

USE OF GIS AND REMOTE SENSING IN NUMERICAL REPRESENTATION OF DEMOGRAPHIC CHANGE- CASE STUDY OF THE PROVINCE OF BASRAH FOR THE PERIOD FROM 1977 TO 2015

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ABSTRACT

This study deals with the population growth in the province of Basra during the years from 1977 until 2015 and cofactors and affecting the growth with the help of GIS and remote sensing systems, using modern techniques and programs that significantly contribute to the clarification of the population variation and show the contrast in minutes. The importance of this study is to know the size of the population in the future, and to develop appropriate development plans according to what the population size will reach him. This study includes the population growth in the province of Basra, after the census that took place in Iraq in previous years, we will take the census data for the years 1977, 1987, 1997, and estimates for 2009 and 2015 estimates. As we address the distribution of this growth on the administrative units that make up the province of Basra, according to the last population census and 2015 estimates. And the statement of the variation in population growth, will we use a program Clarke Mab (10.2), which is one of the most important programs used in geographic information systems, mapping and modern technical means in the design and processing, and taking them out, and then to reach concrete results in order to find the best modern scientific means.

INTRODUCTION

The geographic information systems at the present time is crucial in the development of population maps designed and, as it has developed methods of representation and taking them out the final design with the modern sophistication and, as is the map of the most successful and effective ways to represent geographic phenomena, whether natural or human, since no study successful unless they are supported with maps and graphs designed on scientific foundations and mathematical and technical sound either completed traditional methods or completed in the geographic information system software, so the cartography must be a great sense of artistic and scientific nicely in the production of maps and mapping population the importance of planning social and economic, so that there are factors that have helped to develop population maps, especially at the present time and the result of that evolution and expansion of geographic information systems programs, as well as the rapid development of computer automated systems and its accessories and cartography technologies and remote sensing, and her wealth of capabilities in the statistical analysis of the data automatically, based on the fact it has become to be shed light on the role of the demographic map in a statement relationships and variables that contain statistical values of the population, and through the ability of statistical charts on linking population elements and inter-relationships and variables geospatial site affiliate on nature.

The study population growth of important topics that must be taken into account in population studies as they have a significant impact on the economic and social development

plans. The population are the source of the workforce, which manages the movement of various economic activities in the state understand the producers and consumers, and the study of population growth in any country is crucial for any future planning, and highlights the importance of studying the population growth in the coming years, and therefore of great significance for planners in the state, and religion make multilateral development plans in accordance with the size of the population aspects in the past years, and is no doubt that the population estimates for future great importance especially in countries that are planning economic and social development, and what was the goal of the plan is always the human and satisfying the primary needs and raise the standard of living and prosperity to him, it is necessary to know the growth projected population.

GEOGRAPHIC INFORMATION SYSTEM (GIS)

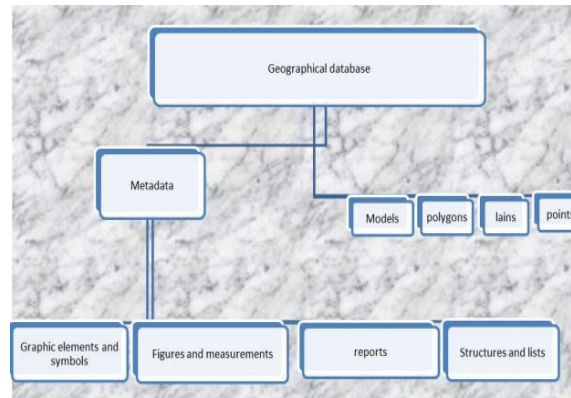
GIS is a system for the display, analysis, storage and retrieval of information about places on the earth. GIS is a useful tool for exploring information and communicating your discoveries to others using maps and other graphic images. GIS can be used either as a research tool, where maps are intermediate steps in an analysis, or as a map production tool, where publication-ready maps are the end product. In either case, knowing something about the basic principles of map making (cartography) will help you use GIS more effectively. When GIS is part of the analysis process, the maps will be changing constantly, and the design of any one map depends on the overall design of the project. It may not be necessary to create an elaborate layout for each map, because some maps may be temporary useful only as intermediate steps in the analysis process. When GIS is used as a map production tool, however, it is important to make each map as informative as possible. The map user and the map designer probably will be different people, and the map user is not necessarily familiar with the information in the GIS the "data behind the maps. Cartography is both an art and science. This document is not a "paint-by-numbers" set of rules, but rather a guide to some of the general principles that cartographers have refined over many years.

SPATIAL DATA

It is located within the data associated with a spatial or geographic reference, any inter-related geographic coordinates or plane, those raster linear spatial elements that make up the map. It is the most raster elements are the coordinates of points on the maps, and public services and the rise point's centers, which do not have the length or space. The linear elements are represented in the water, and political boundaries networks and all kinds of lines that are the length and do not have space lines. The spatial elements Kalmstahat water and land use and communities, which are the elements of a length of the ocean along the line of her, and her space.

METADATA

Meant that written information attributed to the information, and be in the form of lists and reports, and tables and graphs, and symbols, as in the following figure:



FIGUER 1 Basic geographic data base ingredients

The degree of success of geographic data base on the degree of success in linking uses stop inter-fold, which represents a schematic model of the possibility of optimum connectivity.

Accordingly, the rules of geographic information apart from the other databases in its close association with the signing of spatial information on and geometric drawings and aerial photographs and visuals satellite maps which makes them need special pattern of styles and design databases, a scientific study and the technical elements of the maps like points and lines and spaces and important usability for each of them, which represent here necessary for the design of this type of information rules the initial requirements. Source: Aziz Mohammed lavender, geographic information systems, the fundamentals and applications of geographers, i 2 properties knowledge Alexandria 0.2000, p 108.

MERCATOR COORDINATE SYSTEM GLOBAL BROWSER (UTM)

Is a network of lines imaginary longitudinal and occasional right angles to each other to be squares and roads are numbered Surface in kilometers or directly (Source: d. Juma Mohammad Daoud, statistical analysis and spatial, geographic information systems, Clarke MAP Y 21-2009. That any coordinates system that contains coordinate X and Y and point of origin, and to the system of geographical coordinates of point of origin is the line length (Greenwich) with the intersection of the equator circle, relative to the grid for the knowledge of maps is Muscat system Mercator global browser expressed by the world Mercator according points following one - open the earth and make it a flat plate with Greenwich plumb line considered justice to the painting, 180 West Greenwich line and 180 east Greenwich line and 84 north of the equator and 84 south of the equator line. 2 - Section 360 line to 60 View all area 6 longitudinal degrees east. 3 - seemed numbered region of the number (1-60) and gave No. 1 to the area (174-180) west Greenwich.

Thus, Iraq is within the area (37-38 -39) gave the line a central length of each area (ICM), considered the original phantom point of the northern hemisphere, which comes from the intersection line of the central length each region with the equator circle and the value of the coordinates (km - 500 km) on the grounds that one class equivalent to 111 km, and so that all (6) degrees longitudinal roughly equivalent to 650 km and hence the coordinates ray system (Mercator) is a for (3) mattresses pal (km) and (6) mattresses in meters, while the coordinates of the Ypoints (zero), they move away from the South pole to 1,000 km and therefore the ranking coordinates of the Y is (4) mattresses (km) or (7) mattresses in meters, and after this show that every point on the ground with geographic coordinates and quadratic depending on

geographical systems and project (Mercator) (Source: Dr. Mohammed Abdel Wahab Hassan al-Asadi, modern geo-techniques, i 1 S76-77.

CARTOGRAPHY(MAPPING INFORMATION)

The cartography (cartography) of the most important branches of geographical science and who cares about the maps in terms of content, acting and production. The map effective for the study of spatial relations tool, and one of the important means to store a lot of data, including maps of most of the main sources to enrich.

THE GEOGRAPHICAL BASE

Geography data base, many systems rely on the map as a source of data, which usually consists of spatial information (points, lines, and spaces) are stored each of them on a layer or descriptive information, and can be found between the two types of data through the creation of a spatial relationship between phenomena topology. Since the success of the use of computers in the field of graphic In the sixties of the twentieth century, it has taken cartography new CEO attitude where it is called mapping mechanism.

CONCLUSION

The study found a number of the most important results can be summarized by the following:

1. The study showed the importance of the use of geographic information systems (GIS) technology in geographic studies in general studies and cartographic in particular, since this technique (GIS) advanced systems provide in the development, design and update the maps and the development of other maps, the maps stomach through which enjoys high accuracy in the field of geographic phenomena sites, encoding cartographic and show spatial disparities, and see the effect of the affected geographical phenomena to each other in terms of showing reciprocity relations between them, especially since the GIS provides optimized to deal with data and information no matter how large size and processed, analyzed and updated.
2. Geographic studies as well as cartographic studies by geographic information systems technology (GIS) to achieve their desired objectives without the user have this technique familiar with the basic rules of cartography, so in many ways the most important to know the types of maps, classification and the importance of scale and the impact on the presentation of data geographical maps, and the need to know the quantitative and qualitative coding on the maps, and then the effect on the need to know the geographical concept makes sense to analyze the relations between geographical phenomena.
3. Methods of representation cartographic vary among themselves in terms of accuracy for each of them to give the closest picture to the reality of the nature of the spatial distribution of geographical phenomena, as well as in terms of visual perception, especially if we know that the aim of the way cartographic serves as the basis for selection of the appropriate way to represent the phenomena geography.
4. As the way colors are enjoying cognitive and high visual worth as they are more attractive and signed on the eye, they help the reader a map to understand the contents and interpreted as clarity, simplicity and ease of discrimination.

5. The study showed the impact of some of the natural and human factors on the nature of settlement patterns and population distribution in the province, especially the impact of surface water resources and the nature of stretches of rivers and its ramifications on the settlement and distribution patterns of the population, and Lovers is clear variation in the distribution of the population of the province between the different administrative units as well as the impact of certain characteristics or factors human represented with its some urban centers, especially the main ones factors local attraction, making it are heavily population and a clear analogy to other administrative units, was also reflected in the general population and the real and contrast density between administrative units, where we note that close to the center of administrative units and spend Basrah, the center recorded high rates of population density compared to other administrative units.

6. The study confirmed the important role and the basis for the map in geographic studies , so in terms of being the best way to show the statement of the spatial distribution of the various geographical phenomena, as well as knowledge and assessment of spatial relationships between phenomena through specialized maps analyzing and matching with each other in order to know the impact of each displayed on other phenomena, then it cannot be any geographical study to achieve their objectives as required without relying on the map

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