UNIVERSITI TEKNOLOGI MARA

CRIMINALITY AND VISUAL SURVEILLANCE: AN INVESTIGATION INTO CRIMINOGENIC SPACE AND VULNERABLE RESIDENTIAL NEIGHBOURHOOD

FAZZAMI BIN OTHMAN

Thesis submitted in fulfillment
of the requirements for the degree of
Doctor of Philosophy
Built Environment

Faculty of Architecture, Planning and Surveying

April 2022

ABSTRACT

Natural surveillance and visibility are critical components of ensuring safety and development's long-term sustainability. By emphasising space utilisation and enhancing human movement, a safe space can be formed. Increased activity within a street space is thought to promote natural surveillance and contribute to sustaining the rate of visibility. However, whenever space activity is highlighted for crime prevention purposes, the result is invariably paradoxical. There is relatively few research examining the relationship between surveillance, visibility, and crime. Numerous studies that prioritise space utilisation indicate that permeable street design is more secure than impermeable street design. Furthermore, it is claimed that incorporating street space increased the risk of being a victim of insufficient defensive space. Meanwhile, a visibility study put a larger emphasis on housing design without taking environmental factors into consideration. Regardless of its method, the study lacks tangible evidence of how it might affect crime distribution. Thus, this research aims to determine which the local elements lead to a neighbourhood with insufficient surveillance and how visibility affects burglary distribution. Five neighbourhoods in Kuala Lumpur local council were chosen based on common characteristics, including fear of crime. To assess the amount of fear and the area's inter-visibility, this study used a quantitative research methodology that included sampling and the dwelling inventory approach. Additionally, a site verification was performed to ascertain the average daily traffic and local attributes. Numerous analyses were undertaken, including descriptive, visibility, spatial, and statistical. Through the use of a convex, axial map, and spatial accessibility inventory, the visibility study analysed both inter- and direct visibility. The spatial-temporal analysis used to determine the burglary pattern is intended to aid in visualising it. Additionally, the syntactic space method is used to gain a better understanding of how syntactic measures may affect visibility. Both analyses are then correlated and analysed statistically using correlation and regression analysis to detect and quantify significant correlations between independent and dependent variables. As the findings, locations with more visibility are safer and subject to greater public and private monitoring, but spaces with medium visibility can be both risky and safe. Spatial characteristics such as global integration, connectivity, and mean depth influence the rate of burglary. These spatial degrees allow natural public observation by passers-by, resulting in more safe space. As the output, a framework for a safer neighbourhood is designed, with a focus on visibility and surveillance. This framework was designed for the execution by critical law enforcement agencies, such as PlanMalaysia and local governments, which serve as policymakers and practitioners.

ACKNOWLEDGEMENT

First and foremost, praises and thanks to Allah S.W.T. for His showers of blessings on giving me the opportunity to embark on my Ph.D. and for completing this long and challenging journey successfully.

My sincere gratitude and thanks to my main and co-supervisor, Prof Madya Dr. Zaharah Mohd Yusoff and Prof Madya Sr Dr. Siti Aekbal Salleh, for their patience, motivation, enthusiasm, support, and guidance throughout my thesis project. I could not imagine having a better supervisor and mentor for my Ph.D. study.

My sincere thanks and appreciation also go to the Royal Malaysian Police, Malaysian Planning Department, and Survey & Mapping Department, who assisted with data collection. I am also overwhelmed with humility and gratitude to all those who have assisted me in putting the ideas into action, particularly my colleagues and friends.

The Department of Survey Science and Geomatics and the Faculty of Architecture, Planning, and Surveying are not forgotten to be thanked for providing a well-equipped study area and access to first-rate equipment to support this research.

Any endeavour at any level cannot be done satisfactorily without the support and encouragement of my beloved family members, especially my beloved wife Nur Elina Baharuddin, my daughter and son and, of course, all of my family members. This triumphant piece is dedicated to you. Alhamdulillah.

TABLE OF CONTENTS

CHAPTER ONE
INTRODUCTION

1.1 Research Background

The street was intended to be a public space for both pedestrians and vehicles. Most people rely on the streets as their primary source of transportation (Vandeviver and Bernasco, 2020). It is restricted to any specific action or behaviour, but it is required for close communication. The street, as a public space, can become the site of any undesirable event, such as a crime. It is not only a place where things happen, but it may also be a place where criminal activity occurs. A crime requires three essential components: the criminal, the victim, and the environment or circumstance that creates the criminal opportunity. A criminal from a known location could use the street to identify potential targets based on the elements of the crime. Offenders typically live on the same property as the crime or close to the crime scene (Graif et al., 2014). As a result, research into how space and geographical crime areas can aid in crime prevention and reduction was required.

Historically, the study of crime has incorporated other disciplines such as sociology and psychology; however, it was not until the late 1970s that crime's space and spatial location were explored more thoroughly for sustainability. The geographical component of the study was explored when it was determined to be a factor in the prevalence of crime. Numerous techniques have been developed, including spatial patterning of crime, determining the effectiveness of policing reducing and preventing crime, and examining the relationship between crime and the environment. A well-designed space promotes surveillance, social interaction, and safety. Jacob's famous fundamental concept of "eye on the street" explained that the safest urban environment is constantly monitored by a human being (Hollstein, 2018). This concept was then incorporated into the principles of Crime Prevention through Environmental Design (CPTED), also known as Natural Surveillance. Natural Surveillance is concerned with the location of physical features and social activity and attempts to achieve maximum visibility in the least amount of time. People feel secure in a heavily surveillance area for ease of monitoring.