The literature review focused on business recovery and included findings from over 60 studies published between 1984 and 2019. All of this research focuses on the United States.

The major findings are presented in five categories: business characteristics, pre-disaster planning, disaster impacts, and post-disaster finance, and post-disaster actions or recommendations. This document aims to briefly summarize the research included in each of these categories.

**Business characteristics** including: size, owner/ownership characteristics, sector, pre-disaster conditions, emotional attachment to a particular place, and age impact business recovery. Despite inconsistent measurement, research shows that smaller businesses are more negatively impacted than larger firms or corporations. Businesses owned by females and/or ethnic and racial minorities may face more challenges preparing for disaster and accessing resources in comparison to their male and/or Caucasian counterparts. Businesses that own their building or establishment (as opposed to rent) are more likely to recover post-disaster. Disasters affect retail/trade sectors more negatively than other sectors. The FIRE industry (finance, insurance, and real estate) typically experience positive gains following a disaster. The manufacturing and construction industries can experience a short-term increase in demand post-disaster that eventually returns to pre-disaster demand in long-term business recovery. Businesses in poor economic conditions pre-disaster, either community-wide or business specific, fail more often post-disaster or recover more slowly. Generally, attachment to place (the cultural, religious, or personal affinity for a specific geographic location) negatively impacts business recovery because the establishment is less likely-to adapt, if necessary. Finally, the age of the business is not an indicator for recovery since some studies show that older businesses are more likely to recover because of their previous disaster experience, while other show they are less likely to recovery because they aren’t agile and adaptable.

The **major effects of a disaster** that affect recovery are: physical damage to an individual business (structural and inventory) and the wider community (roads, services, etc.), long and short-
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term shutdowns of lifeline systems (electricity, water, internet/phone, etc.), supply chain interruptions, population displacement, emotional/psychological well-being, and attachment to place. These impacts affect the length of closure and vary depending on the time of year (i.e. tourism season). Of these impacts, population displacement is a significant factor for business recovery because it can lead to either loss of staff and/or loss of customer base.

How businesses prepare was measured in a variety of ways: development of business continuity plans, disaster planning, dedicated staff member(s) to emergency/risk/disaster planning, having insurance, and structural mitigation (i.e. retrofitting). Larger businesses are more likely to engage in some form of pre-disaster planning (preparedness and/or business continuity planning) than smaller businesses since larger businesses typically have more resources. Surprisingly, there is no significant linkage between business preparedness and actual business recovery. Reasoning for this finding may be because disaster preparedness and business continuity plans do not adequately mitigate the effect of business characteristics, strong plans may not be actually implemented, or because the plans are too narrow in scope. Another example in pre-disaster planning are the actions taken at the onset of a disaster or storm preparation (typically a hurricane), such as building up windows, backing up data, moving around machinery/inventory, and creating a communication plan with staff. The actions tend to positively impact the business in the short-term, but do not necessarily help for long term recovery.

For financing recovery, there are four main sources of capital that business owners mostly rely on: insurance, personal savings, grants, and loans. Insurance is the most widely used source to finance rebuilding; however, insurance is only useful if the owner has the correct type of insurance which is often perceived as unaffordable or not cost effective. Insurance often does not cover all losses, such as lost revenue due to closure. Smaller, family-owned businesses often resort to using personal savings to finance recovery, if they have available funds. This can speed up the time for recovery since owners have access to capital; however, these funds are usually limited and don’t allow for future security and growth based on those savings. Recovery assistance comes in the forms of grants and loans. Grants are widely available for households and individuals, yet they are less available for businesses and typically have an extensive application process. With government and personal loans, there is no significant relationship between receiving a loan and a successful business recovery. Loans are typically insufficient since they are only for structural damage not secondary effects like loss of revenue, and they always create or increase debt.
Post-disaster actions and recommendations are suggested throughout the research; however, they are not often empirically tested. With that said, these recommendations are based on issues seen throughout various studies by researchers. Recommendations for business owners include considering relocation as an option for recovery and engaging in appropriate disaster planning and mitigation. For government officials, time and speed for support were found to be crucial variables to increase business survival. In addition, the research suggests we should view recovery from a business-community level, instead of an individual-business level, to facilitate community recovery as a whole.

Endnote: This summary was written before COVID-19. COVID-19 presents unique challenges which the established literature on disasters has rarely had the opportunity to address, for it does not create the physical damage which is so often the focus of response and recovery. Moreover, where everyday emergencies, disasters like annual floods, and catastrophes like Hurricane Katrina cost hundreds of billions, the pandemic is estimated to have already cost the United States trillions (as of June 2020). Afflicting every state and many nations around the world, COVID-19 had devastating impacts on local as well as global commerce. Its geographic scope is far broader than anything experienced in modern history. The characteristics, levels of planning, intensity of impact, post-disaster finance, and the recommendations presented here are the current state-of-the-art in understanding disaster, but they have not been tested at the scale of a global pandemic.