Information Sharing: An Analysis of the Uganda COVID-19 Response using D-DEMATEL Method

BACKGROUND

The complexity and rapidly changing environment of emergencies make it critically important that emergency management organizations demonstrate the ability to collaborate and communicate effectively in a variety of situations. During COVID-19, Uganda, and its supporting international partner organizations, were initially required to modify established emergency response procedures to accommodate public health safety measures like social distancing. As positive cases increased and the threat of transmission grew, Ministry of Health emergency managers were required to again alter response coordination protocols; shifting operations to an almost exclusive virtual working environment which relied on technology to accommodate daily communication and coordination.

OBJECTIVE

Examine the management of Uganda’s public health COVID-19 response and identify factors that contributed to the successful implementation of emergency management practices.

HYPOTHESIS AND RESEARCH QUESTIONS

Hypothesis: Due to unpredictable situations, multi organizational collaborations and ad-hoc teams, innovative collaboration and coordination approaches were needed for managing Uganda’s COVID-19 emergency response activities.

Research Question 1: Did the use of information communication technologies enhance Uganda’s public health emergency response to the COVID-19 pandemic?

Research Question 2: What factors contributed or enhanced the implementation of emergency management practices during Uganda’s response to the COVID-19 public health emergency?

METHODOLOGY

A mixed-methods research design was implemented to gather feedback from public health professionals and emergency management subject matter experts. Quantitative data was collected using a web-based survey, and qualitative data was collected through semi-structured interviews. D Number theory was first used to address the subjectivity in expert evaluations and the fuzziness in linguistic assessment. Additional research efforts will focus on assessing and quantifying D Number theory and the consequences of its use in optimization of collaborative decision making.

D-DEMATEL ILLUSTRATION

INFLUENTIAL FACTORS

Based on the proposed method, the optimization of Uganda’s emergency management response can be efficiently simplified into optimizing the seven success factors:

CLASSIFICATION AND IMPORTANCE RANKING

CONCLUSIONS AND FUTURE RESEARCH

This study validated the D-DEMATEL process for determining success factors for Uganda during a specific response under unique circumstances. While innovative collaboration and coordination approaches were needed for managing Uganda’s COVID-19 emergency response activities, subject matter experts assessed that organizational structure and participation along with leadership played a more important role in response management. Additional research efforts will focus on assessing and quantifying success factors for other responses in Uganda and ultimately other countries in order to optimize emergency management practices.

INTERPRETATION OF RESULTS

According to the analysis, these seven factors were identified as success factors in Uganda’s emergency management response:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Importance</th>
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<tbody>
<tr>
<td>Leadership</td>
<td>1.0108</td>
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<tr>
<td>Communication tools</td>
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<td>Stakeholders</td>
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<td>Geographical dispersion</td>
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<td>Culture</td>
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REFERENCES


