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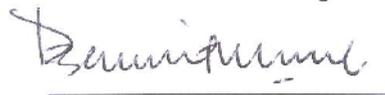
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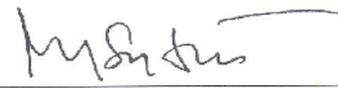
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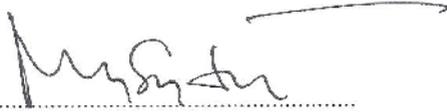
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PROJECT MANAGEMENT CRITICAL SUCCESS FACTORS IN  
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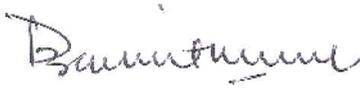
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A capstone project report submitted in fulfilment of the  
requirements for the award of the degree of  
Master Project Management

Faculty of Civil Engineering  
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To my beloved mother, Hajjah Sakinah Ismail; my wife, Maizurah Idris and my children Hafidz, Farhah, Raihan and Naziha who have been able to tolerate the weekends I was away from them. They were the pillar of strength for me to come out with this study. May Allah bless them.

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## **ABSTRACT**

Identification of suitable critical success factors is of significance importance to guide any organisation towards achieving satisfactory performance in project delivery and addressing customers' requirements. This seems to be equally important for JKR, being the leading technical consultant in delivering public projects. However, despite the many years of service, JKR is still searching for the most suitable elements for the successful projects delivery. Therefore this study has been undertaken as one of the effort to identify the project management critical success factors for JKR. This study was conducted using the data generated from within JKR personnel as well as other major stakeholders namely the clients departments, consultants and contractors. This is to ensure that critical success factors that have been generated from the JKR respondents can be compared with those findings from others. The finding of the study indicated that the critical success factors generated based on data from JKR respondents do not differ so significantly from non JKR respondents. Among the critical success factors found from this study are: adherence to quality target, meeting the clients' requirements in product delivered and the need to engage the service of highly experienced personnel in managing high profile project. It is hope that these critical success factors will assist JKR in determining its direction in meeting the current challenges especially in meeting or exceed the client's expectation in project delivery and to tackle the external stakeholders from their respective perspectives. JKR can also use these factors to form the strategic Key Performance Indicators (KPIs). The findings from this study also will help the project managers in JKR to be able to improve their project management process, hence will translate into successful project delivery system; satisfying all the stakeholders.

## ABSTRAK

Mengenalpasti faktor kritikal kejayaan yang sesuai adalah amat penting sebagai panduan untuk organisasi menuju kearah pencapaian yang memuaskan serta berkebolehan memenuhi kehendak pelanggan. Ini adalah mustahak bagi JKR yang merupakan perunding utama dalam penyampaian projek-projek awam. Walaupun telah bertahun-tahun memberi perkhidmatan, JKR masih lagi mencari-cari elemen yang sesuai untuk kejayaan penyampaian projek. Kajian ini dijalankan untuk mengenalpasti faktor kritikal kejayaan pengurusan projek JKR. Pelaksanaan kajian ini adalah menggunakan data-data yang dicerap dari kalangan profesional JKR disamping pihak berkepentingan utama iaitu jabatan pelanggan, perunding dan kontraktor. Ini adalah bagi membolehkan perbandingan dibuat antara faktor kritikal kejayaan JKR dengan penemuan dari pihak lain. Penemuan dari kajian ini menunjukkan bahawa faktor kritikal kejayaan dari responden JKR tidak jauh memesong dari responden bukan JKR. Antara faktor kritikal kejayaan yang ditemui adalah, mematuhi sasaran kualiti, memenuhi kehendak pelanggan terhadap produk yang disampaikan dan perkhidmatan oleh kakitangan berpengalaman dalam mengurus projek berprofil tinggi. Adalah menjadi harapan agar faktor kritikal kejayaan ini dapat membantu JKR memacu halatuju untuk menghadapi cabaran semasa terutama dalam memenuhi atau melampaui espektasi pelanggan dalam penyampaian projek. Disamping itu juga, ia dapat digunapakai sebagai panduan untuk menghadapi pihak luar yang ada kepentingan terhadap pengurusan projek JKR dari perspektif mereka. JKR juga boleh menggunakan faktor-faktor tersebut untuk merangka Petunjuk Utama Prestasi (KPI) strategik jabatan. Penemuan dari kajian ini juga dapat membantu pengurus projek JKR untuk menambahbaik pengurusan projek bagi memastikan projek diserahkan dengan jayanya; memberi kepuasan kepada pihak berkepentingan.

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**LIST OF ABBREVIATIONS**

ACAT	Acquisition Categorization
ACEM	Association of Consulting Engineers Malaysia
ACWP	Actual Cost of Work Performed
BCWP	Budgeted Cost of Work Performed
CIDB	Construction Industry Development Board
COQ	Cost of Quality
COWP	Cost of Work Performed
CSF	Critical Success Factor
D & B	Design and Build
EV	Earned Value
FM	Facility Management
KPI	Key Performance Indicators
mySPATA	Management of Movable Assets
NAFAM	National Asset and Facility Management
PMC	Project Management Consultant
<i>p</i> -value	Probability value
SPSS	Statistics Package for Social Science
TQM	Total Quality Management
Q-Q Plot	Quartile-Quartile Plot
RII	Relative Importance Index

## CHAPTER 1

### INTRODUCTION

#### 1.0 Introduction

JKR being the biggest technical organization in the country is entrusted by the Government of Malaysia to be its main project implementer. In all the Five-year Malaysia Plans (RMK 1 to RMK 9), JKR has been delivering various buildings, infrastructures and civil engineering projects to all government departments throughout the nation. In the 9<sup>th</sup> Malaysia Plan, it was no exception. In the 9<sup>th</sup> Plan, JKR was supposed to deliver 6,116 projects to the various clients' departments. As till 31<sup>st</sup> July 2010, JKR has received a total of RM 42.906 billion to carry out these projects. On top of that JKR also had to handle another 4,844 projects valued at RM 2.53 billion for the Economic Stimulation Package (PRE). At the end of 2009, being the fourth year of the plan, only 64.4% of these projects were delivered. As until end of July 2010, 88.42% or 4,160 had been completed after deducting 242 projects at pre-tender stage, 962 projects under construction to be completed in 10<sup>th</sup> Malaysia Plan and 207 projects been postponed or shelved by the client departments. As at September 2010, out of 1,507 (RMK 9) projects under construction 87 or 5.77% (87 of 1,507) were categorised as 'sick projects' (2 months or 20% behind schedule). (Nota Jemaah Menteri-Status Kemajuan Pelaksanaan Projek RMK9 sehingga 31hb Julai 2010).

It can be deduced that JKR failed to deliver 1,204 projects (242 + 962) or 19.68% in the 9<sup>th</sup> Malaysia Plan and on top of that 5.77% were sick which were not completed as schedule.

The 10<sup>th</sup> Malaysia Plan started in 2011 and like previous trends JKR again has to handle thousands of projects within the 5 year period. JKR has to improve if it is to gain the confidence of the Government, the clients' departments, the public and other stakeholders in delivering their buildings or roads. There are plenty of consultants waiting to provide project management services to these departments if JKR failed to do so.

### **1.1 Background of the study**

The nagging problem with JKR, that there are always shortfalls in project delivery. Four main areas of concern are; JKR fails to deliver as per required number of projects expected from them, the poor workmanship or quality (does not involve all projects) of the projects handed over to clients, cost overrun and fourthly, is the delay in projects delivery to the clients. Some factors are lacking on why JKR fails in fulfilling its clients' charter namely; on-time delivery, within agreed cost and aesthetically pleasing. On top of that JKR also needs to look at the intangible factors that also affect the project management or products delivered to the clients.

In order to improve on these entire shortfalls, JKR has to improve on its project management. Critical factors that affect the JKR's project management practice needs to be addressed. JKR has to know what these critical success factors were, from the perspective of various parties or stakeholders. Once known, all these can later be instilled or implemented in order to improve the project management hence will be able to deliver the projects to the customer on time, with expected quality and agreed cost.

The study was important because, other than meeting the clients' satisfaction it is another way on how JKR can delight the customers. They are important to JKR

since they are the ones what make JKR relevant as an organization and also to the development of the nation.

## **1.2 Aim and objectives of study**

The aim of the study is to identify the critical success factors of JKR project management from the viewpoints or perspectives of various stakeholders, namely the internal and external stakeholders. Internal stakeholder is JKR itself whether its staff or the organization as a whole. The external stakeholders can be any persons, departments (other than JKR), public and others who are affected or related directly or indirectly to the projects. To achieve this aim, three objectives had been set. They were:

- i) to establish key important critical success factors in project management.
- ii) to identify the critical success factors of JKR project management based on JKR's perspective.
- iii) to identify the critical success factors of JKR project management based on stakeholders' perspective.
- iv) to compare the critical success factors of JKR's perspective to the external stakeholders' perspective.

Objective (i) was determined from the literature review of journals articles from the various authors related to the subject matter. The objectives (ii) and (iii) were the assessed contributing success factors as gathered from the internal and external stakeholders respectively.

## **1.3 Scope and limitation of study**

The scope of this study was limited to the followings:

i) Time

The time frame of this study was subjected to the one stipulated by the time table of the taught course of the Master Degree programme by UTM. It was spread over 2 semesters. The duration was from July to October 2010 for the first part of the study (the pre-capstone) and the second part (data collection, analysis and conclusion) was the first half of 2011.

ii) Location

All data collected were from construction projects implemented in Peninsular Malaysia. These will more uniform since projects implementation in Peninsular Malaysia and East Malaysia will be affected by different parameters and geographical conditions. These may include location, materials, labour pricings, work culture and others. Maybe these parameters can be looked at with further study.

iii) Data Collection

Data collection was divided into two target groups namely the internal and external stakeholders. The two groups will be discussed in detail in Chapter 4.

iv) Stakeholders

Project stakeholders are individuals and organizations that are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or project completion; they may exert influence over the project and its result.

(PMI, 2000)

For this study, the external stakeholders were the clients departments, consultants and contractors. They are the organizations that were affected by the

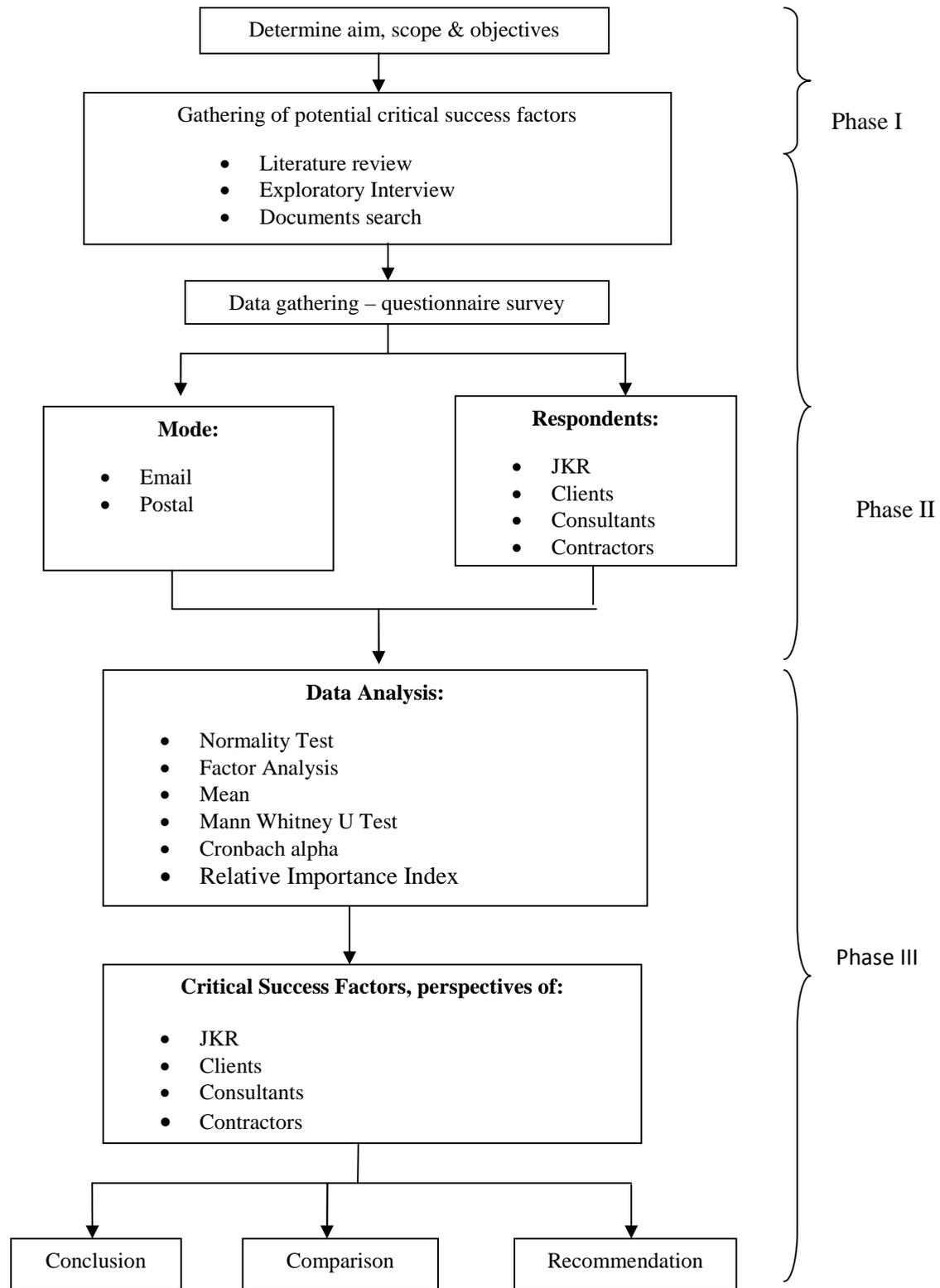
result of the JKR's project execution. If the projects were completed within the schedule they are positively affected and vice versa. These stakeholders contribute to the success or failure of project management in JKR and they are active players as far as JKR project management is concerned.

The internal stakeholders were within JKR itself that was its staff. The target groups were the professional in JKR in all disciplines whether they are engineers (civil, electrical or mechanical), architects and quantity surveyors. They were the ones who at any time of their career in JKR will be involved in project management. They were the District Engineers, the professionals at the headquarters and states, project teams, design teams, construction site teams {Project Directors (PD), Project Director Representatives (WPD), Superintending Officer (SO), and Superintending Officer Representatives (SO)}.

Like the researchers before them, Dvir et al (2003) looked at success through the eyes of the main stakeholders; the end-user, the project manager and the contracting office. In relation to JKR project management, the end-users are the clients' departments and the project manager is JKR itself or its professionals. The main stakeholders are the consultants and the contractors.

#### **1.4 Brief Research Methodology**

The research methodology is presented by means of flow chart for ease of understanding. This is shown in Figure 1.1. The detail description will be elaborated in Chapter 4.



**Fig. 1.1** – Schematic of Research Methodology

## 1.5 List of Chapters

The chapters that are included in this report are:

- Chapter 1 discussed on why the study is being carried out, the aim, objectives and the scope and limitation.
- Chapter 2 presented on the basic concept of critical success factors.
- Chapter 3 is on the current key issues in project management.
- Chapter 4 detailed out on the methodology used to carry out this study.
- Chapter 5 is on the data that has been collected and the analyses done on the data
- Chapter 6 is about the discussion of the results that were gained from the analyses of the data.
- Chapter 7 is the last chapter and concludes this study and presented the suggestions and also the recommendations for further study.