UNIVERSITI TEKNOLOGI MARA

THE RELATIONSHIP BETWEEN SENSE OF DIRECTION, NAVIGATION FAMILIARITY, SPATIAL ANXIETY, SPATIAL VISUALISATION, AND WAYFINDING INFORMATION SYSTEM OF A VISITORS' WAYFINDING EXPERIENCE IN A COMPLEX ENVIRONMENT

NIK ATILLA ATASHA BINTI SHAMSUDDIN

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ABSTRACT

This research explored the relationship between the sense of direction, navigation familiarity, spatial anxiety, spatial visualisation, and the wayfinding information system of visitors' wayfinding experiences in the complex environment of Universiti Teknologi MARA, Puncak Alam Campus, Selangor. Challenges in navigating spatial environments were often found to reduce the relationship of elements such as area familiarity, anxiety about orientation, proficiency in spatial visualisation, and the use of signs or wayfinding aids. The research was driven by six objectives: (1) to investigate the potential disparities in sense of direction, navigation familiarity, and spatial anxiety based on demographics (gender) differences, (2) to examine the variations in sense of direction, navigation familiarity, and spatial anxiety in relation to demographics (age group, income classification, geographic location, employment status, and current occupation), (3) to establish the correlation between sense of direction scale and spatial visualisation ability scores among visitors, (4) to identify the interrelationships among visitors', their spatial anxiety levels, Spatial Visualisation ability scores and wayfinding information system scores, (5) to explore the depth and scope of differences in sense of direction, spatial anxiety, Spatial Visualisation ability scores and wayfinding information, taking demographics into consideration, and (6) to identify the navigational experiences of individuals at the UiTM Puncak Alam campus. A sample of 150 visitors, comprising 61 males and 89 females, participated in the study. Utilising a quantitative method, participants were subjected to a navigation task and a survey. A significant finding was that many participants reported getting lost during their navigation of the campus, which might hint at challenges such as complex building layouts or insufficient signage. Additionally, a substantial number of participants voiced difficulties during wayfinding, indicating potential issues with the campus's wayfinding system, such as unclear signage or unfamiliarity with the layout. Conversely, a smaller group expressed satisfaction with their navigation experience, suggesting the adequacy of the existing wayfinding system and their personal navigation abilities. Gender appeared not to influence the sense of direction, indicating equal navigation task proficiency across genders. Age seemed to play a role in navigation familiarity, with age-related factors such as exposure and comfort potentially being influential. No clear connection was found between the sense of direction and spatial visualisation abilities. Moreover, having a high spatial visualisation ability did not guarantee reduced spatial anxiety. Interestingly, demographic attributes including gender, age, income, location, employment status, and occupation did not significantly affect aspects such as sense of direction, spatial anxiety, or spatial visualisation abilities. This research may contribute to the aspects of the wayfinding industry and policymakers to achieve the Sustainable Development Goals (SDGs) which aspire to provide everyone with access to a safe, affordable, accessible, and environmentally friendly wayfinding information system.

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CHAPTER 1
INTRODUCTION

1.1   Introduction

A wayfinding system is a concept that is intended to guide people to find their way from one point to another point of destination, to make life easier and hassle-free. The concept may sound simple, but the process is very complex (Farr, Klein-Schmidt, Yarlagadda, Yarlagadda, & Mengersen, 2012). Fewings (2001), cited in Farr. et al. (2012), has identified various means of guidance such as the compass, maps, the stars, and sextants, and the current one is the global positioning systems (GPS) that have been successfully employed by humans in assisting wayfinding activity.

This chapter consists of the background of the subject that includes the study of the wayfinding, sense of direction and wayfinding experience of an individual who navigates to a desired location. This chapter also identifies problems that are encountered by society regarding wayfinding and their experience that may involve their varying levels of sense of direction and wayfinding skills.

1.2   Background of the Research

According to the development of time, Malaysia is considered a developing country. It is the goal of the Sustainable Development Goals (SDGs), officially known as Transforming our world- the 2030 Agenda for Sustainable Development, to leave no one behind by 2030. This ambitious plan of action for People, Planet, Prosperity, Peace, and Partnership has the goal of "leaving no one behind". Goal 11 (Sustainable Cities and Communities) aspires to provide everyone with access to a safe, affordable, easily accessible, and environmentally friendly wayfinding information system. Therefore, it is critical to have a friendly and effective transportation system that will link to the wayfinding aids and produce a good wayfinding information system, especially in a complicated setting where a large number of users and visitors need to describe and navigate to the intended location without becoming lost or frustrated.

Investing in a massive expansion of public transportation infrastructure demonstrates the government's commitment to extending the transportation network