

MASTER'S THESIS

Adoption of quality practices in managing information systems

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**Adoption of Quality Practices
in Managing Information Systems**

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ABSTRACT

There are three major contributions that can be identified from this thesis. First, this thesis proposes a model to examine the adaptability of TQM practices in managing Information Systems Functions (ISF). Specifically, the results of the proposed model is based on the study of the relationship between the TQM practices and the ISF quality performance. Second, this thesis proposes a practical application of the findings of the above proposed model. The proposed application is to evaluate the discrepancies of TQM practices between the organizations of the following two groups: respondents that are satisfied with their ISF services, and respondents that are dissatisfied with their ISF services. The results reveal that the first group of respondents are practicing more of TQM factors than the second group. Hence, insightful implications for ISF managers are recommended. Third, the final version of the measurement items of TQM factors and the overall user satisfaction of ISF services can be rendered as a measurement tool for future research because they are vigorously refined and verified. In addition, the final version of the measurement items can also serve as a guideline for practitioners to implement TQM in ISF. The above first two results are further explained in the following paragraphs.

Originally, a model for examining the adaptability of TQM practices in managing ISF is proposed. The proposed model is based on the study of the relationship between the TQM practices and the ISF quality performance. In this model, TQM practices are represented by nine TQM factors found in literature; namely, IS top management support (F1), role of quality group (F2), training (F3), IS

product/service design (F4), supplier quality management (F5), process management (F6), quality information reporting (F7), employee relations (F8), and customer orientation (F9); whereas the ISF quality performance is represented by the overall user satisfaction of ISF services.

The verification of the proposed model is based on a data set which was collected from a questionnaire survey. A total of 628 questionnaires were mailed to both manufacturing and service firms, and 217 usable questionnaires were collected. Thus, the response rate is 34.5%.

The instrument then undergoes vigorous reliability and validity tests. All of the criteria of the tests are met except that one of the TQM factors of supplier quality management (F5) fails the test of convergent validity. Based on the results, this TQM factor is sub-divided into two new TQM factors, and named as the supplier quality assurance (F5a) and supplier relationship (F5b). Henceforth, there are a total number of ten TQM factors.

The proposed model is verified by the use of a statistical method called Structural Equation Modeling (SEM). In SEM, the ten TQM factors are treated as the independent variables and the overall user satisfaction is considered as the dependent variable. With a series of statistical refinement procedures, the final results are obtained. The results show that IS top management support (F1), IS product/service design (F4), quality information reporting (F7), and customer orientation (F9) are positively related to the overall user satisfaction of ISF services; whereas training (F3)

is negatively related to the overall user satisfaction of ISF services. Managerial implications of the findings are also presented.

An application of the above proposed solution is based on a statistical method called Two-group Discriminant Analysis. In this application, the respondents are firstly classified into two groups of participants. The first group constitutes participants who are satisfied with their ISF services, and the second group refers to participants who are dissatisfied with their ISF services. In the Two-group Discriminant Analysis, the two groups of participants are treated as the dependent variable. Whereas, the significant TQM factors of the proposed models are considered as the independent variables. The results show that respondents who are satisfied with their ISF services are practicing more of the following TQM factors than the second group of participants: IS top management support (F1), IS product/service design (F4), quality information reporting (F7), and customer orientation (F9). Again, managerial implication of these findings are presented.

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