UNIVERSITI TEKNOLOGI MARA

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

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Thesis submitted in fulfillment of the requirements for the degree of Bachelor of Surveying Science & Geomatics

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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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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 Gi*, 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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