moderate income households receive. Examples of benefits or assistance include special policy considerations for financial and transportation assistance that facilitate evacuation. While theory provides a foundation for

emergency management policymaking, it does not explain local governments' continuing outreach and communication problems addressing its most vulnerable residents.

RELEVANCE

Research

This dissertation adds to the natural disaster, emergency management, hurricane preparedness and response, policy, and practice oriented research literature. Further, this research adds to the application of theory to policy and practice issues affecting the lives of socially vulnerable populations. The application of social construction theory is found in education, housing, health, voting and criminal justice disciplines (Schneider, Ingram, & Deleon, 2014). However, there are limited studies that link social constructions and emergency management or disasters. The studies that were discovered during this case study are on the subjects of Love Canal, 9/11, Hurricane Katrina and the Haiti Earthquake (Birkland, 2004; Dyson, 2006; Fowlkes & Miller, 1982; Sapat & Esnard, 2012). Therefore, a Hampton Roads case study about emergency management stakeholders' perception of low-to-moderate income households' hurricane evacuation behavior that links to social construction theory enhances the research literature and emergency management discipline.

Practice

At the local and regional government practice levels, this dissertation intends to inform emergency management policy decision making and implementation from executive leadership levels to community participation. Additionally, this case study is a resource for additional policy arenas. For example, while conducting this case study research, it was discovered that questions and assertions exist amongst the emergency management community about local residents' evacuation decision making strategies. According to Ng, Behr, and Diaz (2014), the

perception of safe neighborhoods is important. Ng, Behr, and Diaz (2014) found that residents were less willing to evacuate due to increased burglary perceptions. The perception of increased crime in Hampton Roads' low-to-moderate income neighborhoods after natural disasters was revealed in this dissertation's research findings. This finding informs the review of additional policy arenas such as law enforcement.

Lastly, this case study is a research source to help understand the evacuation behaviors of low-to-moderate income households. Additional resources may better inform EM practitioners and stakeholders' perceptions about evacuation behaviors, thus resulting in more EM inclusive policy considerations. For example, the Ng, Behr, and Diaz' (2014) study indicates that prior experiences with hurricanes reduce evacuation chances. Other evacuation behavior studies conclude that past experiences with hurricanes affect evacuation behavior, specifically when a hurricane passes with little to no effect (Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Lindell, Lu, & Prater, 2005). Therefore, additional research about the evacuation behaviors of low-to-moderate income and other socially vulnerable households is important.

In summary, herein lies an opportunity for policymakers and emergency management professionals to gain insight into vulnerability and equity problems that are not in current policy or practice. According to Buckle (1998) identifying vulnerabilities allows researchers to recognize "social issues or trends not part of emergency response" (p.26). Therefore, this research not only informs new policy and practices but serve as a catalyst to new initiatives and regional collaborations (Buckle, 1998; Haddow, Bullock, & Coppola, 2017).

CHAPTER II

LITERATURE REVIEW

GOVERNMENTAL RESPONSE AND EMERGENCY MANAGEMENT

"Throughout history, public policymakers have sought to anticipate the unexpected in order to reduce loss to human life and safety posed by intermittently occurring natural and made-made hazardous events" (Petak, 1985, p. 3). According to Petak (1985), the efforts of policymakers represent the foundation that places emergency management at the focus of federal, state, and local government. Federal governmental response to climate-change events, such as the increased occurrences of hurricanes, tornadoes and wildfires, takes the form of policies, mandates, and acts with federal funds funneling through the nation's top department for handling natural disasters, the Federal Emergency Management Agency (FEMA). Proper policy implementation becomes vital in assuring that all citizens receive resources necessary for economic vitality, community sustainability, and overall citizens' personal safety. Therefore, public administrators and other professionals responsible for emergency management policies and practices must be committed to ethical values that allow equitable decisions (Buckle, 1998; Cutter & Emrich, 2006; Elliott & Pais, 2006; Frederickson, 2005; Haddow, Bullock, & Coppola, 2017; Hart, 1974; Talen, 2008).

Some researchers suggest that traditionally, public administration's engagement as a discipline in emergency management was more of a reactive measure to crisis instead of a continual practice (Buckle, 1998; Cutter & Emrich, 2006; Elliott & Pais, 2006; Haddow, Bullock, & Coppola, 2017; Hart, 1974). Climate change developments (including coastal storms, sea level rise, floods and wildfires in areas where there are nuclear plants, major airports, hazardous waste landfills, levee and dam systems), and in the unique case of Hampton Roads,

military bases to include the world's largest navy base, warrant a more proactive approach to emergency management policies and practices. Emergency management research studies conclude that emergency managers and professionals face various barriers stifling their ability to effectively plan for disasters (Atkisson & Petak, 1981; Haddow, Bullock, & Coppola, 2017; Petak, 1985; Talen, 2008). Barriers include intra-governmental and intra-organizational complexities that lead to boundary issues, mistrust and lack of coordinated efforts (Atkisson & Petak, 1981; Haddow, Bullock, & Coppola, 2017; Petak, 1985; Talen, 2008). The rationale is that policymakers oftentimes view other problems as more important due to the political "noise" surrounding an issue. Further, it is important to understand that local EM budgetary coffers are highly dependent on the political platforms at the federal, state and local levels. The aforementioned issues result in the lack of political support and resources for emergency management problems (Atkisson & Petak, 1981; Haddow, Bullock, & Coppola, 2017; Petak, 1985; Talen, 2008).

During previous federal administrations, there were shifts in EM legislative attention due to national climate reports and extensive climate change research (Wuebbles, et al., 2017). Some legislators were making great efforts to understand the scientific explanations and the global economic impacts of climate change. The increased interest in climate change promoted the need for additional emergency management resources, as well as an implementation process that simplified the transition of resources from the federal to local levels (Wuebbles, et al., 2017).

In 2016, with the election of a new President, there was a shift in the political winds. Although climate change is a national discussion, it is not a priority for the current federal administration. The State of Virginia still prioritizes climate change (Virginia Department of Emergency Management, 2019). However, federal funds and programs previously in place risk

funding losses. Nevertheless, in order to gain a full understanding of how emergency management policies and practices impact communities, the next section chronicles a discussion of emergency management's historical roots, evolution and phases.

EMERGENCY MANAGEMENT: WHAT IS IT?

According to Haddow, Bullock, and Coppola, (2017) emergency management is the discipline that relates to risk and avoidance. Risks are broad and vary across the spectrum of issues and events that threatens citizens' daily lives (Haddow, Bullock, & Coppola, 2017). Risks range from dry fires and very active hurricane seasons stemming from climate change to domestic terrorism. The avoidance of such events is what constitutes the actions necessary to protect citizens from risks. Mitigation is an example of such action that involves the continuous process of identifying, planning, developing and implementing policies and actions to reduce or avoid risks (Boccardo, 2013; Haddow, Bullock, & Coppola, 2017).

Emergency management is an important function of our federal, state and local governments (Haddow, Bullock, & Coppola, 2017; Petak, 1985). Emergency management is referenced in the United States Constitution, charged with the responsibility for public health and safety to states and gives secondary responsibility to the federal government (Haddow, Bullock, & Coppola, 2017; Petak, 1985). Emergency management is the means by which the government prepares and responds to life, health and safety risks from natural and man-made disasters (Haddow, Bullock, & Coppola, 2017; Petak, 1985). Therefore, emergency management plays an integral role in citizens' daily lives and integrates into daily decisions, not just during times of disasters (Haddow, Bullock, & Coppola, 2017).

THE ORIGINS

Emergency management activities have been ongoing in the United States throughout its history. Fires were a major emergency management issue in past centuries (Haddow, Bullock, & Coppola, 2017). The first example of the federal government becoming involved in a local disaster resulted in the 1803 Congressional Act which allocated federal funds to New Hampshire (Haddow, Bullock, & Coppola, 2017). The disaster event was a major fire (Haddow, Bullock, & Coppola, 2017). The United States Weather Bureau, currently known as the National Weather Service (NWS), has colonial roots. Its official creation was in 1890 under the Benjamin Harrison administration (NWS, 2020). The organization was responsible for weather-event forecasts and warnings.

The Roosevelt Years

According to Haddow, Bullock, and Coppola (2017), the Roosevelt Administration provided the most extensive support to localities for emergency management purposes. In 1933, the Tennessee Valley Authority (TVA) was created to produce hydroelectric power and reduce flooding (Haddow, Bullock, & Coppola, 2017). The Flood Control Act of 1934 gave the United States Army Corps of Engineers increased authority to design and build flood control projects (Haddow, Bullock, & Coppola, 2017).

Federal government actions had significant and long-lasting impacts on emergency management (Haddow, Bullock, & Coppola, 2017; Richter, et al., 2010). For example, the TVA spanned over seven (7) states to include Alabama, Mississippi, Kentucky, Georgia, North Carolina, Tennessee, and Virginia (Haddow, Bullock, & Coppola, 2017; Richter, et al., 2010). There were positive impacts to many communities due to TVA activities (Richter, et al., 2010). Positive impacts include improving living standards and creating jobs (Richter, et

al., 2010). Shortly after the formation of the TVA, Congress enacted The Flood Control Act (1934) that touted a philosophy that humans controlling nature eliminates the risk of floods (Richter, et al., 2010).

Although programs created through the TVA and the Flood Control Act (1934) promoted economic and population growth along the nation's rivers, history has proven that this attempt at emergency management was short-termed and had human costs (Haddow, Bullock, & Coppola, 2017; Richter, et al., 2010). Even though dam construction and other programs through the TVA provided electricity and employment for thousands of people, there were negative societal impacts. Negative impacts included the displacement of families and communities (Richter, et al., 2010). Entire towns were flooded-out due to the redirection of rivers and waterways and created hardships to residents by forcing them out of their homesteads (Richter, et al., 2010).

The Flood Control Act (1934) elicited the coordination of two organizations, the Department of Agriculture and the Army Corps of Engineers, to coordinate in developing plans to reduce runoff through downstream projects and rainfall retainment (ASFM, 2000; Haddow, Bullock, & Coppola, 2017; Richter, et al., 2010). However, the lack of coordination between the organizations stifled progress and resulted in costs overruns (ASFM, 2000; Haddow, Bullock, & Coppola, 2017; Richter, et al., 2010). Coordination problems forced the enactment of additional flood legislation as a means to correct and facilitate natural disaster management. The result was continual coordination and communication problems (Haddow, Bullock, & Coppola, 2017).

The Emergence of FEMA

A barrage of natural events occurred in the 1960s (Haddow, Bullock, & Coppola, 2017). One major event was the Ash Wednesday Nor'easter during March 6-8, 1962. This Nor'easter devastated more than 620 miles of shoreline on the East Coast, producing more than $300

million in damages (ASFM, 2000; Haddow, Bullock, & Coppola, 2017; May, 1985). This storm had profound negative impacts on Hampton Roads residents to include massive tidal flooding and wind damage (ASFM, 2000; Haddow, Bullock, & Coppola, 2017; NHS, 2017). Other hurricanes during this period started a federal government dialogue of insurance as a protection against future floods and a potential method to reduce continued government assistance after disasters (ASFM, 2000; Haddow, Bullock, & Coppola, 2017; May, 1985). These discussions would lead to the National Flood Insurance Act of 1968, which created the National Flood Insurance Program (ASFM, 2000; Haddow, Bullock, & Coppola, 2017; May, 1985).

In the early 1970s, responsibility for EM was spread amongst five (5) federal departments and agencies, including the Department of Commerce, the General Services Administration, the Treasury Department, the Nuclear Regulatory Commission, and Housing and Urban Development (ASFM, 2000; Buckle, 1998; Haddow, Bullock, & Coppola, 2017; May, 1985). Each federal governmental entity had its own function as it related to risk and disasters. During a period in the 1970s, more than 100 federal agencies were involved in some aspect of risk and disasters (ASFM, 2000; Buckle, 1998; Haddow, Bullock, & Coppola, 2017; May, 1985). This multi-organizational behavior trickled-down to the state and local levels and added to organizational border issues (Atkisson & Petak, 1981; Haddow, Bullock, & Coppola, 2017; Petak, 1985).

On June 19, 1978, President Carter presented a plan to Congress consolidating emergency preparedness, mitigation, and response activities into one federal emergency management organization (ASFM, 2000; Buckle, 1998; Haddow, Bullock, & Coppola, 2017; May, 1985). This action resulted in the 1979 executive order from the Carter Administration and established the Federal Emergency Management Agency, commonly referred to as FEMA

(ASFM, 2000; Buckle, 1998; Haddow, Bullock, & Coppola, 2017; May, 1985). Federal departments and agencies previously performing independent functions of risk and avoidance were transferred under FEMA (ASFM, 2000; Buckle, 1998; Haddow, Bullock, & Coppola, 2017; May, 1985). The responsibilities of the newly formed organization were:[2]

- Oversight of the Earthquake Hazards Reduction Program (Office of Science and Technology Policy).
- Coordination of dam safety (Office of Science and Technology Policy).
- Assistance to communities in the development of readiness plans for severe weather-related emergencies.
- Coordination of natural and nuclear disaster warning systems.
- Coordination of preparedness and planning to reduce the consequences of major terrorist incidents.

However, the newly, federally established agency had implementation issues in the form of shared governance which again, trickled-down to state and local agencies (Henstra, 2010; May 1985).

Emergency Management Paradigm Shift from Natural Disaster to Terrorism

After the September 11, 2001 terrorist attacks, President George W. Bush created, by executive order, the Department of Homeland Security (Haddow, Bullock, & Coppola, 2017). Subsequently, FEMA was moved under the Department of Homeland Security (Haddow, Bullock, & Coppola, 2017; Henstra, 2010). As a result, the main focus of emergency

[2] ASFM, 2000; Buckle, 1998; Haddow, Bullock, & Coppola, 2017; May, 1985

management became primarily terrorism. This action diverted resources and leadership channels from the President and away from natural and other hazards (Haddow, Bullock, & Coppola, 2017; Henstra, 2010). Resource and leadership shifts produced dire consequences during FEMA's failures during post-Katrina response (Haddow, Bullock, & Coppola, 2017; Talen, 2008). Post-Katrina legislation improved and corrected some, but not all, of the systemic problems in the federal system but this legislation did not address the budgetary and resource shortfalls experienced in today's EM agencies. According to Haddow, Bullock, and Coppola (2017), current legislation "focuses emergency management on evacuation and response but the long-term strategy of risks mitigation is largely forgotten" (p. 24).

The Functions of Emergency Management

Emergency management consists of a broad set of functions to include 1) mitigation and prevention, 2) preparedness, 3) response, and 4) recovery (Boccardo, 2013; City of Norfolk, 2016; FEMA, 2011; Haddow, Bullock, & Coppola, 2017; Marks, 2005; Petak, 1985; Waugh Jr. & Streib, 2006). Activities taking place within each phase include:

- Mitigation and Prevention - These two phases are often viewed as synonymous. However, there are differences. Mitigation and prevention involve the ongoing examination of the location and causes of dangerous and life-threatening risks to the health, safety, and welfare of communities (Petak, 1985). A major goal of mitigation and prevention is the development and implementation of a risk reduction plan. Both include any activities that prevent an emergency, reduce the chance of an emergency happening, or reduce the damaging effects of unavoidable emergencies (FEMA, 2005; Petak, 1985). This includes hazard mitigation to lessen impacts, such as purchasing properties to move people out of floodplains or creating green spaces and retention ponds to catch excess

water (City of Norfolk, 2016; Haddow, Bullock, & Coppola, 2017; Waugh Jr. & Streib, 2006). Purchasing flood and fire insurance for a home is a mitigation activity. Mitigation activities take place before and after emergencies (FEMA, 2005). Mitigation activities include raising homes in high flood zones, engineering bridges to withstand earthquakes, creating and enforcing effective building codes, and much more (Marks, 2005).

- Preparedness – This phase is intended to lessen the impact of disasters on communities. This EM phase includes response plans and preparations made to save lives and help response and rescue operations. Preparedness consists of planning, training, conducting drills, and identifying critical resources and potential agreements amongst responding agencies (Petak, 1985). These agreements may occur within a jurisdiction or with outside jurisdictions. Evacuation plans and stocking food and water are both examples of preparedness. Preparedness activities take place before an emergency occurs (FEMA, 2005).
- Response – During the response phase, there is a local effort to cope with the disaster itself as it happens, to rescue victims, and to provide short-term relief to victims (Marks, 2005; Petak, 1985). The response begins as soon as a disaster happens. It involves mobilizing and positioning emergency equipment; getting people out of harm's way; providing needed food, water, shelter, and medical services; and bringing essential services back online (Marks, 2005). The response phase, by which this research is oriented, includes search and rescue activities (Haddow, Bullock, & Coppola, 2017). However, it can be as specific as evacuation (FEMA, 2005). This includes actions taken to save lives and prevent further property damage in an emergency (FEMA, 2005). The response phase is putting your preparedness plans into action (FEMA, 2005). Seeking

shelter from a tornado or turning off gas valves in an earthquake are both response activities (FEMA, 2005). Response activities take place during an emergency (FEMA, 2005).

- Recovery – In recovery, public organizations turn to the task of restoring the social systems with concerns including rehabilitation, restoration, assembling a record of damage, and turning to the policy concerns about preparing for future incidents (Marks, 2005). The recovery phase is the process of rebuilding, so individuals, businesses, and communities can function on their own (Marks, 2005). The recovery phase includes the restoration of basic services and actions taken to return to a normal or an even safer situation following an emergency (FEMA, 2005; Haddow, Bullock, & Coppola, 2017; Marks 2015). Recovery involves obtaining financial assistance to help pay for the repairs (FEMA, 2005). Recovery activities take place after an emergency (FEMA, 2005). In this EM phase, public policy concerns return to mitigation and prevention (Petak, 1985).

Emergency Response in Hampton Roads

Most agencies' local governmental responses to extreme weather events are in the form of collaborations (Buckle, 1998). Even though collaboration is essential for the handling of critical weather events, it must not be locked in a command, control system (Waugh Jr. & Streib, 2006). In other words, collaboration must be transparent with information flowing freely between organizations and not controlled by a select few organizations.

However, Norfolk, Virginia is unique as it has one of the most extensive, structured plans in Hampton Roads due to its location, experiences with sea-level rise, research institutions and the existence of the world's largest naval base (The Center for Sea Level Rise, 2017). It is common that such collaborations may have boundary, planning and operational issues due to the

complexity of the organizations involved (Buckle, 1998). Human participation in any collaboration may bring these issues. However, Norfolk still stands out as a locality that embraces a multi-faceted approach that considers theoretical, environmental, political and social values and principles as a vehicle to mitigate and decrease risk (The Center for Sea Level Rise, 2017). Even though Norfolk is distinctive in its collaborative practices, this research recognizes the importance of policies and practices across Hampton Roads cities.

SOCIAL VULNERABILITY

In the literature, social vulnerability is a highly contextual concept and is applicable to numerous research topics. It is the result of social inequalities and its research origins are from social behavioral sciences (Cutter, 1996; 2003). Social vulnerability is found in criminal justice, gender studies, education, medical and housing research, amongst others. However, in this research's context, social vulnerability is a group's susceptibility to hazards along with their resiliency and recovery ability (Blaikie, Cannon, Davis, & Wisner, 1994; Bergstrand, Mayer, Brumback, & Zhang, 2018; Buckle, 1998; Cutter, 1996, Cutter & Emrich, 2006; Gooden, Jones, Martin, & Boyd, 2009; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015). Vulnerability can be based on age, race, income, gender, and even place of residence (Wisner, Blaikie, Cannon, & Davis, 2004).

Socio-economic status is the vulnerability factor that will define this research's vulnerable population. This factor was present in Cutter et al. (2003) social vulnerability index. Cutter et al. (2003) developed a vulnerability index based on a hazards model that conceptualizes inputs of social vulnerability within a hazard's paradigm. Socioeconomic and demographic data were used to construct an index of social vulnerability to environmental hazards, called the

Social Vulnerability Index (SoVI) for the United States (Cutter, Boruff, & Shirley, 2003; Cutter & Emrich, 2006).

Social vulnerability is a multidimensional factor. This means that it is abstract, broad, and complex (Creswell, 2014; Hays & Singh, 2012; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011). When a concept is unidimensional it is narrow and simple (Creswell, 2014; Hays & Singh, 2012; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011). Even though social vulnerability is based on multiple factors, such as age, race and other demographics, socioeconomic status or income came out as the strongest indicator of vulnerability in Cutter and Emrich's analyses (2006). To fully operationalize the research questions, social vulnerability is reduced to one of its unidimensional factors. In this case and based on the social vulnerability index, the characteristic is households with a low-to-moderate socio-income status.

SOCIAL CONSTRUCTION AS A THEORETICAL FOUNDATION

The Evolution of the Social Construction Framework Model

Emergency management is an important function of our federal, state and local governments (Buckle, 1998; FEMA, 2005; Petak, 1985). It is the means by which the government prepares and responds to life, health and safety risks from natural and man-made disasters (Buckle, 1998; FEMA, 2005; Petak, 1985). Emergency management is a continuous process of planning and strategizing the distribution of services (Petak, 1985; FEMA, 2005). For maximum effectiveness and timeliness of EM services, a service delivery structure must be in place that links services to the needs of diverse communities (Petak, 1998). Ignoring internal diversity renders EM efforts ineffective and untimely (Petak, 1998). One way to categorize diverse communities is by dividing them into types of vulnerable groups. In this context, social

vulnerability is a group's susceptibility to hazards along with their resiliency and recovery ability (Buckle, 1998; Cutter & Emrich, 2006; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015).

Even though local governments may have EM policies and practices in place for its most vulnerable residents, the practicality of such policies and practices is not always suitable for vulnerable households (Buckle, 1998; Cutter & Emrich, 2006). The response of vulnerable residents and local government's implementation of emergency response provides possible linkages to continuing problems faced by local governments in addressing the needs of its most vulnerable residents. Social construction as a theoretical foundation provides context for how vulnerable populations are considered in emergency management policy and hurricane response. Presented herein is the paradigm that the social construction of vulnerable populations affects emergency management policy, planning, and implementation. As a result, it affects the assessment of needs and equitable distribution of pre and post-disaster services. Often, policies for vulnerable populations are bounded by broad, general policies that place vulnerable populations in one box without considering the diversity of these target communities (Schneider & Ingram, 1993; Schneider & Sidney, 2009; Talen, 2008). The results are communication and coordination dysfunction amongst organizations that are present in the policy implementation policy phase (Henstra, 2010; Schneider, Ingram, & Deleon, 2014; Schneider & Sidney, 2009). Such dysfunction leads to policymaking that is reactive and serves as temporary fixes that do not result in practical policy solutions (Henstra, 2010; Schneider, Ingram, & Deleon, 2014; Schneider & Sidney, 2009).

Social Construction Theory

Social construction refers to the cultural characterization of groups whose well-being is shaped by public policy (Schneider & Ingram, 1993). In public policy language, it is a way to determine "who gets what, when and how" (Lasswell, 1936; Schneider & Ingram, 1993). The purpose of the social construction theoretical framework is to explain the contextual content of policies and how they shape political narratives, such as political participation, democratic values and political orientations (Ingram & Deleon, 2007; Schneider & Ingram, 1993).

Ingram, Schneider, and Deleon (2007) present numerous questions that help explain issues of policymaking. The social construction framework helps to answer questions that other frameworks may not adequately address such as: if citizens have the same rights and protections under the law, why is it that policy benefits some and not others; how is it that some negatively viewed populations receive better treatment and others do not (Ingram, Schneider, & Deleon, 2007; Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014)? These questions have their relevance in contemporary policymaking as various policies are viewed as inherently and covertly biased and racist (Bullard, 1990; Schneider, Ingram, & Deleon, 2014; Talen, 2008). Social construction theory also helps to explain the realities of how populations are viewed, including existing stereotypes, images and the assignment of values (Ingram & Deleon, 2007; Stone, 1997).

Social Construction Theory Origins

The hypothesis behind the social construction framework states that target populations, along with other factors, in the societal context are identified and provided rewards, sanctions and allocated resources (Ingram, Schneider & Deleon, 2007). As a result, historical and contemporary policy designs have a long-term effect (Ingram, Schneider, & Deleon, 2007;

Schneider, Ingram, & Deleon, 2014). Policy design affects these targets through rules, tools, definitions, or the putative goals of policy (Ingram, Schneider & Deleon, 2007). “Policy designs shape the experience of target groups and send implicit messages about how important their problems are to government and whether their participation is likely to be effective” (Ingram, Schneider, & Deleon, 2007, p. 96).

Social construction’s hypothesis helps to inform this case study’s three research questions. The allocation of benefits and burdens in policy is connected to the overarching, first and second research questions. These questions relate to the consideration of diverse populations in existing emergency management policies and practices and whether these policy considerations are beneficial or burdensome to low-to-moderate income households. According to the thesis, policy allocations to different populations are bound by cultural attitudes. Cultural attitudes shape policy decisions. These allocations are the result of policy decisions that may create systemic, long-termed impacts on certain groups. The interpretation of professional practice and lived experiences of EM practitioners and stakeholders inform the third research question relating to perceived evacuation behaviors of low-to-moderate income households.

Schneider and Ingram (1993) provide a model of the social construction of target populations (Figure 1). The figure is two dimensional and divided into negative and positive constructions (population perceptions) along with the perceived political strength of each. Advantaged groups are those who receive more benefits because they are perceived as worthy or they have favorable public sentiment (Ingram & Deleon, 2007; Schneider & Ingram, 1993). Additionally, they are viewed as having strong political power (Ingram, Schneider, & Deleon, 2007; Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014). Therefore, policymakers

tend to develop and pass legislation that favors these groups (Ingram, Schneider, & Deleon, 2007; Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014).

Constructions

Power	Positive	Negative
Strong	**Advantaged** The elderly Business Veterans Scientists	**Contenders** The rich Big unions Minorities Cultural elites Moral majority
Weak	**Dependents** Children Mothers Disabled	**Deviants** Criminals Drug addicts Socialists Gangs

Figure 1: Social construction and political power: Types of target populations. Adapted from Schneider & Ingram (1993).

The constructions are relatively fluid and in the later models, some of the target populations are divided into subsets, such as small and large businesses, drug addicts and opioid users (Schneider & Sidney, 2009). One reason for the division of populations, as well as their

different constructions, is the result of social learning (May, 1991, 1992; Schneider & Sidney, 2009). According to May (1992), social learning is goal-oriented and focuses on the cause of problems and the construction of target populations. Ingram, Schneider, and Deleon (2007) present a later version of the social construction framework with added populations to include environmentalists, welfare mothers, and the disabled (see Figure 2).

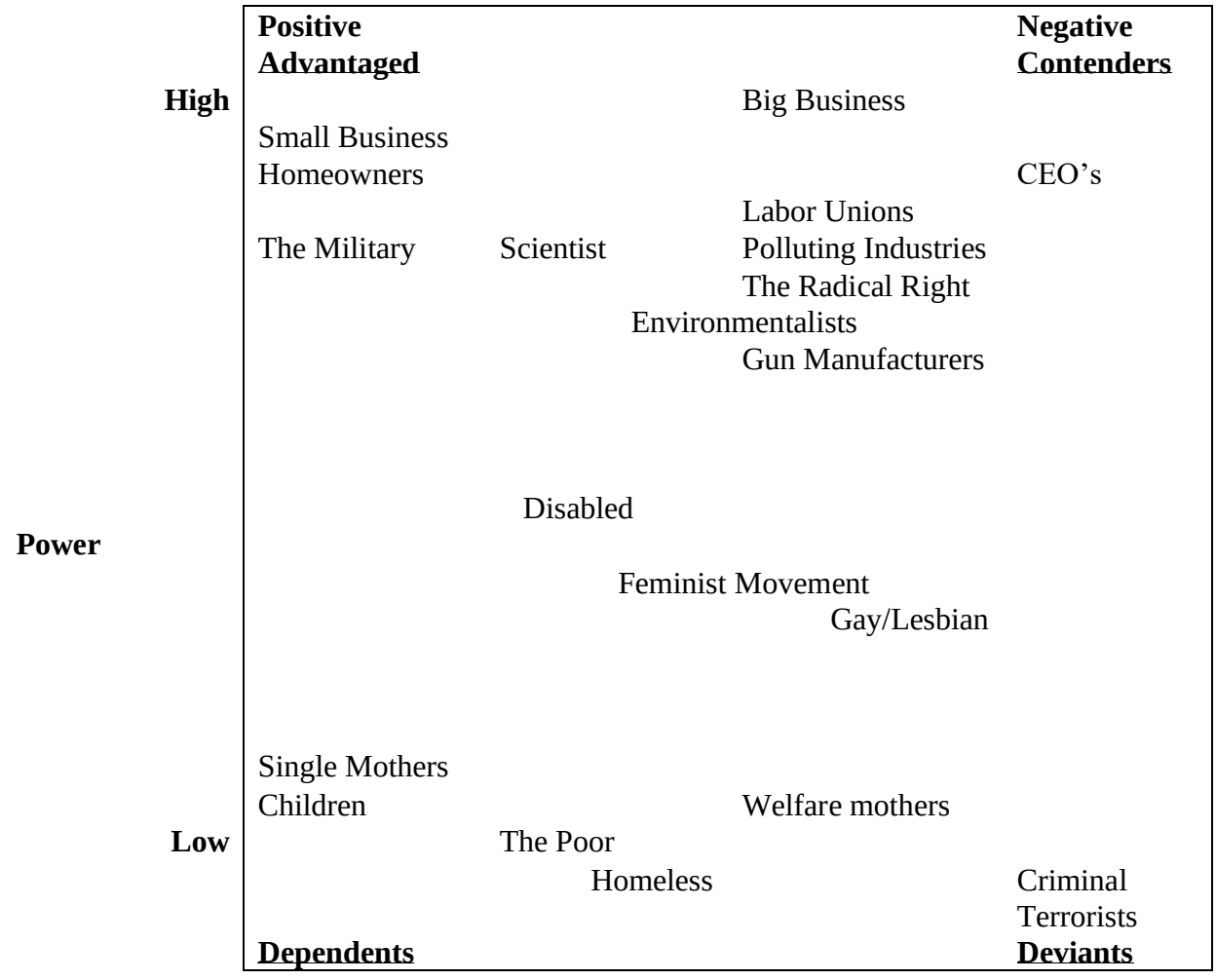


Figure 2: Social Construction and political power revised through political learning. Adapted from Ingram, Schneider & Deleon (2007).

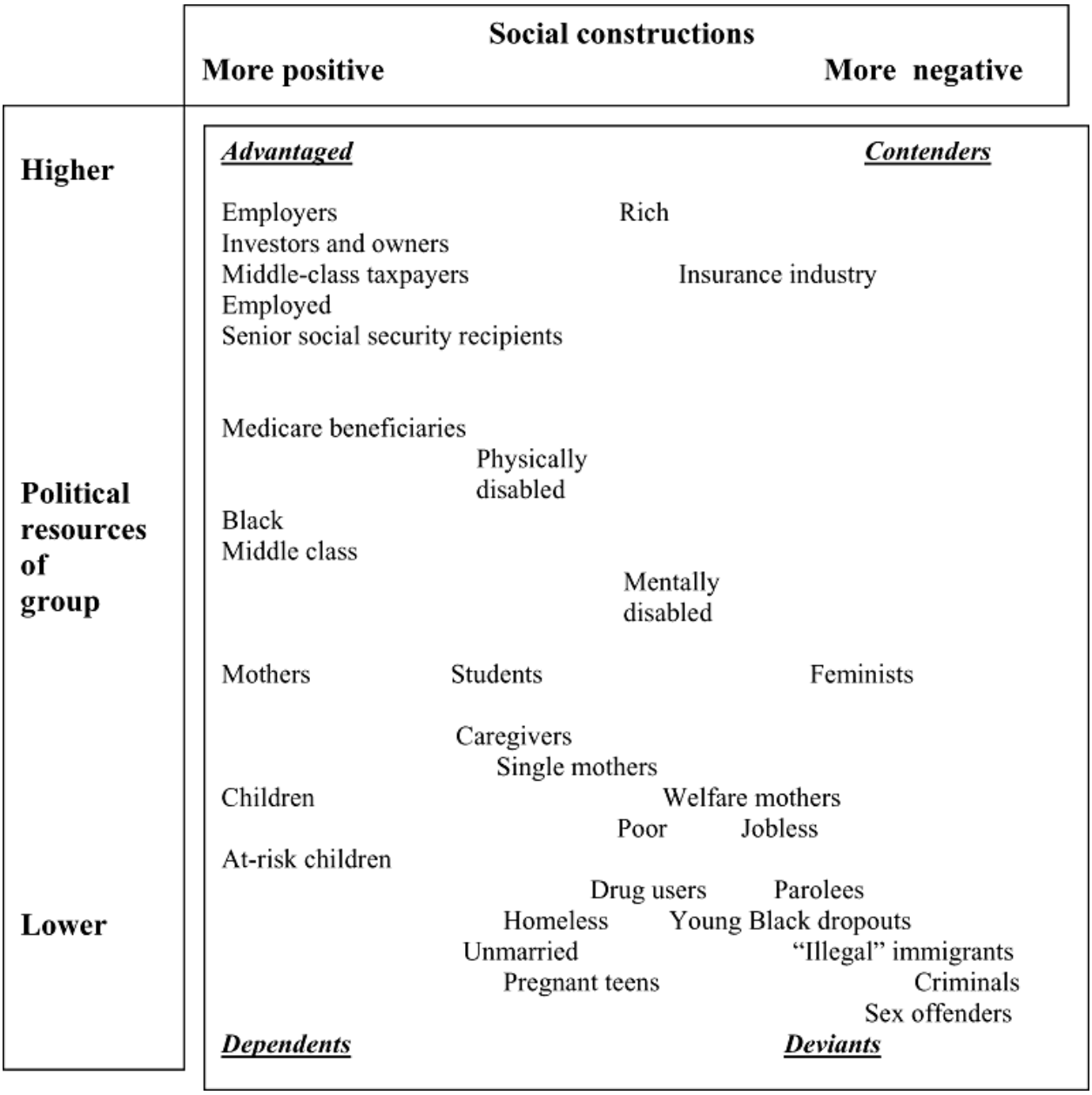


Figure 3: Power and Social Constructions of target populations. Adapted from Schneider & Sidney (2009).

In Figures 2 and 3, Schneider and Sidney (2009) present a more refined version of social construction. According to these researchers, over time policymakers have come to better understand and pay attention to social constructions and how they inform policy (Schneider & Sidney, 2009). Figure 3 is an illustration of the evolution of the social construction framework

and the fluidity of the constructions. It is important to note that target population shifts are often manipulated (Schneider & Ingram, 1993). Policy groups and advocates work to shift images from negative to positive and positive to negative based on policy goals (Schneider & Sidney, 2009). The evaluation of the model is a clear display of occurring populations shifting from contender (negative powerful) to advantaged (positive powerful). There are dynamic shifts in the contender negative weak category. However, there are some populations that do not experience a construction shift. There are construction shifts more toward the middle, and many are based on the policy goals of policymakers and increased participation of those target groups. Contestation over the images of target groups by policy actors often times causes shifts (Schneider, Ingram, & Deleon, 2014). These actions lead to policy consequences. Examples of policy consequences are social and distributive inequities which inform future politics.

The following discussion places emergency management phases in the social construction paradigm. Social construction's population perceptions represent communities and populations having both positive and negative constructions but falling into a low socio-economic status. This discussion ends with a brief review of perception (construction) shifts and whether current emergency management policies, practices and construction shifts align.

Emergency Management in a Social Construction Paradigm

This research's discussion focuses on 1) the government's response to emergency management through policy, 2) socially vulnerable populations, and 3) the social construction framework. The narrative focuses on how constructions shape emergency management policy and implementation, especially where target populations face higher risks of vulnerability due to low-economic status. This is the nexus of emergency management policies that guide emergency managers and the construction of low-income communities. As the social construction theory

evolves, the first research question centers around the role of emergency management policy and implementation for populations situated in the lower social construction category of Schneider's and Sidney's model (2009) illustrated in Figure 1, and how EM policy responses and implementation inform politics and the development of future policies. An important part of the social construction framework is how constructions are tied to public policy responses (Schneider & Ingram, 1993). In this study, the social construction of low-to-moderate income households is linked to emergency management policies and practices, and EM stakeholders' perceptions about low-to-moderate income households' hurricane evacuation behaviors. The research questions help the EM/social construction narrative by asking questions that may provide policymakers insight into strengths and shortcomings in EM policy and implementation and inform future strategic EM plans.

The EM phases are cyclical. To gather an understanding of how social construction frames this discussion, it becomes necessary to place the framework into each EM phase. Each phase in a comprehensive strategic management emergency plan has a component of social construction attached. Thus, the activities of each phase become instrumental in discussing the implications of current EM policy and implementation and the implication for future policy.

According to Schneider and Ingram (1997), the elements of public policy include 1) problem definition, 2) benefits to burdens, 3) target populations, 4) rules (who get what, when, what resources, who is eligible), 5) tools (incentives or disincentives for agencies and target groups to act accordingly with policy directives, 6) implementation plan, 7) social constructions, 8) rationales (justifications and legitimations for policy), and 9) underlying assumptions (implicit or explicit logic about the capacity of people). These policy components help explain how social

constructions of the low-to-moderate income household populations inform each EM phase in the comprehensive EM strategic plan planning process:

- Mitigation and Prevention- Mitigation and prevention involve the examination of locations and causes of dangers that threaten the health or safety of the community. This phase results in risk reduction plans for such areas. All of Schneider and Ingram's (1997) nine tenets to policymaking are relevant and highly contextual in this phase of EM planning. They range from housing, environmental and even racial segregation policies. Historical data of cities like New Orleans show that low lying areas were drained to provide housing communities for poor African Americans without regard to future dangers (Elliott & Pais, 2006). It was not uncommon to build entire communities on drained creek beds and around areas near hazardous waste sites. Populations residing in these areas were low income, minorities, poor elderly, single mothers, and children. In the social construction framework, these populations have both negative and positive (if mothers, children and elderly are included) imagery (constructions) with weak resources and little to no political power. However, while there is a perceived benefit of creating housing communities for African Americans and other populations in low contender constructions, they had a negative imagery and no political or social power during these times (Bryant & Mohai, 1992; Bullard, 1990). As a result, policies are burdensome. Even though many of these communities exist in Hampton Roads, EM was not an established, organized governmental function. Once EM became a function of government, mitigation and prevention became necessary for communities affected by flooding and hazardous waste. There are environmentalists who cite that the lack of political, social and economic power allows the government to create policy resulting in environmental

racism (Bryant & Mohai, 1992; Bullard, 1990; Elliott & Pais, 2006; Szasz, 1993). Herein, lies an example of value-laden policy and implementation informed by the weakest constructions.

Post-Hurricane Katrina, vulnerable communities began to shift constructions. As policymakers gained more social knowledge due to Hurricane Katrina's lessons, target population constructions began to shift as policy goals moved towards better management of FEMA and states wanting to have better organized EM policies (Bryant & Mohai, 1992; Ingram & Deleon, 2007; Petak, 1985; Talen, 2008). However, questions still linger as to whether the policies are the results of a change in values or just the result of political gaming in order to achieve policy goals (Ingram & Deleon, 2007; Petak, 1985). Additionally, policies meant to benefit low income, diverse communities could possibly result in inequities, such as FEMA flood insurance programs (Talen, 2008). Even though this is a federally sponsored mitigation program, the strict implementation may change a policy meant to benefit the public to burdensome. Low-to-moderate income households may not have the means to purchase insurance or afford the premiums. This is when policies become more symbolic than practical. Therefore, a low-to-moderate income household's response to such a policy could better inform future mitigation policies.

- Preparedness – lessens the impact of disasters on communities. Evacuation plans, stocking food and water are examples of preparedness. During this phase, training and drills take place. However, what seems to be lacking is the necessary education and training of communities as a proactive approach to developing preparedness policy. One of Schneider and Ingram's (1997) tenets is an underlying assumption of the capacity of

people. If the assumption is that people fit into this mainstream where everyone has a phone, computer and is technologically savvy, then this results in a policy that marginalizes not just vulnerable populations with negative constructions, but populations, such as the elderly, who possess a very positive, politically strong construction. Most local jurisdictions in the research area have municipal websites providing emergency information and text alert systems. However, this technology may present challenges for vulnerable populations. As technology advances, those residents who already possess technological deficiencies fall behind. Therefore, EM professionals and practitioners must devise ways to better educate communities on emergency communication advances while building relationships that increase trust and civic engagement.

- Response –The response begins as soon as a disaster is detected, and it involves evacuation, and search and rescue. This is, in fact, the actual performance of everything that was previously planned and practiced. In this phase is where possible EM evaluation occurs to examine a policy's practicality. For example, during Hurricane Florence, news stations and websites disseminated information about shelter locations, school closings and evacuation orders for some areas in the Hampton Roads region. Regional bus service was free in the days before Hurricane Florence was scheduled to hit to transport those with transportation issues to shelters. Therefore, here is evidence of policy considerations for vulnerable populations were implemented.
- Recovery – In recovery, public organizations turn to the task of restoring the social systems with concerns including rehabilitation, restoration, assembling a record of damage, and turning to the policy concerns about preparing for future incidents (Marks, 2005). This is also a part of the phase where the distribution of resources to residents

occurs, whether in the form of financial resources to assist disaster victims with repairs or basic needs to the restoration of services, for example, electricity. Residents may question the timeliness of services and how utility companies decide whose services are restored, first. Much of the who gets what, when, and how occurs in this phase. How target populations are constructed could inform the policy and practices for how vulnerable, low-to-moderate income households receive resources. According to Petak (1985), this is where the phases return to mitigation/prevention which creates a continuum of the EM policy-making process. Evaluation of a strategic plan post-disaster informs policymakers, EM professionals and others involved in EM policy on ways to better serve not only the community as a whole but the diversity existing within these communities.

The social construction theory link to this case study is mapped in the framework shown in Figure 4. Figure 4 more clearly illustrates the link between social construction theory and low-to-moderate income households in a social construction framework. However, Figure 4 explains the link as a causal relationship. The first set of boxes represents the dimensions of the social construction models in Figures 1-3. These dimensions are political strength, population perception and policy benefits. Therefore, in the top portion of the diagram, the blue boxes represent the outcome of advantaged and beneficial policy benefits in the following representation: If the political strength of a target population ranges from high to moderate as indicated by the vertical double-sided arrow along with a high to moderate positive perception, then the resulting output is advantaged and beneficial policy consideration for the target population. In the second row of Figure 4, the clear boxes demonstrate an adverse relationship. Therefore, If the political strength of a target population is low as indicated by the arrow pointed down along with a negative perception, also represented by the down-pointed arrow, then the

resulting output is disadvantaged and burdensome policy considerations for the target population. Burdensome policy considerations represent those policies that are supposed to be beneficial to the target group but instead have disproportionate negative effects because of the perception of the policymakers during the policymaking decision process or the perception of those implementing the policies.

The second part of the illustration represents emergency management in a social construction paradigm. In this case, the target population is low-to-moderate income households. In the application of emergency management in a social construction paradigm, the more positive the perception and political power and resources of socially vulnerable groups, then the more policy considerations and resources they will receive. The more negatively socially vulnerable groups are perceived then the less policy consideration and benefits these groups receive. The perceptions of these groups can vary from the positive to negative as they do on the social construction theory model as shown in Figures 1-3. Low-to- moderate income groups are not represented on this model but may serve as a secondary factor for other socially vulnerable groups in the social construction model to include the disabled, elderly, and homeless. However, in this case-study, low-to-moderate income household is a primary factor.

Social Construction Framework

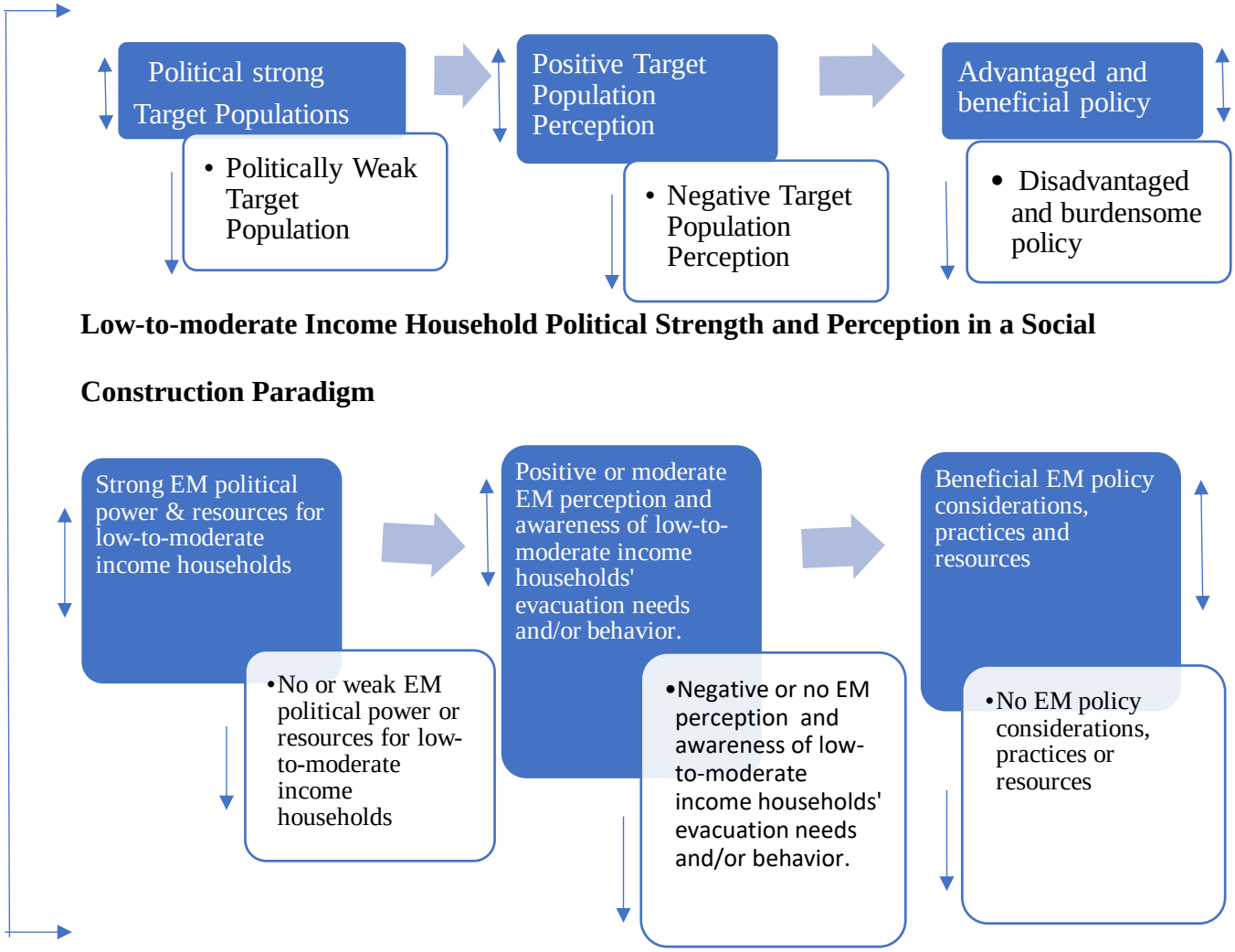


Figure 4: The link between Social Construction Theory and low-to-moderate income household political power and perception in a Social Construction paradigm.

Summary

In summary, the previous discussion provides insight into how the social construction framework is present in all phases of the EM cycle. Figures 4 provides an illustration of how the social construction theory's framework provides some utility in the explanation of how low-to-moderate income households are considered in EM policy-making decisions and practices. The research literature concerning social construction, vulnerability, disaster, and the policymaking

process provide a theoretical foundation that shapes the research questions. Based on the literature, it is evident that EM policy and practices are heavily value-based. As such, segments of populations may be marginalized whether or not it is the policy's intent. Social construction theory explains that many policy decisions are institutionalized based on the construction of certain populations (Schneider & Ingram, 1993; 2009; Schneider, Ingram, & Deleon, 2014). Therefore, in the context of EM, even if it is not the intent of policymakers to exclude low-to-moderate income household populations, due to the historical nature of these policy decisions, these households receive to little to no policy considerations.

This case study examines the potential marginalization of low-to-moderate income households. As previously referenced in the purpose, it is this research's intent to link perceptions of low-to-moderate income households' hurricane evacuation behavior and how this population is considered by EM decision makers, not only in the response phase, but in all EM phases. This is important because the EM process is cyclical, and the evaluation of its current practices, post-disaster, determine policies and practices for the next hurricane. Additionally, this case study adds to the literature and research on how the social construction of groups becomes institutionalized into policies and practices which further reinforce the perceptions of socially vulnerable groups (Ingram & Deleon, 2007; Schneider & Ingram, 1993, 2007; Schneider & Sidney, 2009).

CHAPTER III

METHODOLOGY

The purpose of this qualitative case study is to determine linkages between local emergency management policies and practices, and low-to-moderate income household behavioral responses to hurricane evacuation. As part of this study, phenomenological interviews focus on EM practitioners' and other stakeholders' perceptions of whether current EM policy and practices address the needs of low-to-moderate income households. Additionally, the phenomenological interviews query participants' perceptions on the evacuation behaviors of low-to-moderate income households.

This chapter discusses research methods and the procedures representing this dissertation's framework. The section discusses the following: population, sample frame and data collection methods. Included is a description of the various research processes such as the development of codes and themes, and the interview process. The inclusion of participants' professions and the total number of participants representing Hampton Roads cities, regional and nonprofit organizations show the various fields of professional practice that are all interrelated to emergency management. A discussion about ethical considerations, researcher's bias, credibility and trustworthiness, and types of possible errors and the limitations in conducting qualitative research complete this chapter.

RESEARCH QUESTIONS

Guiding this case study are the following research questions:

Overarching research question

To what extent do local government policies and practices address the evacuation behaviors and needs of socially vulnerable populations facing the threat of a hurricane?

Sub-research questions

1. How are low-to-moderate income households considered in the local evacuation plans?
2. What are the local emergency evacuation policies and practices that are related to low-to-moderate income households?
3. How do local EM policymakers, practitioners, and stakeholders perceive low-to-moderate income households' evacuation behavior when faced with the threat of a hurricane?

The research questions were developed from the social construction theory. The hypothesis behind the social construction theory states that target populations, along with other factors such as political power, are identified and provided rewards, sanctions and allocated resources (Ingram, Schneider & Deleon, 2007). The research questions situated social construction theory in an EM paradigm by identifying the population as low-to-moderate income households. Even though this population is not present in the theory's model, it was linked to other populations that represent factors of social vulnerability and hold similar characteristics, such as single mothers, welfare mothers, the poor, jobless and homeless (*see Figures 1-3)*. As such, low-to-moderate income households would be in a politically weak dimension. However, the perception of low-to-moderate income households would be dependent upon the data collected from the phenomenological interviews about policies and practices and a review of Hampton Roads Emergency Operations and Hazards Management Plans.

This dissertation addresses an overarching research question. The research question is operationalized into three (3) additional research sub-questions. The sub-questions are focused on emergency evacuation policy and low-to-moderate income household response. The questions

represent the main components of the overarching research question. The first two questions specifically address the mitigation and prevention phase of emergency management policy. Policy development and implementation occurs in this phase. These questions query the existence of vulnerable household considerations in existing policy. They include: How are low-to-moderate income households considered in the local evacuation plans; and, what are the local emergency evacuation policies and practices that are related to low-to-moderate income households? Interview questions are created that ask these questions directly. Additionally, EM and other local government, regional and nonprofit practitioners, elected officials and activists are queried to determine if there are specific policy components that address socially vulnerable residents and whether they are implemented.

The last question relates to the perceptions of EM policymakers, practitioners and stakeholders. The perception of interest is vulnerable residents' responses to emergency management actions such as evacuation orders. Also, of interest is how those responses connect to local EM policies and practices. This research question is: How do local EM policymakers, practitioners, and stakeholders perceive low-to-moderate income households' evacuation behavior when faced with the threat of a hurricane? Specifically, based on EM policymakers', practitioners', and stakeholders' professional and other lived-experiences with hurricane evacuation, what are the perceptions of how low-to-moderate income households respond and why? Additionally, how does this connect or disconnect to your evacuation policy?

RESEARCH DESIGN

This research is a qualitative, case study design. A qualitative study is "defined by its by extensive use of information" (O'Sullivan, Rassel, & Berner, 2008, p. 39). Qualitative research is the detailed description of characteristics and cases (Creswell, 2007, 2014; Creswell & Miller,

2000; O'Sullivan, Rassel, & Berner, 2008). This type of research design is flexible and may be altered as research progresses (Creswell, 2007, 2014; Creswell & Miller, 2000; O'Sullivan, Rassel, & Berner, 2008). The qualitative research design approach provides context and information on individuals involved in the research (Creswell, 2007, 2014; Creswell & Miller, 2000; O'Sullivan, Rassel, & Berner, 2008). Qualitative research provides rich insights into real world experiences and adds to the thickness of data through descriptions (Braun & Clarke, 2014; Creswell, 2007, 2014; Creswell & Miller, 2000; O'Sullivan, Rassel, & Berner, 2008).

Case Studies

Case studies offer information from multiple sources (Creswell, 2007, 2014; Creswell & Miller, 2000; O'Sullivan, Rassel, & Berner, 2008). Information sources include interviews, archival documents, interviews and observations (Creswell, 2007, 2014; Creswell & Miller, 2000; O'Sullivan, Rassel, & Berner, 2008). The "inclusion of multiple sources of information is the strength of case studies" (O'Sullivan, Rassel, & Berner, 2008, p. 49). Multiple informational sources can then be compared to increase the research's validity and reliability. This case study relies on theory, existing policies and procedures, and interviews. Case studies allow the researcher to focus on specific components of a case (O'Sullivan, Rassel, & Berner, 2008). For example, emergency management and socially vulnerable populations are broad research topics. As such, this case study focuses on hurricane evacuation behaviors and public policy responses to low-to-moderate income households. The case study's context is Hampton Roads.

Phenomenological Approach

This case study utilizes the phenomenological method of inquiry. This qualitative research method obtains information about the professional practice and other lived experiences of EM and other practitioners in Hampton Roads cities. Phenomenology is an important part of

this case study. Therefore, it warrants an in-depth discussion to understand this approach to qualitative interviewing and its appropriateness for this study.

Phenomenology focuses the meaning of a particular phenomenon through the lived experiences of several people (Creswell, 2007, 2014 Moustakas, 1994). There is an interest by phenomenologists to determine what all participants have in common as they experience a phenomenon (Creswell, 2007, 2014; Hays & Singh, 2012; Moustakas, 1994; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011, van Manen, 1990). According to Creswell (2007), "the basic purpose of phenomenology is to reduce individual lived experiences with a phenomenon to the description of the universal essence" (p. 58), "or the very nature of a thing" (Van Manen, 1990, p. 163). The phenomenon of interest in this research is whether EM policies and practices affect, and meet the needs, of low-to-moderate income household evacuation behavior.

The phenomenological approach used for this research is the hermeneutical approach (Creswell, 2007, 2014; Hays & Singh, 2012; Moustakas, 1994; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011, van Manen, 1990). Hermeneutical phenomenology refers to research that is oriented towards the lived experiences of people and interpreting the contents of their lives (van Manen, 1990). The researcher collects information from participants who have experienced the phenomenon and develops descriptions consisting of the what and how of these experiences (Creswell, 2007, 2014; Hays & Singh, 2012; Moustakas, 1994; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011, van Manen, 1990).

According to Creswell (2007), the types of problems best suited for phenomenological research are those where it is important to understand common experiences. The importance of this understanding is to develop policies and practices or a deeper understand of the phenomenon

(Creswell, 2007, 2014; Hays & Singh, 2012; Moustakas, 1994; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011, van Manen, 1990). Data collection in phenomenological studies are usually by interviews, although data collection may take other forms, such as taped conversations (Creswell, 2007, 2014; Hays & Singh, 2012; Moustakas, 1994; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011, van Manen, 1990). Phenomenology requires that the researcher must have some understanding of the broader philosophical assumptions of the phenomenon and participants need to be carefully chosen so the researcher can establish commonality (Creswell, 2007, 2014; Hays & Singh, 2012; Moustakas, 1994; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011, van Manen, 1990).

This phenomenological approach aligns the research with qualitative interview questions. In the context of this research, the phenomenological method seeks explanations from EM practitioners and stakeholders about the considerations and needs of low-to-moderate income households in local government, regional collaborations, emergency preparedness, and response (Creswell, 2014; Hays & Singh, 2012; Moustakas, 1994; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011; Starks & Trinidad, 2007). 2014; Hays & Singh, 2012; O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011). The phenomenological interview method was used with purposive sampling to establish commonality in shared experiences by EM practitioners and stakeholders which increases the credibility and validity of this study (Speer, 2018). This research obtains experiences from research participants to include 1) emergency managers, engineers, planners, 2) a local government executive, 3) a school board member, 4) a vice mayor, and 2) social justice activists. Data collected from interviews were compared with information obtain from the literature review, as presented in a social construction paradigm, to

better understand how vulnerable populations are considered in all phases of EM policy and planning (Anyan, 2013; Grossoehme, 2014).

SECONDARY DATA SOURCES

Emergency Operations Plans (EOP) and Hazards Mitigation Plans (HMP) for the Hampton Roads cities participating in this study were reviewed. A major part of the review consisted of the search for sections and/or language that addressed socially vulnerable populations, specifically low-to-moderate income household populations. The online review of Hampton Roads' cities EOPs and HMPs helped to determine whether hurricane evacuation and other emergency management related policies connected with the practices as stated by interview participants. This is determined by comparing the policies to EM practitioners' answers in this study's interview phase. As mentioned previously, an important part of the social construction framework is how constructions of people are tied to policy responses.

PHENOMENOLOGICAL INTERVIEW PROCESS

Data Instruments

Researcher. The researcher is the instrument used to collect the data in the phenomenological research method for this qualitative study (Creswell & Miller, 2000, 2014; Speer, 2018). Researchers should provide enough information on the research subject and context to allow the "reader to assess the findings' capability of being transferable," and credible (Cope, 2014, p. 527). The researcher did not influence the participants' answers in any way and allowed them to answer the questions freely.

The researcher's interest in EM policy and practices and social vulnerability originated from a general interest in social justice issues. The researcher's current field of practice is criminal justice administration, policy and public sector leadership. The researcher desires to

extend her knowledge of climate-change policy issues and the impact on disenfranchised populations. In the future, the researcher's doctorate level research abilities, along with years of local government practice, will provide the public service leadership sector assistance in how to better serve local diverse populations.

Audio Recorder. The researcher utilized an audio recorder for face-to face interviews. The researcher ensured that the recording device was operational before each interview via checked batteries and recorded test audios. The interviews were transcribed within two (2) days of the interview. The audio recorder was secured in a locked drawer if it contained interviews not transcribed. The audio recorder was plugged into the researcher's password-protected personal computer for transcriptions. All audio recordings and interview transcriptions were transferred and secured in a password-protected, confidential file located in Dropbox.

Password-Protected Cellular Phone. The researcher's personal cellular phone was used as a back-up in the event that the audio recorder malfunctioned. Additionally, it was utilized if participants could not be interviewed face-to-face. For the sake of confidentiality, telephone interviews were conducted in private spaces. If the audio recording was audible, then the interviewed recording was erased from the cellular phone. For those interviews recorded on the personal cellular phone, the phone was plugged into the researcher's password-protected personal computer for transcribing and erased immediately afterwards. All audio recordings and interview transcriptions were transferred and secured in a password-protected, confidential file located in Dropbox.

Data Storage and Protection. The audio interviews and transcriptions are secured in a password-protected, confidential file located in Dropbox. For the protection of the participants, all raw data, transcriptions, audio interviews, and participants' identities are stored separately.

These records are stored in compliance with Old Dominion University's Strome College of Business Human Subjects Committee requirements for protecting the anonymity of the research subjects. This research's protocol was approved by the Old Dominion University Strome College of Business' Human Subjects Committee.

Population

The population of interest includes EM managers, practitioners, coordinators, a city and regional executives, constitutional officers, first responders, volunteers, engineers, planners, nonprofit workers, social advocates and other stakeholders who work or have experience in emergency management policymaking, planning, response, support capacities and advocacy. The target population must work or volunteer in the Hampton Roads cities of Norfolk, Virginia Beach, Chesapeake, Portsmouth, and Hampton. Purposive sampling, discussed more thoroughly below, is used as a means for selecting participants.

Sample Size, Design, and Frame

Purposive sampling is the choice for this dissertation research. Purposive sampling is a nonprobability form of sampling used to select participants with certain characteristics (Dworkin, 2012). It is based on the judgment of the researcher that somehow the population represents the broader population (Creswell, 2014; Creswell & Miller, 2000; O'Sullivan, Rassel, & Berner, 2008). Purposive sampling is useful in this research's sampling frame strategy. The frame seeks and represents those who possess knowledge and expertise in emergency management policy-making, planning, and practice. Knowledge experts provide insights and perceptions as to what drives EM policy and practices. This expertise explains how vulnerable populations, particularly low-to-moderate income households, are considered during hurricane evacuation. Prequalified participants were identified via social media forums, and networking opportunities by way of

attendance to relevant conferences, symposiums and professional associations where EM was a focus. According to Stewart and Wiliams (2005), the use of qualified participants increases the reliability of results.

Qualitative researchers recommend that when working with phenomenological research, the sample size should be between five (5) and twenty-five participants (Dworkin, 2012; Speer, 2018). This allows the saturation of data needed to explain a phenomenon when using the phenomenological style of research (Hodges, 2011). Twenty-five participants were originally prequalified for this study. The participants were prequalified based on their professional positions and background experiences. The participants were vetted by their current positions, networking at professional conferences and symposiums, city government official websites and professional social media sites. Fourteen of the prequalified participants agreed to participate.

Purposive sampling is utilized when there is a necessity to consider certain demographic factors while choosing participants (Creswell, 2014; Speer, 2018). Participants for the study were chosen for this research through EM networks established by participation in EM oriented symposiums, workshops, conferences and professional meetings. Additionally, participants were chosen via social media through government and business network sites and websites. The participants were minimally familiar with the researcher either through networking or by second-party introductions.

The sampling frame consisted of six (6) participants who were emergency managers, practitioners or coordinators, two (2) engineers, two (2) planners, one (1) local government

executive, two (2) elected officers, and (1) social justice activist for a total of 14 participants.[3] However, it is important to note that participants had multiple roles related to EM and varying backgrounds. For example, seven (7) participants had affiliations with regional organizations. One (1) of the elected officials has a background in community social justice activism and noted that their social justice activist's role is continuous. The multiple roles and geographical areas represented are emphasized in Figure 4 and 5. Figure 4 lists participants by their backgrounds, and Figure 5 lists the Hampton Roads cities that participants represents. The totals in these figures differ from the actual number of participants interviewed, which is 14.

[3] Nonprofit and regional transportation organization's participation decline was either verbally or by nonresponse. Follow-up phone calls were made to try to ensure the receipt of the electronic invitation. However, there was either a verbal decline to participation or calls were unreturned.

Background	Number
EM Managers (those with titles of director, manager, coordinator or administrator)	6
Planners	2
Engineers	2
Elected Official	2
City Administrator	1
Social Justice Activists	2
Total	15

Figure 5: Professions and number of participants

City and/or Regional Participant	Number
Norfolk	4
Virginia Beach	2
Chesapeake	1
Portsmouth	3
Hampton	2
Regional	7
Total	19

Figure 6: Geographical representation of participants

Emergency management practitioners and stakeholders provide credibility to this study due to their professional knowledge and experiences. Additionally, EM practitioners and stakeholders provide unique insights that help to answer the research questions. Many of the participants are part of one or more Hampton Roads regional organizations. Therefore, an

interview question was developed that queried the participants' regional perspectives. Emergency management practitioners and stakeholders represent the effort to present a diverse set of EM experiences and perspectives on current and past policy and practices, and perspectives on low-to-moderate income household evacuation behaviors.

Data Collection

The data collection instrument is the phenomenological interpretive interview. This interpretive approach to interviewing allows descriptions of lived experiences provided by interview participants (Fernandez, 2017). This approach to phenomenological interviews is most effective when participants are purposively sampled (Chenail, 2012). It serves the research purpose due to the experience of the participants, which informs their answers; thus, assisting in answering the research questions. Twenty-five prequalified potential participants were solicited for interviews. The interviews were semi-structured, as shown below (also see Appendix C). Semi-structured interviews are designed to establish subjective responses from the research participants (McIntosh & Morse, 2015). Interview questions will be linked directly to the research question and query existing policies and considerations for low-to-moderate income populations. This leads to more consistent data collection.

Two participants were purposely chosen for pretest interviews. This process was conducted in an effort to increase the credibility and dependability of the study (Speer, 2018). The EM practitioners were asked the same interview questions as those who were scheduled to participate. This was in the effort to reduce bias, avoid ambiguity and repetition, and to determine if the interview questions connected to the research questions (Speer, 2018, Stewart & Williams, 2005). The pretest interviews determined that there was no ambiguity in the questions. Resulting from the pre-test was the addition of follow-up interview questions.

Interview Questions

The interview questions were developed in a manner that would answer the research questions. For example, the overarching and first two research questions query the consideration and existence of low-to-moderate income households in current policies and practices and their needs. Therefore, participants were asked directly whether they have policies addressing these households, how are they considered and what are their needs. Other interviews questions were developed in the same manner to answer questions about low-to-moderate income household evacuation behavior.

1. How do your City's EM policies and practices address the needs of low to moderate income households?
    a. Based on your experience does this represent a change from past policies and practices?
    b. If so/not so, why do you think this is the case?
2. How would you characterize the low to moderate income households in terms of their needs during evacuation?
3. Are there different procedures that are followed for ensuring the evacuation of low-moderate income households?
    a. If so, why? How are they different?
4. Based on your experience, how do low-income households respond to emergency evacuation orders?

    a. What factors do you think contribute to their responses?

5. Lastly, what insights or thoughts do you have about how Hampton Roads cities can improve their evacuation policy and practices to better meet the needs of low to moderate households?

These research questions address the consideration for low-to-moderate income households in local EM policies and practices. The interview questions are direct queries as to whether these households are considered based on what practitioners perceive are their evacuation needs in the event of a hurricane. This question links to the supporting theory, social construction. According to the supporting theory, populations falling into this level of vulnerability are politically weak with moderate to negative connotations (Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014). Preliminary findings suggest that socially vulnerable populations that fall into other categories such as the elderly, homeless, and mentally-ill populations have a little more political power and are viewed as moderately to highly positive. If these categories include low-to-moderate income households, then it is viewed almost as a secondary factor of vulnerability. Lastly, interview question number five (5) asks each participant to provide a regional perspective on how the region may improve its EM evacuation policies concerning low-to-moderate income households.

Protection of Participants

The participants' private information is secured in a password-protected Dropbox file. This file is located on a password protected computer accessed by the researcher, only. The researcher informed each participant of their ability not to participate or stop the interview process at any time to respect the autonomy of the participants. To respect an individual's autonomy is the practice of allowing people to make uncoerced decisions (Creswell & Miller, 2000; United States Department of Health, 1979).

Participants were recruited to participate in the research via email invitation along with a confidentiality statement and waiver of participation statement as well as a consent form (Appendix C). The email included information about research, the researcher, the interview procedure, and how their private information will be protected. Participants choosing to participate acknowledged their agreement by email response and a second acknowledgment of the electronic consent, as approved by Old Dominion University's Strome College of Business Human Subjects Committee (see Appendix C).

Interview Process and Setting

Interviews took place over a seven (7) month period from September 2019 through March 2020. Interview timeframes ranged from 30 minutes to 1 ½ hours. Interviews were conducted face-to-face with one interview occurring by telephone. The telephone interview in place of the preferred face-to-face interview method was a last-minute change due to a participant's schedule conflict.

Once participants agreed to be interviewed, a date, time and place agreeable to both the researcher and the participants were established. The interviews were taped using an audio recording device and the researcher's personal cellular phone as a back-up recorder. The individual interview tape recordings were assigned a confidential identifier recognizable only by the researcher. After transcribing, all audio and transcribed interviews will be stored in a non-shared, password-protected, confidential file in the computer application, Dropbox.

ETHICAL CONSIDERATIONS AND RESEARCHER'S BIAS

Ethical Considerations

The practitioners, policymakers, elected officials and others who participated in this research were provided with all the necessary information needed for them to clearly

understand the benefits and risks associated with their participation. This was done before their decision to participate in this study. Participants were not compensated for their participation, and there were no known immediate risks associated with their participation. No emotional harm or professional risk was noted as their identities and responses to the interview questions were kept anonymous.

The selection of the participants for this study adhered to the qualitative study guidelines; no interviewee was given any preferential treatment over others (Creswell, 2014; Creswell & Miller, 2000, Speer, 2017). During data collection, participants may become comfortable engaging with the researcher, which could contribute to their release of some information that was not intended for the study (Denzin & Lincoln, 2005; Speer, 2018). A consent form was sent to each selected research participant electronically before interviews to inform them of the he Informed Consent process (See Introduction and Voluntary consent document in the appendix B).

Researcher's Bias

Researcher's bias is an issue in qualitative research because its "open ended and less structured than quantitative research" (Johnson, 1997, p. 284). Researcher's bias occurs when one allows their personal views and perspective to determine how the research is conducted and the data interpreted (Cope, 2014; Creswell, 2000, 2014; Johnson, 1997). This type of bias may occur through selective observation, recording, and transcribing of information (Cope, 2014; Creswell, 2000, 2014; Johnson, 1997; Speer, 2018). One way to avoid reseacher bias is through reflexivity (Johnson, 1997). According to Johnson (1997), reflexivity occurs through self-awareness and critical self-reflection of a researcher's own personal biases and predisposition. Therefore, the researcher made every effort to not

interject personal perceptions and preconceived notions about the outcome of this research. This was difficult since the researcher in this case study has an extensive practice background in criminal justice, a field that has institutional and systemic social bias issues. Therefore, in additional to reflexivity, theory and data triangulation are utilized. Data triangulation comprises using multiple sources to explain a phenomenon (Cope, 2014; Creswell, 2000, 2014; Johnson, 1997; Speer, 2018).

DATA ANALYSIS

The method of analysis is thematic analysis, which is a process used to assist researchers in their qualitative methods, (Boyatzis, 1998; Braun & Clarke, 2006, 2014; Holloway & Todres, 2003; Nowell, Norris, White, & Moules, 2017; Ryan & Bernard, 2003). It is a process for reporting themes found within a data set that occur by way of identifying and organizing, then analyzing themes (Braun & Clarke, 2006, 2014; Nowell, Norris, White, & Moules, 2017). Thematic analysis allows for the use of different research methods to complement each other due to its ease in transferability between qualitative and quantitative analysis, enabling researchers who use different research methods that work well, together (Boyatzis, 1998; Braun & Clarke, 2006, 2014; Nowell, Norris, White, & Moules, 2017).

There are advantages and disadvantages to thematic analyses. An advantage includes flexibility in its approach, in that it can be modified to adjust to the needs of different studies (Braun & Clarke, 2014; Nowell, Norris, White, & Moules, 2017). According to Nowell et al. (2017), thematic analysis is practical when comparing and contrasting the perspectives of different research participants. However, there are disadvantages to using this process in qualitative methods. Flexibility in its use may lead to inconsistencies and the lack of understanding as themes are derived from the research data (Braun & Clarke, 2014;

Holloway & Todres, 2003; Nowell, Norris, White, & Moules, 2017). Therefore, trustworthiness plays an important role.

Thematic Analysis as the Data Analysis Tool

Thematic analysis was used in this case study to generate codes from interviews conducted with EM practitioners and stakeholders. Relationships and associations, to include other themes, that emerged as a result of a thorough examination of the raw data were developed into codes. The codes and themes assisted the researcher in answering the research questions. This was done by linking participants' answers to social construction theory and the research literature.

Coding in this case study involved "identifying, analyzing, and reporting patterns within data" (Braun & Clarke, 2006, p. 79). The coding method used relies on from three perspectives: concept-driven, research questions, and data-driven perspectives. Concept-driven coding occurred when researcher searched for "concepts and ideas within the text" (Boyatzis, 1998, p. 2). Social construction theory provided the context for the search for themes, as well as the research literature. The second perspective for coding was from the research questions perspective. This allowed the researcher to determine if the data are consistent with this case study's research questions and provided adequate information (Braun & Clarke, 2006, 2014; Boyatzis, 1998; Jugder, 2016). The last perspective was data-driven coding or open-coding (Braun & Clarke, 2006, 2014; Boyatzis, 1998). In data-driven or open coding, the researcher explored ideas throughout the raw data text without being driven by conceptualization and "let the text speak for itself" (Boyatzis, 1998, p. 2)

CREDIBILITY AND TRUSTWORTHINESS

According to Lincoln and Guba (1985), trustworthiness is one-way researchers can persuade themselves and readers that their research findings are worthy of attention. Criteria to help establish the trustworthiness of a qualitative research study's findings and analysis include credibility, transferability, dependability, and confirmability (Cope, 2014; Creswell, 2014; Creswell & Miller, 2000; Lincoln & Guba, 1985; Nowell, Norris, White, & Moules, 2017).

Credibility was established by the information obtained from the qualified participants (Speer, 2018). Prior EM research and pretesting participants for face-to-face interviews aided in increasing the researcher's knowledge base for this study. Additionally, the researcher's attendance at EM professional meetings, conferences and the overall networking with EM and other stakeholders provided the researcher with a network of researchers and practitioners whose professional knowledge allowed the researcher to have a better, more realistic perspective of the EM field.

The researcher also maintained neutrality while interpreting results and drawing conclusions from the exact transcriptions (Speer, 2018). Pretests were performed on qualified participants to ensure the questions were nonbiased, and to ensure the credibility of the practitioners. Dependability and confirmability of the study were established by comparing and connecting the data in the interviews to the literature and supporting social construction theory.

Demonstrating Rigor Using Thematic Analysis

In thematic analysis, Nowell et al. (2017) provides researchers a guide to establishing trustworthiness when applying the thematic analysis process to qualitative methods. They present it in six (6) phases and they result from five-years of research. A summary of Nowell et al.'s (2017) phases are as follows:

Phases of Thematic Analysis	Means of Establishing Trustworthiness
Phase 1: Familiarizing yourself with your data	Extend engagement with data. Triangulate different data collection modes. Document theoretical and reflective thoughts. Record thoughts about potential codes/themes. Store raw data in well-organized archives Keep records of all data field notes, transcripts, and reflexive journals.
Phase 2: Generating initial codes	Use of a coding framework.
Phase 3: Searching for themes	Researcher triangulation. Diagramming to make sense of theme connections.
Phase 4: Reviewing themes	Researcher triangulation Test for referential adequacy by returning to raw data.
Phase 5: Defining and naming themes	Documentation of theme naming.
Phase 6: Producing the report	Describing process of coding and analysis in sufficient details. Thick descriptions of context. Report on reasons for theoretical, methodological, and analytical choices throughout the description write-up

Figure 7: Establishing trustworthiness during each phase of Thematic Analysis. *Adapted from Nowell, Norris, White, & Moules (2017).*

The data collected through interviews from EM practitioners and stakeholders were analyzed in a three-stage process suggested in the thematic analysis research literature and as illustrated in Figure 7 above (Creswell, 2007; Miles & Huberman, 1994; Jugder, 2016; Nowell, Norris, White, & Moules, 2017). They included preparing the data for analysis by transcribing interviews, reducing the data into themes through coding and presenting the data (Creswell, 2007; Miles & Huberman, 1994; Jugder, 2016). Patterns are identified through a rigorous

familiarization of the data, coding, and theme development (Braun & Clarke, 2006, 2014; Jugder, 2016). All of the stages are illustrated in Figure 7 above.

Phase 1: Familiarizing Yourself with Your Data

"Qualitative data come in various forms including recorded observations, focus groups, texts, documents, multimedia, public domain sources, policy manuals, and photographs" (Nowell, Norris, White, & Moules, 2017, p. 4). In the case of this research, data include narratives and perceptions through phenomenological interviews (Crabtree & Miller, 1999; Nowell, Norris, White, & Moules, 2017). According to Braun and Clarke (2014) and Nowell et al. (2017), it does not matter who collects data, what it is important is that the researcher overly familiarizes herself with the data to have a fuller understanding and knowledge. The volume and complexity of transcriptions and audio recordings often lack consistent structure but is useful in conducting comprehensive analysis (Dey, 1993; Nowell, Norris, White, & Moules, 2017). Researchers must continuously read the data and search for meanings and patterns (Nowell, Norris, White, & Moules, 2017). According to Braun and Clarke (2006), ideas and identification of possible patterns develop as researchers become familiar with all elements of their data. Therefore, pouring over the interviews and audio and writing observations became instrumental in saturating the data for organizational purposes, finding patterns and research credibility.

As it related to this case study, familiarization with the data started with transcribing interviews. The initial transcripts were transcribed by the researcher which was important for the familiarization of the data. Multiple reviews of audio interview recordings were necessary for accurate transcribing. A transcribing application called "Transcribe" was used for transcribing the last interviews. However, the researcher found the application to be inaccurate in its transcribing. Errors included incorrect words which changed the context of the interviews.

Therefore, audio interviews transcribed by "Transcribe" had to be re-transcribed by the researcher. Transcribing applications are not recommended for a small number of interviews. The audio interviews were transcribed within two days of each interview. This was in the event any clarification was needed from the participants. Transcribing was completed using Microsoft Word. For the last step of this phase, the transcripts and audio interview recordings for each interview were imported into Dropbox according to the order in which they were performed.

Phase 2: Generating initial codes

Braun and Clarke (2006) recommend that researchers work through the entire data set, allowing full attention to each datum item, and identify points that may form the foundation and basis for themes. As such, sections of text can be coded in as many different themes as they fit or as many times as deemed relevant by the researcher (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017). The text was taken out of the transcribed interviews as a means to develop codes.

Creswell (2014) described a systematic process for coding data in which specific statements are analyzed and categorized into themes that represent the phenomenon of interest. Fr this case study, after the interviews were transcribed, there were printed to allow the researcher better review of the transcribing's. Preliminary codes and notes were developed on the transcribed data. Additionally, statements or direct quotes were extrapolated from the transcribed data and assigned preliminary and then final codes (Nowell, Norris, White, & Moules, 2017).

Phase 3: Searching for themes

"A theme is an abstract entity that brings meaning and identity to a recurrent experience and its variant manifestations" (DeSantis & Ugarriza, 2000, p. 362). As such, a theme captures and unifies the nature or basis of the experience into a meaningful whole (Nowell, Norris, White,

& Moules, 2017). Themes are identified by bringing together components or fragments of ideas or experiences, which often are meaningless when viewed alone (Aronson, 1994; Nowell, Norris, White, & Moules, 2017). Fragmented quotes, that exhibited similarity, were taken from the participants' answers to research questions. They were categorized based on similarities of terminology used in their answers. A common theme was derived from similarities of terminology used in participants' answers.

A table of codes and themes was developed according to the three coding perspectives: concept-driven, research question, and data-driven, previously described. The first codes were developed by the interview response transcripts and were aligned with the research questions. The codes and themes derived from the research questions, along with other themes and codes were also driven by concepts of social construction theory. Lastly, codes were data-driven, meaning the researcher coded themes that emerged without any type of conceptualization. These codes were developed by discovering patterns of meaning. For example, Race and Future Policy Suggestions emerged as codes and themes as the researcher noticed a pattern of meaning around these terms from the interviews.

Phase 4: Reviewing themes

The fourth phase begins once a set of themes has been devised, and they now require refinement (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017). According to Braun and Clarke (2014), it is likely that some themes may be redundant, and others may need to be broken down further into separate themes. According to Nowell et al. (2017), selected themes will need to be refined into themes that are both specific and broad enough to capture a set of ideas contained in numerous text segments.

In this case study, themes were reviewed to determine whether they were too broad or similar or whether there were any cross themes. Some themes were separated into more than one theme as specified by Nowell, Norris, White and Moules (2017). Peer review of the themes took place to ensure that codes and themes aligned with the raw data. Peer review was performed by recent doctoral graduates and a current doctoral student with knowledge in the fields of social justice, vulnerability and climate change.

Phase 5: Defining and naming themes

During the fifth phase, researchers determine what aspect of the data each theme captures and identify what is of interest about them and why (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017). For each theme, researchers need to conduct and write a detailed analysis, identifying the story that each theme tells (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017). Theme names need to provide the research audience a sense of the theme (Nowell, Norris, White, & Moules, 2017).

In the fifth phase, final themes and codes were developed. Final codes were reviewed to determine if they represented narrower patterns of meaning of the preliminary codes. In the coding table, raw data are in the form of direct quotes taken directly from participants' interviews and some of the research literature. Preliminary codes were derived from the raw data. Lastly, preliminary codes were refined, more than once, into final codes. Some of the final codes have subcategories. It is important to note the flexibility of thematic analysis, in terms of allowing the overlapping of themes (Boyatzis, 1998; Creswell, 2007; Miles & Huberman, 1994; Jugder, 2016). For example, the code "Needs" was categorized into policy and evacuation needs based on any raw data responses where participants expressed 'needs.'

Phase 6: Producing the report

The final phase begins when the researcher has developed the final themes (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017). A thematic analysis report should provide a detailed, logical and nonrepetitive account of all the data within and across themes (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017). In this case study, the final report of this process is the next chapter, Chapter IV entitled Presentation of the Data, Discussion of Results. The researchers build a valid argument of the theme selection by referring to the literature (Nowell, Norris, White, & Moules, 2017). Thus, when literature is included with findings, the merit of the research is enhanced (Aronson, 1994; Nowell, Norris, White, & Moules, 2017).

POTENTIAL ERRORS

There are various types of errors and biases that may occur in qualitative research. They include coverage error, non-response error, sampling error, and measurement error and social desirability bias (Creswell, 2014; Remler & Van Ryzin, 2011). These errors and biases can be minimized through the research design and instrument. The research methods make every effort to avoid biases and minimize these errors.

Coverage Error

Coverage error is a type of bias that does not give all members of a population an equal chance of being selected for the survey or interview. Coverage bias may occur in the purposive selection of interview participants. Coverage bias existed in this study because not all aspects of EM were invited to participated in this study. However, to ensure that appropriate representation still existed despite this bias, a sample of participants who were either EM practitioners or stakeholders were invited to participate. Additionally, participates represented different cities in

the Hampton Roads area and most are affiliated with Hampton Roads regional EM organizations. The backgrounds and cities are in Figures 4 and 5.

Sampling Error

According to Oppong (2013), in most qualitative research, it is either impossible or cost-prohibitive to study all cases of a phenomenon. This places limitations on the researcher in which they are compelled to select a certain proportion as the sample of study (Creswell, 2014; Oppong, 2013). Sampling error occurs when only part of the population is surveyed rather than the entire population. The first challenge with sampling in qualitative research deals with identifying and negotiating access to interview sites and individuals for the interview to take place (Oppong, 2013). Further, in qualitative studies, the investigator is the research instrument. The development of cordial relationships between the research participants and the investigator is vital for the operationalization and quality of sampling, and the reliability of eventual findings and research conclusions (Cresswell, 2014; Denvers & Frankel, 2000a; Oppong, 2013). A researcher who is unable to solicit and obtain subjects' participation cannot proceed with the sampling needed for research resulting in sampling errors (Oppong, 2013).

In this study, purposive sampling is used to select participants for the interviews taking place in stage two. Even though sampling error may occur more frequently with purposive than random sampling, for this dissertation, it is necessary. It is the intent to ensure that organizations, municipal departments, and policy-makers chosen for interviews represent a good sample of these professional populations in Hampton Roads. However, individuals chosen to participate may opt-out for various reasons to include a busy schedule or overall disinterest in the research study. This reduces the sample size and creates the need to solicit other EM professionals at the same or similar organization. Additionally, EM professionals or policy-makers who are chosen

may elect someone else to answer questions in their stead. These individuals may not possess the expertise as those who were originally chosen for the interview. Therefore, there is not a good representation of the knowledge-expert population, resulting in a sample error. This makes the research less valid and reliable. This is why it is important to build a professional rapport with participants. This may help to decrease nonresponse errors.

Lastly, the purpose of this dissertation is to determine linkages between vulnerable populations' behavioral response to hurricane evacuation and possible issues that are present in emergency management policy and practice. The only way to determine the linkages between residents and EM policies and practices is to obtain the perspectives of those who are experts in the EM field. Therefore, purposive sampling is required.

Nonresponse Error

Nonresponse error occurs when potential participants do not respond to either a survey or respond to an email or telephone solicitation for an interview. Nonresponse error may occur for various reasons to include the lack of trust that the potential participant's anonymity and privacy are protected, mistrust of scientific research in general, and the lack of potential participants' time to participate in the study (O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011). Additionally, potential participants may favor one data collection method over another, for example, a web survey over a face-to-face interview (O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011).

Nonresponse error was an issue with potential participants selected for this research, particularly for potential participants representing nonprofit organizations. This study experienced one refusal to participate and one nonresponse. Both potential participants were from Hampton Roads regional organizations. However, most of the nonresponses were from

nonprofit organizations. O'Sullivan, Rassel, and Berner (2008) offer recommendations to overcoming nonresponse errors. They include gift and monetary incentives, personal phone call attempts and alternative forms of collecting the information (O'Sullivan, Rassel, & Berner, 2008).

In this case study, numerous attempts were made to overcome nonresponse errors with nonprofit agencies. Follow-up phone calls were made to those who did not respond to the initial email invitation. This occurred within two weeks of the initial email invitation. In all of the call attempts, the researcher left voice messages that further detailed the case study and reiterated the confidential and anonymous nature of the interview. The researcher also offered to interview participants by phone instead of face-to-face to suit the potential participant's preference. This was done in the event that potential participants had reservations about their confidentiality and privacy. Additionally, the researcher went through third party contacts, such as nonprofit board members, in the effort to contact the appropriate person. Potential participants who are contacted may feel that they do not have the knowledge or expertise to participate in the study (O'Sullivan, Rassel, & Berner, 2008; Remler & Van Ryzin, 2011). Therefore, an attempt was made to locate potential participates who had the knowledge and expertise to participate in the study. Third party contacts, specifically nonprofit board members, were very responsive to the research, but preferred not to participate. Board members provided contacts to potential participants within the nonprofit organizations. However, this was met with barriers as potential participants passed the interviews to other people who they felt were more qualified to participate in the case study. This turned into a situation where no one returned the researcher's phone calls or emails. There were two potential participants from nonprofit organizations who were willing to participate but had to obtain supervisory permission. One of the anticipated participants never called back nor

responded to the researcher's subsequent emails and phone calls. The other potential participant sent an email after the data collection phase was over and expressed that supervisory approval was still needed. Therefore, despite persistent efforts to overcome nonresponse errors, the nonprofit sector is not represented in this study.

Measurement Error

Measurement errors occur when survey or interview questions do not measure what is intended. Gross errors are a common type of measurement error possibly affecting this research. Gross errors in research are caused by mistakes in misusing research instruments, miscalculating measurement and erroneously recording data results (Cresswell, 2014; Denvers & Frankel, 2000a; Oppong, 2013). This is a qualitative study. Therefore, the researcher's interpretation of the responses through transcribing and coding errors may result in measurement errors if quantitative methods are later used. Memory and recall errors or other inaccuracies from EM professional's responses may cause measurement errors (Cresswell, 2014; Denvers & Frankel, 2000a; Oppong, 2013).

Ways of overcoming measurement errors include strengthening validity and reliability to ensure the data is credible and trustworthy (Cresswell, 2014; Denvers & Frankel, 2000a; Nowell, Norris, White, & Moules, 2017; Oppong, 2013). The researcher's neutrality was very important in this process. A pretest was performed to test the interview questions for ambiguity and that they were structured in a way to answer the research questions. Additionally, the researcher ensured a process for rigor in the analysis as provided by the thematic analysis process (Figure 7). The researcher engaged multiple methods of collecting the data such as interviews, audio recordings of interviews and written observations. These methods assisted the researcher with recall and served as an audit trail for the data collection phase. Triangulation of the interview

data, EM research literature, social construction theory and two outside peer reviews of the data helped to justify the codes and themes (Cresswell, 2014; Denvers & Frankel, 2000a; Nowell, Norris, White, & Moules, 2017; Oppong, 2013). All of these methods were used as a measure to overcome measurement errors in this case study.

Social Desirability Bias

A major part of this research includes interviews. It is important to avoid social desirability bias which may cause measurement errors. Social desirability bias is a type of response where the respondent tends to answer questions in a manner that will be viewed favorably by others (Neeley & Cronley, 2004). It can take the form of over-reporting good behavior or under-reporting bad or undesirable behavior (Neeley & Cronley, 2004). This can be avoided by ensuring that the respondents are aware of the confidentiality of their participation and responses. Another way to mitigate this is to avoid poor wording of questions. Wording is important to determine the exact information needed to answer the research questions. Pre-testing the interview questions and soliciting input from the pre-test participants may assist in avoiding wording that possibly elicit untruthful or over-exaggerated answers. However, the researcher must be careful to word questions in a manner that does not lead or tunnel respondents to answer in any particular way (Neeley & Cronley, 2004). In qualitative research, the investigator may ask direct, indirect and follow-up questions to help avoid such biases. If there is a misunderstanding of questions by participants, then clarification from the researcher is necessary.

CHAPTER IV.

PRESENTATION OF DATA, FINDINGS, AND DISCUSSION OF THE RESULTS

PRESENTATION OF THE DATA

This chapter presents the data by answering the questions 1) does the social construction of low-to-moderate income households, in terms of both how they are perceived and the amount of political power they have, shape the way policy decisions are made and implemented; and, 2) how they shape EM practitioners' and stakeholders' perceptions about their evacuation behavior. The study's three research questions were developed from the social construction's hypotheses and the research literature. It is the purpose of this case study to determine linkages between local emergency management policies and practices and low-to-moderate income household behavioral needs when responding to hurricane evacuation. This case study attempts to connect the aforementioned to the two dimensions of social construction theory. Social construction theory's two dimensions include political power and resources, and the perception of target populations. [4] The connections are determined from data collected from the phenomenological interviews, codes and themes derived from thematic analysis and review of the research literature and EM policies and plans.

The hypothesis behind the social construction framework states that perceptions about target populations in conjunction with political power and resources are associated with how rewards, sanctions, and resources are allocated (Ingram, Schneider & Deleon, 2007). The basic

[4] The social construction of people is either positive or negative depending on their assigned category. The political power and resources of target populations is categorized as powerful or weak. See a more descriptive discussion of social construction theory in Chapter II.

premise is that the population's social construction determines "who gets what, when and how" (Lasswell, 1936; Schneider & Ingram, 1993). Specifically, the higher the positive perception and political power and resources, the higher the policy benefits and resource allocation. The range of perception matters. Even if the target population has a low range of positive perception, and is politically weak, there can be some policy benefits and resource allocations. However, those policy considerations are limited. See Figures 1-4 in Chapter II for a more descriptive discussion of social construction theory.

PHENOMENOLOGICAL INTERVIEW ANALYSIS

The first four interview questions help to answer all three research questions. Interview questions 1-3 ask participants about EM policy considerations about low-to-moderate income households and their needs. Interview question four queries this case study's participants about their perception of low-to-moderate income households' evacuation behavior. The last interview question allows participants to provide their input on how Hampton Roads can improve its regional hurricane evacuation efforts. Below is an analysis of participants' responses to each interview question. Some of the interview responses quoted were edited for clarity to ensure readability and understanding of context. This discussion includes responses that are most relevant to answering the research questions.

Interview question #1: How do your City's EM policies and practices address the needs of low-to-moderate income households?

Participants' answers to interview question one starts the phenomenological interview results. Responses, as shown below, were chosen because they best represent the varying answers for the first interview question. Answers to this research question ranged from a definitive "no" to "we try but there are some challenges," and one affirmative "yes." The first

observation by the researcher while conducting some interviews, was the candor from participants in stating that their policies do not address the needs of low-to-moderate income households. A participant summed this notion by stating:

> **Social Justice Activist**: "Practically speaking, no. I think that there's a necessity to kind of build one plan, but we're not one size fits all, and there are barriers that exist within each community. And, you know, you don't understand the community innately. Before something happens, you just, come in and apply a band-aid."

Additionally, this comment was one that was echoed throughout the research literature. It serves as an example of how EM, and general social needs, policies and practices designed to address the needs of vulnerable populations often miss the mark because of a lack of understanding of community culture and the culture of poverty (Bryant & Mohai, 1992; Buckle, 1998; Bullard, 1990; Council, Covi, Yusuf, Behr, & Brown, 2018; Cutter, 2003; Cutter & Emrich, 2006; Deutsch, 1975; Frederickson, 2015; Gooden, Jones, Martin, & Boyd, 2009; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Ingram, Schneider, & Deleon, 2007; Lasswell, 1936; Lindell, Lu, & Prater, 2005; May, 1991; Neeley & Cronley, 2004; Schneider & Ingram, 1993; Schneider & Sidney, 2009; Schneider, Ingram, & Deleon, 2014; Talen, 2008; Wisner, Blaikie, Cannon, & Davis, 2004). As a result, policy equates to what the participant stated as the application of a band-aid as a temporary fix to the continuous problems of EM practitioners communicating effectively with socially vulnerable neighborhoods. One participant went further to explain their opinion as to why, historically, EM policies and practices do not address low-to-moderate income households and how this affects policy decision making today.

> **Social Justice Activist**: "Historically, I would say, you know, it was racism. We're looking at, first of all, taking a look at the evacuation plans that have been in effect in this

country is one thing. And from that point, let's say the twenties or the thirties, moving forward, you know, are we so concerned about those neighborhoods where particularly, historically, we would live as, let's just say as African Americans, as a population? If you know that this population is here and lets just pick a state…Alabama in the thirties. Where is our effort going to go? And historically, that I believe has been the reason why it's been happening. Now, I would say, in addition, it's [EM policies and practices not addressing socially vulnerable people] almost benign, which is even worse. It has to do with creating one plan for all. Because that's sometimes…you know how they [policymakers] say, 'I don't care. You're all going to wear this same dress.' I think that has a lot of...I think that's a very large reason as well."

Overall, twelve out of fourteen participants commented that income was not considered in EM policies and practices as a primary factor. However, all participants expressed that low socioeconomic status populations, represented by low-to-moderate income households, are important and may be represented by other vulnerable populations receiving policy considerations. For example, the response below is an example of the acknowledgement that there are policy response gaps in capturing low socioeconomic population groups. However, there are considerations for other vulnerable groups that could serve low-to-moderate income households if they happen to fall in these other socially vulnerable groups receiving policy considerations. An EM practitioner stated:

EM Practitioner: "Well, I think that is an important question, but we don't tailor a lot of policy response[s] and procedures to specific social and economic groups. We don't have that level of refinement [but] let me give you an example. So, if I issued an evacuation order, it's not as if I am going to reprogram that language for someone who is in a lower

social economic group. Now there is a caveat to that we do for [those with]disabilities, and we might include some English as second language option for some groups like that. As far as emergency management policies go, they are pretty uniform across the spectrum. So, if I am opening a shelter or messaging the public about what they can do to get prepared for an emergency, we do not have specific messaging about social economic groups."

There were two participants who expressed that their policies and practices were taking a proactive approach to ensure that low-to-moderate income households were given policy considerations. However, there were challenges such as low-to-moderate income households' mistrust of EM and government. Another challenge was the messaging in terms of community outreach and reaching those who may not be on social media or fully understand how to navigate a municipal website in order to sign-up for alerts. Nevertheless, the responses shown below provide an example of how some EM practitioners not only recognize the exclusionary nature of past and current EM policies and practices for low-to-moderate income households, but are taking the steps to move toward a future of policy decision and practices that include these households. One response that provides the best example to this notion is:

EM Practitioner: "We really try to make sure that those folks that are under resourced, who experience emergencies on a daily basis, get the support they need leading up to an incident. So, understanding Maslow's hierarchy of needs, there are those who have basic needs before we get to the whole self-fulfillment needs of flood insurance and all of that stuff. So, we try to work with Human Services, Community Services Board and other [departments and agencies] to make sure we [are] doing what we can to get folks to where they need to be and also while doing that, building trust. Yes, so, I like to think we

> are more proactive and real because it is almost a nontraditional route we are taking. We are bringing Human Services or behavioral science to the discipline. So, we can check the boxes and do our plans and all [but] we are not really meeting the need. So, we may be required to do some many outreach events, but we're not reaching the needs of those who can't even get to those events."

In summary, there is some variance in responses to the first interview question. However, answers only vary slightly. It was evident from the responses that low-to-moderate income households is not considered a major vulnerability factor in EM policies and practices. The conclusion is that the exclusion of low-to-moderate income households is not an intentional action of the participants who had policy influence and made decisions. The exclusion links back to social construction theory where the social construction of groups affected policy decisions. Often times, these policy decisions become institutionalized in a manner that has unintended negative effects on socially vulnerable groups of people, specifically those who fall under a low to moderate income household status. More responses to interview question one are included below.

> **EM Practitioner:** "We don't tailor a lot of policy response and procedures to specific social and economic groups. We don't have that level of refinement."

> **EM Practitioner:** "Actually, our policies don't differentiate between low-to-moderate income, we just plan for the entire city."

> **City administrator**: "I think what we do is we try to look out for all of citizens and it's more based on geography."

Engineer: “No, I don’t so because I think the policy is geared to warning, informing people of the pending threat and recommending the proper actions to take. They don’t address the socio economics of it because that’s not the purpose or the mindset is people need to leave not if you can afford to leave, just leave. And, I don’t think the policies ever address how and where you going to go. We don’t care where you go you just cannot stay here.”

Social Justice Activist: “No. Historically no. Practically speaking, no. I think that there’s a necessity to kind of build one plan, but we’re not one size fits all, and there are barriers that exist within each community to get to them to assist. And, you know, you don’t understand the community innately. And before something happens you just, come in and apply a band-aid. So, I would say no.”

Planner: “I do not know if it adequately addresses it, but I do know that it is high on their list of things that they try to do. How successful [they are] is probably in the eye of the beholder, but I do know it is something that they do not overlook. I know that there are challenges with the government in particular contacting people because we have trouble contacting people in some of those groups because they are not on social media or they do not have email or there is a mistrust of the government.

EM Practitioner: “So, I think it addresses it pretty well. So, we got the Continuity [of] Operations Plan, we got the EOP that we just recently redid, we got the Predisaster Recovery Plan that we’re in second draft and working towards a final and the Training and Exercise Plan. So, it’s good for our City, so that’s what were focused on. We know that the [military] bases are going to sustain themselves, but who’s going to look after us. That is what our Predisaster Plan is focused on. It’s focused on preventing homelessness,

people who are already homeless, recognizing what our shelter and long term and mass plans are. We don't have a population who can pick up and go to Richmond. So, we have partnerships with places that can provide long-term meals. So, I think our policies are driven by the needs of the City and community. We really embrace that whole community approach."

EM Practitioner: "Well, we take it into consideration certainly in our plans by using census information and also partnering with organizations such as Senior Services, the Foodbank of Southeastern Virginia [and the Eastern Shore], Sentara meals on meals. We really try to make sure that those folks that are under resourced and who experience emergencies on a daily basis get the support they need leading up to an incident."

Elected Official: "Through experience, we know the most vulnerable areas in our city with regard to flooding as well as the communities who typically may not have transportation and need the local shelters. So, I think, over time we know who needs those Services."

Interview question #2: How would you characterize low-to-moderate income households in terms of their needs during evacuation?

According to a participant's response, "What the research shows us is that people who have low-moderate incomes are susceptible to the impact of disasters. More importantly, [they] take longer to recover after a disaster. So, they are more fragile." There was a general sentiment amongst most participants that people who fall under a low-to-moderate income household populations are disproportionately affected. All participants were able to provide their characterization of low to moderate income households' evacuation needs. Most participants were speaking from professional and personally experiences working with EM practitioners

during emergency evacuation situations. There were two participants who noted that their answers were assumptive in nature, “Having not walked in their (low to moderate income households) shoes” according to one participant. Another participant stated “ I think everybody, I guess people will have the same needs. I guess its whether people will have the ability to address those needs.” The conclusion drawn from this response is that all hurricane evacuation needs will be the same for all households and the difference lies only in the service-delivery of those needs. So, even though this participant was unsure in their response and could not separate the needs of low-to-moderate income households from other households, they recognized that there was some disparity in how those needs are addressed. Throughout these interviews, the researcher found that participants recognize that they are social disparities, but some participants are really unsure as to how this disparity may be resolved or who bears the responsibility for the disparity. This links back to social construction in how some exclusive policies are so institutionalized, that they become intertwined with policies and practices over a long time period. The institutionalization of policy decisions can be referred back to what Schneider and Ingram (1997) considered were elements of policy decisions including the underlying assumptions (implicit or explicit logic about the capacity of people) which help explain how social constructions of the low-to-moderate income households informs EM policies and practices.

Other participants provided responses that recognized the evacuation needs of low-to-moderate income households and provided reason for challenges. One of the Social Justice Activist’s responses really spoke to low-to-moderate income households’ evacuation needs as it related to daily challenges of vulnerable populations. This participant did not directly state what the evacuation needs of low-to-moderate income households were but provided a scenario of

what these low-to-moderate income households lacked on a daily basis and the challenges that this population faces in a hurricane evacuation situation. This participant's response was:

> **Social Justice Activists**: "The most vulnerable families are located or live in the highest risk areas. We don't have any real mass transit system, we talked about the physical environment in terms of vulnerable people living on brownfields and other former hazardous waste sites. Even if you wanted to go to the grocery store and stock-up, often our areas are far from that. These areas lack major supermarkets even though we do have dollar stores, but they are subject to empty shelves very quickly because they are not that large. When you think of medical services, low-to-moderate, in particular, low[-to moderate] income [household] families of color already are medically underserved so that becomes an issue to get to a hospital. So, it's a very toxic mix of potential barriers."

The same participant who responded above provided insight into a different socially vulnerable population, public school children, who may come from low-to-moderate income households. This provided an interesting perspective because children are a population that is on the social construction theory framework model. They have a low positive construction and are politically weak. Therefore, they are viewed are policy dependents (see Figures 1-3). Yet, one elected official indicated that many of these children come from low-to-moderate income households. Due to public school children receiving policy considerations in nonemergency events, such as linkages to services, these services may trickle over to their families in the event of a natural disaster, such as a hurricane. This elected official provided this insight:

> **Elected Official**: "So, schools are more in tune to some of those needs because schools see children every day and even in nonemergency situations, they are often connected with Social Services, Community Services, Dept of Justice, other agencies just to provide

ongoing support for children. So, if you look at the emergency network, many of the agencies that schools work with every day would also, I would hope, be involved with how we address the nature calamity or catastrophe."

Overall, participants recognized that low-to-moderate income households have hurricane evacuation needs that are significant and different from other populations. Transportation, money and medical needs was a common response to this interview question. Responses shown below were chosen because they provide the best examples of what participants considered as the most critical evacuation needs.

EM Practitioner: "Destination is one of the biggest challenges. They have a car that's in the driveway or they and their neighbor, you know, it is transportation."

EM Practitioner: "The research also shows that in local moderate-income homes, there is more than just the nuclear family sometimes. So, you have grandma's staying there, the aunts staying there, the aunt's kids staying there. They have dogs, cats whatever it is. Whereas the wealthier families are more nuclear and its mom, dad, 2.5 kids and the dog. They have a bigger footprint too that they have to pay for. So, there's actually low-moderate are more susceptible to evacuation need and it is a big issue for us. Now, it is one of those things, that we know about, but we don't know how to address it."

Engineer: Transportation, but let's place the context when we're looking at a certain population of people. Transportation needs even for people with medical conditions.

Elected Official: "But, you run the risk of being caught here. We don't have any real mass transit system, we talked about the physical environment. Even if you wanted to go to the grocery store and stock up often our areas are a far from that."

Planner: "Well, money I mean that's the route to everything. I mean most low to moderate income people will have a hard time because if you do not have somewhere to evacuate to? You don't have the money to spend on [a] hotel room where the hotel rates are jacked up because everyone is leaving, on food, on gas, on the possibility of missing work."

Elected Official: "What I find is [that] a lot of folks don't have family members [who live in the area], a second home [where they can go to evacuate] or funds to stay at hotel."

EM Practitioner: "Their needs are multi-faceted, if we are talking about the community, you need transportation, you need a place to go, you need the financial resources to be able to get the transportation to secure a place to go."

Planner: "I think it starts with means to evacuate. A lot of people do not have cars, they rely on public transportation, so they don't even have the first means to go anywhere, somewhere. The bus doesn't even take them, and they cost. And then there is costs, whether its costs for transportation, lodging, food, wherever it's going to take you once you get there, which is why people end up in public shelter."

Interview question #3: Are there different procedures that are followed for ensuring the evacuation of low-moderate income households?

The responses to interview question three were somewhat predictable due to the first interview questions' responses. If participants did not recognize low-to-moderate income households as a primary single vulnerability factor, then this population would not be considered in current policies. However, an important conclusion was the researcher's notion that the lack of evacuation procedures for low-to-moderate households was the social norm and

not a major issue for some of the EM and other professionals. There were a few "aha" moments that gave way to the possibility that these populations should be considered. One participant began their response by saying, " "No, [but] we develop procedures with those populations in mind." There was one EM practitioner who stated that even though there are no different EM procedures for low-to-moderate income household, their practices sometimes steer away from their procedures because of the awareness that vulnerable populations may need additional assistance. For example:

> **EM Practitioner**: "No, I can't really point to that. We take a wholistic approach to all of our citizens regardless of income level and to be honest with you, we spent more effort and time on certain populations because we know they need more education and time. But nothing is articulated in policy that is related to that."

Another important conclusion coming out of this interview question was the challenge of evacuation messaging. One participant responded "…that most of the policies and practices are broader and cookie cutter." One example is the "Know Your Zone." According to the participant, "I'm sure you're "familiar with the "Know Your Zone." Okay, so right there. It's kind of put out in the same way. It's like, know where you live, know what zone you're in, get out." This response is an example of how EM policies decisions may result in policy failures when other factors aren't considered, like messaging for diverse communities. For example, messaging was one of the biggest challenges of "Know Your Zone." As part of the implementation of "Know Your Zone," one city stenciled the zones on receptacle cans, another city mailed their residents refrigerator magnets with their respective zones. So, there were efforts put forth for residents' awareness of their evacuation zones. However, during the threat of Hurricane Florence, residents who had their zones stenciled on their receptacle cans were

unaware that the stencil was there or its meaning. Therefore, residents were confused about their designated zones and their need to evacuate. According to one EM practitioner:

EM Practitioner: "I will say the biggest challenge we have is evacuation and pushing that message of evacuation. How to overhaul our evacuation message when the evacuation zones change. We're telling way too many people to leave that don't need to leave."

Interview question three did not query messaging. However, it was evident, from the researcher's perspective, that responses regarding messaging was a major reason as to why there should be different procedures for low-to-moderate households. Below, are the best examples of additional responses that discuss the challenges of messaging as well as other varying responses as to why low-to-moderate households are not considered as a single, primary vulnerability factor, especially as it pertains to evacuation policies and procedure.

> **EM Practitioner:** "We really do not differentiate between low-to-moderate, but we would really start with the evacuation zones. We have a contract with the schools for the busses to get folks to shelters and we pick up along the roads. But that's for everybody and anybody that wants a ride. Messaging is important for all people."
>
> **City administrator**: "Again, it's geography we're going to send out targeted messaging to the communities based on weather information. So, we're going to target direct messaging to the areas that will be directly affected."
>
> **Social advocate:** "I don't know about different procedures but there are targeted efforts that we talked about earlier with the recognition that needs are different, resources are different, location does matter, I think that the communication is very significant."

Interview question #4: Based on your experience, how do low-income households respond to emergency evacuation orders; and, what factors do you think contribute to their responses?

Interview question four addresses the last research question: How do local EM policymakers, practitioners, and stakeholders perceive low-to-moderate income households' evacuation behavior when faced with the threat of a hurricane? All but two of the participants had negative perceptions of low-to-moderate income household evacuation behaviors. In this context, a negative perception is in terms of whether low-to-moderate income households are amendable to evacuating compared to higher income households. One response from an EM participant summed up the general sentiment of participants, "They are extremely delayed. So, if we get a disaster evacuation order, some of the last people to act are the low-to-moderate income households." Answers varied from low-to-moderate income households not having adequate financial resources added to being afraid of losing employment to a mistrust of government.

Mistrust of government is a constant theme that emerges out of interview question four's responses. It was an important point that surfaced out of the responses from the second interview question. Again, this connects back to social construction theory where the institutionalization of policy decisions can be referred back to what Schneider and Ingram (1997) considered were based on the underlying assumptions (implicit or explicit logic) about the capacity of people. As such, past race and class biased policy decisions from housing to the environment disenfranchised populations of people (Bullard, 1990; Dash, McCoy, & Herring, 2010; Grote, 2015; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Schneider, Ingram, & Deleon, 2014; Szasz, 1993; Talen, 2008). The result is populations of people who do not trust government policy or representatives because of past experiences. This is especially a sentiment

within the African American community where the mistrust of government stems from past policies, such as housing policies that allowed housing to be built on or in very close vicinity, to hazardous waste dump sites. One participant stated, as it related to the history of mistrust of government in emergency evacuation response:

> **Social Justice Activist: "**Once a community knows a dirty truth, then it's difficult to unknow it, and makes it applicable to just about everything."

Another participant stated that residents in a particular neighborhood in their city were especially mistrustful of evacuation orders because there was a fear that residents would not be able to get back into their neighborhood and the government would then confiscate their homes and property because it was located in what is now considered valuable waterfront property. Mistrust of government also emerged as a cross theme with messaging. Messaging was more prevalent in interview question three. However, one participant stated:

> **EM Practitioner:** "Trusting the government is a big issue. That is one of our biggest issues we have to work on. We need the state to help us, because the messaging is just go [evacuate]. If you're military, we understand there are certain [military] populations that have to go. But if you've been here a certain number of years, you should have some type of network you can build into your system and citizens just don't think about that. It's a public education thing we need to do, but public education and emergency response is one of those things that is second fiddle to a lot of things."

Participants' answers to this question provides opportunity for further research due to additional questions that develop as a result of the responses. For example, eleven participants either mentioned the mistrust of government directly, or indirectly, as part of the reason that low-to-moderate income households do not, or are slow to, evacuate. Social construction theory states

that those with weak political power and resources and negative perceptions receive little to no policy considerations (Schneider & Sidney, 2009; Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014). The research literature shows that persistent problems experienced by local governments include residents' mistrust perceptions of emergency management policies, practitioners and policymakers (Bullard, 1990; Dash, McCoy, & Herring, 2010; Grote, 2015; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Schneider, Ingram, & Deleon, 2014; Szasz, 1993; Talen, 2008). Mistrust is a guiding factor in people's decisions to evacuate (Huang, Lindell, Prater, Wu, & Siebeneck, 2012). Therefore, a question for future research is whether low-to-moderate income households' evacuation behavior is linked to the mistrust of government due to current and past policies that are nonbeneficial to socially vulnerable populations?

Below are additional responses that further allude to trust or mistrust as underlying reasons as to why low-to-moderate income households are slow to evacuate or just shelter-in-place. Also shown below are participants' varying perceptions as to why low-to-moderate-income households do not evacuate. Responses range from lack of finances to individualized needs.

> **EM Practitioner**: "It depends on motivations so there is no one answer for everybody. Now on a racial side and this a whole different path I'm going on, but again it's trust. I may not be the face from who they want to hear the message from."
>
> **EM Practitioner:** "I think the key thing that is a challenge is having the financial means to be able to pick up and leave and there's going to be any number of resistance to it. A lot of it boils down to money."

EM Practitioner: "Our low to moderate-income tends to be the ones at least that I have more conversations with as we're building up to an alarm."

Planner: "I think more so it's highly correlated to the amount of money that you have. I think that if you survey this and graph this, you would see a straight line showing that the more money you have the more likely you are to evacuate. I think umm, yeah, I going to say that is the main reason. It just buys a lot more access and gives a feeling of you have a lot more to lose if you stay."

Engineer: "So, they don't treat it as realistic threats because I think we have had a lot of crying wolf on things, the media over-hypes stuff and I'm told to leave, why? And general mistrust in government."

Social Justice Activists: "I, here in Hampton Roads, I think they don't. Unless there's been a major impact to them personally in the past, as like in the case of a hurricane, where there was flooding: they don't. They usually shelter-in-place. Which is disturbing, you know? I think a lot of it is the fear of losing what they have. Not trusting the situation."

Elected Official: "Residents are reluctant to respond. They are reluctant to leave their homes. You know, if you don't have family members, if you don't have other places that you can go, there is a lot of concern around leaving your property. So sometimes it takes a lot of effort to try to convince people to leave. I continue to refer back to the level of trust with Emergency Management."

Planner: "Some people are going to leave for a variety of reasons, no matter the income; [others], they are not going to leave. That is a very individualized response based on people's needs."

Interview question #5: Lastly, what insights or thoughts do you have about how Hampton Roads cities can improve their evacuation policy and practices to better meet the needs of low to moderate households?

This interview question was a created to allow participants a means to express their thoughts and ideas about current emergency management policies and practices in general, what they felt was missing and why. It was also a good way to complete an interview by allowing participants the opportunity to decompress by stating their own opinions and expressions about Emergency Management without the boundaries of a structured or semi- structured question. Responses to this question ran the gamut of issues. However, mistrust and messaging surfaced once again as important issues as in previous questions. The two examples presented below spoke directly to the importance of messaging and getting messages out to residents, specifically, low-to-moderate income households, in ways that emphasized the seriousness of hurricane evacuation. According to two participants:

> **EM Practitioner**: "I think it's getting to know the folks in their community and trusting the sources in which they are getting their information from. The fact that it may not be the EM rep, but try to figure how to best articulate the message and the best folks to make that happen. Also, when going back to the community, explain they really need to get out. During one of our strategic meetings, they were rumors that there were evacuations only for those folks who we really cared about getting out the area. But that's not true, if we had the opportunity to show them the model, the topographical data and how the flow of water inundates that area and this is why we want to move you out of the area and why we want to get them out first because you are on higher ground."

Social Justice Activist: "What I would encourage is that on a local basis, we always work within our communities and that our community leader is actually not who we may consider [them] to be a…well from the community I come from, I know the barber is a leader in my community, and you know, Mrs. Smith who lived four doors down from my grandmother; she was our community leader. She was like the neighborhood grandmother. I know who my community leaders are. I would suggest from a regional level that we really look and see who the community leaders are, and from there develop relationships within each community so that you have community leaders to kind of conceive and share that evacuation plan, right? So, if we do it from a grassroots level, at the school, right? Its posted. And at the church, and at the community center. And at the grocery store. And the people who are conveying this information are truly trusted members who believe it."

Two participants addressed the question in a way that spoke directly to low-to-moderate income households. There was a sense by the researcher that these responses opened the possibility that these participants were not only more in tune to the evacuations needs of the low-to-moderate income households, but there was a chance that these participants would advocate for EM policies and practices change.

EM Practitioner: "That's so easy, so for this predictor, for low-to-moderate income families, what we need to be educating them on is that they don't have to evacuate to Richmond or Danville, Harrisonburg or DC. They don't have to go outside the area in some cases. So, what we want them to do is start building a social network that is a resilient network."

> **Elected Official:** "I think from the regional level. We've had those discussions internally about understanding vulnerable populations. I mean, if you look at the local structure, their various branches within that [structure] deal with housing and emergency preparedness…you know poverty. So, you look at a lot of different issues and very good reports based on the research that they do for helping cities prepare for emergency responses."

Responses to interview question five shown below represent the various issues that participants felt were most important to Hampton Roads. Most interesting was the response that referenced the border issues that localities often have when collaborating with other cities. The border issues serve as barriers to progress. Even though there are multiple regional collaborations in Hampton Roads that serve the purpose of coordinating and informing regional collaborative procedures, according to this participant, the border issues hinder the impact of these collaborations at the regional level. According to one participant:

> **EM Practitioner**: "The EM community in this region… everybody is siloed, and you can attest to that in your neck of the woods. Everybody… kind of have their own little, their reign of their little locality, their queendom/kingdom kind of thing. And so that does kind of get in the way, a little bit, of progress. However, when stuff is getting real, I think we do as a community, as an EM community, do coordinate well as we have lessons learned and some of those are implemented after the fact because some of them [natural disaster incidences]will happen again. We are doomed to repetition because we did not get hit hard enough or the lesson learned wasn't strong enough."

Other responses below ranged from better evacuation plans and shelters. For example, schools have long served as host shelters. However, one participant responded that using schools

as shelters is an antiquated means of sheltering people since there are limitations. Another response that stood out as it related to sheltering is a shelter model that was introduced to the researcher, Inland Host Sheltering. This is where the state has Memoranda of Agreements (MOA) between localities to shelter people in all parts of the state. Overall, question five allowed participants to speak about their ideas of what would benefit localities and the region.

> **Engineer:** "I think identifying safe zones with the city so that it is not a general evacuation. Secondly, identifying time frames so that if you are going to issue an evacuation, identifying that it is expecting to last "x" number of hours or days so people can have a reasonable expectation of when they can come back because it may be easier to plan than telling everyone to get out and we'll let you know when it is safe to come back. And, then a third is establishing transportation between safe zones and work zones so that people who rely on mass transit have a way to get to work because if work is a reason they are not going to leave, then [you have to] try to address [if] they can and whether or not you split up a family if someone has to stay home."
>
> **EM Practitioner:** "I think one of them, and I said it early on, one of the things that the Commonwealth of Virginia does not have is Inland Host Sheltering and it's a mechanism so that we can direct people to a location. That's my biggest frustration right now. If you came to me and said I want to evacuate that's my plan. Where do I need to go?"
>
> **Planner**: "Getting people to the shelters what does that mean. How do you identify them, where are they and what will you leave it for? So how do you know where those people are in some safe way and how do you get them? We definitely need some dedicated sheltering space that has better resources, typically they are in schools. It is the shelter of last resorts is what is emphasized. It's a complicated mix. So, I think it's very

complicated. How do you have a space that can function 365 days as one thing, but for 5 days it can function as something else? But I do not know how you do that in an affordable way, so that you can accommodate that in an affordable way because schools are not the answer."

THEMATIC ANALYSIS

This section discusses codes and themes that emerged out of the interview responses. The process utilized was thematic analyses. The six step thematic analyses process in Chapter III, Figure 7 was used in the process of developing codes and themes. The creation of themes started with reading through the transcribed interviews and relistening to the audio interviews to pull out phrases and words that were common. Prominent preliminary codes that began to emerge throughout the transcribed interviews were Transportation, Needs, Trust Level, Messaging, Race, Money and Other Socially Vulnerable Populations. Prominent preliminary codes were words that represented a strong pattern or were very prevalent in the interview texts. Many of the prominent preliminary codes overlapped. There were other codes that were derived from the responses such as Education and Response. However, these preliminary codes were combined with other more prominent codes like Transportation, Mistrust and Messaging to create themes.

The preliminary codes that linked directly to the social construction theory were codes such as Systemic Racism, Race, Racism, Underserved Populations that surfaced as a part of the thematic analysis process. The emergence and significance of these codes to social construction theory are discussed more thoroughly under the open-coding perception of thematic analysis. A diagram was created to organize the raw data and the development of the codes (see Figure 10). The diagram was organized according to the research questions and some of the codes that surfaced from the phenomenological interview responses. As a result, final themes emerged.

Below, the researcher begins the discussion with an analysis of the most prominent preliminary codes.

Transportation

Transportation is a theme that emerged throughout the interview responses in different ways, especially as it related to sheltering and evacuating people out of Hampton Roads. Transportation was a common code as it related to low-to-moderate income households' hurricane evacuation. Therefore, this code overlapped with the code Needs. Responses referencing Transportation ranged from local transportation policy issues for hurricane evacuation and public transportation to shelters to unrealistic regional policy decisions and plans coming from state agencies such as the Virginia Department of Transportation (VDOT). Unrealistic VDOT regional plans revolved around evacuating the entire Hampton Roads region and the lack of readiness trainings for such an extensive evacuation. Many participants mentioned the lack of a real public mass transportation system in this area as a major barrier to the evacuation of low-to-moderate income households. The research literature corroborates the participants' responses that transportation is a major barrier to socially vulnerable populations and hurricane evacuation (Dash, McCoy, & Herring, 2010; Gooden, Jones, Martin, & Boyd, 2009; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Lindell, Lu, & Prater, 2005; Wisner, Blaikie, Cannon, & Davis, 2004). The responses about transportation in Hampton Roads were mixed between positive and negative responses. The examples of responses mentioning transportation represent those that best describe the context in which transportation was an issue.

> **Engineer**: "A lot of the evacuation protocols are established by transportation and how long it would take to get people out. That's what the concern it because we can't evacuate Hampton Roads in 24 hours."

EM Practitioner: "We never get what you really need from regional transportation…"

EM Practitioner: "Their [low-to-modern income households] needs are multi-faceted, if we are talking about the community, you need transportation, you need a place to go, you need the financial resources to be able to get the transportation to secure a place to go."

EM Practitioner: "Government testing of protocols and whether they will actually do what they say in terms of getting people out (transportation)."

Planner: "I think it starts with the means to evacuate. A lot of people do not have cars, they rely on public transportation, so they don't even have the first means to go anywhere, somewhere. The bus doesn't even take them, and they cost. And then there is costs, whether its costs for transportation, lodging food, wherever it's going to take you once you get there, which is why people end up in public shelter."

Elected Official: "Through experience, we know the most vulnerable areas in our city with regard to flooding as well as the communities who typically may not have transportation and need the local shelters. So, I think, over time we know who needs those Services."

City Administrator: "Like my counterpart… transportation is a big issue that he deals with [but] **t**ransportation is not such a big issue for us…."

Engineer: "…establishing transportation between safe zones and work zones so that people who rely on mass transit have a way to get to work."

Engineer: "Regional transportation policy [is] unrealistic – VDOT. I mean they talk about reverse the highways and all of that. I mean the protocols are there but is government willing to pull the trigger on doing that unless it is [a] catastrophic storm coming?"

Social Activist: "We have no real mass transportation system."

Needs

Needs, specifically hurricane evacuation needs, were a predictable preliminary code that developed from participants' responses. It was predictable because it was derived from the third interview question that asked participants to describe what they thought characterized low-to-moderate income households in terms of their needs during evacuation. Responses were from professional and personnel experiences and did not vary significantly between participants. Below are responses that were chosen because they specified the importance of supporting needs in different ways. Participant responses emphasized needs through collaborative efforts of nonprofit organizations as well as other local government departments. One EM practitioner's response emphasized Maslow's hierarchy of needs for the determination of low-to-moderate income household's hurricane evacuation needs. An elected official and EM practitioner responded to needs in terms of knowing the necessities of their individual communities and pushing basic needs in the communities, so residents are not going to different agencies seeking services. However, it was the sentiment of a city administrator, from a policies and practices standpoint, that policies and practices better serve the needs of low-to-moderate income groups only if you feel that it does. So, in other words, if you [localities] feel that what you have is sufficient for low-to-moderate income households and other socially vulnerable populations, then those communities are better served for having those policies in place as opposed to not having anything.

EM Practitioner: "…by using census information and also partnering with organizations such as Senior Services, the Foodbank of Southeastern Virginia [and the Eastern Shore], Sentara meals on meals. We really try to make sure that those folks that are under

resourced and who experience emergencies on a daily basis get the support they need leading up to an incident."

EM Practitioner: "So, understanding Maslow's hierarchy of needs, there are those who have basic needs before we get to the whole self-fulfillment needs of flood insurance and all of that stuff."

Elected Official : "Through experience, we know the most vulnerable areas …" So, I think, over time we know who needs those Services."

EM Practitioner: "We push [services] like that out into the neighborhoods so that people who have several needs for services after a disaster can go to one place instead having to go 20 places different offices."

City Administrator: "Policies and practices do better [to] meet the needs of low-to-moderate income households only if you feel that they do."

Engineer: "People will have the same needs regardless of income."

Trust Level

Trust Level in government policies was a preliminary code that came from the interviews. It was also discussed extensively in the phenomenological interviews' analysis. The context centering around trust level stemmed from low-to-moderate income households' experiences with past policy decisions. Additionally, the code Trust Level overlapped with Messaging which also surfaced as a code. They overlapped in areas where participants felt that changes in messages, or messaging campaigns represented a major area in which there needed to be more attention to help residents, who fall into low-to moderate income households, better trust government in their EM policies and practices decision making. As stated in the phenomenological interviews, past policies and practices that negatively affected black and

brown populations and lower income classes of people bred a general lack of trust in EM and other government policy decisions (Bullard, 1990; Dash, McCoy, & Herring, 2010; Grote, 2015; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Schneider, Ingram, & Deleon, 2014; Szasz, 1993; Talen, 2008). Below are responses that address Trust Level or make inferences to the lack thereof.

> **EM Practitioner**: "It depends on motivations so there is no one answer for everybody. Now on a racial side and this a whole different path I'm going on, but again it's trust. I may not be the face from who they want to hear the message from."
>
> **EM Practitioner:** "Trusting the government is a big issue. That is one of our biggest issues we have to work on."
>
> **EM Practitioner**: Myths of the communities – "…in cahoots with bread and milk folks, grocery stores, government trying to push me from my land…"
>
> **Social Justice Activist**: "Once a community knows a dirty truth, then it's difficult to unknow it, and makes it applicable to just about everything."
>
> **Social Justice Activist**: "And the people who are conveying this information are truly trusted members who believe it."
>
> **Social Justice Activist**: "I think a lot of it is the fear of losing what they have. Not trusting the situation."
>
> **Elected Official**: "So sometimes it takes a lot of effort to try to convince people to leave. I continue to refer back to the level of trust with Emergency Management."
>
> Messaging

Messaging was another preliminary code that developed from the data, as shown below. Participants' responses revolved around messaging when they spoke about how messages about

hurricane evacuation are spread throughout the communities. The importance of messaging was emphasized when discussing communication barriers with socially vulnerable populations that fall into low-to-moderate income households' populations. In the research literature, Messaging was a determining factor in whether people decided to evacuate (Huang, Lindell, Prater, Wu, & Siebeneck, 2012). Messaging is key for all households regardless of income. Therefore, the way localities convey their messages is pertinent in all EM phases for minimizing the loss of life. Messaging overlapped with other codes such as Trust Level and other codes discussed under the Overlapping of Codes section. It is also an issue that was prominent in the phenomenological interview analysis. The following quotations show the challenges of messaging in diverse communities and how this code overlaps with other codes such as Trust Level:

> **EM Practitioner**: "I think it's getting to know the folks in their community and trusting the sources in which they are getting their information from."
>
> **EM Practitioner**: "I may not be the face from who they want to hear the message from."
>
> **Planner**: "You know and some of those challenges and one of the things we struggle with our messages is how people consume that information. Are they on social media, do they read the newspaper, are they on the website, do they look at the news, do they listen to the radio and all of that is evolving and some of these population do not [have] access to those means that [are] starting to become the go to for the city, you know sending our an email blast, putting something out on twitter, FB or IG and that may not be where some population have traditionally gone to get their information."
>
> **EM Practitioner**: "And when I go out [or] anyone on my staff goes out to present to community civic league various programs we go out to push the message. It's the same message across the whole city."

Social Justice Activist: "And the people [members of the community] who are conveying this information are truly members who believe it."

Engineer: "So, they don't treat it as realistic threats because I think we have had a lot of crying wolf on things, the media hypes stuff."

Elected Official: "The importance of messaging – who is the messenger?"

Social Justice Activist: "People living in the community should be included in messaging…"

City administrator: "Again, it's geography we're going to send out targeted messaging to the communities based on weather information. So, we're going to target direct messaging to the areas that will be directly affected."

Race

Race was a code that was represented in many forms within the transcribed interviews. Race was first noticed in the analysis of the interview responses. While the subjects of race and racism were evident during the interview process, it was not until the analysis of the interview text and relistening to the audio interviews that the prevalence stood out. Responses about race were in the context of racist policies negatively affecting low-to-moderate income households' trust levels of EM practitioners and the government in general, and the lack of diversity in messaging to low-to-moderate income household communities.

Race overlapped with some of the other prominent codes, especially Trust Level and Messaging which is discussed further in the Overlapping of Codes and in the Coding Perceptions sections. Race was emphasized in participants' responses when there were discussions about historical policies and the systemic racism of those policies, trust levels in African American communities and even in a participant's response about gerrymandering. Race was mostly a

response from the Social Justice Activists, with references from other participants. The Phenomenological Interview Analysis section presents a more extensive discussion about Race and social construction theory. Another extensive discussion is presented in the Theme and Code Perceptions section below. Quotations shown below may also be found in the Phenomenological Analysis section. However, these responses were chosen because they best represented the essence of how race was emphasized in the responses.

Social Justice Activist: "Systemic racist policies starting with housing and trickling into other policy arenas."

Social Justice Activist: "Gerrymandering districts, gentrification, racist housing policies that re-segregate populations of people of color into isolated areas and harms families when it comes to EM preparedness economically, health wise and create injustice."

Social Justice Activist: "Jim Crow practices finds its way into all policies."

EM Practitioner: It depends on motivations so there is no one answer for everybody. Now on a racial side and this a whole different path I'm going on, but again it's trust."

Social Justice Activist: "Historically, I would say, you know, it was racism."

Money

Money was a code that was mentioned in interview question two when participants were asked about their characterization of low to moderate income households in terms of their needs during evacuation. Money overlapped with numerous other codes to include Transportation, Needs and Response. These responses were chosen because serve as the best examples related to money. The responses included:

Planner: "Well, money I mean that's the route to everything. I mean most low to moderate income people will have a hard time because if you do not have somewhere to

evacuate to? You don't have the money to spend on hotel room where the hotel rates are jacked up because everyone is leaving, on food, on gas, on the possibility of missing work."

EM Practitioner: " People have the lack of financial resources, [and they live] paycheck to paycheck…"

Planner: "I think more so it's highly correlated to the amount of money that you have. I think that if you survey this and graph this, you would see a straight line showing that the more money you have the more likely you are to evacuate. I think umm, yeah, I'm going to say that is the main reason. It just buys a lot more access and gives a feeling of you have a lot more to lose if you stay."

Engineer: "They need money to buy the necessary food they need."

EM practitioner: " [They need] money for meds and medical supplies to last."

Socially Vulnerable Populations as Codes

Participants' responses in reference to socially vulnerable populations included populations such as the elderly, immigrants, the medically fragile, homeless, and children. Even though interview questions asked specifically about low-to-moderate income households, participants were more inclined to address other socially vulnerable groups, and groups that may not be vulnerable in their responses. The response from participants was often that low-to-moderate income groups could easily fall into any of the other socially vulnerable groups. The researcher's observation was that low-to-moderate income households were a secondary socially vulnerable factor to other groups that were a part of participants' responses. Below are a few examples of when participants referred to other socially vulnerable groups that were considered in current EM policies and practices.

Social Justice Activist: "Children are affected if they come from these households…"

City Administrator: "Now we do, we do however take into account… we do take into account our homeless population."

Elected Official: "Services are typically to the elderly and you have those without transportation and a few others who may not necessarily have family members or others."

EM Practitioner: "If we are evacuating in zones A, then our shelters are automatically out in that area and where we open shelter[s] we work with [other organizations] to [make sure that there] is a handicap bus available at each shelter."

EM Practitioner: "We have pet friendly shelters for pet owners, the medically fragile and we partner with Sentara to be able to [keep] these shelters staffed with what they need, if they have oxygen needs and other medical needs."

EM Practitioners: "We look at having shelters and other things for non-English speaking people, we have a lot of immigrants who may come here to work."

Education and Response

There were other codes that served as preliminary codes. However, these codes were less prominent. They included Education, Money, Response and Other Vulnerable Populations. The Education code was about educating low-to-moderate income households about the need to build resilient networks and education campaigns that overlapped with Messaging. Another participant spoke about the technology divides that prevent some people from signing up for alerts and some of the other means in which information is pushed out into the communities.

Education

EM Practitioner: "That's so easy, so for this predictor, for low-moderate income families, what we need to be educating them on is that they don't have to evacuate to

Richmond or Danville, Harrisonburg or DC. They don't have to go outside the area in some cases. So, what we want them to do is start building a social network that is a resilient network."

Social Justice Activist: "[There are] technology divides in the poorer communities in reference to signing up for some of these alerts and the communities need to be educated."

Response (Hurricane Evacuation)

The Response code was linked to interview question number four in reference to perceptions about how low-to-moderate income households respond. Participants' perceptions were based on previous professional experience in hurricane evacuation behaviors. However, there were participants who did not possess this specific professional experience, so their views or perceptions were personal. Personal views about a population, especially one in which a person has no experience in interaction can shape a perception and those perceptions can very well be based on the stereotypes of people whether a person is willing to admit this or not. This too links back to social construction theory where policy decisions are based on the personal opinions of populations that are grounded in stereotypes, which may affect policy decisions and practices (Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014; Schneider & Sidney, 2009). Below, is one response that summarizes participants' responses about the perception of low-to-moderate income households' response.

Elected Official: "Residents are reluctant to respond. They are reluctant to leave their homes. You know, if you don't have family members, if you don't have other places that you can go, there is a lot of concern around leaving your property. So sometimes it takes

a lot of effort to try to convince people to leave. I continue to refer back to the level of trust with Emergency Management."

Overlapping of Codes

As the researcher reviewed the transcribed interviews, there were clear relationships and overlaps in the preliminary codes. Transportation overlapped with Needs, and Money. Throughout the transcribed and audio interviews, participants made references to transportation in multiple contexts. Transportation was referenced as a main source of hurricane evacuation need for socially vulnerable populations, specifically low-to-moderate income households. Therefore, there was no surprise that it overlapped with the code Needs and Other Socially Vulnerable Populations. Another code that Transportation overlapped with frequently is Money or financial resources. Even though these code words were not present in all of the transcribed interview text, the inferences were present in the context of the responses. Below are three examples pulled from the quotations under the codes Transportation, Needs, Money and Other Socially Vulnerable Populations shown above.

Elected Official: "Through experience, we know the most vulnerable areas in our city with regard to flooding as well as the communities who typically may not have transportation and need the local shelters. So, I think, over time we know who needs those services."

Planner: "I think it starts with means to evacuate. A lot of people do not have cars, they rely on public transportation, so they don't even have the first means to go anywhere, somewhere. The bus doesn't even take them, and they cost. And then there is costs, whether its costs for transportation, lodging food, wherever it's going to take you once you get there, which is why people end up in public shelter."

EM Practitioner: "If we are evacuating in zones A, then our shelters are automatically out in that area and where we open shelter[s] we work with [other organizations] to [make sure that there] is a handicap bus available at each shelter."

Trust Level, Messaging, and Race were code overlaps prominent within the interview text. The context in which these three codes overlapped most was responses about the historical mistrust of government policies and practices from socially vulnerable population communities, specifically African American communities. Additionally, these three codes overlapped when participants discussed Messaging. The context for this code overlap was in reference to mistrust of hurricane evacuation messages and the need to revamp messaging in order to convince low-to-moderate income households of serious hurricane threats. Trust Level, Messaging and Race did not always overlap together. There were overlaps that included Trust Level and Messaging that did not include Race. The quotations below were pulled from codes and are the best examples of how Trust Level, Messaging and Race overlap:

EM Practitioner: "I think it's getting to know the folks in their community and trusting the sources in which they are getting their information from."

EM Practitioner: "It depends on motivations so there is no one answer for everybody. Now on a racial side and this a whole different path I'm going on, but again it's trust. I may not be the face from who they want to hear the message from."

EM Practitioner: "Trusting the government is a big issue. That is one of our biggest issues we have to work on. We need the state to help us, because the messaging is just go [evacuate].

Elected Official: "The importance of messaging – who is the messenger?"

Social Justice Activist: "And the people [members of the community] who are conveying this information are truly members who believe it."

There are other codes that overlap as well. Other Socially Vulnerable Populations, Needs, Transportation and other codes overlapped in participants' responses when discussing the populations that are considered in current policies and practices. This is evident throughout the interview quotations shown both in the thematic and phenomenological analyses. However, below are specific examples taken from transcribed interviews:

EM Practitioner: "If we are evacuating in zones A, then our shelters are automatically out in that area and where we open shelter[s] we work with [other organizations] to [make sure that there] is a handicap bus available at each shelter."

EM Practitioner: "We have pet friendly shelters for pet owners, the medically fragile and we partner with Sentara to be able to [keep] these shelters staffed with what they need, if they have oxygen needs and other medical needs."

Elected Official: "Services are typically to the elderly and you have those without transportation and a few others who may not necessarily have family members or others."

Theme and Code Perceptions

In the concept-driven perception of theming and coding, social construction theory explains that policies were developed to benefit favorable populations with strong political power and resources (Schneider, Ingram, & Deleon, 2014; Schneider & Ingram, 1993; Schneider & Sidney, 2009). There was a small pattern around the word "historically" as it related to policies and practices considerations for low-to-moderate income households. Social construction theory describes that the way people are perceived determines whether they receive policy benefits. Additionally, it describes reasoning as to why institutional racism is inherently a

part of past and current policy decision-making (Schneider, Ingram, & Deleon, 2014; Schneider & Ingram, 1993; Schneider & Sidney, 2009).

There were no patterns around the words political power as it related to any vulnerable population with the exception of the term gerrymandering. Gerrymandering was used by a participant to describe a system that did not allow African Americans to have a true political voice in decisions that affected their lives. The participant who used this term placed it in the context of why, historically, African Americans have had no voice in policies that have the most negative effects, to include EM policies and practices. Gerrymandering circles back to social construction theory and is the most profound term surfacing amongst participants' responses in this case study as an explanation or backdrop to the placement of target populations' political power and resources in social constructions' models.

Lastly, as it related to data-driven or open-coding perspectives of themes and codes, there were themes that emerged that were not originally conceptualized. Race was one such code. Even though race is a socially vulnerable factor, in this context, the patterns of race emerged during discussions of mistrust of government for evacuation purposes, messaging, racist housing practices forcing people of color into high risk areas. Gerrymandering was also mentioned in this context. Race was not a concept the that the researcher thought would emerge as prominently as it did in the text. However, it is linked to social construction theory as target populations characterized by race, such as the black middle class and young black youths. Additionally, race is significant in the discussions about institutional and systemic racism as a result of the perception of African Americans and other races of people and ethnicities. Historically, policy decisions left over from Jim Crow eras provide some explanations as to why many socially vulnerable populations receive no current policy considerations.

Policy Suggestions was a theme that emerged as a result of open coding. There was a general interview question that asked participants about their thoughts about the Hampton Roads regional efforts in hurricane evacuation. Budget to implement state EM initiatives came up more than once in the interview responses. Two EM practitioners expressed that local jurisdictions did not have the EM budgets or adequate staff to implement state initiatives. According to participants, this presented as a barrier to include more populations, such as low-income, in their EM policy considerations.

DISCUSSION OF FINDINGS

Phenomenological Interview Findings

Findings from the phenomenological interviews are significant to this case study and provide preliminary answers to the research questions. One such finding is while local policies may contain considerations for other socially vulnerable populations such as the elderly, disabled, and medically fragile, income is not a considered in policies as a vulnerability factor. The research literature revealed that most emergency plans did not adequately address socioeconomics, or low-income, as an evacuation vulnerability factor (Gooden, Jones, Martin, & Boyd, 2009; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Lindell, Lu, & Prater, 2005; Talen, 2008). Therefore, other socially vulnerable populations with relatively low-to-moderate positive perceptions and political strength still receive policy considerations and resource allocations. This is in step with social construction theory. Based on the interviews, low-to moderate income households do not receive the same considerations unless they are paired with other populations.

However, in this case study, while participants have positive perceptions of low-to-moderate income households and their evacuation needs, they hold negative perceptions about low-to-moderate income household evacuation behavior. Participants expressed the importance

of considerations for low-to-moderate income households since lack of financial resources was often mentioned as a barrier to evacuation. However, participants presented no positive expressions of low-to-moderate income households' evacuation behaviors based on reasons that ranged from the mistrust of government, particularly governmental messaging such as evacuation orders, to an admittance that they did not know why this population did not evacuate. This reason possibly provides explanation for lack of policy consideration for low-to-moderate income households in EM policy and practices.

To link the case study to the social construction theory, the data should reveal that low-to-moderate income households have weak political power and resources and a varying moderately positive to negative perception (Schneider & Ingram, 1993; Schneider & Sidney, 2009; Schneider, Ingram, & Deleon, 2014). As a result, there may be little to no policy considerations of low-to-moderate income household and they will be politically weak. This assumption is drawn from the research literature in terms of the construction of existing socially vulnerable groups already and the political power and resources traditionally held by these groups (Schneider & Ingram, 1993; Schneider & Sidney, 2009; Schneider, Ingram, & Deleon, 2014).

Figure 8 is a more specific example of a causal relationship between low-to-moderate households, political strength and EM policy consideration. This framework adds the perception of low-to-moderate income households' evacuation behavior and their needs. Evacuation behavior and needs are circled to emphasize these factors in the relationship. The relationship is situated in the social construction framework as is Figure 4. The Figure 8 framework illustrates how the relationship of low-to-moderate income households with no political strength, low population perception, a weak perception of their evacuation behavioral needs, and a negative

perception of low-to-moderate income households' evacuation behavior results in no policy considerations.[5]

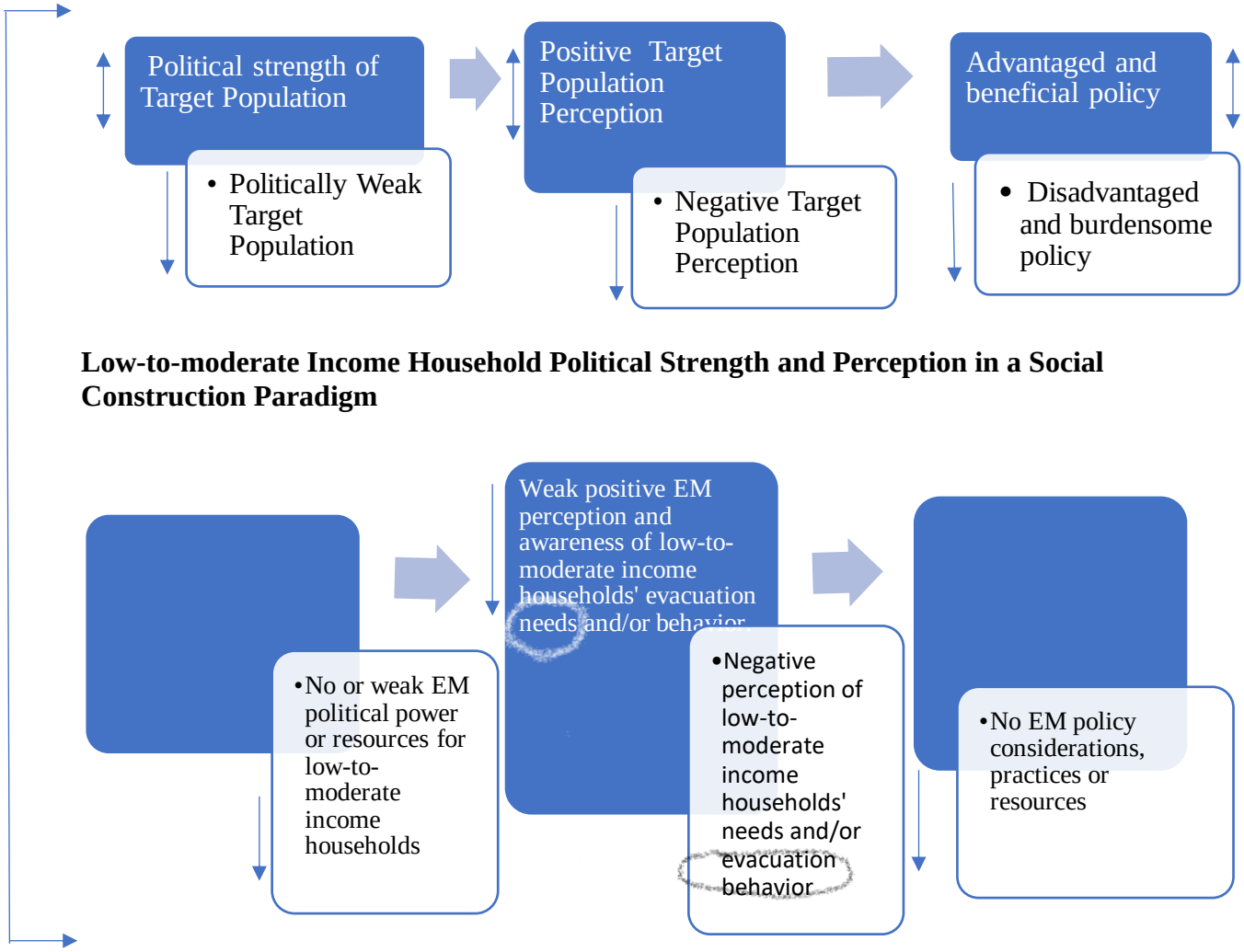
Figures 4 and 8 are examples of how social construction theory is useful in explaining the links between the social constructions of low-to-moderate income households and local government responses to hurricane evacuation needs. More so, Figure 8 represents an example of how social construction theory works on behalf of low-to-moderate income households to provoke EM stakeholder action. If the causal relationship illustrated in Figure 8 is analyzed in reversed order, then it is possible that EM stakeholders may discover solutions to problems they know to exist. For example, the outcome in the second half of Figure 8 is little to no policy benefits or considerations for low-to-moderate income households. EM stakeholders may not have viewed hurricane evacuation policy considerations for low-to-moderate income households as a major issue because there are policies and procedures already in place for other socially vulnerable populations, such as the elderly, disabled, children and the medically fragile. There are considerations for these populations even though income is a factor for social vulnerability (Cutter, 1996, Cutter & Emrich, 2006; Gooden, Jones, Martin, & Boyd, 2009). More so, income emerges in the research literature and phenomenological interviews as a major factor in decisions determining why low-to-moderate income households do not evacuate (Blaikie, Cannon, Davis, & Wisner, 1994; Bergstrand, Mayer, Brumback, & Zhang, 2018; Buckle, 1998; Cutter, 1996, Cutter & Emrich, 2006; Gooden, Jones, Martin, & Boyd, 2009; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015). The factors leading to the outcome in Figure 8 are EM stakeholders' negative perceptions in terms of how low-to-moderate income households

[5] In the social construction theory framework, any range of positive perception allows for some policy benefits.

evacuate. In the phenomenological interview section, there are quotations from participants who perceive low-to-moderate income households' hurricane evacuation behavior as delayed or they shelter in place for a myriad of reasons. Another factor illustrated in Figure 8 leading to the outcome is a range of positive to weak perceptions of what low-to-moderate-income households' evacuation needs are. Emergency management practitioners were more confident in their answers about this population's hurricane evacuation needs due to past hurricane evacuation professional experiences. However, some participants speculated about what they perceived those needs would be. The third factor in Figure 8 is the political power of low-to-moderate income households. Political power in low-to-moderate income household groups is often weak (Ingram, Schneider, & Deleon, 2007; Schneider & Ingram, 1993; Schneider & Sidney, 2009; Schneider, Ingram, & Deleon, 2014). The phenomenological interviews provide some answers as to why low-to-moderate income household groups do not mobilize and participate as actively as other socially vulnerable populations.

During this research, the problems that resonated amongst participants and non-research participants in the emergency management stakeholders' field were communication and being out of touch with diverse local communities. What social construction theory framed in emergency management hurricane evacuation does, as illustrated in Figure 8, is provide a possible explanation as to why EM stakeholders have these issues based on what social construction theory says about the institutional nature of racist policies and how policies are implemented based on the perceptions of those in power. Figure 8 also provides an opportunity for EM stakeholders to examine their own perceptions about people and how this could affect local policy decision making, implementation, communication and trust from their respective local communities.

Emergency Management in a Social Construction Framework



Low-to-moderate Income Household Political Strength and Perception in a Social Construction Paradigm

Figure 8: The link between Social Construction Theory and low-to-moderate income household political power and perception in a Social Construction paradigm.

Based on the phenomenological interviews, answers to the research questions are below. The answers are linked back to social construction theory and the research literature. It is important to note that these answers are preliminary and are based solely on the phenomenological interviews without the benefit of thematic analysis. However, it is an expectation that the answers to the

research questions after thematic analysis will enhance the validation and efficacy of this case study.

Research question #1: How are low-to-moderate income households considered in the local evacuation plans?

Low-to-moderate income households as a primary vulnerability factor are not considered in the local evacuation plans. Income is a secondary factor to other socially vulnerable populations. Socially vulnerable populations receive some policy benefit. Below, are some of the references to other socially vulnerable populations from participant responses. They include:

> **EM Practitioner**: "If we are evacuating in zones A, then our shelters are automatically out in that area and where we open shelter[s] we work with [other organizations] to [make sure that there] is a handicap bus available at each shelter."
>
> **EM Practitioner**: "…by using census information and also partnering with organizations such as Senior Services, the Foodbank of Southeastern Virginia [and the Eastern Shore], Sentara meals on meals. We really try to make sure that those folks that are under resourced and who experience emergencies on a daily basis get the support they need leading up to an incident."
>
> **EM Practitioner**: "We have pet friendly shelters for pet owners, the medically fragile and we partner with Sentara to be able to [keep] these shelters staffed with what they need, if they have oxygen needs and other medical needs."
>
> **Elected Official**: "Services are typically to the elderly and you have those without transportation and a few others who may not necessarily have family members or others."

The social construction model references "the poor" as a population, but it's vague. One can assume that if a household is poor, then they fit into the low-to moderate income household

range. However, participants did not reference "poor" or any type of socio-economic factor as a primary EM policy consideration. As stated throughout the findings, income was paired with other social vulnerability factors. Social construction theory does not account for low-to-moderate income as a primary factor. However, the researcher can conclude, based on the background thesis of the theory, the literature and the phenomenological interviews, that socially vulnerable populations representing low-to-moderate income households have little to no EM policy considerations. This assertion can be tested. However, this is a qualitative, not mixed-method, case study. Therefore, the inability to test this conclusion quantitatively, in this study, represents a limitation.

Research question #2: What are the local emergency evacuation policies and practices that are related to low-to-moderate income households?

The EM evacuation policies and practices that are related to low-to-moderate income households are those that address other vulnerable populations such as the homeless, medically fragile, disabled, pet owners and elderly. There are none that address income. Most participants spoke about low-to-moderate income households falling under other socially vulnerable groups which have policy considerations. Responses from interviews that support this finding are:

> **City administrator**: "I think what we do is we try to look out for all of citizens and it's more based on geography."
>
> **Engineer:** "…I think the policy is geared to warning, informing people of the pending threat and recommending the proper actions to take. They don't address the socio economics of it because that's not the purpose, or the mindset is people need to leave not if you can afford to leave, just leave. And, I don't think the policies ever address how and where you going to go. We don't care where you go, you just cannot stay here."

> **Planner**: "I do not know if it adequately addresses it [low-to-moderate income households], but I do know that it is high on their list of things that they try to do. How successful [they are] is probably in the eye of the beholder, but I do know it is something that they do not overlook. I know that there are challenges with the government, particularly, contacting people because we have trouble contacting people in some of those groups because they are not on social media or they do not have email or there is a mistrust of the government.

Research question #3: How do local EM policymakers, practitioners, and stakeholders perceive low-to-moderate income households' evacuation behavior when faced with the threat of a hurricane?

Participants' responses to this question were generally negative, or they had a negative or low perception. The context for negative perception is that participants did not indicate that low-to-moderate income populations had quick responses to hurricane evacuation orders. Most participants answered that low-to-moderate income households rarely leave due to various reasons. Reasons varied from insufficient finances, mistrust of government, and prior experience with hurricanes that did not land in a forecasted area. These reasons connect to the research literature that references evacuation behaviors (Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Lindell, Lu, & Prater, 2005). Participants' answers about the mistrust of government as a contributing factor for the perception of hurricane evacuation behavior provides an opportunity for further study. The hypothesis behind social construction theory states that the target population perceptions of government was a major factor in policy-decision making (Schneider & Ingram, 1993; Schneider & Sidney, 2009; Schneider, Ingram, & Deleon, 2014). Responses that support this conclusion are shown below and include:

EM Practitioner: "Trusting the government is a big issue. That is one of our biggest issues we have to work on. We need the state to help us, because the messaging is just go [evacuate]. If you're military, we understand there are certain [military] populations that have to go. But if you've been here a certain number of years, you should have some type of network you can build into your system and citizens just don't think about that. It's a public education thing we need to do, but public education and emergency response is one of those things that is second fiddle to a lot of things."

EM Practitioner: "It depends on motivations so there is no one answer for everybody. Now on a racial side and this a whole different path I'm going on, but again it's trust. I may not be the face from who they want to hear the message from."

EM Practitioner: "I think the key thing that is a challenge is having the financial means to be able to pick up and leave and there's going to be any number of resistance to it. A lot of it boils down to money."

Another major finding while reviewing the transcribed interview was references to populations considered vulnerable that were not listed on the most recent social construction model that was found while conducting research. Populations not present on the social construction theory model include non-English speaking populations, the medically fragile, and pet-owners. These populations were mentioned by all of the participants who were EM practitioners and a city administrator multiple times in reference to challenges in sheltering these population and trying to meet their needs. Therefore, the newly represented populations are provided EM policy considerations, benefits and resource allocation; yet, income, specifically, low-to-moderate income households, is not afforded this same consideration. Further, the vagueness of income descriptions as target populations is a limitation in social construction's

model. Social construction theory's models reference rich and poor as target populations groups with no descriptors. The model presented limitations in representing income groups. Therefore, income was further conceptualized by making low-income, low-to-moderate income and high-income new target population groups. The addition of better conceptualized and additional target populations heard throughout the interview responses allow the researcher to update the social construction theory model (See Figure 9). Additionally, populations such as big banks, polluting industries, gun manufacturers, and scientists that were included in earlier social construction framework models and omitted were added back due to their current relevance as populations traditionally viewed as political strong, but with varied constructions ranging from neutral to more negative (Ingram, Schneider & Deleon, 2007; Schneider & Ingram, 1993; Schneider & Sidney, 2009). Further, two populations including the lesbian, gay, bisexual, transgender, queer or questioning, intersex, and asexual or allied (LGBTQIA) and marijuana users/advocates communities were included in the model. According to Schneider, Ingram, and Deleon (2014), these populations were able to change their social constructions to a politically stronger perception due to community mobilization and monetary resources. Overall, the new target populations, political resource positions and constructions are based on the interview responses, the social construction theory and research literature (Bryant & Mohai, 1992; Bullard, 1990; Cutter, 1996; Cutter, 2003; DeSantis & Ugarriza, 2000; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Gooden, Jones, Martin, & Boyd, 2009; Schneider & Ingram, 1993; Schneider & Sidney, 2009; Schneider, Ingram, and Deleon, 2014; Speer, 2018; Talen, 2008; Wisner, Blaikie, Cannon, & Davis, 2004). Therefore, Figure 9 is the researcher's conceptualization of a more current representation of the social contruction theory framework.

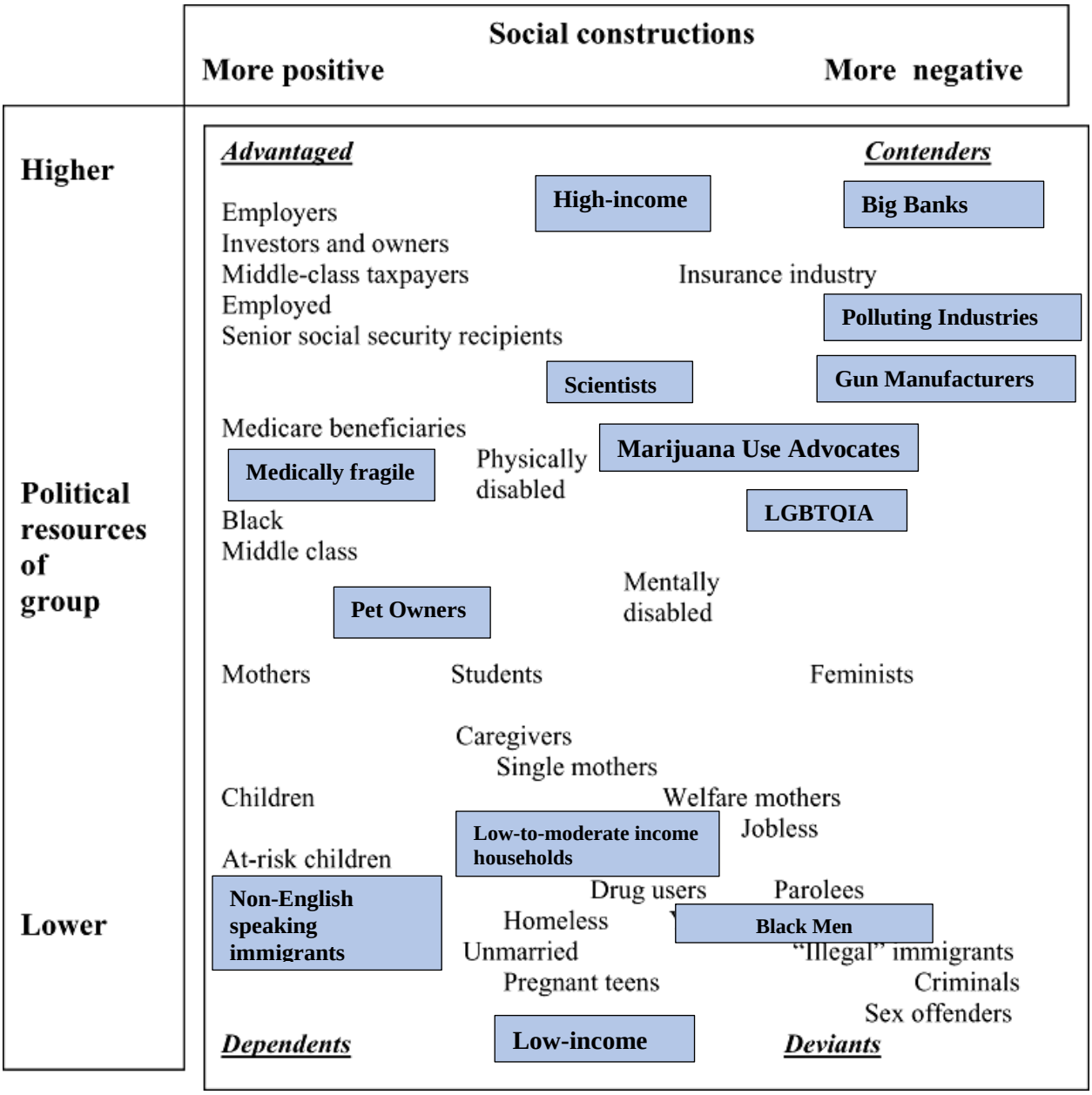


Figure 9: Evolution of Power and Social Constructions of Target Populations. Adapted from Schneider & Sidney (2009).

Overarching research question: To what extent do local government policies and practices address the evacuation behaviors and needs of socially vulnerable populations facing the threat of a hurricane?

Local government EM policies and practices address the evacuation behaviors and needs of socially vulnerable populations facing the threat of a hurricane. These populations include vulnerability that is based on disability, medically fragile, the homeless, the elderly and non-English speaking populations. These populations correspond with (or to) the research literature in terms of characteristics that determine a person's likelihood of being considered socially vulnerable (Buckle, 1998; Blaikie, Cannon, Davis, & Wisner, 1994; Cutter, 2003; Cutter & Emrich, 2006; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015). One socially vulnerable population, the elderly, has a very high positive perception and is politically strong. As such, policy considerations are advantageous for this population. Low-to-moderate income households are not clearly identified by EM stakeholders, policies, and practices as being a socially vulnerable group. Therefore, very minimal to no EM policy considerations exists for this group. Responses that support this conclusion include:

> **EM Practitioner:** "We don't tailor a lot of policy response and procedures to specific social and economic groups. We don't have that level of refinement."
>
> **EM Practitioner**: "We have pet friendly shelters for pet owners, the medically fragile and we partner with Sentara to be able to [keep] these shelters staffed with what they need, if they have oxygen needs and other medical needs."
>
> **Elected Official**: "Services are typically to the elderly and you have those without transportation and a few others who may not necessarily have family members or others."

Thematic Analysis Final Themes and Findings

Code and final theme development were performed for each research question. Below, are explanations of findings for the final themes for each research question that surfaced from the transcribed interviews and preliminary subsequent codes. Included in the discussions are final

conclusions to the research questions based on both the phenomenological interviews and thematic analysis.

Research question #1: How are low-to-moderate income households considered in the local evacuation plans?

Policy Needs was the theme for this research question. In the search for codes and themes for this question, it was evident from participants' responses that localities try to capture the needs of socially vulnerable populations through policies and practices. However, some of the answers were vague and not specific to low-to-moderate income households. For example, the quotes shown below show that localities make policy considerations for socially vulnerable populations, but a close examination of the quotations have inferences to the elderly, through the mentioning of Senior Services, Meals on Wheels. The Food Bank is a service that is available for other socially vulnerable households to include low-to-moderate income households. There were responses that referenced vulnerable areas prone to flooding and those within those areas needing specific services. But again, this may include those who are socially vulnerable and those who may possible fall into nonvulnerable populations.

> **Emergency Practitioner**: "…by using census information and also partnering with organizations such as Senior Services, the Foodbank of Southeastern Virginia [and the Eastern Shore], Sentara meals on meals. We really try to make sure that those folks that are under resourced and who experience emergencies on a daily basis get the support they need leading up to an incident."
>
> **Elected Official: "**Through experience, we know the most vulnerable areas in our city with regard to flooding as well as the communities who typically may not have

transportation and need the local shelters. So, I think, over time we know who needs those Services."

EM Practitioner: "We push stuff like that out into the neighborhoods so that people who have several needs for services after a disaster can go to one place instead having to go to 20 different offices."

The responses revealed that policy considerations were mostly for other groups that are considered socially vulnerable according to the research literature (Buckle, 1998; Blaikie, Cannon, Davis, & Wisner, 1994; Cutter, 2003; Cutter & Emrich, 2006; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015). These populations included the elderly, medically-fragile and homeless, as well as people who are vulnerable based on where they reside. There was some acknowledgement that there was a general awareness of low-to-moderate income households and the overall need for policy to address this population. There were really no considerations for low-to-moderate income households. The answer to research question one aligns with the phenomenological interview analysis for interview question one (1).

Research question #2: What are the local emergency evacuation policies and practices that are related to low-to-moderate income households?

The final theme for this research question is Emergency Management and Continuity of Operations Plans (EMCOP). It was discovered from the phenomenological interviews and the review of EMCOPS that were found online for all participating localities that none of these plans consider low-to-moderate income households as a primary factor, at least not as far as the researcher was able to find. Households were addressed, but not by income. For example, as it relates to evacuation, one Hampton Roads' City's Emergency Operations Plan states (The City of Virginia Beach, VA, 2018):

Individuals, Families and Households: Individuals, families, and households should also prepare emergency supply kits and emergency plans so they can take care of themselves, their pets, the elderly, and their neighbors for at least 72 hours following a significant event. During an actual disaster, emergency, or threat, individuals, households, and families should monitor emergency communications and follow guidance and instructions provided by local authorities.

The city's EOP give specific attention to other socially vulnerable populations such as the medically fragile, disabled, children and animals. There are considerations to diverse cultures, as well. Special needs considerations to diverse cultures and populations include non-English speaking and public transportation-dependent populations and are specified under the heading Medical, Functional and Access Needs (The City of Virginia Beach, VA, 2018).

Medical, Functional and Access Needs: Residents or visitors with medical, access and functional needs may include the elderly, children, persons with disabilities (e.g. mobility/vision/hearing/speaking impairments, among others), as well as those who live in institutional settings, are from diverse cultures, have limited or no English proficiency, or are public transportation-dependent.

Equal Access: People with disabilities must be able to access and benefit from emergency programs, services, and activities equal to the general population. Equal access applies to emergency preparedness, notification of emergencies, evacuation, transportation, communication, shelter, distribution of supplies.

Children: [The City] recognizes the varying and special requirements of children and is committed to ensuring that their physical and mental health needs will be appropriately addressed.

> **Animals:** City public education campaigns exist to inform owners of pocket pets, household pets/companion animals, exotic animals, and livestock what preparedness and response actions should be taken before, during, and after an emergency. Only service animals covered under current Americans with Disabilities Act (ADA) regulations are allowed in City emergency shelters.

There is reference to nondiscriminatory laws by not having a one size fits all policy. However, in this particular policy, this applies only to those with disabilities. One tenet under this nondiscriminatory section of this EOP states (The City of Virginia Beach, VA, 2018):

> **No "One-Size-Fits-All" Policy:** People with disabilities do not all require the same assistance, and do not all have the same needs. Many different types of disabilities affect people in different ways. Preparations should be made for people with a variety of functional needs, including people who use mobility aids, require medication or portable medical equipment, use service animals, need information in alternate formats, or rely on a caregiver.

Located in another city's EOP is a reference to individuals, not households, with special needs. This city also maintains a special needs data-base that allows residents to suggest changes in its EOP for special needs populations. However, unlike other EOP's reviewed for this case study, the burden is on special needs residents to register for inclusion on the data-base. There was no date found for this city's online EOP abstract. Therefore, this could possibly be an outdated policy and practice (The City of Hampton, nd). Nevertheless, the policy abstract states:

> **Individuals with Special Needs:** The Office of Emergency Management provides educational and personal emergency planning assistance to the special needs population. Individuals with special needs may voluntarily register with the Office of Emergency

Management, for inclusion in the special needs database. The special needs database is used as a planning tool to accurately plan for this portion of Hampton's population.

This case study does not insinuate that policy considerations and services are not available to low-to-moderate income households; it is just not specified in the written policy. Three EM practitioners stated that they consider low-to-moderate income household in their EM practices, but it is unwritten in their policies. One participant stated that they have plans in the work for these populations, but they were in draft form. For example:

EM Practitioner: "So, we got the Continuity Operations Plan, we got the Emergency Operations Plan that we just recently redid, we got the Pre-Disaster Recovery Plan that we're in second draft and working towards a final and the Training and Exercise Plan."

Therefore, the concluding answer for this research question is that while there are considerations for socially vulnerable populations, no policies specifically target income, or low-to-moderate income households as a primary factor. Two EM practitioners stated they had outdated policies and are revising policies to better include low-to-moderate populations. But other EM practitioners candidly stated there are no real policies and practices that are related to any income groups. Examples of such as response is below:

> **EM Practitioner:** "We really do not differentiate between low-to-moderate, but we would really start with the evacuation zones. We have a contract with the schools for the busses to get folks to shelters and we pick up along the roads. But that's for everybody and anybody that wants a ride. Messaging is important for all people."

Research question #3: How do local EM policymakers, practitioners, and stakeholders perceive low-to-moderate income households' evacuation behavior when faced with the threat of a hurricane?

The final theme for this research question is Low Perception. In this context, low perception means that participants had no positive responses in how low-to-moderate income households evacuate. The social construction theory framework provides some utility for low perception of evacuation behaviors in the social construction model created by the researcher and presented in Figure 8. This social construction model illustrates a negative or low perception of low-to-moderate income households' evacuation behavior as a contributing factor to no policy considerations for low-to-moderate income groups.

This theme is the result of the numerous codes that emerged from interview question four (4) which participants were asked about their perceptions of how low-to-moderate income households responded to government orders, such as evacuation orders. Patterns in the interview text developed around the code words Trust Level, Messaging as reasonings for delayed or no response to evacuation orders. Quotes shown for the codes Trust Level and messaging that relates to this research question includes:

> **Elected Official**: "So sometimes it takes a lot of effort to try to convince people to leave. I continue to refer back to the level of trust with Emergency Management."
>
> **EM Practitioner:** "Trusting the government is a big issue. That is one of our biggest issues we have to work on. We need the state to help us, because the messaging is just go [evacuate]."

There are other codes connected to the perception of low-to-moderate income households' evacuation behavior. Codes that emerged as additional reasons for low perceptions of the response delay include Transportation and Money. Responses related include:

> **Planner:** "I think more so its highly correlated to the amount of money that you have. I think that if you survey this and graph this, you would see a straight line showing that the

more money you have the more likely you are to evacuate. I think umm, yeah, I'm going to say that is the main reason. It just buys a lot more access and gives a feeling of you have a lot more to lose if you stay."

Planner: "I think it starts with means to evacuate. A lot of people do not have cars, they rely on public transportation, so they don't even have the first means to go anywhere, somewhere."

Therefore, the answer to this question would be that overall, EM policymakers, practitioners, and stakeholders have low or negative perceptions of low-to-moderate income households' evacuation behavior when faced with the threat of a hurricane. (Negative or low perception in terms of how this population is likely to evacuate based on various reasons represented by the aforementioned codes). A low perception of evacuation behavior is illustrated in Figure 8 along with a low to moderate perception of their needs.

Overarching research question: To what extent do local government policies and practices address the evacuation behaviors and needs of socially vulnerable populations facing the threat of a hurricane? Specifically, to what extent do local government policies and practices address the evacuation behaviors and needs of low-to-moderate income populations facing the threat of a hurricane?

The theme that emerged from the overall research question is Population Specific Policy Response and Procedures**.** Interview responses collected as raw data ranged from "no policy and procedures," to "we take into consideration" to "we address it pretty well." Examples of actual responses included:

EM Practitioner: "We don't tailor a lot of policy response and procedures to specific social and economic groups. We don't have that level of refinement."

EM Practitioner: "No, we develop procedures with those populations in mind."

Engineer: No, I don't so because I think the policy is geared to warning, informing people of the pending threat and recommending the proper actions to take. They don't address the socio economics of it because that's not the purpose, or the mindset is people need to leave not if you can afford to leave, just leave. And, I don't think the policies ever address how and where you going to go. We don't care where you go you just cannot stay here."

EM Practitioner: "Well, we take it into consideration certainly in our plans…"

The thematic process did reveal a code for Other Vulnerable Populations. This code was drawn from the interviews where participants spoke about service delivery to socially vulnerable population other than low-to-moderate income households. In this case low-to-moderate income households serve as a secondary vulnerability factor to other socially vulnerable populations. Most of the raw data taken from participants answers leads the researcher to conclude that there is little to no policy consideration for low-to-moderate income households. Some examples of other socially vulnerable populations mentioned in the interview text include:

EM Practitioner: "We have pet friendly shelters for pet owners, the medically fragile and we partner with Sentara to be able to these shelters staffed with what they need, if they have oxygen needs and other medically needs."

Elected Official: "Services is typically the elderly you have those without transportation and a few others who may not necessarily have family members or others."

The researcher's conclusion is similar to what is provided in the phenomenological interviews' analysis. While there is some consideration for other socially vulnerable populations, there are little to no policy considerations for low-to-moderate income households. Income is not

considered as a resource base for vulnerable populations and low-to-moderate income households are not clearly defined by EM stakeholders, policies, and practices as its own socially vulnerable group. Additionally, low-to-moderate income households are viewed as a secondary vulnerability factor to population such as the elderly, homeless, medically fragile, disabled, and non-English speaking people. These are all vulnerability characteristics under the definition of social vulnerability. (Blaikie, Cannon, Davis, & Wisner, 1994; Bergstrand, Mayer, Brumback, & Zhang, 2018; Buckle, 1998; Cutter, 1996, Cutter & Emrich, 2006; Gooden, Jones, Martin, & Boyd, 2009; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015).

CODES AND THEMES SUMMARY

The codes and themes summary table represent the process that the researcher chose to organize and develop themes and codes. The development of the summary table is a step in the process of establishing trustworthiness in thematic analysis represented in Figure 7 (Nowell, Norris, White, & Moules, 2017). The table is arranged by the headings: 1) Raw Data-Quotes, 2) Preliminary Codes and Themes, and 3) Final Codes and Themes. Beneath the Raw Data-Quotes heading are direct quotations from participants' interviews. The quotations are taken from the transcribed interviews. The second heading, Preliminary Codes and Themes, contain initial codes that were developed as part of the initial process of analyzing the transcribed interviews and relistening to the audio recordings. The third heading, Final Codes and Themes are codes and themes that emerged from the initial coding process.

The summary table was then organized into sections under the headings. The first section was organized by the overarching and sub-research questions. This organization process assisted the researcher in identifying emerging codes from the quotations that were relevant to answering the research questions. The last sections consist of codes and themes that surfaced during the

preliminary coding process. The coding process for this case study is discussed more thoroughly in the Methods section.

Raw Data-Quotes	Preliminary Codes and Themes	Final Codes and Themes
RESEARCH QUESTIONS		
Overarching Research question: To what extent do local government policies and practices address the evacuation behaviors and needs of socially vulnerable populations facing the threat of a hurricane? Specifically, to what extent do local government policies and practices address the evacuation behaviors and needs of low-to-moderate income populations facing the threat of a hurricane?		
"We don't tailor a lot of policy response and procedures to specific social and economic groups. We don't have that level of refinement."	No population – specific policy response and procedures	**POPULATION SPECIFIC POLICY RESPONSE AND PROCEDURES**
"No, we develop procedures with those populations in mind."	No procedures	
No, I don't so because I think the policy is geared to warning, informing people of the pending threat and recommending the proper actions to take. They don't address the socio economics of it because that's not the purpose or the mindset is people need to leave not if you can afford to leave, just leave. And, I don't think the policies ever address how and where you going to go. We don't care where you go you just cannot stay here."	No policy	
"No. Historically no.	No, historically	
"Historically and practically speaking, policy is not inclusive of low-moderate income people."	Historically, policy not inclusive	
"So, I think it addresses it pretty well…"	Addresses it pretty well	
Raw Data- Quotes	**Preliminary Codes (themes)**	**Final Code**
"Well, we take it into consideration certainly in our plans…"	Takes it into consideration	
Research question 1: How are low-to-moderate income households considered in the local evacuation plans?		

"…by using census information and also partnering with organizations such as Senior Services, the Foodbank of Southeastern Virginia [and the Eastern Shore], Sentara meals on meals. We really try to make sure that those folks that are under resourced and who experience emergencies on a daily basis get the support they need leading up to an incident."	Support needed	**POLICY NEEDS**
"Through experience, we know the most vulnerable areas in our city with regard to flooding as well as the communities who typically may not have transportation and need the local shelters. So, I think, over time we know who needs those services."	Knowledge of constituency needs	
"We push stuff like that out into the neighborhoods so that people who have several needs for services after a disaster can go to one place instead having to go 20 places different offices."	Needs	
Research question #2 What are the local emergency evacuation policies and practices that are related to low-to-moderate income households?		
"So, we got the Continuity Operations Plan, we got the EOP that we just recently redid, we got the Predisaster Recovery Plan that we're in second draft and working towards a final and the Training and Exercise Plan."	Emergency Plans	**EMERGENCY MANGEMENT AND CONTINUITY OF OPERATION PLANS**
Research Question #3: How do local EM policymakers, practitioners, and stakeholders perceive low-to-moderate income households' evacuation behavior when faced with the threat of a hurricane?		

Raw Data- Quotes	Preliminary Codes (themes)	Final Code
Delayed Response	Response	**LOW PERCEPTION** **SUBCATEGORIES OF CODES** Trust level Messaging Race Stereotypes
Households have different motivations for leaving	Response	
Mistrust Government	Trust Level	
"Once a community knows a dirty truth, then it's difficult to unknow it, and makes it applicable to just about everything"	Trust Level	
Myths of the communities – "…in cahoots with bread and milk folks, grocery stores, government trying to push me from my land…"	Trust level	
"Trusting the government is a big issue. That is one of our biggest issues we have to work on.	Trust/Messaging	
"It depends on motivations so there is no one answer for everybody. Now on a racial side and this a whole different path I'm going on, but again it's trust. I may not be the face from who they want to hear the message from."	Trust/Messaging	
Media hype	Messaging/Trust	
"So sometimes it takes a lot of effort to try to convince people to leave. I continue to refer back to the level of trust with Emergency Management."	Trust	
Stereotypes -Poor folks less resilient	Stereotypes	
"And the people who are conveying this information are truly members who believe it."	Trust/Message	
One stop recovery shops in neighborhoods	Resiliency	
RACE		
Historic racism	Institutional racism	**RACE**

Systemic racist policies starting with housing and trickling into other policy arenas	Systemic racism	
Gerrymandering districts, gentrification, racist housing policies that re-segregate populations of people of color into isolated areas and harms families when it comes to EM preparedness economically, health wise and create injustice.	People of color/Segregation Institutional/systemic/ systematic racism	**Final Code**
Raw Data- Quotes	**Preliminary Codes (themes)**	
Jim Crow practices finds its way into all policies	Systemic racist policy	
Low-to-moderate income households already underserved, so a pending disaster may increase the vulnerability	Underserved populations	
LOW-TO-MODERATE INCOME HOUSEHOLD HURRICANE EVACUATION NEEDS		
"Maslow hierarchy of needs…"	Needs	**EVACUATION NEEDS** **SUBCATEGORIES OF EVACUATION NEEDS** Money Transportation Employment Medical access
"Basic needs…"	Needs	
"People will have the same needs regardless of income	Needs	
Lack of Mobility	Transportation	
"I think it starts with means to evacuate. A lot of people do not have cars, they rely on public transportation, so they don't even have the first means to go anywhere,	Transportation	

somewhere. The bus doesn't even take them, and they cost. And then there is costs, whether its costs for transportation, lodging food, wherever it's going to take you once you get there, which is why people end up in public shelter."		**VULNERABLE POPULATIONS- PRIMARY** Age Children Disabled Pet Owners Non-English speaking immigrants
"A lot of the evacuation protocols are established by transportation and how long it would take to get people out. That's what the concern it because we can't evacuate Hampton Roads in 24 hours."	Transportation	
"Like my counterpart, transportation is a big issue that he deals with transportation is not such a big issue for us as it is a destination."	Transportation	
"Their needs are multi-faceted, if we are talking about the community, you need transportation, you need a place to go, you need the financial resources to be able to get the transportation to secure a place to go."	Transportation	**Final Code**
"establishing transportation between safe zones and work zones so that people who rely on mass transit have a way to get to work"	Transportation	
Raw Data- Quotes	**Preliminary Codes (themes)**	
No real mass transportation system	Transportation	
Lack of financial resources, paycheck to paycheck	Money	
Money to buy the necessary food	Money	
Money for meds and medical supplies to last	Money/Medical access	
Work responsibilities	Employment	
People are weary of leaving – protection of property	Property protection	
Disabled Shelters	Disabled	
Medical shelters	Medical need	

Pet shelters	Pets	
Non English speaking shelters	Language barriers	
Children are affected if they come from these households	Children	
MESSAGING		
The importance of Messaging – who is the messenger?	Messaging	**MESSAGING** **SUBCATEGORIES OF MESSAGING** Community Education Inclusiveness Innovation **Final Code**
People living in the community should be included in messaging	Inclusiveness	
"Again, it's geography we're going to send out targeted messaging to the communities based on weather information. So, we're going to target direct messaging to the areas that will be directly affected."	Messaging	
Raw Data- Quotes	**Preliminary Codes (themes)**	
Nonappreciation of what skill set low-moderate households bring to the equation in reference to resilience	Exclusivity	
Education of communities	Education	
Technology	Innovation	
Technology divides	Education	
POLICY SUGGESTIONS		
Building social networks	Education	**POLICY SUGGESTIONS** Transportation Policy
Regional transportation policy unrealistic – VDOT I mean they talk about reverse the highways and all of that. I mean the protocols are	Transportation policy	

there but is government willing to pull the trigger on doing that unless it is catastrophic storm coming."		Policy needs practicality Community Education
We really don't get what we really need from regional transportation	Transportation needs	
Government testing of protocols and whether they will actually do what they say in terms of getting people out (transportation)	Policy needs practicality	
Better quantifying the threat to include advising when people can get back to their homes if they evacuate	Policy needs practicality	
GIS mapping that displays the entire Hampton Roads which allow us to see what is going on in other areas, no more borders	Mapping	

Figure 10: Codes and Themes

CHAPTER V.

SUMMARY OF FINDINGS, KEY OBSERVATIONS, RESEARCH CONTRIBUTION, LIMITATIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

SUMMARY OF FINDINGS

It was a purpose of this qualitative case study to determine linkages between local emergency management policies, practices and low-to-moderate income household behavioral needs when responding to hurricane evacuation. This was done through interviews with emergency management practitioners and stakeholders, reviews of the research literature, and reviews of local Hampton Roads emergency operations plans. Social construction theory provided a framework to guide this research. Throughout this research process, the researcher identified areas where social construction theory provides efficacy in explaining the findings.

The social construction theory is broadly used in studies relating to health, education, criminal justice and voting (Schneider, Ingram, & Deleon, 2014). Unlike the present literature, the researcher has attempted to connect social construction theory with the formation and application of policies and practices relating to Hampton Roads' evacuation of vulnerable populations. However, while social construction is a flexible paradigm that can be placed in the context of many social science research areas, especially those exploring social equity and justice issues; the flexibility of this theory may be its most significant flaw.

The social construction framework explains how socially vulnerable populations are perceived. The research literature also states that social constructions can change (Ingram, Schneider, & Deleon, 2007; Schneider, Ingram, & Deleon, 2014; Schneider & Sidney, 2009). However, social construction theory is relatively silent as to how socially vulnerable populations can better themselves. The negative social constructions are inherently resistant to change

(Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014). These negative perceptions are ingrained in public policies. A major reason why populations with negative social constructions do not work to build themselves up is due to past policies with negative effects that ultimately diminish their political participation and mobilization (Ingram, Schneider, & Deleon, 2007; Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014; Schneider & Sidney, 2009). Therefore, based on the research literature, low-to-moderate income households' reactions to negative policy effects could possibly serve as a factor in how EM management stakeholders perceive this population's hurricane evacuation behavior (Ingram, Schneider, & Deleon, 2007; Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014; Schneider & Sidney, 2009). Low-to-moderate income households' mistrust of EM practitioners and the subsequent disregard of voluntary and mandatory evacuation orders due to fear of ulterior motives are residual behaviors stemming from bad policy decisions.

There are examples in the research literature indicating that groups with negative social constructions do experience periods of more positive perceptions and increased political power. Perception and political power changes are mostly due to the political platforms of those who are in power (Schneider, Ingram, & Deleon, 2014). Social construction and political power shifts are usually temporary due to changes in political administrations and platforms (Schneider & Ingram, 1993; Schneider, Ingram, & Deleon, 2014). The exception is the LGBTQ community and marijuana users who have been able to change their social constructions through political participation and mobilization (Schneider, Ingram, & Deleon, 2014). However, these groups' ability to change their social constructions result from resources that are lacking in other groups with negative social constructions, such as higher incomes and higher education statuses (Schneider, Ingram, & Deleon, 2014).

During the interviews with emergency practitioners and stakeholders, it was observed that income was not considered the primary factor of social vulnerability even though income is a socially vulnerable factor in environmental hazards and natural disasters (Blaikie, Cannon, Davis, & Wisner, 1994; Bergstrand, Mayer, Brumback, & Zhang, 2018; Buckle, 1998; Cutter, 1996, Cutter & Emrich, 2006; Gooden, Jones, Martin, & Boyd, 2009; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015). Social construction theory is vague in its explanation of income as a factor amongst all of its target population groups. There is only vague representation of income, directly, in the social construction models. Income is referenced as populations with rich and poor constructions. The reference to income as target populations in the social construction models is unlike the other target population groups labeled as single mothers, black middle class, and criminals.

Throughout this case study, social construction theory provided an adequate framework to make the argument about how the perceptions of socially vulnerable populations influence EM policies, practices and perceptions of low-to-moderate income household's evacuation behavior. However, at times, the researcher had difficulty situating low-to-moderate income households into the social construction model. There were numerous instances while analyzing the data that the researcher noticed that participants responses' and social construction seemed to speak the same dialect in terms of how they both characterized socially vulnerable populations. This led the researcher to draw the conclusion that the theory, itself, holds that income is a secondary factor to other socially vulnerable populations, as well. This was the reason for the researcher's decision to conceptualize income and devise a more evolved and descriptive model of social construction theory.

RESEARCHER'S KEY OBSERVATIONS

The researcher discovered key observations while conducting this research. One observation stems from the consistent problems and issues surrounding messaging that was expressed by participants during interviews. Conducting the interviews revealed that many of the EM offices visited lacked diversity. Therefore, it was this researcher's conclusion that messaging will continue to be an issue if EM offices lack the necessary diversity needed to help create and carry hurricane evacuation messages. Additionally, if those who are responsible for creating messages, "having not walked in another man's shoes," in response to low-to-moderate income households, then the lack of understanding makes it difficult to consider the true needs of low-to moderate income communities. This lack of understanding results in policies that are broad and generalized, and such policy types were included in many participants responses.

There were local EM agencies that developed relationships with community civic leagues, but the relationships only exist with civic leagues that are active. Additionally, civic league leaders and members groups located in low-to-moderately income neighborhoods may have the same issues as expressed in the responses, such as mistrust of government. So, how do EM practitioners and policymakers best determine the specific needs of low-to-moderate income households? It is this researcher's conclusion that the EM practice community is best served by going into these communities and speaking, directly, with residents in forums outside of civic leagues, especially if the civic leagues are resistant. EM practitioners can determine first-hand the needs of the communities and start building trust relationships with key residents who are held in high esteem, as well as other residents in these communities. Developing policy initiatives in low-to-moderate income household communities, or other socially vulnerable population communities based solely on second-hand information passed to EM practitioners is

insufficient. EM practitioners may present the argument that they consult with elected officials representing these communities. However, it is no secret that some political officials are not always aware, or serve the best interests, of their constituents' needs, especially if elected officials are not actively involved with their constituents. Additionally, there are EM task forces in many of the localities that participated in this study. There are community leaders, residential members and social justice activists who are a part of these efforts. This represents a promising start to addressing the needs of diverse populations. However, to be effective, these special task forces or groups must be transparent to their community members and allow them a sustained, active voice in decision-making and not just hold an appointed seat or the need for a diverse member on a special board or task force.

The second key observation as a result of the research process is the prioritizing of EM operations through budget allocation. Emergency management budgets emerged during the coding process, and even though the word budget was not captured many times in the transcribed interviews, it was inferred, often. There were indirect references to budgets in participants' statements, such as, " lots of it boils down to money" or "emergency response is one of those things that is second fiddle to a lot of things." Two of the EM practitioners interviewed for this study emphasized how implementation of state initiatives, such as "Know Your Zone" was challenging due to low budget allocations that resulted in staffing levels of no more than two to seven total staff members. Even though all of the participating localities are well aware of the danger of hurricane threats, the budgets for these departments are minimal compared to other city departments. Additionally, and it is important to note, that many EM practitioners interviewed for this case study had strong desires to better address socially vulnerable populations, and more specifically, low-to-moderate income households. However, small

budgets make many efforts non-sustainable. Three EM practitioners from different localities expressed that they have special grants to cover some EM special initiatives. However, some grants allow for the application of continuing funding and others have permanent sunset dates.

Third, phenomenological interviews revealed that there is more general awareness from the region's EM practice communities of hurricane preparedness and evacuation in Hampton Roads, despite underfunding and understaffing. There is more information on websites and technological advances allow residents to sign-up for their respective EM locality's alerts. Local Hampton Roads EM offices have made strides in their communications efforts to residents. However, there are still populations of people who are left out. They include low-to-moderate income households due to what one participant stated was a large "technology divide." Additionally, a resident is only able to receive city-wide alerts if they have phone service during the time of a disaster. Lower income populations are more likely to be affected by the disconnection of phone or internet services due to lack of payment (Gooden, Jones, Martin, & Boyd, 2009; Huang, Lindell, Prater, Wu, & Siebeneck, 2012; Lindell, Lu, & Prater, 2005; Phillips, Thomas, Fothergill, & Blinn-Pike, 2010).

RESEARCH CONTRIBUTION

This study has made original contributions on several fronts. Rather than characterizing the flaws of social construction theory as a failure of the theory, the researcher viewed this as an opportunity to enhance and better articulate social construction theory. To this end, the researcher developed and presented, in Chapter IV, an expanded conceptualization of the social construction theory's model.

POLICY IMPLICATIONS

Hurricanes will continue to affect the Hampton Roads area. If policies and practices are not revised to 1) properly message low-to-moderate income household communities about the seriousness of hurricane threats and the need to evacuate, 2) improve ways to build trust amongst citizens, and 3) create viable solutions with adequate resources and equitable service delivery to assist in hurricane evacuation, then, as one EM practitioner stated, "We are doomed to repetition because we did not get hit hard enough or the lesson learned wasn't strong enough." Therefore, it is imperative for states to appropriate adequate funding to localities for improving EM practices statewide. One major emergency management issue that Virginia policymakers should particularly pay closer attention to is the lack of hurricane evacuation readiness (Behr, et al., 2013). Hurricane evacuation readiness is pertinent in the one region of the state that shares its boundaries with the Atlantic Ocean, Chesapeake Bay, and numerous rivers, lakes, creeks, inlets and other bodies of water.

Lastly, it is important for localities to fund their EM offices according to the magnitude of emergency management issues facing their respective jurisdictions. Local EM offices will benefit from creating programs that target its diverse populations, specifically low-to-moderate-income households. This may help close the communication and service gaps in these communities. The outcome may result in more positive and expeditious responses from low-to-moderate income household in their hurricane evacuation decisions. If there is a failure to learn lessons from past hurricane evacuation experiences, then the effects may prove dire for low-to-moderate income households in future hurricane evacuations.

LIMITATIONS

Nonparticipation of Prequalified Participants

The first limitation encountered was the nonparticipation of prequalified participants. A large amount of the researcher's resources and time were spent in multiple attempts to reach nonresponsive participants and in the solicitation of new ones. Declining to participate in a case study for various reasons impacts the transferability and credibility of any qualitative study. Therefore, the interview process was extended an additional three (3) months in order to vet other prequalified participants who would be willing to be interviewed. Extending the data collection period stifled the data analyses progress, greatly. However, it was necessary for the case study's credibility.

Advanced Research

A second limitation is the lack of indicators to show how low-to-moderate income populations have been harmed. In this study, the researcher only interviewed EM practitioners and other EM stakeholders. There is no information from low-to moderate income household residents to provide their perceptions. Additionally, no indicators of actual harm to low-to-moderate households in Hampton Roads were found during this research process.

However, the question of harm is separate from the questions posed by this research. The questions in this study asked about the presence of hurricane evacuation policies and practices for socially vulnerable populations, specifically low to moderate income households. Another question queried EM stakeholders' regarding their perceptions about this population's evacuation behavior. These questions were linked to social construction theory through explanations of how population perceptions and political power are linked to policy considerations and

implementation. Therefore, harm indicators for low to moderate income households based on the results of this study represent the opportunity for additional research.

Timing of Case Study

Another limitation of this case study was timing. It was the previous mind-set of the researcher that interviews conducted during hurricane season, June 1st-November 30th, would affect the participation of EM practitioners and other stakeholders due to their job duties. However, natural disasters were not the EM event that affected the timeliness of this study. The major EM event was the March 31, 2019 mass workplace shooting in Virginia Beach, Virginia. The mass shooting was a shock to the Hampton Roads region and emergency management attention was heightened on domestic terrorism. As such, many Hampton Roads localities and nonprofit organizations were focused on adding policies, planning and response tactics focused on mitigating this new social norm. As a result, this action impacted the availability of many people who were prequalified for the study. The media outlets ran the gamut in their reporting of the Virginia Beach, Virginia mass workplace shooting, and the aftermath's media reports created paranoia amongst Hampton Roads local governments because of the inaccurate and erroneous information dissemination. Even though all potential participants were emailed a notice of informed consent describing the research as part of the email invitation, some participants were reluctant.

Social Vulnerability Definition

The socially vulnerable population used for this case study was low-to-moderate income households. Using social construction as a theoretical framework for this population was difficult since income was often a secondary factor to other populations such as the homeless, medically fragile, and single mothers. This was evidenced during interviews when participants used their

own definitions of socially vulnerable populations based on their specific policy considerations. Many participants were redirected back to low-to moderate income households. Low-to-moderate income households as a secondary factor leads the researcher to believe that income is not a major primary consideration in EM policies and practices. This provides some understanding as to why low income households, alone, are not considered in EM policies and practices. According a study by Gooden, Jones, Martin, and Boyd (2009), after reviewing the Emergency Operations Plans (EOP) of over 25 cities and counties, the researchers found that low-income was a social vulnerability factor that was consistently less considered in EMCOPs than other factors, such as disabled populations.

Social Construction Theory

In the social construction theory's framework, income was not well conceptualized as a target population. In each representation of the model explored during the research process, income was vaguely referenced as either a rich or poor target population. The poor conceptualization of income along with limitations of this case study's social vulnerability definition did not provide clear linkages of low-to-moderate income household evacuation behavior perceptions to EM policies and practices. The theory was successful in providing direct links to other socially vulnerable populations since many of them were already present in the social construction models.

Social Desirability Bias

The last limitation is evidence of social desirability bias. There were times during interviews when the researcher sensed what could be considered as social desirability bias in answers (Neeley & Cronley, 2004). Some participants were interviewed together instead of separately and social desirability bias was most evident when a subordinate was interviewed with

their direct report. The interviews were not designed to be conducted in this manner. However, individual circumstances of the participants, such as time, made this interview mode a necessity. When social desirability bias is present, then a possible conclusion is the lack of comfort discussing social vulnerability and hurricane evacuation policies and practices which may affect policymakers and practitioners from reexamining their policies (Neeley & Cronley, 2004).

RECOMMENDATIONS FOR FUTURE RESEARCH

Methodology

Qualitative methods alone were not suitable for this study. Future research may benefit from a mixed method qualitative and quantitative study with phenomenological interviews along with a survey instrument. Surveys allow participants to answer questions independently and confidentially.

Qualitative methods provide context and "offer rich and compelling insights" by seeking descriptions based primarily on the lived, professional experiences of the participants (Braun & Clarke, 2014, p. 10). As such, qualitative methods may reveal whether diverse household are served vs. underserved and the reasons. However, the use of the qualitative phenomenological style of the structured and semi-structured interviews, alone, did not significantly impact the study due to the lack of direct answers and descriptions.

The benefits of quantitative research methods are the ease of compiling, comparing and analyzing data (Remler & Van Ryzin, 2011; O'Sullivan, Rassel, & Berner, 2008). Quantitative methods provide statistical answers that exhibit direct relationships between variables (Remler & Van Ryzin, 2011; O'Sullivan, Rassel, & Berner, 2008). However, quantitative methods are incapable of describing life experiences and sacrifice the richness of data and concepts (O'Sullivan, Rassel, & Berner, 2008).

Therefore, the marriage of the two methods would provide a more comprehensive analysis of the data in the attempt to answer the research questions. In a mixed-methods study, codes developed from the phenomenological interviews and surveys could serve as variables. Direct links between EM policies and practices, perceptions of low-to-moderate income household behavior, as well as other relationships between variables unforeseen, could be determined. Direct relationships and causality between the variables may provide additional information to EM practitioners and stakeholders. The phenomenological interviews would fill in data gaps by its descriptions. The ending result is a case study that is possibly more transferable, valid and robust.

Disaster Related Studies Using Social Construction Theory

An expanded use of social construction in disaster related studies could benefit the emergency management research and practice fields. During this research, there were numerous studies on emergency management preparedness, response, evacuation, planning and technological advances. Very few studies used social construction as a supporting theory. As previously mentioned, social construction oriented studies that were linked to disasters discovered in this research included studies related to Love Canal, Hurricane Katrina, Haiti Earthquake, and 9/11 (Birkland, 2004; Dyson, 2006; Fowlkes & Miller, 1982; Sapat & Esnard, 2012). Additional disaster or emergency management studies could help advance social construction theory to provide linkages to modern day emergency management issues that are becoming more prevalent than in the past and do not represent natural disasters, such as pandemics.

Social Vulnerability Redefined

Another recommendation for future research relating to EM policy and practices and social vulnerability is to examine other populations that are identified as socially vulnerable. Medical pandemics are a component of natural and manmade disasters that represent another emergency management issue that worsen social vulnerability. Coronavirus disease 2019 (COVID-19) adds to existing policy and practice challenges for EM practitioners and stakeholders in all phases of emergency management. This is especially evident as medical professionals work to prevent and contain COVID-19's continuous spread and develop a vaccine. Medically fragile, as well as newly identified socially vulnerable groups, are at great risks from disasters such as medical pandemics and research that addresses issues specific to these populations is essential for the EM field. People who are at greater risk of becoming COVID-19 positive may fall under the medically fragile socially vulnerable group. Under COVID-19, medical fragility has expanded to include those who are at greater risk of contracting the virus but appear otherwise healthy. Additionally, people who are medically fragile due to underlying chronic conditions and those over the age of 65 experience higher risks and poorer outcomes from COVID-19 (Centers for Disease Control and Prevention, 2020). EM practitioners already struggle with obtaining the necessary resources necessary to support residents who have other traditional chronic illnesses such as respiratory and heart disease and diabetes that have supply needs of oxygen and medications, but the need to identify and address the needs of more medically vulnerable populations has increased due to the pandemic.

In addition to the complications of medically fragile persons, the virus intensified other existing social vulnerabilities and introduced new socially vulnerable communities. For example, low-to-moderate income households may not have the resources to get tested for COVID-19 or

to be able to provide care for a sick family member. Additionally, members of certain minority groups are disproportionately affected by this disease. Moreover, COVID-19 shifted groups that were not previously considered vulnerable to a more susceptible status. For example, those who are unemployed as a result of coronavirus due to furloughs, layoffs and business closures.

Due to the unknowns associated with COVID-19, EM practitioners and stakeholders will struggle to address these issues though policy considerations and practice, especially during the preparedness, response and recovery phases. These phases are most important because EM preparedness informs response. How well EM practitioners prepare for a COVID-19 positive population directly affects their response once a disaster hits and during recovery when the restoration and rehabilitation of services occur.

Using this study's research design, social construction theory and other socially vulnerable populations such as persons impacted by COVID-19, single parents, and domestic violence victims present the opportunity for further study. Other studies could study the EM policy impacts on nontraditional vulnerable populations. Such studies could better inform current and future emergency management policy and practice.

CONCLUSION

Overall, this case study revealed that in EM policies and practices, low-to-moderate income households were not clearly identified as its own vulnerable group. Additionally, resource base such as income was not considered in policies reviewed for this research. As such, there were no policy considerations for low-to-moderate income households in hurricane evacuation when income was the primary vulnerability factor.

As a region, most participants expressed that the Hampton Roads area was not well-prepared to evacuate residents in a well-organized and timely fashion. According to participants

interviewed, even as critical incidents are increasing in frequency and severity, local EM departmental budgets do not allow all Hampton Roads cities to effectively implement state and local requirements for its current households. Very limited EM budgets and staff created the opportunity for greater collaborations with other local departments, cities, and nonprofits to expand resources. However, small EM budgets and staff generated barriers to create and implement more specialized evacuation programs for the broader local community.

As previously indicated in this case study, researchers suggest that public administration's engagement as a discipline in emergency management was more of a reactive measure to crisis instead of a continual practice (Buckle, 1998; Cutter & Emrich, 2006; Elliott & Pais, 2006; Haddow, Bullock, & Coppola, 2017; Hart, 1974). More aggressive recruitment of EM professionals in the public administration field provides an opportunity for the enhancement of the discipline. Emergency management as a continual practice under the discipline of public administration promotes advanced research and collaboration with other policy and practice-oriented arenas. Lastly, although many EM practitioners stress evacuation preparedness in their emergency operations plans and through public service announcements and evacuation initiatives, communication with low-to-moderate income households, for a myriad of reasons, is still a challenge.

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APPENDICES

A. DEFINITION OF KEY TERMS

1. **Climate change** refers to a broad range of global phenomena created predominantly by burning fossil fuels, which add heat-trapping gases to Earth's atmosphere (NASA, 2019). These phenomena include the increased temperature trends described by global warming, but also encompass changes such as sea level rise; ice mass loss in Greenland, Antarctica, the Arctic and mountain glaciers worldwide; shifts in flower/plant blooming; and extreme weather events (NASA, 2019).
2. **Emergency Management** refers to the managerial function charged with creating the framework within which communities reduce vulnerability to hazards and cope with disasters (FEMA, 2006).
3. **Equality** refers to treating people the same, especially in status, rights and opportunities (Gooden, Jones, Martin, & Boyd, 2009; Lindell, Lu, & Prater, 2005).
4. **Equity** refers to treating people fairly and impartially.
5. **Evacuation** refers to the organized, phased, and supervised dispersal of people from dangerous or potentially dangerous areas (FEMA, 2005, 2019).
6. **Gerrymandering** refers to the process of setting electoral districts that establishes a political advantage for a particular party or group by manipulating political district boundaries. Gerrymandering may help or hinder a particular demographic such as ethnic, racial, linguistics, religious, or class group (Nelson, 2019).
7. **Hurricanes** originate in the Atlantic basin, which includes the Atlantic Ocean, Caribbean Sea, and the Gulf of Mexico, the eastern North Pacific Ocean, and, less frequently, the central North Pacific Ocean (NOAA, 2017). Storms are categorized as hurricanes when

the maximum sustained winds reach 74 mph. The hurricane's wind scale has a one (1) to five (5) rating, or category, based on a hurricane's maximum sustained winds (NOAA, 2017). The higher the category, the greater the hurricane's potential for property damage (NOAA, 2017).

8. **Low-to-Moderate Income Households** refer to households earning less than 80% of an area's median income (HUD Exchange, 2020).
9. **Mandatory Evacuation** refers to warning persons within designated areas that an imminent threat to life and property exists and individual must evacuate in accordance with the instruction of local officials (FEMA, 2005).
10. **Mitigation** refers to preventing future emergencies or minimizing their effects (FEMA, 2005).
11. **Perception** refers to the manner in which one conceives or understands someone, or something based on a collation of different ideas, values, attitudes and experiences which give rise to insight (Thapliyal, 2018).
12. **Policies** refer to legislative rules and regulations resulting from the conceptualization of problems brought to government for a solution that experience phases of implementation, evaluation and revision (Bacchi & Goodwin, 2016; Sabatier, 2007).
13. **Practices** refer to activities that are an integral part of professional activity in diverse fields that focus on implementation, evaluation and revision of existing, and the formulation of new, policies (Gal & Weiss-Gal, 2013).
14. **Preparedness** refers to preparations or plans made to handle an emergency and to save lives (FEMA, 2005).

15. **Race** refers to a person's self-identification with one or more social groups (United States Census Bureau, 2017)
16. **Racism** refers to the belief that a particular race is superior or inferior to another, that a person's social and moral traits are predetermined by his or her biological characteristics (Anti-Defamation League, 2020)
17. **Recovery** refers to actions taken to return to a normal or safer situation following an emergency (FEMA, 2005).
18. **Response** refers to actions taken to save lives and prevent further property damage in an emergency situation (FEMA, 2005).
19. **Shelter** (mass care) refers to a facility where evacuees without a destination are evaluated and receive disaster services from government agencies and/or volunteer organizations (FEMA, 2019).
20. **Shelter-in-place** refers to allowing people to remain in place in areas that are less impacted by a disaster (FEMA, 2019).
21. **Systemic Racism** refers to prejudice and discrimination based on race that affects the entire political, social, and economic societal system (Feagin, 2006; Feagin & Bennefield, 2014).
22. **Social Construction** refers to the cultural characterization of a group (Schneider & Ingram, 1993). These characterizations or constructions shape the groups' health, safety, and welfare through public policy (Schneider & Ingram, 1993).
23. **Social Equity** is fairness and justice in "the formulation of public policy and the management and distribution of public services to citizens" (Gooden, 2019, p. 13).

24. **Social Vulnerability** is a group's susceptibility to hazards along with their resiliency and recovery ability (Buckle, 1998; Blaikie, Cannon, Davis, & Wisner, 1994; Cutter, 2003; Cutter & Emrich, 2006; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015).
25. **Socially Vulnerable Population** refers to groups of people that are disproportionately affected by hazard exposure and whose characteristics may be based on can be based on age, race, income, gender, language, educational attainment, access to transportation, physically and mentally challenges, and place of residence (Buckle, 1998; Blaikie, Cannon, Davis, & Wisner, 1994; Cutter, 2003; Cutter & Emrich, 2006; Myers, Slack, & Singelmann, 2008; Rufat, Tate, Burton, & Maroof, 2015).
26. **Voluntary Evacuation** refers to a warning to persons within a designated area that a threat to life and property exists or is likely to exists I the immediate future. Individuals issued this type of warning or order are not required to evacuate; however, it is to their advantage to do so (FEMA, 2005).

B. RESEARCH INTRODUCTION AND INTERVIEW QUESTIONS

E-mail to solicit participation in the individual interview and voluntary consent for participation

INTRO

Mechelle B. Smith, Doctoral Candidate in the School of Public Service, College of Business and Public Administration at ODU, invites you to provide your input in a study examining how vulnerable populations are affected by and respond to hurricane threats, and the implications for current and future emergency management policy and practices. This research is being conducted under the supervision of Dr. Wie Yusuf, Old Dominion University.

Your participation in this study is voluntary and your responses will be anonymous. This interview will be recorded, and I will be taking detailed notes of responses during the interview session. The interview will be transcribed, and the recording destroyed once all related research has been concluded. The interview and the handling of your responses are bound by the ethics of confidentiality located in the informed consent.

Participating in the interview is expected to take 30-45 minutes.

RISK and BENEFITS

RISKS: The risks and discomfort associated with participation in this study are no greater than those ordinarily encountered in daily life. As with any research, there is some possibility that you may be subject to risks that have not yet been identified.

BENEFITS: There are no direct benefits to you, personally. Benefits are to research and the profession and community you serve.

COSTS AND PAYMENTS

The researchers want your decision about participating in this study to be absolutely voluntary. You will not receive any compensation for participating.

CONFIDENTIALITY

All information obtained about you in this study is strictly confidential unless disclosure is required by law. The results of this study may be used in reports, presentations, and publications, but in an anonymous format and you will not be specifically identified.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study at any time. The researchers reserve the right to withdraw your participation in this study, at any time, if they observe potential problems with your continued participation.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact the current ODU IRB chair, at 757-683-3802, who will be glad to review the matter with you.

VOLUNTARY CONSENT

By continuing with this study, you are saying that (1) you have read this form or have had it read to you, and (2) you are satisfied that you understand this form, the research study, and its risks and benefits. The researcher should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them. You can direct your questions to Mechelle B. Smith at (757) 439-4582.

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call the current ODU IRB chair, at (757) 683-3802, or the Old Dominion University Office of Research, at (757) 683-3460.

For additional information about and/or to participate in the interview please call Mechelle B. Smith at (757) 439-4582 or email at msmit136@odu.edu.

Interview Questions (EM Professionals)

1. How do your City's EM policies and practices address the needs of low-to-moderate income households?
    a. Based on your experience does this represent a change from past policies and practices?
    b. If so/not so, why do you think this is the case?
2. How would you characterize the low-to-moderate income households in terms of their needs during evacuation?
3. Are there different procedures that are followed for ensuring the evacuation of low-moderate income households?
    a. If so, why? How are they different?

4. Based on your experience, how do low-income households respond to emergency evacuation orders?
    a. What factors do you think contribute to their responses?
5. Lastly, what insights or thoughts do you have about how Hampton Roads cities can improve their evacuation policy and practices to better meet the needs of low-to-moderate households?

Concepts	Interview Questions
Defined as local government's relevant evacuation policy and practices responding to low-to-moderate income households.	1. How do your City's EM policies and practices address the needs of low-to-moderate income households? Follow-up: Based on your experience, does this represent a change from past policies and practices? If so/not so, why do you think this is the case?
	3. Are there different procedures that are followed for ensuring the evacuation of low-moderate income households? Follow-up: If so, why? How are they different?
	5. Lastly, what insights or thoughts do you have about how Hampton Roads cities can improve their evacuation policy and practices to better meet the needs of low-to-moderate households?
Defined as local government's response to low-to-moderate income households in the development of an evacuation plan, and household response to evacuation.	2. How would you characterize the low-to-moderate income households in terms of their needs during evacuation?
	4. Based on your experience, how do low-income households respond to emergency evacuation orders? Follow up: What factors do you think contribute to their responses?

VITA

Mechelle B. Smith serves as Director/Programs Manager of Norfolk Criminal Justice Services in Norfolk, VA. In this capacity, Smith is responsible for the daily administration of city-wide community-based pretrial services and a local probation agency. Ms. Smith's experience in the criminal justice field spans over 24 years with 20 years in administrative leadership. Additionally, Smith serves as an adjunct faculty member at Old Dominion University and Strayer University teaching under the criminal justice and political science curricula.

Ms. Smith is a Norfolk, Virginia native and educated in the local public school system. Smith earned her undergraduate and graduate degrees from Virginia Polytechnic Institute and State University (Virginia Tech). Ms. Smith holds a Bachelor of Arts in Urban Affairs (1991) and a Master of Public and International Affairs (2004). Additionally, she has advanced post graduate certificates in Criminal Justice (2005) and Public Policy (2007) from Virginia Commonwealth University and Old Dominion University, respectively. Ms. Smith earned a Doctor of Philosophy in Public Administration & Urban Policy (2020) from Old Dominion University's School of Public Service. Her research interests lie at the intersection of social justice public policy, offering insight into policy issues concerning socially vulnerable populations in the disciplines of emergency management and criminal justice.

Ms. Smith is a member of numerous professional organizations including the American Society for Public Administration (ASPA), the National Forum for Black Public Administrators (NFBPA) and the American Probation and Parole Association (APPA). She is a member of Pi Alpha Alpha and Golden Key honor societies. Additionally, Ms. Smith is a member of Alpha Kappa Alpha Sorority, Incorporated.