

**UNIVERSITI TEKNOLOGI MARA**

**SPATIAL CORRELATION ANALYSIS OF  
OBESITY CASES WITH DEMOGRAPHIC AND  
FAST FOOD OUTLETS DISTRIBUTION**

**SITI NUR ZULAIKHA BINTI CHE HUMAIDI**

Thesis submitted in fulfillment  
of the requirements for the degree of  
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## AUTHOR'S DECLARATION

I declare that the work on this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. This thesis is original and it is the result of my own work, unless otherwise indicated or acknowledged as referenced work.

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Name of Student : Siti Nur Zulaikha binti Che Humaidi  
Student's ID No : 2014807704  
Faculty : Faculty of Architecture, Planning and Surveying  
Programme : Bachelor in Surveying Science and Geomatics (Hons)  
Code Programme : AP220  
Project Title : Spatial Correlation Analysis of Obesity Cases with  
Demographic and Fast Food Outlets Distribution

Signature : .....  
Date : January 2018

### **Approved by:**

I certify that I have examined the student's work and found that they are in accordance with the rules and regulations of the Department and University and fulfills the requirements for the award of the Degree of Bachelor of Surveying Science and Geomatics (Honor).

Name of Supervisor : Dr. Noradila binti Rusli @ Ruslik

Signature : .....  
Date : January 2018

## ABSTRACT

Most of population in the world live in countries where obesity and overweight killed people more than underweight whereby leads too many chronic diseases such as diabetes mellitus and heart attack. Although the worldwide obesity nearly tripled since 1975, the influence of the surrounding factors such as fast food outlets distribution, income status and physical activity levels is still unclear. This research investigates the pattern of obesity cases in United Kingdom and Malaysia in year 2015 by testing the associated variables in order to find the risk factors that contribute to the rise of obesity cases in both country. Hotspot analysis was examined for the explanatory factors for both country by using Getis Ord  $G_i^*$ , cartogram mapping and classification by using ArcGIS 10.2 software and Scape Toad software to determine which region or state that have high rate each of those factors. Spatial correlation analysis was used by using fast food outlets distribution, income status and physical activity levels data with obesity cases to test the relationship of the explanatory factors towards percentage of obesity. It is found that the correlation value for fast food outlets distribution in UK is  $R^2 = 0.01$  while in Malaysia,  $R^2 = 0.02$ . The correlation value for income status in UK is  $R^2 = 0.86$  and Malaysia,  $R^2 = 0.12$ . Lastly, the correlation value for physical activity levels in UK is  $R^2 = 0.40$  while in Malaysia,  $R^2 = 0.20$ . In conclusion, income status and physical activity have high impact to the obesity in United Kingdom meanwhile it give low impact among population in Malaysia. For fast food outlets distribution, it has very low relationship with obesity for both country. The usage of GIS application and new technology can provide easier and effective ways in order to monitor the obesity and health status worldwide.

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