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The 'population' variable in urban design and regional planning (the case of Greece)

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INTRODUCTION

The population is a variable qualifier is a factor in urban planning and regional development. At the same time the space is the natural background of development of each population. Trying to look who the variable “population” ultimately enters in the Greek planning procedures, we will begin with a first approximation of the relationship between area and population, but also with planning as a tool for organizing space.

Planning

By default, the design is "a very rational process to reach a situation which has certain desirable characteristics (*Aravantinos A.*, 1999). When the above process focuses on the area you are talking about spatial planning.

The variable "population"

However, a large part of the procedures and analysis of planning related to population. The study of population characteristics of an area and predict the evolution is not an end in itself for analysis, but their usefulness lies in the fact that some of the characteristics of the urban area is determined by the size and characteristics of the population (first demographic) that concentrated there. Provides much of the size and needs of the site infrastructure and can serve as important indicators for development.

Population in a given geographical area is the quantitative sum of its inhabitants. In Demography and planning is a clear distinction between the real, the permanent and legitimate people. Specifically:

Effective population of a region (municipality, community or village): "The total attendance for any reason, this person on the day of the census, whether they reside permanently in this region were found to reside either temporarily or accidentally." (Kotzamanis B., 2001)

Legal population (citizens): "The number of persons in accordance with the law, registered in population registers of each municipality in the country, wherever they found the day of valuation." (Kotzamanis B., 2001)

Permanent population: All persons normally resident in one administrative unit. In Greece, the inventories of the population, as a permanent (or resident) population recorded all the people living in an administrative module most of the year (NSS).

The data sources for the population in Greece:

The primary source for collecting and disseminating information is the **National Statistical Service of Greece (NSSG)**. The inventory of NSS conducted every ten years and cover the fields are complete. The aim is to collect data relating primarily to the population and its basic characteristics. The fact that the census conducted every ten years, poses problems for the information in the time between the two census. The main user of statistics are public administration, which, based on these designs, implements and monitors policies in various fields. An important question that arises is the validity of the NSS data. Overall, the NSS is considered a reliable source of data, but this does not always ensure and validity of information available. A very important problem which is common in the collection of data is *missing records*.

Key characteristics of the population

Demographic characteristics:

The size, ie the total population of a territorial unit

The density, that may vary considerably from country to country and from region to region.

Changes in population size is the physical movement (balance of births and deaths) and migration inflows and outflows.

The study of these phenomena is the use of specific indicators:

The basic *structural ratios*: The **index ratio of leaves, participation rates in the population of large age groups, the dependency ratios, indicators of aging, the replacement ratio, the dependency ratio.**

The *population pyramids*

The population distribution by sex and age are presented in the form of population pyramids. These population pyramids are histograms of the numbers of males and females by age group, in absolute numbers or percentages of the total population.

Το εμβαδόν της πυραμίδας μας πληροφορεί για τον συνολικό πληθυσμό, ενώ το περίγραμμα της μας δίνει τα πρώτα στοιχεία για την δομή του (και κατ' επέκταση για τις συνθήκες γονιμότητας και θνησιμότητας. Γενικά, οι πληθυσμιακές πυραμίδες τείνουν να πάρουν ένα από τα τρία χαρακτηριστικά σχήματα που παρουσιάζονται κατωτέρω. Σε κάθε ένα από τα σχήματα αυτά αντιστοιχεί και μια διαφορετική δημογραφική προοπτική. Η τάση που υπάρχει σήμερα στις αναπτυγμένες χώρες, και στην Ε.Ε. είναι γερασμένες πληθυσμιακές πυραμίδες. The area of the pyramid tells us about the total population, while his contours give us the first evidence for the structure (and thus the conditions of fertility and mortality). Overall, the population pyramids tend to get one of the three characteristics shape shown below. In each of these figures represents a different demographic prospects. The tendency today in developed countries and the EU are aged in the population pyramids.

Other characteristics:

The economics

It is important for the design (urban and spatial) analysis of the occupational composition of the population, because it helps us to understand a range of possibilities and limitations of intervention in local development. A first basic distinction of professional composition of the population is the economically **active** and **inactive** population. The economically active populations who are working normally, although at the time of the census are unemployed. The non-working population consists of people not working while not doing so. Including retirees, housewives, students and unable to work.

Beyond that, another major distinction is that the working population **employed** and **unemployed**. Employees who are employed permanently or seasonally or unemployed persons are those who seek work and act in this direction have lost their jobs, and young people seeking their first job.

In relation to the active and employed **depending on the profession**, NSSG κάνει τριών ειδών κατηγοριοποιήσεις: make three types of classifications: (Depending on the sector and the industries, groups of individual occupations, the occupational)

Social characteristics:

The social characteristics of the population can capture a first rough picture of the living area. Παράλληλα θα μπορούσαν να αποτελούν δείκτες της χωρικής ανισοκατανομής και των κοινωνικών διαφοροποιήσεων και άρα δείκτες προσδιορισμού των κοινωνικών αναγκών του πληθυσμού μιας περιοχής. Τα κοινωνικά χαρακτηριστικά του πληθυσμού που μελετώνται συνήθως στον σχεδιασμό είναι το **μέγεθος των νοικοκυριών**, η **οικογενειακή κατάσταση**, το **επίπεδο μόρφωσης** και οι **μειονοτικές ομάδες**, αλλά περιγραφικά, χωρίς την χρήση συγκεκριμένων δεικτών. It will likely be an indicator of spatial imbalance and social differences and thus indicators for identifying social needs of the population of an area. The social characteristics of the population being studied in spatial planning are the **household size, the family status, the education level** and the **minority groups**. These characteristics are used descriptive, without the use of specific indicators.

The urbanization:

Another important distinction of the population for spatial planning is the distinction between **urban and rural** population. Please note that this distinction is particularly difficult, and separation criteria may vary from country to country. In Greece, NSSG distinguish the population in urban, suburban and rural according to the size of the most populous settlement of the respective municipality.

The current legislative

Today, the basic spatial planning legislation is essentially based on two laws: Law 2742/1999 "Spatial Planning & Sustainable Development for the planning and the

Law 2508/1997" Sustainable Residential Development in Towns & Settlements of the Country "and in particular Articles Law 1337-1383 "Expansion planning: Residential development and related regulations " for urban planning. These laws, through provisions establish the basic tools and draws for the implementation of spatial planning. For each project there are certain specifications that describe methods and procedures for implementing them. The standards are documents that describe the procedures and implementation of various projects in urban and regional planning. Therefore, by examining the plan's technical specifications, we will try to see how the variable population enters in urban planning and regional development in our country.

Conclusions

First conclusions from the review of technical specifications for all projects

Generally, urban planning and regional development as a process consists of two main stages. There is the analysis phase of the study area and the planning stage or, in other words, phase of proposals. It is understood that the two main stages of the design features and is involved, that the variable we are interested in them. At this stage of analysis, population and its characteristics involved with descriptive to help identify the region, while in the proposal stage the population size is that we are concerned. The truth is that according to the specifications may be omitted some characteristics of the population recognized in the phase of the analysis as it is not mandatory to take into account in the stage of proposals.

1. There is a difference in the way that the variable "population" envisaged depending on the scale of the project. In the large-scale projects the variable "population" and its characteristics are taken particular account during the phase of analysis stage and in the description of the area. For small-scale projects (Master Plan) are taken particular account during the phase of proposals.
2. The way in which the variable "population" being analyzed is generally descriptive. It isn't requested specific indicators to reflect the required standard, so the fix is either descriptive or using absolute sizes. The problem becomes even more pronounced in small-scale projects, in which, anyway, the variable is underestimated. Not also, in this scale the inequalities are reflected.

3. **The problems arising from the study population, based on planning standards** to the stage of proposals concerning both the characteristics of the population not taken into account, and how they take account of others. As we have already mentioned the urban standards is an attempt to quantify the social infrastructure needs of the population in the neighborhood / urban unity and ultimately the overall settlement. The size **used** for the calculation of these needs is the future size of the population. At this stage not taken into account qualitative features, many of whom have studied in the analysis phase. A first question, then, is the use of data obtained from the analysis phase. Essentially, the study of the population, already done in the analysis phase is canceled and its characteristics studied below are not use in phase of proposals.

Besides the general criticism of the theory of planning standards, there are particular problems occur during use. First, all social infrastructure needs arising as a percentage of specific user groups on the total projected population. The rates were not calculated, but based on the demographic structure of the population in a given study area, but down from the start of the technical standards A prerequisite, therefore, beyond the correct prediction is these rates correspond to reality, which in many cases are not applicable (eg based on the specification of primary users is 10% of the total population).

Many of the standard are not mandatory, but advisory. So while it can theoretically be made for a certain percentage of land for social needs, in practice this never materialized. Another issue that arises in relation to urban standards is their sufficient. Some of the suggested standards are outdated in many European countries. Finally, another issue that needs special attention is the relaxation of standards (how volatile are in a number of factors, especially how they vary according to socio-economic profile of each region).

Characteristics of population fails within the planning process

1. Daily mobility for work

The daily mobility in work is increasingly intense phenomenon in most European countries. Nevertheless, it is an issue that is not employing the procedures of planning

in our country (at least based on data generated by the project specifications). The key aspects of the phenomenon directly related to spatial planning are twofold: First, the number of workers moving every day and secondly the change (increase substantially) of the distance must travel and the time needed. We therefore agree with the NSS data for 2001, "The mobility, expressed as a percentage of municipal employees working in a different municipality than living, for approximately 27% of workers in the country, representing 1.1 million people. In most cases, the distance is relatively small, but there is a significant proportion working in the municipality enough away from the place of residence".

2. Seasonal Mobility

The Greek tourism is highly seasonal, as it is based on moving large numbers of tourists during the summer months. The seasonal mobility is a characteristic of the population not directly taken into account in planning. Data on the size of the population moves may result from the availability of beds, but there is not a corresponding planning to the reception of this magnitude be without problems. However, "the seasonal movements of domestic tourists are travels from urban areas to rural. Such movements are vital for urban population due to degradation of quality of life in metropolitan areas (Katochianou D., 2005). Regarding the number of tourists watching that 33% of urban population, which shifted to non-urban areas, increase their population by 72%.

3. Household size

Household size may be a determinant factor in the social characteristics of an area. Moreover, exploring the social characteristics of households is of particular interest to identify groups with particular characteristics or problems that make them likely vulnerable to poverty and social exclusion. This is reflected by the unequal distribution of households in urban areas based on their member's number. Besides, the increase in the number of households and reduce the number of members of the average household causes new needs in urban planning. These needs have to do with the total area of residence and correspondingly increasing the total surface in social and technical infrastructure. So far, the study of households is understated, but

apparently can be an important indicator for planning procedures for identifying the needs of the population, especially at lower administrative levels.

4. Minority groups

Primarily they are the groups of people facing more and more pronounced social and economic problems. That impact may have on spatial organization and planning. They are the populations most in need of a proper design for a better quality of life. Under the law, these groups usually considered separately in the processes of design in the analysis phase, but the phase of proposals and implementation of the design, add treated simply as the total population size. The result is that after the implementation of the projects structural problems remain, and sometimes can be worse. An example is the word "gentrification" often used by planners to develop low-income areas, that usually are residential areas for these groups (eg Metaxourgio, Gazi, Ano Liosia, etc.). The result of this "gentrification" is the persecution of specific groups from these areas because of rising land prices, and relocated in others with worse housing and social conditions.

Observations, by the study of 4 randomly selected masterplans:

After studying the technical specifications, such as those derived from the Greek law, to conduct more comprehensive and more detailed conclusions, the essence of design, we studied in more detail four specific master plans. From this analysis arise particular problems and failures of projects relating to population.

The masterplans, which we studied are the following: The Master plan of the Municipality of Acharnon 1985, the Master plan of the Municipality of Kallithea 1985, the Master plan of the Municipality of Chalkis 1985, the Master plan of the Municipality of Nice in Larissa in delivery (Phase A) the Master plan of the Municipality of Tavros).

The most characteristic and most common problem is the expected population growth. In many studies these assumptions were misplaced. The acceptance of excessive programming population sizes often result in excessive operating disruptive expansions in the structure of the city, and prompt excessive demand for social

facilities. So essentially canceled the spatial planning, because the state can prescribe, to plan and meet the actual needs for education, health, welfare, infrastructure, etc. Another perspective problem is as follows: excessive expansions of urban areas are made to other land uses, particularly agriculture. It is a typical example of pressure from the urban to the rural area, and how this is achieved.

This problem can have many origins and, in my opinion is not always an error. Specifically the wrong estimates of excessive population growth often work irregularly as a tool for increasing the urban land. This course is difficult to prove because there are other factors which may be due to the wrong results and can often mask the above intent.

The problem posed by the parallel use of permanent and effective population data

Please note here that over time this phenomenon not only weakened but intensified by making the differences between permanent and effective population greater. Noting the differences between official and actual population based on the census of 2001, is "obviously that is more pronounced at the municipalities than at prefecture level and then in regions with small population (<2000 inhabitants) (Kotzamanis B., 2009). The second dimension of the problem is that despite the differences observed in the absolute size of the population, the movements varies also by gender and age, so that the population pyramids of real and permanent population show differences which are often significant. Finally, another dimension of the problem is the misleading picture that emerges from the data of the actual population for the population dynamics of mountain and upland areas compared to the same study with data of the resident population. Equally wrong is clearly the image of rural areas than urban.

Problems in the calculation of the projected population, the case of master plans

As mentioned earlier the technical specifications do not provide a specific type or better yet a specific methodology under which it will make projections of future population size. The technical specifications of the standards saying that "to calculate future population size using statistically acceptable methods", failing to define either of these methods, nor specific guidelines for the calculation.

The evolution of the population and that population change is a very complex subject that requires delicate handling. Especially in the level of master plans spatial changes in the population is very difficult to arrange because they depend heavily on immigration. Here are analyzed the methods of calculating population for one year target used in most projects.

A method of linear interpolation Interim

B. Application of parametric models

C. Synthetic Methods

All these procedures provide estimates and projections more or less satisfactory data on the evolution of population size (with the exception of the linear projection method). We, on the basis of old inventories of the NSSG tried to see what curve could predict the future population growth. The result shows that for each of the three cases, different curves are close to the current population of each region

Generally what we conclude is that the population of a region is not a closed system. These changes, especially at such a low spatial level depend on internal migration, which in turn depends directly on the socio-economic profile of the area and how this is changing. Knowledge of basic demographic characteristics and trends in the evolution of a population are essentials for making accurate predictions. The experience and scientific knowledge of the designer is very important in the process of forecasting, and is under consideration if the scientific background of planners allows them to make correct predictions. Anyway, the changes of population and its characteristics during the time is a special science, demography, which deals exclusively with population and demographic trends. Scientists of the respective branch are considerably more experienced and accountable for the study of this issue. However, today, the development of new technologies and new infrastructures in PC allowing more flexibility in the estimates, making it possible to include different scenarios for the evolution of the population to choose that which socio-economic conditions of each region is likely to bring.

Suggestions:

It is well established that the current planning system has major gaps and uncertainties in relation to the population studies. Population characteristics are directly related to the spatial distribution of population and this should be taken into account in spatial planning processes. Below are some suggestions in this direction:

1. Update of specifications

The simplification and streamlining of requirements is essential. Currently, the standards are illegible and difficult to understand for an inexperienced planner. Many times also consumed in unnecessary paper exercises (such as budget and action plan). This does not concern particular the variable population but to the extent that many features can, because of imprecise regulations, be omitted. I also think it important to use some standards to the presentation of demographic information. In some specific projects are presented in encoding tables and helping to better capture and read information.

2. Update of the standards

The planning standards, as we said above are an attempt to quantify the needs of urban social and technical infrastructure of the population. It is important to have an update of those figures. It is necessary for the sustainability of cities to increase the proportion of social land for each inhabitant, as the current figures specifically for the urban green is small and outdated. It should also ensure the attainment of these target figures. This is achieved by strengthening the regulatory status of the Master Plan to forecast those on already urbanized areas and in urban development. Finally, we must adopt new methods that take into account the quality of the population by calculating the needs of a social land.

3. Use of specific indicators in the studies

It should the standards, both in the analysis phase and the phase of the proposals to suggest the use of specific indicators that describe the characteristics of the population. It should also be ensured and formulas of these indicators. Using specific markers other than to make it easier to identify and therefore the management of

demographic and spatial trends could be also a safety valve at systematically observed errors (f.e. population projections).

4. Use of new technologies in the planning

The development of new technologies now permits the handling of large volumes of data and automates many routine procedures. No substitute for knowledge, experience and personal education of the planner, offering savings in time and zero probability of calculation errors. It is a great challenge for spatial planning to integrate these new technologies, combined with new design and computational tools (Geographic Information Systems) can provide while complete and accurate conclusions and indications for the interpretation of different spatial patterns. This course requires a corresponding provision of digital mapping and demographic data from the relevant agencies.

5. Participatory processes

The establishment of active users in the region in the production and application of planning is particularly important. Especially for groups that are anyway excluded from the centers of decision making and hence of the other planning processes. So apart from the questionnaires and surveys that can make each planner is important to place popular meetings with the participation of people of all social classes, in order to clearly identify their needs. The process is not simple and requires time, human and financial resources. Nonetheless there are developed world methods and tools to support participatory processes and participatory planning. Scenario workshops, the consensual conferences, participatory modeling are some methodologies well known abroad but unknown in our country, supporting the participation of local communities in planning and creative dialogue.

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