



UNIVERSITI BRUNEI DARUSSALAM

CODE AND MODULE NAME:

SM-4290 (RESEARCH PROJECT)

RESEARCH PROPOSAL'S TITLE:

THE STATISTICAL ANALYSIS ON KNIFE CRIMES IN BOROUGH OF LONDON

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ABSTRACT

One of the most common crimes committed in London is knife crime. In this research study, the focus will be on the possible common factors of knife crimes committed in the 33 boroughs of London. The objective of this study is to gain an understanding of the pattern of knife crimes committed in specific areas by spatial analysis. Linear regression is also utilized to determine the relationship between the factors and the knife crime committed in the specified areas. The results will show the correlation of the factors of knife crimes in different areas of the 33 boroughs of London

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INTRODUCTION

General Background

Crime is an illegal act or an activity which is against the law for which the person committing a crime can be legally punished by the law. An action or omission that constitutes an offense that may be prosecuted by the state and is punishable by law as stated by Michalowski (2016).

The main objective of this research study is to carry out a close examination of some possible factors of knife crime rates in the 33 boroughs of London, United Kingdom. Knife crime is a crime which involves knife which is commonly used as an offensive weapon to cause an injury to another person or with the intention to cause injury to another person. Knife crime has always been a big problem in United Kingdom. A very high number of knife deaths and a large number of newly arrived migrants or refugees who were caught up in the violence, there was an increase in teen deaths thirty teenagers died in Greater London in 2008, compared to twenty-six in 2007 as stated by a Wood (2010).

These are list that are considered as knife crime:

- carrying any knife in public without any valid reason
- in the possession of a prohibited knife
- causing injury or fatally wounding someone with a knife
- has the intention of injuring or harming someone with a knife
- robbery or burglary in which a knife was used as a weapon

This study will focus all area that involves knife crime.

Significance of Research

The various elements of possible factors presented in this study are critical and beneficial in identifying the fundamental flaws that lead to knife crime in the 33 boroughs of London. The statistical analysis in this research can also be used for tourism organization to evaluate and see how it affects the geographic areas they represent. These statistics can also provide public awareness regarding the knife crime occurrence from the spatial analysis given.

Objectives and Research Questions

The main objectives of this research are to have an inside look if there is a link between the knife occurrence and the possible factors of knife crime.

- To focus and gain understanding on knife crime occurrences in the 33 boroughs of London.
- Differentiate the factors (unemployment rate, level of education, population density, median annual gross pay) between the 33 boroughs of London.
- Distinguish the relationship between the knife crime occurrences and the possible factors in the 33 boroughs of London.

Research Questions:

- Do the possible factors have a positive or negative correlation with the knife crime occurrences?
- Of all 33 boroughs of London, which boroughs has the lowest and highest knife crime occurrences?
- Which of the possible factors has the most impact on knife crime rates in the 33 boroughs of London?

Literature Review

A crime is an act or omission that is considered an offense and is penalized under the law. Several scholars have conducted studies on the probable factors that influence crime rates.

A violent crime occurs when someone physically harms or threatens to harm another person, as well as when a weapon is utilized, here knife crime also falls under the category of violent crime. Based on research by Sandra, Alexandra and Zach (2014), according to a multiple regression analysis, a 1% rise in the unemployment rate increases violent crime by 14.3% per 100,000 inhabitants.

On another study by Groot and van den Brink (2010) concluded that, the findings of this study imply that investing in education can result in significant reductions in the social costs of crime. With each year of education, the likelihood of committing crimes such as stealing, vandalism, threat, assault, and harm decreases.

Research done by Watts (1931) a Chief Statistician on criminal statistics from Dominion Bureau of Statistics Canada, have found that it is abundantly evident that the crime rate is materially affected by the growth and urbanization of the population.

An individual's gross salary is his or her monthly or annual compensation before any deductions. Based on research done by Becker (1968) stated that, as wages rise, the likelihood of cost crime rises, reducing an individual's proclivity to commit criminal offenses.

METHODOLOGY

Description of Research Area

The choice of study area for this research project is the 33 boroughs of London (including the city of London), United Kingdom. On April 1, 1965, the current London boroughs were all established at the same time as Greater London. London has 32 boroughs, including 12 inner boroughs, 20 outer boroughs and this study will also include the City of London.

Target Population

The target population of this study will include all population in 33 boroughs of London (including the city of London) aged from 16-64.

Data Collection

The knife crimes set of data is obtained from 1) data.police.uk and 2) met.police.uk

While the possible factors of knife crime set of data is obtained from the 3) Office of National Statistics (ONS), United Kingdom.

All 3 platforms are readily available and is permissible to be used for the public which can be found in the internet.

Variables Identification

Dependent Variable: Knife crime occurrences

Independent Variable: Possible factors of knife crime (unemployment rate, level of education, population density, median annual gross pay)

Method of Data Analysis

1) Spatial Analysis

In this section, the number of knife crime occurrences and their possible factors from the 33 boroughs of London will be extracted and layered to the map of London borough. This will show the comparison of the knife crime occurrences and its possible factors in form of heat map.

2) Linear Regression

In this section, the linear regression is used to find the relationship between the dependent variables and independent variables. This will identify the strength of impact the factors of knife crime have to the dependent variable. R-Software will also be used to calculate the linear regression of this model.

Limitation to the Research

Some data for the both independent and dependent variable are not updated in the database store.

People Involved

In this research project, Muhamad Akmal bin Hj Abu Hanipah is the person who is responsible for gathering the data, conducting the analysis, research proposal and journal article. This research project is all under the guidance of Dr. Haziq Jamil (Assistant Professor in Statistics).

Potential Outcome of the Research

The results from the spatial analysis (heatmap) will provide a comparison of knife crime rates in the 33 boroughs of London, this will show which borough has the lowest/highest knife crime rates. This can provide public awareness and identify which borough has the safest environment in regards of knife crimes. The knife crime rates and possible factors will undergo linear regression to identify the correlation.

Timeline

The components of the various stages of research are summarized in the table given below, along with the estimation of completion.

STAGE	TASK	DATE	DURATION
1	Topic Choosing	8 th January – 1 st March	7 weeks
2	Research Proposal	2 nd March – 15 th May	10 weeks
3	Data Collection and Analysis	18 th May – 1 st August	14 weeks
4	Writing Journal Article	2 nd August – 1 st October	8 weeks
5	Presentation	2 nd October- 30 th November	9 weeks

Summary

The spatial analysis will show which of the 33 boroughs of London has the highest and lowest knife crime rates. Next, factors will be taken into account whether or it has a positive or negative correlation with the knife crime occurrences in the 33 boroughs of London. From here, this will aid the public to identify which boroughs has the safest environment (no/less knife crime rates). The main analysis that will be carried out in this study is spatial data analysis and linear regression.

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