THE APPLICATION OF UNMANNED AERIAL VEHICLES (UAV) IN ALLEVIATING TIME OVERRUN IN THE CONSTRUCTION INDUSTRY

THOO YUAN LENG

BACHELOR OF SCIENCE (HONS) IN QUANTITY SURVEYING

FACULTY OF ENGINEERING AND QUANTITY SURVEYING
INTI INTERNATIONAL UNIVERSITY
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BY

THOO YUAN LENG

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DECLARATION BY THE CANDIDATE

I Thoo Yuan Leng, I16010349 confirm that the work in this report is my own work and the appropriate credit has been given where the references have made to the work of other researchers.

_____

Student Name : Thoo Yuan Leng

Student ID : I16010349

Date : 7/4/2020

ABSTRACT

Time overrun has been one of the major issues faced by the construction industry in Malaysia for the recent time being. Construction task has been executed in a slow manner as traditional method is being practiced and human being are being employed carry out those tasks. However, a series of technologies have been invented and being implemented in the construction industry in order to save time required for each construction task. In such a case, one of the newly implemented technology, Unmanned Aerial Vehicles (UAV) will be discuss and identify effect of its implementation towards time overrun issues. The project title for this dissertation is named The Application of Unmanned Aerial Vehicles (UAV) in Alleviating Time Overrun issues in the Construction Industry. The aim of this dissertation is to identify recognize UAV implementation does alleviate delay that lead to time overrun in the construction project. Data is collected from six respondents by using qualitative method as the number of UAV applicants in construction industry is limited. The targeted respondent for the study is G7 contractor who is financially capable to employ such technology in Selangor area. Thus, data collected will be coded and tabulated for data analyzation purposes. Content analysis is being employed to analyze data collected in the dissertation. Hence, the findings are showing the functions of UAV and those functions that can be implemented in the construction industry. In addition, the adoption level of UAV in the construction industry at the current moment is being scrutinize in the study. Although UAV implementation is increasing the efficiency and effectiveness in carrying out construction task, the results reveal the possibility of UAV implementation in lessen time overrun issues is low. The respondents did clarify that UAV is being employed as a tool in the construction industry.

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List of Abbreviation

UAV	Unmanned Aerial Vehicles
VTOL	Vertical take-off and landing
CAAM	Civil Aviation Authority of Malaysia
JUPEM	Jabatan Ukur dan Pemetaan Malaysia
GNSS	Global Navigation Satellite System

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Chapter 1

Introduction

1.1 Background of study

Construction sector is one of the major key drivers for the economics of Malaysia which contribute significantly towards the economic growth of the country. The construction industry has continuously contributing towards the national Gross Domestic Product at the rate of 3-5% for the past 20 years. It is playing a central role in driving economic growth and socio-economic due to its growth-initiating and growth-dependent nature (N A Mirawati, Othman and Risyawati, 2015). Completion on time for construction project is a significant parameter for a successful construction project (Ullah *et al.*, 2018).

However, delay is one of the frequent phenomena that rampant across the world in the construction projects which lead to time overrun in construction projects (Hasmori *et al.*, 2018; Ullah *et al.*, 2018). Time overrun is defined as completion of a project is exceeding its planned time, or project completion date is beyond the date that has been written in the contract (Rafieizonooz *et al.*, 2016). Thus, it will bring a series of negative impact to the project and the participating parties. Time overrun is often associated with additional cost of a project, such as direct, indirect and impact cost due to delay of completion (Hasmori *et al.*, 2018).

Time overrun is initiated with a few factors, which are project management and contract administration, contractor site management, material and machineries resource, in accurate evaluation of projects, labor supply, lack of communication between parties and mistakes during construction stage, and poor decision making (Sambasivan and Soon, 2007; Othman, Shafiq and Nuruddin, 2018). One of the new technologies that can be implemented in the construction industry to allay time overrun issue is Unmanned Aerial Vehicles (UAV).