Communication Emerging from the Crisis Resolution Stage: Topic Modeling of Tweets about Hurricane Maria

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Introduction

- Crisis and Emergency Risk Communication (CERC) model
- Big data tools
- Communication patterns about resolution stage of Hurricane Maria

Method

Sample
- 12,146 Hurricane Maria tweets (posted 11/06-11/21/2017)

Data Analysis
- Data clean: R
- Topic modeling, latent semantic analysis, and word cloud: JMP Pro 13

Topic Model:
- A simple probabilistic procedure to generate documents on the basis of latent (random) variables
- Latent Dirichlet Allocation (LDA) (Figure 1)

Latent Semantic Analysis:
- Computing a partial singular value decomposition (SVD) of the document term matrix (DTM)

Findings

- Topics (Table 1):
  1. Food support
  2. Mental and physical health
  3. Fatalities
  4. Government responses
  5. Water supply

  - Government was criticized for:
    1. Inadequate support for the victims and crisis recovery
    2. Lack of remediation and rebuilding efforts

Conclusions

- Government failed to use social media to initiate interactive crisis communication.
- Public expressed concerns on social media.
- Immediate communication about remediation and rebuilding responses were highlighted.

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References