STUDY ON CAUSES OF DELAY FOR GOVERNMENT CONSTRUCTION PROJECT IN KUCHING, SARAWAK

NURUL ASYILAH BINTI ROMZI

B. ENG (HONS.) CIVIL ENGINEERING

UNIVERSITI MALAYSIA PAHANG
SUPERVISOR’S DECLARATION

I/We* hereby declare that I/We* have checked this thesis/project* and in my/our* opinion, this thesis/project* is adequate in terms of scope and quality for the award of the Bachelor Degree of Civil Engineering

________________________________________
(Supervisor’s Signature)
Full Name : Dr. Doh Shu Ing
Position : Deputy Dean (Research & Postgraduates Study)
Date : 26th December 2017

________________________________________
(Co-supervisor’s Signature)
Full Name :
Position :
Date :
STUDENT’S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

__________________________________________
(Student’s Signature)

Full Name : Nurul Asyilah Binti Romzi
ID Number : AA14258
Date : 26th December 2017
STUDY ON CAUSES OF DELAY FOR GOVERNMENT CONSTRUCTION PROJECT IN KUCHING, SARAWAK

NURUL ASYILAH BINTI ROMZI

Thesis submitted in fulfillment of the requirements for the award of the Bachelor Degree in Civil Engineering

Faculty of Civil Engineering and Earth Resources
UNIVERSITI MALAYSIA PAHANG

DECEMBER 2017
ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious and the Most Merciful Alhamdulillah, all praises to Allah for His blessing in giving me strengths and power to overcome obstacles in completing this thesis.

I would like to dedicate this thesis to my family, Mr. Romzi Bin Adin and Mrs. Siti Zubaidah Binti Abol, my sisters Nurul Athirah, Nurul Asyiqin, Nurul Ameerah and my brothers Muhammad Ameerul Fikri and Muhammad Ameerul Faris for their endless love, prayer, and encouragement.

Special appreciation goes to my supervisor, Dr. Doh Shu Ing, for his supervision and constant support. I am truly appreciated his invaluable help in giving comments and suggestions throughout the thesis works which have contributed to the success of this research.

My sincere thanks also go to the rest of my thesis committee, friends and to those who indirectly contributed in this research for their excellent co-operation, encouragement, insightful comments, and support during this research.

Last but not least, I would like to express my deepest appreciation to myself for staying strong for all the struggles during the whole extent of this thesis.
# TABLE OF CONTENTS

DECLARATION

TITLE PAGE

ACKNOWLEDGEMENT ii

ABSTRACT iii

ABSTRAK iv

TABLE OF CONTENT v-vii

LIST OF TABLES viii

LIST OF FIGURES ix

LIST OF ABBREVIATIONS x

CHAPTER 1 INTRODUCTION 1

1.1 Background of Study 1

1.2 Problem Statement 2

1.3 Research Objectives 3

1.4 Scope of Study 4

1.5 Significance of Research 4

CHAPTER 2 LITERATURE REVIEW 6

2.1 Introduction 6

2.2 Definition 6

2.3 Type of Delays 8

2.3.1 Excusable Delays 8

2.3.1.1 Excusable Compensable Delays 9
2.3.1.2  Excusable Non-Compensable Delays  9
2.3.2  Non-Excusable Delays  10
2.3.3  Concurrent Delays  10
2.4  Research on Delay  11
  2.4.1  Manufacturing  11
  2.4.2  Medical  13
  2.4.3  Construction  14
2.5  Causes of Construction Delay  16

CHAPTER 3 METHODOLOGY  21
  3.1  Introduction  21-22
  3.2  Project Flow Chart  23-24
  3.3  Gantt Chart  25-26
  3.4  Milestone  27-28
  3.5  Question Design  29-32
  3.6  Sampling Method  33
  3.7  Data Validation  34
  3.8  Data Analysis  35

CHAPTER 4 RESULTS AND DISCUSSION  36
  4.1  Introduction  36
  4.2  Respondent Demographic Characteristic  36
    4.2.1  Gender  37
    4.2.2  Age  38
    4.2.3  Involvement in Construction  39
    4.2.4  Years of Experience in Construction  40
LIST OF TABLES

Table 2.1  Previous Research on Causes of Delay .................................................. 16
Table 3.1  Research Methodology Design ............................................................... 22
Table 3.2  Project Schedule .................................................................................... 25
Table 3.3  Project Milestone .................................................................................. 27
Table 4.1  Gender Distribution of Respondent ....................................................... 37
Table 4.2  Age Classification .................................................................................. 38
Table 4.3  Respondent Involvement in Construction ............................................. 39
Table 4.4  Respondent years of experience in construction ................................. 40
Table 4.5  Degree of Agreement .......................................................................... 41
Table 4.6  Cronbach α Coefficient ...................................................................... 42
Table 4.7  Six categories of causes of delay mean and rank ............................... 43
Table 4.8  Client-related mean and rank ............................................................... 44
Table 4.9  Contractor-related mean and rank ...................................................... 45
Table 4.10 Labour/Equipment-related mean and rank ....................................... 46
Table 4.11 Material-related mean and rank ......................................................... 47
Table 4.12 The most 5 crucial causes of delay in construction ......................... 50
LIST OF FIGURES

Figure 1.1 Percentage of Project facing time overrun in term of days 3
Figure 2.1 Type of Delays 3
Figure 3.1 Project Flow Chart 23
Figure 3.2 Project GanttChart 26
Figure 3.3 Project Milestone Chart 28
Figure 3.4 Questionnaire via e-mail 29
Figure 3.5 Question Design 29
Figure 3.6 Section A of Questionnaire 30
Figure 3.7 Section B of Questionnaire 30
Figure 3.8 Client-related and contractor-related factors 31
Figure 3.9 Consultant-related and material-related factors 31
Figure 3.10 Labour/equipment-related and external-related factors 32
Figure 3.11 Section D of Questionnaire 32
Figure 3.12 Convenience Sampling 33
Figure 3.13 One of step in SPSS to perform reliability test 34
Figure 3.14 One of step to perform one-way ANOVA 35
Figure 4.1 Gender percentage of respondent 37
Figure 4.2 Age percentage of respondent 38
Figure 4.3 Involvement in construction percentage of respondent 39
Figure 4.4 Years of experience in construction of respondent 40
Figure 4.5 Reliability Statistic 42
Figure 4.6 Six categories of causes of delay mean 43
Figure 4.7 Client-related mean 44
Figure 4.8 Contractor-related mean 45
Figure 4.9 Labour/Equipment-related mean 46
Figure 4.10 Material-related mean and rank 47
Figure 4.11 Top 5 highest mean of causes of delay 49
# LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPSS</td>
<td>Statistical Package Social Science</td>
</tr>
<tr>
<td>BIM</td>
<td>Building Information Modelling</td>
</tr>
<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
</tr>
<tr>
<td>KPKT</td>
<td>Kementerian Kesejahteraan Bandar, Perumahan dan Kerajaan Tempatan</td>
</tr>
</tbody>
</table>