



اَوْبُوْزَسِيْتِيْ تِيْكْنُوْلُوْجِيْ مَارَا
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**A POST-OCCUPANCY
EVALUATION ON INDOOR
ENVIRONMENT AND ITS
SIGNIFICANCE ON LEARNING
PERFORMANCE FOR HIGHER
LEARNING EDUCATION BUILDING**

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MSc

March 2022

ABSTRACT

Malaysia's tropical climate is hot and humid. This situation could have an adverse impact on the comfort of occupants in any place. It is reported that in 2018, all schools in Kedah and Perlis were to be closed from teaching and learning for two days due to extremely hot and dry weather caused by the El Nino Phenomenon. Meanwhile, in Malaysia, there is a research that found that the occupant was not satisfied with the number of occupants inside of a building which had become too crowded. The research aim is to develop an assessment tool of Post Occupancy Evaluation (POE) for institutes of higher education building in Malaysia. The objectives of this research are to identify occupant satisfaction towards an indoor environment in the classroom and to analyze the relationship between the indoor environment and their learning performance. This research also will develop a Post Occupancy Evaluation (POE) framework that incorporates indoor environment and learning performance. A field experiment by using sets of questionnaires was conducted at three colleges in Perlis to study the objectives. Apart from frequency and descriptive analysis, correlation and multiple regression analysis was used to analyze the data. The result found that the occupant satisfaction towards the indoor environment in the classroom is at the average level while the relationship between indoor environment and learning performance is at the average level. The multiple regression analysis conducted showed that four factors (temperature, lighting, design or space, and ventilation) and learning performance correlatively influence the occupant satisfaction towards the indoor environment in the classroom.

ACKNOWLEDGEMENT

Alhamdulillah, I wish to thank God for giving me the opportunity, strength and courage for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor Sr Dr. Yuhainis Abdul Talib, and co-supervisor, Sr Dr. Husrul Nizam Husin @ Husain. Thank you for the support, patience and ideas in assisting me with this dissertation. I also would like to express my gratitude to the facility management's teams from Kolej Universiti Islam Perlis (KUIPS), Institut Pengajian Tinggi Islam Perlis (IPTIP) and Kolej Teknologi dan Profesional Indera Kayangan (KATPM) for their facilities and assistance during the sampling process. Special thanks to my family who always understand and give support to finish this journey. Thank You.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Nowadays, there are some buildings constructed traditionally that rely on a combination of natural ventilation and mechanical ventilation to achieve comfort as well as in academic buildings. Therefore, it becomes an interesting study to investigate the level of comfort and satisfaction of students in a class and its impact on their learning performance. This is because it can affect the students in activities that promote understanding of concepts, problem-solving abilities, and attitude toward learning. Appropriate physical facilities and services will stimulate intellectual activity, improve social relationships, promote learning and student development and limit negative behavior among students (Arzi, 2003). Malaysia is one of the fast-developing countries in Asia (Hanafiah & Chan, 2018). Developing urban areas causes climate change, acid rain, and heat island so that an increase in temperature and disrupt people's lives (Ibrahim *et al.* (2015). Growth areas in terms of urbanization have led to some changes and transformations including socio-economic and change of climate and weather are significant (Ismail *et al.*, 2014) and resulted in changes to the thermal comfort. Comfort itself and model of comfort, especially for buildings with natural ventilation which are located in areas that are hot and humid to is a topic of discussion in this research because of the importance of their impact on student learning performance. Most ongoing studies focus on determining the thermal comfort in a variety of backgrounds, such as the climate between four seasons to the tropics. Some studies on thermal comfort in an equatorial climate (tropical) were carried out early in 1950. Webb (2013) conducted a study in Singapore and presented the equator comfort index based on dry and wet bulb temperature and wind speed. In addition, Ellis (2011) also conducted a study in Singapore and concluded in his study that the level of thermal comfort is the same for men and women in Europe with women and men in Asia.