UNIVERSITI TEKNOLOGI MARA

INFOSTRUCTURE MATURITY MODEL FOR DISASTER MANAGEMENT IN MALAYSIA

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PhD

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Disaster management is a topic that continues to grow in significance as countries and organizations seek to minimise the impacts caused by it. Despite evidence of organizations improving performance by following existing guidelines and procedures, there is little theory that explains how information is assessed in disaster. The study starts by reviewing the important resources during disasters that are information, structure and technology. A tailored infostructure term was defined for these resources and suitable indicators for infostructure were identified. With the introduction of infostructure tailored exclusively for disaster management, there is a need for organizations involved to assess the improvement of the infostructure usage. A measurement tool is built in the form of maturity model to provide evaluation and monitor the capability of the infostructure. The maturity model for the infostructure is validated by applying the model through a simulation exercise of disaster activities of an electricity company. This is mixed-method research, adopting sequential explanatory design where the quantitative phases were conducted by obtaining agencies' opinion and experience using survey questionnaire. Next, qualitative phases were done by interviewing select agencies to identify infostructure implementation during disasters. An electricity company in Malaysia that deals with disasters was selected as a case company to explore the usage of infostructure. The conceptual model of this research was built from the concepts of maturity model and quantitative results. Content analysis was adopted to analyse transcriptions on interview data, and results were integrated into the final maturity model. Key findings from this research produced a five-level maturity model named as infostructure maturity model (IMM) which include detailed description of each level. The IMM shows how the infostructure usage influences organization's maturity level. This suggest that an organization may identify the progression paths or improvement of the disaster processes of relevant organizations. This research is therefore beneficial to all players in the disaster management field as they grapple with trying to improve processes related to infostructure. The research believes that the IMM is applicable and suits the existing disaster management practices and it enables a company to assess maturity of its infostructure usage. This research also contributes to the disaster management field by offering a better and improved practices that can help to lessen damages to the company, public and nation.

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