

**UNIVERSITI TEKNOLOGI MARA**

**ANALYSE THE PROPERTY  
CRIME CASES IN JOHOR  
BAHRU UTARA USING  
SPATIAL ANALYSIS  
GEOGRAPHIC INFORMATION  
SYSTEM**

**SITI NURAHIN BINTI AHMAD**

Thesis submitted in fulfillment of the  
requirements for the degree of  
**Bachelor of Surveying Science and Geomatics  
(Hons)**

**Faculty of Architecture, Planning and Surveying**

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## **AUTHOR'S DECLARATION**

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student : Siti Nurahin Binti Ahmad

Student I.D. No. : 2015280696

Programme : Bachelor of Surveying Science and Geomatics (Hons) -  
AP220

Faculty : Architecture, Planning and Surveying

Thesis : Analysis The Property Crime Cases In Johor Bahru  
Utara Using Spatial Analysis Geographic Information  
System

Signature of Student : .....

Date : July 2019

## **ABSTRACT**

The Johor Bahru is one of the sub-district in Johor is the third largest city in Malaysia with a people of 1.4 million and is predictable rose up to 2.2 million in year 2020 (Economic Report, 2005, 2006) that have a high number of crime cases. The aim of this research is to analyse property crime pattern and its relationship on population, labour force, metrological and built environment in Johor Bahru using Geographic Information System (GIS). Performed geocoding of the database is process to performed in order to locate the position of the crime cases on the map. Second process will proceed by open sources Quantum GIS (QGIS). Hot Spot Analysis using Kernel Density Estimation. The Kernel density estimation (KDE) is the most suitable spatial analysis technique for the hotspot crime cases. Last stage, the regression analysis using Ordinary Least Square (OSL) is performed in order to get the P-value which is the probability of the relationship and also derived the multiple R-squared and adjusted R-squared from the regression equation to quantify model performance. The result is Map of hotspot crime cases in Johor Bahru and what pattern is influence the Property Crime Cases based on relationship between factor and cases.

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