Spatial Analysis of the Existing Police Stations In Enschede

Introduction

Police stations have a big impact on the security of a city. The goal of this project is to find out whetheror not the spatial distribution of the current-existing police stations in Enschede is reasonable and optimal. Based on the literature research[1], two factors have been taken into account in this project: 1) the spatial distribution of the population density in each zone in Enschede 2) the distances between police stations and the main roads.

Methods

The first step is to analyze the relations between the spatial distribution of the police stations and the population density in Enschede (figure 2). The second step is to find out how far the police stations are close to the main roads (figure 3). After that, the areas which has high population density and close to the main roads are determined. A comparison between this area and the buffer of police stations is shown in figure 4.

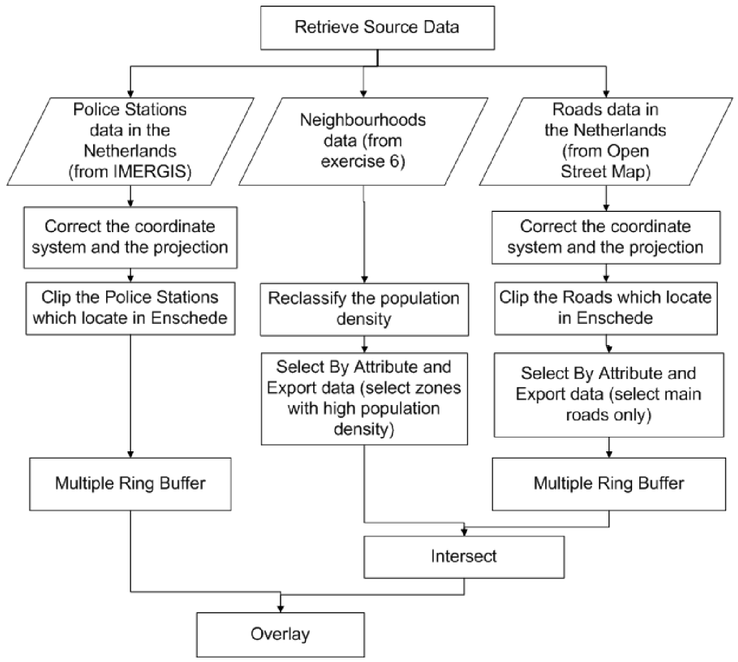

Figure 1. Flowchart of data collecting and data processing

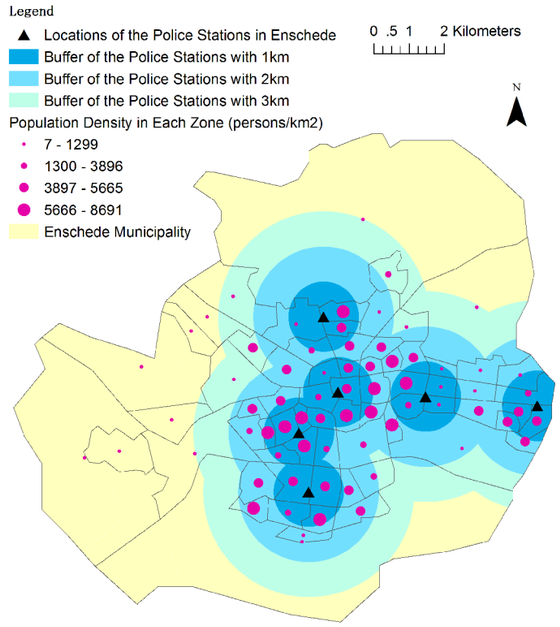

Figure 2. Spatial distribution of police stations and Spatial distribution of population densities in each zone in Enschede

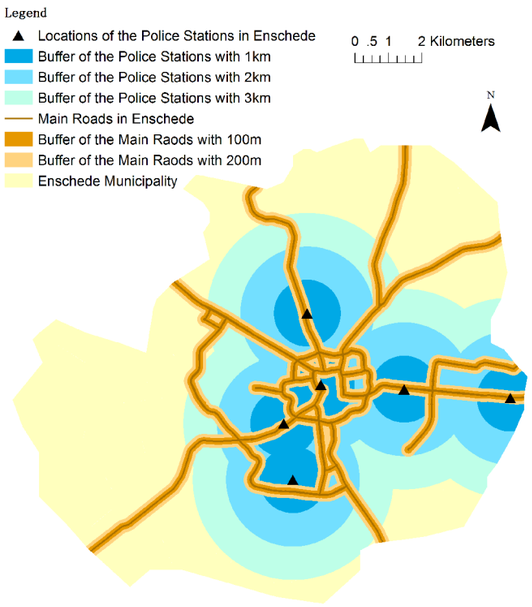

Figure 3. Spatial distribution of police stations and spatial distribution of main roads in Enschede

[1] M. Rahmani, E. Golmehr. The Ideal and Practical Pattern of Positioning Police Stations and its Comparison with the Present Condition.(2014) European Online Journal of Natural and Social Sciences. Vol.3

Results

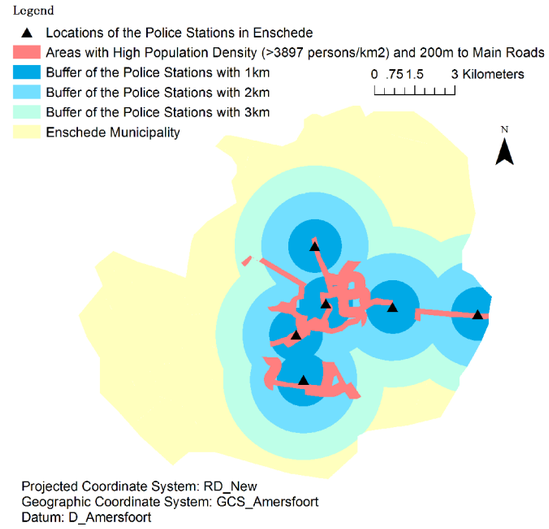

Figure 4. How the spatial distribution of police stations match with the intersection of high-populaiton-density areas and close-to-main-roads areas

Limitations

1) The criteria of choosing the buffer radius of police stations and the buffer radius of main roads is based on intuition, instead of literature research. 2) The decision on the value of “high populaiton density area” is not very valid. 3) When analyzing the distances between the police stations and the main roads, accessibility analsyis is more suitable than buffer analysis. However, due to the time limitation, accessibility analsyis can not be performed.

Conclusions

The spatial distribution of existing police stations in Enschede is reasonable and optimal.1) All the police stations are located in the high-population-density areas. 2) All the police stations are very close to the main roads. 3) Additionaly, it has been observed that there are more numbers of police stations in the middle and east of enschede than those in the west.

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