July 1st, 2024

Event Summary Note

Mobility Data for Emergency Management

During our work in Latin America at Crisis Ready, we found that establishing data-sharing agreements between telecommunication agencies and emergency response agencies is challenging and essential for creating effective research-to-policy pipelines. To better understand the complexities and opportunities of these agreements, we invited three experts to discuss successful case studies involving mobility data and the obstacles they encountered.

The session began with Takahiro Yabe, Ph.D., an Assistant Professor at the Center for Urban Science & Progress at NYU. He discussed the Kumamoto Earthquake in April 2016 in Japan, resulting in 273 deaths and 2,809 injuries. One significant issue during this disaster was that many evacuees went to non-designated areas, such as shopping mall parking lots, making it difficult for authorities to locate them. A few days after the earthquake, Dr. Yabe's team used data from Yahoo Japan to identify key evacuation areas, aiding local disaster response agencies.

A crucial factor in the success of this report was the pre-existing collaboration between the University of Tokyo and Yahoo Japan, which had been working together on similar research questions for years. This meant Dr. Yabe's team had access to the raw mobility data before the disaster. Additionally, the report format had been tested in previous scenarios, ensuring its robustness and timely generation. Reflecting on post-disaster strategies and addressing new problems is vital for improving future responses.

The next speaker was Manuel Riaño, an economist and political scientist who helped create Bogotá's data analytics agency. This agency integrates public and private organizations to enable data-driven disaster responses. During the COVID-19 pandemic, Riaño leveraged his expertise and network to direct an initiative using mobility data to track virus movement across Bogotá. His team, comprising data broker services from Servinformación, epidemiologists from Universidad del Rosario, and private sector data scientists, used mobile location data to advise the mayor on quarantine areas and interactions with "superspreaders." This model increased the accuracy of detecting positive cases by 67%, enabling early treatment and isolation. Riaño emphasized that all data was anonymized and adhered to strict privacy standards.

The final speaker was María Isabel Mejía Jaramillo, a systems and computer engineer affiliated with the Berkman Klein Center for Internet & Society. She highlighted the challenges of creating data collaboration agreements between the academic, public, and private sectors. Often, there is ambiguity about the types and ownership of data (e.g., private, public, sensitive), complicating efforts to ensure governmental transparency and privacy standards. In Latin America, the lack of clear regulations on data-sharing agreements further complicates these collaborations, although some progress has been made.

Financial challenges also pose significant barriers. Developing the necessary infrastructure for safe data sharing with privacy standards is costly, as is recruiting the right talent for technical development and data analysis. Moreover, unclear business models can hinder these initiatives, as data-sharing agreements need to provide value for all stakeholders. From a governance perspective, clear protocols, roles, responsibilities, and conflict resolution tools are essential. **The role of a data steward to oversee the entire data ecosystem and its stakeholders is often missing but crucial.**

In conclusion, data-sharing agreements are vital for disaster response efforts incorporating data analytics. While these agreements are challenging and time-consuming, understanding common difficulties and learning from successful cases can help build effective research-to-policy pipelines in disaster contexts.

Useful Resources

Mobilkit: A Python Toolkit for Urban Resilience and Disaster Risk Management Analytics using High-Frequency Human Mobility Data. Link