شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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ASSESSMENT OF BASIC SERVICES IN URBAN SETTLEMENTS USING GEOGRAPHIC INFORMATION SYSTEMS

Submitted By

Ahmed Ghazy Ibrahim Azzam

B. Sc. Of civil Engineering, Higher Technological Institute,
Tenth of Ramadan, 2000
Master in Environmental Sciences, Institute of Environmental
Studies and Research, Ain Shams University, 2011

A Thesis Submitted in Partial Fulfillment
Of
The Requirement for the Doctor of Philosophy Degree
In
Environmental Sciences

Department of Environmental Engineering Sciences
Institute of Environmental Studies and Research
Aim Shams University

2021

APPROVAL SHEET

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This thesis was discussed and approved by:

Name Signature

1- **Prof. Dr. Magda Ekram Ebaid**
Prof. of Environmental Architecture of Environmental Engineering Sciences
Institute of Environmental Studies & Research
Ain Shams University
Dean of the Higher Obour Institute of Engineering & Technology

2- **Prof. Dr. Ihab Mahmoud Bayoumi Okba**
Prof. of Environmental Desing & Planning
Faculty of Engineering
Fayoum University

3- **Prof. Dr. Bashayer El Sayed Khairy**
Prof. of Planning, Department of Urban Planning
Faculty of Engineering
Sin Shams University

4- **Dr. Hala Mohamed Adel Effat**
Associated Prof. of Environmental Engineering & Urban Planning
Head of Environmental Studies & land use Department
National Authority for Remote Sensing.

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1- **Prof. Dr. Bashayer El Sayed Khairy**

Prof. of Planning, Department of Urban Planning
Faculty of Engineering
Sin Shams University

2- **Dr. Hala Mohamed Adel Effat**

Associated Prof. of Environmental Engineering & Urban Planning
Head of Environmental Studies & land use Department
National Authority for Remote Sensing and Space Sciences

2021

Acknowledgment

First of all I would like to thank Allah the mighty creator who gave us knowledge and abilities to innovation the software and the tools helping us to overcome the challenges we face to achieve fair distribution of services in any urban community whether it is an existing or newly planned one.

Also great thanks for my supervisors who supported me scientifically through this thesis elegantly.

I would like sincerely thank my Mother, who is the main reason for my standing here right now physically and morally.

Great thanks for my beloved sister for her psychological and moral support through all the stages in my life specially the period of preparing this thesis.

The ultimate thanks for my small family my Wife and my three angels who supported me, encouraging me to finish this study in order to be in a better scientific and social status.

Abstract

This thesis aims to assist the spatial distribution, sufficiency and equality of the educational and health services in the urban mass of Egyptian cities. Two cities were selected for the study. The first application was applied on El Mansoura City in Dakahleya Governorate, located in the Nile Delta and surrounded by arable lands with no desert extension. The target was to assess and improve its situation in the urban mass without sprawling on the arable lands. The second application was applied on the Tenth of Ramadan City, located in the desert extension in El-Sharkeya, one of the first generations of the new communities in Egypt. The target was to assess and improve the current situation of the services and avoiding extension of infrastructure outside the city urban mass boundary. The assessment was conducted using the spatial analysis tools in ArcGIS 10.4.1 software and following the guidelines set by GOPP for deriving the standards, thresholds and sphere of influence for the locations of each of the two services for each city. The directory of distribution of land-use activities for the Egyptian cities was studied and followed.

Applying the spatial analysis on the relevant GIS layers in the geographic database and following the mentioned guidelines, the assessment revealed a shortage of both services in both cities. Such shortage was depicted in spatial analysis and maps pointing out the situation in each city administrative boundary/sheyakha. The cities' extensions were also assessed in order to ensure the use of available vacant lands. Accordingly, field visits were conducted for such vacant lands and finally new locations for the educational and health services was proposed for the two cities. The new proposed locations follow the GOPP guidelines and abide the directory of distribution of land-use activities in the Egyptian cities.

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