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Editorial Note

Giving birth to a journal is a painful journey. It starts with a specific vision followed by lots of ambiguity at the implementation level that gives way to clarity. Finally we have arrived at it. The first issue of the first volume is now ready.

I wish to emphasize on the vision with which we have started the journal. This vision is closely linked with the academic background of SIBER; the Institute that brings out this journal. SIBER is a unique Institute of its kind in the entire Indian Subcontinent imparting Post Graduate Professional Education in the field of Business Management, Social Work Administration, Environmental Studies and Computer Application. Management thoughts and managerial research are the common factors that link these otherwise diverse fields. Having completed three decades, the Institute now desires to cater the international community, by creating a platform for sharing the outputs of managerial research in these as well as other areas of human activities.

We perceive that the socio-economic and political environments in South Asian Countries are more or less similar that we will be able to share the same media for this purpose.

Scarcity of good articles was the main hurdle experienced in bringing out the first edition of the journal. Copycat culture is frequently reflected in the research articles. Usually the reputed researchers will be reluctant to spare research for an upcoming journal.

Research requires imagination and creativity. Most research lack rigorous methodological constraints. The aim of our journal is to provide a quality article to the readers and to create a platform for the academicians to publish their articles.

It is our editorial policy to review every paper by two experts. We followed this method religiously and continue to follow in the future too. The accepted papers have gone through dual reviews.

This issue contains four papers. The first paper is of a joint article of Dr. Francisco Diniz and Teresa Sequeira on 'A Social and Economic Development Index NUTS Ranking in Portugal'. In this paper the authors have calculated Social and Economic Development Index (SEDI). By using multivariate statistical analysis, the authors have studied demography, education, employment, entrepreneurial structure, health and housing conditions etc. in Portugal and made a comparisons between different regions.

The second paper is from Dr. Nandakumar Mekhoth, Faculty, Department of Management Studies, Goa University, Goa and Nattuvathuckal Barnabas from Goa Institute of Management, Goa. The paper is related to Development of a scale, a Scale to Measure Organization Autonomy. By using psychometric techniques, the authors have developed scale in an appropriate manner and its reliability has been established through factor analysis.

The next paper is from Dr. R.L. Hyderabad and M.N. Bhajantri from Department of Commerce, Karnataka University, Dharwad. They have discussed Share Buy Back Procedure in detail. The authors have discussed Open Market Repurchases (OMRs) and Fixed Price Tender Offers (FPTs), which are common and popular methods of accomplishing share buyback decisions. They have concluded that OMRs yield greater returns in first buybacks and FPTs in subsequent buyback.

The last paper is related to job satisfaction among the nursing professionals by Dr. Madhu T.P. Nair and Dr. Shobha A. Menon, Cosmopolitan's Valia College of Commerce, Mumbai. This paper is related to health sector.

The first issue of the journal has review of two books. The book on 'Service Marketing' authored by Valarie a Zeithaml, Dwayne D Gremler, Mary Jo Bitner and Ajay Pandit has been reviewed by Dr. N.M. Makandar, Department of Commerce, Anjuman Arts, Science and Commerce College, Dharwad. The second book is related to New Mantras in Corporate Corridors: From Ancient Roots to Global Routes, authored by Subhash Sharma has been reviewed by Dr. Pratima Verma, Indian Business Academy, Bangalore.

We welcome research papers from the field of Computer Science, Environmental Studies, Social Work, Administration, etc.

I am grateful to all the authors, reviewers and editorial members of the journal for their contribution and support in bringing out the first volume of the journal successfully.

Dr. Babu Thomas

Editor, SAJMR

SIBER, Kolhapur

A Social and Economic Development Index NUTS Ranking in Portugal

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Abstract

Once we accept the principle that development is a process which leads to changes in people's living conditions, regional development economists will always find it a challenge to try to define new ways of measuring the development level. The aim of this study is to calculate and to compare a Social and Economic Development Index (SEDI), regarding each *concelho* (NUTS IV) in Portugal. The SEDI is based on a set of variables regarding demography, education, employment, entrepreneurial structure, health, and housing conditions present in each *concelho*. From there it will move forward to seeking for homogeneity patterns between the various *concelhos*, with recourse to the clusters multivariate statistic method. Results point to there being clusters of *concelhos* highly differentiated, which suggests the need for a special care in setting up the spatial boundaries prior to its application to regional development policies and public management measures.

Keywords: Social and Economic Development Index; Cluster Analysis; Public Management

1. Introduction

The aim of this study is, first of all, to present a new way of ranking Portuguese territorial units on the mainland, at the level of the *concelhos*, while making some considerations as to the position they occupy in what concerns social and economic development indicators. These will include variables other than those strictly related to economics. At a later stage, this study will be dealing with homogeneity relationships that might eventually exist among the different *concelhos* departing from a multivariate statistical model - the clusters obtained in the course of a process of several stages which begin with a hierarchical method followed by a non-hierarchical one (K-means). Section 3 provides the methodological structure used in this study in order to facilitate the understanding of all the steps followed to achieve the aforementioned tasks.

Section 4, in turn, presents an analysis of the results obtained as well as a description of the social and economic development level of all the different *concelhos* contemplated in this study, while ranking them and pointing out the variables or sets of variables which establish a connection between their development level and all the aspects which might account for it. These aspects are also dealt with in greater detail in section 5 as an attempt to obtaining the clusters.

This study ends with some final remarks and considerations regarding its own shortcomings at the same time that it sets some guidelines for future research.

2. Socio-economic development

It is true that the concept of development implies a notion of futurity; it is also true that there can be no future without a clear knowledge of the past. From the beginning, any development process is associated with the idea of observing a certain situation, which will be the starting point of that process. When subject to a deeper analysis, that idea will become the object of implementing a growth model closely linked with how it turns and changes into a quantitatively as well as qualitatively higher stage.

Although the actual *per capita* GDP is one of the indicators more frequently used to measure and compare economic growth/development processes, going on in different spatial areas, it has raised some severe criticism among researchers who have been

because *per capita* GDP is but one of the many aspects of regional development. In its exclusive application this indicator ends up neglecting social aspects (such as access to education, health care and other living conditions) on the one hand, and other equally important variables that can be used to measure the economic performance of a given territory (Baster, 1972).

Since 1990, the UNDP has been studying the recent history of human development evolution (especially after 1960) to the extent that it is primarily a process leading to each individual being able to widen the possibilities he or she is being given through accomplishing three major things: a long life, a good health, and knowledge that will grant him or her access to all the necessary requirements for a suitable living standard.

The concept of human development, however, does not exhaust itself in achieving these goals; it involves other equally important dimensions even if they are not easy to achieve which have to do with political, economic, and social freedom, but also creativeness, productiveness, and respect for basic human rights. As such, it points to two main features which always go hand in hand: namely the enhancing of individual abilities and the way people put them to use, whether for productive or recreational or even political, cultural, and social purposes. The lack of balance between these two aspects concerning human development can lead to serious frustration. (Seers, 1972).

Therefore, gender issues were introduced in 1995. Since then, attention has been given to how differences of opportunity between genders could alter the ranking of countries *vis-à-vis* their development level. Likewise, the degree of participation of women in societies' political and economic life has been taken into account. Ever since 1997 special attention has been given to human poverty and the countries' situation has been measured on the assumption that poverty statute changes depending on how high the development level is or whether it is still at an early stage. Finally, in 1999 the technological achievement index was calculated for the purpose of defining leading countries, potential leaders and dynamic followers of new technologies. (UNDP, 2007).

All these approaches focused on a country as a territorial unit and despite including several reflect a wide range of valences when the territorial analysis reaches a more restrict level. The value added of this study lies, on the one hand, on a territorial analysis of a more local nature and, on the other hand, on a wider range of variables (demographic, educational, health care, economic/entrepreneurial, environmental, and quality of life) making room for a better hierarchization of territorial units as far as their social and economic development level is concerned.

3. Methodology

The present study proposes a methodology, which follows closely the one adopted by the UNDP in the Annual Report on Human Development in order to quantify social and economic development at a local level. It contemplates the integration of different dimensions (demographic, economic, social, and environmental) so that it can provide an integrated conceptual view on development.

The *status quo* model was the one chosen to systematize indicators. In fact, although it is usually assumed that development is best represented when different forms of indicators (pressure, *status quo* and answer), as well as the relationships between them, are analysed only the former was taken into consideration, since the analysis in question concerns the status quo of development dynamics within the territory composed of the 278 *concelhos* in Mainland Portugal.

Bearing in mind both the aforementioned methodology and the data available for each *concelho*, the present SEDI is the result of 15 indicators representative of different development approaches (Table 1). Thus, as regards demography, four indicators were taken into consideration, which focus not only on the vitality but also on the human resources evolution dynamics taking place in each territory in terms of population growth - both natural and migrant - and fertility rates. At the education level we expect to measure the population's qualifications with recourse to illiteracy rates while determining what percentage of the population has a university degree. From there, we move to other issues regarding employment, economy and the entrepreneurial sector departing from the seven

indicators which can give an important contribution to a better knowledge of the population's living conditions in terms of both work and income. At this stage, we try to outline not only the territory's entrepreneurial structure profile but also the profile of a whole set of basic issues for the survival of the populations and the preservation of their sense of belonging and social cohesion. Finally, health and housing reinforce the social component presented by this index, seeking not only to assess the existing facilities and their corresponding accessibilities which, to a certain extent, show the social impact of local, economic and, demographic constraints.

Table 1
SEDI components

Level	Indicator		Description
DEMOGRAPHY	I1	Demographic Growth	Residing population variation – % between 1991 and 2001
	I2	Natural Demographic Growth	Natural growth rate – ‰ in 2002
	I3	Migrant Demographic Growth	Residing population according to migrations per residence *concelho* (in 99/12/31), per usual residence *concelho* in 2001/3/12 – Internal Migration Balance
	I4	Fecundity rate	Number of births per 1.000 fecund -age women (15-49 years of age) – 2002
EDUCATION	I5	Illiteracy	Illiteracy rate in % – 2001
	I6	Higher Education	Population over 1 8 years of age with an university degree - % in 2001
EMPLOYMENT	I7	Total Employment	Total employment rate – % in 2001
	I8	Total Unemployment	Total unemployment rate – % in 2001
	I9	Employment in non - primary sector	Population employed in the non - primary sector– % in 2001
	I10	Employees and Pensioners	Employed population per pensioner – 2001
ECONOMY	I11	Per head GNP	Per head GNP – 2001
	I12	Purchasing Power	Purchasing Power Index – 2004
ENTREPRENEURIAL SECTOR	I13	Entrepreneurial Structure	Entrepreneur ial Index per *Concelho* – 2002
HEALTH	I14	Health	Health Index per *Concelho* – 2002
HOUSING	I15	Housing Conditions	Housing Conditions Index per *Concelho* – 2001

Source: Own calculations

Besides the indicator housing conditions also contemplates the environmental aspect since three features of this variable are included in the compound indicator so that social and economic aspects likely to influence resources' and the territories' environmental quality can be measured such as water and residues.

Another methodological aspect described concerns the way data was treated. In this case we chose the benchmarking type analysis using reference values as the most and the least favourable situation, (*Ls* and *Li*, respectively). Thus, each indicator value calculated for each *concelho* undergoes a transformation according to the most or the least favourable value for the whole set of *concelhos* analysed. The result is a variation interval between zero and one. The reading of the values obtained gives room to understanding the relative position of each *concelho* compared to the one with the most favourable results, besides pointing to their inter- and intraterritorial cohesion levels.

The next step in our methodology was aggregating all the indexes. The same weighting was given to each of the 15 indicators seeking, albeit subjectively, that the final index would reflect the authors' perception as to each indicator's relative weight on development. Thus, the value of each indicator is first transformed as follows:

$$(I_{11,2,...278;}\ I_{21,2...278;}\ I_{31,2...278;.....},\ I_{151,2...,278}) = \frac{(X - Li)}{(Ls - Li)}$$

where,

$(I_{i;\ i=1,2,...,278})$ = the *concelho*'s indicator index

X = the *concelho*'s indicator

Li = the indicator's least favourable value

Ls = the indicator's most favourable value

Then the different indicators transformed are aggregated as follows:

$SEDI = (_{i=1,\ldots,15} \sum^{15} I_i/15)$

In order to be able to obtain clusters, namely hierarchical clusters, on a first approach we used both agglomerating and dividing techniques. According to these methods, the individuals- in this particular case the *concelhos* - are considered from the beginning as a cluster and later grouped according to their proximity or, on the contrary, allotted to a cluster and then divided into sub-groups depending on how distant they are from each other (Maroco, 2003).

Several cluster connection methods have been tested using SPSS software in order to check whether they could produce similar results as suggested by Pestana and Gajeiro (2003) and Maroco (*op. cit.*). We were able to observe that the aggregation results obtained were very similar to those produced when using both Complete and Average Linkage (Within groups) methods. After using non-hierarchical K-means method, we were able to establish that the results thus obtained very much resembled Complete Linkage's and so we decided to choose it in order to compare these two types of methods.

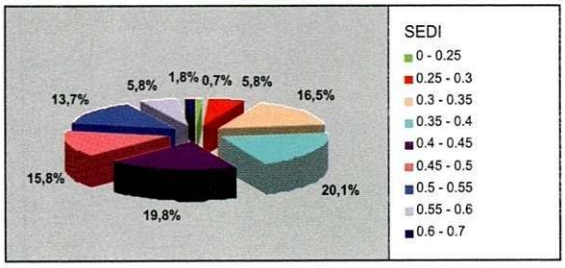
4. Results and Discussion

Having described the methodology used to treat data concerning the variables chosen to deal with the various levels approached it was possible to calculate a social and economic development index the SEDI for each of the 278 *concelhos* in Mainland Portugal. Based on this index and on the values obtained for each *concelho*, we will first look at the hierarchical position of the *concelhos* explaining their development level by their place in the ranking in relation to the 15 indicators which compose the final index.

The SEDI presents a value oscillating between a little under ¼ and a maximum of approximately 2/3. The variation coefficient value is not significant since the standard deviation is about 20% of the mean value. The *concelho* of Vinhais shows the lowest index value (0.2364), which means it is only 24% short of having the worst results of all the indicators. Lisbon in turn occupies the top place in the ranking reaching a threshold of 0.6609, which, nevertheless, places this *concelho* 34 point short of reaching an optimal position. The SEDI concentration is at 40 points, moving less away from the worst position than from the most favourable one. (Annexe I, Table I.1)

The two *concelhos* with a SEDI below 0.25 (about 1%) - Vinhais and Mértola , are both located in the hinterland and on the border with Spain. The 16 *concelhos* with a SEDI between 0.25 and 0.3, have in common the fact that they all lie several kilometres inland. And when the index goes up to 0.35, of the 46 *concelhos* in that interval (approximately 17% of the total under analysis), only Odemira lies on the coast, more precisely in Alentejo (Fig. 1).

Fig. 1. Per cent Distribution of the Concelhos according to SEDI levels



Source: Own calculations

With the greatest number of *concelhos* (56 of the 278 under analysis), the development level between 0.35 and 0.4 includes only Alcácer do Sal, Grândola, Aljezur and Castro Marim, all of them in the south, namely on the coastal strip of Alentejo and Algarve. The remaining 52 *concelhos*, as we have already seen, are located further inland.

Once the analysis of the first half of the interval between SEDI maximum and minimum values has been completed it is important to point out again the most important feature observed so far and that is the fact that all the spaces lie away from the coast.

As we move over 0.05 up on the SEDI ranking, the *concelhos* on the coast start to show a slightly better performance. It is the case of Caminha in the north, Tavira and Vila do Bispo in the Algarve, and Santiago do Cacém in Alentejo. It should also be pointed out that the majority of the costal *concelhos* in this interval are located in the centre of the country (Lourinhã, Peniche, Óbidos, Nazaré, Pombal, Cantanhede, Mira and, Murtosa). The remaining 43 *concelhos* are all located in the interior of the country, which remains the major space of this development level.

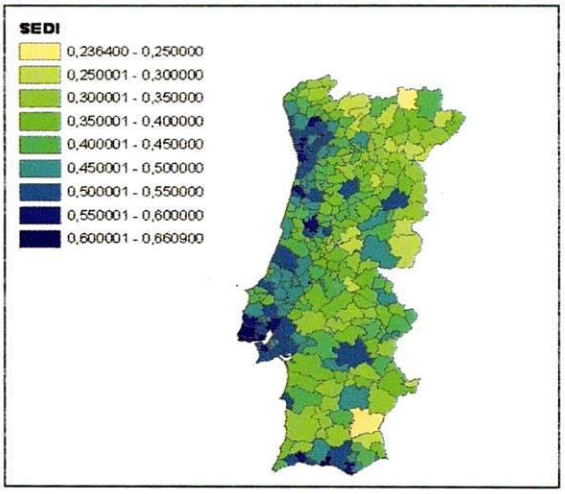
With a SEDI between 0.45 and 0.5, the coastal strip still has more *concelhos* north of the river Tagus than, for instances, the Algarve where only Olhão, Silves and Vila Real de Santo António have reached that score. Although the distribution in this development level is very similar in percentage terms to the distribution observed in the previous level, as far as coastal *concelhos* are concerned (about 20%), the great difference lies in the location of inland *concelhos* since their performance as regards this development level, is beginning to be closer to the former's.

That is even more striking when we move 5 points up in the SEDI; then the coastal concelhos and the ones located in adjoining areas achieve the best performance for the first time. Yet it is possible to find in the same development threshold such *concelhos* as Viseu, Guarda and Évora, where there is a strong urban concentration despite their being far away from the coast. If to this axis we add other inland cities with slightly lower SEDI, we may conclude that these territories play an important role in polycentric development defined as a regional development policy by the EU (European Commission, 1999).

Finally, the country's two main urban centres can be found in SEDI's two last levels. With an index between 0.55 and 0.6 we have those *concelhos* which include the cities of Aveiro, Braga, Coimbra, Faro, and Porto, as well as other territorial units belonging to Lisbon and O'Porto metropolitan areas, such as Odivelas, Seixal, and Vila Franca de Xira, (belonging to the former) and Maia, and Vila Nova de Gaia (belonging to the latter). At the SEDI top level we find the concelhos in Lisbon metropolitan area and Albufeira, in the Algarve, which is an exception (Map1).

In order to complete our first analysis of how the concelhos position themselves regarding SEDI we will look in detail at the 15 indicators which served as the basis of our compound index. As mentioned before, these have to do with variables grouped according to several levels: Demography; Education; Employment;

Map 1. SEDI for the concelhos of Mainland Portugal



Source: Own calculations

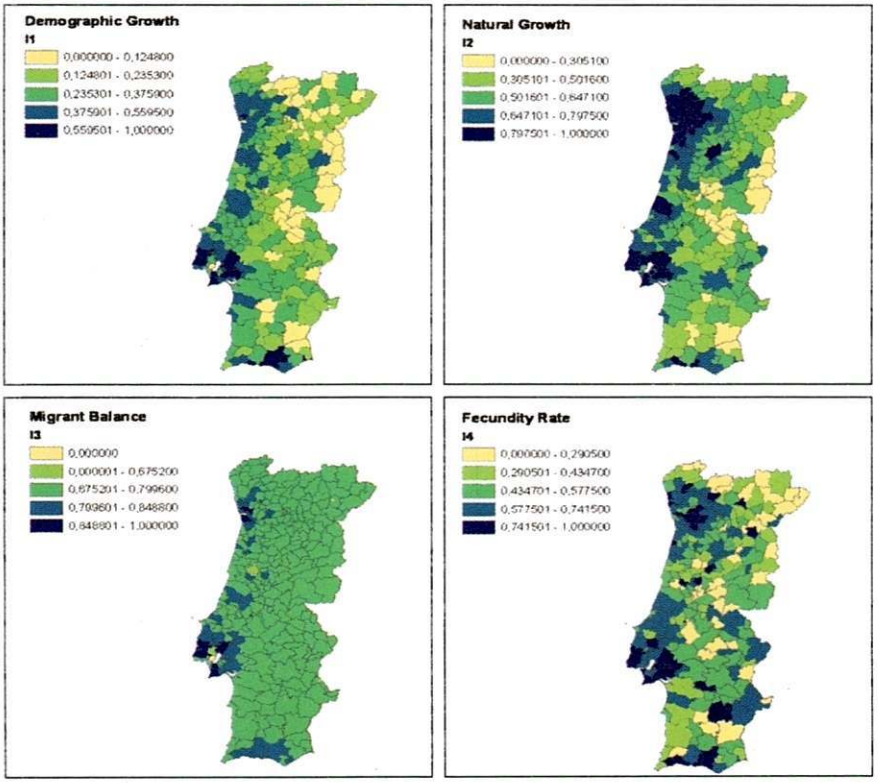
Economy; Entrepreneurial Sector; Health; Housing.

Starting with demography, it seems that a little over half of the concelhos in Mainland Portugal register a negative demographic growth, especially in the hinterland territorial units near or on the boarder. In turn, the areas with a higher population growth are located on the coast, namely in Lisbon and O'Porto metropolitan areas and in some concelhos of the Algarve. As if contradicting the idea that inland areas are becoming depopulated, the concelhos of Vila Real, Viseu, and Guarda register positive demographic growth rates, which reinforce the aforementioned polycentrism.

Natural growth is a phenomenon more likely to occur in the north than in the south for a number of reasons but mainly due to the positive contribution of that half of the country lying to the north and closer to the coast. Similarly to what happens with demographic growth, generally speaking, in the inland regions near the boarder natural growth rates are relatively lower.

The migrant balance indicates that the two big metropolitan areas, with the exception of their respective main cities, Lisbon and O'Porto, do indeed attract more people. Likewise, the Algarve as well as some concelhos on the coast in central Portugal register some very positive values as concerns this issue (Map 2).

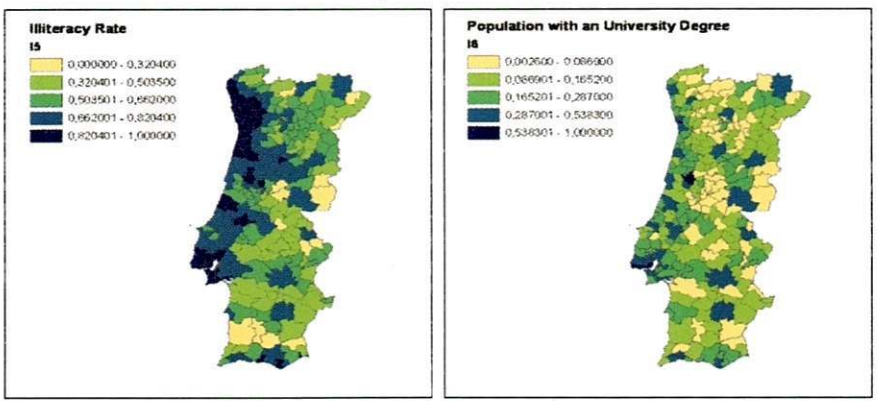
Map 2. Demography



Source: Own Calculations

In what concerns education and based on the two indicators chosen Illiteracy and Higher Education it may be said that the former has a more even distribution all over the country, although there are still some serious problems in the south, namely in Baixo Alentejo. On the other hand, the biggest contribution to SEDI in terms of the Population with an University Degree Indicator definitely comes from those concelhos where there are universities and polytechnic schools (Map 3).

Map 3. Education

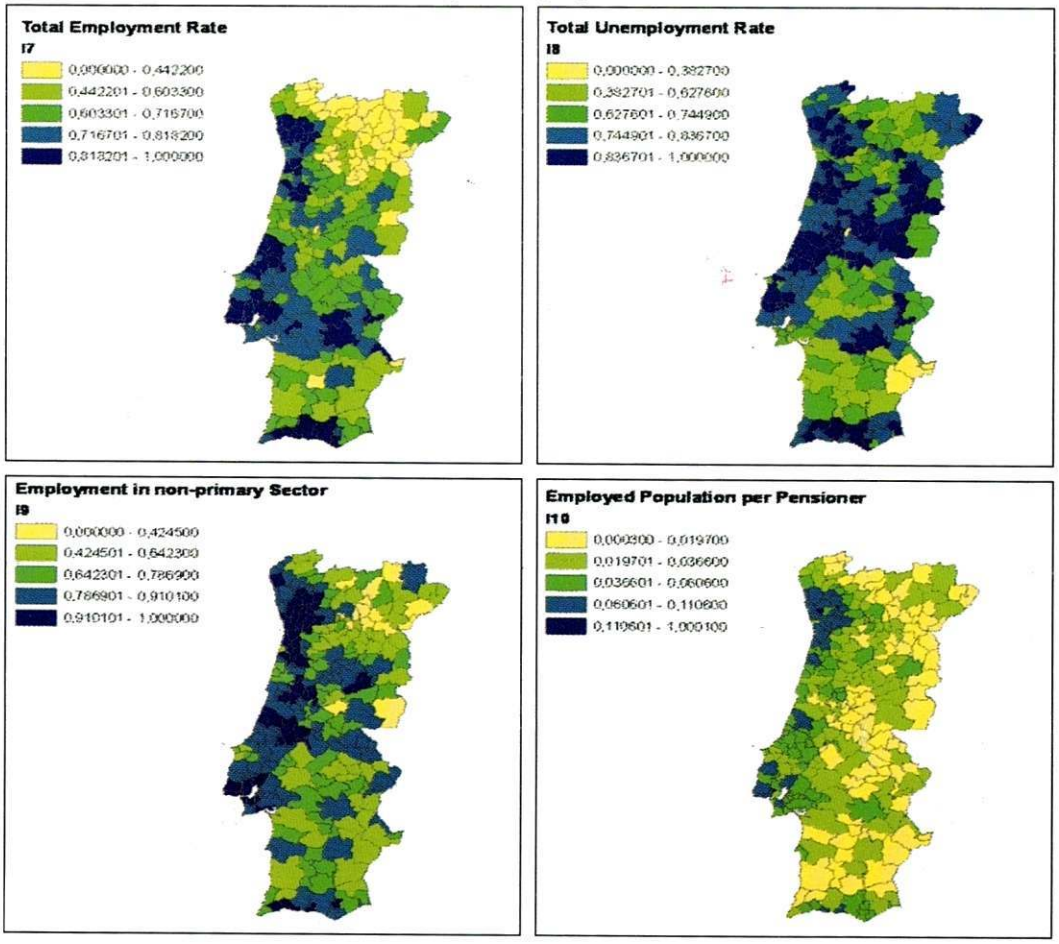


Source: Own Calculations

Total employment rate gives a positive contribution to SEDI in most of the coastal strip areas, with the exception of some concelhos to the north, like Mira, Figueira da Foz, Cantanhede, Murtosa, and Pombal in the central region and some in the Algarve and Alentejo coastal strip. Central Alentejo also shows very positive values. The unemployment

particularly high in Alentejo, a predicament confirmed by the weight the number of pensioners has in the whole of the hinterland from the north to the south and in the whole of the Alentejo (Map 4).

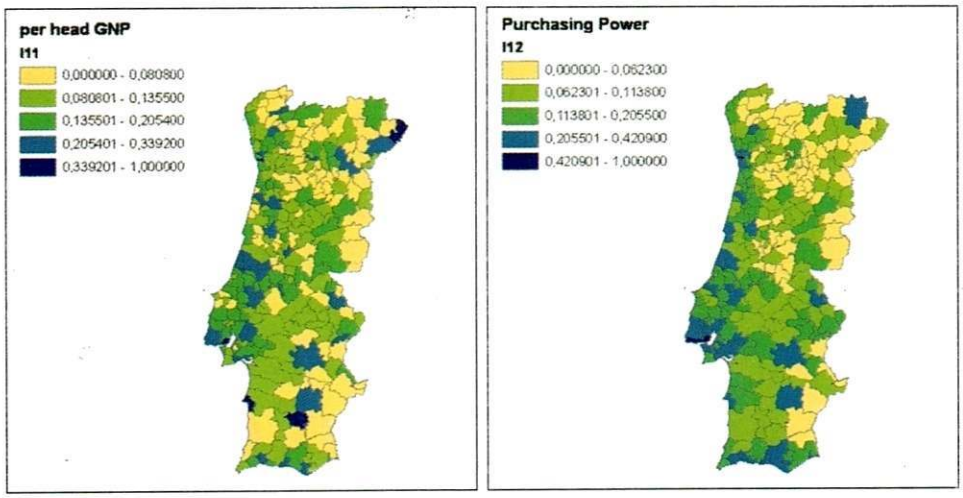
Map 4. Employment



Source: Own Calculations

A look at the per head GNP indicator explains how the economy is concentrated in Lisbon and O'Porto metropolitan areas. There are, however, a few exceptions. Miranda do Douro, and Castro Verde, in the interior of the country, are among the concelhos with the best performance concerning this indicator. Responsible for this excellent performance are, no doubt, the dams and the production of electrical power in the former and the mining industry in the latter. It is also worth mentioning the fact that petrochemical industry is based on the concelho of Sines, in the Alentejo coastal strip, which makes this indicator so interesting and contributes in a very positive way to its respective SEDI. Once again, almost the whole of the hinterland, especially the regions near the boarder, reach low levels regarding this indicator. Likewise, the Purchasing Power is stronger in the above mentioned metropolitan areas as well as in the Algarve. As a consequence of the tertiarization of their economies and the presence there of some universities, Bragança, Portalegre, Évora, and Beja in the hinterland present quite interesting living standards (Map 5).

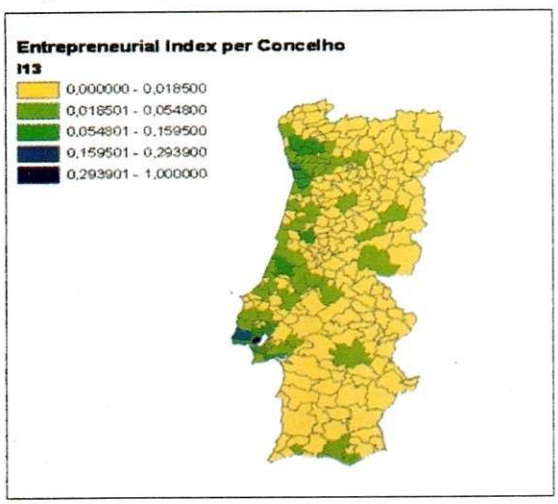
Map 5. Economy



Source: Own Calculations

The entrepreneurial index per concelho, which includes four indicators: a) Business firms based on the region; b) Partnerships based on the region; c) Personnel working in partnerships based on the region; and, d) turnover of partnerships based on the region, again points to a stronger concentration of economic activity in O'Porto and Lisbon metropolitan areas. These two areas along with Leiria region, the Algarve coastal strip, and some urban centres in the interior of the country emphasize the rest of the country's lack of entrepreneurship (Map 6).

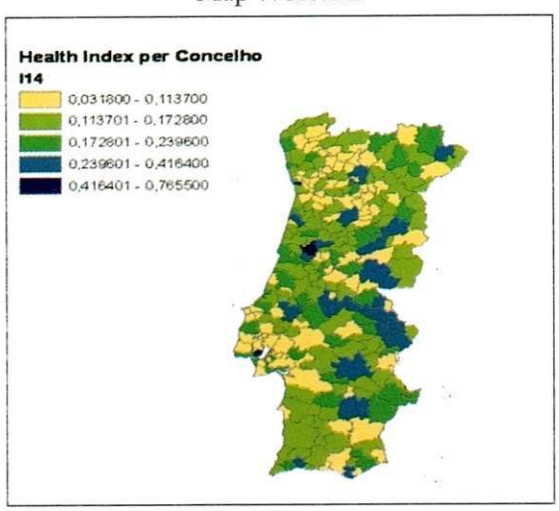
Map 6. Entrepreneurial Sector



Source: Own Calculations

When we look at the health indicator we come upon some very interesting conclusions. The concelhos in O'Porto and Lisbon metropolitan areas located around these two cities present several weaknesses and this is a situation, which also occurs in the Algarve and in the vicinity of Coimbra. The regions along the boarder, with the exception of Vimioso in the north, Castelo Branco in the centre, and the boarder concelhos of Alto Alentejo in the south, have considerable needs when it comes to infrastructures, equipments and human capital (Map 7).

Map 7. Health

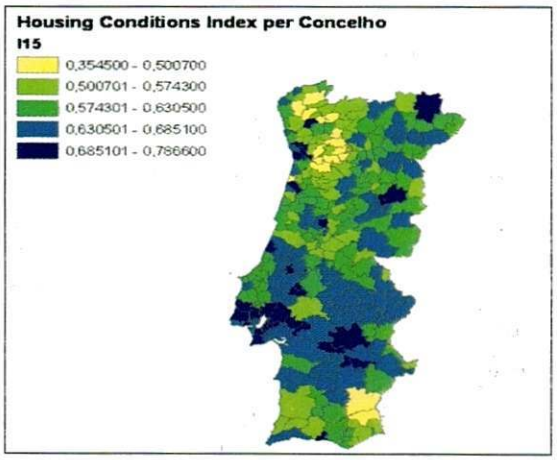


Source: Own Calculations

Finally, the analysis of the housing conditions shows that the concelhos situated in the interior north and not very far from the coast have more weaknesses than the ones further inland, with the exception of Mértola, and Alcoutim, in Baixo Alentejo, and Algarve, respectively. The latter actually face great

difficulties as regards housing conditions. Although living conditions are much better in both metropolitan areas, it is already possible to enjoy some good conditions in terms of comfort in several concelhos of the interior of the country (Map 8).

Map 8. Housing



Source: Own Calculations

5. Cluster analysis

In order to be able to analyse the SEDI'S several components we tried to group the concelhos into clusters, which as described by López (2005: 441) is a multivariate statistic method whose main object is "... revelar concentraciones en los datos para su agrupamiento eficiente en clusters (oconglomerados) según su homogeneidad".

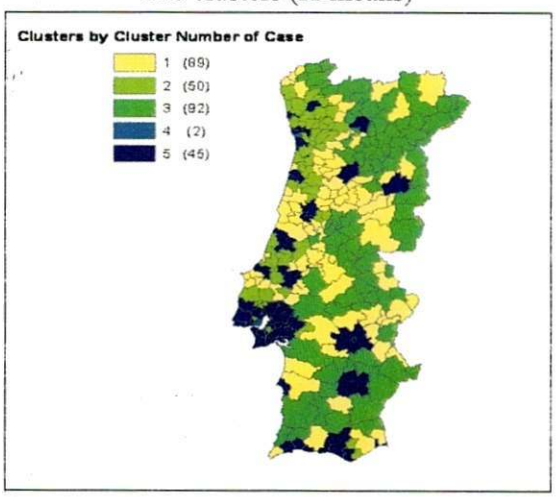
As it was already mentioned in section 2, our first intention was to obtain hierarchical clusters. Based on our findings we concluded that aggregation results were very similar whether we used the Complete or the Average Linkage (Within groups) method.

Since the non-hierarchical K-means method implies establishing a number of clusters right from the onset, we decided to make a previous analysis using Complete Linkage to establish that number. The criteria applied were the distance between clusters and the R-square. The distance criterion showed that we could retain 5 to 10 clusters for it is when the slope of the straight line uniting the distance between two clusters is bigger. When to this analysis we added the R-square criterion we observed that the 5 cluster solution retains 75,9 % of the total variability. In terms of getting a minimum number of clusters, the 5 cluster solution seems to us the eligible one since, from the beginning, it retains a significant percentage of the total variability.

In table II.1 of the annexe we produce the results obtained through non-hierarchical K-means method. K-means will serve as the basis of our analysis for, in general, non-hierarchical methods provide a more accurate classification of the subjects. Map 9 and Table 2 show the clusters obtained through this method, namely their geographical distribution and the variable descriptive statistics.

The variance analysis presented in annexe II.5 allowed us to identify those variables leading to a division per cluster as well as their relative importance..This way it was possible to establish that I12 (Purchasing Power) is the variable which contributes most to cluster division followed by I3 (Migrant Demographic Growth), and I13 (Entrepreneurial Structure), I5 (Illiteracy), I1 (Demographic Growth), I2 (Natural Demographic Growth), I6 (Higher Education) and I9 (Employment in the Non-primary Sector), and also by I7 (Total Employment), I4 (Fecundity Rate), I14 (Health), and I11 (per head GNP); and finally by I15 (Housing Conditions), I8 (Total Unemployment), and I10 (Employees and Pensioners).

Map 9 – The *concelhos* grouped into clusters (K-means)



Source: Own Calculations

1) Assuming that if a variable discriminates much among clusters, its variability (given by the *Cluster Mean Square*) will be high among clusters and low within its own cluster (obtained through the *Error Mean Square*). Thus, variables with a higher *Cluster Mean Square* and lower *Error Mean Square* are the ones which better define the clusters for they have a higher F value (Maroco, 2003).

Table 2
Summary of variable descriptive statistics per cluster

Variable	Cluster	N	Mean	Std. Deviation	Std. Error	95% Conf.Int. f. Mean		Minimum	Maximum
						Lower B.	Upper B.		
I1	1	89	0,257	0,071	0,008	0,242	0,272	0,077	0,484
I2	1	89	0,590	0,082	0,009	0,573	0,607	0,372	0,779
I3	1	89	0,790	0,006	0,001	0,789	0,791	0,773	0,806
I4	1	89	0,511	0,146	0,015	0,481	0,542	0,240	1,000
I5	1	89	0,657	0,111	0,012	0,634	0,681	0,401	0,880
I6	1	89	0,151	0,073	0,008	0,136	0,166	0,019	0,418
I7	1	89	0,662	0,112	0,012	0,638	0,686	0,325	0,888
I8	1	89	0,782	0,092	0,010	0,763	0,802	0,520	0,959
I9	1	89	0,786	0,101	0,011	0,765	0,807	0,550	0,964
I10	1	89	0,028	0,008	0,001	0,027	0,030	0,010	0,059
I11	1	89	0,118	0,081	0,009	0,101	0,135	0,000	0,746
I12	1	89	0,109	0,048	0,005	0,099	0,119	0,000	0,242
I13	1	89	0,009	0,007	0,001	0,008	0,011	0,001	0,039
I14	1	89	0,159	0,058	0,006	0,147	0,171	0,072	0,376
I15	1	89	0,605	0,068	0,007	0,590	0,619	0,354	0,742
I1	2	50	0,431	0,082	0,012	0,408	0,454	0,316	0,752
I2	2	50	0,813	0,105	0,015	0,783	0,843	0,558	1,000
I3	2	50	0,801	0,018	0,003	0,796	0,806	0,766	0,864
I4	2	50	0,657	0,120	0,017	0,623	0,691	0,395	0,892
I5	2	50	0,821	0,070	0,010	0,802	0,841	0,673	0,951
I6	2	50	0,166	0,070	0,010	0,146	0,186	0,045	0,346
I7	2	50	0,805	0,106	0,015	0,775	0,835	0,564	1,000
I8	2	50	0,853	0,078	0,011	0,831	0,875	0,582	1,000
I9	2	50	0,915	0,058	0,008	0,899	0,932	0,750	0,999
I10	2	50	0,100	0,187	0,026	0,046	0,153	0,025	1,000
I11	2	50	0,135	0,048	0,007	0,121	0,148	0,050	0,237
I12	2	50	0,124	0,047	0,007	0,110	0,137	0,041	0,287
I13	2	50	0,029	0,023	0,003	0,022	0,035	0,004	0,094
I14	2	50	0,113	0,039	0,006	0,101	0,124	0,058	0,239
I15	2	50	0,595	0,068	0,010	0,576	0,615	0,474	0,719
I1	3	92	0,134	0,068	0,007	0,120	0,148	0,000	0,354
I2	3	92	0,421	0,150	0,016	0,390	0,452	0,000	0,720
I3	3	92	0,788	0,002	0,000	0,788	0,789	0,782	0,794
I4	3	92	0,387	0,177	0,018	0,350	0,424	0,000	0,801
I5	3	92	0,452	0,133	0,014	0,425	0,480	0,000	0,669
I6	3	92	0,083	0,038	0,004	0,075	0,091	0,003	0,199
I7	3	92	0,488	0,157	0,016	0,455	0,521	0,000	0,770
I8	3	92	0,687	0,158	0,016	0,654	0,719	0,000	0,959
I9	3	92	0,577	0,165	0,017	0,543	0,612	0,000	0,952
I10	3	92	0,014	0,007	0,001	0,013	0,016	0,000	0,031
I11	3	92	0,089	0,069	0,007	0,074	0,103	0,008	0,503
I12	3	92	0,058	0,027	0,003	0,052	0,063	0,001	0,147
I13	3	92	0,003	0,002	0,000	0,002	0,003	0,000	0,013
I14	3	92	0,139	0,059	0,006	0,127	0,151	0,032	0,416
I15	3	92	0,594	0,057	0,006	0,583	0,606	0,433	0,704
I1	4	2	0,074	0,019	0,014	-0,099	0,247	0,060	0,088
I2	4	2	0,624	0,033	0,024	0,324	0,923	0,600	0,647
I3	4	2	0,207	0,292	0,207	-2,418	2,832	0,000	0,413
I4	4	2	0,600	0,156	0,110	-0,800	2,000	0,490	0,710
I5	4	2	0,940	0,030	0,021	0,672	1,209	0,919	0,961
I6	4	2	0,848	0,103	0,073	-0,073	1,770	0,776	0,921
I7	4	2	0,761	0,100	0,071	-0,135	1,658	0,691	0,832
I8	4	2	0,679	0,101	0,071	-0,229	1,586	0,607	0,750
I9	4	2	0,997	0,002	0,001	0,983	1,012	0,996	0,999
I10	4	2	0,030	0,007	0,005	-0,029	0,089	0,025	0,034
I11	4	2	0,654	0,204	0,145	-1,184	2,491	0,509	0,798
I12	4	2	0,832	0,238	0,168	-1,306	2,969	0,664	1,000
I13	4	2	0,647	0,499	0,353	-3,839	5,133	0,294	1,000
I14	4	2	0,677	0,035	0,025	0,361	0,994	0,652	0,702
I15	4	2	0,654	0,007	0,005	0,594	0,713	0,649	0,658
I1	5	45	0,498	0,167	0,025	0,448	0,548	0,161	1,000
I2	5	45	0,814	0,087	0,013	0,788	0,840	0,629	0,983
I3	5	45	0,806	0,062	0,009	0,787	0,825	0,654	1,000
I4	5	45	0,722	0,134	0,020	0,682	0,762	0,414	0,997
I5	5	45	0,864	0,087	0,013	0,838	0,890	0,676	1,000
I6	5	45	0,389	0,158	0,024	0,341	0,437	0,187	1,000
I7	5	45	0,817	0,085	0,013	0,791	0,842	0,575	0,990
I8	5	45	0,771	0,073	0,011	0,749	0,793	0,607	0,939
I9	5	45	0,935	0,057	0,008	0,918	0,953	0,812	1,000
I10	5	45	0,059	0,017	0,003	0,054	0,065	0,028	0,106
I11	5	45	0,223	0,141	0,021	0,181	0,265	0,105	1,000
I12	5	45	0,273	0,091	0,014	0,246	0,300	0,145	0,589
I13	5	45	0,055	0,048	0,007	0,041	0,070	0,006	0,215
I14	5	45	0,200	0,118	0,018	0,164	0,235	0,078	0,765
I15	5	45	0,684	0,044	0,007	0,670	0,697	0,599	0,787

When we cross-reference this information with the one in Table 2 consisting of a summary of variable descriptive statistics per cluster, mean statistic tests and the map previously produced, the following may be observed:

Cluster 4, composed of the cities of Lisbon and O'Porto dominates regarding such indicators as Purchasing Power (I12), Entrepreneurial Structure Dynamism, (I13), Population with an University Degree (I6), Health Indicators (I14), and Per Head GNP (I11), immediately followed by cluster 5 - which includes, among others, the most important urban nuclei - in relation to the same indicators. Cluster 4 also has the lowest migrant demographic growth (I3), and cluster 5 the highest demographic growth (I1).

Cluster 3 is representative of great majority of the inland *concelhos* and it is different from the rest for its low level of employment and high illiteracy rate which reflect themselves on I7 and I5; it also has the lowest level of both population with an university degree (I6) and of purchasing power (I12).

Cluster 2, including a set of *concelhos* near the coast stands out, among other reasons, for its positive behaviour in such aspects as unemployment and demographic growth with a repercussion on I8 and I1, a relative entrepreneurial dynamism (I13), only overcome by clusters 4 and 5, and for a rather favourable employed population per pensioner ratio (I10).

Finally, cluster 1, including 89 *concelhos* spreading throughout the territory, with a relative concentration in the centre occupies an intermediate position in relation to most of the indicators.

The intrinsic homogeneities of each cluster as well as the inter-cluster differences found are the result of not only the social and economic specificities already existing in each cluster but also of regional development policies implemented in Portugal after the country has joined the European Union. These policies increased the importance of coastal towns against rural areas and the hinterland, which may be observed in the dichotomies between clusters 4 and 5 *versus* 1 and 3.

2) Since we wanted to perform mean multiple comparisons we did *a posteriori* tests to find out which of the mean pairs were different using Tukey's and Bonferroni's Post-Hoc tests.

6. Final remarks and policy/managerial implications

The use of cluster techniques to analyse the several indicators which compose the SEDI in each *concelho* only stressed the notion that the *concelhos* on the coast and the ones in the interior of the country, separated by an intermediate central zone, have different characteristics and that the same situation occurs when we look at the group of *concelhos* which include the main towns and the *concelhos* around them and the one formed by the two big cities, Lisbon and O'Porto.

The simple exercise of overlapping the NUT III regions map and the map of the *concelhos* produced would clearly show the great asymmetries in terms of development within each NUT III. These asymmetries would be even bigger if we were to overlap the NUT III regions map with the map of territory regarding NUT II. We believe these considerations to be particularly important for the definition of new development instruments and policies insofar as the ones existing are traditionally conceived and targeted to a much too wide territorial aggregation level to be able to cope with each territorial unit's weaknesses and specificities and, therefore, compromising its efficiency and effectiveness.

These results also suggest some public management measures regarding such aspects as landuse and organization and public budgeting, which are essential in terms of development if a larger territorial cohesion is to be attained. We refer naturally to such measures likely to increase the literacy level, to fight the depopulation of the hinterland as well as increasing entrepreneurial attractiveness, namely by investing in schools, in the continuous training of teaching agents and in other communication infra-structures. This may be achieved with recourse to tax incentives that may help high skilled human resources settle all over the country and attract private investment in a diversified entrepreneurial tissue.

In short, centralized management of regional development policies has been one of the main obstacles to a more equal distribution of resources that might lead to equal opportunities in territorial development. It is important to point out that this study was carried out through calculating indicators that referred to the total area of Mainland Portugal. Recalculating these values based on a smaller territorial unit like NUT II and NUT III will certainly be a useful topic to pursue in further research.

ANNEXE I

Table I.1 Per cent distribution of the *Concelhos* according to SEDI levels

SEDI	*Concelhos*	No	%
[0 – 0,25[	Mértola; Vinhais.	2	0,7
[0,25 – 0,3[	Aguiar da Beira; Alcoutim; Barrancos; Boticas; Carrazeda de Ansiães; Freixo de Espada à Cinta; Gavião; Idanha-a-Nova; Montalegre; Oleiros; Pampilhosa da Serra; Penamacor; Ribeira de Pena; Torre de Moncorvo; Valpaços; Vimioso.	16	5,8
[0,3 – 0,35[	Alandroal; Alfândega da Fé; Alijó; Aljustrel; Almeida; Almodôvar; Arcos de Valdevez; Armamar; Avis; Castanheira de Pêra; Castro Daire; Coruche; Cuba; Ferreira do Alentejo; Figueira de Castelo Rodrigo; Fornos de Algodres; Fronteira; Melgaço; Mesão Frio; Mogadouro; Monção; Monchique; Mondim de Basto; Mora; Murça; Odemira; Ourique; Paredes de Coura; Pedrógão Grande; Penedono; Portel; Proença-a-Nova; Resende; Sabrosa; Sabugal; São João da Pesqueira; Sernancelhe; Serpa; Tabuaço; Tarouca; Terras de Bouro; Trancoso; Vila Flor; Vila Nova de Foz Côa; Vila Pouca de Aguiar; Vila Velha de Ródão.	46	16,5
[0,35 – 0,4[	Alcácer do Sal; Aljezur; Alpiarça; Alter do Chão; Alvaiázere; Alvito; Arganil; Arraiolos; Arronches; Baião; Cadaval; Castro Marim; Celorico da Beira; Celorico de Basto; Chamusca; Cinfães; Crato; Ferreira do Zêzere; Figueiró dos Vinhos; Góis; Gouveia; Grândola; Mação; Macedo de Cavaleiros; Marvão; Meda; Miranda do Douro; Mirandela; Moimenta da Beira; Monforte; Montemor-o-Velho; Mortágua; Moura; Mourão; Nisa; Penalva do Castelo; Pinhel; Ponte da Barca; Ponte de Sor; Redondo; Salvaterra de Magos; Santa Comba Dão; Santa Marta de Penaguião; São Pedro do Sul; Sardoal; Sátão; Seia; Sertã; Soure; Sousel; Tondela; Vidigueira; Vieira do Minho; Vila de Rei; Vila Nova de Paiva; Vouzela.	56	20,1
[0,4 – 0,45[	Abrantes; Almeirim; Amarante; Amares; Ansião; Arouca; Belmonte; Bombarral; Borba; Bragança; Cabeceiras de Basto; Caminha; Campo Maior; Cantanhede; Carregal do Sal; Castelo de Paiva; Castelo de Vide; Castro Verde; Chaves; Elvas; Estremoz; Fundão; Golegã; Lamego; Lourinhã; Mangualde; Manteigas; Mira; Montemor -o-Novo; Murtosa; Nazaré; Nelas; Óbidos; Oliveira de Frades; Oliveira do Hospital; Penacova; Penela; Peniche; Peso da Régua; Pombal; Ponte de Lima; Póvoa de Lanhoso; Reguengos de Monsaraz; Santiago do Cacém; Sever do Vouga; Tábua; Tavira; Tomar; Vale de Cambra; Valença; Vila do Bispo; Vila Nova da Barquinha; Vila Nova de Cerveira; Vila Nova de Poiares; Vila Verde.	55	19,8
[0,45 – 0,5[	Albergaria-a-Velha; Alcanena; Alcobaça; Anadia; Arruda dos Vinhos; Azambuja; Barcelos; Barreiro; Beja; Cartaxo; Castelo Branco; Constância; Covilhã; Espinho; Estarreja; Fafe; Figueira da Foz; Marco de Canaveses; Mealhada; Miranda do Corvo; Moita; Montijo; Olhão; Oliveira de Azeméis; Oliveira do Bairro; Ourém; Penafiel; Portalegre; Porto de Mós; Rio Maior; Santarém; Santo Tirso; São Brás de Alportel; Silves; Sobral de Monte Agraço; Torres Novas; Torres Vedras; Vagos; Vendas Novas; Viana doAlentejo; Viana do Castelo; Vila Real; Vila Real de Santo António; Vila Viçosa.	44	15,8
[0,5 – 0,55[	Águeda; Alcochete; Alenquer; Almada; Amadora; Batalha; Benavente; Caldas da Rainha; Condeixa-a-Nova; Esposende; Évora; Felgueiras; Gondomar; Guarda; Guimarães; Ílhavo; Lagoa; Lagos; Leiria; Loulé; Loures; Lousã; Lousada; Marinha Grande; Matosinhos; Ovar; Paços de Ferreira; Palmela; Paredes; Póvoa do Varzim; Santa Maria da Feira; Sesimbra; Setúbal; Sines; Valongo; Vila do Conde; Vila Nova de Famalicão; Viseu.	38	13,7
[0,55 – 0,6[	Aveiro; Braga; Coimbra; Entroncamento; Faro; Mafra; Maia; Odivelas; Portimão; Porto; São João da Madeira; Seixal; Trofa; Vila Franca de Xira; Vila Nova de Gaia; Vizela.	16	5,8
[0,6 – 0,7]	Albufeira; Cascais; Lisboa; Oeiras; Sintra	5	1,8
Total		**276**	**100**

ANNEXE II Cluster Analysis (K-means)

II.1 - Cluster Membership

N	Concelho	Cluster	N	Concelho	Cluster	N	Concelho	Cluster
2	Caminha	1	122	Ansião	1	183	Tomar	1
7	Ponte de Lima	1	124	Figueiró dos Vinhos	1	184	Torres Novas	1
8	Valença	1	127	Carregal do Sal	1	185	Vila Nova da Barquinha	1
10	Vila Nova de Cerveira	1	129	Mangualde	1	207	Grândola	1
20	Vieira do Minho	1	130	Mortágua	1	208	Santiago do Cacém	1
35	Cabeceiras de Basto	1	131	Nelas	1	214	Campo Maior	1
36	Celorico de Basto	1	132	Oliveira de Frades	1	215	Castelo de Vide	1
38	Baião	1	134	Santa Comba Dão	1	217	Elvas	1
47	Cinfães	1	135	São Pedro do Sul	1	223	Ponte de Sor	1
49	Arouca	1	137	Tondela	1	224	Portalegre	1
53	Vale de Cambra	1	140	Vouzela	1	226	Arraiolos	1
61	Peso da Régua	1	148	Seia	1	227	Borba	1
66	Lamego	1	150	Celorico da Beira	1	228	Estremoz	1
74	Bragança	1	153	Manteigas	1	230	Montemor-o-Novo	1
77	Mirandela	1	155	Pinhel	1	231	Mourão	1
82	Chaves	1	158	Castelo Branco	1	233	Redondo	1
94	Murtosa	1	162	Belmonte	1	234	Reguengos de Monsaraz	1
97	Sever do Vouga	1	163	Covilhã	1	236	Viana do Alentejo	1
99	Cantanhede	1	164	Fundão	1	237	Vila Viçosa	1
102	Figueira da Foz	1	166	Bombarral	1	244	Castro Verde	1
103	Mira	1	168	Nazaré	1	252	Azambuja	1
104	Montemor-o-Velho	1	169	Óbidos	1	253	Almeirim	1
105	Penacova	1	170	Peniche	1	254	Alpiarça	1
106	Soure	1	173	Cadaval	1	259	Golegã	1
110	Pombal	1	174	Lourinhã	1	261	Salvaterra de Magos	1
112	Arganil	1	177	Abrantes	1	266	Castro Marim	1
116	Oliveira do Hospital	1	178	Alcanena	1	275	Silves	1
118	Penela	1	179	Constância	1	276	Tavira	1
119	Tábua	1	181	Ferreira do Zêzere	1	277	Vila do Bispo	1
120	Vila Nova de Poiares	1	182	Sardoal	1		Number of cases	89

N	Concelho	Cluster	N	Concelho	Cluster	N	Concelho	Cluster
9	Viana do Castelo	2	40	Lousada	2	111	Porto de Mós	2
11	Amares	2	41	Marco de Canaveses	2	114	Lousã	2
12	Barcelos	2	42	Paços de Ferreira	2	115	Miranda do Corvo	2
14	Esposende	2	43	Paredes	2	165	Alcobaça	2
16	Vila Verde	2	44	Penafiel	2	171	Alenquer	2
17	Fafe	2	50	Santa Maria da Feira	2	172	Arruda dos Vinhos	2
18	Guimarães	2	51	Oliveira de Azeméis	2	175	Sobral de Monte Agraço	2
19	Póvoa de Lanhoso	2	87	Águeda	2	176	Torres Vedras	2
21	Vila Nova de Famalicão	2	88	Albergaria-a-Velha	2	186	Ourém	2
22	Vizela	2	89	Anadia	2	194	Odivelas	2
23	Santo Tirso	2	91	Estarreja	2	199	Moita	2
24	Trofa	2	93	Mealhada	2	235	Vendas Novas	2
26	Gondomar	2	95	Oliveira do Bairro	2	256	Cartaxo	2
32	Vila do Conde	2	96	Ovar	2	260	Rio Maior	2
34	Castelo de Paiva	2	98	Vagos	2	272	Olhão	2
37	Amarante	2	107	Batalha	2	274	São Brás de Alportel	2
39	Felgueiras	2	109	Marinha Grande	2		Number of cases	50

N	Concelho	Cluster
1	Arcos de Valdevez	3
3	Melgaço	3
4	Monção	3
5	Paredes de Coura	3
6	Ponte da Barca	3
15	Terras de Bouro	3
45	Mondim de Basto	3
46	Ribeira de Pena	3
48	Resende	3
54	Carrazeda de Ansiães	3
55	Freixo de Espada à Cinta	3
56	Torre de Moncorvo	3
57	Vila Flor	3
58	Vila Nova de Foz Côa	3
59	Alijó	3
60	Mesão Frio	3
62	Sabrosa	3
63	Santa Marta de Penaguião	3
65	Armamar	3
67	Moimenta da Beira	3
68	Penedono	3
69	São João da Pesqueira	3
70	Sernancelhe	3
71	Tabuaço	3
72	Tarouca	3
73	Alfândega da Fé	3
75	Macedo de Cavaleiros	3
76	Miranda do Douro	3
78	Mogadouro	3
79	Vimioso	3
80	Vinhais	3
81	Boticas	3
83	Montalegre	3
84	Murça	3
85	Valpaços	3
86	Vila Pouca de Aguiar	3
113	Góis	3
117	Pampilhosa da Serra	3
121	Alvaiázere	3
123	Castanheira de Pêra	3
125	Pedrógão Grande	3
126	Aguiar da Beira	3
128	Castro Daire	3
133	Penalva do Castelo	3
136	Sátão	3
138	Vila Nova de Paiva	3
141	Oleiros	3
142	Proença-a-Nova	3
143	Sertã	3
144	Vila de Rei	3
145	Mação	3
146	Fornos de Algodres	3
147	Gouveia	3
149	Almeida	3
151	Figueira de Castelo Rodrigo	3
154	Meda	3
156	Sabugal	3
157	Trancoso	3
159	Idanha-a-Nova	3
160	Penamacor	3
161	Vila Velha de Ródão	3
205	Odemira	3
206	Alcácer do Sal	3
210	Mora	3
211	Alter do Chão	3
212	Arronches	3
213	Avis	3
216	Crato	3
218	Fronteira	3
219	Gavião	3
220	Marvão	3
221	Monforte	3
222	Nisa	3
225	Alandroal	3
232	Portel	3
238	Sousel	3
239	Aljustrel	3
240	Almodôvar	3
241	Alvito	3
242	Barrancos	3
245	Cuba	3
246	Ferreira do Alentejo	3
247	Mértola	3
248	Moura	3
249	Ourique	3
250	Serpa	3
251	Vidigueira	3
257	Chamusca	3
258	Coruche	3
264	Alcoutim	3
265	Aljezur	3
271	Monchique	3
	Number of cases	92

N	Concelho	Cluster
29	Porto	4
188	Lisboa	4
	Number of cases	2

N	Concelho	Cluster
13	Braga	5
25	Espinho	5
27	Maia	5
28	Matosinhos	5
30	Póvoa de Varzim	5
31	Valongo	5
33	Vila Nova de Gaia	5
52	São João da Madeira	5
64	Vila Real	5
90	Aveiro	5
92	Ílhavo	5
100	Coimbra	5
101	Condeixa-a-Nova	5
108	Leiria	5
139	Viseu	5
152	Guarda	5
167	Caldas da Rainha	5
180	Entroncamento	5
187	Cascais	5
189	Loures	5
190	Oeiras	5
191	Sintra	5
192	Vila Franca de Xira	5
193	Amadora	5
195	Mafra	5
196	Alcochete	5
197	Almada	5
198	Barreiro	5
200	Montijo	5
201	Palmela	5
202	Seixal	5
203	Sesimbra	5
204	Setúbal	5
209	Sines	5
229	Évora	5
243	Beja	5
255	Benavente	5
262	Santarém	5
263	Albufeira	5
267	Faro	5
268	Lagoa	5
269	Lagos	5
270	Loulé	5
273	Portimão	5
278	Vila Real de Santo António	5
	Number of cases	45

II.2 Number of Cases in each Cluster

Cluster	1	89
	2	50
	3	92
	4	2
	5	45
Valid		278
Missing		0

II.3 Final Cluster Centers

	Cluster				
	1	2	3	4	5
I1	,257	,431	,134	,074	,498
I2	,590	,813	,421	,624	,814
I3	,790	,801	,788	,207	,806
I4	,511	,657	,387	,600	,722
I5	,657	,821	,452	,940	,864
I6	,151	,166	,083	,848	,389
I7	,662	,805	,488	,761	,817
I8	,782	,853	,687	,679	,771
I9	,786	,915	,577	,997	,935
I10	,028	,100	,014	,030	,059
I11	,118	,135	,089	,654	,223
I12	,109	,124	,058	,832	,273
I13	,009	,029	,003	,647	,055
I14	,159	,113	,139	,677	,200
I15	,605	,595	,594	,654	,684

II.4 Distances between Final Cluster Centers

Cluster	1	2	3	4	5
1		,423	,439	1,582	,590
2	,423		,846	1,587	,340
3	,439	,846		1,769	,993
4	1,582	1,587	1,769		1,378
5	,590	,340	,993	1,378	

II.5 ANOVA

	Cluster		Error			
	Mean Square	df	Mean Square	df	F	Sig.
I1	1,338	4	,009	273	150,450	,000
I2	1,816	4	,013	273	140,640	,000
I3	,174	4	,001	273	173,175	,000
I4	1,098	4	,023	273	48,115	,000
I5	1,825	4	,012	273	152,984	,000
I6	,949	4	,007	273	132,713	,000
I7	1,223	4	,016	273	78,724	,000
I8	,247	4	,013	273	18,955	,000
I9	1,455	4	,014	273	107,533	,000
I10	,067	4	,006	273	10,504	,000
I11	,277	4	,007	273	36,961	,000
I12	,606	4	,003	273	206,064	,000
I13	,220	4	,001	273	158,075	,000
I14	,188	4	,005	273	39,351	,000
I15	,071	4	,004	273	18,991	,000

II.6 Oneway

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
I1	1	89	,257	,071	,008	,242	,272	,077	,484
	2	50	,431	,082	,012	,408	,454	,316	,752
	3	92	,134	,068	,007	,120	,148	,000	,354
	4	2	,074	,019	,014	-,099	,247	,060	,088
	5	45	,498	,167	,025	,448	,548	,161	1,000
	Total	278	,285	,168	,010	,266	,305	,000	1,000
I2	1	89	,590	,082	,009	,573	,607	,372	,779
	2	50	,813	,105	,015	,783	,843	,558	1,000
	3	92	,421	,150	,016	,390	,452	,000	,720
	4	2	,624	,033	,024	,324	,923	,600	,647
	5	45	,814	,087	,013	,788	,840	,629	,983
	Total	278	,611	,197	,012	,587	,634	,000	1,000
I3	1	89	,790	,006	,001	,789	,791	,773	,806
	2	50	,801	,018	,003	,796	,806	,766	,864
	3	92	,788	,002	,000	,788	,789	,782	,794
	4	2	,207	,292	,207	-2,418	2,832	,000	,413
	5	45	,806	,062	,009	,787	,825	,654	1,000
	Total	278	,790	,059	,004	,783	,797	,000	1,000
I4	1	89	,511	,146	,015	,481	,542	,240	1,000
	2	50	,657	,120	,017	,623	,691	,395	,892
	3	92	,387	,177	,018	,350	,424	,000	,801
	4	2	,600	,156	,110	-,800	2,000	,490	,710
	5	45	,722	,134	,020	,682	,762	,414	,997
	Total	278	,531	,196	,012	,508	,554	,000	1,000
I5	1	89	,657	,111	,012	,634	,681	,401	,880
	2	50	,821	,070	,010	,802	,841	,673	,951
	3	92	,452	,133	,014	,425	,480	,000	,669
	4	2	,940	,030	,021	,672	1,209	,919	,961
	5	45	,864	,087	,013	,838	,890	,676	1,000
	Total	278	,654	,195	,012	,631	,677	,000	1,000
I6	1	89	,151	,073	,008	,136	,166	,019	,418
	2	50	,166	,070	,010	,146	,186	,045	,346
	3	92	,083	,038	,004	,075	,091	,003	,199
	4	2	,848	,103	,073	-,073	1,770	,776	,921
	5	45	,389	,158	,024	,341	,437	,187	1,000
	Total	278	,175	,144	,009	,158	,192	,003	1,000
I7	1	89	,662	,112	,012	,638	,686	,325	,888
	2	50	,805	,106	,015	,775	,835	,564	1,000
	3	92	,488	,157	,016	,455	,521	,000	,770
	4	2	,761	,100	,071	-,135	1,658	,691	,832
	5	45	,817	,085	,013	,791	,842	,575	,990
	Total	278	,656	,182	,011	,634	,677	,000	1,000
I8	1	89	,782	,092	,010	,763	,802	,520	,959
	2	50	,853	,078	,011	,831	,875	,582	1,000
	3	92	,687	,158	,016	,654	,719	,000	,959
	4	2	,679	,101	,071	-,229	1,586	,607	,750
	5	45	,771	,073	,011	,749	,793	,607	,939
	Total	278	,761	,128	,008	,746	,776	,000	1,000
I9	1	89	,786	,101	,011	,765	,807	,550	,964
	2	50	,915	,058	,008	,899	,932	,750	,999
	3	92	,577	,165	,017	,543	,612	,000	,952
	4	2	,997	,002	,001	,983	1,012	,996	,999
	5	45	,935	,057	,008	,918	,953	,812	1,000
	Total	278	,766	,185	,011	,744	,788	,000	1,000
I10	1	89	,028	,008	,001	,027	,030	,010	,059
	2	50	,100	,187	,026	,046	,153	,025	1,000
	3	92	,014	,007	,001	,013	,016	,000	,031
	4	2	,030	,007	,005	-,029	,089	,025	,034
	5	45	,059	,017	,003	,054	,065	,028	,106
	Total	278	,042	,085	,005	,031	,052	,000	1,000
I11	1	89	,118	,081	,009	,101	,135	,000	,746
	2	50	,135	,048	,007	,121	,148	,050	,237
	3	92	,089	,069	,007	,074	,103	,008	,503
	4	2	,654	,204	,145	-1,184	2,491	,509	,798
	5	45	,223	,141	,021	,181	,265	,105	1,000
	Total	278	,132	,107	,006	,119	,145	,000	1,000
I12	1	89	,109	,048	,005	,099	,119	,000	,242
	2	50	,124	,047	,007	,110	,137	,041	,287
	3	92	,058	,027	,003	,052	,063	,001	,147
	4	2	,832	,238	,168	-1,306	2,969	,664	1,000
	5	45	,273	,091	,014	,246	,300	,145	,589
	Total	278	,126	,108	,006	,114	,139	,000	1,000
I13	1	89	,009	,007	,001	,008	,011	,001	,039
	2	50	,029	,023	,003	,022	,035	,004	,094
	3	92	,003	,002	,000	,002	,003	,000	,013
	4	2	,647	,499	,353	-3,839	5,133	,294	1,000
	5	45	,055	,048	,007	,041	,070	,006	,215
	Total	278	,023	,068	,004	,015	,031	,000	1,000
I14	1	89	,159	,058	,006	,147	,171	,072	,376
	2	50	,113	,039	,006	,101	,124	,058	,239
	3	92	,139	,059	,006	,127	,151	,032	,416
	4	2	,677	,035	,025	,361	,994	,652	,702
	5	45	,200	,118	,018	,164	,235	,078	,765
	Total	278	,154	,086	,005	,144	,164	,032	,765
I15	1	89	,605	,068	,007	,590	,619	,354	,742
	2	50	,595	,068	,010	,576	,615	,474	,719
	3	92	,594	,057	,006	,583	,606	,433	,704
	4	2	,654	,007	,005	,594	,713	,649	,658
	5	45	,684	,044	,007	,670	,697	,599	,787
	Total	278	,613	,068	,004	,605	,621	,354	,787

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
I1	Between Groups	5,350	4	1,338	150,450	,000
	Within Groups	2,427	273	,009		
	Total	7,777	277			
I2	Between Groups	7,263	4	1,816	140,640	,000
	Within Groups	3,524	273	,013		
	Total	10,787	277			
I3	Between Groups	,698	4	,174	173,175	,000
	Within Groups	,275	273	,001		
	Total	,973	277			
I4	Between Groups	4,391	4	1,098	48,115	,000
	Within Groups	6,229	273	,023		
	Total	10,620	277			
I5	Between Groups	7,301	4	1,825	152,984	,000
	Within Groups	3,257	273	,012		
	Total	10,558	277			
I6	Between Groups	3,797	4	,949	132,713	,000
	Within Groups	1,952	273	,007		
	Total	5,749	277			
I7	Between Groups	4,892	4	1,223	78,724	,000
	Within Groups	4,241	273	,016		
	Total	9,133	277			
I8	Between Groups	,988	4	,247	18,955	,000
	Within Groups	3,559	273	,013		
	Total	4,547	277			
I9	Between Groups	5,820	4	1,455	107,533	,000
	Within Groups	3,694	273	,014		
	Total	9,515	277			
I10	Between Groups	,268	4	,067	10,504	,000
	Within Groups	1,741	273	,006		
	Total	2,009	277			
I11	Between Groups	1,106	4	,277	36,961	,000
	Within Groups	2,043	273	,007		
	Total	3,149	277			
I12	Between Groups	2,422	4	,606	206,064	,000
	Within Groups	,802	273	,003		
	Total	3,224	277			
I13	Between Groups	,882	4	,220	158,075	,000
	Within Groups	,381	273	,001		
	Total	1,262	277			
I14	Between Groups	,751	4	,188	39,351	,000
	Within Groups	1,302	273	,005		
	Total	2,053	277			
I15	Between Groups	,283	4	,071	18,991	,000
	Within Groups	1,015	273	,004		
	Total	1,298	277			

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