ARISTOTLE UNIVERSITY OF THESSALONIKI
SCHOOL OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
POSTGRADUATE PROGRAMME OF CONSTRUCTION MANAGEMENT

ACADEMIC YEAR 2010 – 2011

TITLE OF DIPLOMA THESIS:

Multicriteria analysis in decision making for the location of General Hospital: Application to Thessaloniki Prefecture using GIS

AUTHOR: Sidiropoulou Domna

ABSTRACT

The present essay aims to examine the theoretical approach through MultiCriteria Decision Making on location of public health services, while exploring the possibilities of application in real conditions. The application takes place at the Thessaloniki Prefecture, which examines the case for locating a General Hospital. Initially, it explores the conceptual framework of "health services", reveals the role and functions of health services, general characteristics, and make reference to the evaluation criteria, to the theoretical approach to the location criteria. Then, it becomes a historical review of the National Health System and the present situation of organizations and public health services in Greece. The implementation of this task for locating hospital in the Thessaloniki Prefecture, performed by using geographical information systems, is an analysis of selected location criteria. The processing method of the criteria used is the hierarchical method of analysis, and visualization of results comes through maps, by use of GIS software. The demarcation of areas for the location of a hospital unit is a multifactorial process, which takes into account factors geographic, demographic, shared a sub-category. The method of multicriteria analysis serves the needs of the present essay for the location services, as it is a methodological approach, which investigates, collate, analyze and arrange appropriate information available on possible areas of design. A multicriteria analysis method is chosen, the hierarchical method (Analytic Hierarchy Process AHP). This is a method which has wide application in solving problems of location. . The proliferation of AHP due to both the simplicity and clarity and ease of implementation. The method of AHP is implemented in various stages: a) hierarchical analysis of the problem decision on decision (decision elements), collecting preferences) from the decision maker about what decision c) calculating individual priorities (weights) for decision and d) the composition of the individual priorities of general priorities of alternatives. The first two stages take place with the participation decide (decision stage) while the last two are purely computational

KEYWORDS

Location, Multicriteria analysis, Hospitals