



In partial fulfillment of the requirements for the degree of

Master of Science
Adam Andresen

Will present his scientific paper

**Understanding the Social Impacts of Power Outages:
A Case Study Comparison across U.S. Cities**

Friday, July 10, 2020

12:00 PM

[Zoom Meeting ID](#): 928 6043 1855

Faculty, students, and the general public are invited.

Supervisory Committee:
Dr. David Hondula, Chair
Dr. Melanie Gall, Member
Dr. Sara Meerow, Member

Abstract

Power outages are a common impact that are a result of natural disasters. Yet little research has been conducted on the household effects of power outages, due to the lack of available power outage data from utility companies. This research investigates the social impacts of power outages and demonstrates why more attention must be given to the social aspects within the sociotechnical system.

This thesis comprises of two methods. The first method consists of a systematic literature review. A dataset was generated using Scopus and consists of 762 articles to investigate the common social impacts observed during power outages. A multi-city survey is the second component of the thesis. This survey will allow for household-level power outage experiences to be documented in three major cities across the United States (Detroit, MI; Miami, FL; Phoenix, AZ). Deploying through Amazon's Mechanical Turk (MTurk), the survey asks questions regarding the frequency and duration of recent power outages, how power outages have impacted a participant's household, and coping mechanisms utilized to mitigate the impacts of previous power outages.

The hypotheses for this thesis are as follows: Those of minority demographics and lower socioeconomic status experience more frequent and prolonged power outages and, therefore, can respond despite potentially experiencing greater consequences. Also, research has primarily focused on past natural hazards that have caused significant power outages primarily in the United States. Interviews have been the primary source of collecting data in the field to best understand experiences with power outages after a significant weather event, such as a landfalling hurricane.