Leah Windsor
Alistair Windsor

Smart City Research Cluster

Final Research Report, Part I

FedEx Institute of Technology

Prepare a report that includes the following elements and submit to casanto@memphis.edu or smishra3@memphis.edu by December 31, 2017.

1. **Provide a Research Executive Summary that includes the purpose of your research, your methodology, and key findings.** (500 words)

This projects presents a case study that triangulates the problems of community disorder, crime, and weather and examines local government responses to them. Existing scholarship has examined the relationship between disorder and crime, and weather and crime, with little emphasis on the role of governance and responsiveness. Using a computational linguistics approach, we explore types of disorder and government responses to it. We define disorder in two ways: endogenous disorder resulting from individual-level features, such as trash and blight; and exogenous disorder such as that results from external forces, such as more extreme weather. As a feature of "global weirding", the climate change process by which weather becomes more extreme and unpredictable, the Southern part of the United States is forecast to experience more negative externalities than other regions. Using macro-level global political research on the effects of climate change as a frame, we examine micro-level processes with Memphis, TN as a case study. We take a comparative, global perspective on the problems of disorder, crime, weather, and governance, contextualizing these issues with a broader global literature of how communities are responding to systemic stressors driven by both endogenous and exogenous weather events. We use data from the Memphis 311 system alongside crime and weather patterns between 2000-2016. We take a comparative, global perspective on the problems of disorder, crime, weather, and governance, contextualizing these issues with a broader global literature of how communities are responding to systemic stressors driven by both endogenous and exogenous weather events. Disorder and crime are both symptoms of poor governance, as well as consequences of it. More extreme weather patterns, driven by climate change, account for increasing global disorder,[1] but also offer opportunities for cooperation and progress.[2] By treating the Memphis case as a part of a global phenomenon, we hope to synthesize policy prescriptions, glean best practices, and learn lessons from around the world about how governance matters to crime and disorder under worsening weather conditions.

[1] Hsiang, Burke, and Miguel, "Quantifying the Influence of Climate on Human Conflict"; Barnett and Adger, "Climate Change, Human Security and Violent Conflict."
[2] Mitchell and Van Aals, "Convergence of Disaster Risk Reduction and Climate Change Adaptation"; O'Brien et al.,

[2] Mitchell and Van Aals, "Convergence of Disaster Risk Reduction and Climate Change Adaptation"; O'Brien et al., "Disaster Risk Reduction, Climate Change Adaptation and Human Security"; Baettig, Brander, and Imboden, "Measuring Countries' Cooperation within the International Climate Change Regime"; Bernauer and Böhmelt, "National Climate Policies in International Comparison"; Wolf, "Water Wars and Water Reality"; Wolf, "Conflict and Cooperation along International Waterways"; "Hyogo Framework for Action (HFA) - UNISDR"; Slettebak, "Don't Blame the Weather! Climate-Related Natural Disasters and Civil Conflict"; Buhaug, "Reply to Burke et Al."

2. **Describe any next steps in your research agenda that have emerged from this project. (E.g., Revisions to methodology, new research questions, etc.)** (250 words)

We had anticipated getting data from the NextDoor organization, an online community forum akin to neighborhood watch, where citizens discuss local issues in a forum where their identities are not anonymized. We had hoped this would leverage insight into community problems not captured by the city's robust 311 service. However, NextDoor was unabe to provide us with this data due to personnel issues. Therefore, we modeled community issues by examining the narratives provided in the 311 service requests, contextualizing these responses with data from weather and crime.

3. **List external funding that has been/could be leveraged by this project. Include grants/contracts awarded as well as pending funding opportunities.**

We have identified a Smart and Connected Communities NSF Grant (18-520) with a submission deadline of February 28, 2018 with an estimated award pool of $19,250,000. Per the award description, "a smart and connected community is a community that synergistically integrates intelligent technologies with the natural and built environments, including infrastructure, to improve the social, economic, and environmental well-being of those who live, work, or travel within it."

4. **List any publications / conference presentations that have stemmed from this project.**

Windsor, L. (2018, January) *Community Engagement and Government Responsiveness to Inclement Weather: A case study of the Memphis 311 System*. Southern Political Science Association Conference Within a Conference: Emergency Management, Disaster, and Politics. With Alistair Windsor, Andrew Hampton, and Grayson Cupit. New Orleans, LA.

This conference within a conference format offers participants the opportunity to contribute their projects to special journal issues, coordinated by conference organizer Dr. Gina Yannitell Rinehart.

5. **Summarize any student involvement in the project (e.g., classes that participated in the project, graduate assistants, PhD students, etc.) and list the number of students involved. Note whether the project has been connected to any doctoral dissertations.**

Grayson Cupit worked extensively on this project as an undergraduate student (graduated in May 2017 with BS in EECE).

Andrew Hampton, ABD, also contributed substantially to this project.