

GIS Assignment 2

by Tapi Matuwi

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GEOGRAPHICAL INFORMATION SYSTEMS ASSIGNMENT 2

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1.0 Introduction

This report is going to be focusing on the application of GIS in the relation to the MMR immunisation of Swansea over the last few years. Location based services use geo data from a mobile device or a smartphone to provide information. The research carried out from this project made use of location based services by getting the information about the school around the city of Swansea, after obtaining the information the latitude and longitude was used to pin point where those schools were on a map. Using MMR data from the Financial Years of 2014 to 2017 thematic maps were created to see which areas where the safest from outbreaks or potential outbreaks.

2.0 Data Collection and Entry

The data gathered about the MMR was taken from the National Health Services Wales website. This data allowed the research to go further by looking at different schools around Swansea in relation to MMR and the information about the schools was obtained from the Swansea City Council Website. The MMR data that was used was based on 2 doses by the age of 16 in the different areas of Swansea. Once the data on the MMR was obtained it was put into the Microsoft excel and it was edited so it could work inside the MapInfo Pro software application. The same procedure was carried out for the information gathered on the secondary schools of Swansea. Once this was done the data on MMR was opened in MapInfo as a table, using the geocode from the table it the data was able to be represented on a map. When the data from the schools was put into the MapInfo software in order to represent the schools on the map the latitude and longitude was used to create points of the schools on the map.

3.0 Development of Layers

When all of the data was collected and entered into the MapInfo software the stage was the development of the layers. The layer that was very important was outline the map of Swansea which was obtained from the ordnance survey website. This was the base layer of the workspace. (Figure 1) Thematic maps representing the different financial years were put in as additional layers. The themes of the different financial were put into different colours to avoid confusion when added to the map. (Figure 2) Once these themes were added the information on the schools was then added as a new layer, the latitude and longitude was used to pinpoint where the schools were location on the map of Swansea. (Figure 3)



Figure 1: Swansea Map Layer



Figure 2: MMR Themes

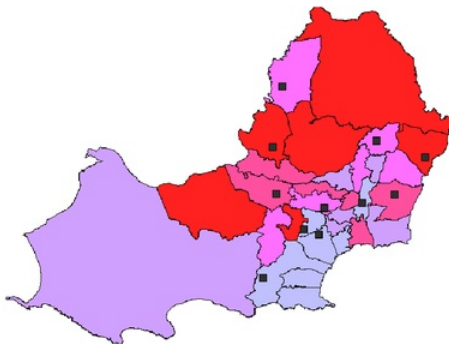


Figure 3: School Points

4.0 Functionality of the System GIS and Website

Using the add on tool for called MapInfo2Leaflet webpages based on the data collected in MapInfo was able to be created. The add on tool has the ability to create a webpage that shows where the schools are on a live map. When the points on the live map are clicked they show the information about that school that is taken from the data table that is in MapInfo as show in the Figure 4

School Info



Table: School_Info.TAB, exported from MapInfo Professional (using the MapBasic application MapInfo2Leaflet.MBX)
Date: 15 May 2018

Figure 4: Website

5.0 Spatial Data Sets

When all of the data is put together it becomes very useful when it comes to the observation of the map. Looking at Figure – which shows the MMR by age 16 of the financial year 2014/15. The different shades shown on the map represent the MMR coverage, the darker the colour the better and the lighter represents bad. In these financial years there are two school that are in areas shown as below 86.0 which is not so good in terms of MMR. The rest of the schools are in the better areas as shown on the map.

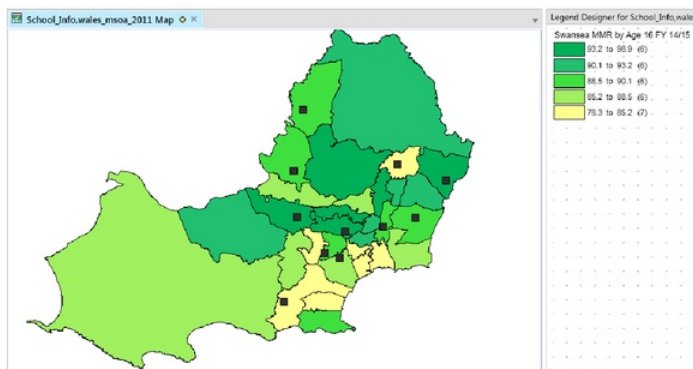


Figure 5: MMR FY 14/15

In the financial years of 2015/16 it is shown in the image below that there are only two schools that that are located in the area that have a range of 93.4 to 95.9. There are two other schools that are located in area that have over 90.0 but the rest of the schools are below. When compared to the previous financial years it's not a good look because there have been no improvements, the MMR dose by the age of 16 has gone down since then.

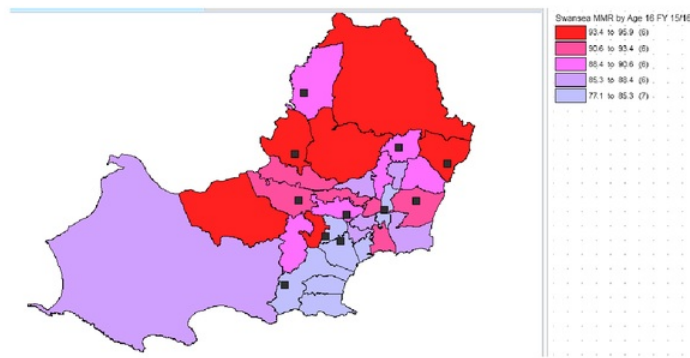


Figure 6: MMR FY15/16

Looking at the image below things have only gotten worse in this financial year because looking at the ranges show on the Legend the highest is 88.7 to 94.9. When compared to the previous years which show the highest being 93.0 and above. The lowest ranges in these financial years have lowered as well compare to the previous years where they were 77.1 and above and in this financial year it goes down to 69.2 and above. This map shows that there are three schools that are in the safer areas of Swansea whereas the other areas are not as safe.

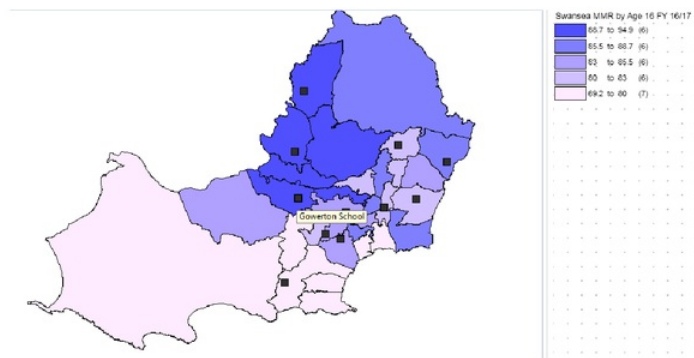


Figure 7: MMR FY16/17

In order to enhance the user experience with the GIS/LBS tooltips where added on the points of the schools to show the name of the school as shown in Figure 7. The use of different colours of themes to represent the different financial years also stops user from getting confused because if the same colour scheme was used to would be hard to tell which financial year is which.

GIS Assignment 2

GRADEMARK REPORT

FINAL GRADE

58/100

GENERAL COMMENTS

Instructor

Discussion / Brief report on LBS in relation to the provision of the student facilities and transport guides (CA 1) 20

A suitable but brief discussion on LBS. However you demonstrate a good understanding of the data requirements under discussion.

Data collection and entry to the system (CA2)20

What have you included in your data that will enhance that users experience with the GIS/LBS (CA 2)

An appropriate set of data layers have been gathered but maybe you could have also include the Townsend data and or deprivation data

Description of the spatial data sets (CA3)20

You have added school data but you have not suggested how you might have completed this task. Perhaps more visuals of the raw data would help with your report.

How you developed the layers within the system (CA 4)35

Functionality of system GIS and Website (CA 4)

Some suitable layers have been added to the workspace and you have used the web utility appropriately to build a website overview.

Documentation / Report including: (CA5)5

Report of an appropriate standard.

10/12/12/20/4 58

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