

## MASTER'S THESIS

### Empirical studies toward DRP constructs and a model for DRP development for information systems function

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**Empirical Studies toward DRP Constructs and a Model  
for DRP Development for Information Systems Function**

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**A thesis submitted in partial fulfillment of the requirements  
for the degree of  
Master of Philosophy**

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## ABSTRACT

This thesis has two main contributions. First, this thesis proposes and validates a set of Disaster Recovery Planning (DRP) constructs for Information System Function (ISF). Second, this thesis examines a DRP development by studying the relationships between DRP constructs for ISF. These results are further explained below.

This thesis identifies fourteen DRP constructs from an extensive literature review. This thesis adopts an organizational system model as a mean to study a DRP development, by treating the validated DRP constructs as part of model components in the proposed model.

The verification of the proposed DRP constructs and model development is based on a database collected from a questionnaire survey. A total of 500 questionnaires were mailed to potential participants, 129 usable questionnaires were collected. The response rate is thus reported as 26.7%.

Through the convergent validity test, fourteen constructs are validated as the DRP critical success factors for ISF. These fourteen DRP constructs are: "Top management commitment", "Policy and goals", "Steering committee", "Risk assessment and impact analysis", "Prioritization", "Minimum processing requirement", "Alternative site", "Backup storage", "Recovery team", "Training", "Testing", "Documentation", "Maintenance", and "ISF personnel participation".

In the proposed DRP development, the path analysis is adopted to analyze the relationships between those validated DRP constructs, and is based on the concept of the organizational system model. The model has five main components, namely, "Top management leadership", "Management infrastructure sophistication", "Process management efficacy", "Stakeholder participation", and "Quality performance".

In this thesis, model component "Top management leadership" is represented by the DRP construct "Top management commitment". Model component "Management infrastructure sophistication" is represented by DRP constructs "Policy and goals", and "Steering committee". Model component "Process management efficacy" constitutes of four model sub-components "DRP analysis", "DRP design", "DRP implementation", and "DRP post-implementation". Whereas, model component "DRP analysis" is represented by three DRP constructs "Risk assessment and impact analysis", "Prioritization", and "Minimum processing requirement". Model component "DRP design" is represented by three DRP constructs "Alternative site", "Backup storage", and "Recovery team". Model component "DRP implementation" is represented by three DRP constructs "Training", "Testing", and "Documentation". Model component "DRP post-implementation" is represented by the DRP construct "Maintenance". Model component "Stakeholder participation" is represented by the DRP construct "ISF personnel participation". At last, model component "Quality performance" is represented by a model construct "Product quality".

The findings shown that the proposed DRP constructs play a significant and positive direct/indirect effects on others. It is also revealed in the proposed model that these DRP constructs contribute to the "Product quality" of DRP. The results shown that the proposed DRP development consists of a process sequential flow of: 1) "Top management leadership", 2) "Management infrastructure sophistication", 3) "Process management efficacy". Model component "Stakeholder participation" is considered as a monitoring mechanism to "Process management efficacy".

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