# THE ORGANIZATIONAL STRUCTURE AND HUMAN RESOURCE NORMS FOR JKR DISTRICT OFFICE WITH PROJECTS BELOW RM10 MILLION

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To my beloved parents, wife and children

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#### **ABSTRACT**

The success of a project depends on multiple factors such as financial capabilities, technical knowledge and sound project management practices. One very important factor that is often left out is the organizational structure and human resource requirement of a project organization. The setup of a project organization will determine how efficient and effective it will be and may be the deciding factor on whether a project will succeed or not. Not many researches have been done to determine how a particular project team structure can affect a construction project with the norm being a team is formed based on personal experience. Thus, this study aims to investigate the effectiveness of current JKR organization structure in managing conventional projects at the district level in order to propose an improved and more effective method on deciding the best team setup, and develop a model for project team structure and human resource requirement. This study is divided into three phases: Phase 1 is the literature review and preliminary interview; Phase 2 involves of identification and development of current norms model from expert interviews; Phase 3 focuses on analysis and improvement of current organizational structure model. The outcome of this study is a template of a JKR District Office organizational structure and human resource norms that is more effective and efficient through the integration of the 10 Principles of Organization.

## **ABSTRAK**

Kejayaan sesebuah projek bergantung kepada pelbagai faktor. Antaranya adalah kekuatan kewangan, kebolehan teknikal dan juga amalan pengurusan projek yang berkesan. Salah satu faktor yang jarang mendapat perhatian walaupun tidak kurang penting adalah struktur organisasi dan keperluan sumber manusia sesbuah pasukan atau organisasi projek. Susunatur organisasi akan menentukan kecekapan dan keberkesanan sesebuah pasukan projek dan ini adalah antara faktor utama yang menjayakan sesebuah projek. Sehingga hari ini, tidak banyak penyelidikan telah dilaksanakan untuk menentukan kesan struktur organisasi ke atas projek. Oleh demikian, kajian ini dilakukan untuk menyiasat keberkesanan struktur organisasi JKR dalam pengurusan projek jenis konvensional di peringkat daerah dan seterusnya mencadangkan satu struktur organisasi projek yang lebih mantap dan berkesan selain mengenalpasti keperluan sumber manusia. Kajian ini dipecahkan kepada tiga fasa iaitu: Fasa 1 untuk kajian ilmiah dan temuduga awalan; Fasa 2 untuk mengenalpasti dan membangunkan model struktur organisasi semasa dengan menemuduga pakar; dan Fasa 3 melibatkan analisa dan serta penambahbaikan ke atas struktur organisasi semasa berkenaan. Di akhir kajian ini, satu templet rekabentuk struktur organisasi serta norma sumber manusia untuk sebuah Pejabat Daerah akan terhasil berdasarkan 10 Prinsip Organisasi.

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#### **CHAPTER 1**

## **INTRODUCTION**

#### 1.1 Introduction

Organization structure and human resource are two very important concepts in managing the modern organization. Human resource is a modern term commonly used to define the function within an organization that is responsible for implementing strategies and policies involving the management of individuals.

JKR Malaysia is the premier technical agency responsible for implementing infrastructure development project for the nation. As one of the largest government department with employees reaching up to 16,000 personnel all over the country, organizational structure and human resource is now a critical point that must be managed successfully to ensure all government development objectives set in the National Plan are achieved satisfactorily. Under the current structure, JKR is divided into 3 levels starting from JKR District that reports to JKR State and finally JKR Malaysia headquartered in Kuala Lumpur.

In the 9<sup>th</sup> Malaysia Plan, the number of projects to be completed by JKR Malaysia is 5,841 and up until 31 Dec 2009 only 3,589 or 61.44% has been completed. Within one year, JKR still has 2,252 projects to be completed if the objectives of the 9th Malaysia Plan are to be achieved and this is just not possible. The key reason to the inability to obtained the targets set for the National Plan most often been cited as the lack of resources to supervise all the projects, specifically the lack of manpower.

#### 1.2 Problem Statement

As a government department, JKR is required to comply with all circulars and General Orders (G.O) made by Jabatan Perkhidmatan Awam (JPA) on matters involving human resources and organizational structure. Among these circulars, there are instructions and guidelines on the structure of organization and staffing ratios or norms. However, these guidelines do not include the structure and human resource norms for project teams in the field. With no specific guidelines available, the norm for HR requirement for projects is unknown and often left to managers to be decided based on personal experience and preference.

Therefore, it is important to determine with certainty the current method practiced in JKR with focus on District level before any improvement is proposed. Tatum (1986) found that although managers understand the need of organization, this attention is often limited to organization charts only and any other elements in the structure evolve only as "informal organization". This attitude reduces project performance as a whole and creates unnecessary tension and pressure to the members of the project team.

Researches were done since early 1980's on project organizational structure and its design (Tatum, 1983; Tatum, 1985; Cheng et.al., 2003; Dias, 1989) but with different approaches. Currently there are no systematic method on designing project organizational structure as there are too many independent variables involved in a project (Tatum 1986) but several criteria has been identified as able to assist project managers on this matter.

## 1.3 The Aim and Objectives

The aim of this study is to propose a norm on organizational structure and human resource requirements for JKR District level. The following objectives will ensure this aim is met:

- a) To identify current JKR project organization structure and human resource requirement in district-managed projects.
- b) To investigate the effectiveness of current JKR project organization structure and human resource management at JKR District level.
- c) To propose the best project organization setup and human resource norms for JKR District Office

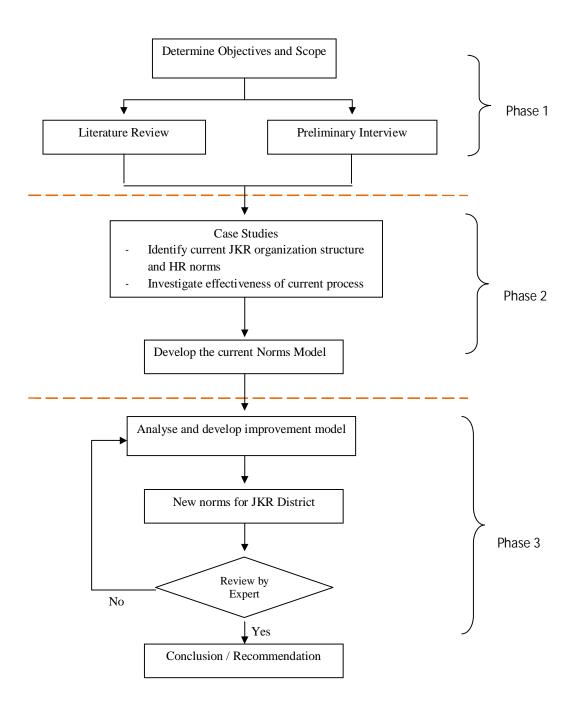
## 1.4 Scope and Limitation of Study

For the purpose of paper study, only five JKR districts with projects costing less than RM10 million is selected and studied. The focus is only on projects already in the construction phase as this is the core business function of JKR District. The reason for choosing five districts as case studies is to ensure District Engineers from grades J44, J48 and J52 are in the study. Difference in grades presents a significant impact as it indicates different organizational structure and human resource availability. Ideally, all phases in the project lifecycle such as initiation, planning, procurement and completion should also have norms developed but due to time constraint the scope is limited only to the construction phase.

## 1.5 RESEARCH METHODOLOGY

Research methodology is the model or framework used by researchers on how to carry out a study. The framework consists of several processes that include the act of collecting information as foundation of knowledge, collecting raw data and samples, analysis of data and interpretation of findings. In order to achieve the objectives of this study, *Figure 1.1* illustrates the schematic of research methodology. It consists of three separate phases.

Phase 1 covers the literature review and preliminary interview with experts in the organization. Phase 2 encompasses the case studies of current management process or norms and investigation of the issues involved. This will be the basis for the development of current norm practiced. Phase 3 is the final phase where analysis of the current model is done and improvements to be proposed. The final product will be a guideline for project structure and human resource requirements.



**Figure 1.1** Schematic of research methodology

## **REFERENCES**

- Bahagian Korporat, JKR Pahang (2007). Kertas Cadangan Penstrukturan Semula Jabatan Kerja Raya Negeri Pahang Darul Makmur. Kuantan: JKR Pahang
- Cawangan Pengurusan Projek Kompleks, JKR Malaysia (2008). Strategi Penempatan Profesional Baru Di JKR Daerah. Kuala Lumpur: PROKOM
- Cheng, M.Y., Su, C.W. and You, H.Y. (2003). Optimal Project Organization Structure for Construction Management. *Journal of Construction Engineering and Management*. 129(1).
- Forrester, R. and Drezler, A.B. (1999). A Model for Team-based Organization Performance. *The Academy of Management Executives*. 13(3): 36-49.
- Galbraith, J.R. (1971). Matrix Organization Design: How To Combine Functional and Project Forms. *Business Horizons*: 29-40
- Galbraith, J.R. (1974). Organization Design: An Information Processing View. *INTERFACES*. 4(5)
- Galbraith, J.R. (1995). Designing Organizations. San Francisco: Jossey-Bass
- Graicunas, V.A. (1933). Relationship In Organization. *Bulletin of the International Management Institute*. 7, 39-42
- Kerzner, H. (2006). Project Management: A Systems Approach to Planning, Scheduling, and Controlling. (9<sup>th</sup> ed.) Hoboken, N.J.: John Wiley and Sons

- Kvale, S. (1996). *InterViews: An Introduction to Qualitative Research Interviewing*. Thousand Oaks, California: Sage Publications.
- Lind. M. and Seigerroth. U. (2003). Team-based reconstruction for expanding organizational ability. *The Journal of Operational Research Society*. 54(2): 119-129.
- Mintzberg, H. (1979). *The Structuring of Organizations*. Eaglewood Cliffs, N.J.: Prentice Hall
- Mintzberg, H. (1983). Structure in fives: Designing Effective Organizations. Eaglewood Cliffs, N.J.: Prentice Hall
- Mullins, L.J. (2008). *Essentials of Organisational Behaviour*. (2<sup>nd</sup> ed.) Edinburgh Gate, England: Prentice Hall
- Pejabat Ketua Pengarah JKR Malaysia (2007). JKR Strategic Framework 2007 2010. Kuala Lumpur: JKR Malaysia
- Pinto, M.B., Pinto, J.K. and Prescott, J.E. (1993). Antecedents and Consequences of Project Team Cross-functional Cooperation. *Management Science*. 39(10): 1281-1297
- Stewart. G.L. and Barrick, M.R. (2000). TEam Structure and Performance: Assessing the Mediating Role of Intrateam Process and the Moderating Role of Task Type. *The Academy of Management Journal*. 43(2): 135-148.
- Saddler, P. (1971). Designing an Organizational Structure. Management International Review. 11(6). 19-33
- Tatum, C.B. (1989). Organizing To Increase Innovation In Construction Firms.

  Journal of Construction Engineering and Management. 115(4).

- Tatum, C.B. (1984). Organizing Large Projects: How Managers Decide. *Journal of Construction Engineering and Management*. 110(3).
- Tatum, C.B. (1986). Designing Project Organizations: An Expanded Process. Journal of Construction Engineering and Management. 112(2).
- Tatum, C.B. and Fawcett, R.P. (1986). Organizational Alternatives for Large Projects. *Journal of Construction Engineering and Management*. 112(1).
- Tatum, C.B. (1990). Integration: Emerging Management Challenge. *Journal of Management in Engineering*. 6(1).