MODELING AND SIMULATION OF INTERACTION AMONG ORGANIZATIONS DURING THE RESPONSE TO A DISASTER

By

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ABSTRACT

A primary challenge in responding to natural and man-made disasters is predicting the effectiveness of an organization in dealing with a crisis situation. Culture influences an organization's managerial effectiveness in handling a given task. Culture also influences how well two organizations will work together when assigned to the same task. The thesis will summarize past work on studying the influence of organizational culture on crisis response. It will describe past research in the role of different organizations' cultural biases in shaping how they complete accumulated disaster response tasks and deal with the disruptions of never-before encountered, or novel, tasks. The thesis will then describe a new approach to explore the nature of the relationship between two organizations, having different cultural biases, but assigned to address the same task. It will attempt to predict the changes in the cultural bias of each organization, and in turn its effect on efficiency when faced with a dynamic setting involving the resolution of novel tasks. The development of a computer simulation will be described, demonstrating how cultural biases lead to different outcomes for two organizations that face similar circumstances but have very different cultural lenses for interpreting those circumstances. The simulation will be assessed through simulated data concerning two cases, each of which had two organizations collaborating on a common mission, during the response activity following Hurricane Katrina in Louisiana. Beyond the specific case of disaster response, this research can demonstrate the value of modeling and simulating basic notions about organizational culture in order to better understand organizational behaviors.