

HIGH-RAISED BUILDINGS IN URBAN AREA CONTRIBUTES TO THE SNATCH THEFT INCIDENTS

Anith Nabilah Mustafa¹, Siti Rasidah Md Sakip²

*Department of Landscape Architecture, Faculty of Architecture,
Planning and Surveying, Universiti Teknologi MARA (Perak), Malaysia*

¹anith_nabilah@yahoo.com

²sitir704@perak.uitm.edu.my

Received: 26 October 2017

Accepted: 21 November 2017

ABSTRACT

Snatch theft incidents are on the rise in Malaysia especially in the cities. It tends to happen in cities because there is a possibility to commit it and both crime and urban are often associated with each other. The aim of this paper is to find out whether the building with two or more levels in urban area contributes to the snatch theft incidents. The present study has been taken up to detect the hotspots of snatch theft in Selangor, Malaysia. The crime data were obtained by requesting and analysing the index crime statistical data from the Royal Malaysian Police (RMP). This study made use of the Geographical Information System (GIS) where its 3D modelling function to construct, assess and analyse the area with high snatch theft cases. The crime reports of 2010 until 2015 were geocoded and the crime maps were prepared in ArcGIS 10.2. It was found that the hotspot area is a mix-used development area which consists mainly of commercial and residential areas of more than two-level buildings.

© 2017MySE, FSPU, UiTM Perak, All rights reserved

Keywords: Crime, CPTED, hotspot, snatch theft, street pattern

INTRODUCTION

Crime and urban are frequently associated with each other due to their physical surroundings and public's behaviour (Block & Block, 1995). Other than that, urban area has higher number of population compared to the population in the sub-urban area (Levitt, 1999). This may partly be one of the factors which is responsible for the number of crimes is increasing especially when the cost of living in urban area is high and insufficient of job opportunities in a city. It was stated by Cozens (2008) that every potential threat to the abiding health, endurance, personal safety and security of both built environment and its users are essential to be considered in order to produce a sustainable city (Cozens, 2008) that is actually indirectly related with their needs to survive in the cities.

Snatch theft events have been a very worrisome issue since a considerable number of this crime occurrence caused casualties (Yew, 2012). This issue has created a huge impact on sense of panic, anxiety and fear which imperil the safety of the people. The snatch theft incidents that occurred in Malaysia are announced in the local media news as well as when others recorded through videos and later uploaded in the cyberspace which went viral nationally. The occurrence of snatch theft incidents has developed a sense of fear among the urban society especially to those who are walking to and from a place or workplace (Lakshiny, 2016). The quality of life of the society, especially in the urban areas, are getting deteriorated every day due to the presence of crime. The previous scholar, Colquhoun (2004) also stated that, it is crucial to get the design of the built environment right because good environment design has an important conduct towards the quality of life of the community.

In the fast pace of globalization process, Malaysia is experiencing rapid growth especially in the cities, In the bid to compete and not wanting to lag behind with other countries in terms of development the crime rates also are getting worst which becomes one of the threats that need to be faced by the societies. The number of cases and incidents of snatch theft in Malaysia during the period of 6 years, from the year of 2010 until the year of 2015 has been oscillating. Although the number of cases in the statistical data of the snatch theft cases fluctuate in the particular 6 years, the public's fear is not declining as stated by Malaysia Crime Prevention Foundation

(MCPF) vice chairman, Tan Sri Lam Thye, in the local newspaper (The Star, 2016). The conditions of snatch theft cases in every states in Malaysia is shown in Table 1. There are four major cities within these states that have a high number of snatch theft cases. Those states are Selangor (5,553 cases), Kuala Lumpur (4,687 cases), Penang (1,953 cases) and Johor (298 cases) (PDRM, 2016a). Nowadays, cities are drawing attention especially towards the people from rural settlement due to its favourable economic and job conditions to earn a living. Hence, the crime prevention and common crimes of opportunities such as snatch incidents should be put focus and mark especially in an urban planning.

Table 1: Snatch Theft Crime Data in Malaysia in 2010 to 2015

STATE/ YEAR	2010	2011	2012	2013	2014	2015	Total by state
Perlis	58	52	38	25	26	16	215
Kedah	412	286	234	158	102	101	1293
Penang	835	197	280	165	245	231	1953
Perak	252	167	143	152	133	73	920
Kelantan	295	168	116	64	76	63	782
Terengganu	56	63	56	28	22	21	246
Pahang	101	66	79	43	72	43	404
Kuala Lumpur	1901	951	385	214	632	604	4687
Selangor	1247	799	726	985	846	950	5553
Melaka	122	117	27	12	5	2	285
N. Sembilan	55	25	10	6	22	18	136
Johor	84	76	38	28	39	33	298
Sabah	99	60	98	57	68	99	481
Sarawak	344	293	263	184	143	108	1335
Total by year	5861	3320	2493	2121	2431	2362	18588

Source: Polis Diraja Malaysia (PDRM), (2016)

The government is aware of this issue and strives to reduce the crime rates through the National Key Result Areas (NKRAs) that has been

established in the Government Transformation Program (GTP) in 2004 (Department of Information, Malaysia, 2009). NKRA was announced by the Prime Minister in July 2009 where the efforts in reducing crime has been one of the criteria included. The Home Affairs Ministry and Royal Malaysia Police (RMP), as part of the government agencies, also are targeting the reduction of crime as their main priority matters, which is through Crime Prevention through Environment Design (CPTED). This seems that CPTED and its awareness amongst the professionals of built environment has been taken into consideration since this matter is very important in order to reduce the crime rates especially in the urban areas because it can influence the residents' impression on safety and fear towards crime. CPTED is being highlighted as a planning device that is favourable for assisting in the creation of more competent, sustainable and liveable urban design (Cozens, 2008). It is becoming increasingly more critical for getting the building designs and the environment right, as the interest in CPTED is growing (Colquhoun, 2004). The existence of crime within an urban area are making the societies' quality of life to be declined. CPTED is known as the Safe City Program in Malaysia that act as a tool and guideline to reduce crime hence improving the quality of life of the societies. It is essential especially for built environment related body such as architects, planners and others who are involved in the understanding of the importance of addressing the issues (Colquhoun, 2004).

Therefore, the target of this paper is to find out whether the building density in urban area contribute to the snatch theft incidents by using the Geographic Information System (GIS) 3D modelling to construct, determine and analyse the hot spot area of the snatch theft cases based on the data obtained from the Polis Diraja Malaysia (PDRM).

LITERATURE REVIEW

Geographic Information System (GIS) is a map generated by a computer that uses geography as an interface to combine and access a lot of information based on location (Johnson, 2000; Weisburd & McEwen, 1998). GIS makes police personnel capable to plan effectively for emergency response, differentiate the reduction priorities, analyse historical events, and predict future events. (Chainey, Tompson, & Uhlig, 2008; Johnson, 2000). GIS

plays a critical role in crime mapping and analysis as it offers visual representations of crime-related issues of where and why it occurs and can enhance attempts to encounter crime (Johnson, 2000; Weisburd & McEwen, 1998). The GIS software helps incorporate a large number of multi-source location-based data where it allows users to compile data and view the data that matters most to a particular problem (Johnson, 2000). It is used widely by both large and small police organization to supply mapping solutions for crime analysis, criminal tracking, traffic security, community policing, and various other tasks (Johnson, 2000). In addition, GIS can also be used to explore the relationship between the environment and crime because crime mapping can help police protect the people more effectively and policy makers in the police department may use a more complex map to observe the trend of criminal activity to solve crime cases (Johnson, 2000; J. H. Ratcliffe, 2002; Weisburd & McEwen, 1998).

Crime has been the big problems faced by all the countries in the world including Malaysia. Urban areas are always becoming the main target for the crime offenders to commit the crime especially in most of the developing countries. Crime incidents are categorized into two types of crime which are index crimes and non-index crime (PDRM, 2016). Index crimes usually being reported and considered to have ample evidence towards the crime level, for instance the break-ins of the house while for non-index crimes involve crimes such as scam cases, scam of insurance, falsification of currency and breach of trusts which the measurement are not considered as crime streams (PDRM, 2008). As for the environmental aspect definition, crime is acknowledged as a real situation of behavioural action while in terms of the desired motivation, every crime act is different. There are three factors of the environmental that occur at the same time which involves the aimed victim either a person, an association or equity, the offender with the devotion to commit the offence, and the opportunity to commit crime (P. L. Brantingham & Brantingham, 1993).

Undistributed crime which is highly concentrated in particular areas and consists of fear concentration, no matter whether criminal incidents have occurred or not are called 'hot spots' (Wang et al., 2013; Cohen & Felson, 2016b). Crime 'hot spots' arise at a diversity of scales from the community to the block to the specific situations (Sherman et al., 1989; Maltz et al., 1990). After a crime mapping process is done according to

the police statistical data, the hotspot areas are obtained. These maps of the crime hotspot that are accurately identified and clearly visualized will definitely give advantages to the police organization by guiding visualization of threat, allocation of police resource and prediction of the crime activities in the area (Chainey, Tompson, & Uhlig, 2008). Usually these maps show characteristic or pattern distributions such as the spatial variation of crime hotspots that are related to particular offences (Baglioni, Antônio, Macêdo, & Renso, 2009). The locations where crimes or concentrations of crimes have occurred which are displayed on straightforward maps can be used to help direct patrols to the places that needed them the most (Johnson, 2000). One can find numerous size of hot spots, from as small as hot spot places to as big as hot spots regions with today's latest developments in crime mapping. It is crucial to know and understand that the factors that led to the rise of the hot spot places are not the same with the factors that lead to the hotspot of the streets, neighbourhoods, cities. Accurate and clear visualized crime hotspot map will definitely give advantages to the police organization to find threat visualization, police resource distribution and crime prediction (Chainey, Tompson, & Uhlig, 2008).

'Snatch thefts' are part of the offence 'theft from the person' and are covered under the Theft Act 1968. The term target to bring to mind the image of an offender snatching a property away from the victim that is currently in his or her personal possession. Generally, snatch theft is defined as a criminal act of stealing property of other people by engaging rob-and-run tactics (Yew, 2012) which happens instantly without any verbal communication that takes place between the offenders and the victims (Monk, Heinonen, & Eck, 2010). Most of the incidents are normally operated and done by the offenders who is riding on a motorcycle and this makes them easier to escape after committing the crime. Snatch thefts will either work alone or with a friend riding at the back seat of the motorcycle, who is the one who usually do snatch action of items from people who are walking, while the motorcyclist rider tries to run away after obtaining their desired things. The most usual purse snatching incidents is that there will be two thieves riding a motorcycle, speed up towards a victim from behind where the passenger on the back snatches valuable items such as purse, handbag, or cellular phone. Thieves have also conducted snatch thefts while leaning towards the passenger side of moving vehicles (OSAC, 2015).

As we are aware, most of the land uses in urban areas consist of the commercial areas. It was found that commercial-only areas have higher crime rate (Anderson, Macdonald, Bluthenthal, & Ashwood, 2013). At night, these areas usually will be “dead” since there is no activity occurs. During this time, the area tends to be scarier and people will try to avoid it. Commercial land that is busy during daytime will have low public activity especially after business hours and the area will become quiet and a crime-prone area at night (Chowdhury, 2014). While most streets are safe to walk, downtown areas that is surrounded with entertainment facilities such as discos and bars tend to become populated with less desirable people after midnight. It is better to avoid these areas late at night if possible (OSAC, 2015). There are some areas nearby the commercial and public spaces identified as crime prone locations due to the existence of potential sources of easy escape routes for the criminals (Chowdhury, 2014). This shows that land use could also be identified as one of the crucial factors for high crime rate until it become crime hotspot due to the existence of connectivity value and high integration of the area (Faizah, 2015). This is also supported by Brantingham & Brantingham (1984) where the urban area contains nodes, paths and edges where crime is concentrated (P. Brantingham & Brantingham, 1984).

METHODOLOGY

The study in this paper employed a qualitative approach. The crime statistical data of snatch theft were obtained from Polis Diraja Malaysia (PDRM). Snatch theft statistical data that has been obtained from PDRM will be sorted out according to the states as shown in Table 1 and districts shown in Table 2 from the highest to the lowest number of snatch theft cases from the police data. Table 1 shows the four main cities in bold font in Malaysia which are Selangor, Kuala Lumpur, Penang and Johor. The Geographic Information System (GIS) is used for this study in order to produce hotspot map based on the snatch theft statistical data from PDRM. All existing buildings located at Ampang Jaya are digitized to the approximate actual form and height so that 3D city visualization can be performed. A 3D city model is used to find out the building distances to the closest crime scene. Snatch theft hotspot map is produced after the police data is inserted into the map of Ampang Jaya by using ArcMap 10.2. After the data have been inserted and snatch theft incidents were located, these areas categorized into

five different colours coding which are red, orange, yellow, light green and green in order to identify which area will be the hotspot area. Red colour represents an area with the highest number of snatch theft cases, while green with the lowest or no snatch theft cases.

RESULTS AND FINDINGS

This paper aims to shed light on the urban area as a locality with noticeable features built with the sense of place and security. Table 2 shows four districts in Selangor that are having high numbers of snatch theft cases. Ampang Jaya has been selected as a case study area due to the total number of snatch theft cases in the period of six years, from 2010 until 2015. After sorting and analysing the statistical data given by the PDRM, the hotspot maps are produced through the ArcMap 10.2 and Pandan Indah shows as the snatch theft hotspot area. From this map, a 3D city model has been constructed as shown in Figure 1. 3D models of buildings were created in which all buildings with height less than 100 meters were generated. Based on this 3D digital city model which allows visualisation from any angle, direction or zoom level, several scenes of Ampang Jaya were modelled. The purpose of this paper is to find out whether the building density in urban area contribute to the snatch theft incidents which can be envisaged using 3D digital simulation and visualisation. The study area was limited to Pandan Indah which has been identified as snatch theft hotspot area. All existing buildings located in Ampang Jaya are digitized to the actual form and height so that 3D city visualisation can be performed.

Table 2: Statistical Data of Snatch Theft cases in 4 districts in Selangor from 2010 to 2015

STATE/ YEAR	2010	2011	2012	2013	2014	2015	Total by state
Ampang Jaya	429	260	321	322	257	220	1809
Petaling Jaya	135	79	82	183	153	355	987
Subang Jaya	195	152	127	130	151	70	825
Kajang	16	1	79	127	150	128	501

Source: Polis Diraja Malaysia (PDRM), (2016)

Snatch theft cases and are worsening in Malaysia since it will cause victims to be traumatized and prolonged the impacts of fear on victims and communities. It has also become the biggest concerns towards the citizens. This is because it has been causing deaths and injuries as reported in the daily local news, newspaper, and articles. Figure 1(a) shows the plan view map and Figure 1(b) shows the 3D map of Pandan Indah produced in ArcScene 10.2. The red colour area is the hotspot area of snatch theft in Pandan Indah where it consists of residential and commercial areas. Most of the terrace houses in Pandan Indah mainly are made of two-level houses. As shown in Figure 1(b), the light green colour buildings represent the residential with five or more floors building such as apartments and flats while the light purple colour buildings are non-residential buildings with five or more floors such as shopping mall and shop houses.

Based on the statistical data of snatch theft, the highest recorded cases in Pandan Indah resulted to be in the Taman Pandan Indah residential area as shown in Figure 2 (a), rather than the commercial areas. Ampang Jaya is having a grid iron layout which is known as highly accessible and navigable. Due to these uncomplicated entries and exits within the area, it is easier for the offender or snatch theft to escape after committing the crime. Most of the streets in Pandan Indah are straight or linear streets that is connected directly with the main road of Jalan Pandan Indah, which can be accessed by anyone at any time. Snatch offenders often use a motorcycle, which is smaller than a car, to commit the crime. Hence, it is easier for them to run away especially by using the smaller road that cannot be accessed by cars or lorries. In this neighbourhood, there are closed roads and road with dead-ends for bigger vehicles such as cars and smaller lorries, but these routes also are still able to be accessed by smaller transportations such as motorcycles and bicycles.

In Figure 2 (b) shows the Taman Pandan Indah residential area which consists of two-level terrace houses and five-levels flat. Even though informal surveillance can be provided from the window of the building, it will not give much help if the window is obstructed with other physical elements such as advertisement board or signboard. This situation usually happens in the commercial areas where the windows at the upper part of the shop buildings are being blocked by signboards or advertisement banners. As for residential buildings, usually people tend to equip their windows with

curtain which is to provide privacy for the owner especially during night time. Due to this condition, it might become one of the advantages for the snatch theft to commit the crime within the neighbourhood without being witnessed by others especially the people inside the houses or buildings. Other than that, it seems as if the offenders, might be someone who already knows every corner of the residential area and the potential victims within it. The crime pattern has been linked by the environmental criminologists, the environment and physical layout of the places where the crime does take place (Abdullah, Razak, Salleh, & Sakip, 2012).

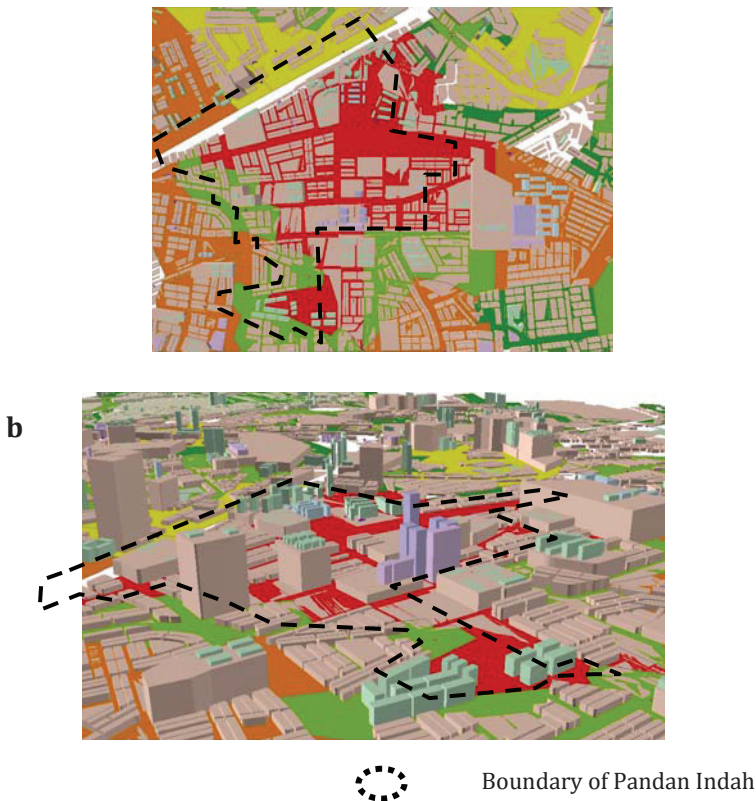


Image 1: Pandan Indah as snatch theft hotspot (red) on plan view (a) and perspective view (b)

In addition, this residential area is located nearby the Pandan Indah Light Rapid Transit (LRT) station where it becomes another nodes or centre of attraction for the public in Pandan Indah besides the commercial area.

People such as the pedestrians are walking, cycling or driving to go to the station to use the facility that have been provided. It is often known that the victims of the snatch incidents tend to be the pedestrians who are walking from one place to another. In Pandan Indah, there is limited number of pedestrian walkway. Within the Taman Pandan Indah neighbourhood, there is no appropriate walkway for pedestrians. These people are likely to be the snatch theft's victims because of their vulnerable state during walking since there is no separation between the pedestrian walkway and the vehicles on the road which indirectly make the pedestrian safety and security level inadequate. The street pattern in this neighbourhood is actually more accessible for two-wheeled vehicles such as motorcycles and bicycles. The size of both motorcycles and bicycles are smaller and can use any smaller paths or passage available for it to get through. This idea also applied to the snatch thefts who mainly use motorcycles to commit the crime. Even though there are witnesses during the incidents, usually the witness will not be able to provide any help even by going after the snatch thefts by using cars or any bigger vehicles since the offenders will definitely find and use any small escape routes available to run away. Moreover, the street is linear and connected with the main road which provide direct access to any public users other than the residents in the neighbourhood. Since this area is a residential area, the residents in the neighbourhood are not always outside the housing area as compared to the commercial area or public spaces which can provide informal surveillance. This might be one of the advantages for the offenders to commit the crime.

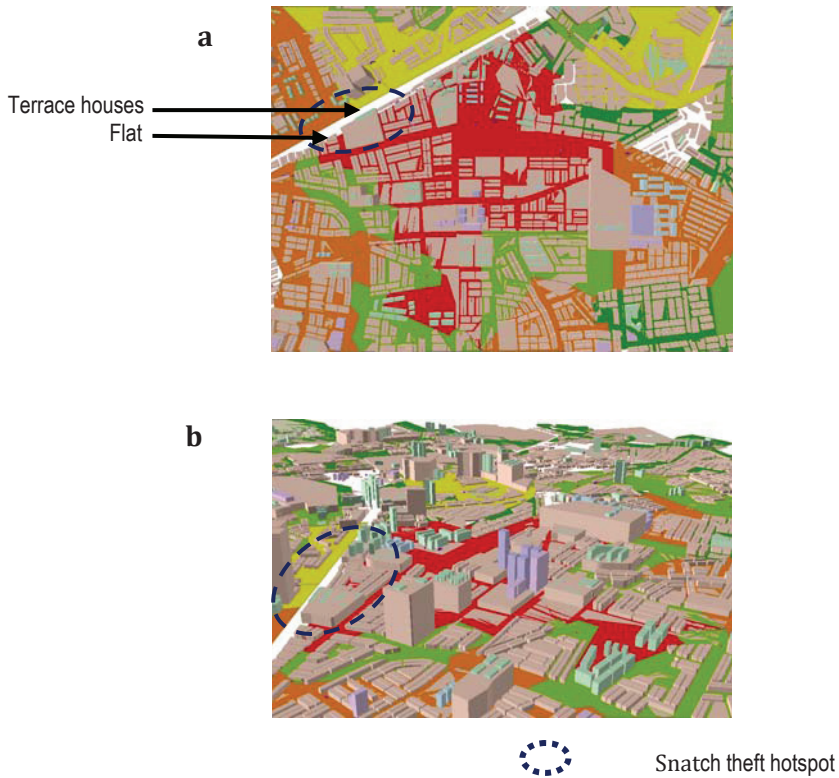


Image 2(a-b): Taman Pandan Indah Neighbourhood with Highest Snatch Theft Cases

CONCLUSION

Snatch theft has become the biggest concern towards the citizens in Malaysia since it has caused deaths and injuries as reported in the daily local newspaper, articles and videos which were uploaded on the internet. One of the reasons is because the awareness level of people in snatch theft issues is very low and it will eventually make the victims to be traumatised (Faizah, 2015). This study has revealed that high-rise or tall building could contribute to snatch theft incidents due to its insufficient of informal surveillance from the public and from the inside of the building. It is not easy to provide informal surveillance from the inside of the building even though the buildings have big clear windows. This is because people do not

always be looking outside of the buildings through the window and some of the windows are covered or equipped with curtain to provide privacy and also from the direct sunlight. Also from the results obtained, it shows that the snatch theft incidents happened in the residential area. It is likely snatch theft to occur in the urban area such as commercial and public areas. This might be due to the neighbourhood as having ample escape routes for the snatch thefts without being seen by the residents in the neighbourhood. It is highly recommended to increase the usage of the mechanical surveillance by installing the CCTVs and the number of patrolling police within the snatch theft hotspot area. In addition, the schedule for the patrolling police should be varied instead of having fixed time. If the patrol time is fixed, the snatch thefts or any other crime offenders could observe and plan to commit crime when it is not the time of the patrolling takes place. Hence, the crime rates might be reduced through the strict enforcement at the hotspot area. GIS technologies evidently commit as efficient mapping instrument which carry significant potentials for urban planners and other related fields in planning.

ACKNOWLEDGEMENT

In realizing this study, the researchers would like to thank the Royal Malaysian Police (PDRM), Ministry of Higher Education by the Malaysian Government to support this research by the Research Acculturation Collaborative Effort (RACE) of (600-RMI/RACE16/6/2(3/2015)).

REFERENCES

- Block, R. L. &, & Block, C. R. (1995). *Space, Place and Crime: Hot Spot Areas and Hot Places Of Liquor-Related Crime*. Crime and Place.
- Chainey, S., Tompson, L., &Uhlig, S. (2008). *The Utility of Hotspot Mapping for Predicting Spatial Patterns of Crime*. Security Journal. <http://doi.org/10.1057/sj.2008.6>.
- Clontz, K. A. (1997). *Spatial analysis of residential Burglaries in Tallahassee, Florida*. annual environmental systems research institute (ESRI).

- Colquhoun, I. (2004). *Design Out Crime: Creating Safe and Sustainable Communities*. Crime Prevention and Community Safety.
- Cozens, P. (2008). Crime prevention through environmental design in Western Australia: Planning for sustainable urban futures. *International Journal of Sustainable Development and Planning*, 3(3), 272–292.
- Jabatan Penerangan Malaysia. (2009). Enam Bidang Keberhasilan Utama Negara (Nkra). Retrieved June 16, 2016, from <http://pmr.penerangan.gov.my/index.php/nkra/4808-pointers-6-bidang-keberhasilan-utama-negara-nkra.html>
- Lakshiny. (2016). 7 To 8 Police Reports Daily on Snatch Thefts In KL, Malaysians Need To Look Out For Each Other To Overcome This Crime. Retrieved July 27, 2016, from <http://malaysiandigest.com/>
- Liggett, R., Loukaitou-sideris, A., Iseki, H., & Candidate, D. (2003). *Protecting Against Transit Crime*, 139–156.
- M.P., P. (2004). Factors of the Physical Environment Associated with Walking and Bicycling. *Medicine and Science in Sports and Exercise*, 36(4), 725–730.
- Maltz, M. D., Gordon, A. C., & Freidman, W. (1991). Mapping crime in its community setting: Event geography analysis. *Mapping crime in its community setting: Event geography analysis*.
- Monk, K., Heinonen, J. A., & Eck, J. E. (2010). *Street Robbery The Problem of Street Robbery What This Guide Does and Does Not Cover*. Retrieved from http://www.popcenter.org/problems/street_robbery/print/
- OSAC. (2015). *Malaysia 2015 Crime and Safety Report*, 1–8. Retrieved from <https://www.osac.gov/pages/ContentReportPDF.aspx?cid=17215>
- PDRM, P. D. R. M. *Statistik Jenayah Ragut* (2016).
- PDRM, P. D. R. M. *Statistik Jenayah Ragut* (2016).

- The Star. (2016, April 28). Lee : Crime index down, but not public fear. Star Media Group Berhad, pp. 1–2.
- Wang, D., Ding, W., Lo, H., Stepinski, T., Salazar, J., & Morabito, M. (2013). Crime hotspot mapping using the crime related factors - A spatial data mining approach. *Applied Intelligence*, 39(4), 772–781.
- Weisburd, D., Groff, E. R., & Yang, S. M. (2013). *The Criminology of Place: Street Segments and Our Understanding of the Crime Problem*. *The Criminology of Place: Street Segments and Our Understanding of the Crime Problem*.
- Weisburd, D., Morris, N. A., & Groff, E. R. (2009). Hot spots of juvenile crime: A longitudinal study of arrest incidents at street segments in Seattle, Washington. *Journal of Quantitative Criminology*, 25(4), 443–467.
- Yew, E. L. (2012). *Situation Analysis of Snatch Theft Issue in Malaysia*. Multimedia University (MMU).