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Effects of Risk Management Practice on the Success of IT Project

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Abstract

The objectives of this research were to explore risk management practices influencing the success of IT projects. Data were collected from 200 project managers, IT managers, and IT analysts in the IT firms through questionnaires and analysed using the Independent Sample t-test, One-way ANOVA, and Multiple Linear Regression at the statistical significance level of 0.05. The results demonstrated that the differences in organisational types affected the success of IT projects in all aspects, while the differences in organisational sizes affected the success of IT projects in terms of the aspect of product performance as well as total aspects.

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Keywords: risk management; information technology; project success; project management

1. Introduction

Successful IT project management was the most desirable for all organizations and stakeholders. IT project success or failure had long been interesting for researchers over the past 20 years. High failure rates of IT projects were caused by completion beyond budget, behind schedule, and without meeting requirements, and could threaten the very existence of the company [1]. The McKinsey Global Institute (MGI) reported that in 2012, on average, large IT projects run 45 percent over budget and 7 percent over time, while delivering 56 percent less value than predicted. Standish group (2014) reported that only 12% of projects had finished on time and on budget. Randell et al. [2] described that "70% of software projects fail due to poor requirements with an associated rework spend just north of $45 billion annually". Jenner [3] elaborated on depressing project failure rates between 50% and 70%. With these

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high failure rates, there were several attempts to reduce those failure rates. Many researches were conducted on the factors related to IT project success. Among several factors, risk management was one of the important factors that affected project success. Project Experts' Goff mentioned that risk management was a key part of project management for any project size [4]. Didagra [5] elaborated that risk management was the most important management tool a project manager can use to increase the likelihood of project success.

Although there was high importance of risk management to IT project success, the adoption of these risk management methods in practice is inconsistent [6, 7]. In addition, there were a lot of project managers that decided not to apply any risk management due to financial reasons. This research aimed to explore the influence of risk management practices on IT project success. The results from this study would provide guidance on the practical implementation of risk management concerns for IT project success.

2. Literature Review

2.1. Project Risk Management

Project risk management is the art and science of identifying, analyzing, and responding to risk throughout the life of a project and in the best interests of meeting project objectives [8]. Project risk management involved understanding potential problems that might occur on the project and how they might impede project success. Several research results indicated that poor risk management was a likely cause of project problems and failures. "Risk management is an essential process for the successful delivery of IT projects" [9, 10]. The body of research examining risk in IT projects spans over 30 years. Risk management researchers have focused on the examination of process models that provide prescriptions for risk management, typically including variations on the four processes of risk identification, assessment, response planning, and monitoring [11]. Schwalbe [8] expressed six processes that were involved risk management as follows: planning risk management, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, and risk monitoring & control.

Didagra [5] developed a model to investigate the relationship between risk management and IT project success and the model consisted of risk management in four categories; risk identification, risk analysis, risk response planning, and risk monitoring & control. The research results found that risk identification and risk planning did not influence the subjective performance of the project in terms of reliability, easiness, flexibility, satisfaction and quality. There was no method of risk management that influenced the objective performance of the IT project in terms of cost, schedule and effort. Therefore, the conclusions couldn't be generalized to all IT companies due to the reduced sample size to an unacceptable error margin. Further research in this field is mandatory to formulate a solid conclusion regarding the role and effects of applying risk management in successful IT projects. Credar [12] elaborated that every project had risk for example; resources left the organization, leadership changed and budgets got cut etc. There were many factors beyond control. However, many risks to projects can be mitigated or even eliminated with some forethought and ongoing management.

This research intended to fulfil the research gap by extending Didagra's model with the addition of organization factors in both types and sizes. The size of an organization or business can be defined in many ways, by the value of its annual sales or shipments, or by its annual gross or net revenue, the size of its assets, or the number of its employees [13]. In different countries, the definition is quite different. For example, The Ministry of Industry Thailand defined the business size according to the number of employees. Small organizations had less than 50 employees. Medium organizations had 50 to 200 employees and large organizations had more than 200 employees. Large organizations tend to be formal and more decentralized in decision-making. The public and private organization types were considered due to the differences in hierarchy, flexibility, and freedom in the organization that may affect IT project success.

2.2. Project Success

The success of IT project was an area of concern for many organizations around the world. There were a variety of approaches about the measurement of project success. DeLone and McLean expressed 6 measures for information system's project success as follows: system quality, user satisfaction, information quality, information use,