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**SMART CONSTRUCTION CONCEPT: PERCEPTION OF G7
CONTRACTORS IN SARAWAK**

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ABSTRACT

Smart construction has widely appeared in construction industry because of the rapid growth and maturity of evolving Information and Communication Technology (ICT). The smart construction project has been implemented in Hong Kong-Zhuhai-Macao Bridge whereby the intensive use of ICT has been applied in the project. However, smart construction concept has not been implemented in Malaysia yet due to Malaysia still using traditional procurement method as the main procurement during construction project. The use of ICT in construction industry is seen to be more suitable for big scale and risky projects. The research aim for this research is to ascertain the perception of G7 contractors to the concept and characteristics of smart construction and its future prospect to Sarawak construction industry. Therefore, several objectives have been constructed which includes to study the concept of smart construction, to identify the level of knowledge on smart construction among professional in G7 contractor companies and to determine factors that hinder the implementation of smart construction faced by the professional in G7 contractor companies. The objective can be achieved by using data collection such as literature review and questionnaire survey which are distributed to the company director, project managers, architects, engineers and quantity surveyors in Kuching district. SPSS software has been used to analyse the findings. The findings revealed that the respondents have high level of knowledge on the smart construction. However, the findings revealed that the factors that hinders the implementation of smart construction are the high cost of acquiring or purchasing specialized software, high cost for training staff for ICT application and lack of skills in ICT among staff and project team. The findings can be used to cater the factors that hinders the implementation of smart construction in construction industry.

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TABLE OF CONTENTS

| | |
|-----------------------------------|-----|
| ABSTRACT | i |
| ACKNOWLEDGEMENT | ii |
| TABLE OF CONTENTS | iii |
| LIST OF FIGURES | vi |
| LIST OF TABLES | vii |
| LIST OF ABBREVIATIONS | ix |
| | |
| CHAPTER 1 INTRODUCTION | 1 |
| 1.1 INTRODUCTION | 1 |
| 1.2 RESEARCH BACKGROUND | 1 |
| 1.3 PROBLEM STATEMENT | 2 |
| 1.4 RESEARCH AIM | 3 |
| 1.5 RESEARCH OBJECTIVES | 3 |
| 1.6 RESEARCH QUESTIONS | 4 |
| 1.7 SCOPE OF RESEARCH | 4 |
| 1.8 TENTATIVE CHAPTER | 5 |
| 1.9 SUMMARY OF CHAPTER | 5 |
| CHAPTER 2 LITERATURE REVIEW | 7 |

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter will discuss about the research background, problem statements, aim, objectives, research questions, scope of research and significance of research.

1.2 BACKGROUND RESEARCH

According to Schwab (2016), the 4th Industrial Revolution is a change driven by three major technological domains, namely physical, digital and biological. This revolution will affect human life in terms of the way they live, work and have relationships. Schwab (2016) also added that the world today is moving towards a new revolution which is 4th Industrial Revolution whereby the application of ICT is the basis of this new industrial revolution. This 4th Industrial Revolution has introduced digital technologies, sensor systems, intelligent machines, and smart materials to the construction industry whereby Building Information Modelling (BIM) for example has become the central repository for collating digital information about a project (Craveiro, Duarte, Bartolo. H, Bartolo P, 2019).

On the other hand, smart construction is a building structure, design and construction that make full use of computerized technology and industrialized technical strategies in order improve profitability, reduce life cost, increase sustainability and expand client benefits. In recent years, smart construction systems have widely appeared in engineering construction management due to the rapid growth and maturation of evolving information technology (Bucchiarone, et.al, 2019).