

**UNIVERSITI TEKNOLOGI MARA**

**PSYCHOLOGICAL AND  
PHYSIOLOGICAL COLOUR  
IMPACTS ON MALAY STUDENTS IN  
THE UNIVERSITY HOSTEL  
ENVIRONMENT**

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## ABSTRACT

Colour is an environmental stimulus that exerts an influence on human beings in a multitude of ways. The colour effect has been abundantly unequivocally demonstrated in previous research on the integration of multimodal approaches, such as from the psychological, performance and non-performance and preferences assessments. Nevertheless, little research has been conducted locally on the university students with the integration of physiological assessment and consideration of subjects' living ecology, this being particularly true in the field of design. The fact that no specific colour scheme recommended for the interior of public buildings and double standard perceptions of the importance of visual stimulations are contributing to the monotonous looks at most hostel rooms in public universities. The condition becomes a norm to the students although numerous of research has posited the view that environmental stimuli are correlated with better performances and engagements while the existing white environment contributes to salient negative implications. Worse, inappropriate colours could cause low performances; indirectly affecting moods, *dysphoria* or depression and health problems among others. In this regards, physiology is another option in understanding the nature of human's responses to their environments and, in this context, the coloured environment. This is because studies have postulated that colours are detectable in other modality, such as through parasympathetic activities and sympathetic activities, in the human autonomic nervous system (ANS). The aim of this study was to propose an optimal colour for the hostel environment of female university students from their heart rate responses. The objectives of this study were to identify the colour effects of four coloured environments and its effect patterns in a specific duration of exposures across various lengths of exposures. It also intended to determine the appropriate colours for the hostel rooms that evidently significant in performance, physiologically as well as psychologically. The colours used were strong red, bluish-green, pink - as it is the most preferred colours among female students obtained from a conducted survey, and white as the existing students' environment. A test and re-test method of assignment were conducted to 24 female students in their coloured rooms or ecology, and changes in their performance, emotional responses and physiological responses were recorded. They were divided according to three types of exposures; short-term exposure, long-term exposure with one to two weeks of stay, and sustainable exposure, where subjects live in the coloured rooms for more than three weeks. The results showed that each colour has different effects with positive changes over time. In fact, some of the colours were capable of overturning adverse influences into positive responses. Based on the consistency patterns and their advantages points, the findings found that the bluish green colour is the most appropriate colour for longer to sustainable dwelling periods and therefore is the most suitable for the hostel room for this focused group. Based on the differences found in each colour, this study has suggested a few recommendations that can possibly contribute to a better stimulating coloured environment. Findings from the study may become the best practice for designers as well as universities' management themselves in designing conducive learning environment for better students' engagements and productivities.

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# **CHAPTER ONE**

## **BACKGROUND OF THE RESEARCH**

### **1.1 INTRODUCTION**

This thesis investigated the effects of coloured environments on humans as colours are said to have many forms of influences that can affect human behavior towards their surroundings. In finding the precise influences and discovering its potential uses, this study focused on its implication in the hostel rooms. The chapter started with the research background that introduces the general idea of colour, how human 'see' colours, its uses as well as the responses, and its implications. Then the chapter continued with the problem statements, research objectives, research questions and hypotheses, the significance of the study, the limitations and the organization of the study or also known as the research framework.

### **1.2 RESEARCH BACKGROUND**

Every day we see colours. The colours we see are produced by various wavelengths of light reflected from surfaces. It is the element that gives a form, add character and define space for the purpose of identifying surroundings and providing meaningful information that is useful for environment adaptation (Ching, 2007). From the general definition and description, its purpose is clear to us that colour is an environmental enrichment that becomes the stimuli to human sensory. From the environmental stimulation, people are attracted to the activity, moment or to the context itself physically, emotionally and mentally which can result in engagement. According to Kwallek et al. (1997), people function more optimally when there is adequate stimulation from the environment. In other words, an appropriate colour as a stimulus to the environment is capable of making people engage in the activity and can produce optimum responses or optimum performance. Since it is an inevitable visual stimulation, it has a significant role in human life that relates to human development in many ways.