Location of educational centers Using Combined Overlap Index and Analytical Hierarchy Process (AHP) (The case study: the guidance Schools of Kazeroun city)

J. Mohammadi. H. Poorghayumi. M. Ghanbari
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Extended abstract

1- Introduction

Educational use is one of the most important uses through the physical body of cities and is importance for this issue. The existence of educational use is accounted as an index element through the urban areas (Zarabi et al., 2009:46). Nowadays, with regards to population invasion to big cities and due to construction of whole urban lands and insufficient positioning of municipal services especially in educational centers, several problems have been caused in the field of youth and students services. So, optimal positioning of educational centers is necessary (Mikaeili; 2009: 6).

According to the statistics of Fars educational organization within the year 1388, across the city of Kazeroun, there are only 31 schools with 4611 students. Now, the educational space of guidance schools is about 58005 m2 which is accounted as less than as 1percent.. This level of area in comparison with its optimum situation, 99117m2, shows 44112 m2 shortages (Consulting Engineers of Naghshe Mohit, 2009:53). So, the necessity of making new schools across the city of Kazeroun and their proper positioning is felt.

2- Methodology

The descriptive- analytical method has been used in this research. All data have been collected by field observations, study of comprehensive models of Kazeroun city and educational organization of this city. Then, proper locations for constructing guidance schools were preceded using the GIS software and after information entry, data management and analysis them.
3- Discussion

In this research seven following data layers have been used in order to proper positioning of guidance schools of Kazeroun city; involving proximity to communication network, proximity to urban green space, proximity to residential centers, proximity to cultural centers, distance from available guidance schools, locating across the proper land use, locating on proper slope. Table 1 shows the Rating to information layers according to distance.

<table>
<thead>
<tr>
<th>Distance in Meters</th>
<th>Green Spaces</th>
<th>Cultural Centers</th>
<th>Communication Network</th>
<th>Residential Areas</th>
<th>Guidance Schools</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-100</td>
<td>0-100</td>
<td>0-50</td>
<td>0-100</td>
<td>900+</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>100-200</td>
<td>100-200</td>
<td>50-100</td>
<td>100-200</td>
<td>800-900</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>200-300</td>
<td>200-300</td>
<td>100-150</td>
<td>200-300</td>
<td>700-800</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>300-400</td>
<td>300-400</td>
<td>150-200</td>
<td>300-400</td>
<td>600-700</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>400-500</td>
<td>400-500</td>
<td>200-250</td>
<td>400-500</td>
<td>500-600</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>500-600</td>
<td>500-600</td>
<td>250-300</td>
<td>500-600</td>
<td>400-500</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>600-700</td>
<td>600-700</td>
<td>300-350</td>
<td>600-700</td>
<td>300-400</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>700-800</td>
<td>700-800</td>
<td>350-400</td>
<td>700-800</td>
<td>200-300</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>800-900</td>
<td>800-900</td>
<td>400-450</td>
<td>800-900</td>
<td>100-200</td>
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</tr>
<tr>
<td>900+</td>
<td>900+</td>
<td>450+</td>
<td>900+</td>
<td>0-100</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Reference: Authors.

For land use, has been rated the economical value and its proportion. For instance, sterile use is higher rated and commercial use is lower rated according to their lower and higher economical values, respectively. In the following, the optimal locations maps in order to build new guidance schools across the city of Kazeroun could be seen.
As shown in the map1, major proposed locations for guidance schools construction are located at suburbs; because of suburbs in comparison with other places have higher grants. Considering with the shortage of these places, the construction of guidance schools in proposed areas not only will affect the development of whole city of Kazeroun but also can help citizens access to educational services.

4- Conclusion
There are several causes in positioning of educational centers (guidance schools), which their different aspect analysis are not been possible by traditional methods. Therefore, geographic information system is necessary for a great deal of information analysis. Also, analytical hierarchy process (AHP) and geographic information system (GIS) have a high efficiency in the field of guidance schools positioning. This efficiency is not related to the comparison and estimation different locations and optimal place selection according to mentioned criteria. After revealing the problems of guidance schools positioning of Kazeroun using GIS, Analytical hierarchy process (AHP) and index overlap model have been used in order to position new guidance school buildings. Ultimately lands which are located in the city limits of the legal and privacy of Kazeroun were leveled and six locations were investigated for new schools. Then, using AHP, these six locations were preceded and best place was detected.

Key words: Geographical information system (GIS); Analytical hierarchy process (AHP); Index overlap model
(IO); location; Guidance schools; Kazeroun

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