

**PROGRAM OF QUANTITY SURVEYING
DEPARTMENT OF BUILT ENVIRONMENT STUDIES
AND TECHNOLOGY, FACULTY OF ARCHITECTURE,
PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA PERAK BRANCH**

**FACTORS CONTRIBUTE TO FLEXIBLE PAVEMENT
FAILURE IN PERAK**

Dissertation submitted in partial fulfilment of the requirement for the
award of Bachelor of Quantity Surveying (Honours)

**PREPARED BY: AFIQAH NUR EIZWANI BINTI AZMI FARIED
(2019488934)**

SEMESTER: SEPTEMBER 2019 - FEBRUARY 2021

ABSTRACT

In recent years, the deteriorating condition of the flexible pavements due to the effect of increase heavy vehicles load has become the subject of great concern of many. Road construction in most countries faces challenges where there is obvious failure in road pavement. Majority of road in Malaysia are using flexible pavement. The contractor has taken a few initiatives to improve the pavement and reduce the failure of pavement, but the failure is still happening. The aim of this research is to analyse the factor contribute to flexible pavement failure to help the authorities including contractor to improve their roles in making flexible road pavements strong and safe for the user based on problem of the current road. The failure of the road pavement has causing inconvenience to the road user and sometimes can cause accident among users. In this study, objectives of the research are to determine the factor that contributing to the failure of the flexible pavements, to identify the failure severity of flexible pavement that obstruct the functions of the road and to suggest the improvement for reducing the failure of the flexible pavement for the future road construction. It is important to improve and reduce the failure of the flexible pavement for the future road construction. In order to achieve this objective, a quantitative method of research is used and questionnaire as the tools for data collection. This study adopted stratified sampling method for data collection. The questionnaire was developed and distributed to contractor Grade 7 firms registered with CIDB and Quantity surveyor consultant firm registered in BQSM. All data have been analysed using Statistical Package Social Science (SPSS) software version 27. As a result, the factor that contributing to the failure of the flexible pavements were known which is construction quality and materials and the highest failure that occur on road is cracking. Last but not least, in term of recommendation the most agreed suggestion for reducing the failure of the flexible pavement for the future road construction is by taking care the quality of material.

ACKNOWLEDGEMENT

In the name of Allah, the Most Beneficent, the Most Merciful.

With high gratitude to Allah S.W.T who gave me the ideas and strength in preparing this final dissertation. Despite the obstacles that I went through to complete this final dissertation, with His permission and grace, I managed to complete this final project successfully.

First of all, I would like to extend my heartfelt gratitude and appreciation to my supervisor who has given me guidance and support and contribution of ideas in preparing this final dissertation. In addition, a special thanks for his insightful supervision, encouragement, thoughtful criticisms throughout the research. Without the support from him, completion of this project would not have been possible. I am also indebted to all my friends for their moral support and encouragement during the preparation of this final project.

I would also like to express my gratitude to those who have helped me in achieving this research aim and objective by agreeing to be surveyed and sharing their expertise and insight on the realities of the construction sector. Last but not the least, I dedicate this final project to my beloved parents and family members for the devotion, education and endless pouring of love and never stop giving me their encouragement and full support in order for me to complete my final project. Thank you for all the understanding given to me when I really needed it.

Thank you.

TABLE OF CONTENTS

ABSTRACT	ii
ACKNOWLEDGEMENT	iii
LIST OF FIGURES	xi
LIST OF TABLES	xii
LIST OF APPENDICES	xiv
LIST OF ABBREVIATIONS	xv
CHAPTER 1	2
INTRODUCTION.....	2
1.1 BACKGROUND OF STUDY	2
1.2 RESEARCH PROBLEM.....	4
1.2.1 Poor Road condition.....	4
1.2.2 There are many potholes.....	5
1.2.3 Road maintenance is expensive	5
1.3 RESEARCH AIM	7
1.4 RESEARCH OBJECTIVES	7
1.5 RESEARCH QUESTIONS.....	7
1.6 SCOPE OF RESEARCH	7
1.6.1 Location.....	7
1.6.2 Respondents	8
1.6.3 Limitation	9
1.7 RESEARCH METHODOLOGY	9
1.7.1 Method of methodology	9
1.7.2 Data collection	10

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

In Malaysia, the transportation system experiencing a rapid development in the recent years because Malaysia is moving towards of becoming one of a developed country. Every people on earth need to use road as it plays an important part in the trade and to stay in connection to daily lives. The quality of existing road and new roads throughout its lifespan cannot be neglected (M. Jayakumar and Lee Chee Soon, 2015). Each of infrastructure projects requires sustainability aspects consideration. This is supported by (Shamil Ahmed, 2017) more recent attention gives focused on maintaining the infrastructure in a good condition to ensure that the pavement continues to be effective, and functions based its required standards throughout its entire design lifespan. However, Malaysia construction of roads is implemented mainly by the Federal Government and State Government. It is estimated 3000 kilometers of paved road will be constructed in the Eleventh Malaysia Plan (2016 to 2020), where an allocation of RM2 billion has been declared in Malaysia's budget 2018 for the construction of Pan-Borneo Highway and another RM934 million for constructing and improving the road infrastructure in the rural areas of Malaysia. The state road is entire road that constructed by state under the administration of the Malaysian highways authorities according to the JKR standard and all the maintenance of this road is the state responsibility and done through the state JKR (Malaysian roads general information, 2003).