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Small Business Responses to Reduce Impacts from Natural Disasters

Lenox Lemar Godfrey
Walden University

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Walden University

College of Management and Technology

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Lenox L. Godfrey

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Walden University
2019

Abstract

Small Business Responses to Reduce Impacts from Natural Disasters

by

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MBA, Jacksonville University, 1993

BS, Florida State University, 1981

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

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Abstract

Florida is a hurricane-prone state, and not all small business owners are prepared to survive in the wake of a hurricane or flood event, as only 14% of small business owners prepare for natural disasters compared to 44.9% for large corporations. Small business owners can enhance the survivability of their companies with well prepared disaster plans. The purpose of this qualitative case study was to explore strategies 5 small business owners in northwest Florida implemented to avoid permanent business closure after a natural disaster. The conceptual framework was the theory of planned behavior. Data were collected through interviews with 5 small business owners; company documentation served as a secondary data collection source. Yin's 5-step analysis process was used to analyze the data. Themes from responses were property insurance coverage, business continuity, disaster recovery plans, cloud computing, and remote working. The implications for positive social change include the potential to minimize unemployment, provide economic growth, and add stability to both the local and state economies. A well-planned disaster preparedness plan could reduce the number of days employees of small businesses would be out of work, keeping the local community thriving.

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Dedication

I dedicate this doctoral study to my mother, who is my “Most Valuable Player,” Mrs. Bessie Mae Godfrey-Baker, family members, and friends who provided prayers, love, and support during this doctoral journey.

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Section 1: Foundation of the Study

Small businesses provide local employment and a range of goods and services, contributing to the economic and general well-being in their communities (Sadiq & Graham, 2016). However, owners of small businesses in the United States prepare less for natural disasters compared to owners of large corporations, resulting in extended recovery times for small business owners (Levy, Yu, & Prizzia, 2016). Small business owners planning for natural disasters avoids business closures and reduces recovery time after a natural disaster event. My objective in this study was to explore strategies that successful small business owners implemented to avoid business closures after a natural disaster event. Sharing examples of successful strategies with other small business owners may assist business owners to prevent business failures in the aftermath of a natural disaster.

Background of the Problem

Natural disasters occur every year in the United States, resulting in millions of dollars in repairs and disrupting the lives of many people. Florida is prone to more tropical storms and hurricanes than any other state in the United States (Torres & Alsharif, 2016). During the hurricane seasons of 2004 and 2005, Florida experienced a record number of hurricanes that included Charley, Frances, Jeanne, Dennis, Wilma, and Katrina. In August 2005, Hurricane Katrina damaged over 300,000 homes, caused approximately \$96 billion in damages, and killed over 2,000 people (Townsend, 2014). Additionally, floods are the most common and most destructive natural disaster in the United States. Ninety percent of natural disasters involve flooding, and all 50 states have

experienced floods or flash floods since 2013. However, the Federal Government under the National Flood Insurance Program supplements flood insurance to organizations.

Small business owners may be at risk of market failure in the aftermath of a natural disaster due to the lack of disaster recovery plans and strategies (Sahebjamnia, Torabi, & Mansouri, 2015). Large corporations are more often able to maintain business continuity with strategies designed to be proactive in their disaster recovery efforts (Patankar & Patwardhan, 2016). Approximately 50% of businesses that suffer from a major disaster without a disaster recovery plan in place never reopen for business (El-Temtamy, Majdalawieh, & Pumphrey, 2016).

Problem Statement

In preparation for natural disasters, the Federal Emergency Management Agency (FEMA) has allocated \$16 billion to assist businesses, state, and local government agencies to remain operable (Adame & Miller, 2015). However, only 14% of small business owners establish a business recovery plan compared to (45%) of larger businesses (Sarmiento et al., 2015). The general business problem is that some small business owners who do not establish plans to mitigate risks may experience business closure in the event of natural disasters. The specific business problem is that some small business owners lack strategies to overcome the adverse effects of natural disasters.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies small business owners apply to overcome the effects of natural disasters. The targeted population consisted of five small business owners in the retail and wholesale industry in

the northwestern (panhandle) section of Florida who successfully avoided permanent business closures in the aftermath of a natural disaster. A major implication for positive social change includes assisting small business owners to maintain employment and continue to have a positive economic effect on their communities.

Nature of the Study

Research methods consist of three types: qualitative, quantitative, and mixed methods (Christenson & Gutierrez, 2016). Quantitative researchers collect and analyze numerical data to describe, explain, predict, or control the phenomenon of the source. The quantitative approach was not appropriate for the study as numerical data would not aid in understanding the phenomenon. Additionally, mixed-methods research includes both qualitative and quantitative data collection and analysis (Toothaker, 2018). I did not use the mixed-methods approach because I did not study variables' relationships or differences.

Within a case study design, the focus is on a general situation in a real-life setting, which applied to this study. Therefore, other qualitative research designs were not appropriate. For example, phenomenological studies involve exploring the lived experiences and the meaning of participants' experiences regarding a phenomenon (Demir & Ercan, 2018), which was not the intent of this study. I also did not use ethnographic research because it is a design for exploring cultural phenomena (Salman, Zouha, & Nawafleh, 2018), and the results reflect the knowledge and the system of meanings in the lives of a cultural group (Aveling, Parker, & Dixon-Woods, 2016). I selected the qualitative case study for this study because researchers conduct case study

research to interpret and describe event experiences and to develop an in-depth description of a problem and its solutions (Yin, 2018).

Research Question

What strategies do small business owners apply to overcome the effects of natural disasters?

Interview Questions

1. What have been your experiences with natural disasters that your company has survived?
2. What are your experiences with natural disasters, including downtime, repair or renovations costs, and loss of employees?
3. What strategies did your business implement during the natural disaster you experienced?
4. What are your disaster recovery plans?
5. How much damage and destruction your business sustained as a result of a natural disaster?
6. Based on your experience with natural disasters, what changes to your strategies apply to prevent or reduce closures in the aftermath of a future natural disaster?
7. What were the business norms, attitudes, and responses following the natural disaster?

8. What additional information can you provide to help me understand the successful strategies your organization has used for mitigating and responding to the effects of natural disasters?

Conceptual Framework

The theory of planned behavior (TPB) predicts an individual's intention to engage in behavior at a specific time and place. The TPB indicates that individual behavior is driven by behavior intentions, where behavior intentions are a function of three determinants: an individual's attitude toward behavior, subjective norms, and perceived behavioral control (Ajzen, 1985). Behavioral intention represents a person's motivation in the sense of his or her conscious plan or decision to perform certain behavior (Conner & Armitage, 1998). Perceived behavioral control refers to the individual's perception of the extent to which the performance of the behavior is easy or difficult. Perceived behavior control increases when individuals perceive they have more resources and confidence (Ajzen, 2011). The TPD conceptual framework was suitable for exploring how business leaders use emergency plans for business recovery.

Operational Definitions

Business continuity plan: Business continuity plan is a process designed to assist leaders of organizations to identify critical applications and endorse policies, procedures, processes and plans to ensure the continuation of these functions in the event of a natural or human-made disaster (Sambo & Bankole, 2016).

Disaster recovery plan: Disaster recovery plan is a process encompassing the restoring, rebuilding, and reshaping the physical, social, economic and natural

environment through pre-planning and post-event actions (Cheng, Ganapati, & Ganapati, 2015).

Natural disasters: Natural disasters are events that could cause both catastrophic and noncatastrophic that inflicts large damages on society, including the loss of lives. Natural disasters include hurricanes, tornadoes, floods, earthquakes, landslides, tsunami, and volcanic eruptions (Sadiq, & Graham, 2016).

National Flood Insurance Program: National Flood Insurance Program was created by Congress in 1968 in response to the lack of the availability of private insurance and continued increases in federal disaster assistance due to floods. The National Flood Insurance Program allows business property owners to buy insurance to protect against flood losses. The insurance is intended to furnish as an insurance alternative to disaster assistance and reduces the rising costs of repairing damage to buildings and their contents caused by a flood (Li & Landry, 2018).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions in research are elements and beliefs without supporting evidence that researchers understand to be facts without proof (Silverman & Bibb, 2018). Researchers use assumptions of theories, models, and methods to investigate and establish truth in research (Dinsmore, 2017). In this study, my assumptions were that the small business owners interviewed would be both knowledgeable and honest with the interview questions regarding their strategies to reduce impacts from natural disasters. I also assumed that the leaders and managers of the small businesses in this study had

experienced natural disasters and successfully survived them due to the small business owners' disaster preparedness and business continuity plannings, which the results did confirm.

Limitations

Limitations are potential weaknesses in a researcher's study, which may be out of the researcher's control. A researcher must explain how they intend to deal with the limitations that they are aware of so as not to affect the outcome of the study (Sarmiento et al., 2015). In this study, the sample size of participants may limit the ability to make generalizations about the findings (Levy et al., 2016). Most of the limitations were avoided due to a large sample size of five participants.

Delimitations

Delimitations are characteristics that limit the scope and define the boundaries of a study (Nelms, 2015). The delimitations are under the control of the researcher. Delimiting factors included the choice of objectives, the research questions, variables of interest, theoretical perspectives that I adopted, and the population I chose to investigate. I delimited my study to small business owners who continued to thrive in the aftermath of a natural disaster in hurricane-prone Florida. I excluded from the study small business owners with more than 500 employees, as small to medium-sized businesses are organizations with fewer than 500 employees (Lingard, Turner, & Charlesworth, 2015).

Significance of the Study

Small businesses are a significant source of local employment and add to the economic vitality of a community (Marshall, Niehm, Sydnor, & Schrank, 2015). The goal

of the study was to provide lessons from small business owners regarding successfully maintaining their businesses in the aftermath of a natural disaster. This case study involved hurricanes Hermine in 2016 and Irma in 2017. Both hurricanes affected multiple small businesses in northwestern Florida.

Contribution to Business Practice

The potential contributions to business practices include the lessons and knowledge gained by business owners who have survived natural disasters. The knowledge gained from the experiences of business owners who have survived natural disasters could educate leaders of the need to plan for disasters (Kantur & Iseri-Say, 2015). Owners of small businesses may benefit from the results of this study by understanding strategies that could improve their business continuity and survival in the aftermath of a natural disaster.

Implications for Social Change

Implications for social change include mitigating the number of days that small businesses would have to remain closed due to a natural disaster. An effective disaster preparedness plan could reduce the number of days that employees of small businesses would be out of work, thus keeping the local community thriving.

A Review of the Professional and Academic Literature

The purpose of this qualitative multiple case study was to explore strategies that small business owners used to avoid permanent business closure in the aftermath of a natural disaster. I will focus on sharing strategies that will allow small business owners to overcome the effects of natural disasters. The findings of this study may benefit new

owners of small businesses, entrepreneurs, and current business owners by providing strategies to overcome the effects of natural disasters in Florida. Strategies to overcome natural disasters in advance can reduce business closures and recovery times as a result of a natural disaster.

For the review of the literature, I used search engines from Walden University. Some of the search keywords used to identify literature for this review included *hurricanes in the State of Florida, natural disasters in the State of Florida, business continuity plans, disaster recovery plans, preparedness, small business owners in the State of Florida, and the theory of planned behavior*. I searched these terms using ABI/INFORM, ProQuest Central, ScienceDirect, SAGE Premier, Elsevier, and EBSCOhost. A significant portion of the information in the literature review is from academic peer-reviewed articles and journals. Other materials included books, dissertations, and doctoral studies. I used 84 sources, of which 78 (93%) were published within 5 years of the anticipated completion date, and 82 (98%) of the references are peer-reviewed.

In this literature review, I offer research regarding the importance of small business owners' preparations for natural disasters. The purpose of the literature review is to provide knowledge regarding how natural disasters may affect small business owners and strategies to reduce the impact of natural disasters. In the literature review, topics include (a) business continuity and disaster recovery plans, (b) disaster preparedness, (c) disaster planning, (d) hurricanes in Florida, (e) minority and veterans business owners, and (f) small business owners in the aftermath of natural disasters.

The Relevant Theory

The theory selected as my conceptual framework is the TPB. This theory is relevant to the study of business organizations and how the leaders of organizations attitude toward natural disasters may influence the decision-making of the organization. The use of the TPB could assist leaders and managers of organizations' to understand the importance of preparing in advance of a natural disaster, based on behavioral outcomes and voluntary intentions. The TPB is one of the most influential models for the prediction of human social behavior (Ajzen, 1985).

The theory of planned behavior. In 1980, Ajzen (1985) developed and introduced the theory of reasoned action, which is used as a lens to understand how people perform actions based on voluntary intentions. The theory suggests that behavioral intention is shaped by three factors: (a) the individual's attitude on whether a specific behavior is good or bad, positive or negative, favorable or otherwise; (b) the subjective norms or the social pressure arising from other people's expectations as seen from the individual's point of view; and (c) the perceived behavioral control of the individual or his perception of his ability to perform a specific behavior (Ajzen, 1985).

The development of TPB is an improvement to the theory of reasoned action because TPB reinforces and adds to the assumptions of the previous theory. The TPB incorporates rational thinking that results in rational considerations that influence and govern the choices, decisions, and behaviors of individuals and leaders of organizations. The TPB may assist small business owners with implementing designed interventions to address their behaviors to prepare for natural disasters.

Based on the theory, small business owners' behavior undergoes three kinds of considerations: beliefs about the likely consequences of the behavior, beliefs of the normative expectations of others, and beliefs about the presence of factors that may facilitate or impede the performance of the behavior (Ajzen, 1991). Thus, the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger the small business owners' intention would be to perform the behavior to prepare for natural disasters. Given a sufficient degree of actual control over the behavior, leaders, and managers of small businesses are expected to carry out their intentions when the opportunity arises (Ajzen, 1991). The TPB could serve as a predictor of behavior for owners and leaders of small businesses. Owners, leaders, and managers attitudes toward disaster may influence their decision-making (Chen, 2016). Organizations and small business owners may develop an understanding of the negative effects of extreme weather by creating disaster recovery plans.

One of the criticisms of the TPB and other reasoned action models is that they are too rational, not taking account of cognitive and affective processes that are known to bias human judgment and behavior. This concern for the TPB may be based on the perception that the theory posits a rational actor who is unaffected by emotions and in part on the standard methodology that is typically used to operationalize the theory's constructs (Ajzen, 2011). However, there is no assumption in the TPB that behavioral, normative, and control beliefs are formed in a rational, unbiased fashion or that they accurately represent reality.

Alternative Theories

Human capital is the stock of knowledge, habits, social and personality attributes, including creativity, embodied in the ability to perform labor to produce economic value. The human capital theory is the study of human resources management as found in the practice of business administration and macroeconomics (Woodward & Samet, 2018). The human capital theory was introduced by Gary Becker, an economist and Nobel Laureate from the University of Chicago. The expectation is that investment in training and education will lead to increased benefits for the employee and the organization (Becker, 1962). Although training and education are important to small business owners to improve their knowledge of preparing for natural disasters, I did not select the human capital theory as my conceptual framework. The human capital theory can be seen as reducing people to machines, viewing humans and individuals as economic units acting as their own economy. The human capital theory may apply to my study, but I used the TPB because it may provide the knowledge and motivation of why small business owners prepare for natural disasters in advance.

Another potential theory was the transformational leadership theory, which is a process that changes and transforms people. Transformational leaders can benefit an organization. Transformational leaders are energetic, passionate, and they focus on the individual employee to do well and to be successful. The concepts of transformational leadership theory include (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d) individualized consideration (Aga, Noorderhaven, & Vallejo, 2016). Two of the categories of leadership are (a) transactional leadership and

(b) transformational leadership. A transactional leader uses the policy of rewards to motivate and earn employees' efficiency and loyalty. On the other hand, a transformational leader gets involved with the employees, possesses determination and commitment toward success, and motivates employees in exchange for their high performance and loyalty (Aga et al., 2016). The transformational leadership theory can be difficult to be taught to small business owners because its components are too comprehensive.

Another consideration was the vested interest theory, which is used to explain how certain attitudes can influence and predict behavior based on the degree of subjective investment an individual has in a particular attitude object. Crano (1983) defined *vested interest theory* as the degree to which a person's point of view is deemed relevant by the attitude holder and that vested attitudes will be functionally related to behavior. Self-efficacy is a component of the vested interest theory, and it refers to the amount that individuals believe that they are capable of performing an action associated with an attitude. Researchers have indicated that most Americans recognize the importance of disaster preparedness, but there is a disconnect between thoughts and actions, as few people take measures to prepare for natural disasters (Miller, Adame, & Moore, 2013). The vested interest theory can apply to leaders of small business organizations' tendency to overestimate the extent to which other members of their organization agree with their beliefs on how to prepare for natural disasters; this is the assumed-consensus effect.

Minority and Veteran Business Owners

Small businesses have a greater likelihood of closing post-disaster if operated by women, minority, and veteran owners due to their lack of resources and failure to prepare

in advance of natural disasters (Marshall et al., 2015). These owners may not perceive the vulnerability of their business or may be unsure how to reduce their exposures or lack capacity to do so. Thus, increased policy support and educational assistance from business consultants and government programs may be necessary to assist women, minorities, and veteran-owned businesses to identify and reduce their vulnerability to closing due to natural disasters. Small business owners can seek resources from both the local and federal governments for information and assistance regarding pre- and post-natural disaster preparedness (Marshall et al., 2015).

Additionally, disaster management includes mitigation, preparation, response, and recovery, but not every business owner has the resources necessary. Mitigation actions take place before a disaster to decrease vulnerability and to reduce hazard exposure. Preparedness takes place before a disaster to enable social units to respond when a disaster occurs. The response phase takes place a short period before, during, and after a disaster to reduce injury and property damage. The recovery efforts aim to rebuild, repair, and reconstruct damaged properties and to restore the local communities (Das, 2018). In the United States, however, racial/ethnic minorities, women, children, older adults, those with disabilities, and those living in poverty have limited access to economic resources, reducing the capacity to manage the challenges associated with natural disasters. Therefore, reducing social and economic inequities can foster resilience among organizations, individuals, and communities to improve disaster preparedness (Gil-Rivas & Kilmer, 2016).

Hurricanes in the State of Florida

In the years since Hurricane Katrina struck the U.S. Gulf of Mexico coast, there has been tremendous progress toward recovery given the devastation. However, there have been disparities in resilience, or a community's ability to rebound to a healthy state following a major disruption such as a disaster (Carpenter, 2015). For most communities, this would mean the first return of lifeline infrastructures such as utilities, food and water, and shelter. Longer term, this would mean the return of households and businesses and a return to self-sufficiency and effective governance (Carpenter, 2015). A long-term plan for health and resilience should be a forethought rather than an after-thought when a disaster occurs. It is also important to have a personal and family disaster recovery plan (Brown & Easterday, 2016).

In 2017, the Caribbean, Central America, and the United States experienced a devastating series of hurricanes: Harvey in August, Irma, and Maria in September, and Nate in October. The first three caused devastation along their paths and reached the United States as Category 4 hurricanes (Woodward & Samet, 2018). Hurricanes in 2017, Harvey, Irma, and Maria, as well as Sandy in 2012, resulted in human and economic losses despite the warnings and forecasts. Natural disasters present unique challenges for forecast and warning systems and decision-making in the face of risks and uncertainties. Timely and accurate forecasting and warnings play a role in reducing economic impacts, loss of life, and injuries during extreme weather conditions (Bostrom, Morss, Lazo, Demuth, & Lazrus, 2018).

The concern for public health response to hurricanes and other natural disasters has increased in the aftermath of hurricanes Irma, Harvey, and Katrina (Fullerton et al., 2015). After hurricanes like Harvey and Irma, it is necessary for small business owners to consider what can be done to make communities safer, healthier, and more resilient places to live (Woodward & Samet, 2018). For example, risk reflective premiums by the private sector insurers lead to situations where they may choose not to insure certain households and small businesses or only at costs that many may find unaffordable. The increasing challenge is how to increase societal resilience in the face of future catastrophic events in a fair and affordable manner (McAneney, McAneney, Musulin, Walker, & Crompton, 2016).

Natural disaster preparation activities vary depending on the business and characteristics of the owner such as the size of the business as measured by the number of employees and specific industries. Small business leadership plays an important role in the management of preparation for disasters (Josephson, Schrank, & Marshall, 2017). Disasters such as fire, flood, hurricanes, or sudden departure of key personnel can all impact small business owners. Some CPA professionals routinely advise business owners to prepare disaster recovery plans. During a natural disaster event, small business owners can implement accountability strategies to sustain beyond the disaster. Accountability allows for the timely mitigation of issues and quicker resolution of problems (Galvin, 2018). But in a survey about a business continuity plan, more than half of the respondents indicated that their businesses had none because other priorities took precedence or they were unaware of the need to have a business continuity plan (Sarmiento et al., 2015).

Government agencies are also important in preparing for natural disaster recovery. FEMA has designated \$16 billion for state and local government agencies to plan and prepare for natural disasters since 2007 (Adame & Miller, 2015). These activities include support for the development of emergency response and continuity of operations plans, disaster research, mitigation projects, training, and disaster simulation. However, despite federal government efforts, the participation of individuals and business owners taking advantage of the FEMA resources has been ignored (Adame & Miller, 2015). Additionally, FEMA provides continuity planning templates involving natural and international biological hazards in risk assessments and business impact analyses but does not provide the prevention and mitigation guidance for other common hazards such as flooding (Welch, Miller, & Engle, 2016). Similarly, the Occupational Safety and Health Administration requires employers to prevent work-related illnesses yet does not define work-related illness and limits specific prevention and mitigation strategies in healthcare and other similar high-risk settings (Welch et al., 2016).

Policy and support for disaster preparedness education are especially important to owners who are at a greater risk after a natural disaster (Marshall et al., 2015). Growing population and urban concentration across the world have contributed to an increased frequency, severity, and magnitude of disasters, which has impacts across the globe and exposes poor and marginalized people to higher risks (Madan & Routray, 2015). Those with higher income, those with diversified income sources, and those in nonagricultural employment had lower effects from natural disasters (Daramola, Oni, Ogundele, & Adesanya, 2016). A general framework to evaluate potential socioeconomic losses helps

public and private agents focus on the characteristics that might reduce the damage and losses caused by natural disasters and improve the ability of the affected areas to recover from the shock and implement adaptation strategies (Modica & Zoboli, 2016).

Natural disaster risk management is utilized by organizations to minimize the impact of natural disasters by monitoring potential threats and implementing dynamic processes including disaster planning, project implementation, and emergency rescue and response. Once small business owners and other organizations have successfully implemented natural disaster risk management techniques, regular and rigorous training and testing of the preparedness plan must take place at least twice annually. Disaster training and testing are intended to cultivate employee skills and awareness required to react positively and actively to a natural disaster (Chou, Yang, & Ren, 2015).

Disaster Preparedness

A natural disaster encompasses an event or a series of events that involve widespread human, material, economic, and environmental impacts. Negative consequences caused by natural disasters could affect small business owners and communities' overall well-being for a long period, which usually exceeds the ability of the affected businesses and communities to cope using their resources. Small business owners, other organizations, and communities must be aware of the four stages of effective disaster management, which includes preparedness, response, recovery, and mitigation (Nurrahman, & Pamungkas, 2014). The aims of proper disaster management are to significantly reduce the potential losses due to hazards and to ensure that small

business owners and communities receive the appropriate assistance and recover from the impacts rapidly and effectively (Cui, Han, & Wang, 2018; Lindell, 2013).

One of the most effective long-term efforts in managing natural disasters for small business owners is education as it assists in providing the tools, information, skills, and knowledge base to cope with natural disasters (Johnson, Ronan, Johnston, & Peace, 2014). The purpose of disaster education for small business owners is not only to enrich the knowledge and awareness, but also to address the importance of translating knowledge that triggers informed decisions and actions to protect during the occurrence of natural disasters (Oktari, Shiwaku, Munadi, Syamsidik, & Shaw, 2015).

Disaster preparation is the key to effective disaster response. However, small business owners do little to plan for natural disasters. Understanding how preparers justify their efforts can inform decisions about effective disaster preparations. Disasters, by nature, are unpredictable, which makes preparations difficult to evaluate, justify, and accomplish. In spite of the uncertainty inherent to disaster preparation, small business owners, policymakers and the general public need a sense that preparations are components to survival and recovery (Barbour & Manly, 2016; Jongejan, Helsloot, Beerens, & Vrijling, 2011).

The Sendai framework emphasizes the need for a shift from disaster management to disaster risk management rather than reactive response. The framework built on elements of disaster risk management ensures continuity with the work done by States and other stakeholders and introduces several innovations. Disaster risk is an acute and increasingly urban issue. Poorly-planned urban environments, weak urban governance, an

old fragile infrastructure, and rapid population growth had increased pressure on the urban environment and triggered exposure to disaster risk (Juanzon & Oreta, 2018). The unpredictable nature and catastrophic consequences of disasters create a real risk for small business owners resulting in a delayed response due to inadequate advanced preparations. Disaster preparedness is one of the basic components of disaster risk reduction that if properly implemented, will reduce the recovery time for small business owners (Ejeta, Ardalan, & Paton, 2015).

Disaster preparedness is one of the most important stages that small business owners' must engage in before the onset of a natural disaster. Disaster preparedness improves the response time capabilities of these businesses and reduces the disruptive and harmful impacts that natural disasters cause. Research indicates that minority and female small business owners are less likely to engage in disaster preparedness and other mitigation efforts (Martins, Nigg, Louis-Charles, & Kendra, 2019). Local, state, and federal government agencies should concentrate their efforts in the assistance of disaster-related information and developing interventions that target female and minority small business owners that are less prepared for natural disasters.

One of the most deadly and damaging hurricanes was Hurricane Katrina, which struck the Gulf of Florida, Mississippi, and Louisiana in August 2005. Hurricanes' economic cost is immediately experienced by the impacted communities through damaged infrastructure and disrupted economic activity, but large federal and private insurance programs spread those costs across the country in the long run. Hurricane Katrina is estimated to have caused almost \$108 billion in damages. Hurricane Katrina

was disruptive to the residents of the Gulf Coast, particularly those in New Orleans, and there is plenty of reason to expect it will constitute a substantial shock to every facet of those residents' lives (Bleemer, & van der Klaauw, 2019). Approximately 13,000 residents, including small business owners, evacuated the city of New Orleans due to Hurricane Katrina. These evacuees did not have a personal or business disaster recovery nor business continuity plans, thus resulting in numerous small business owners closing their businesses. Small business owners have less of an ability to relocate to more stable, safer areas in the aftermath of a natural disaster compared to large corporations. The decisions that leaders of small businesses make for hurricane events are strategic decisions that can affect the sustainability of their businesses. There is much value to small business owners to understand who prepares, what they do to protect their businesses, and in predicting these decisions from known demographics such as race, gender, and business size (Josephson et al., 2017).

Many leaders of small businesses do not undertake hurricane preparations, and the recommendations are that education and policy strategies be used to assist these business owners (Josephson et al., 2017). Small businesses are important to the economy, yet they have not prepared themselves for disasters. Local workshops could be a valuable tool to address preparation for disaster and solutions adaptable to small businesses with few employees (Josephson et al., 2017). While disasters have a negative effect on the national economy, local governments also experience hardships after disasters (Ismayilov & Andrew, 2016). Research revealed that immediately after Hurricane Ike in 2008, there was an average increase in sales tax revenue for almost three quarters, followed by a

long-term decrease in revenue that lasted two years. Small businesses failure to prepare for natural disasters resulting in their businesses permanently closed or disrupted for an extended period, resulting in less tax revenue for the local economy (Ismayilov & Andrew, 2016). Small business owners are more susceptible to being permanently or temporarily forced to close their businesses in the aftermath of a natural disaster. Natural disasters, such as hurricanes and floods, affect many small businesses in the United States. Hurricane preparedness is very critical to the survival of small businesses.

The threat of hurricanes is an annual concern for communities and small business owners along the Gulf of Mexico and the eastern coast of the United States. The State of Florida is particularly vulnerable, due to its location between the Gulf and the Atlantic Ocean, as well as its continued population growth and concentration. Small business owners in hurricane-prone areas are aware of the threat of hurricanes. Catastrophic hurricanes such as Katrina 2005 and Sandy 2012 are reminders of the potential devastation of these storms and have led to public service campaigns for both personal and business disaster readiness (Basolo, Steinberg, & Gant, 2017). For these reasons, it is reasonable to presume that small business owners at risk of natural hazards would perceive the risk and prepare for an eventual disaster event. Research studies, however, indicate that many small business owners are underprepared for natural disasters, including hurricanes.

Disasters produce devastating economic and societal consequences. For example, in 2012, natural disasters caused \$160 billion in damage in the U.S. alone (Paul & MacDonald, 2016). While planning for disasters such as earthquakes that have little to no

fore-warning can be quite challenging, hurricanes can be detected several days before their landfall. Forecast advisories are issued approximately five days before a hurricane's landfall by the National Hurricane Center (Paul & MacDonald, 2016). South Florida is in a region with high storm surge vulnerability. The social organization of mobile home residents presents multilevel challenges for assessing knowledge, attitudes, and practices related to hurricane preparedness, as well as for hazard-related education and communication. Mobile homes are particularly vulnerable to hurricane-force wind damage, and residents of these communities tend to be less economically resilient than the general population (Prasad & Stoler, 2016).

Small business owners must consider emergency preparedness plans that include employees who may have physical or mental disabilities. There are resources available to small business owners to assist with disaster preparedness regarding employees with disabilities. FEMA provides extensive guidance documents, recommendations, and the requirement for organizations that relate to integrating people with disabilities into planning, exercises, and training. Opportunities exist for small business owners to strengthen their organizations' resilience by broadening the inclusion of employees with disabilities in the preparedness planning process (Kruger, Silverman, Hinton, & Sinclair, 2018).

Historically, natural disasters have inflicted large damages to society, nationally and internationally. Small business owners are important entities in society. They provide a wide range of goods and services, thereby contributing to the economic and general well-being of their local communities. Small business owners are impacted negatively

when a disaster strikes, reducing their abilities to contribute to their local economies. If small business owners have a disaster preparedness plan before a disaster, they may be able to reduce some of the negative consequences and continue their business operations (Sadiq & Graham, 2016).

Small business owners could benefit from Cuba's disaster preparedness strategy which has been lauded by various international organizations, including the United Nations and the Red Cross. Hurricane Matthew, a storm that killed more than 1000 people in Haiti, caused 50 deaths in the United States but caused no deaths in Cuba. The Cuban approach includes a strong political will, a good evacuation plan, early warnings and communication, and risk reduction techniques (Kirk, 2017). Hurricane Matthew in 2016 was the most notable storm regarding intensity, longevity, damage, and fatalities.

The center of Hurricane Matthew remained offshore of both Florida and Georgia, storm surge and heavy rainfall caused significant flooding in northeast Florida, causing many businesses to close their business temporarily as they recover from the storm. Hurricane Matthew was responsible for 50 deaths in the United States, and total insured and uninsured damage from the storm was estimated at approximately \$10 billion (Klotzbach, 2017). Small business owners' rapid assessment of the damage sustained to their organization after a natural disaster event plays a critical role in crisis management to reduce losses by supporting rescue and humanitarian. Business owners are encouraged to use social media to capture photos of the property damage to their buildings and post these images on Facebook and Twitter to assist local authorities to prioritize rescue and recovery efforts (Yuan & Liu, 2018).

The hurricane season of 2017, which included Hurricanes Harvey, Irma, Jose, and Maria, is estimated to be the second costliest hurricane season in the United States (Vo & Castro, 2018). While these storms caused massive devastation, there is a silver lining for the employers who paid employees during a period of business inoperability due to the hurricanes. The president of the United States on September 29, 2017, signed into law the Disaster Tax Relief and Airport and Airway Extension Act of 2017. This law is intended to help lessen the economic burden for businesses in the designated disaster areas that may have struggled to pay employees as they worked to rebuild (Vo & Castro, 2018). Hurricanes Harvey and Irma cut a destructive swath through the northeastern Caribbean and the Florida Keys. The post-hurricane report indicates that more than \$50 billion worth of damage reportedly sustained in the United States, as well as 39 fatalities. Florida libraries had much less destruction relative to their counterparts in Texas did after Harvey (Peet, 2017).

As Hurricane Irma approached the State of Florida in September 2017, the Putnam Community Medical Center in Palatka, Florida activated its emergency response plan. Fortunately, the storm did not knock out power to the 99-bed facility. The biggest challenge for the medical center was that all community pharmacies within 100 miles closed on September 9, 2017, the day before the storm hit. The pharmacies did not reopen until September 12, 2017; therefore, there was no practical way for the residents to have their outpatient prescriptions filled (Traynor, 2017).

Organizations, particularly small business owners, must have a well-developed information technology (IT) disaster recovery plan to enable the organization to continue

operations in the event of a disruption and to be able to survive a disastrous interruption to its information systems. IT disaster recovery planning is a component of an organization's business continuity management plan, and it is critical that every business entity has a well-developed IT disaster recovery plan (El-Temtamy et al., 2016).

Organizations should use cloud computing as an alternative storage model to handle large amounts of data and to serve as a data backup mechanism as a part of their disaster recovery plan. In the event of a natural disaster, several questions will require attention from organizations. For example, do we have a backup server? Where is it? How do we reconnect our clients back to the system? How long will the system take to resume service? Hence, a disaster recovery plan must be prepared by organizations to address and answer both these and many other questions (Sahi, Lai, & Li, 2016). It is important that small business owners incorporate the concept of sustainability in their disaster recovery plans. Disaster recovery plans that incorporate sustainability are more promising in generating planning outcomes that promote resiliency and sustainability (Yan, Chaosu, Olshansky, Yang, & Yu, 2017).

Planning plays an essential role in any business continuity plans and is the key to the success of small business owners' organizational resilience. Organizations must ensure the resiliency of their organizations. The stakes are high to mitigate the potentially severe impacts of business disruptions as a result of natural disasters (Olson & Anderson, 2016). A business continuity plan is a process designed to identify organizations' critical applications and endorse policies, procedures, processes, and plans to ensure the continuation of these functions in the event of a natural or human-made disaster. A

business continuity plan is a written document that consists of a collection of different procedures and information which is developed and maintained annually and used in the event of an emergency or disaster. A business continuity plan should be updated and tested annually as the risks to each organization changes from year to year (Sambo & Bankole, 2016).

The purpose of a business continuity plan is to minimize the effect of the event or disaster to an organization. One of the main benefits of the business continuity plan is to reduce the risk of financial liabilities, improve the company's ability to recover from disaster or interruption as soon as possible. Business continuity planning should also help minimize costs and reduce risk concerning the event of a disaster (Setiawan, Wibowo, & Susilo, 2017).

Researchers indicated that there is a correlation found between outmigration and poverty rates regarding hurricane-prone areas (Ademola, Adebukola, Adeola, Cajetan, & Christiana, 2016). As the outmigration of the nonpoor population in areas hit by super-severe disaster grew, poverty rates in those areas rose. This is because the poorest are least likely to have the financial means or ability to evacuate the area. Severe natural disasters shake up socioeconomic norms in the affected regions, causing those who are able to move to relocate to more stable, safer areas, and those who do not have the means to leave remain (Ademola et al., 2017).

Hurricane Harvey brought heavy and prolonged rain, and despite the systems in place, large areas of the counties in the Houston area flooded resulting in the closings of both businesses and local schools for months. Natural disasters such as Hurricanes

Katrina and Harvey that provided prolonged days of rain and floodings carries the risk of physical and mental or emotional problems for the communities affected (Ivey, 2017).

After Hurricane Harvey, the city of Houston launched the post-Hurricane Harvey Neighborhood Restoration Center (NRC). The goal of this project is to assess and address the varied social, economic and emotional needs of residents and small businesses impacted at the neighborhood level, using a one-stop-shop approach (Nepal, Atkinson-Travis, DeLaCruz, & Banerjee, 2018).

Weather experts, using wind speed, declared September 2017 the most active Atlantic hurricane season on record. Wind speed is but one measure of impact. A comprehensive assessment of the immediate and long-term consequences of disasters requires a holistic, whole community approach. Protecting the most vulnerable is the proven strategy to protect all. Recent disasters showed that this principle seemingly ignored in Texas, Florida, and Puerto Rico. Although self-preparedness is an important first step in disaster management, those who live from paycheck to paycheck do not have the luxury of buying three days worth of water and food (Lichtveld, 2018). September represents the annual National Preparedness Month. The campaign's overarching goal is to engage more people in disaster planning exercises at home, work, businesses, schools, and other places where people gather (Petrozzello, 2017). The public service campaign divides the month of September into four distinct action plans: making an emergency plan for yourself, your family, and your friends; planning to help your neighbors and community; practicing and building our your plan, and helping small business owners within the community (Petrozzello, 2017).

Hurricane Sandy landed on the east coast of the United States on October 22, 2012. Hurricane Sandy was the second costliest hurricane to pummel multiple states and communities in U.S. history. Many lives lost, businesses were disrupted or destroyed, and homes and communities obliterated in the New York and New Jersey regions. Affected communities and households had little to no food, gasoline, or energy of any kind, some for months. Recovery and restoration of communities, homes, and lives continue. Although physical restoration has been ongoing, less attention provided to the mental, emotional, and psychological recovery of hundreds of thousands of people affected by this disaster (Pizzi, 2015). Because of New Jersey's proximity to the coastline and strong dependence on both coastal infrastructure and ocean structure, the fishing community was among the hardest hit. The United States Department of Commerce declared fishery disasters for both New York and New Jersey on November 16, 2012 (Clay, Colburn, & Seara, 2016).

As Hurricane Maria left Puerto Rico and the U.S. Virgin Islands, residents discovered the same problem that Houston and South Florida faced after Hurricanes Harvey and Irma (Farquhar, 2017). After Harvey, pollutants from Superfund sites and chemical facilities in the Houston area mixed with floodwaters, leading Texas Governor to warn residents to stay out of the water. The Environmental Protection Agency confirmed that 13 Superfund sites in Texas flooded by Harvey were experiencing possible damage due to the storm (Farquhar, 2017). Hurricane Irma, with wind gusts exceeding 140 mph, crossed directly over a hospital with two inpatient campuses in Collier County, Florida, on Sunday, September 10, 2017. During normal operations, the

pharmacy department normally staffed for twelve hours per day, with on-call support overnight (Nitzki-George, Palowitz, Sowerby, & Fusselman, 2018). Even with downtown procedures being in place and personnel having hurricane experience, the staff did not expect the challenges that occurred when the storm slowed and prolonged the pre-downtime processes. The pharmacy was staffed with a skeleton crew for 30 hours before and twelve hours after the eyewall passed overhead. After the eyewall passed, communication systems failed and remained down for five days. The backup generators continued to provide electricity, but the cooling towers at one campus were temporarily compromised (Nitzki-George et al., 2018).

Living through Hurricane Irma was one of many experiences faced by many people who endured the natural disaster that devastated large populations in the United States during August and September 2017. Before Irma, Hurricane Harvey, a category four storm, made landfall in Texas and caused massive destruction throughout 43 counties in the state. By comparison, Irma led to a state of emergency declared in 67 counties in Florida with the hurricane causing significant damage throughout many southern states (Zolnikov, 2018). These natural disasters halt patterns of daily life and involve a myriad of negative effects, including financial hardship experienced by individuals as well as local, state and federal government as they try to re-create the predisaster environment. Many small business owners lose money because of forced closures caused by power outages, water shutoffs, flooding, or unsafe terrain whereas others will be unable to sustain the amount of work needed and may suffer undue stress owing to long working hours (Zolnikov, 2018).

Natural disasters have historically inflicted large damages upon society. There is a myriad of examples abound both nationally and internationally. Hurricane Katrina, which occurred in August 2005, killed over 2000 people, destroyed or damaged an estimated 300,000 homes, and caused \$96 billion in damages (Townsend, 2014). Superstorm Sandy, which occurred in October 2012, killed 147 people and damaged or destroyed at least 650,000 homes. Internationally, the Haiti earthquake on January 12, 2010, and South Asia tsunami on December 26, 2004, killed 316,000 and over 275,950 people, respectively (Koontz, 2014).

Small business owners are important entities in any society. They provide a wide range of goods and services, thus contributing to the economic and general well-being in their communities. When disasters strike, small businesses are unable to contribute to their local economies. If small businesses prepare prior to a disaster, they may be able to reduce some of the negative consequences and maintain their business operations (Sadiq & Graham, 2016). Small business owners typically are forced to borrow to meet their needs in the aftermath of a disaster, and the provision of small loans to the poor through micro-finance institutions has become mainstream (Linnerooth-Bayer & Hochrainer-Stigler, 2015).

Business Continuity and Disaster Recovery Plans

Business continuity management refers to the capability of the organization to continue the delivery of products or services at acceptable levels following a disruptive incident. Organizations demonstrate continuity if throughout a disruption it retains revenue streams, provides employment, addresses the needs of customers and maintains

the confidence of shareholders, customers, employees, and the public at large (McKnight & Linnenluecke, 2016). The key themes of business continuity management are to identify the potential for business interruption and to mitigate risks. Both risk identification and mitigation are essential elements for managing business continuity (McKnight & Linnenluecke, 2016).

The business continuity plan is a key plank in an organization's risk management process. Small business owners face enormous pressures to continue operating while simultaneously experiencing major business disruption, which threatened their survival. Business continuity planning fits within the planned resilience component as a long-established mechanism intended to enable small business owners to manage the impacts of a natural disaster (Hatton, Grimshaw, Vargo, & Seville, 2016). The growing number of natural disasters worldwide has led to many governments to promote the benefits of a business continuity plan to small business owners as a part of building societal resilience (Hatton et al., 2016).

Disasters are unexpected natural or human-made events that injure people, damage property and infrastructure, and threaten the survival of organizations. Disaster management comprises four phases: prevention, preparedness, response, and recovery (PPRR). Prevention involves preventing or mitigating hazard impact such as disaster-proof infrastructure; preparedness ensures measures are in place before a disaster occurs, the response comprises effective and efficient reaction to a disaster, and recovery includes the short and long-term efforts to restore businesses and communities following disasters (Granville, Mehta, & Pike, 2016). Despite the range of disasters and the

existence of disaster management and engagement strategies, disaster preparedness for small business owners remain historically low (Granville et al., 2016).

Small business owners should examine their business continuity plans or create a business continuity plan if it does not exist. It is vital for small business owners to develop a robust business continuity plan capable of enduring the physical, financial, and emotional toll of natural disasters (Swanciger, 2016). Businesses that maintain preparation strategies have a better chance of bouncing back from destruction. Small business owners have smaller budgets and insurance packages. They are especially vulnerable to natural disasters and can get hit harder by temporary slowdowns (Swanciger, 2016).

It is critical for small business owners to implement effective hurricane preparedness plans to survive natural disasters. This technique will assist managers of small businesses to possibly reduce permanent closures after a hurricane. There was a long-term business recovery in the aftermath of Hurricane Wilma in the State of Florida. Disaster researchers focused on the impact of disasters on individuals, regions, and communities, but less on the idea of the business as a discrete research topic which has led to business recovery overlooked in past research (Atkinson & Sapat, 2014). Hurricane Wilma made landfall in South Florida on October 24, 2005, resulting in significant disruptions to small business owners. The economic impact to the local communities was \$21 billion. The Governor of Florida activated a bridge loan program for businesses showing state-level support for response and recovery (Atkinson & Sapat, 2014).

Hurricanes have effects on the local population and specific socio-demographic components of the population, such as age, race, and poverty status. Research indicates that white and non-poor populations have shifted over time away from zones with a higher risk of wind damage, while more vulnerable population groups, the elderly, African Americans and the poor have moved in the opposite direction. Alternately, there are similar results for the African American small business owners whom most often are forced to close operations after a natural disaster event has negatively affected their businesses (Logan & Xu, 2015). Wilma bolsters current resilience research by investigating how the concept of resilience functions across spatial and temporal scales. By using hurricane Wilma as a reference point selected newspaper articles uncovered how the response to this acute natural disaster reflected Broward County's perceived capacity for adaption, learning, and transformation (Torres & Alsharif, 2016).

Extreme precipitation causes businesses and communities to suffer from the effects of flooding. Floods mostly occur during the summer months resulting in losses and inconveniences felt by both residents and small business owners. The hazard of flood produces damages resulting in death, serious property damage, and loss of income due to business interruptions (Haddad & Teixeira, 2015). Small business owners must prepare for the hazard of flood in advance of a flood event.

Economic losses from natural disasters have increased dramatically, hindering the economic growth for small business owners who have not prepared for natural disasters. Small business owners must incorporate the risk of natural disasters into their development and planning policies (Paul, 2015). Between 2000 to 2012, natural disasters

caused 1.2 million deaths, affected 2.9 billion people, and resulted in a total of \$1.7 trillion of economic loss globally mostly to communities and organizations. For small business owners, mobility can play a critical role in disaster response and evacuation strategies for their organizations (Wang & Taylor, 2016).

Disaster Planning

The use of cloud computing could offer small business owners an effective tool as a part of their disaster recovery planning process. The cloud computing model provides IT resources for small business owners as a paid service for the recovery of important data after a natural disaster is easy and painless. The essential services that cloud computing provides include IT capabilities such as networks, servers, storage, applications, and services. Small business owners can obtain these services without the need for human interaction with the service provider, thus reducing their need for a large IT department (Charif & Awad, 2016). In the development of a small business owners' business continuity plan, they must identify and prioritize their critical business functions, operations, systems and consider alternatives and reduce redundancies where appropriate (Gordon, 2016).

Rapid changes in technology have created many options for small business owners. The traditional approach to disaster recovery and disaster continuity planning tends to begin with examining the events or weaknesses that can impact the service delivery of the organization. When organizations develop their business continuity strategies, they should think about the consequences and not events or the probability of an event (Mattei & Satterly, 2016).

Computer systems are a critical part of small business owners' day to day operations. Organizations rely on computer systems to perform many of the daily tasks. It is important that small business owners prepare a disaster preparedness and recovery plans to recover their data in the event of a natural disaster. A properly prepared disaster recovery plan will provide small business owners with a state of readiness that will allow their personnel to act promptly in response to a disaster such as a hurricane (Lozupone, 2017).

Cloud computing is an alternative storage and computing strategy that small business owners could utilize as a part of their disaster recovery plan. Cloud computing provides network access to a shared group of computing resources, which are easy to install and maintain with little effort. Cloud computing is a technique for using computer resources and other technological functionality in IT that provides services such as storage and applications. The use of cloud computing by small business owners could allow for a smaller Information Technology department since users can access and use cloud computing without the need for any expertise (Sahi et al., 2016). As a part of the disaster recovery planning and business continuity planning processes, small business owners must first complete a business impact and risk analysis (BIRA). A BIRA helps an organization understand the requirements that may arise in different situations, such as how to recover from a flood as opposed to a hurricane (Cervone, 2017).

Small business owners rarely plan for recovery in the aftermath of a natural disaster (Meyer & Hendricks, 2018). However, professional planners have the skills to help small business owners and communities redevelop, particularly in rebuilding

commercial property and residential property. Entrepreneurs and small business owners' recovery after a disaster involve crucial planning, and it can be a challenge for these type of business owners compared to large corporations (Meyer & Hendricks, 2018). Organizations should seek assistance from the city and state planners who have invaluable community knowledge before the occurrence of a disaster. Most small business owners are unaware that they can qualify for a low-interest rate loan through the Small Business Association to assist with rebuilding business property during the recovery process (Meyer & Hendricks, 2018).

Small business owners' ability to increase their recovery performance as regards to both time and quality lies in their pre-disaster preparedness, resilience, and their recovery capacity (Noureddine Tag-Eldeen, 2017). Disaster-Recovery-as-a-Service is a cloud-based solution that small and medium-sized businesses have been adopting to guarantee availability even in catastrophic situations. It offers lower acquisition and operational costs than traditional solutions. Organizational leaders should incorporate the use of cloud computing to store data and share resources as a critical part of their disaster recovery plan. Since 2015, the cloud has become a dominant and preferred method to store large amounts of data and enable the sharing of data among many users. Cloud computing is popular in several different types of businesses that are cost-effective because users pay only for the resources they use (Alshammari, Alwan, Nordin, & Abualkishik, 2018).

Disaster recovery is the process of restoring, rebuilding, and reshaping the physical, social, economic, and natural environment through pre-event planning and post-

event actions. In the aftermath of a natural disaster, local, state, and federal officials face tremendous pressure to put things back to the way they were before the occurrence of the disaster event. Recovery efforts and assistance programs often focus on short-term relief for business owners with less attention paid to opportunities to increase small business owners and community resilience for future disaster preparations with a thorough, high-quality recovery process (Horney, Dwyer, Aminto, Berke, & Smith, 2017).

Small Businesses in the Aftermath of Natural Disasters

Some small business owners lack the skills and resources to prepare for natural disasters and would require collaboration and participation regarding preparedness and recovery from local governments and the elected officials. Small business owners should seek out the assistance for recovery and planning guidelines from FEMA's Self-Help Guide for Long-Term Community Recovery Planning. Organizations participation in and their awareness of the process of developing a plan can greatly improve outcomes and future resiliency in the aftermath of a disaster (Horney, Nguyen, Salvesen, Tomasco, & Berke, 2016).

Entrepreneurs and small business owners lack recovery plans, which could minimize business disruptions caused by a natural disaster. While most entrepreneurs are more concerned and focused on the business operations side of the organization, their disaster preparedness and recovery plans should also focus on the possibility of damage to and disruptions to their technical systems. Organizations should undertake the process of gaining an in-depth understanding of the technical systems that are critical to their businesses (Rossmiller, Lawrence, Clouse, & Looney, 2017).

Culture and risk perceptions are interrelated in regards to disaster management and disaster risk communication. Small business owners, women, ethnic minorities, and people with lower socio-economic status have shown higher disaster risk perception than other groups of the population. Women, African Americans, and other minority cultures have a strong lack of knowledge about what to do in the case of a natural disaster or what is a disaster preparedness plan (Appleby-Arnold, Brockdorff, Jakovljević, & Zdravković, 2018).

Forecasters' predictions of hurricane landfall and potential impacts were accurate in 2005. Hurricanes in 2017, Harvey, Irma and Maria including Sandy in 2012 resulted in human and economic losses despite the warnings and forecasts. Natural disasters present unique challenges for forecast and warning systems and decision making in the face of risks and uncertainties. Timely and accurate forecasting and warnings play a critical role in reducing economic impacts, loss of life, and injuries during extreme weather conditions (Bostrom et al., 2018). The effects of natural disasters draw concerns about the psychological health, specifically depression of the affected local communities.

State and local public health workers play a critical role as first responders, including both police and fire departments. The concern by local, state and federal governments for public health response to hurricanes and other natural disasters have increased in the aftermath of hurricanes Irma, Harvey, and Katrina (Fullerton et al., 2015). Natural disasters have and continue to pose significant threats to the physical and economic well-being of public and private organizations on a national and international

scale. Hurricane Andrew, in August 1992, destroyed nearly 82,000 businesses, resulting in the loss of 86,000 jobs throughout the State of Florida (Sadiq & Tyler, 2016).

To alleviate the impact of natural disasters, public and private organizations are encouraged to adopt preparedness measures such as acquiring a first-aid kit, providing disaster information to employees, and offering disaster preparedness and response training programs (Sadiq & Tyler, 2016). Damage from Hurricanes Harvey, Irma, and Maria are likely to cost hundreds of billions of dollars. Countless businesses, homes, schools, hospitals, vehicles, and critical infrastructure have been damaged or destroyed. Rebuilding will take years, even decades (Dzau, Lurie, & Tuckson, 2018). There is no silver lining in this crisis, but there is a once-in-a-lifetime opportunity to rebuild the affected communities in ways that make Americans safer, healthier, and better prepared for the next challenge and to remind all communities. It is critical that small business owners understand the importance of engaging in preplanning for disasters, so they are more resilient (Dzau et al., 2018).

There is a need for business owners to integrate disaster risk management, including business continuity, into their business models and practices through disaster risk-informed investments, especially in micro, small, medium-sized businesses (Kato & Charoenrat, 2018). Disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters. Disaster risk reduction also includes the reduction of exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events (Kato & Charoenrat, 2018).

Post-Hurricane Katrina, the recovery of the population and housing has tested the generalization about disaster recovery based on previous disasters. A multidimensional, such as social, spatial, and temporal understanding of housing and population recovery after a disaster reveals that there are different mechanisms driving recovery for different segments of the population. Disaster recovery policies need to be fine-tuned to eliminate inequality in recovery efforts to meet the needs of all members of the population (Fussell, 2015).

Business owners must integrate disaster risk management, including business continuity, into their business models and practices through disaster risk-informed investments, especially in micro, small, medium-sized businesses (Kato & Charoenrat, 2018). Disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters. Disaster risk reduction also includes the reduction of exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events (Kato & Charoenrat, 2018).

Transition

Section 1 provided an overview and discussion of several aspects of this study: (a) problem statement, (b) purpose statement, (c) nature of the study, (d) research questions, (e) interview questions, (f) conceptual framework, and (g) significance of the study. The goal of this study is to explore strategies successfully used by small business owners to overcome the effects of natural disasters. The findings of this study may assist new small owners, entrepreneurs, and current business owners with a current disaster plan that may

require updating and disaster readiness companies and organizations in the state of Florida.

Section 2 includes the research procedure with an explanation of the role of the researcher, participants, research method, research design, data collection, data collection techniques, data analysis and how to assure the reliability and validity of the study.

Section 3 of the study will provide an overview and summary of the data collected.

Section 3 will also provide the presentation of findings of the study, recommendations for further research, and most importantly, the application to professional practice, implications for social change and recommendations for action.

Section 2: The Project

In Section 2, I will focus on strategies small business owners implemented to avoid business closures. The discussions in this section included the purpose statement, my role as the researcher, the participants, the research method and design, the population sampling, and ethical consideration in research. Additional topics discussed are data collection, data organization techniques, data analysis, reliability, and validity. This section is concluded with a transition and summary statement.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies small business owners apply to overcome the effects of natural disasters. The targeted population consisted of five small business owners in the retail and wholesale industry in the northwestern (panhandle) section of Florida who successfully avoided permanent business closures in the aftermath of a natural disaster. A major implication for positive social change includes assisting small business owners to maintain employment and continue to have a positive economic effect on their communities.

Role of the Researcher

My role as a researcher was the primary research instrument for data collection and the sole mediator of evidence with the use of multiple sources to collect data as described by Babchuk (2017). For this qualitative multiple research study, I collected data from company documents and interviews. First, I requested a copy of the participants' disaster recovery and business continuity plans, which were important to review in advance of the interviews. Second, I collected data from owners, leaders, and

managers of small business companies and organizations. I used an interview protocol (see Appendix), which contained the interview questions and step-by-step guidance that I used consistently for all interviews. An interview protocol also includes providing an informed consent form to all participants, making sure that the participants meet the established requirements, arranging a location for the interview, maintaining confidentiality, and providing information on the interview process (Jacob & Furgerson, 2012). As a researcher, I have the responsibility to have respect for persons, protecting the autonomy of all people, and treating them with courtesy and respect as provided in the Belmont Report (Adashi, Walters, & Menikoff, 2018).

In qualitative research, researchers must clarify their role by explaining their relationship to the study topic to the interview participants (Unluer, 2012). As an insurance claims professional for the past 33 years, I will continue to identify and search for mitigation strategies and solutions for small business owners. Further, the northwestern section of Florida is my home, and during the past three years, 2016, 2017 and 2018, a hurricane has made landfall. However, I was not involved in the various organizations interviewed, ensuring the objectivity of the research. I also avoided bias by maintaining an awareness of personal biases and the potential of ethical issues. I maintained a neutral perspective when evaluating participants' responses. However, I acknowledged that as the data collection instrument, I could not separate myself from the research.

Participants

The eligibility requirements for participants in this study included small business owners in Florida, regardless of their gender and ethnicity. Only successful business owners who implemented strategies to maintain business continuity in the aftermath of natural disasters in the retail and wholesale industry located in northwestern Florida were eligible (see Marshall et al., 2015). All participants possessed the knowledge regarding recovery efforts aimed to rebuild, repair, and reconstruct damaged properties and to restore their local communities (see Das, 2018). All participants had to possess the experience and knowledge related to surviving natural disasters.

I used purposeful sampling to gain access to small business owners who successfully survived in the aftermath of natural disasters. Purposeful sampling is a time-consuming activity that requires a lot of resources and flexibility from the researcher. However, purposeful sampling creates the potential to arrive at a rich conceptual model (Benoot, Hannes, & Bilsen, 2016). My initial contact with the participants took place via telephone with a follow-up confirmation via e-mail. Initial contacts are a researcher's opportunity to reacquaint and bond with the participants (Sil & Das, 2017). Additionally, researchers seek to strengthen their relationships with their participants through follow-up contacts, which can help validate a study's eligibility criteria (McCrae & Pursell, 2015).

As an insurance claims professional for the past 33 years, I have developed professional relationships with numerous small business owners and other organizations who have successfully survived many of the hurricanes affecting Florida. Thus, each participant was informed that I was acting in the capacity as a Walden University

doctoral student to avoid any bias. All participants accepted my role as a researcher. The consent form served as an invitation letter agreement for the participants to participate in the study.

Research Method and Design

Research Method

The three research methods are qualitative, quantitative, and mixed methods. Qualitative research encompasses multiple data collection techniques. The major mode of data collection is interviewing, often combined with participant observation. Research also indicates that leaders and managers of organizations are more likely to agree to be interviewed rather than complete a questionnaire, especially where the interview topic is determined to be interesting and relevant to their work (Makrakis & Kostoulas-Makrakis, 2016). Other data collection resources in this study included the review and analysis of insurance policies, disaster recovery plans, business continuity plans, and observation of the business operations of the small business owners.

Researchers use the quantitative method within the positivist paradigm, especially when using predetermined and structured data collection techniques. Quantitative research is used to test theories using hypotheses incorporating an inductive approach, which can be used to establish causation or other relationships between variables. Quantitative methods include statistical analysis of outcomes or questionnaires and are expressed numerically (Bekhet & Zauszniewski, 2012). The mixed method approach is a combination of both the qualitative and quantitative methods and is useful when the researcher is seeking a way to answer the research question most effectively. The mixed

method approach involves collecting, analyzing, and interpreting both qualitative and quantitative data in the same study (Makrakis & Kostoulas-Makrakis, 2016). I did not select the mixed method approach due to its use of quantitative analysis, as my study did not include numerical data to test hypotheses. Because I explored strategies that small business owners in northwestern Florida used to avoid permanent business closure in the aftermath of natural disasters, the qualitative method was most appropriate.

Research Design

The four most frequent designs for a qualitative case study are narrative, ethnography, phenomenology, and case study (Colorafi & Evans, 2016). Narrative researchers seek meaning through the exploration of long-life memories and experiences (Würth & Schuster, 2017), which would involve investigating individuals' personal histories to explain business decisions (Colorafi & Evans, 2016). However, I investigated business decision-making processes that may not be explainable through life stories, therefore I did not select the narrative approach. Additionally, ethnography is used to explore the cultural framework of groups, which did not apply to this study. Finally, the primary objective of a phenomenological study is to explicate the meaning, structure, and essence of the lived experiences of a person, or a group of people, around a specific phenomenon to describe a phenomenon (Berglund, 2015). Although this might have applied to this study, one key difference between a case study and phenomenological design is that the case study researcher conducts interviews, reviews available documentation, and physical artifacts to understand a business problem.

A case study is a research method that is used to investigate an individual, a group of people, or an event, allowing the researcher to broaden their understanding of the research subject and go beyond the surface by helping to understand the behavioral conditions through the participants' perspective (Makrakis & Kostoulas-Makrakis, 2016). Researchers use multiple case studies to compare and contrast numerous situations (Webb, 2015). I used the qualitative multiple case study because different businesses face different circumstances and applied different strategies to ensure business continuity; therefore, this approach provided a broad spectrum of strategies to respond to natural disasters impacting businesses.

Population and Sampling

The targeted population consisted of small business owners in the retail and wholesale industries in the northwestern (panhandle) section of Florida who successfully avoided permanent business closures due to the numerous hurricane occurrences that affected Florida. The criteria to participate in this study were (a) small business owners in the retail or wholesale industry, (b) located in northwestern Florida, (c) avoided permanent business closures in the aftermath of a natural disaster, and (d) a company with less than 500 employees (see Rosenthal, 2016). Researchers conduct sampling for interviews or focus groups by balancing the need to obtain a rich experiential description from interviewees without sacrificing the equal representation of experiences across the population of participants (Rosenthal, 2016). Researchers use purposeful sampling as an approach to select participants that meet the criteria to participate in the study (Benoot et al., 2016). Purposeful sampling provides the opportunity to include new aspects and

perspectives to a study to ensure the outcomes will align with the research question.

Researchers select participants who can provide multiple perspectives and a broad understanding of their perceptions and scope of practice (Benoot et al., 2016).

Researchers must continue to interview participants until data becomes repetitive and no new information emerges.

Ethical Research

The researcher's primary goal is to protect the integrity of the study, which includes protecting and respecting the study participants (Ingham-Broomfield, 2017). The researcher's knowledge of the ethical issues of confidentiality during the reporting stage of the research is critical. It is also essential that the privacy of individuals and organizations that participate in the interview process is kept confidential. Further, I explained to the study participants that they could withdraw at any time before, during, or after the interview process without consequence. An informed consent form is a written document in plain language that will ensure that the potential participants have the necessary information about the research study so that they can make informed decisions as to whether to accept or decline participation in the study (Lee, 2018). I invited participants to sign the consent form as a prerequisite to engaging in the interview process. The consent form included the IRB approval number 08-21-19-0738460, which expires August 20, 2020.

I obtained the participant's permission to record the interview. Each participant was assigned a pseudonym (e.g., P1, P2) to protect their confidentiality, and all information pertaining to the participants will be stored on a private flash drive and a

password-protected computer, as well as a storage cabinet, for a period of 5 years (see Ngozwana, 2018). I explained to each participant that they would not receive any compensation for their involvement in the study. However, each study participant will receive a complimentary condensed summary of the findings.

Data Collection Instruments

As the researcher, I will be the primary instrument in the study; I will collect data from small business owners in the state of Florida who successfully survived and avoided business closures due to natural disasters. I will conduct semistructured interviews with small business owners whose businesses survived natural disasters. I used an interview protocol to guide the interview process (see Appendix A). In the interview protocol, I provide the contact instructions, interview procedures, and interview questions, to ensure I conduct each interview the same way. Yin (2016) maintained that the interview protocol helps to increase the reliability of the case study research. Researchers in a case study must: (a) ask relevant questions during the interview, (b) be an active listener, (c) provide flexibility, (d) have good knowledge of the topic covered, and (e) avoid bias (Yin, 2016).

The participant identified the best setting for the interviews, I kept the interview as brief as indicated in the consent form. At the onset of the interviews, I reminded participants of their rights as participants, and I ensured that participants meet the criteria to participate. Participants may ask any questions and have the option to answer some, all, or none of the questions. During each interview, I obtained information from the participants through the use of a digital recorder and a notebook to record subtle nuances during the interviews. Using a digital recorder, I accurately record the interviews. After

each interview was conducted, I conducted member checking, which allowed each participant the opportunity to review the interview summary for additional insights. I set up a meeting to review the interview summary findings to ensure accuracy and correctness. This provided participants an opportunity to correct any misunderstanding prior to transcribing the data. Member checking is vital to ensure the information collected is an accurate and reliable source of data in the research process (Birt, Scott, Cavers, Campbell, & Walter, 2016)).

Data Collection Technique

It is critical that researchers use data triangulation to establish the quality and rigor of a study with the review and inspection of multiple data sources (Jentoft & Olsen, 2019). Interviewing purposefully selected participants and reviewing related documentation within an organization are good sources of data to understand a phenomenon (Percy, Kostere, & Kostere, 2015). In addition to the interviews, I reviewed and analyzed each small business owners' disaster recovery plan and business continuity plan that was in place during the previous natural disaster as well as their plans to confirm revisions from the experiences gained from the prior hurricanes. Qualitative research encompasses multiple data collection techniques. The major modes of data collection are interviewing, documentation, and physical artifacts. Interviewing techniques vary in standardization from unstructured interviews or narratives to semistructured, open-ended interview schedules. I used the interview process as my primary source of collecting research data. The use of face-to-face interviews allowed me, as the researcher, to see and hear the participants' expressions and experiences

through observations. One of the disadvantages of using face-to-face interviews is that there is an increased propensity for bias (Yin, 2014). The four principles of data collection by Yin (2014) provide critical insight into the successful completion of the Walden University DBA doctoral study. The four principles are: (a) use multiple sources of evidence, (b) create a case study database, (c) maintain a chain of evidence, and (e) exercise care when using data from electronic sources.

Data Organization Technique

Documenting and organizing data collected from each participant involves providing proof of the information obtained and the researcher's analysis (Yin, 2014). Each participant will be assigned a distinct code for differentiation, and I will maintain the recorded interviews, hand field notes, and documents such as insurance policies, disaster recovery plans, and business continuity plans. The participant interviews will be recorded using an electronic recording device. The interviews will be transcribed into text and stored on Microsoft Office 365 Cloud. I will store the data on a password protected computer as well as a locked cabinet in my home for no less than 5 years, in accordance with Walden University policy on the retention of research data.

Data Analysis

Akinyode (2018) explained that the importance of a proper understanding of the actual steps taken in qualitative data analysis could not be over-emphasized. Methodological triangulation is used within qualitative research to help facilitate understanding of the complexity of a poorly understood phenomenon, an example being the combination of conducting an in-depth interview with participants and observing their

behavior within a natural setting (Abdalla, Oliveira, Azevedo, & Gonzalez, 2018). The use of triangulation can help the researcher to overcome the potential problem of personal bias. One of the advantages of using methodological triangulation is that it helps the researcher to resolve the limitations that single methods have in studying the complexity of social reality. The purpose of using triangulation within qualitative research is to add rigor, depth, breadth, complexity, and richness to the research process (Abdalla et al., 2018).

Theme analysis is the process of identifying repeated patterns in words from participants' interviews (Percy et al., 2015). Researchers' analysis of data involves organizing the data, reviewing data, data coding, and the development of themes. Theme development should occur without manipulation or bias by the researcher (Dasgupta, 2015). Therefore, I will ensure that theme development occurs naturally. Within this study, I will use open-coding techniques to structure the transcribed interview and documents. Open-coding is a first-level coding technique where the researcher looks for distinct concepts and categories in the data that will form the basic unit of analysis. Within the transcribed interviews, I looked for recurring words, phrases, and sentences to form related clusters regarding their relevance to the research questions. Researchers use the research question and related literature as guidelines for data analysis (Norquay & Sandhu, 2018).

Reliability and Validity

Reliability

Reliability in qualitative research refers to the dependability of the findings. Dependability in research involves verifying the data analysis results by asking the study participants to review the themes and the accuracy of the findings. If the researcher can replicate the research and achieve the same findings, the research is reliable. Reliability refers to replication and consistency. A good quality research study will provide evidence of how all these factors are handled and addressed. As the researcher, I will ask the right questions using the interview protocol while documenting the processes and decisions made during the research process. Rigour may result through achieving a correct and genuine representation of the study participants' experiences and situations (Grossoehme, 2014). I will interview the participants as well as examine company documents such as disaster recovery plans and business continuity plans as described by Heale and Twycross (2015).

Data saturation is considered reached when there are no new perspectives on the research question, when the ability to obtain additional information is no longer necessary, and when further coding is no longer feasible (Fusch & Ness, 2015). The failure to recognize data quality issues such as saturation can affect the reliability of a doctoral research study. The reliability of the study is enhanced by asking the right questions during the interview process as well as carefully documenting the processes and rationale for decisions made during the research. The use of the interview protocol can assure that the researcher remains focused and unbiased during the interview sessions

of the participants. Therefore, I will use the interview protocol to guide the data collection process.

Confirmability

Confirmability in a qualitative research study is achieved when the findings and data leading to the results are clearly understood (El Hussein, Jakubec, & Osuji, 2015). Member checking and follow up interviews are some of the methods of achieving confirmability. As the researcher, I have the responsibility to provide a description of the participants and the research process, to enable the reader to assess whether the findings are transferable to their settings (Korstjens & Moser, 2017). Trustworthiness in research occurs through member checking and the incorporation of the participants' feedback in the data analysis process. Furthermore, being transparent with the study participants improves trustworthiness (Kornbluh, 2015).

Transferability

Transferability provides a thick description that is essential for someone interested to transfer the original findings to another context, or individuals. Transferability also involves others being able to form conclusions from a research study. Dependability is attainable through credibility, the use of overlapping methods, and use of an audit trail of all decisions made during the research process. Providing the participants with an overview of the process helps to prevent bias in a research study and increases the credibility of the study (Morse, 2015). In this study, I will seek to demonstrate confirmability, credibility, and transferability of the research findings.

Validity

Validity in qualitative research refers to the use of the appropriate methodology for the data collection and data analysis to obtain a reliable result (Leung, 2015). The reliability of a qualitative research study depends on the depth to which the results are believable and trustworthy. In the Walden University doctoral study, the independent scholar must ensure both reliability and validity to solve a business problem and to effect social change.

According to Morse (2015), to achieve research quality, he recommends the use of strategies to achieve rigor, reliability, validity, and generalizability. Data saturation occurs when the researcher receives no new information or emerging themes after conducting the interviews with the participants. A small number of rich interviews can have the same importance and effect of dozens of shorter interviews. One method for achieving data saturation is by asking multiple participants the same questions (Fusch & Ness, 2015). I will interview participants until no new research data is available or until there are no new emerging themes for coding to confirm data saturation. I will conduct member checking by having the participants review the themes from the collected data, and review a summary of the interpretations to ensure all interviews data is accurate, and make any needed changes to reflect participant intent. I will use an audit trail to ensure the repeatability of my study. The approaches help to increase the value of a research study.

Transition and Summary

Section 2 included a discussion of the various stages of the research study, including the purpose statement, the role of the researcher, participants, research method, and design. This section also discussed population and sampling, ethical research, data collection instrument, and techniques, data organization, data analysis, and reliability and validity. The data collection technique is semistructured interviews and the review of the company disaster recovery plans and property insurance documents. Section 3 will include the detailed findings of the qualitative multiple case study and recommendations for future research, application to business practice, and implications for social change.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this qualitative multiple case study was to explore strategies small business owners apply to overcome the effects of natural disasters in northwestern Florida. My findings included four themes that small business owners apply to overcome the effects of natural disasters: (a) property insurance coverage, (b) business continuity and disaster recovery plans, (c), cloud computing, and (d) remote working. All five of the participants discussed the importance of their staff and human resources, allowing them time to personally prepare for natural disasters, which enhances the organization's disaster recovery efforts. Four of the five participants had business continuity and disaster recovery plans. The business continuity and disaster recovery plans were reviewed annually for revisions based on recent experiences of natural disasters. All participants reported that they use cloud computing that will allow them to work remotely in other cities or states if their offices are damaged or destroyed due to a natural disaster. These findings relate to the TPB, which suggests that behavior, subjective norms, and perceived behavioral control shape an individual's behavioral intentions and behaviors. All participants reported having a positive attitude in advance of natural disasters, maintaining perceived control and adhering to norms (Ajzen, 1985).

Presentation of Findings

The overarching research question for this study was "What strategies do small business owners apply to overcome the effects of natural disasters?" The conceptual framework included the TPB. This theory was useful with the study of small business

owners' business and how the leaders of organizations' attitudes toward natural disasters may influence the decision making of the organization (see Ajzen, 1985). The findings conformed to the TPB conceptual, which will be discussed in relation to the five themes in the following subsections. Table 1 contains a summary of demographic information regarding the five participants. All of the small business owners have at least 30 years of professional experience as a small business owner.

Table 1

Demographic Information About Small Business Owners

Participant	Location	Education	Business experience
P1	Florida	Juris Doctorate	40 years
P2	Florida	Juris Doctorate	38 years
P3	Florida	Juris Doctorate	30 years
P4	Florida	Bachelor of Arts	35 years
P5	Florida	Bachelor of Arts	35 years

A total of eight interview questions presented to each of the five participants were developed as part of the interview protocol. Due to the depth of experience with each of the participants (30 plus years), there was consistency in the answers to the research question, which provided the opportunity for triangulation and identification of themes during the data collection analysis. Each participant participated in member checking to establish credibility in trustworthiness. Member checking involves developing the truth of the research study's findings. All five participants implemented planned behavior strategies that drove their success in the aftermath of natural disasters.

Theme 1: Property Insurance Coverage

Securing property insurance coverage is important for small business owners' recovery in the aftermath of natural disasters. Property damage insurance coverage is necessary to make needed repairs caused by hurricane and flood events. Florida is prone to hurricanes yearly. Hurricane season runs from June 1st through November 30th of each year. Securing property insurance assists with recovery efforts if offices or warehouses sustain property damage as a result of a natural disaster. All the participants stated that they have property and business interruption insurance, which allowed them to recover from the structural damage and not go out of business. However, none of the participants sustained hurricane damage due to recent years' hurricanes: Hermine 2016, Irma 2017, Michael 2018, or Dorian 2019.

Based on each of the participants' natural disaster experiences in Florida, they considered a planned behavior of securing property insurance as a critical component of their business plan. Therefore, small business owners must realize that having insurance coverage is not the only factor involved in disaster recovery; both preparedness and mitigation are critical factors in the aftermath of a natural disaster (Pathak & Ahmad, 2016).

Theme 2: Business Continuity and Disaster Recovery Plans

Successful organizations prepare in advance for natural disasters, incorporating business continuity and disaster recovery plans in their annual business plans. These plans may guarantee that business operations can continue even at the time of natural disasters. The disasters can be either natural or human-made, where businesses cannot

function under normal conditions. Small business owners need to devise business continuity plans to guarantee the working of organizations even either type of incident. Disaster recovery plans help to continue the business with less downtime with business continuity plans. A disaster recovery plan incorporates a geo-redundant data backup arrangement that can be retrieved and utilized at times of unexpected downtime. The redundant backup arrangement location must be outside of the business' disaster impact zone.

Additionally, leaders of organizations prepare disaster recovery plans that involve switching to a backup server if the primary server is disabled and designating a backup system in case the central system can no longer function. Disaster recovery plans also focus on disaster prevention, such as a plan for security system equipment to be stationed in a secure area. Disaster recovery plans differ between companies and industries; however, all disaster recovery plans prioritize the recovery of the most vital parts of a business. The organizational creation and implementation of both business continuity and disaster recovery plans are disaster-reducing strategies (Daramola et al., 2016).

Four of the five participants interviewed have written business continuity and disaster recovery plans as their guidelines on how to respond to natural disasters. A business continuity plan includes the following components: (a) risk assessment, (b) business impact analysis, (c) strategies and solutions development, (d) plan development, (e) plan maintenance, (f) exercises, (g) emergency notification, and (h) incident management. P2, P3, P 4, and P5 stated that it is essential for small business owners in

Florida to have both business continuity and disaster recovery plans to avoid permanent closure in the aftermath of a natural disaster.

Theme 3: Cloud Computing

Cloud computing provides access to business data and applications from anywhere at any time from any mobile device, at a reasonable cost. The cloud gives small businesses access to technologies that previously were out of their reach and allows them to compete with other small businesses and large corporations due to their ability to continue operations after a natural disaster event. Cloud computing could also offer small business owners a tool as a part of their disaster recovery planning process. The cloud computing model provides IT resources for small business owners as a paid service for the recovery of relevant data after a natural disaster.

All five participants stated that they use cloud computing. P1 and P2 indicated that due to power outages as a result of hurricanes Hermine 2016, Irma 2017, and Michael 2018, cloud computing allowed their organizations to continue to work with back-up power strategies. Cloud computing is a way that small business owners can save money, time, and hassle. The following is a detailed outline of the benefits of cloud computing:

- Reduction of costs: cloud-hosted servers enable mass-scale computing power and minimize IT requirement and physical storage, providing significant savings

- Anytime and anywhere: cloud-hosted desktops allow users to access their files anytime, anywhere, using any device. Files are no longer stuck on one single computer
- Ease of collaboration: saving and accessing data through the cloud allows everyone to work from the same master document. Administrators can even implement access and permission controls
- Reduces risk: the cloud adds security for its users by backing-up data off-site, decreasing the potential for hackers, viruses, and other cyber-security issues
- Improves efficiency: after migrating to the cloud, companies no longer worry about power requirements, space considerations, or software updates.

These strategies implemented by the participants are perceived behavioral controls.

Theme 4: Remote Working

The importance of remote working is that it provides the opportunity for small business owners to continue to work and be productive if their office buildings are damaged or destroyed due to a hurricane event. Due to the implementation of the cloud computing strategy to continue operations in the aftermath of a natural disaster, small business owners' employees can work remotely due to power outages and destruction of business offices. All of the participants (participant frequency 100%) interviewed stated that they use a remote working strategy.

Both P1 and P2 said that they used remote working when they experienced power outages due to hurricanes Hermine 2016, Irma 2017, and Michael 2018. These two participants' behavioral concerns in the aftermath of hurricanes Hermine 2016 and Irma

2017 included power outages and downed trees. The TPB Theory relates to the findings due to small business owners' behavior and perceived behavioral control to plan for natural disaster events. A behavioral response concern after hurricanes Irma for P1 was the power outages and downed trees. P1 also noted that the business norm and attitudes in the community after a hurricane event were as best as expected since hurricanes are frequent events in the State of Florida.

Applications to Professional Practice

Small business owners may apply the findings of this study as a standard professional practice. The five participants shared their professional business practices related to their survival in the aftermath of natural disasters in northwestern Florida. The themes discussed could be critical success factors for small business owners to implement to improve their effectiveness to reduce impacts from natural disasters. P1 and P2 experienced frequent power outages due to hurricanes in the northwest section of Florida. Small business owners may avoid permanent business closure or reduced downtime by purchasing a generator that provides a temporary source of power. Power generators could serve as a mitigation tool in the aftermath of a natural event for small business owners.

Business readiness may avoid permanent closure and reduce recovery time in the aftermath of a natural disaster with the business practice of securing property damage insurance and having business continuity and disaster recovery plans. Business continuity and disaster recovery plans provide small business owners with a step by step written instructions on how to respond due to a natural disaster event. Some of these steps

include what to do if the business sustains building damage and power outages. Securing property damage insurance provides for the payment of property damage sustained to small business owners' offices and buildings, thus reducing their out of pocket expenses during the disaster recovery period. P1 added that there are frequent electrical power outages in their city due to numerous trees and the fact that the electrical lines are above ground compared to underground utilities. P1 agreed to speak with their public officials to improve readiness and recovery times by requesting that all electrical lines be converted to underground utilities. This strategy could improve recovery time during a disaster event.

Implications for Social Change

Social change implications for small business owners could include having the behavior to plan and prepare in advance for survival in the aftermath of natural disasters. Small business owners' survival could prevent unemployment, provide economic growth, and add stability to the local economy. The lack of training, knowledge, and implementation of appropriate strategies could result in unemployment and a distressed economy. All of the participants in this study demonstrated proactive behaviors in preventing permanent business closure. Implications for positive social change included assisting small business owners to maintain employment and continue to have a positive economic effect on their communities.

Local, state, and federal governments benefit from small business owners' continued operations in the aftermath of natural disasters due to sustained tax base provided to these government entities and avoiding a distressed economy. The findings of

this study could offer education and knowledge to small business owners regarding strategies used by successful small business owners. Implications for positive social change include preventing unemployment, providing economic growth, and adding stability to both the local and state economies. The business owners in this study practiced planned behavior of developing successful strategies by developing business continuity and disaster recovery plans.

Recommendations for Action

The purpose of this qualitative multiple case study was to explore strategies small business owners apply to overcome the effects of natural disasters. The State of Florida is a hurricane-prone state. Therefore, it is vital that small business owners prepare for natural disasters to avoid permanent business closure. Based on the findings of this study, I recommend several actions that current and future leaders of small business owners implement: (a) secure property insurance coverage; (b) training and education, (c) business continuity and disaster recovery plans, and (d) take warnings to hurricanes seriously.

Recommendation 1: Secure Property Insurance Coverage

I recommend that every organization, especially small business owners, secure property insurance coverage that provides coverage to office buildings if damaged due to a hurricane event. Too often, small businesses do not have property insurance coverage in the aftermath of natural disasters, and their building structure is damaged or destroyed. Destroyed office buildings without insurance coverage may result in small business owners' permanent closure.

Recommendation 2: Training and Education

I recommend that small business owners seek training and education on survival techniques in the aftermath of natural disasters. Small business owners may lack the skills and knowledge to forecast and prepare for natural disasters. Small business owners should seek training from local, state, and federal governments on disaster preparedness. The FEMA provides online and classroom courses on disaster preparedness.

Recommendation 3: Business Continuity and Disaster Recovery Plans

I recommend that every small business owner have both a business continuity and disaster recovery plan as a part of their overall business plan. Having these plans prepared, practiced, and updated annually will assist with the survival of natural disasters. Most small businesses permanent closure in the aftermath of natural disasters may be due to their failure to plan in advance of a natural disaster event. Having a business continuity and disaster recovery plans could markedly increase the survival of small business owners.

Recommendation 4: Take Warnings to Hurricanes Seriously

I recommend that small business owners seriously consider the hurricane warnings that are provided by various news media and local governments. Organizations must stay abreast of the news of an approaching hurricane event so that they may timely notify employees and implement the company's business continuity and disaster recovery plan. Too many organizations do not take warnings to an approaching hurricane event, which results in the delay of allowing their employees to prepare personally.

Recommendations for Future Research

I conducted a qualitative multiple case study to explore strategies small business owners apply to overcome the effects of natural disasters in the northwest section of the State of Florida. The State of Florida is more susceptible to hurricanes than any other state in the United States. Future research should be conducted to determine if there should be a mandatory requirement for small business owners to secure property damage insurance in hurricane-prone states. Future research should be conducted regarding how to encourage small business owners to prepare both business continuity and disaster recovery plans. I recommend that future research be done on the need to provide training and education to small business owners on the use of cloud computing and remote working. Organizations that focus on natural disaster preparedness through the use of cloud computing and remote working may have a better chance of surviving natural disasters.

Reflection

My journey as a doctoral study at Walden University has been both enlightening and challenging, and it is a worthwhile journey. For the past 33 years, my employment in the insurance industry, adjusting and managing property and liability claims, has allowed me to experience first-hand the effects of natural disasters on small business owners in the State of Florida. I have personally witnessed numerous small business owners close their businesses permanently after a natural disaster event due to their lack of disaster recovery strategies and failure to secure property insurance coverage. It is my purpose to

present doctoral research that may provide an informative plan for small business owners to survive in the aftermath of natural disasters.

Conclusion

Small business owners are essential entities in society. They provide a wide range of goods and services, thereby contributing to the economic and general well-being of their local communities. A small business is an independent business having fewer than 500 employees (Anastasia, 2015). Small business owners' survival in the aftermath of natural disasters is critical to the United States' economy. Survival strategies discussed in this study may assist small business owners in avoiding permanent closure and, therefore, provide continued operations to keep employees employed and continued contribution to the local economy.

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Appendix: Interview Protocol

Participants will receive a copy of the informed consent form regarding their agreement to participate as an uncompensated volunteer in this study. A meeting will be scheduled at the participants' place of business. I will begin by introducing the research topic and explain the scope and purpose of the study. The participants will be assured that all information collected will remain confidential. I will seek their permission to record the interview.

The questions for the interview are as follows:

Research Question:

What strategies do small business owners apply to overcome the effects of natural disasters?

Interview Questions:

1. What have been your experiences with natural disasters that your company has survived?
2. What are your experiences with natural disasters including downtime, repair or renovations costs, and loss of employees?
3. What strategies did your business implement during the natural disaster you experienced?
4. What are your disaster recovery plans?
5. How much damage and destruction your business sustained as a result of a natural disaster?

6. Based on your experience with natural disasters, what changes to your strategies apply to prevent or reduce closures in the aftermath of a future natural disaster?
7. What were the business norms, attitudes, and responses following the natural disaster?
8. What additional information can you provide to help me understand the successful strategies your organization has used for mitigating and responding to the effects of natural disasters?

All of the participants will be thanked for their participation and for sharing their strategies with successfully surviving in the aftermath of natural disasters. I will invite participants for a member checking interview to confirm my interpretation of the interviews before transcribing.