

EMERGENCY MANAGEMENT USE CASE

Research Title:	An Examination of Business Disruption and Recovery Post Hurricane Harvey in Southeast Texas
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Description:	<p>Small businesses and local nonprofits are the most vulnerable organizations in communities to disaster impacts, while also being central supporters of overall community resilience and recovery. While previous research has improved the way we understand how social and physical vulnerabilities affect our communities, there is a critical need to use that information to take action on the ground and reduce the impact of future disaster events for local organizations.</p> <p>This Use Case draws from the results of our recent research in Southeast Texas and Southwest Louisiana that were impacted by Hurricanes Harvey, Imelda, and Laura, as well as by the COVID-19 pandemic. We did surveys with a random sample of small businesses and local nonprofits in each location along with additional interviews of local nonprofits to understand their impacts and recovery from those disasters. In total we surveyed 179 organizations and interviewed 29 organizations.</p> <p>The study indicated that organizations are in need of training related to Organizational Mitigation and Preparedness, Organizational Continuity and Recovery Planning, Place-based Impact Investing, Preparation of Fiscal Records for a Disaster (Meyer and Semien, 2021).</p> <p>In particular, minority owned- or operated- organizations (which included veterans, women, and racial minorities) reported more damage and slower recovery from disaster damages. Minority organizations reported more damage on almost all categories including to their building (55% versus only 33% of non-minority organizations), building contents (41% versus 24%); machinery/equipment (37% versus 16%); and documents (34% versus 14%). Minority organizations were more likely to need employees for extra hours after Harvey (49% versus 32% of nonminority organizations). About 42% of organizations had an alternate work location available for employees, with minority organizations less likely to have this option (35% to 49% of nonminority organizations). Minority organizations more often reported physical and mental health issues impacting their employees. Also, 58% of minority businesses reported revenue decreases compared to 29% of nonminority businesses and 30% of minority-led nonprofits reporting decreases compared to 22% of other nonprofits. Only 62% of minority organizations indicated that they were fully recovered from Harvey by 2019 compared to 92% of nonminority organizations. Less than half of organizations had flood insurance and few filed claims and very few sought governmental assistance for disaster recovery.</p> <p>Only a small fraction had a disaster plan, but those who did felt it improved their recovery.</p> <p>Through this Use Case, we support small businesses, local nonprofits, and faith-based organizations in understanding hazard risk and developing planning strategies that will improve their internal (continuity of operations) and external (community engagement) resilience capacity. We increase organizational resilience through the development and scientific testing of a suite of coastal resilience training and engagement programs, developed from the scientific evidence around hazard risk communication and organizational mitigation and recovery needs.</p>
When Applied:	Blue Skies: General education programming for disaster preparedness
Who Applies:	Homeland Security & Emergency Management Local Emergency Management Texas Division of Emergency Management Chambers of Commerce or other local business networks Local VOAD partners

Disaster Type:	All natural hazards
Infrastructure Affected:	N/A
Industry Affected:	N/A, Focused on small and local businesses and nonprofit organizations
Where Applied:	Any area affected by natural hazards
Agency Affected:	no
VOAD Affected:	Yes, local VOAD partners
Who/What Affected:	Our research shows clear gaps in organizational disaster planning, and is especially noted as worse for minority, veteran, or women owned and operated organizations. The goal of the use case is to train/educate local and small businesses and local nonprofit organizations on how to best mitigate and prepare their organization for the onset of a disaster and, importantly, how to develop recovery planning documents and actions for their organization and their engagement with the broader community, as well as how to partner with the local government. We do this through targeted lessons derived from our previous study where we evaluated the impact and recovery of organizations following recent Hurricanes in Southeast Texas and the COVID-19 pandemic.
How Affected:	<p>Entities would be encouraged to participate in targeted in-person and online training centered around key lessons that would teach the organization how to improve their own organizational resilience and the resilience of their local community. The training topics are derived from our previous research project, as described above. The training content complements the “Designing Participatory Trainings” manual produced by the United Nations High Commissioner for Refugees which contains information on how to conduct participatory training (UNHCR, 2008) and the Federal Emergency Management Association (FEMA) “Continuity Plan Template and Instructions for Non-Federal Entities and Community Based Organizations” which provides content on developing and implementing a continuity plan (FEMA, 2018).</p> <p>At the end of training, local organizations will have an organization-specific recovery plan with action items to address as they develop their resilience.</p>
Timing of Application:	The Use Case would be applied before a disaster in order to prepare organizations for a disaster.
Critical Points:	<p>For emergency managers to implement this Use Case, the entity will need to understand and be able to communicate the following information to the general public: Knowledge about community specific disasters and adaptation tools needed, Organizational leaders Attitudes around risk perception and resilience, as well as Preparedness information related to organizational continuity, and Skills related to implementing plans and mitigation activities.</p> <p>The entity should also be abreast of the Characteristics of the organization and community risks, Operational needs, Insights and perceptions about disasters, Necessary risk reductions, and Simultaneous disaster events.</p> <p>The entity should be able to actively engage participants through each topic area and include hands-on activities that result in drafted hazard planning documents for each organization as a take-away from the program. Thus, the training program should aim to communicate risk and possible resilience actions then help organizations take the first step (making official plans) to implementing those actions.</p>
What Benefit:	<ul style="list-style-type: none"> Local organizations will gain knowledge on mitigation and preparedness strategies to implement for themselves and their communities Local organizations will complete disaster recovery plans for their organizations Coastal communities will benefit from having businesses and nonprofits that are more prepared for future disaster events.

	<ul style="list-style-type: none"> • Reduced time offline for businesses that can reopen quicker and have fewer disruptions in profit • Reduced downtime for nonprofits that will be able to reopen quicker and have fewer gaps in providing needed services to the community • Local nonprofits able to adapt activities to meet community recovery needs • Reduced economic revenue loss for local small businesses • Emergency managers will benefit from having organizations who can ready themselves prior to a disaster and serve as supporting players in recovery.
Where Used:	<p>The research study that training materials draw from was completed in Southeast Texas (Beaumont and Port Arthur) and Southwest Louisiana (Lake Charles).</p> <p>Educational trainings are a common practice throughout multiple fields especially the field of emergency management and urban planning. Our training will build on already existing trainings to add a more target approach to educating business and nonprofit organizations on disaster preparedness.</p> <p>We are in the process of beta testing the training with a group of faith-based organizations in the Houston area.</p>
Additional Research:	<p>Additional research for implementation is not needed; we will use the information acquired from past research to develop and implement the trainings. However we would like to test the efficacy of different modes of distribution of the training programs in influencing knowledge, awareness, and the resilience practice of participants. We will do this through a series of pre/post test and activities administered throughout the duration of the training. For example, many training programs are self-directed, online while others are in-person workshops.</p> <p>We will use an experimental design to test the efficacy of different content and modes of delivery, such that future emergency management programming can foster use the scientifically proven education strategies. Using a K.A.P.S. educational assessment (Semien and Nance, 2022; Semien and Nance, 2019), we will determine which mode - virtual/self-directed, virtual/synchronous, or in-person/workshop - creates the greatest change in participant <u>K</u>nowledge about disasters and adaptation needs, <u>A</u>ttitudes around risk perception and resilience, <u>P</u>reparedness around organizational continuity, and <u>S</u>kills related to implementing plans and mitigation activities.</p> <p>After co-designing the training programs, we will test the efficacy of different modes of distribution and allow participants to self-evaluate the effectiveness of the training program. Ultimately we expect the results to help guide the development of future training activities that can be extrapolated across organizations (i.e. businesses and nonprofits) while also specifically targeted to different vulnerable populations of organizations to support community resilience overall.</p> <p>It's important to note that the training modules made will place specific emphasis on the known disparities in disaster experience between minority-led organizations (i.e., veteran, women, or racial minority-owned) and other organizations (Howell and Elliott 2019; Jacobs, 2021; Peacock et al., 2014; Scanlon, 1988) and using engagement with these organizations build tailored training that is culturally specific.</p> <p>Research consistently shows that disasters widen pre-existing inequalities (Howell and Elliott 2019; Jacobs, 2021; Peacock et al., 2014; Scanlon, 1988). The same can be said for small businesses and local nonprofits operating in disaster-prone areas. The COVID-19 pandemic served as a recent example of how small organizations, women-led organizations, veteran-led organization, racial and ethnic minority-led organizations were more severely affected by the pandemic closures, had less access to resources to maintain the continuity of their operations, and recovered from the economic impact more slowly than their counterparts (Bartik et al., 2020; ILO 2021; Liu et al. 2021).</p>



	<p>Our previous research also shows disparities in disaster impact and recovery for organizations owned and operated by women, veterans, or racial and ethnic minorities (Meyer and Semien, 2021). Results indicated that minority-owned or –led organizations reported more damage on almost all categories including to their building, building contents; machinery/equipment; and documents. Furthermore, only 73% of minority-owned businesses reported being fully recovered from Hurricane Harvey compared to 90% of non-minority businesses within 2 years. These findings suggest there are factors impacting minority-owned/led organizational damage and recovery, and a specific need for targeted and culturally relevant training to support minority-, women-, and veteran-owned and led organizations.</p>
Additional Information:	<p>Meyer, M., Semien, J., & Helgeson, J. (2021). NIST-NOAA Survey Tool for Business Disruption and Recovery Associated With Extreme Events. Business-Disruption-and-Recover-Post-Hurricane-Harvey-in-Southeast-Texas.pdf (netdna-ssl.com)</p> <p>Semien, J. (2022, December 12). Local nonprofits play a key role in recovery from disasters – while also having to get back on their own feet. The Conversation. Retrieved December 14, 2022, from https://theconversation.com/local-nonprofits-play-a-key-role-in-recovery-from-disasters-while-also-having-to-get-back-on-their-own-feet-192377</p> <p>Semien, J. Romero, S. (2021) "Organizational Impact and Recovery Field Guide", in Examining Organizational Disruption and Recovery Post Hurricane Harvey in Southeast, Texas. DesignSafe-CI. https://doi.org/10.17603/ds2-gxwb-fd57</p> <p>Semien, J. Meyer, M. (2021) "Report", in Examining Organizational Disruption and Recovery Post Hurricane Harvey in Southeast, Texas. DesignSafe-CI. https://doi.org/10.17603/ds2-e0w5-zh88</p> <p>Meyer, M., Peacock, W. G., Peacock, W. M., Washington, S., & Semien, J. (2019-2021). <i>Business Disruption from Hurricane Harvey</i>. SCIPP: Southern Climate Impacts Planning Program. Retrieved December 14, 2022, from https://www.southernclimate.org/index.php/research/project/business-disruption-from-hurricane-harvey/</p> <p>Watson, Maria, Meyer, Michelle, Dudensing, Rebekkah, & Semien, J. (2021-2022). Understanding Repeat Disruption to Small Minority-Owned and Rural Businesses with Applications to Economic Diversification and Organizational Resilience in the Gulf Coast. SCIPP: Southern Climate Impacts Planning Program. Retrieved December 14, 2022, from https://www.southernclimate.org/index.php/research/project/understanding-repeat-disruption-to-small-minority-owned-and-rural-businesses-with-applications-to-economic-diversification-and-organizational-resilience-in-the-gulf-coast-2/</p>
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Original Research:	<p>Meyer, M., Semien, J., & Helgeson, J. (2021). NIST-NOAA Survey Tool for Business Disruption and Recovery Associated With Extreme Events. Business-Disruption-and-Recover-Post-Hurricane-Harvey-in-Southeast-Texas.pdf (netdna-ssl.com)</p>

	<p>Semien, J. (2022, December 12). Local nonprofits play a key role in recovery from disasters – while also having to get back on their own feet. The Conversation. Retrieved December 14, 2022, from https://theconversation.com/local-nonprofits-play-a-key-role-in-recovery-from-disasters-while-also-having-to-get-back-on-their-own-feet-192377</p> <p>Semien, J. Romero, S. (2021) "Organizational Impact and Recovery Field Guide", in Examining Organizational Disruption and Recovery Post Hurricane Harvey in Southeast, Texas. DesignSafe-CI. https://doi.org/10.17603/ds2-gxwb-fd57</p> <p>Semien, J. Meyer, M. (2021) "Report", in Examining Organizational Disruption and Recovery Post Hurricane Harvey in Southeast, Texas. DesignSafe-CI. https://doi.org/10.17603/ds2-e0w5-zh88</p> <p>Meyer, M., Peacock, W. G., Peacock, W. M., Washington, S., & Semien, J. (2019-2021). <i>Business Disruption from Hurricane Harvey</i>. SCIPP: Southern Climate Impacts Planning Program. Retrieved December 14, 2022, from https://www.southernclimate.org/index.php/research/project/business-disruption-from-hurricane-harvey/</p>
What Risks:	There are no inherent risk for adopting this use case.
Partner Agencies/Jurisdictions:	<p>The Hazard Reduction and Recovery Center</p> <p>Local Chambers of Commerce or business networks</p> <p>Local EM</p> <p>Local nonprofit networks, e.g., local VOAD, United Way</p> <p>Local faith-based networks such as local ministerial alliances.</p>

Research with a Technology Component Should Respond to the Following Questions

Research Requested:	No
Why Better:	Based on our research, these local organizations have little interest in federal or state available disaster trainings. FEMA based trainings are rarely known by organizations or seem applicable to their specific local needs.
Reliability:	N/A
Support Needed:	Basic internet access
Citizen Impact:	No
Training Required:	Train-the-training program can be developed to support local delivery of training content and materials
Public Accountability:	No

Please Note: Questions or suggestions regarding the Use Case Template may be directed to Dr. MacGregor Stephenson at the Texas Division of Emergency Management at macgregor.stephenson@tdem.texas.gov.