"Mapping city profiles and positioning through city benchmarking: A methodological proposal for strategic cities planning".

(working paper)

Abstract

The main aim of the present paper is to examine the ways in which results of city benchmarking can be included in strategic city planning as a methodological proposal for its diagnosis. With this objective in mind, a review of the theoretical foundations has been carried out in respect of the planning support system as a conceptual framework for city benchmarking.

In this context, the potential benefits are illustrated by applying two multivariate analysis techniques (cluster analysis and multidimensional scaling) to a group of municipal diagnosis indices and they enable us to characterize the cities profiles and positioning. The closing section of the paper presents a synthesis of the main results and their implications with specific reference to the area benchmarked.

Keywords

1. Strategic planning support systems in the city management context

One of the key requirements for the development of modern information society is access to precise, objective and quality information sources. However, the over-abundance of information and news in our daily life complicates, at times, its management. This underscores the importance of systematicity in the dissemination of information.

From the second half of the 1980s onwards, city planning has been characterized by an increase in global networks of participation by sectors (Granados-Cabezas, 1995), boosted in the 1990s by the implementation of new information technologies. Within this context, establishing an efficient information system (IS) will attempt to evaluate urban, cultural and natural dimensions, along with the social, economic and political structure of the city or region.

Wright and Ashill (1998), when analyzing new guidelines for research and intervention in information flows, distinguish between different methods of information gathering. The classification given depends on the cost error and the environmental volatility or unpredictability. When the cost of error or uncertainty is high, the need for information increases.

TABLE 1. INFORMATION GATHERING METHODS

		Volatility	
		Low	**High**
Cost of error	**High**	Formal investigations	Regular reports
	Low	No need of information	Routine information

Informal investigations (centered between the High cost/Low volatility and Low cost/High volatility cells)

Source: Wright and Ashill (1998)

Attending to the proposed model, strategic city planning finds itself in a situation that is highly volatile or uncertain and the cost of error is substantial in terms of public resources used, meaning that the need arises to conduct periodic investigations. In such circumstances, the information

collecting should become more frequent and formal or precisely specified (e.g. marketing research, systematic gathering, decision support systems, strategic benchmarking…).

Support systems for city strategic planning should€ provide information according to the needs of the organism in charge of the urban strategy plan. According to the theoretical foundations laid by Talvinen (1995), Wierenga and Ophis (1997), Wierenga and Bruggen (1997), Wright and Ashill (1998) and Lilien et al. (2000) applied to organizational systems on an operative level, the system receives data and information of a quantitative or qualitative nature. Likewise, concerning not only the different urban dimensions of the city itself (IS integrated vertically), but also other data taken for reference purposes, as well as, information regarding the environment (also linked horizontally with other systems). The information is collected from different areas of the local, regional or central administration of both public and private institutions. Hence, data on the population, social and economic aspects, accessibility, city traffic, housing and urbanism, along with all the other characteristics, are interpreted and converted into information thanks to the information system. It will serve as support to the decision making policies, related to management and research.

In the present context of new information technologies, statistics allows us to obtain opportune useful information and serves both to prescribe and understand the reality of society. This statistical production and the work of different public and private institutions (national, autonomic and local) prove to be of vital importance in order to make this information accessible to the users of the public service. Obviously, this data is very wide-ranging and of differing origin, from secondary or primary sources.

As well as developing this level, an effective IS also helps to convert the said information into knowledge (strategic level). That is to say, it enables us to extract the fundamental strategy guide-

lines or rules that will guide city planning and which, therefore, will have a certain continuity or long-term perspective.

Thus, the city planners have a valuable instrument for strategic urban diagnosis. In short, they are able to design a city model using key ideas and designing potential scenarios. But the system can also define the witnesses of the consequences derived from strategic architecture and the implementation of specific actions. Furthermore, the analysis of the evolution provides accurate information to evaluate decisions and, if necessary, to re-orientate or redirect any actions taken.

From an external comparative perspective, benchmarking helps decision-makers to make well-informed selections among "best-practice" case studies and to implement them in a specific political and administrative context.

2. Conceptual details of benchmarking

The term benchmarking comes from the word *benchmark*, which means a standard of reference, that is, a point of comparison against which to measure what one has done and what others have done. In the 1960s, the concept became popular in the USA, where it was used in the management of industrial firms, reaching its peak at the end of the 1970s. However, in implicit terms, the concept was already present in business organizations much earlier, since the research into job organization carried out by Frederick Taylor at the end of the 19th century, which was based on the benchmarking concept (O'Reagin and Keegan, 2000). The recent application of benchmarking has been accompanied by the establishing of prizes which were also introduced into public administrations and government offices (Loomba and Johannessen, 1997, EFQM, 1999, Cabinet Office, UK Government, 1999, NIST, 2001, Auluck, 2002), in the manner proposed by Loomba, and Johannessen (1997); starting with the premise that government strives to achieve the learning organization and, consequently, its connection with benchmarking. During the 1990s, the same

process was also applied to other disciplines such as healthcare and postal services or education. The growing number of consortiums, associations and clubs is actively promoting the use of this concept through the activities they participate in, and Yasar (2000) forecasts a relevant expansion both in terms of geography and sectors.

In a broader sense, benchmarking refers to an on-going process that consists of identifying, learning and applying the most effective practices from other organizations in order to improve one's own products, processes and capabilities. Camp (1989) defines it as "the search for industry best practices that lead to superior performance", and it is based on the fact that organizations discover the critical processes for their business, measure them and compare them with the other corporations considered "world-class" actors.

For Kotler *et al.* (1994, 257 and 364), its area of application has been widened and analyzes the processes, the organization and the whole system of delivering value to customers. Thus, benchmarking is seen as one of the best sources of ideas for improving quality and company competitiveness.

One of the priorities in this process is to have an in-depth knowledge of oneself and of the superiors in one's "class", as well as determining the mechanisms by which to transfer best practices. Benchmarking and the search for best practices are actually synonyms.

The characteristic aspects or common traits that can be deduced from the various definitions given in the literature to benchmarking are included in the table 2:

TABLE 2.CHARACTERISTIC ASPECTS OF BENCHMARKING

COMMON TRAITS	Description
Identification	Search for that which makes firms or organizations "excellent", from the same activity sector or any other. Application of benchmarking to those organizations, areas, practices and work methods that are key to achieving better results.
Knowledge	Technique considered as a process of inter-organizational learning and understanding, a procedure for evaluating these organizations, their activities and products.
Adaptation	In a tactical context, implementation of what has been learned.
Systematization	The information collected and knowledge obtained should be backed by a coherent rigorous structure. Requires prior planning and organization.

| Continuity | Continuous measurement, it does not consist of solving an isolated problem quickly, but, rather, a constant process, the main aim of which is improved action. Revision and repetition as an ideal for improvement. |

Source: own production

The reasons that have promoted the application of this tool include the fact that objectives are established more rigorously, it helps toward overcoming mistrust, assigns responsibility and speeds up culture change.

For Yasar (2000) the main trend that will affect the transfer of best practices in the future will be centered on the power and progress of information technologies, such as the Internet, and other electronic instruments and networks. Besides all that, recently Longbottom (2000) and O'Reagain and Keegan (2000) proved a tendency toward projects of metric condition, in the form of appropriate indicators, and not so much toward an analysis of processes.

3. Applying benchmarking to cities management

3.1. The conceptualization of city benchmarking

From the beginning, strategic planning has been a concept linked to the urban development of large cities, later its scope has been widened to smaller cities. Discovering the solution to crisis situations, the complexity of urban processes and of the agents involved in them (political, economic and academic groups and civil society) all mean that strategic planning must be founded on an exhaustive previous research process. Likewise, the intensity and speed at which socio-demographic and economic changes occur in the urban context have sparked off an interest in these concepts and procedures that originated in the private sector.

In relation to the particular characteristics of city benchmarking, the main advantage of this type of evaluation lies in the possibility of making evaluations between cities over a time span.

As far as the transformations of social range are concerned, the citizen is identified as a client of public services and greater attention is paid to establishing a services quality system. An orienta-

tion toward constant improvement and quality is necessary and is attempted by means of different tools and methods originally used in management and marketing sciences. These include total quality management, process reengineering and benchmarking (Ministry of Social Affairs, 3). Similarly, Fonts (1997) argues that improvements in the actions and efficiency of metropolitan administration in southern Europe has been hindered from the start by, among other factors, the limited transfer of tools such as total quality management or reengineering.

But the limitations attributed to public administration for applying benchmarking and incorporating a learning organization is also a challenge for the technical team in charge of planning. What is needed to overcome it is greater flexibility, the participation of the civil society, multidisciplinarity and the adoption of private analysis and management tools (Auluck, 2002).

Various perspectives can be identified for the application of this philosophy of action in the urban context, such as, a system of urban indicators in city marketing (Luque and Muñoz, 2003, Muñiz, Cervantes and Abad, 2003), the evaluation of a city's physical traits (Nasar, 1995), the regions and cities' competitive position (Haahti, 1986, Eizaguirre and Laka, 1996, Huggins, 2003, Department of Trade and Industry, 2003), local economic development (Wong, 2000), efficiency differences between cities and their public service provision (Moore et al., 2005) or postures regarding a city's image (Eizaguirre and Laka, 1996, Bradley et al., 2001, Luque et al., 2002, Luque et al., 2003), and a tourist destination's image (Calantone and di Benedetto, 1989, Gartner, 1989, Echner and Ritchie, 1993, Baloglu, 1997, Bigné et al., 2001, Kozak, 2002).

From an approach of indexes, public opinion or processes evaluation (Luque and Muñoz, 2005), or from both quantitative (structured questionnaire) and qualitative (collecting secondary data, observations) research methods (Kozak, 2002) argues, the evaluation contributes toward identifying the city's position. This positioning will help to formulate the strategic vision or future model search for the urban community. But, a benchmarking of public opinion (residents, opinion-

leaders) should be applied as a support to data interpretation before any efforts in city reposition-ing and marketing strategy's reorientation are undertaken (Gartner, 1989, Eizaguirre and Laka, 1996).

Thus, in the light of these arguments, *city benchmarking* is defined as "a systematic and continu-ous method that consists of identifying, learning and implementing the most effective practices and capacities from other cities in order for one's own city to improve its actions" (Luque and Muñoz, 2005). For this, it supplies a system of socio-economic indicators enabling high levels of quality to be achieved in the services and public management of the city.

3.2. Process of benchmarking applied to cities

Basically, the process of urban benchmarking will attempt to respond to a type of general ques-tions, concerning what to compare and with what, such as, for example, what dimensions and topics to consider, or, what (target) cities are adequate for the comparison. The figure below de-scribes in greater detail the city benchmarking process to design a useful applicable structure for the potential researches carry out in this field. Due to space limitations, only some phases of the process are described.

FIG. 1. CITY BENCHMARKING PROCESS
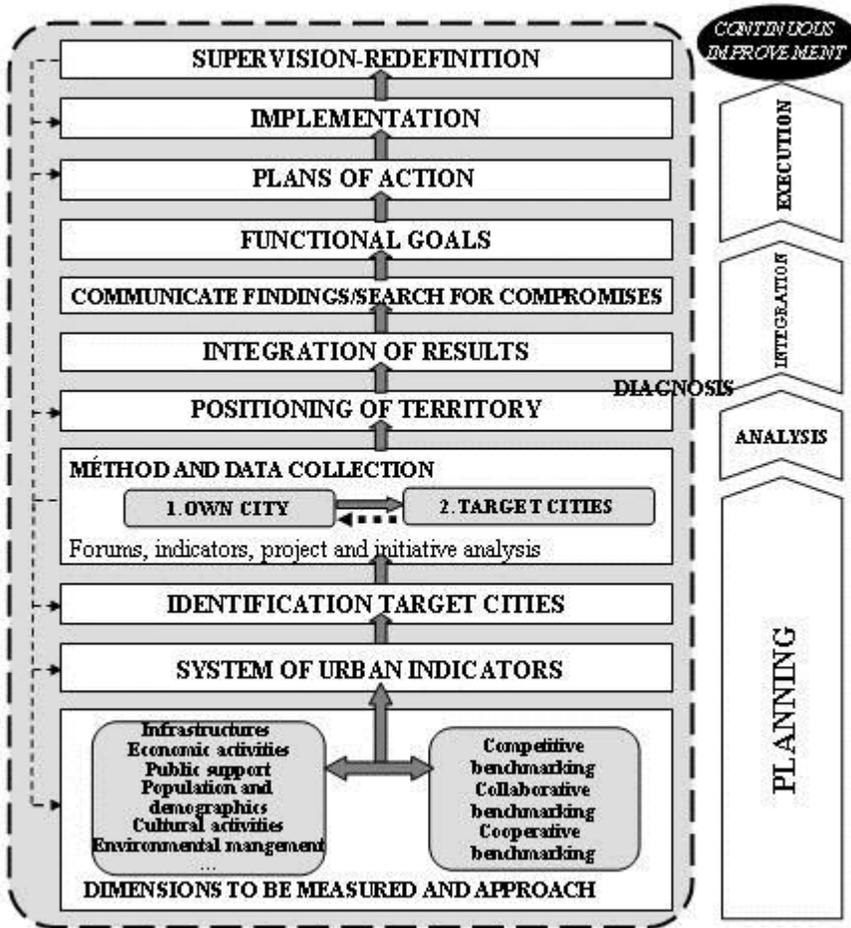
Source: own production

The success of the comparative evaluation process greatly depends on the availability and reliability of the existing information sources. Computer databases and networks are a clear example of progress applied to information transmission. Internet provides an efficient tool for disclosing, obtaining and managing this information. However, the statistical properties and reliability of the data sources need to be evaluated (Wong, 2002). To do this, before establishing comparisons, it is advisable to check the characteristics of the data, such as: reliability, validity, updating, the origin and cause of its generation, ease with which it is obtained, units of measurement and conditions of use (Luque, 1997, 80-89).

From the standpoint of strategic planning, and the approach to the user of public service, any organization has to incorporate information, benchmarking and control systems into its management which will allow it to pinpoint the needs and wishes of those using what the city offers; to develop a different image that can put across the benefits and attributes of the place; to supervise the change in the environment and respond constructively to the changing opportunities and threats.

4. Empirical application of city benchmarking

The studied geographic area embraced the capital cities of the eight provinces[i] that make up the autonomous region of Andalusia (Spain). This autonomous region is characterized by a great social and economic diversity (conformed under three very heterogeneous areas: the countryside, the sierra and the seaboard) and a great fragility in its natural components and physical environment. Hence, what is required are several motors located within the environment of large urban agglomerations with a greater potential for dynamism (seaboard and metropolitan areas). In this situation, it has become apparent in recent years that territorial planning is essential to overcome the problem of combining the global, intermediate and local aspects.

FIG. 2. PROVINCES AND THEIR CAPITALS OF ANDALUSIA (SPAIN)

4.1. Methodology: Identification and collection of municipal diagnosis indicators

Exploratory phase

In the exploratory phase, an review was made of the relevant theoretical literature and empirical studies analyzing the different elements or factors considered to be determinant in the economic and competitive development or the image forming of a territory (Eizaguirre and Laka, 1996, Fernández, 2000, Fundación Metrópoli[ii], 2002, Kozak, 2002, Luque *et al.*, 2002, Wong, 2002, Luque, and Muñoz, 2003b, Huggins, 2003, Ng, and Hills, 2003). This allowed us to obtain a set of underlying dimensions with a complete coverage.

According to Wong (2002), the "traditional factors" refer to those factors that have been examined in the academic field, particularly by neoclassical economists and industrial location geographers, for a substantial length of time. But these factors have been less emphasized, in relative terms, with the passing of time. Due to the traditional factors' inability to capture the large amount of unexplained variation in local growth rates (Doeringer et al., 1987, Bovaird, 1993, *cit.*

in Wong, 2002), more attention is now paid to the influence on local economic development of "more intangible" factors[iii], such as business culture, quality of life, community image and institutional capacity. In spite of this, the traditional factors need to be considered, since there are theoretical and empirical bases for explaining the contribution of these factors to local economic development.

In short, after overviewing the bibliography, and in terms of the sources available, the basic dimensions and groups proposed in them, detailed in Appendix, refer to physical and demographic indicators, variables concerning economic development, to social progress and quality of life, to accessibility and communications infrastructures, to transport, to housing and to environmental management. In a wider study, for each dimension analyzed there is a table or matrix of urban indicators that includes the data for each topic dealt with and for each city.

Phase of data collection

The data was collected from November of 2002 to July of 2003. The final number of indicators was 180, of which 53 were used for the multivariate analyses. Due to the limited period of data collection, only 90% of the expected amount of data was obtained. As can be observed below, the data obtained was secondary information obtained by means of published data sources and external databases.

The data was collected from a wide and diverse range of reliable sources such as annual statistical reports, censuses and surveys of central, regional and local administration (publications by the Ministry of Health; Regional Justice Councils, Provincial Tourism Departments and City Councils), of national institutes: INE (National Institute for Statistics), IEA (Andalusian Institute for Statistics), of private bodies, e.g. Oficina de Justificación de la Difusión (Office for Media Monitoring), La Caixa (a banking entity), of public registries, e.g. the Patents and Brands Office, the

regional capitals' respective universities as well as other *on-line* databases such as: IEA and INE, CAMPSA Guide, etc.

Most of the above information refers to the year 2001 (54,72%) since information for the year, 2002 and for the first half of 2003 was not available (except for unemployment figures and data on the availability of nursing home places for over-65s, which are for 2002). Owing to similar limitations, some information is even less recent such as the data on the distinct types of tenancy (main, rented, empty or habitually uninhabited, infra-housing and second home), which corre-spond to 1991, urban zone population density, the number of people employed in the industry and in the services, the illiteracy rate, which all refer to 1996; the inhabitants' per capita income (1998); voter turn-out in the last municipal elections and the financial capacity to purchase a home (1999); the indicators of variation in family income per inhabitant, the number of overnight stays, the number of income tax returns submitted, energy consumption, migration rate, state support for housing and stock of council houses (2000).

When transforming the values into useable information, the data was made relative (percent and percent per 10,000 or 100,000 inhabitants), given that in absolute values the comparison was meaningless, whereas in this way the reality of the situation is reflected more clearly.

Below, we present an extract of the conclusions drawn after examining all the indicators for the eight capital cities, and the outcomes from submitting them to two multivariate techniques: a cluster analysis and a multidimensional scaling. The scaling allows the cities to be positioned with regard to each other and to characterize them in a more visual and analytical form. But every time, with particular reference made to the case of Granada.

4.2. Data analysis: Profiles and positioning

In the market research literature, there is a need for comparative evaluation studies that enable practitioners and academics to assess the qualities of these relatively new procedures, like cluster and multidimensional scaling analysis, which complement existing methods of analysis (Hodgkinson et al., 1990, Mazanec, 1995a and 1995b). This allows the establishment of the courses of action to follow in our city, focusing attention on those dimensions, that show deficiencies and the cities that are shown to act as reference points or that have points which coincide in some areas.

The first tool applied, cluster analysis of variables, analyzing the subjacent structure of the benchmarked cities and, in a summarized manner, concrete the more relevant conclusions obtained in a larger research study. This assessment will be completed with a set of profile graphics. The relative image of group of cities in a geometric two-dimensional space will be determined through the multidimensional scaling, allowing to understand the subjacent schemes in data.

Therefore, the particularities that show each city with regard to the rest can be represented in a more visual and conjunct manner through graphic representations, as is illustrated in the following figures. In them, the values of the cities, once standardized[iv], are represented. As can be seen from the figures in the appendix, the claim that the inferior and superior limits (region of 3σ) should be indicative of weaknesses and strengths of the city, respectively, is not defensible since the orientation positive or negative of each topic considered depends on how its value is interpreted.

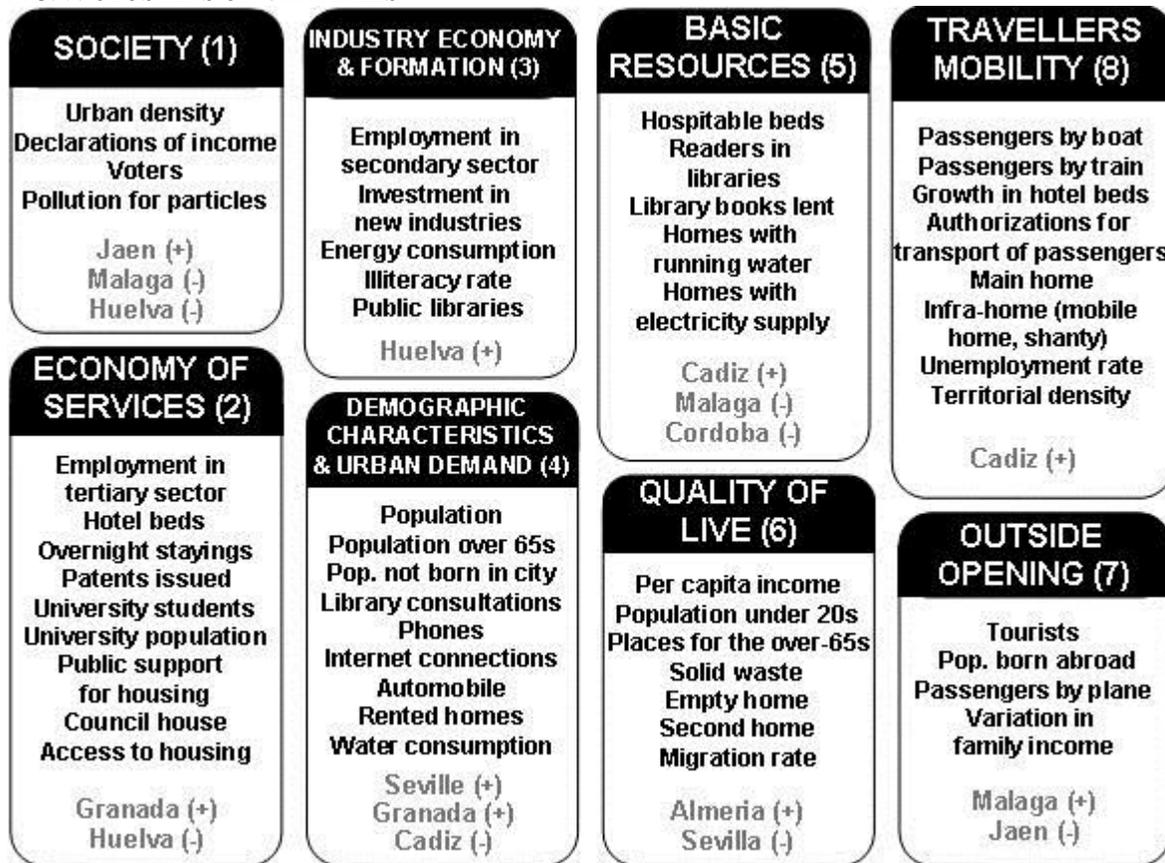**a. Cities profiles through cluster analysis**

Starting from a cluster analysis applied to the indicators, eight different groups of indicators[v] are observed, which synthesize the data gathered (see table 2 in the appendix). Each class obtained is

composed for very similar attributes in accordance with the values for each city, that is, those constitute its principal descriptors. The graphic representation of standardized means allows a clear identification of the profile of the cities examined (see fig. 1 of appendix).

Focusing our attention on the groups of indicators that contain the characteristics for Granada, and for a more meticulous analysis of the values from the empirical study, it is revealed that groups 2 and 4 are those that summarize the strengths and weaknesses of the city. Below, each group of indicators is discussed in more detail.

FIG. 3. CLUSTERS OF VARIABLES[a]

SOCIETY (1)

Urban density
Declarations of income
Voters
Pollution for particles

Jaen (+)
Malaga (-)
Huelva (-)

ECONOMY OF SERVICES (2)

Employment in tertiary sector
Hotel beds
Overnight stayings
Patents issued
University students
University population
Public support for housing
Council house
Access to housing

Granada (+)
Huelva (-)

INDUSTRY ECONOMY & FORMATION (3)

Employment in secondary sector
Investment in new industries
Energy consumption
Illiteracy rate
Public libraries

Huelva (+)

DEMOGRAPHIC CHARACTERISTICS & URBAN DEMAND (4)

Population
Population over 65s
Pop. not born in city
Library consultations
Phones
Internet connections
Automobile
Rented homes
Water consumption

Seville (+)
Granada (+)
Cadiz (-)

BASIC RESOURCES (5)

Hospitable beds
Readers in libraries
Library books lent
Homes with running water
Homes with electricity supply

Cadiz (+)
Malaga (-)
Cordoba (-)

QUALITY OF LIVE (6)

Per capita income
Population under 20s
Places for the over-65s
Solid waste
Empty home
Second home
Migration rate

Almeria (+)
Sevilla (-)

TRAVELLERS MOBILITY (8)

Passengers by boat
Passengers by train
Growth in hotel beds
Authorizations for transport of passengers
Main home
Infra-home (mobile home, shanty)
Unemployment rate
Territorial density

Cadiz (+)

OUTSIDE OPENING (7)

Tourists
Pop. born abroad
Passengers by plane
Variation in family income

Malaga (+)
Jaen (-)

[a] The labels have been established in terms of the kind of dominant indicators.

As can be observed, the graphics of Figure 1 of the appendix enable the interpretation of groups. Thus, the first aggregate of indicators is related with the ‹‹society aspects›› or the people and their performances. Those are the aspects in which Jaen stands out, but not Huelva or Malaga. It is

interesting how Granada and Cadiz are the capitals that show a higher population density in their urban and territorial surface area. In the rest of indicators Granada shows an intermediate position.

The explanation of the second group refers to an aggregate relative to an ‹‹economy of services››, focusing on the tourism and the university, and public support for housing. Groups 2 and 4 summarize the strength and weakness of Granada. This city is the only one where over 80% of the working population is employed in the services sector.

The number of hotel beds and its growth per inhabitant is also very high if we compare with the other capitals. As an indicator of its inhabitants' innovation capacity, Granada has the highest number of patents per inhabitant in Andalusia. Likewise, the university city of Granada has the highest proportion of university students per inhabitant and the highest percentage of the population with university qualifications.

On the other hand, the stock of housing constructed with public participation, support and council house, in Granada is clearly larger both in the city, something that is directly related to the difficult situation regarding the financial ability to access the housing market.

The cluster 3 refers to an ‹‹industrial economy›› and cultural aspects like ‹‹formation››, that is the typical case from cities like Huelva, in relative terms. Granada has the lowest number of industries, and therefore, the lowest employment in this sector. Likewise, it is the city with the lowest rate of investment in new industries. The fourth group focuses mainly on ‹‹demographic characteristics›› of population and ‹‹aspects derived from urban demand›› (the telecommunications, the rent of housings and the consumption of water), that is, indices where Granada obtains higher values. In this group 4, there is a greater similitude with Seville, city of reference for these indicators (this city heads the two third parts of measures).

In the context of Andalusian capitals it is necessary to emphasize the weight of population of the bigger cities: Malaga and Seville. But, the city of Granada, behind Seville, has a high number of old-aged people. It leads the ranking in number of telephones per inhabitant. It is also above the national, and, of course, regional and local, average in the use of Internet (behind Seville). Granada is also top of the list of Andalusian cities in terms of the number of cars per inhabitant, a fact that is directly related to the city's traffic problems. And, lastly, it's among the three Andalusian provinces with the lowest water consumption.

The fifth group is referred to the supply and demand of ‹‹basic resources›› like health, libraries, and water and electricity supply, that is, the peculiarities of Cadiz and, at the opposite end of the scale, of Malaga and Cordoba. As for the block concerning public health, and, more specifically, for the case of hospitable beds per 10,000 inhabitants, Granada, and Cadiz at a close distance, are the cities with the largest supply.

The sixth conglomerate describes cities which have a relation with the aspects that refer to a greater "quality of life"; particularly income level, second housing, places in residential homes and young population, and which are inversely linked to sustainable development. In this situation we can include cities such as Almeria and to a lesser extent Seville (but also Cadiz and Granada). Granada is in a low place in terms of income level, when is compared with other provinces. In general, the whole of the province of Granada offers a very small number of places for the over-65s in residential homes. In rate of migration, the city registers quite low values. Likewise, it's among the three Andalusian provinces with the lowest generation of solid wastes.

The group 7 is intimately related with the tourism and the ‹‹outside opening›› of the city, where surpass cities like Malaga and, negatively, Jaen. Granada has the highest percentage of inhabitants that were not born there (group 4), but when this figure refers to foreigners, Malaga and Almeria are at the top.

The last cluster refers to a subjacent dimension of one's own of those cities that they have structural problems concerning the generating capacity of job, but with ‹‹travellers' great mobility››, inside and outside the city, and some tourist services on the increase. This is a peculiar feature of Cadiz, and no so much of Almeria or Jaen. In general, the situation regarding transport infrastructure, and specially, volume of passenger is very different like evidence the data about passengers by boat and train.

**b. Positioning of cities through multidimensional scaling.**

The multidimensional scaling (MDS) permitted us to obtain an "added unique position" (Luque *et al.*, 2000: 189-192) and a subjective interpretation of the data (Gartner, 1989), starting from the means of each group resulting of cluster analysis. The tool provided us with a set of points that describes the perceived similarity (or proximity) of a city with the rest. The significant grouping of cities, that is, them that appear joints in space, it is indicative that they possess common characteristics. As in most multivariate exploratory techniques, the MDS is a useful tool when the knowledge is relatively disorganized and the data subjacent structure is not known.

In our example, the level of fitting s quite good[vi]. The subjacent dimension 1 discriminates the different cities, basically through the indicators regarding "services" (basic resources, economy of services), in a positive sense as opposed to "outside opening", which is discriminated negatively (see table 5 in the appendix). In this sense, it is appreciated how this factor he opposes Granada and Cadiz with Malaga and Almeria.

The dimension 2 is more associated with the ‹‹demographic characteristic and urban demand››, and the responsibility and actions of ‹‹society››. That is, it differentiates between the oriental cities vs. occidental.

Starting from of the structure in data, both dimensions group together the inland cities of the autonomous region of Andalusia: Seville, Cordoba, Jaen and Granada. This grouping is based on: ‹‹essential services›› provide to population (hospital, public support to housing in a situation of difficult capacity of access, and supply services to homes –water and electricity-), ‹‹demographic characteristics›› (related with superior education, population over-65s, not born in city and employment in services), and ‹‹urban demand›› (high use of libraries resources, New Technologies, automobiles, water consumption) and with high ‹‹tourist offer››.

FIG. 4. POSITIONING OF CITIES: EUCLIDEAN DISTANCE MODEL
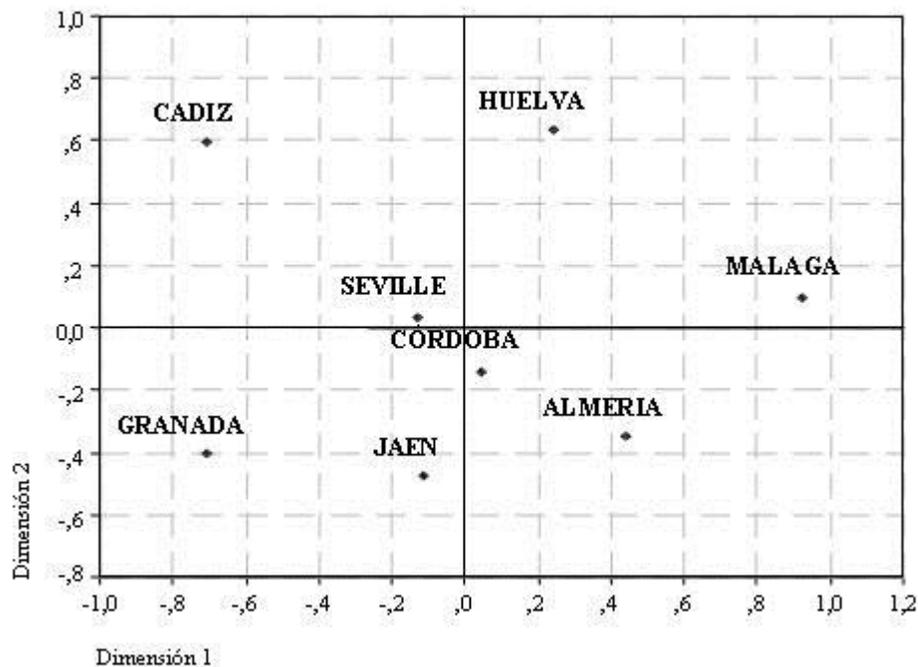
5. Final discussion of findings

Cities and territories need to evaluate what their potential is to be able to compete in the international context using their singularities. In this context, a term being used actually is "Smartland", such as those that, allow the forming of networks of actors and the participation of holders and

institutional agents in their capacities, to embed upon the specificity of local productive system, and to develop an appropriateness of public policy framework (Kafkalas, 2002).

The incorporation of concepts and tools from management sciences and marketing, like the planning support system, is useful for learning from other cities considered as reference points, through benchmarking; in short, for their process of strategic planning. It should be remembered that uncertainty grows with the complexity of the environment and that the strategic importance of the value of information and knowledge is greater in a context of large amounts of data and the need to manage long-term relation. Thus, the organism in charge of urban planning must focus in those critical singularities (positive or negative) that affect more to the perception and the behaviour of its public objective (Eizaguirre and Laka, 1996). And this is easier through comparative bases, that is, city benchmarking. Of course, for city benchmarking to be successful as a procedure of continuous support to the decision in urban planning, it needs to be agile, fast, efficient in achieving its objectives and its application has to bring improvement.

The process of urban benchmarking undertaken attempted to respond to a group of specific and defined questions on what the cities under study were doing, how was they doing it, what successful results was they achieving, what the reference city did, how was it doing, what results was it obtaining or what to do to get up there with the "best-in-class". Thus, in the first stage, this study identified the basic dimensions and items that define a city, concerning: population and territory, economic development, social progress and quality of life, accessibility and communication infrastructures, housing and environmental management. Next, the cities selected were the eight Andalusian capitals (Spain), and relevant findings, with the application of multivariate techniques, in territories positioning stage were provided.

The groups of indicators obtained, through cluster analysis, constitute the principal descriptors of cities. For these indicators, exist a bigger similitude between Granada and Seville, than head as-

pects (ever standardized) such as socio-demographic characteristics (population over 65 years, outside population of the city, university population), urban demand of New Technologies (telephone numbers and Internet -Digital Network of Integrated Services-), of water consumption, of hotel rooms and overnight stayings, of libraries consultations, of automobiles numbers, and as to a bigger territory density. Granada leads the attributes relating to an ‹‹economy of services››, concretely at the tourism and the university, and public support for housing, when compared with the other Andalusian capitals.

Regarding "deficiencies", Granada does not show a weak position along the ‹‹quality of life›› dimension (overcoat in places for the over-65s, per capita income, migration rate, even second homes), where can include themselves cities like Almeria. Further, starting from them outcome of correspondences analysis, in Granada we find a city's typical features ‹‹no industrial›› (low active population in this sector and energy consumption)

The representation of the cities in a space of few dimensions (two), that offer the multidimensional scaling, helps to discovery than the group of "interior" and more seemed cities (Granada, Seville, Cordoba and Jaen) show a suitable position on the basis of the ‹‹essential services›› apply to population, the ‹‹demographic characteristics and urban demand››, and with high tourist resources.

6. Implications for the cities planning and limitations

These findings leant the diagnosis, undertaken on the occasion of the strategic planning *GRANADA METROPOLI 21* and were integrated in other urban researches (like citizen's forums, territorial contextualization, accessibility outside and so on). Thus in a superior level reports guided the decision of the plan board compose, among another agents, by policy-markers and

representative top-level of public administrations. Concretely, some decisions and actions that, in a summarized manner, can be outstanded those related with the d*emography and territory* (e.g. necessity of a Granada's metropolitan area consolidation, from perspective of the management and policy), *economic development* (positioning as services city and actions for rising the average length of stay of the tourists), *social development and quality of live* (intensifying the civic participation and, derived of its positioning and leadership), *accessibility and communications* (its improvement, specially, in airport and railway infrastructures), *urban transport* (an urgent development plan for the inside accessibility), *housing* (special plan of housing), e*nvironmental management* (actions destined to improve consciousness-raising of the agents).

In the data collection, the level of detail searched, for a municipal scale, it is the main limitation found, as well as, to find common standards to help compare between cities in a superior scale (national or even international).

The small number of cities (and inferior to the number of variables) has quite limited the utilization of tools of type multivariate. In addition, the groups obtained can contain more related elements to another group, since the groups are not exhaustive, rather they can evidence tendencies.

A future research can be traced out, that reveals the knowledge and interest that a set of initiated territorial planning's technical offices has of the city benchmarking, from the different perspectives distinguished in the text.

REFERENCES

Auluck, R. (2002). Benchmarking: A tool for facilitating organizational learning? *Public Administration and Development* 22: 109-122.

Baloglu, S., and D. Drinberg (1997). Affective images of tourism destinations. *Journal of Travel Research* 35 (4): 11-15.

Bigné, J. E., M. I. Sánchez, and J. Sánchez (2001). Tourism image, evaluation and after purchase behavior: Inter-relationship. *Tourism Management* 22: 607-616.

Boisvert, H (2001). Profility success. *CMA Management* 75 (3, May): 30-32.

Boxwell, R. J. (1995). *Benchmarking para competir con ventaja*. Madrid: McGraw-Hill, Interamericana de España, S. A.

Bradley, A., T. Hall, and M. Harrison (2002). Selling cities. Promoting New Images for Meeting Tourism. *Citie*s 19 (1, February): 61-70

Cabinet Office, UK Government (1999). *Modernising Government White Paper*. London: Crown Stationery Office.

Calantone, J., and C. A. di Benedetto (1989). Multiple multinational tourism positioning using correspondence analysis. *Journal of Travel Research* 28 (2): 25-32

Calinsky, R.B., and J. Harabasz (1974). A dendrite method for cluster analysis. *Communication in statistics* 3: 1–27.

Camp, R. C. (1989. *Benchmarking: The search for industry best practices that lead to superior performance*. Milwaukee, WI: Quality Press, American Society for Quality Control.

Camp, R. C. (1993). A bible for benchmarking, by Xerox. *Finantial Executive* 9 (4): 23-27.

Camp, R. C. (1998). Best practice benchmarking: the path to excellence. *CMA: The Management Accounting Magazine* 72 (6): 10-14.

Department of Trade and Industry (DTI) (2003). *Regional Competitiveness, and State of the Regions*. London: DTI.

Echtner, C. M., and J. R. B. Ritchie (1993). The measurement of destination image. *Journal of Travel Research* 31 (4, spring): 3-13.

Eizaguirre, A., and J. P. Laka (1996). Competencia entre ciudades. Medición de la imagen comparada de 7 metrópolis españolas. *Boletín de estudios económicos* 51 (157): 67-88.

European Foundation for Quality Management (EFQM) (1999). *Assessing for excellence: A practical guide for self-assessment*. London: Crown Stationery Office.

Fonts, J. (1997). Efficiency and effectiveness of partnerships in southern European Motropolitan Administration. http://www.bm30.es/intranet/ponen/9801.html (accessed April 20, 2003).

Gartner, W. C. (1989). Tourism image: Attribute measurement of state tourism products using multidimensional scaling techniques. *Journal of Travel Research* 28 (2): 16-20.

Granados-Cabezas, V. (1995). Another Mythology for development? Selling places with packaging techniques: A view from the Spanish experience on city strategy planning. *European Planning Studies* 3 (2): 173-187.

Haahti, A. J. (1986). Finland's competitive position as a destination. *Annals of Tourism Research* 35 (4): 11-15.

Hodgkinson, G. P., J. Padmore, and A. E. Torres (1999). Mapping consumers's cognitive structures: A comparison of similarity tress with multidimensional scaling and cluster analysis. *European Journal of Marketing* 12 (May): 41-60.

Huggins, R. (2003). Creating a UK Competitiveness Index: Regional and local benchmarking. *Regional Studies* 37 (1): 89-96.

Kafkalas, G. (2002). Intelligent Territorial Government. Paper presented at *International Conference Disemination of Innovation: Cluters, Regional Institutions and Telematic*, May 16-17, in Thessaloniki, Greece.

Kotler, P., D. Cámara, I. Grande, and I. Cruz (1994). *Dirección de Marketing*, Madrid: Prentice Hall.

Kozak, M. (2002) Destination benchmarking. *Annals of Tourism Research* 29 (2): 497-519.

Krusal, J. B., and M. Wish (1978). *Multidimensional scaling*. Newbury Park, CA: Sage.

Lilien, G. L., G. H. van Bruggen, and B. Wierenga (2000). Bridging the marketing theory-practice gap with marketing engineering. *Institute for the Study of Business Markets*. Working Paper, ISBM Report 3-2000: The Pennsylvania State University.

Longbottom, D. (2000). Benchmarking in the UK: An empirical study of practitioner and academics. *Benchmarking* 7 (7): 98-117.

Loomba, A. P. S., and T. B. Johannessen (1997). Malcolm Baldrige National Quality Award critical issues and inherent values. *Benchmarking for Quality Management & Technology* 4 (1): 59-73.

Luque, T. trans (2000). *Técnicas de análisis de datos en investigación de mercados*. Madrid: Ed. Pirámide.

Luque, T. trans (2002). *Granada vista por los granadinos.* Granada: council of Granada.

Luque, T., and F. Muñoz (2005). City benchmarking: A methodological proposal referring specifically to Granada. *Cities* 22 (6): 411-423.

Luque-Martínez, T., S. Del Barrio, J. A. Ibáñez, and M. A. Rodríguez (2003). La modelización de la imagen de ciudad: Caso de la ciudad de Granada. Paper presented at the XV Encuentro de Profesores Universitarios de Marketing, September 24-26, in Córdoba (Spain)

Mazanec, J. A. (1995a). Competition among European tourist cities: A comparative analysis with multidimensional scaling and self-organizing maps. *Tourism Economics* 1: 283-302.

Mazanec, J. A. (1995b). Competitive maps: A comparative study on European tourist cities with INDSCAL and neurocomputing methodology. Paper presented at 24th European Marketing Association Conference (EMAC), Vol. I: : 703-729, ESSEC, May, in Cergy-Pontoise, France.

Ministry of Social Affairs: *Guía Metodológica de Benchmarking*. Madrid: Instituto Nacional de la Seguridad Social in coordination with the Asociación Española para la Calidad.

Moore, A., J. Nolan, and G. F. Segal (2005). Putting out the trash. Measuring municipal service efficiency in U. S. cities. *Urban Affairs Review* 41 (2): 237-259.

Muñiz, N., M. Cervantes, and J. Abad (2003). Análisis de marketing de ciudades a partir de un sistema de indicadores urbanos. Aplicación a la caracterización de ciudades españolas. Paper presented at XV Encuentro de Profesores Universitarios de Marketing, September 24-26, in Córdoba, Spain.

Nasar, J. L. (1995). The evaluative image of the city. *Journal of the American Planning Association* 56 (1): 41-54.

National Institute of Standards and Technology (NIST) (2001) Baldrige National Quality Program. In *Malcolm Baldrige National Quality Program.* http://www.quality.nist.gov/index.html (accessed July 15, 2003].

Ng, M. K., and P. Hills (2003). World cities or great cities? A comparative study of five Asian metropolises. *Cities* 20 (3): 151-165.

O'Reagain S., and R. Keegan (2000). Benchmarking explained. In *Benchmarking in Europe-Guin Working Together*.

Shi, N., and D. Bennet (2001). Benchmarking for information system management using issues framework studies: content and methodology. *Benchmarking* 8 (5): 358-375.

Spendolini, M. J., D. D. Friedel, and J. A. Workman (1999). Benchmarking: Devising Best. *Graphic Arts Monthly* 71 (10): 58-62.

Talvinen, J. M. (1995). Information systems in marketing: Identifying opportunities. *European Journal of Marketing* 29 (1): 8-26.

Timm, N.H. (2002). *Applied Multivariate Analysis*. New York: Springer-Verlag.

Wierenga, B. and P., Ophuis (1997). Marketing decision support systems: Adoption, use, and satisfaction. *International Journal of Research in Marketing*. 14: 275-290.

Wong, C. (2002). Developing indicators to inform local economic development in England. *Urban Studies* 39 (10): 1833-1863.

Wright, M., and N. Ashill (1998). A contingency model of marketing information. *European Journal of marketing* 32 (1/2): 125-144.

Yasar, J. (2000). Future trends in benchmarking for Competitive advance: A global survey. *Canfield School of Management*, 1-6.

Zairi, M., and J. Whymark (2000). The transfer of best practices: How to build a culture of benchmarking and continuous learning - part 1. *Benchmarking* 7 (1): 62-72.

Appendix:

TABLE 1. PROPOSED BASIC DIMENSIONS

1	**POPULATION AND TERRITOTY**	4	**ACCESSIBILITY AND COMMUNICATIONS**
1.1	Area approximated	4.1	Telecommunications
1.2	Evolution of the population	4.2	Airports
1.3	Residential density	4.3	Ports
1.4	Demographic structure	4.4	Intercity rail links
2	**ECONOMIC DEVELOPMENT**	4.5	Road network
2.1	Per capita income	5	**URBAN TRANSPORT AND MOBILITY**
2.2	Productive structure	5.1	Forms of urban transport
2.3	A place for business	5.2	Importance of private and public transport
2.4	Tourism and hotels	6	**HOUSING**
2.5	Economic vitality	6.1	Type of tenancy
2.6	Other economic data	6.2	Basic services in homes
3	**SOCIAL DEVELOPMENT AND QUALITY OF LIFE**	6.3	Public support for housing
3.1	Education	6.4	Capacity of access to housing
3.2	Family	7	**ENVIROMENTAL MANAGEMENT**
3.3	Migration	7.1	Historical heritage
3.4	Equity and diversity	7.2	Water supply services
3.5	Public health	7.3	Drains
3.6	Good citizenship and leadership	7.4	Refuse
3.7	Security	7.5	Air
3.8	Culture	7.6	Electric energy
3.9	Social welfare	7.7	Acts against the environment

TABLE 2. Non-Hierarchical (K-means) clustering: means of groups

CITY	Cluster1	Cluster2	Cluster3	Cluster4	Cluster5	Cluster6	Cluster7	Cluster8
Almeria	-0,1090	-0,5777	-0,5647	0,1650	-0,4557	**1,6402**	0,4533	-0,7384
Cadiz	-0,6847	0,3623	-0,7038	**-1,1092**	**1,3819**	-0,6122	-0,4649	**1,7447**
Cordoba	0,5976	0,0054	0,0619	-0,2723	**-1,0670**	-0,0869	-0,6196	-0,1075
Granada	0,7320	**1,9989**	-0,4278	**0,9936**	0,7344	-0,6060	0,1541	-0,1971
Huelva	**-0,7518**	**-0,7502**	**1,9147**	-0,6678	0,6814	0,0637	-0,1999	-0,1631
Jaen	**1,4128**	-0,3150	-0,6399	-0,5080	0,4814	0,4132	**-0,8508**	-0,6987
Malaga	**-0,9282**	-0,6432	0,4159	0,1315	**-1,4510**	-0,0208	**2,0806**	0,0020
Seville	-0,2686	-0,0805	-0,0561	**1,2667**	-0,3055	**-0,7912**	-0,5528	0,1583

FIG. 1. CITIES PROFILES

SOCIETY ASPECTS

ECONOMY OF SERVICES

INDUSTRY ECONOMY AND FORMATION

DEMOGRAPHICS CHARACTERISTICS & URBAN DEMAND

BASIC RESOUCES

QUALITY OF LIFE

OUTSIDE OPENING

TRAVELERS MOBILITY

AL
CA
CO
GR
HU
JA
MA
SE
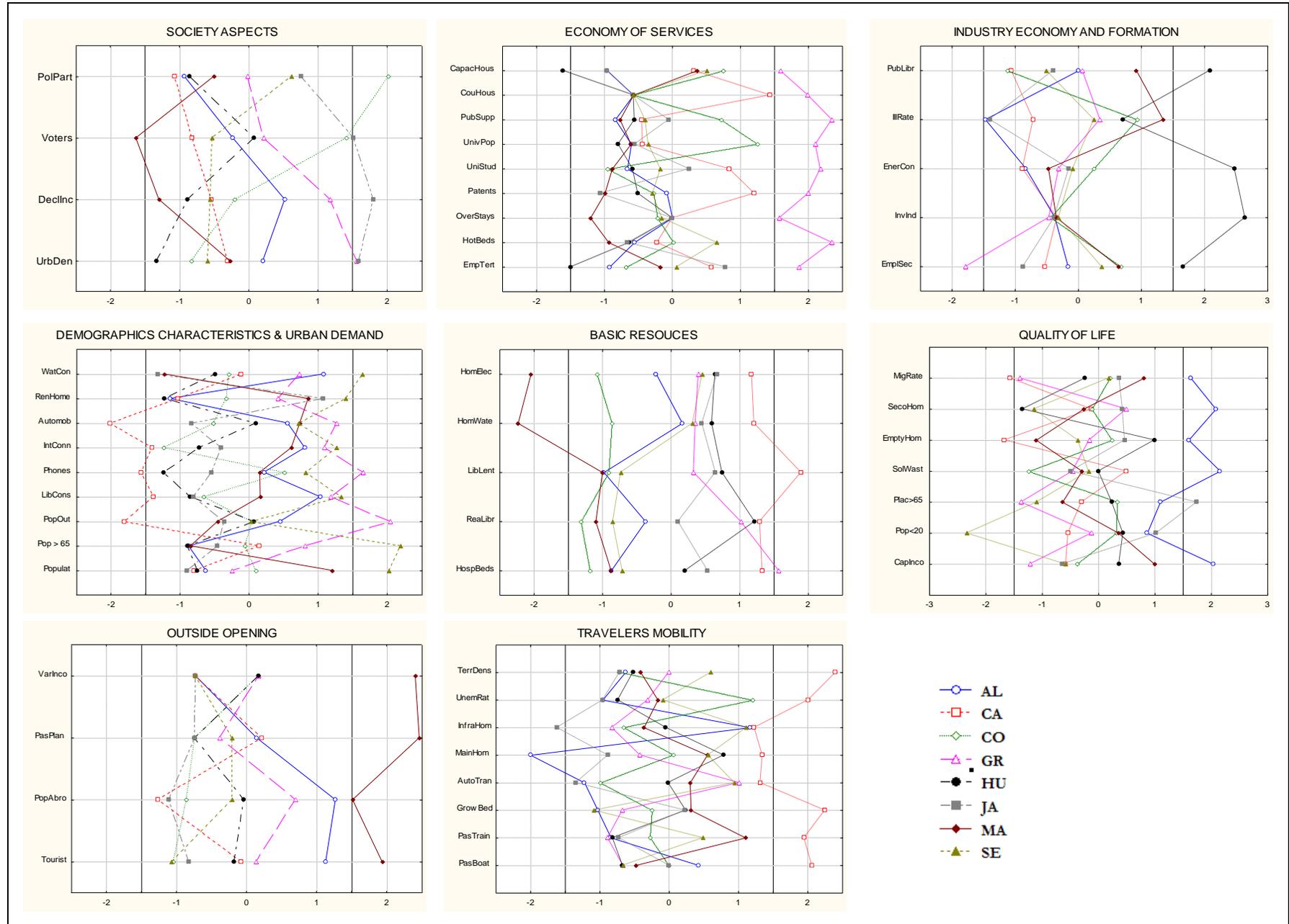
TABLE 3. FITTING MEASURES AND STRESS (PROXCAL)

MEASURE	Value
Raw normalized Stress	0,01829
Stress-I	0,13523
Stress-II	0,36669
S-Stress	0,05481
Explain dispersion (D.A.F.)	0,98171
Trucker's coefficient of congruence	0,99081

TABLE 4. FINAL COORDINATES

CITY	Dim 1	Dim 2
Almeria	0,443	-0,35
Cadiz	-0,706	0,594
Cordoba	0,043	-0,14
Granada	-0,708	-0,403
Huelva	0,244	0,636
Jaen	-0,11	-0,473
Malaga	0,923	0,099
Seville	-0,13	0,036

TABLE 5. PEARSON'S CORRELATIONS

	Society aspects	Economy of services	Industry economy and formation	Demographic charact., and urban demand	Basic resources	Quality of live	Outside opening	Travellers mobility
Dim 1	0,26	0,75	-0,39	-0,10	0,78	-0,64	-0,59	0,61
Dim 2	0,45	0,55	-0,38	0,90	-0,24	0,02	0,08	-0,49

---

[i] Province is each one of the territorial administrative divisions that integrate an autonomous region in Spain.

[ii] Indicators designed by the Fundación Metrópoli as an analysis method included in PROYECTO**CITIES.**

[iii] The literature overview reveals that the intangible factors are more difficult to define by means of a set of operative definitions, and the problem arises of not considering all the aspects of the concept to be measured, such as that of infrastructures, due to its heterogeneity.

[iv] Under a normal distribution with parameters: average, zero and standard deviation, one.

[v] The technique utilized for the delimitation and description of the segments was the nonhierarchical cluster. To determine the number of clusters we have utilized various criteria such as the cases dendrogram (distance among 25-30 %), the analysis of evolution of Calinsky and Harabasz 's (1974) indicator, and R^2 and of average squared of deviations (RMSSTD2) of Timm (2002: 531-532).

[vi] Tucker's coefficient of congruence is 0.982, and S Stress, 0.054; see appendix.