

Locating the Rural Waste Landfills by Using Integrating Multi-Criteria Decision-Making Model in GIS Environment (Case Study: Shahrekord County)

Masoud Safeepour^{1*} - Sadegh Mokhtari Chelche² - Seyyed Reza Hosseini³ - Ismaiel Soleymanirad⁴

1-Associate Prof., in Geography & Urban Planning, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

2- MSc. Student in Geography and Rural Planning, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

3- MSc. Student in Geography and Rural Planning, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

4- MSc. Student in Geography and Urban Planning, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

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Extended Abstract

1. INTRODUCTION

lack of control on wastes and inattention to qualitative and quantitative condition of all productive waste, collecting method, transportation and their correct and hygiene removal result in special problems, threatening the health and environment. in any rural and urban centers, study on waste condition is differently Done because of various factors including waste management manner, type of the services presented by medical-hygiene centers, admission numbers, cultural and economic condition of The society, etc. wastes and their distribution in the environment Is one of the most Important problems of Human society and Its extent is increasingly increasing with regarding to rubbish production rate.

2. THEORETICAL FRAMEWORK

Locating in the sciences related to earth is an operation In which by presenting the needs, aims and information about the existing condition to the other experts and summing them in his/her aims and opinions, an individual tries to attaining at the best choice among the available alternatives for the intended operation. Optimum locating is possible when the researcher can establish a scientific and logical relationship between the data and information obtained by the related experts in location area. Man chooses his activity place in order to attain at bearing less cost, more earnings and easy access to the resources. However, as the effective factors on locating become complex, we have to use scientific and modern methods (especially after world war2). In this respect, different theories, assumptions and Models have been presented, each one has its own advantages and disadvantages and is intended for the special operations. In term of approach and problem

analysis, locating theories are divided into three groups:

- 1) theories based on minimizing the cost,
- 2) theories based on access analysis (most emphasize on demand and market factors a maximizing the intended earning),
- 3) theories based on maximum earning and in fact they are the result of two above methods.

As more local models are employed for finding the optimum locations or optimum design, they are called as site selecting models or locating models. the aim of these models is to find the best location for an activity or settlement.

3. METHODOLOGY

this investigation is in applied type and descriptive-analytical method. The aim of this study, the optimum locating for the waste rural landfill in shahrekord. In this respect establishing the required installations and equipment's in order to locating the hygiene burial of the rural wastes requires using many various criteria. Then, in the present study, hierarchical analysis process model has been used for pair comparison by the experts and determining the final weight of sub-criteria. Then, by creating the information layers of sub-criteria and integrating them in arc Gis environment with regarding to the final weight abstracted from this model, the best sites for the final locating of the hygiene waste landfill have been prioritized.

4. DISCUSSION

in this investigation, the best location for the establishment was identified by integrating 13 information layers in GIS environment. In the identification process, three locations were chosen as the proposed locations. AHPF model was used to select the best location.

*. Corresponding Author: safaee_p@scu.ac.ir

in the analysis, three proposed sites (first site 18.2 km², second site 12.6 km², third site 6.7 km²) were identified as the best places for waste rural waste landfill which were located in the west and east regions of county sharekord.

With regarding to the results of the investigation, some suggestions can be presented as the following:

- in preparation step of information layers, if possible use the figure data provided by mapping organization which should be update as much as possible, so that in addition to assuring the geometric accuracy and precision

of the input data, excess costs and longtime spending for providing the information layers will be prevented.

- it is necessary to study the ownership type and land cost in the located places so that final decision will be made about the intended ownership.
- present the selected place characteristics in the form of an intelligent model.

Key words: Locating (location), burial, rural waste, multi-criteria decision making, geographical information system (GIS).

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