

STATISTIC METHODS AND QUALITATIVE INDICATORS IN HUMAN GEOGRAPHY.

CASE STUDY: CITY IMAGE MAPPING

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ABSTRACT

Dans l'esprit d'une philosophie de la gestion urbaine, au fond d'une compétitivité augmentée entre les villes, générée par le processus de la mondialisation, les études de géographie urbaine approfondissent des nouveaux concepts dans l'essai de trouver un bon instrument pour organiser l'espace urbain. Ainsi, à coté du *design urbain*, du *marketing* et du *branding urbain*, on trouve aussi l'image urbaine, qui peut cartographier les principales malfunctions ainsi qu'elles sont perçues par les résidents et pas seulement. Cet étude se concentre sur l'identification des habitats d'attractivité et de répulsivité du municiple Ploiești, la carte mentale pouvant devenir un instrument opérationnel pour un futur modèle d'organiser l'espace urbain.

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1. INTRODUCTION

Both statistical methods, as well as qualitative indicators have entered human geography at the middle of last year, on the context of *positivism*, thought current which emerged as a reaction to descriptive geography present until the '50s when there was an acute need for laws to explain spatial models and configurations of geographical phenomena and processes.

As a philosophical current, *positivism* indices scientific rigor in the analysis of the urban space, as it is expressed as method, specific to natural, physical sciences and predominantly in social problems. Although the method of observation is a classic one, another approach of it is suggested: the collection of objective data sets and their statistical processing, the suggestion of work hypothesis and their test, the formulation of theories.

Several forms of the positivist current individualised, out of which the most used are: *logical positivism* and *critical positivism*, through which social behaviour can be expressed mathematically and explained using investigation methods used by natural sciences (such as

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observation, as stated above). R. Johnston (1983) synthesised *logical positivism* in six postulates:

1. The events which take place within a society or which involve human decision have a determined cause, which can be identified and measured;
2. Taking a decision is the result of operating a set of rules, to which each individual adheres;
3. There is an objective reality which comprises individual behaviour and its consequences, which may be observed and stored in an objective manner according to universal criteria;
4. The researcher is a neutral (objective) observer;
5. As in the case of studying physical world, there is a structure of human society (which makes it function as an organic whole) which changes in a determined manner, according to observable laws;
6. Applying the laws and theories in the spirit of *positivism* in the analysis of social behaviour can be done without changing the law that operates in a particular situation or the change of the context in which the law will be applied.

Critical rationalism emerges as a response to *logical positivism*, focusing on verifying the applicability of a law and identifying its exceptions.

The beginning of the '60s is marked by the so-called „quantitative revolution” in geography, which allows the use of statistical methods. It is the moment of proliferation of multifactor classifications of cities, hierarchies according to rank, modelling of urban settlements and the analysis of dynamics of territorial fluxes within the city, between cities, between the city and the adjacent space.

Also, urban space and its internal structure is analysed according to new approaches. Statistical approaches reveal the fact that the distribution and configuration of residential areas or processes such as segregation are not exclusive results of ecological factors, which means that taking the individual decision is not influenced by natural laws, but by economic ones - maximisation of utilities (access to urban services) and profit, in the context of diminishing costs. The studies insist on spatial configurations of processes which take place in the urban space.

The 70s bring even more critics to *positivism*, among which the most obvious was related to the object of analysis of urban geography studies. Some of the geographers of the moment brought to discussion the fact that, if spatial forms are social constructions and results of social manifestations and forces, then researches on urban space should focus more on social relations, rather than on spatial ones.

In this spirit, a new phase of epistemological approach is entered, aside from the fact that it is object of series of statistical data and mathematical processing, becomes the object of perceived interpretative knowledge. It is the time of a new philosophical current, *behaviouralism*. Quantitative indicators are completed now by qualitative variables. The plan of the city is doubled by the mental map, and cognitive maps are used in order to map residential mobility, consumer behaviour, the degree of attraction or repulsiveness towards certain urban areas (perception on neighbourhoods), city image.

What is new in the behaviourist approach? The translation of the gravity centre from the space form of social processes and behaviours towards the process itself (S. Gale and G. Olsson, 1979). Spatial characteristics of human behaviour are now approached, through elements related to perception, attitude etc. And the data is collected through polls, questionnaires, qualitative interviews etc.

According to Reginald Golledge (1979), the behaviourist approach in geography researches takes into account the following premises:

- Each individual places himself and others in the external world, in the objective reality;
- Elements of the same objective, exterior reality exist and will continue to exist even after individual interaction will cease;
- Elements of external reality will continue to exist as part of the external environment, independently from the degree of awareness of the individual;
- Knowing the existence of places and their spatial characteristics remains in the memory of the individual after the cease of physical interaction with the respective place.

The adoption of these premises allows the portrait of the nature of objective reality as it is perceived by the individual. Also, it allows for the collection of information and data on objective reality and their representation so that each individual could understand and communicate the characteristics of the objective reality. Moreover, for Lee (1973), objective reality is all that can be perceived, or understood by the individual and human community.

The behaviouralist movement allows the introduction of new concepts in urban geography and human geography in general, such as mental maps or cognitive maps, used also by Kevin Lynch (1960) in *The image of the city*, which implied methodological reconsiderations.

2. CITY IMAGE MAPPING

Theoretical aspects. In 1960, year that marks the start of an especially scientifically fertile decade, because of the new concepts that arose from the academic debates and the university scientific groups, on the background of the modernist trend that used to dominate the society, and researchers' opponent opinions related to its consequences (the depersonalisation of cities, and of urban life, the attempt to understand the city, and the way it works, as an engine, as a system, the human community remaining a simple quantitative component in this whole gearing; the exaggerating of geographic determinism and the models' monopole in the scientific approach of cities), the American citizen, Kevin Lynch launches the concept of *city image*, as an idea and as an expression, in the pages of his work, whose promoter he was, along with Jane Jacobs, Christopher Alexander and others.

Therefore, urban elements and forms create certain connexions and meanings in the mind of the urban actors. The physical part of the city is doubled by the mental one (the mental map, the urban image). The mental city outlines, or at least should indicate the lacks in functionality in the physical city. People are no longer prisoners of a predefined urban model, determined in its whole, but now like or have a repulsive attitude towards certain elements or forms that appear in the urban landscape. The inhabitants, therefore, become an active element in the reconfiguration and resize of the urban architecture. For Lynch, the city is a "text" that is deciphered, decrypted by the inhabitants, or by the simple bystanders of that particular urban life. Therefore, the city must be "readable". If it is "readable", then it is decoded and correctly perceived by people, that is it has meanings. If the elements and the urban forms are loaded with significances, then, the city has an identity.

For any city there is a *collective image*, a mental product of the human community that populates and represents it, but also, *individual images* of the urban actors, unique images, mental representations of the city, of its neighbourhoods, of its streets, through some

physical directly perceptible landmarks, which sometimes become animated, more or less, by different social meanings of some objectives, areas, by their history or name.

Lynch's idea resides in the isolation of some urban elements and the diagnosis of the inhabitants' view of them, searching for the meanings that they have on a mental level. As such, some distinctive elements are aimed:

- *The paths.* They are ways of access along which the observer (a simple inhabitant of the city or a visitor) passes by, occasionally or potentially, with the purpose of reaching certain objectives, either by foot (and it is interesting here to observe the quality of the sidewalks and of the pedestrian crossings), either by a vehicle (case in which the dominant of the perception is given by the quality of the traffic road). For most of the inhabitants, the streets are the predominant elements of the city image. People observe the city when they pass through it and some elements of the urban landscape are allotted in space and spotted in terms of their localisation along a street, a boulevard, etc.

- *The nodes.* These are "strategic" places or points, penetrable by an observer, from and towards his destination. Some of these "nodes" represent the nucleon of those districts or neighbourhoods, that constitute themselves as symbols for that particular area and around which they clearly show their influence. Well marked in the urban landscape, through squares, and roundabouts, the nodes are signalled by Kevin Lynch as being genuine "breaches" in communication, where the rhythm or direction is sensibly changed.

- *Landmarks.* They are another type of reference elements for the city image, with a particular typology; they are external, impenetrable by the observer. This category is constituted from reference elements that have a certain local utility, when they can't be "seen" except from certain places or from certain angles. This is the case of certain road posts, shop windows, some institutions or churches, different elements or other details of the urban landscape that "fill" the inhabitants' image.

- *The Neighbourhoods.* They are fundamental "cells" of the urban social space, with a remarkable internal cohesion through which that urban community perceives the whole city. Therefore, in most cases, the district image is reflected on the general qualitative image of the city, taking into account the time spent inside that particular neighbourhood. Also, the district may set a certain social behaviour to its inhabitants. The neighbourhood is acknowledged through a certain characteristic (texture, space, forms, details, symbols, type and colour of buildings, social significances with a certain emotional meaning, type of activity, functions, inhabitants, degree of maintenance/usage, topography, etc.), which allows the observer to identify it, if he is inside it (endogenous perception), characteristic that transforms itself into a basic reference, if the subject is outside it (exogenous perception). As such, the districts are relatively wide areas of the city, which may be mentally identified by the observer, and that have certain own internal quality. Practically, at a perceptive level, each district is unique, impressing a certain belonging spirit to its inhabitants, which may sometimes be identified as a strong urban community held in a tight internal cohesion.

- *The edges (discontinuities).* These are linear elements with a precise identity for the observer, diametrically opposed to the access ways. These are frontiers between two types of precincts.

The above presented elements constitute the "rough material" that lies at the basis of drawing up a city image. These do not appear as singularities, but are put into a scheme; they receive value and significances through the relations among them. This is why the perception scale (the "geographical resolution") is essential for the general outlining of a city image. As such, a landmark means nothing unless the resolution is increased (the perception scale is reduced), if it is not inserted into a scheme on the street, in a crossroads,

in a neighbourhood, in a part of the city, city reflected by a number of mental individual images, number proportional with the number of inhabitants.

Case study and methodological aspects. This study has been carried out using two questionnaires that were conducted in 2001 and 2004 in Ploiești city, on two experimental focus groups (250, respectively 200 inhabitants).

Firstly, between the two although quantitatively similar samples, some clear differences have outlined, as a result of the way of “selecting” the respondents: in 2001, *street questionnaire, random selection*, whereas in 2004, *Internet questionnaire* (hosted by different sites of Ploiești city, with all the advantages and disadvantages that incur from this)

Therefore, some differences have been outlined:

- A population segment, aging between 18 and 25, with 20% larger than in the case of the street questionnaire, difference that is perfectly reflected in the age segment of over 55 (23% in 2001, as opposed to 3% in 2004);
- The two sexes are represented almost equilibrate in 2001 (42% masculine and 58% feminine), whereas in the second poll, it seems to highlight mostly the masculine perception (67%);
- It seems that, at least at the level of 2004, the Internet has been accessed by people owning a university degree (approximately 70%), as opposed to a third in the classical poll;
- Regarding the type of residence (one level house or block of flats), the differences are insignificant; in both cases predominate the owners living in blocks of flats;
- The perception of the inhabitants regarding the city image of Ploiești is relevant through the large percentage (approximately 70%) of the ones living in this city for over 15 years.

The questions were closed, semi-open that offered the opportunity of attaching personal details (following the model of something else/what?) and open, especially the ones aiming “deficiencies”, “solutions” or “prognoses” (for ex: How would you see Ploiești city in twenty years’ time?)

Objectives:

- a) the perception on urban habitat and the inside perception on city image;
- b) the links that may be established between the perception on the city and different independent variables, selected in the heading of the questionnaire - sex, age, education, the length of time spent living in that district, etc (the hi square significance test);
- c) the identification of causal relations between the perception on different life and urban living conditions (the urban habitat) and the perceived quality of the city image;
- d) the outline of some territorial disparities and of some opinion regions (perception maps).

3. RESULTS

The perception from micro-scale to macro-scale. It is obvious within the two sequences of the study, the differentiated perception from the micro-scale (residence level) to the macro-scale (neighbourhood and city), the percentage of the people who appreciate the quality of their own residence as being good and very good (86% in 2001 and 65% in 2004) knowing a significant decrease as regards to the appreciation of the street, the neighbourhood, or the city, case in which there is a growth in the percentage of the

undecided (“I can’t tell”, respond, with regards to the neighbourhood between 14 and 35% of the people interviewed). The results highlight an absolutely natural thing, considering that each man knows its own residence better than the street or the neighbourhood he inhabits.

Correlation between variables and the acuity of perception. Applying the hi-square test (the test of the null hypothesis), it has resulted that the perception is distorted inversely proportional to the own income. As such, in the case of the people with low income, the acuity of the perception as regards to the living conditions increases.

City image. Although there is an entire segment in the questionnaire that aims the living conditions, the last part of the poll is interesting with regards to identifying the perception on city image. As such, according to the results of the questionnaire, it seems that the city of Ploiești is not an attractive place from the point of view of the business opportunities, as at the statement “The city offers many employment possibilities and business opportunities”, 77% have stated that they “disagree” or that they “partially agree”. The negative perception is enhanced by the high percentage (over 65%) of the ones who respond in the same manner in the case of the statement “Ploiești is an extraordinary place for me to live in along with my family”. In return, over 40% perfectly agree with the statement “It is a city with a working aspect (series of grey blocks) which has not preserved its historical past.”

Also, the inhabitants of Ploiești name precisely the first three things they dislike most in their city, as the analysis of the responses for the afferent question outlines predominantly the sector of public services (street cleaning, illumination, and public security, but no lastly, the behavioural hazard), a small percentage of the people interviewed indicating also the architectural aspect.

The question “Which are the first three things that you like most within our city?” also highlights some interesting aspects:

- Firstly, the diffusion of the perception in a very wide spectre: from concrete elements (The Chestnut Boulevard, which in 2004 has the highest percentage, the Palace of Culture), and diverse social aspects or elements related to the urban services.

- A significant percentage (17% from the 2004 questionnaire) does not respond to this question, although they have given answers to the former one.

- 55 % of the people interviewed in 2001 and a similar percentage in 2004 are not satisfied with the ensemble image of the city of Ploiești.

„Which do you consider to be the symbol that represents the city of Ploiești?” is the edifying question form the questionnaire, with regards to the perception on the city image or identity. And the study has showed that over a third of the inhabitants who were interviewed indicates as symbol or associates the city image to the petroleum or the connected elements (oil distilleries, The University of Petroleum and Gas or the Museum of the Petroleum).

Mental maps. The results of the study have allowed the identification and outlining of some attractive and repulsive areas in Ploiești, highlighting, in the first case, the central part and the axe of the boulevards that go across the city from North to South, and in the second case, the peripheral neighbourhoods.

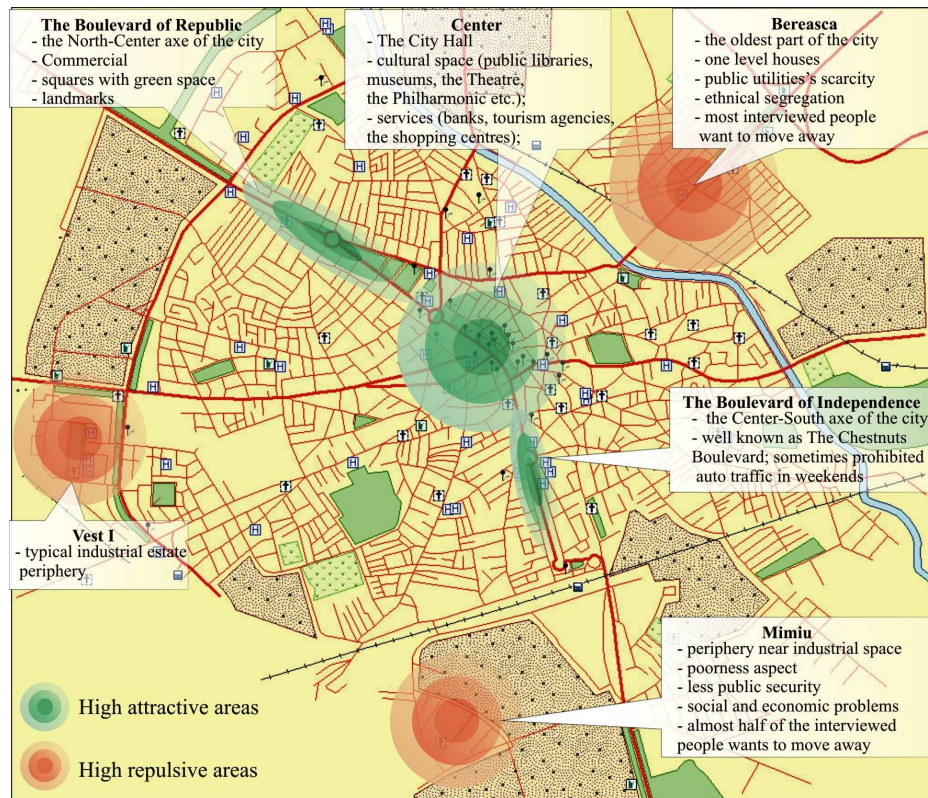


Fig. 1 The Mental Map of Ploiești City

4. CONCLUSIONS

Romania, and in general, the countries from the former communist block constitute a “fertile” ground for complex studies of urban and social geography, which are very attractive to the researchers in the area, as we are in the phase of crystallising some work models.

Although the city image is an especially attractive concept to the geographers, it requires an interdisciplinary approach and the understanding of the way in which the concept may be fully operable in the following urban planning studies.

There are no clear perception differences between the two opinion polls made in Ploiești (2001 and respectively, 2004), especially regarding the attractive and repulsive areas of the city, although the samples from the people interviewed have been sensibly different regarding the structure. However, on the basis of this primary perception, repeated polls must be made, with a more and more profound degree of detail and specificity.

The results of this study have shown that the social status and the quality of life distort the acuity of people’s perception of the city they live in, regarding the aspects related to identity, symbols, etc.

The mental maps and the situation of the perceptions have outlined an attractive area on the North-South axe of the city, crossing the central part, with a complex functionality,

while a general totally negative perception is represented by the neighbourhoods situated outside the area of the “city body”, beyond the discontinuities (railway, river etc.) at the periphery of the city, in the proximity of the industrial platforms. It seems to be a typical situation for the forced industrialised cities that are going through functional and why not, identity reconsideration times.

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