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Relation between some socio economic indicators and the security factor – the case of Algarve

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44th Congress of the European Regional Science Association
(ERSA)

Proposed theme for parallel sessions

“E. Public capital and regional development”

*“Relation between some socio economic indicators
and the security factor – the case of Algarve”*

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ABSTRACT

The paper discusses the implications of the security factor in the regional development in Algarve region. Considering the goal of sustainable development and growth, some variables related to criminality at regional level have been observed and compared to the national values. The obtained data bases was applied in a methodological essay to search for significant statistical correlations between criminal registers and a set of social and economic indicators, namely: unemployment, internal regional product at mp and cp, regional added value, population density, entered legalised citizens and visiting foreign citizens. This study, developed at regional level, reports an observation period from 1995 and is based on the bibliographic support kindly supplied by the Cabinet of Legislative Politics and Planning in Ministry of Justice.

The results show an inexistence of statistical correlation's between the regional unemployment rates and the criminal registers. Positive correlations were found for following indicators: internal regional internal product, regional added value (in what concerns crimes against the State and the crimes foreseen in Sundry Legislation). Also the population density reacted positively to the tests of correlation with the group of crimes against the State. The same occurrence was found in the registers of foreign legalized citizens. When the association between the registers of visitors was considered, the correlation appeared on the crimes against the State and the crimes foreseen in Sundry Legislation.

Despite the Algarve region being classified, for its visitors, as “*safe tourist destination*”, these associations disclosed some concern about the impact of this type of crime in the regional development logic's to Algarve region, essentially for its tourist preponderance and localisation as peripheral region in the UE.

Keywords: *Regional Development, Internal Security, Criminal Records GPLP-MJ, Correlations; Social and economic pointers;*

INTRODUCTION

Our proposal is based on the methodology to obtain a whole of statistical co-relations, supported by means of a co-relation coefficient³, among the GPLP-MJ crime groups⁴ and some social and economic indicators⁵ of recognised statistical availability and reliability for the Algarve Region from 1995 to 2001. An incursion at the NUTS II inter-regions level is admitted.

Some difficulties have particularly been experienced in the statistical conciliation of the chosen social and economic indicators. They were due to their aggregated register nomenclature and the criminal records of GPLP-MP⁶, which, in spite of being official statistics, “tend to reproduce not the real criminality but the apparent reality, i.e., either the one participated to the authorities or the one they know”(Lourenço and Lisboa, 1994: 47). On the other hand, their model of aggregation and reclassification, which occurred in 1993, reflect the “... impossibility to use the statistics of PSP and GNR [...] the data of PJ that have an irregular quality along the period [...] due to the fact that their criminal statistics data are being processed in computer” (Lourenço and Lisboa, 1994: 51) justify limitations of these data. The choice of the social and economic indicators focused on those that may be statistically more representing of the social and economic problems in the country.

Once this is a very problematic and of scarce approach matter in the academic environment, a more complex task may be to establish an association between regional development and crime, with the contribute of some factors (Carcach, 2000). Neapolitan (1997) discovered co-relations in some studies⁷, in others not, for a few social and economic variables (GDP-pc, urbanising, population youth rate, density of population, infant mortality, unemployment levels, cultural integration and religion). Also here a try

³ Statistical concept that confers the link between the two variables, numerically estimated by the calculation of several co-relation coefficients. In the following co-relation graphs appears the indication R², which should be read R², i.e.. the square of Pearson’s co-relation coefficient, or coefficient of determination that expresses the measure of the variability proportion in a variable that is explainable by the other’s variability.

⁴ Cabinet of Legislation and Planning Policy – Ministry of Justice – reflecting the criminal groups of crimes against people, crimes against the heritage, crimes against life in society, crimes against the State and the crimes foreseen in sundry legislation. The crimes against peace and humanity due to their irrelevance were not taken into account, in statistical terms.

⁵ GDP-pm-pc, GVA, unemployment rate, density of population, number of visitors entering the Algarve region by air and number of legalized foreign citizens.

⁶ For example, in this aggregation, this entity (that is one of the most credible, embracing and publically available) has in its publications a desaggregation even at the level of NUTS II Region. This means a real impossibility to know the criminality records (of those crimes known by the police authorities) in a region’s interior. In the Algarve region’s case, there aren’t any statistical data to confer an inter regional analysis to the sixteen councils that compose it.

⁷ These studies were confronted with the problematic of determining a representative sample of countries. This sampling has focused on the countries where the statistics are more accessible and trustable.

will be made in order to establish co-relations with statistically more expressible criminal groups, by using a few social and economic variables. The results, framed in explaining justifying/ non-justifying interpretations of those associations and tendencies, are presented below.

1. THE ALGARVE REGION

The Algarve region spreads along a single district and makes a kind of triangle whose vertices are the littoral³, the “barrocal” and the hills⁴. In this geographic amplitude there are around 395.208⁵ inhabitants, distributed along 4.995,2 sqm, reflecting a density of population of about 80 inhabitants/sqm (INE, 2001ab). Adding to this economic geography there is another strong component, associated to the tourism sector, that is expressive by the 2.047.483 hosts who entered the country in 2000, (INE, 2001ab) as well as about 13 million stays in hotels and guest houses (INE, 2003). This circumstance, statistically difficult to reflect in the criminal aspect, aggregated by GPLP-MJ, must be re-equated in future studies.

1.1 GPLP-MJ crimes and unemployment rate - in the Algarve region

Some authors have dealt with the relation crime vs unemployment. Calvó-Armengol and Zenou (2002)⁶, for instance, demonstrated that the criminality indices in a community increased the unemployment rate of that community. Becker (1968)⁷ gave a contribute about the crime economy and more recently, Burdett, *et al.*, (1999) suggest a theoretical model of the criminal activity and the labour market. The simultaneousness between crime and unemployment, largely neglected by the majority of

³Geographically is presented more cliffy at west than at east, along an extension of more than 200 kilometres.

⁴Assumes more significance at the Hill with the 902 meres of altitude at Foia..

⁵Data from 2001 census, provisional results, for resident population, men and women.

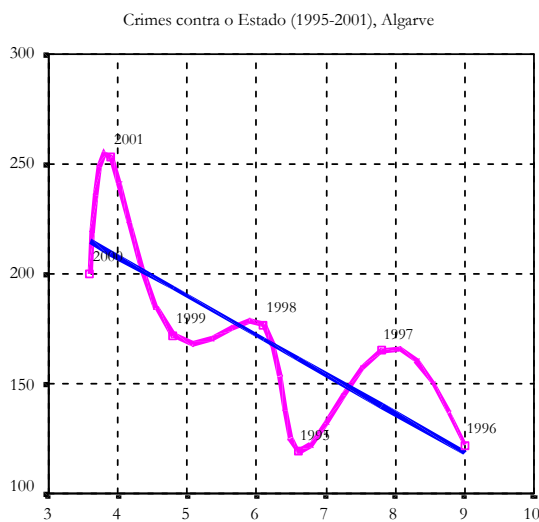
⁶Revealed that the criminality indices in a community increase the unemployment rate in that community; in their empyrical evidences the obtained results indicated that the unemployment had an ambiguous impact on the crimes against property (classified as a particular typology of criminal activity). They were grounded on a styled model foreseeing the positive effect of unemployment on criminality. The involuntary unemployment reduces the profits and potential income as from the licit activities. By that means it lowers the opportunity cost (that reflects the value of alternative use or opportunity) for a certain economic asset, or the alternative value that is prejudiced) of the practice of a crime..

⁷He wrote that “...began to think about crime in the 1960s after driving to Columbia University for an oral examination of a student in an economic theory” (Becker, 1996: 143)..In fact, he is one of the most prominent authors who have developed models of the crime economics theory – individual decision for the practice of a crime, that appeared in the 60s and 70s, along with Ehrlich (1973) and Heineke (1978). First he focused on the minimising of the social loss in the search as from the crime and not only the individual decision in the practice of the crime (Horvath and Kolomaznikova, 2002). He argued what would be the adequate policy to the fight against criminality and how that referred the meaning of punishment, public expense, probability of conviction and punishment by law. His Rational Choice model, where an individual’s decision to commit a crime was based on the cost and benefits, where all potential criminals have a benefit of crime, includes both the financial and any expected psychological benefits of crime (Oliver, 2002).

studies, has been subscribed in empirical studies⁸, with controversial results. In the case under analysis, the co-relation of this social and economic indicator with the group of crimes, defined by GPLP-MJ has shown some interesting, even surprising co-relations.

In this relation two co-relations have been identified, both indicating inverse tendencies. Facing an increase in the registered crimes against the State and those foreseen in the Sundry Legislation, the unemployment rate has a tendency to lower its levels. This circumstance reveals there is no test regarding any association between the various groups of crimes (of GPLP-MJ) and the evolution of the unemployment rate for the Algarve region.

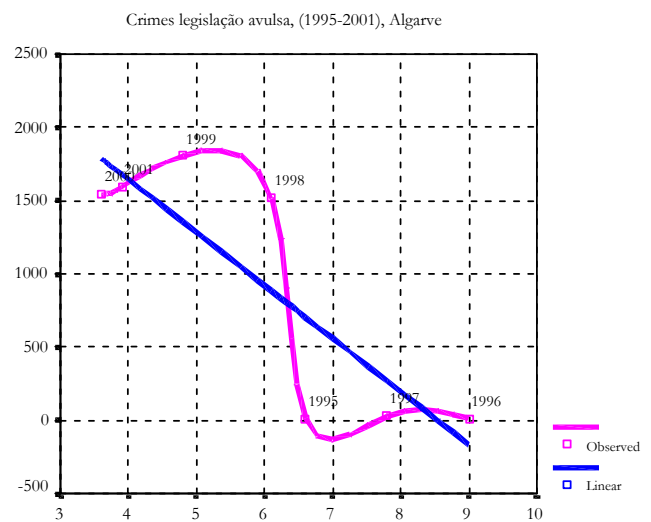
Graphic 1.1.1/2 Regression estimation curve - Crimes against the State and those foreseen in the Sundry Legislation (1995-2001), Algarve



Tx desemprego (%), 1995-2001, Algarve, INE Estatísticas do Emprego

Fonte : GPLP e INE - Estatísticas do emprego

$$Y = 278,880472 - 17,802950 * X_i ; R2 = 0,60308$$



Tx desemprego (%), 1995-2001, Algarve

Fonte : GPLP-MJ e INE Estatísticas do emprego

$$Y = 3094,340413 - 362,377581 * X_i ; R2 = 0,72005$$

For large density of population aggregates (in the Portuguese case, the metropolitan areas of Lisbon and Oporto) and without empirical studies to confirm this argumentation, it will be possible to verify co-relations, following Glaeser e Sacerdote (1996)⁹. That will not be the case of the Algarve, in spite of its touristic specificity, which

⁸Corman, *et al.*, (1987)concluded there is no causality in both directions, while Thornberry and Christenson (1984) and Bushway and Engberg (1994) supply a separate empirical evidence, in both directions, of that causality(unemployment affects crime and, reciprocally crime affects unemployment).

⁹In their studies presented the relation between the density of population and the criminal incidence.

puts the region on extremely high peaks of population¹⁰, in certain seasons of the year.

The implications originated by a stressing oscillation, in the security vector, may have overwhelming and countless repercussions in the whole regional economy. It is, therefore, interesting to check the co-relations (and their tendencies) that have arisen for these groups of crimes. If we look at their significance in the national whole¹¹, and its recent evolution, they may be strong reasons for a growing concern at the national and regional levels. It will be interesting to follow this pace in future studies.

1.2 GPLP-MJ crimes and GDP-pm-pc – in the Algarve region

The strongest (and sole) co-relation has arisen in the crimes against the State¹², a bit farther, but relevant in the crimes foreseen in Sundry Legislation. In fact, the tested registrations associate this indicator with those crimes for the Algarve region. In the crimes against the State (graph 1.2.1) the association presents an adjustment that leads us to conclude there is a relative stability, bearing in mind that this criminal group assimilates an impact in the public opinion, only comparable to other crimes against people and some crimes against the heritage. The evolution of records in this group of crimes has deserved special attention from the police authorities, media and people in general, due to the feeling and expectation it has in the internal security context.

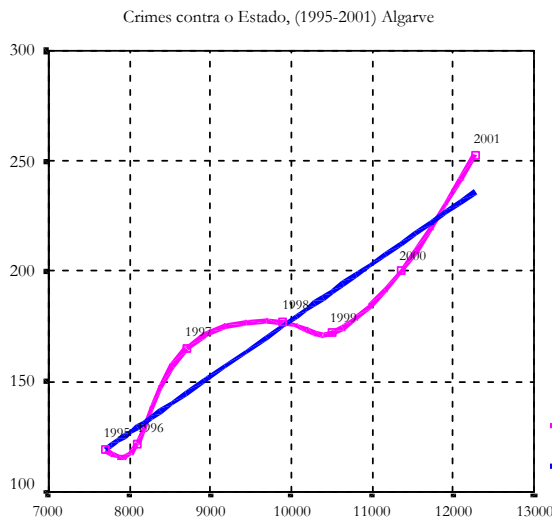
Taking into account that the zones/regions of higher per capita income will be subjected to a higher number of this type of crime records, a similar reasoning can be made for the crimes foreseen in the Sundry Legislation where the decline registered in 1999 was maintained until 2001 (graph 1.2.2), thus creating a co-relational derangement that only the next years could corroborate.

¹⁰According to the statistical available data (INE, 2001a) these show about 14 million people who visited the Algarve region during 2001. There are no records available concerning the NUTS II regions, that enable us to establish an association between the visitors in the region and the GPLP-MJ crimes. If we admit the growth tendency this indicator has had and if we look at the GPLP-MJ groups of crimes that assume this tendency we will find the crimes against the State and the crimes foreseen in special legislation.

¹¹Consult Graph - Annexe I

¹²In the analysis at the national level this indicator had also shown to be statistically co-related - Table – Annexe II

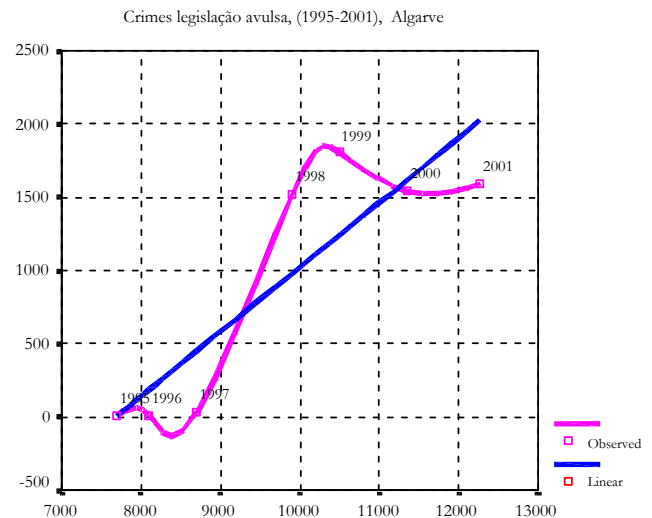
Graph 1.2.1/2 Regression estimation curbve- Crimes against the State and crimes foreseen in Sundry Legislation with the GDP -pm-pc (1995-2001), Algarve



PIB-pm-pc (Euros), 1995-2001, Algarve

Fonte : GPLP-MJ, 1995-2001, a) 2000/2001 Valor estimado

$$Y = -77,750089 + 0,25571 * X_i ; R^2 = 0,90069$$



PIB-pm-pc (Euros), 1995-2001, Algarve

Fonte : GPLP-MJ e INE, 1995-2001, 2000/2001 valor estimado

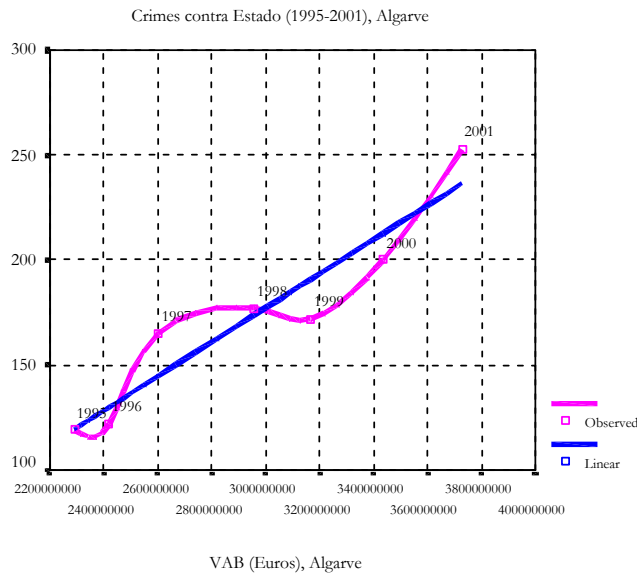
$$Y = -3388,511390 + 0,441197 * X_i ; R^2 = 0,77264$$

1.3 GPLP-MJ crimes and regional GVA – in the Algarve region

From the established association between the group of crimes and this regional indicator, co-relations have appeared for the crimes against the State and the crimes foreseen in the Sundry Legislation (graph 1.3.1). This evidenced tendency follows the same line as the tested results at the time when the relation between these crimes and the GDP-pm-pc was established. In fact, this association reflects a tendencial similarity that allows the reinforcement of the tested association, for the regional wealth (formed by the GVA indicator) and by the people’s income (identified by the GDP-pm-pc).

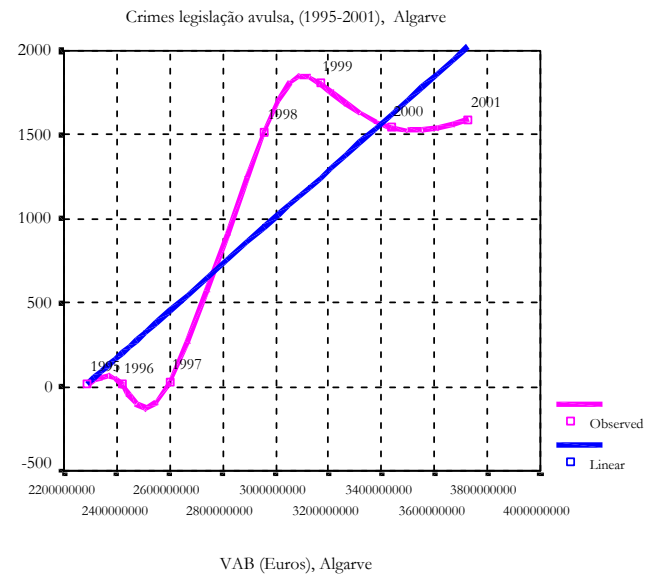
The crimes that established this co-relation are the same. This circumstance allows a synthesis conclusion for the region of Algarve. In the presence of increases in those economic indicators, the groups of crimes against the State and those that are foreseen in the Sundry Legislation follow this evolution up. Since we are before two groups with their own specificnesses, namely in the crimes against the State, the records from 2000 to 2001 begin to rise some concern. If, in some cases these represent crimes against employees from the State, the opposite happens too.

Graph 1.3.1/2 Regression estimation curve - Crimes against the State and crimes foreseen in Sundry Legislation with Regional GVA (1995-2001), Algarve



Fonte : GPLP-MJ, GEPE, base INE, contas regionais SEC95, 1995-2001

$$Y = -66,893579 + 8,13825990E-08 \cdot X_i; R2 = 0,90002$$



Fonte : GPLP-MJ e GEPE, base INE, contas regionais SEC95, 1995-1999

$$Y = -3176,468380 + 1,39573607E-06 \cdot X_i; R2 = 0,76258$$

1.4 GPLP-MJ Crimes and the density of population – in the Algarve region

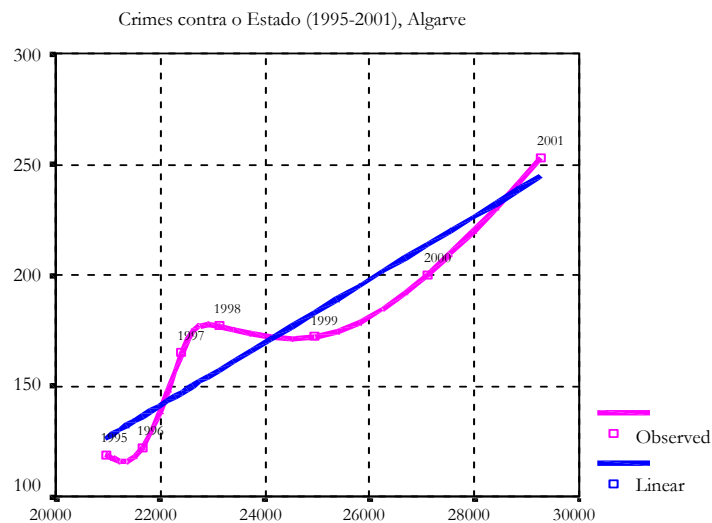
The density of population in the Algarve region is around 80 inhabitants/sqm (INE, 2001ab). In the association of this indicator with the criminal groups under study, checkable in the Table – Annexe III, the co-relation appeared only in the crimes against the State. We don't have any doubts that it will comprise the fluctuating population in the region, for this co-relational impulse, rather fair, cannot be totally ascribable to the residents, bearing in mind the high percentage of visitors. A slight motive for concern may arise regarding the “assiduity” of this group of crimes in the co-relations, although it doesn't directly reflect problems of insecurity.

It may express a certain worry before the decentralised organs of the central (and regional) power and the users (and residents) in the region. Some explaining causes may be situated in the peripheric position of these services, taking into account the geographic location of the Algarve in the absence of central power's leadership and monitoring, regarding these state services and a particular appetency of the resident (and fluctuant) population for this illicit practice. Only the next years may confirm the tendency or not of this co-relation. In case of confirmation such a fact will be regionally dequalifying.

1.5 GPLP-MJ crimes and legalized foreign citizens– in the Algarve region

Once the problem of the migrants flow, namely the migrants from eastern countries, is a weakening circumstance regarding security, the purpose is to associate the (available) records of legalized foreigners¹³, in the Algarve region with the group of crimes under study in order to infer conclusive lines. The group of crimes against the State was the only one that revealed co-relations with this record.

Graph 1.5.1 Regression estimation curve– Crimes against the State and the legalized foreign citizens (1995-2001), Algarve region



Estrangeiros Legalizados, (1995-2001), Algarve

Fonte : GPLP-MJ EE INE, 1995-2001

$$Y = -171,711283 + 0,11221 * X_i ; R^2 = 0,89301$$

From this, some criminal issues may be identified, associated with the complex process of legalization of foreign citizens who are drawn to criminal practice. The excessive bureaucratisation in the process of legalization, a bit of negligence in the fiscalization, a desirable and attractive labour market for this type of workforce may be some of the causes.

It is to be known how these records will develop, taking into account the subsequent logic of social and economic integration in the regional economy, as well as the consequent implications for the internal security of the region. This is a value that must be preserved as a reference for those who visit the region.

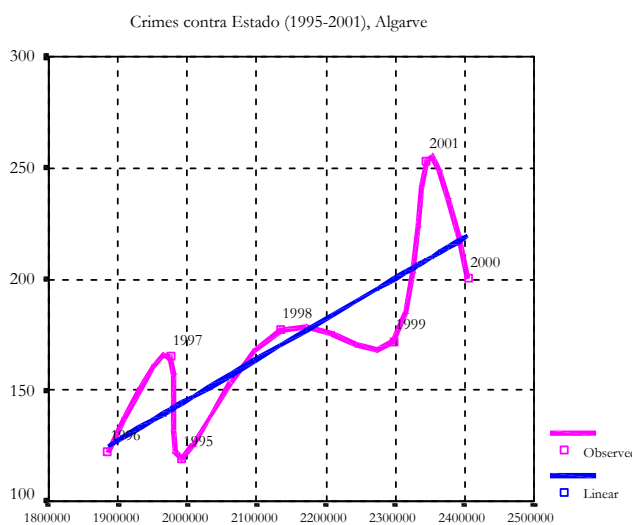
¹³Which are not desaggregated by nationality, circumstance that would improve the analysis. It is feared that this whole of official records may not represent the “reality” concerning the effective number of foreign citizens in the region, presuming there will be countless illegal migrants staying in the region. This circumstance may be a threat to the normal security in the region.

1.6 GPLP-MJ crimes and visitors’ entries (by air) – in the Algarve region

The perspective is to relate the yearly criminal records under study in the Algarve region with the people who visited the region, by air, in the period 1995-2001, trying to reflect that aspect. In this co-relation the statistical evidences focused on the crimes foreseen in Sundry Legislation (sustained by the coefficients of *pearson e spearman*) and in the crimes against the State (through the coefficient of *spearman*), as can be seen on Table - Annexe IV. Such circumstance reinforces the preponderance that especially the crimes foreseen in the Sundry Legislation have shown in the Algarve region, similarly to what was tested in the country. The same focus is on the crimes against the State, although with less extent. The graphs 1.61/2 translate such evidences, although with two different vertices.

During the year 2001, in the crimes against the State there is a record above the previous ones not accompanied by an abnormal entry of visitors in the region. This induces to infer that the practice of this type of crimes may be, in great part, put down to the residents, bearing in mind the records of both indicators and their evolution. This circumstance cannot be empirically proved, because the available official criminal records don’t have those indicators, either by NUTS II regions or by nationality.

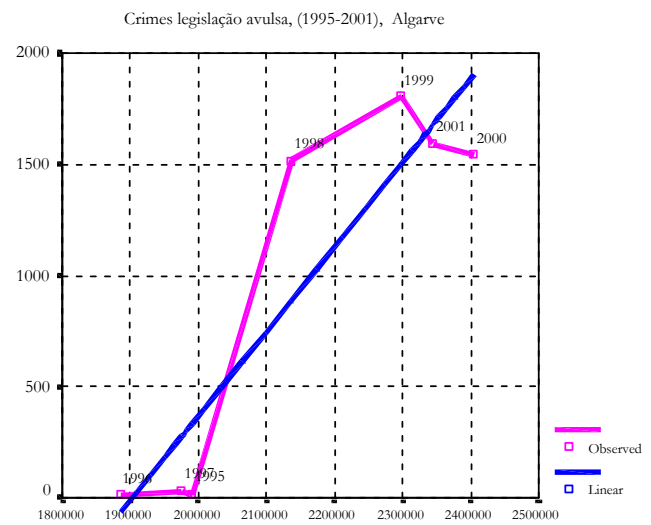
Graph 1.6.1/2 Coefficients of co-relation – Crimes against the State and crimes foreseen in Sundry Legislation (GPLP-MJ) and visitors to the region (by air) – Algarve region, 1995-2001



Visitantes anuais entrados aeroporto Faro, (1995-2001)

Fonte : GPLP-MJ e Ana, SA (1995-2001)

$$Y = -219,221866 + 0,000182 \cdot X_i; R2 = 0,65465$$



Visitante anuais entrados aeroporto FARO, (1995-2001)

Fonte : GPLP-MJ e ANA, S.A (1995-2001)

$$Y = -7231,781372 + 0,00380 \cdot X_i; R2 = 0,81838$$

crease, which, in this case, is also accompanied by the registration of entries, by air, in the region. This situation reinforces the tested evolution for this group of criminals, which starts bringing a bit of concern in what regards the future.

It is important to refer that it would be very interesting, in case the official records allow it to analyse two effects that arise from here: the seasonal aspect and those visitors' nationalities. As already referred to above, the desaggregation of GPLP-MJ records concerns only the yearly level and the NUTS II regions, a fact that leads to the need of further studies.

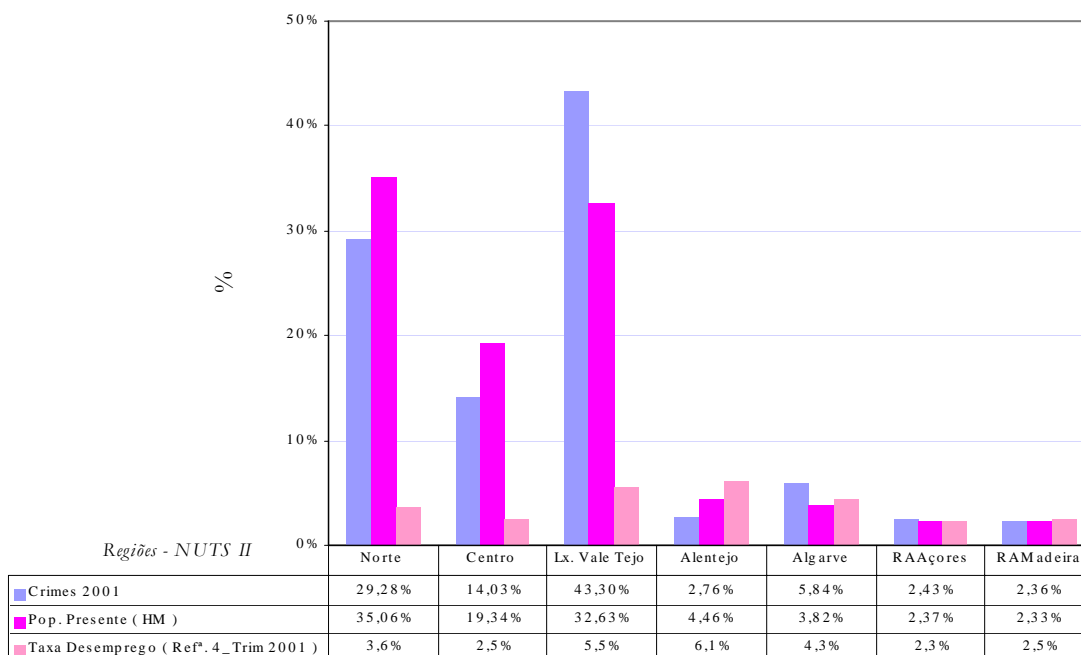
2. GPLP-MJ CRIMES IN THE INTER-REGIONS NUTS II

In this analysis a perspective of testing the criminal records in the NUTS II regions is included with the association of some economic indicators, reporting to 2001. The first trial is based on the trilogy presented in graph 2.1, where the analogy between the criminal records, the present population and the unemployment rate for those regions is reflected.

There is a stressed leadership of the Lisbon and Tagus Valley region that, in spite of a low unemployment rate, presents the largest population rate and, consequently, major records in criminality. The Northern and Central regions reflect a tendency led by the present population rate that is situated above the criminal records. The Algarve region assumes the perspective shown by the regions of Lisbon and Tagus Valley, i.e., criminal records above the present population rate, with a relatively low unemployment rate, circumstance that may reflect the presence of the seasonality factor. The Alentejo region appears with the unemployment rate above the present population rate and the criminal records. In this region the thesis presented by (Calvó-Armengol e Zenou, 2002) may be inserted.

In spite of that possible evidence some reticences are kept, following the previously stated line, in referring the unemployment rate as one of the criminality causes in the NUTS II regions. However, before a scenario of growth of the unemployment level it will be interesting to follow-up the criminal records, finding out the presence or not of co-relations.

Graph 2.1 - Crimes regions NUTS II, present population (HM)¹⁴ and the unemployment rate¹⁵, regions NUTS II, 2001



Fonte : GPLP-MJ (1995-2001) e INE (2001b)

A second essay of the criminal records of these regions NUTS II in the year 2001, now with the number of registered buildings variable¹⁶, has been tried. The result shows a strong co-relation for all the types (groups) of GPLP-MJ crimes, as can be seen in the table (Annexe V). There, the most significant adjustment for a significance level of 0,01, appears in the crimes against people, against the heritage and against life in society. In fact, in the checked co-relational tests (groups of GPLP-MJ crimes and the social and economic indicator) grounded associations are identified with that group of crimes. There may be several reasons here that lead us to aspects of density of population, urban concentration, as well as the existence of industry and service areas. This subject sustains¹⁷ the possibility of the urbanizing level being co-relatively associated with this criminal group, embodying the tendencies defended by Carcach (2000). By graphically adjusting the crimes against life in society with these indicators (graph 2.2) two different groups are identified.

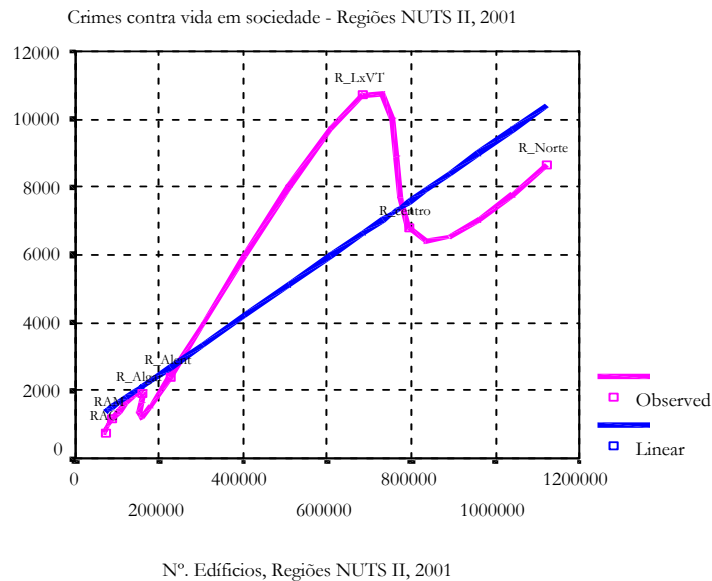
¹⁴Census 2001 (INE, 2001ab).

¹⁵Referring to 4.th Trimester 2001 (INE, 2001ab).

¹⁶In a certain way, it may represent a strong indicator of urbanity (INE, 2001ab).

¹⁷Admitting this indicator will be susceptible to and representative of the urbanity in the regions.

Graph 2.2 Regression estimation curve- Crimes against life in society and the number of buildings in the regions NUTS II, 2001



The first one, perfectly adjusted to the estimated straight line, formed by the autonomous region of Azores, the autonomous region of Madeira, the region of Alentejo and the region of Algarve that are situated in a record up to 300.000 buildings, comparing with a criminal record under 2.500. The second group is scattered in the remaining three regions. The region of Lisbon and Tagus Valley is leading the record of crimes corresponding to a group of buildings of 685.382. The Central region is supposed to have 793.421 buildings crossing with 6.780 criminal records. The Northern region has a larger number of buildings (1.124.474) opposing to a criminal record of 8.641, for this group of crimes (Annexe VI).

The regions that consider the two metropolitan areas have the previously expressed problems. Their industrial structure may encounter strong association with the criminal incidence¹⁸, being usually referred to as risk zones (Donnermeyer, 1994). These metropolitan regions may intrinsically induce this issue, such circumstance being reflected in the criminal records. The remaining regions don't assume these characteristics, therefore not showing these problems.

¹⁸Not statistically reflected in these co-relations.

CONCLUSIONS

Aiming at testing the statistical co-relations between the criminal groups under study and some social and economic indicators for the region of Algarve, the results have shown an “apparent normality” in the criminal records, as presented next. There is a concern regarding the testing of the nearest causes for the lack of security in the Algarve region, co-relating those causes with development factors and taking into account their geographic specificity and the increasing population heterogeneity, the following co-relation lines are admitted.

When crossing the under study criminal groups the co-relations arose, in strong parity, for the tested indicators (*GDP-pm-pc, regional GVA, density of population, number of legalized foreigners and number of by air visitors in the region*). The criminal groups that were associated with these indicators were the group of crimes against the State and the crimes foreseen in Sundry Legislation. Amazingly, the unemployment rate didn't find any association in the crimes of theft and burglary for the region. Since the unemployment levels haven't reached alarming levels in the Algarve region, that criminal sub-group may assume a “stable pace” in its records. There would be serious consequences in terms of regional economy, mainly for the tourism sector if high records of theft and burglary sub-group crimes were verified. The impact and the insecurity they cause in the populations would weaken the touristic assesment of the region security and would draw that sector into a crisis, whose consequences are inestimable.

From these co-relations there is a need for a moderate economic growth in terms of GDP-pm-pc and regional GVA, that will allow a moderation in the records of crimes against the State and those foreseen in Sundry Legislation, bearing in mind the tested co-relations. The need to integrate the migrant classes in the region should be fought by means of scattered urbanistic construction to integrate these social groups. In this aspect the strategic planning seems to be a functional tool to strengthen the regional development, reducing the risks of social exclusion and reinforcing the security.

In view of the above stated and taking into account the touristic specificity of the Algarve region, the internal security issue has not been duly examined either by the central, regional (local) power or by the various regional economic agents. Covered by a “protection” that classifies the region and a relative stability in terms of (available) official criminal records, confirmed in the study period, the implications caused by this vector haven't been duly reequated for the economy of the region and very particularly, for

the tourism and leisure segment. This segment will be extremely sensitive to an oscillation in the security aspect.

Since the region hasn't yet been subject to any circumstances where its internal security has been put in danger we don't know the scope of the consequences. The Euro-2004 will be an excellent barometer for the exposure in the Algarve region. During the event the Security Forces and Services will be tested, the very model of security will be tested with them, as well as the implications that such model may have in terms of growth and development of the region.

BIBLIOGRAPHY

- Becker, G. (1968), Crime and punishment: an economic approach, *Journal of Political Economy*, England, 76, 169-217;
- Becker, G. (1996), Crime and punishment: Accounting for Tastes, *Harvard University Press*, USA -Boston;
- Burdett, K., Lagos, R. and Wright, R. in (1999), *Crime, inequality and unemployment*, USA, Unpublished manuscript, Ed. University of Pennsylvania;
- Bushway, S., Engberg, J. (1994), *Panel data VAR analysis of the relationship between crime and unemployment*, Unpublished manuscript, USA, Ed. Canegie Mellon University;
- Calvó-Armengol, Antoni e Zenou, Yves (2002), *Does Crime Affect Unemployment? The role of Social Networks*, Southampton – England, Ed. University of Southampton; Disponível [on-line] <http://www.economics.soton.ac.uk> [Outubro 2002];
- Carcach, Carlos (2000), *Regional Development and Crime*, Camberra-Austrália, Ed. The Australian Institute of Criminology, Trends & Issues in crime and criminal justice, n.º 160, July-2000; Disponível [on-line] <http://www.aic.gov.au> [Outubro 2002];
- Corman, H., Joyce, T. and Lovitch, N. in (1987), Crime, deterrence and the business cycle in New York city: A VAR approach, USA, Ed. *Review of Economics and Statistics*, 69, 695-700;
- Donnermeyer, Joseph F. (1994), Crime and Violence in Rural Communities, in Blasser, J. (Ed.) *Perspectives on Violence and Substance Use in Rural America North Central Educational Laboratory*, USA, Oak Book, II; disponível [on-line] <http://www.ncrel.org/sdrs/areas/issues> [Novembro 2002];
- Ehrlich, I. (1973), Participation in Illegitimate Activities, *Journal of Political Economy*, England, 81, 521-565;
- Glaeser, E. and Sacerdote, B. (1996), *Why is there more crimes in cities?*, Cambridge-England, Ed. NBER - Working Paper, 5430;
- GPLP-MJ (1995), *Estatísticas Criminais – 1995*, Lisboa, Ed. Gabinete de Política Legislativa e Planeamento do Ministério da Justiça;
- GPLP-MJ (1996) *Estatísticas Criminais – 1996*, Lisboa, Ed. Gabinete de Política

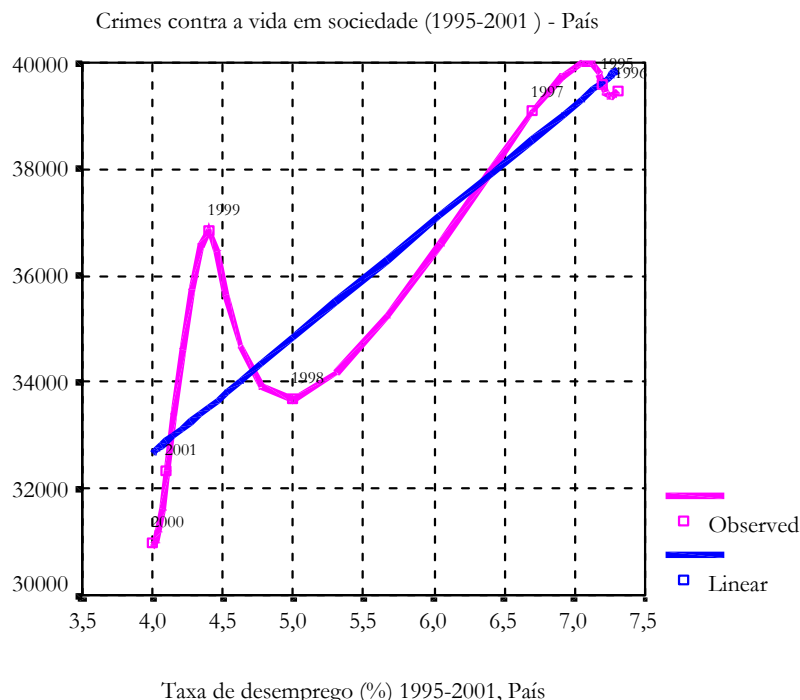
- Legislativa e Planeamento do Ministério da Justiça;
- GPLP-MJ (1997), *Estatísticas Criminais – 1997*, Lisboa, Ed. Gabinete de Política Legislativa e Planeamento do Ministério da Justiça;
- GPLP-MJ (1998), *Estatísticas Criminais – 1998*, Lisboa, Ed. Gabinete de Política Legislativa e Planeamento do Ministério da Justiça;
- GPLP-MJ (1999), *Estatísticas Criminais – 1999*, Lisboa, Ed. Gabinete de Política Legislativa e Planeamento do Ministério da Justiça;
- GPLP-MJ (2000), *Estatísticas Criminais – 2000*, Lisboa, Ed. Gabinete de Política Legislativa e Planeamento do Ministério da Justiça;
- GPLP-MJ (2001), *Estatísticas Criminais – 2001*, Lisboa, Ed. Gabinete de Política Legislativa e Planeamento do Ministério da Justiça;
- INE (2001a), *Anuário Estatístico da Região do Algarve*, Lisboa, Ed. INE, Disponível [on-line] <http://www.ine.pt> [Outubro 2002];
- INE (2001b), *Indicadores - PIB-pm, PIB-pc e produtividade por Regiões 1995, 1996, 1997, 1998 e 1999*; Lisboa, Ed. INE. Disponível [on-line] <http://www.ine.pt>; [Abril 2002];
- INE (2003), *Actividade Turística – Janeiro a Dezembro 2002 – Resultados preliminares da Procura turística*, Lisboa, Ed. INE, Destaque Informação à comunicação social, 28 de Fevereiro de 2003, Disponível [on-line] <http://www.ine.pt>, [Março 2003];
- Heineke, J. M. (1978), *Economic Modelos of Criminal Behavior*, *Nort-Holland*, Holland-Amesterdam;
- Horvath, Roman e Kolomaznikova, Eva (2002), *Individual Decision-Making Commit a Crime: Early Models*, Work Paper, Disponível [on-line] <http://www.econpapers.hhs.se/paper/wpawuwple/0210001.htm>, [Abril 2004];
- Lourenço, Nelson e Lisboa, Manuel (1994), *Violência, criminalidade e sentimento de insegurança*, Lisboa, Separata da Revista “Textos” nº2, 1991-92/1992-93, Ed. do CEJ;
- Oliver, Alison (2002), *The Economics of Crime: Na Analysis of Crime Rates in America*, *The Park Place Economist*, Vol. X, Work Paper, Disponível [on-line] <http://titan.iwd/~econ/ppe/2002/alison.pdf>, [Abril 2004];
- Neapolitan, J. (1997), *Homicides in developing nations: Results of research using a*

large and representative sample, EUA, Ed. *International Journal of Offender Therapy and Comparative Criminology*, 41-44;

Thornberry, T. P. and Christenson, R. L. (1984), Unemployment and criminal involvement: An investigation of reciprocal causal structures, USA, Ed. *American Sociological Review*, nr 49, 398-411;

ANNEXES

Annexe I – Graph of the regression estimation curve – Crimes against life in society and the unemployment rate (1995-2001) in the country



Fonte : GPLP-MJ e INE, 1995-2001

$$Y = 23948,951425 + 2179,233592 * X_i ; R2 = 0,79816$$

Annexe II - Table - Coefficients of co-relation - GPLP-MJ crimes and GDP-pm-pc (1995 - 2001) in the country

Crimes ^(a)	PIB-pm-pc, (Euros), 1995-2001, país		
	Pearson correlation Sig (2-Tailed)	Kendall's tau_b Sig (2-Tailed)	rho Spearman's Sig (2-Tailed)
Contra as Pessoas	+ 0,903 (*)	+ 0,810 (*)	+ 0,893 (*)
	+ 0,005	+ 0,011	+ 0,007
Contra património	- 0,759 (*)	-	-
	+ 0,048		
Contra vida_sociedade	- 0,873 (*)	- 0,810 (*)	- 0,929 (*)
	+ 0,010	+ 0,011	+ 0,048
Contra o Estado	+ 0,873 (*)	+ 0,714 (*)	+ 0,857 (*)
	+ 0,010	+ 0,024	+ 0,014
Legislação Diversa	+ 0,830 (*)	-	+ 0,786 (*)
	+ 0,010		+ 0,036

Fonte: GPLP-MJ e INE (1995-2001)

^(a) Representa o Total dos crimes anuais, para cada grupo de crimes do GPLP-MJ, no período considerado;

^(b) Não foram apuradas correlações;

^(*) Correlação é significante para nível de 0,05;

^(*) Correlação é significante para nível de 0,01;

Annexe III – Table of coefficients of co-relation- GPLP-MJ crimes and density of population (1995-2001) in the Algarve region

Crimes ^(a)	densidade populacional, 1995-2001, região do Algarve		
	Pearson correlation Sig (2-Tailed)	Kendall's tau_b Sig (2-Tailed)	rho Spearman's Sig (2-Tailed)
Contra as Pessoas	-	-	-
Contra património	-	-	-
Contra vida_sociedade	-	-	-
Contra o Estado	+ 0,820 (*) + 0,024	+ 0,905 (*) + 0,004	+ 0,964 (*) + 0,000
Legislação Diversa	-	-+ 0,714 (*) + 0,024	-+ 0,857 (*) + 0,014

Fonte: GPLP-MJ e INE (1995-2001)

^(a) Representa o Total dos crimes anuais, para cada grupo de crimes do GPLP-MJ, no período considerado;

^(b) Não foram apuradas correlações;

^(*) Correlação é significativa para nível de 0,05;

^(**) Correlação é significativa para nível de 0,01;

Annexe IV - Table of coefficients of co-relation - GPLP-MJ crimes and visitors in the region (by air) –Algarve region, 1995-2001

Crimes ^(a)	Visitantes entrados via aérea – Aeroporto de Faro		
	Pearson correlation Sig (2-Tailed)	Kendall's tau_b Sig (2-Tailed)	rho Spearman's Sig (2-Tailed)
Contra as Pessoas	-	-	-
Contra património	-	-	-
Contra vida_sociedade	-	-	-
Contra o Estado	+ 0,809 (*) + 0,027	-	+ 0,821(*) + 0,023
Legislação Diversa	+ 0,905 (**) + 0,005	-	+ 0,821(*) + 0,023

Fonte: GPLP-MJ e Ana, S.A (1995-2001)

^(a) Representa o Total dos crimes anuais, para cada grupo de crimes do GPLP-MJ, no período considerado;

^(b) Não foram apuradas correlações;

^(*) Correlação é significativa para nível de 0,05;

^(**) Correlação é significativa para nível de 0,01;

Annexe V - Table of coefficients of co-relation - GPLP-MJ crimes and number of buildings, NUTS II regions, 2001

Crimes ^(a)	n.º de edifícios e regiões NUTS II, 2001		
	Pearson correlation Sig (2-Tailed)	Kendall's tau_b Sig (2-Tailed)	rho Spearman's Sig (2-Tailed)
Contra as Pessoas	+ 0,882 (**) + 0,009	-	-
Contra património	+ 0,787 (*) + 0,036	-	-
Contra vida_sociedade	+ 0,885 (*) + 0,008	+ 0,810 (*) + 0,011	+ 0,893 (*) + 0,007
Contra o Estado	+ 0,790 (*) + 0,034	+ 0,714 (*) + 0,024	+ 0,857 (*) + 0,014
Legislação Diversa	+ 0,782 (*) + 0,038	-	+ 0,821 (*) + 0,023

Fonte: GPLP-MJ e INE (2001a)

^(a) Representa o Total dos crimes ano 2001, para cada grupo de crimes do GPLP-MJ;

^(b) Não foram apuradas correlações;

^(*) Correlação é significativa para nível de 0,05;

^(**) Correlação é significativa para nível de 0,01;

Annexe VI - Territorial character- Area, Present pop.and number of build-ings			
Districts	Area (sqm)	Pres.Pop. HM – Census 2001	Nr. Buildings
Aveiro	2.799,6	713.578	225.990
Beja	10.266,0	161.211	86.947
Braga	2.705,1	831.368	231.801
Bragança	6.598,7	148.808	81.948
C. Branco	6.627,0	208.069	106.337
Coimbra	3.974,9	441.245	169.020
Évora	7.391,9	173.408	73.603
Faro	4.994,9	395.208	159.583
Guarda	5.535,6	179.963	106.557
Leiria	3.509,5	459.450	185.517
Lisboa	2.795,1	2.136.002	322.452
Portalegre	6.083,8	127.018	64.423
Porto	2.329,6	1.781.826	411.289
Santarém	6.722,8	454.506	189.208
Setúbal	5.163,2	788.459	173.722
V. Castelo	2.220,2	250.273	108.477
Vila Real	4.309,6	223.731	108.613
Viseu	5.010,5	394.927	182.346
R.A. Açores	2.322,1	245.012	74.659
R.A. Madeira	782,0	241.762	87.481
Total	92.142,1	10.355.824	3.149.973

NUTS II regions	Area (sqm)	Pres.Pop. HM – Census 2001	Nr.Buildings
North	23.173,7	3.630.933,0	1.124.474,0
Centre	22.446,6	2.002.305,0	793.421,0
Lx. Vale Tejo	14.681,1	3.378.967,0	685.382,0
Alentejo	23.741,7	461.637,0	224.973,0
Algarve	4.994,9	395.208,0	159.583,0
RAAçores	2.322,1	245.012,0	74.659,0
ARMadeira	782,0	241.762,0	87.481,0
www.ine.pt , 09-03-2002			