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**Preprint**

## Tourism in the Portuguese Rural Areas

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**Title:** Tourism in the Portuguese Rural Areas

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## **Tourism in the Portuguese Rural Areas**

### **Abstract**

The tourism in the rural areas is an important contribution to the local economies and an additional income for the traditional local activities as the agricultural sector. Some traditional rural activities, as the agriculture, sometimes and in some locations are not sufficient to provide an acceptable return to their promoters. So the different forms of tourism in rural zones, as the small industry and others sectors, are important contributions to the economic activity in the rural areas. This study pretends to analyze some information and statistical data about the several forms of tourism in the Portuguese rural areas, namely tourism accommodation, rural tourism, agritourism, village tourism, country house and rural hotel. There were used data from 2004 to 2008 available in the Statistics of Portugal (INE) for the Portuguese NUTs II. These data were analyzed with econometric methods, namely, spatial econometrics and panel data analysis.

**Keyword:** Tourism, Portugal, Rural areas, Econometric analysis.

## **1. Introduction**

The tourism, as well others activities, in the rural areas had an important contribution with the 1992 CAP (Common Agricultural Policy) reform. This reform, because several factors, pretended to solve environment, budget and overproduction problems in the European agricultural sector. This situation created in many zones some problems to the rural operators, namely the farmers. It was need to promote and incentive others activities to complement the income of the farmers. The tourism in rural areas was and is a crucial source of returns to the farmers and others operators in the rural regions. So, is not enough to research about these questions, to improve what already exists and find others forms to develop the rural regions.

The new technologies, namely those related with the information and communication are crucial to increase and strengthen the competitiveness of the tourism in rural zones (Mariani and Gehlen, 2008). Sometimes the tourism companies, in the rural areas, have weak skills about the web marketing techniques and are not well informed about their importance in the promotion of the economic activities (Duarte and Pais, 2010).

The tourism in rural areas, besides it contributions to the rural economy, has an important contribution to the rural sustainability and to the environment preservation. To find local and adapted forms of tourism is fundamental consider the local heritage and the operators must be innovative and must use the advanced techniques related with the entrepreneurship and the local marketing (Gronau and Kaufmann 2009).

Of course in all this activity the facilities and the appearance of the local environment are determinant to attract tourists to the rural zones. Some authors, as Huylenbroeck et al. (2006), found that the practices in the farms determine the attractiveness for the tourists and have implications in the prices practiced by the local operators. Permanent grassland have positive impact in the tourists and, consequently, in the prices. On the other hand, the intensive agriculture and animal production are not well appreciated for the tourism in the rural areas, namely for the agritourism. In the Flanders this kind of tourism represents more than 30 per cent of the farm return in the some farms, what is an important contribution.

The economic integration forms, as the European Union, contribute to increase the human movement and, as consequence, the tourism in all the different forms, namely the tourism in the rural areas. For example, the number of tourists in some countries, after the 2004 European Union enlargement, increase considerably. However, sometimes the returns from the tourism are not significantly, because in some kind of tourism the people do not spend much money (Druvaskalne and Slara, 2006).

The tourism in China became, in the last years, an important activity and lead the international destinations. The tourism in the rural has been, also, explored. In the East of China the farmers taken this opportunity and the agritourism represents 27%, in some cases, of the total farm income (Rodriguez et al., 2011).

In general, the impact of the tourism in the rural zones is weaker than in the urban areas. This is a question that must be taken into account and be found ways to improve this aspect, stimulating the tourists to spend more money (Zhang et al., 2007).

## 2. Data analysis

The rural tourism is the most important forma of tourism in the rural areas in Portugal (figure 1). The village tourism has little expression in the Portuguese tourism in the rural spaces. Anyway this tourism in the rural regions increase from 2004 to 2007 and decrease lightly from 2007 to 2008.

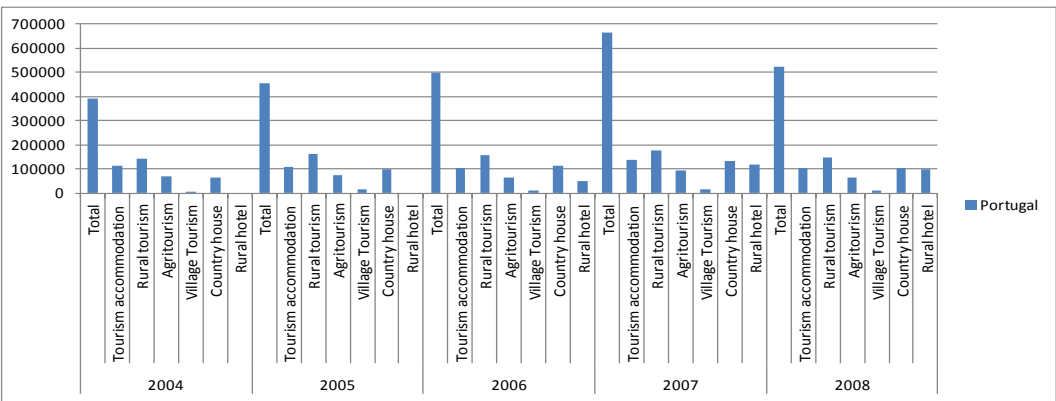


Figure 1: Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Portugal)

In Portugal Continental (figure 2) the evolution of the different forms of tourism was more or less the same observed for all Portugal.

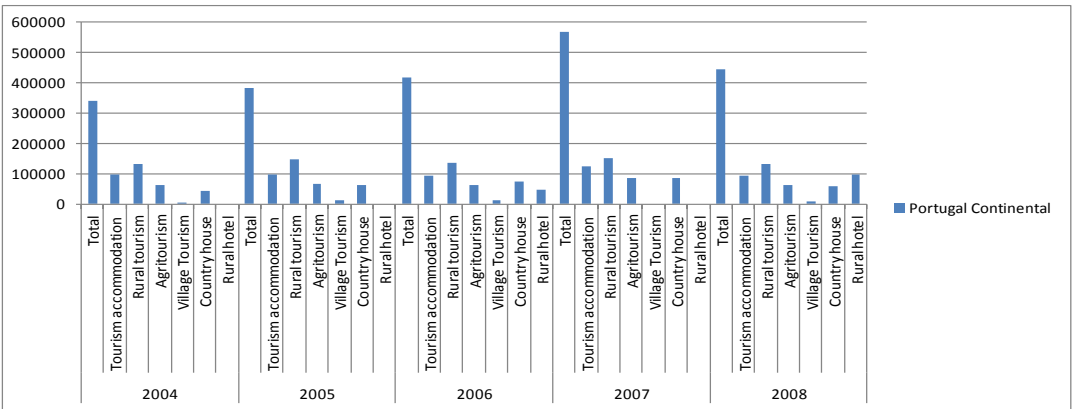


Figure 2: Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Portugal Continental)

The NUT II Norte of Portugal presents a significant relevance of the tourism accommodation in parallel with the rural tourism (figure 3).

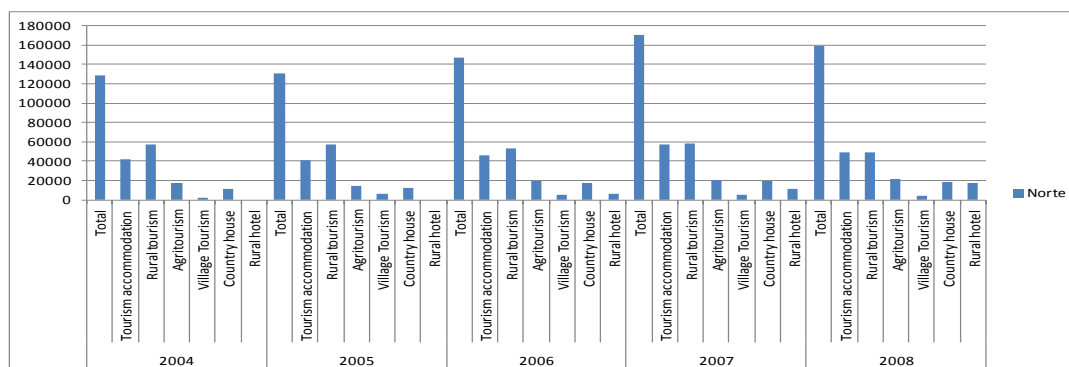


Figure 3: Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Norte)

The Centro of Portugal presents an evolution similar with that of the all Portugal showed in the figure 1 (figure 4).

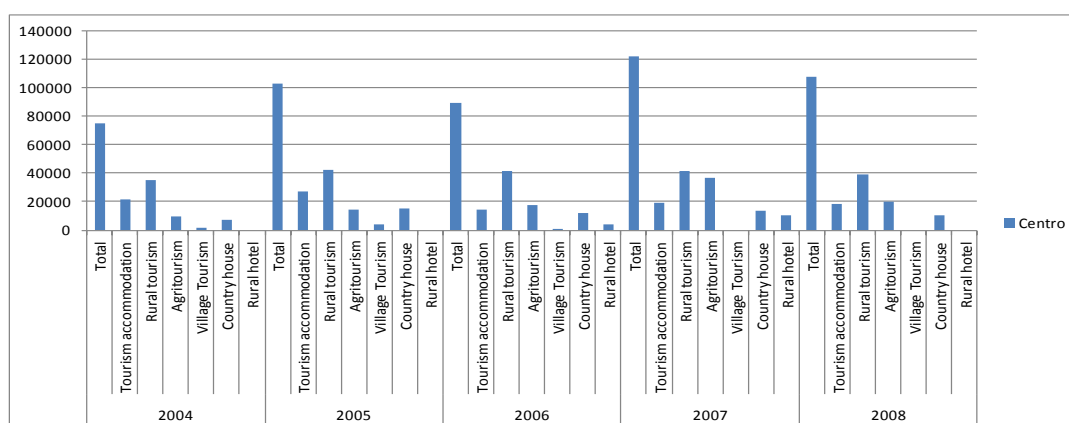


Figure 4: Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Centro)

Observing the figure 5 it can be seen that the Portuguese NUT II Lisboa has a significant importance in the tourism accommodation.

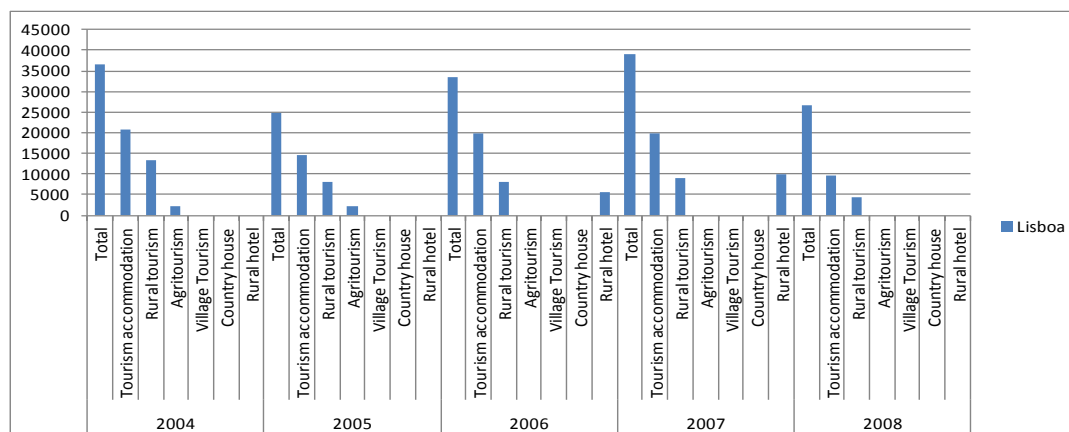


Figure 5: Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Lisboa)

In the Alentejo (figure 6) the agritourism and the country house have a relevant importance relatively to the others forms of tourism in rural areas.

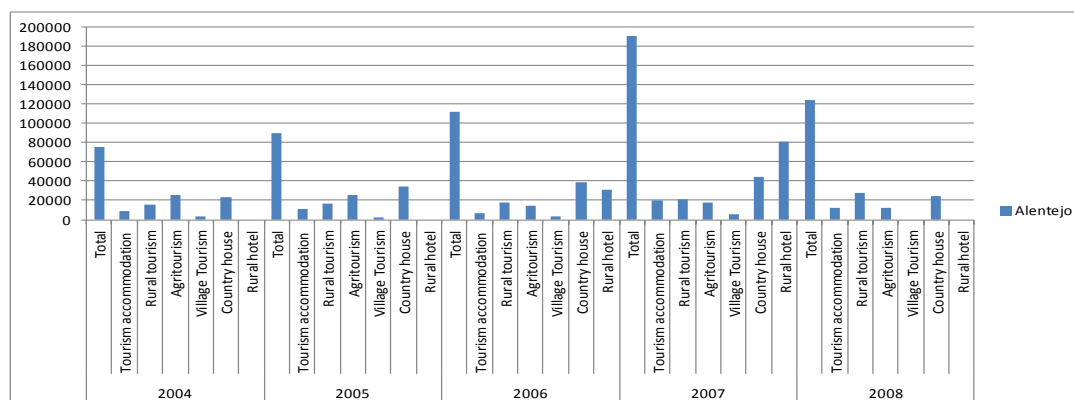


Figure 6: Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Alentejo)

The Algarve is characterized by the importance of the rural tourism and the agritourism, but namely by the rural tourism (figure 7).

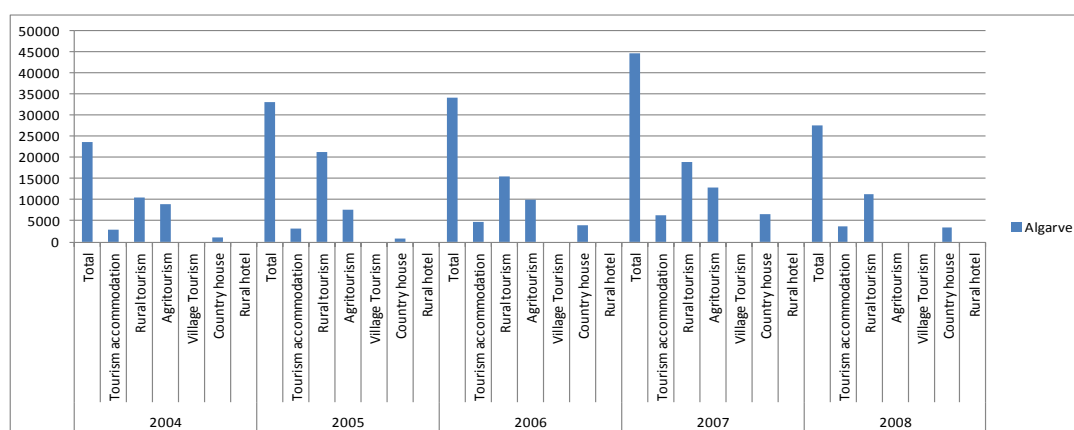


Figure 7: Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Algarve)

From the figure 8 is possible to conclude that Açores presents a evolution similar with that of the all Portugal, with a relative importance of the rural tourism.

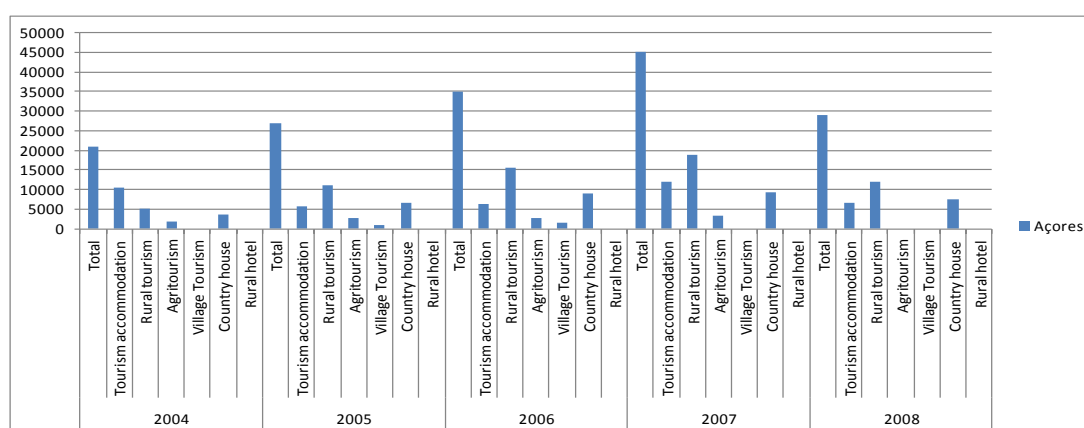
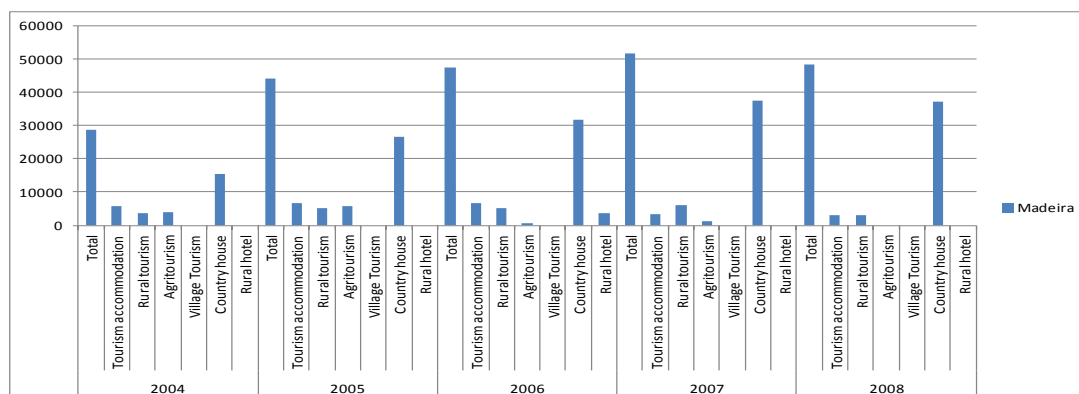


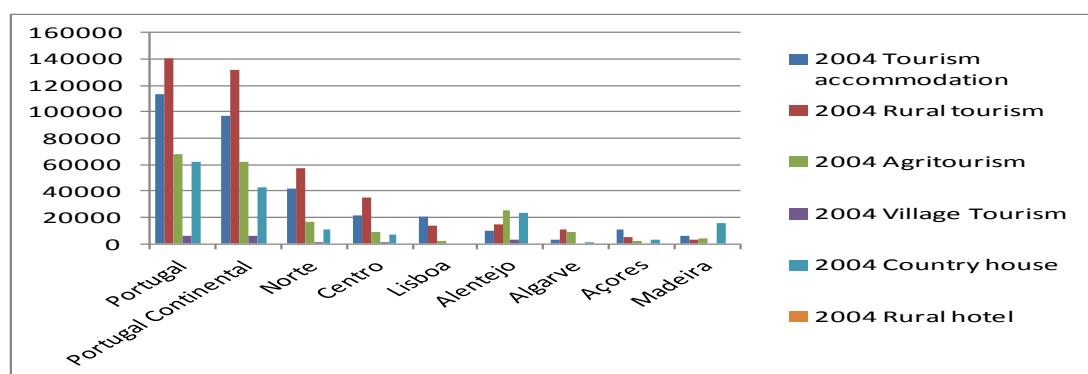
Figure 8: Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Açores)

In the Madeira is the country house that shows a relative importance relatively to the others forms of tourism in rural zones (figure 9).



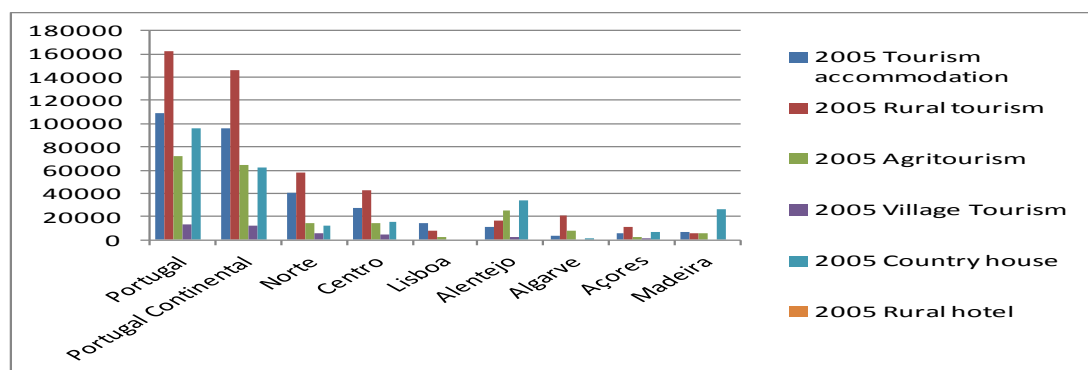
**Figure 9:** Number of nights in the different forms of tourism in rural areas, from 2004 to 2008 (Madeira)

Analyzing now the evolution of the different forms of tourism in rural zones, in the Portuguese NUTs II, for each year (figure 10 to figure 14) is possible to conclude that in 2004 the Norte and the Centro of Portugal were the Portuguese NUTs II where the tourism in rural spaces had more importance, namely with the tourism accommodation and with the rural tourism (figure 10).



**Figure 10:** Number of nights in the different forms of tourism in rural areas, 2004 and Portuguese NUTs II

In 2005 the situation is similar, however the Alentejo and Madeira show a relative greater importance, namely with the country houses.



**Figure 11:** Number of nights in the different forms of tourism in rural areas, 2005 and Portuguese NUTs II



In 2006 is proven the relative importance of the Alentejo and Madeira, namely the Alentejo (figure 12).

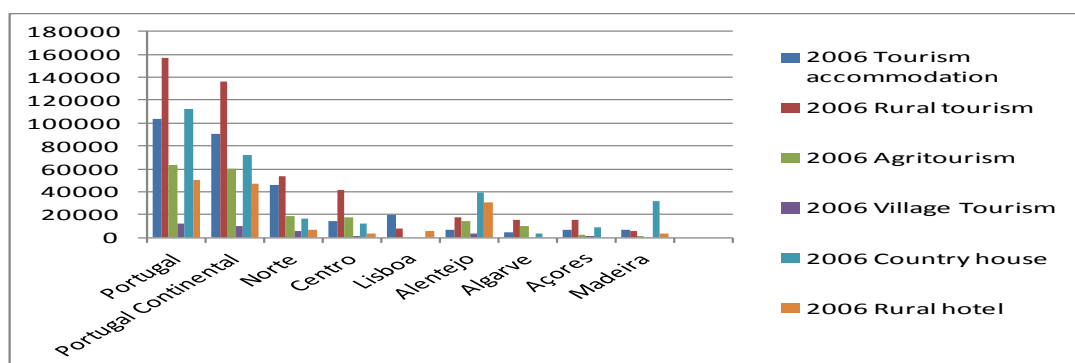


Figure 12: Number of nights in the different forms of tourism in rural areas, 2006 and Portuguese NUTs II

The figures 13 and 14, for 2007 and 2008, respectively, show the same referred before, namely for the Alentejo.

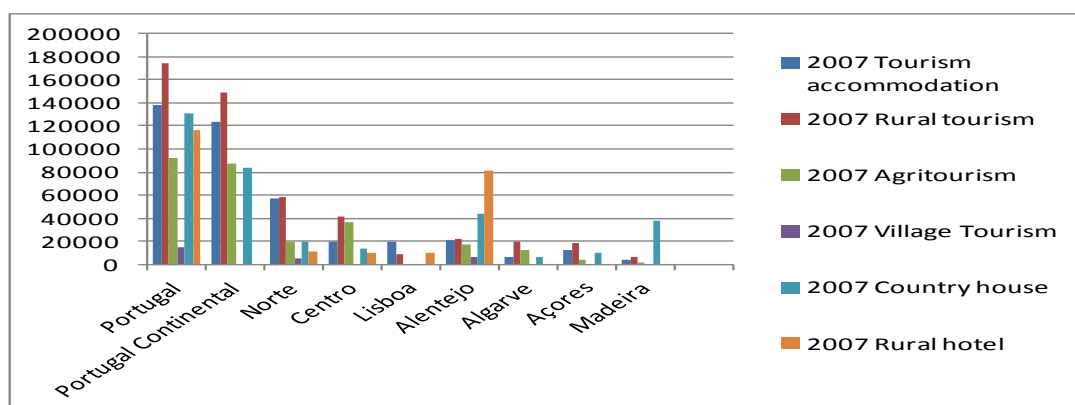


Figure 13: Number of nights in the different forms of tourism in rural areas, 2007 and Portuguese NUTs II

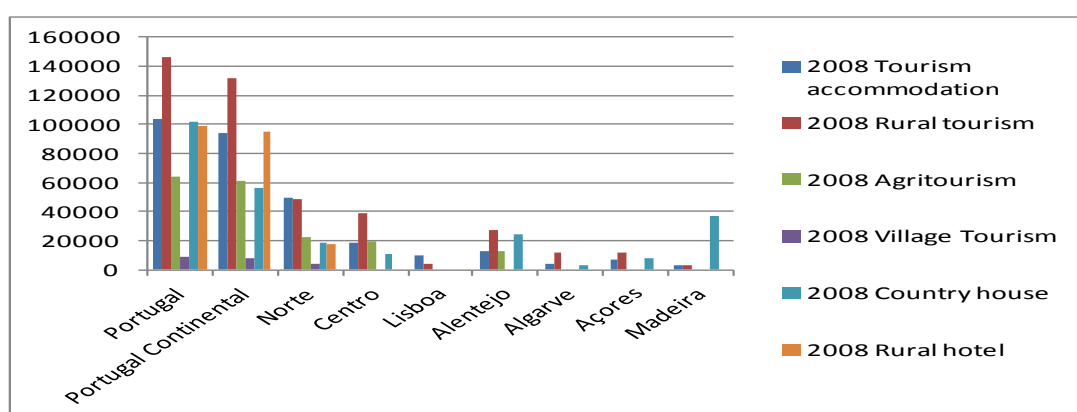
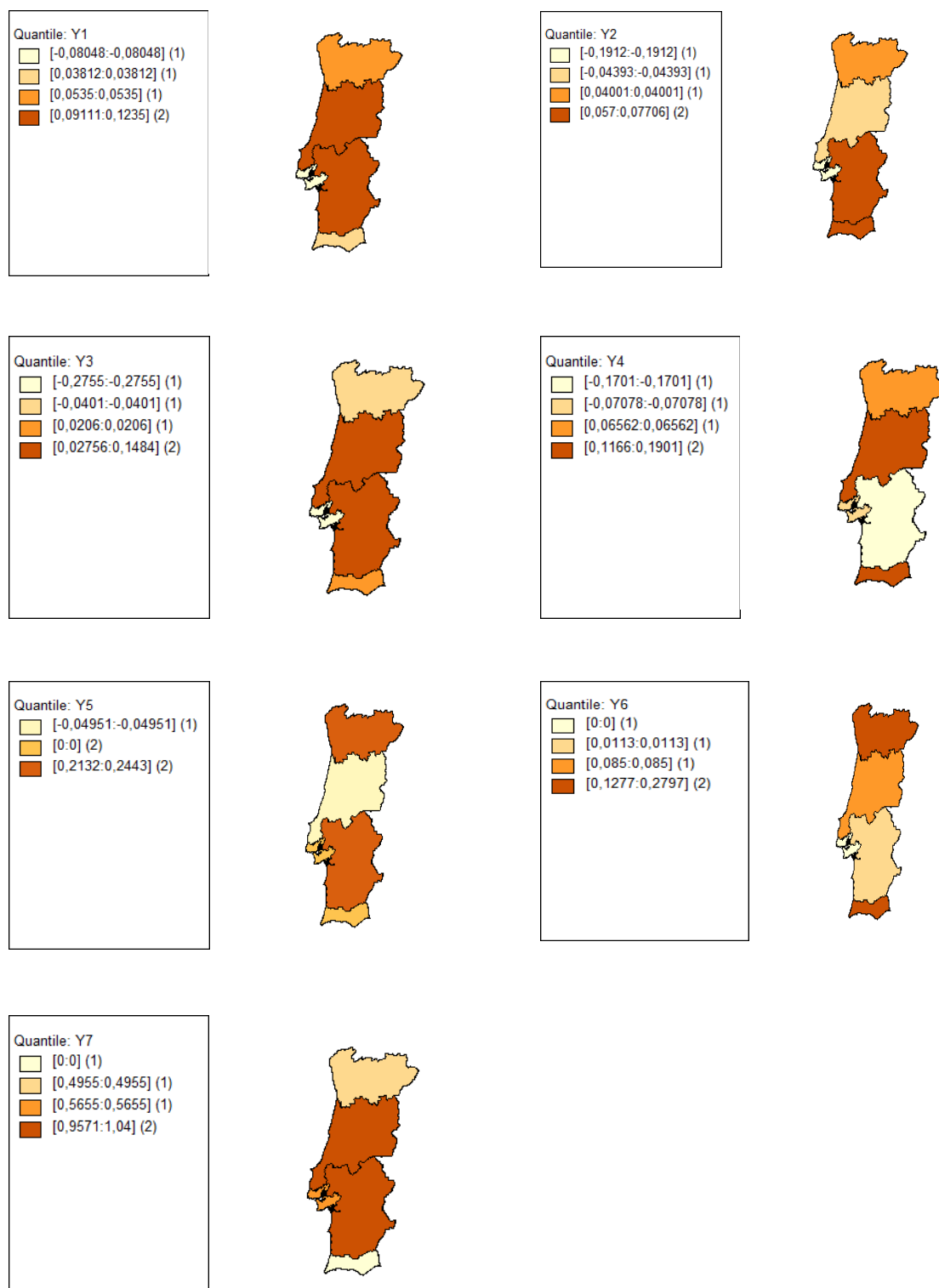


Figure 14: Number of nights in the different forms of tourism in rural areas, 2008 and Portuguese NUTs II

The figure 15 presents the nights growth rate average (2004-2008) for the different forms of tourism in each Portuguese NUTs II.

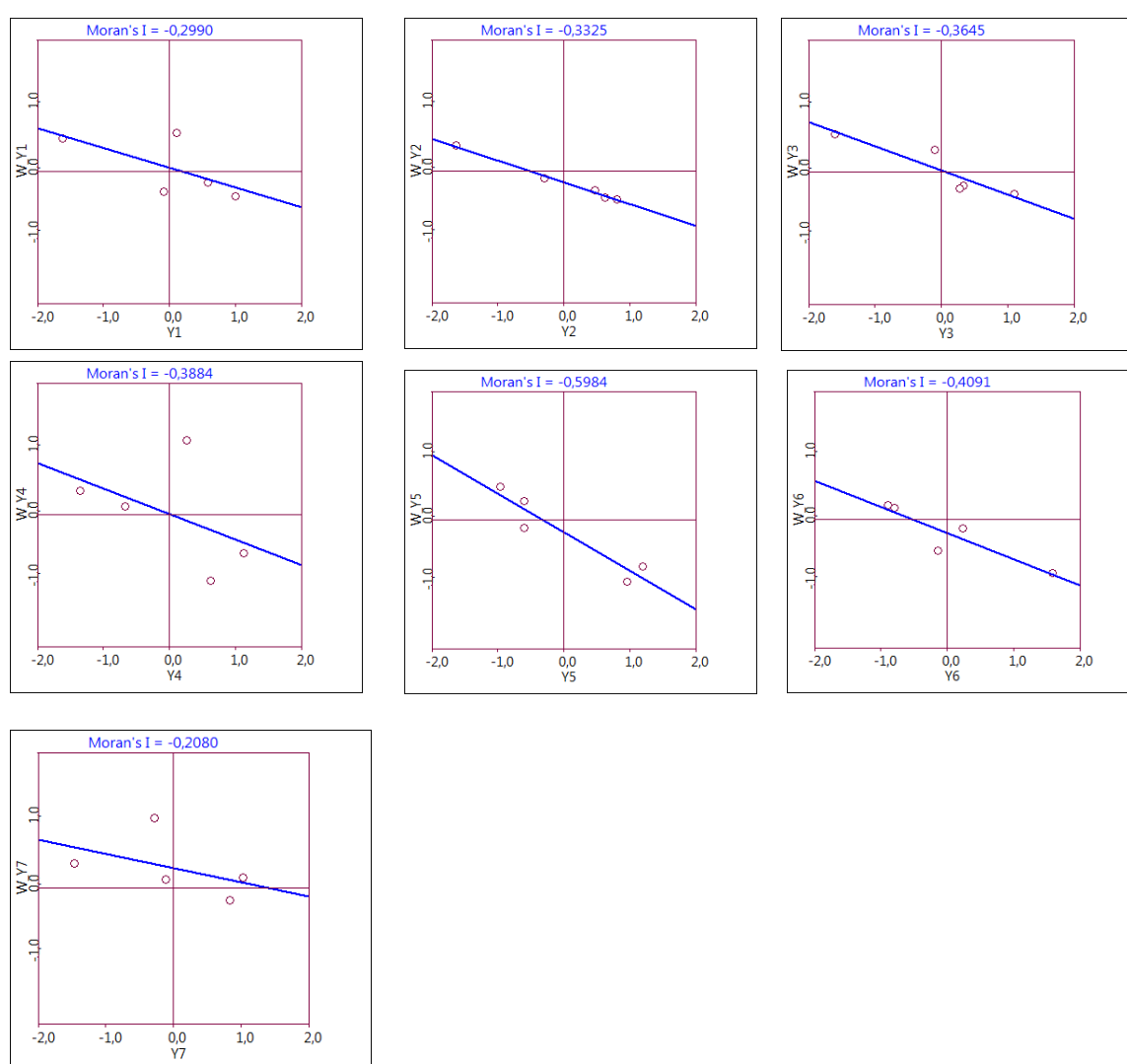
Biggest growth rates, for the total of nights in the tourism rural areas (y1), are verified in the Centro and Alentejo. The same is verified for the rural tourism (y3) and rural hotels (y7).



**Figure 15:** Nights growth rate average (2004-2008) for the different forms of tourism in rural areas (total, tourism accommodation, rural tourism, agritourism, village tourism, country house and rural hotel, respectively, y1, y2, y3, y4, y5, y6 and y7) in the Portuguese NUTs II.

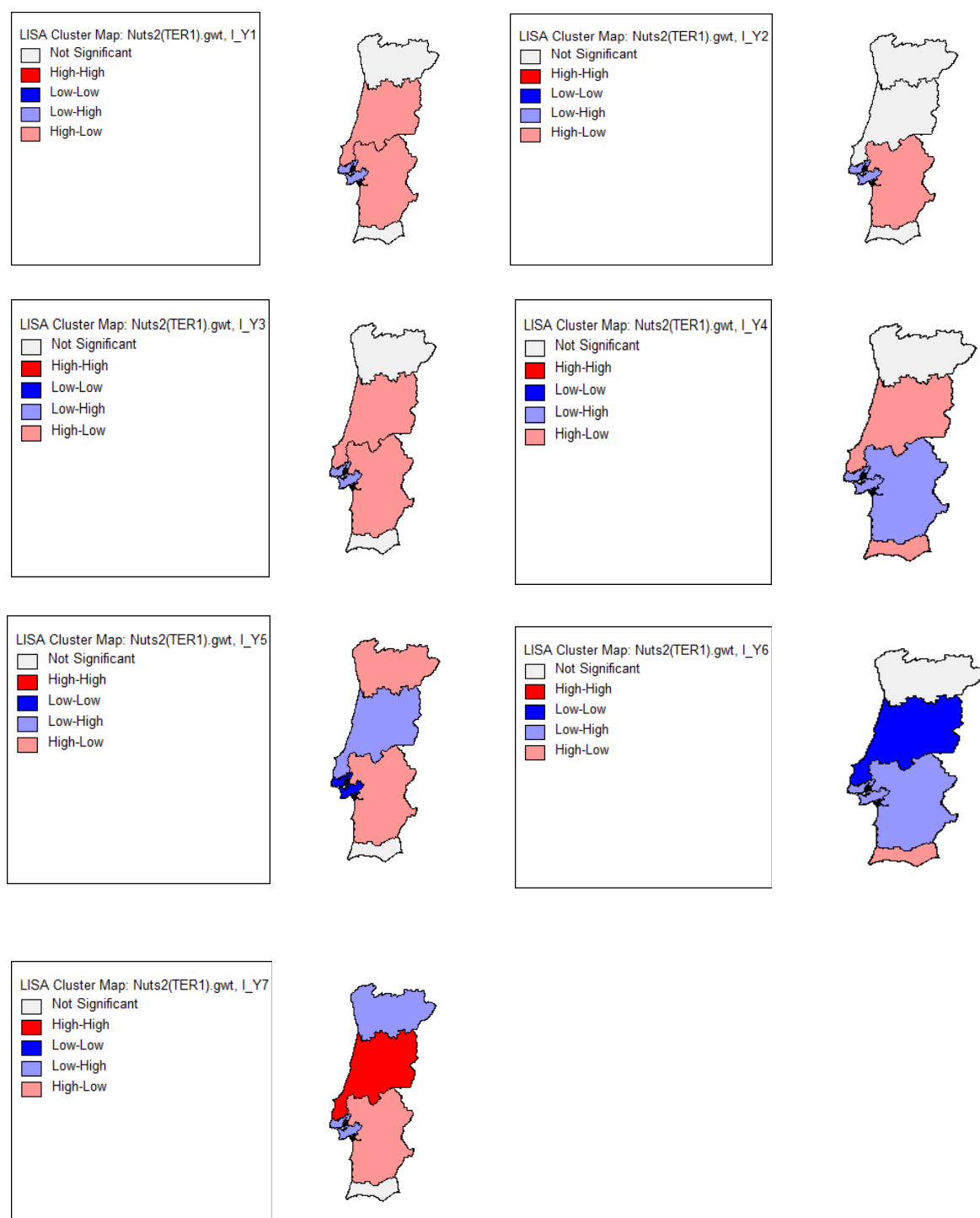
The tourism accommodation (y2) presents great growth rates in the Alentejo and Algarve, the agritourism (y4) in the Centro and Algarve, the village tourism (y5) in the Norte and Alentejo and the country house (y6) in the Norte and Algarve.

The figure 16 shows the statistics of Moran's I for the global spatial autocorrelation, in the all Portuguese NUTs II, and in the nights growth rate average (2004-2008) for the different forms of tourism in rural areas. This analyzes shows us if the growth rates in each NUTs II have autocorrelation with the others of the NUTs II neighbors (considering the distances). A positive Moran's I mean positive autocorrelation and the inverse is also correct (negative Moran's I-negative autocorrelation).



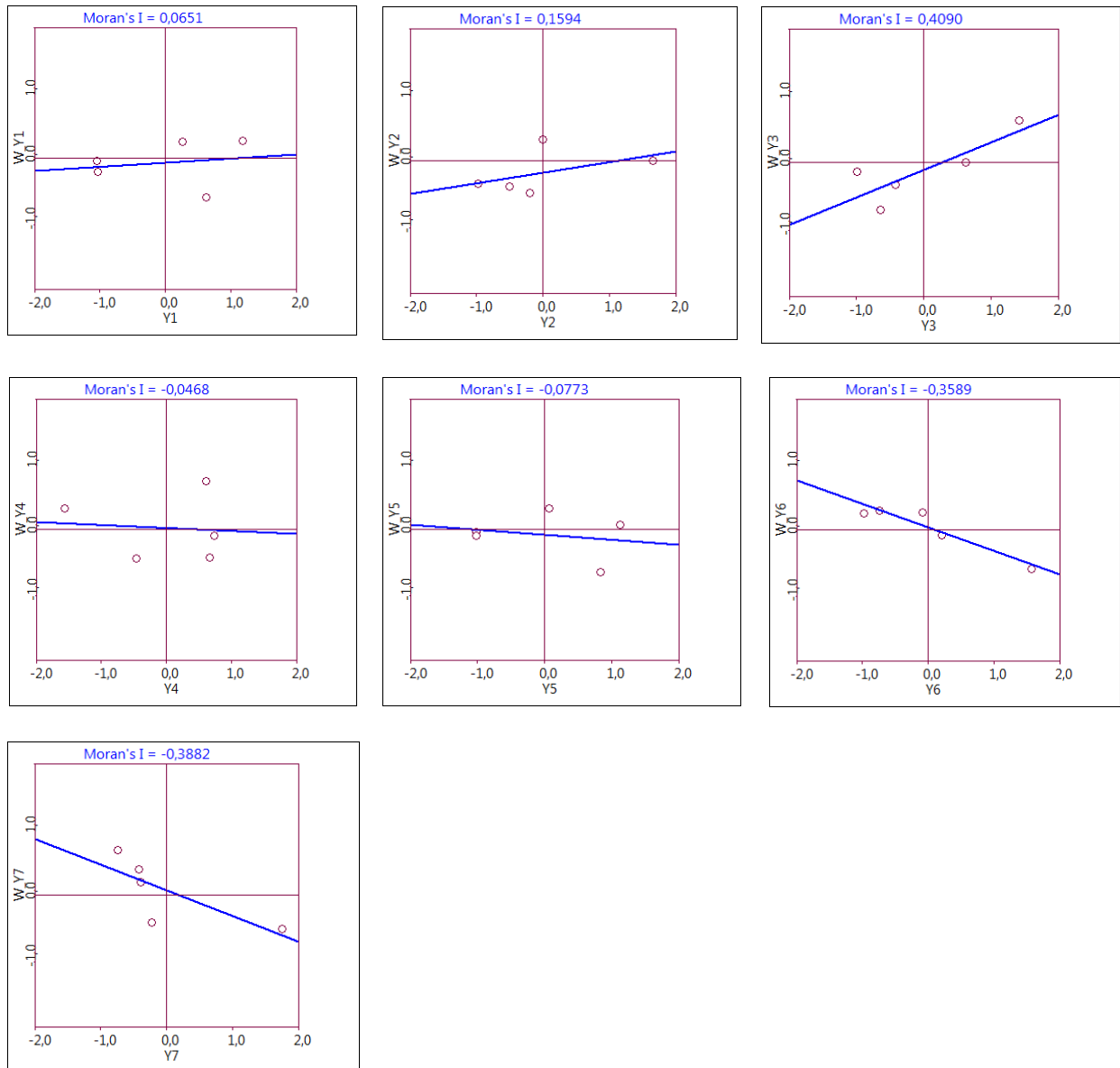
**Figure 16:** Global spatial autocorrelation (Moran's I) between the Portuguese NUTs II nights growth rate average (2004-2008) for the different forms of tourism in rural areas (total, tourism accommodation, rural tourism, agritourism, village tourism, country house and rural hotel, respectively, y1, y2, y3, y4, y5, y6 and y7).

In the figure 16 all the Moran's I are negative, so we have negative autocorrelation between the Portuguese NUTs II for the nights growth rate average in the rural areas tourism.



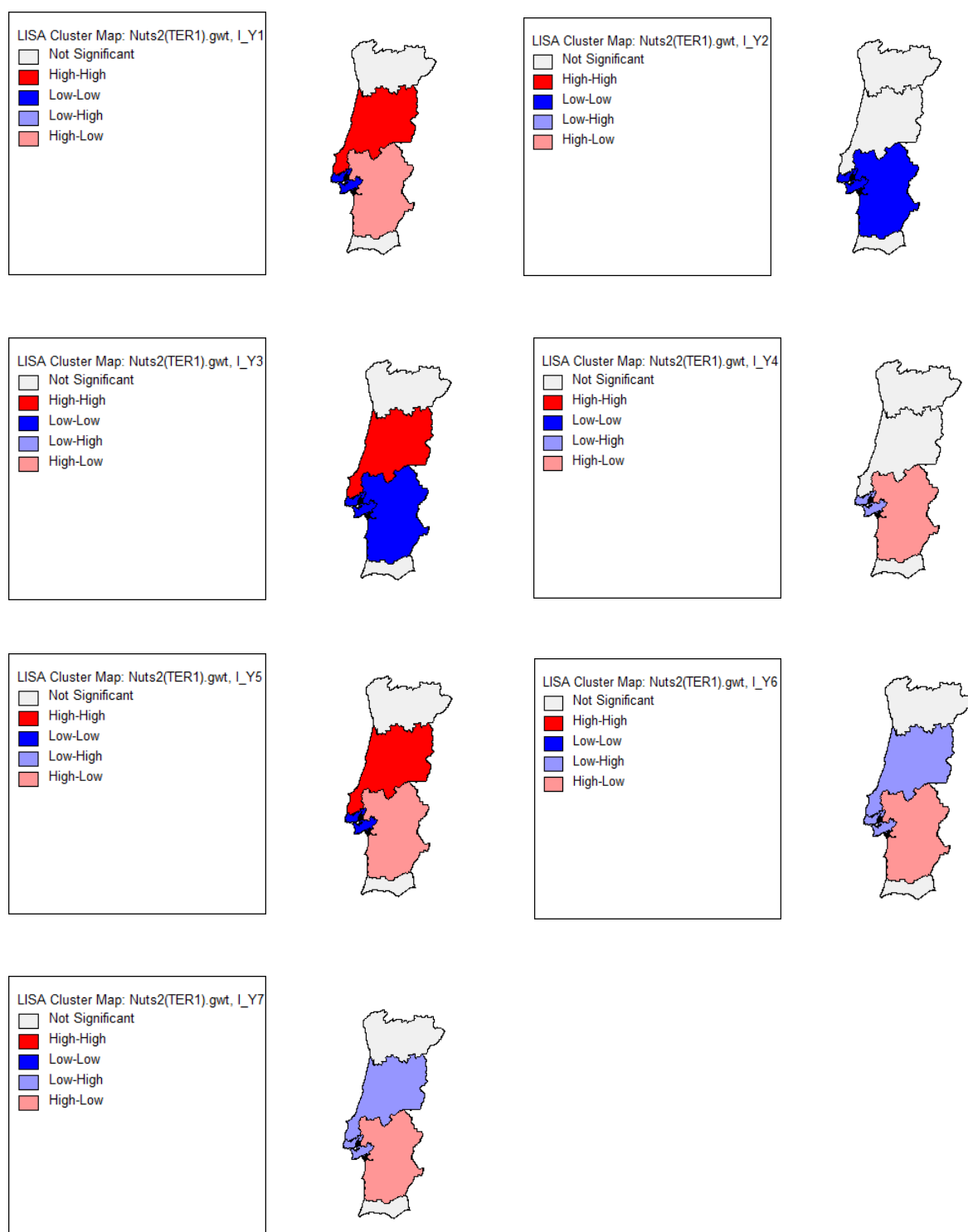
**Figure 17:** Local spatial autocorrelation between the Portuguese NUTs II nights growth rate average (2004-2008) for the different forms of tourism in rural areas (total, tourism accommodation, rural tourism, agritourism, village tourism, country house and rural hotel, respectively, y1, y2, y3, y4, y5, y6 and y7).

The figure 17 above, presents the same analyze for the autocorrelation, but in this case for the local autocorrelation in each NUTs II. The high-low and the low-high statistics values indicate no spatial autocorrelation between the NUTs II, for the variable considered. The high-high and the low-low values represent spatial autocorrelation, for the value high and low of the variable considered, respectively. So, only the village tourism (y5), the country house (y6) and the rural hotel (y7) show spatial autocorrelation in Lisboa (low-low), Centro (low-low) and Centro (high-high), respectively.



**Figure 18:** Global spatial autocorrelation (Moran's I) between the Portuguese NUTs II nights levels average (2004-2008) for the different forms of tourism in rural areas (total, tourism accommodation, rural tourism, agritourism, village tourism, country house and rural hotel, respectively, y1, y2, y3, y4, y5, y6 and y7).

Figure 18 presents the same global spatial autocorrelation but with the variable (nights in the different rural zones tourism) in levels. In this case there are some signs of positive global spatial autocorrelation in all rural areas tourism (y1), tourism accommodation (y2) and rural tourism (y3).



**Figure 19:** Local spatial autocorrelation between the Portuguese NUTS II nights levels average (2004-2008) for the different forms of tourism in rural areas (total, tourism accommodation, rural tourism, agritourism, village tourism, country house and rural hotel, respectively, y1, y2, y3, y4, y5, y6 and y7).

In the above figure 19 is presented an analyze of the local spatial autocorrelation, also for the nights in levels, and there some signs of autocorrelation in different NUTs II for some forms of rural spaces tourism, namely the Centro with high-high values and the Alentejo and Lisboa with low-low values.

In the analysis of the spatial autocorrelation the distances between the spatial unity considered, in this case the NUTs, are determinant, because the values of the variable in the spatial unities are weighted by the distances. So, for this weighing is needed to built a matrix of distances. All the spatial autocorrelation analysis, as well the preparation of the matrix of distances was made with the informatics program GeoDa. In elaboration of the matrix can be considered different limits to the distances, but after several simulations was considered the limit of about 250 Km as the most appropriated maximum. Considering that the distances between the spatial unities are important, in the analyze of the spatial autocorrelation was not considered the NUTs II Açores and Madeira (two Portuguese Islands).

### **3. Estimations results**

There were realized several estimations, with panel data (seven NUTs II and 5 years), separately for the total of rural areas tourism, tourism accommodation, rural tourism, agritourism, village tourism, country house and rural hotel.

For these estimations was used the model of the absolute convergence, of Solow (1956), with panel data (Islam, 1995). In this model the variable dependent is the growth rate and the independent variable is the initial value.

This analyze of the convergence give us an idea about the regularity of the data and about the evolution of the context. Negative values for the coefficient of the estimation indicate signs of convergence.

The results obtained are those presented in the following table 1. These results must be complement in the future with others, considering namely more number of observations. Anyway, these results are a first approach to the analyze of these issues.

Observing the table 1, there is a problem with the number of observations for the last estimation, but for the others estimations all the coefficient are statistical significant and with negative values, signs of convergence in the nights growth rates.

Another interesting conclusion is the fact of the in the majority of the estimations the tests indicate a preference for the fixed effects and the constant coefficients presents statistical significance and high values, what can mean the lack of others variables.

**Table 1.** Estimation of the convergence coefficient with panel data (7 NUTs II and 5 years), considering nights growth rates

	Const. <sup>1</sup>	Coef. <sup>2</sup>	F/Wald(mod.) <sup>3</sup>	F(Fe_OLS) <sup>4</sup>	Corr(u_i) <sup>5</sup>	F(Re_OLS) <sup>6</sup>	Hausman <sup>7</sup>	R <sup>2</sup> <sup>8</sup>	N.O. <sup>9</sup>	N.I. <sup>10</sup>
<b>Total</b>										
FE <sup>11</sup>	9.850* (5.580)	-0.893* (-5.550)	30.800*	5.340*	-0.929	-----	-----	0.606	28	-----
RE <sup>12</sup>	0.923 (1.040)	-0.078 (-0.970)	0.940	-----	-----	0.000	34.360*	0.606	28	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD <sup>13</sup>	14.757* (3.860)	-1.331* (-3.810)	22.960*	-----	-----	-----	-----	-----	14	5
<b>Tourism accommodation</b>										
FE <sup>11</sup>	10.432* (4.720)	-1.117* (-4.750)	22.520*	3.780*	-0.935	-----	-----	0.530	28	-----
RE <sup>12</sup>	1.061 (1.110)	-0.118 (-1.160)	1.350	-----	-----	0.000	22.140*	0.530	28	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD <sup>13</sup>	22.089* (4.140)	-2.363* (-4.140)	37.960*	-----	-----	-----	-----	-----	14	5
<b>Rural tourism</b>										
FE <sup>11</sup>	9.705* (5.420)	-0.998* (-5.410)	29.300*	6.320*	-0.939	-----	-----	0.594	28	-----
RE <sup>12</sup>	1.435 (1.400)	-0.147 (-1.400)	1.960	-----	-----	0.080	31.500*	0.594	28	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD <sup>13</sup>	16.731* (3.570)	-1.715* (-3.580)	13.870*	-----	-----	-----	-----	-----	14	5
<b>Agritourism</b>										
FE <sup>11</sup>	8.317* (3.770)	-0.918* (-3.770)	14.190*	2.600*	-0.878	-----	-----	0.503	22	-----
RE <sup>12</sup>	1.278 (1.070)	-0.140 (-1.080)	1.160	-----	-----	0.000	14.280*	-----	22	-----
OLS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
DPD <sup>13</sup>	7.880* (2.210)	-0.865* (-2.230)	92.170*	-----	-----	-----	-----	-----	9	5
<b>Village Tourism</b>										
FE <sup>11</sup>	11.369* (4.610)	-1.402* (-4.540)	20.610*	3.060	-0.656	-----	-----	0.805	10	-----
RE <sup>12</sup>	6.604* (2.740)	-0.804* (-2.660)	7.090*	-----	-----	0.000	85.210*	0.805	10	-----
OLS	6.604* (2.740)	-0.803* (-2.660)	7.090*	-----	-----	-----	-----	0.404	10	-----
DPD <sup>13</sup>	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
<b>Country house</b>										
FE <sup>11</sup>	6.586* (3.970)	-0.689* (-3.880)	15.070*	2.110	-0.893	-----	-----	0.485	24	-----
RE <sup>12</sup>	1.898* (2.320)	-0.187* (-2.140)	4.600*	-----	-----	0.000	10.540*	0.485	24	-----
OLS	1.898* (2.320)	-0.187* (-2.140)	4.600*	-----	-----	-----	-----	0.135	24	-----
DPD <sup>13</sup>	10.792* (7.590)	-1.134* (-7.470)	61.810*	-----	-----	-----	-----	-----	12	5
<b>Rural hotel</b>										
FE <sup>11</sup>	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
RE <sup>12</sup>	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
OLS	0.391 (0.230)	0.035 (0.190)	0.040	-----	-----	-----	-----	0.012	5	-----
DPD <sup>13</sup>	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Note: 1, Constant; 2, Coefficient; 3, Test F for fixed effects model and test Wald for random effects and dynamic panel data models; 4, Test F for fixed effects or OLS (Ho is OLS); 5, Correlation between errors and regressors in fixed effects; 6, Test F for random effects or OLS (Ho is OLS); 7, Hausman test (Ho is GLS); 8, R square; 9, Number of observations; 10, Number of instruments; 11, Fixed effects model; 12, Random effects model; 13, Dynamic panel data model; \*, Statically significant at 5%.



#### 4. Conclusions

In the rural zones tourism the rural tourism has a significant importance. However the relative importance of the several forms of rural areas tourism is different in each Portuguese NUTs II. The Norte and the Centro are the two, Portuguese NUTs II, with more contribution for this tourism, but the Alentejo appear with an aggressive position in the last years.

So, there are in Portugal, yet, forms of tourism in rural regions that can be explored, namely the village tourism and there are regions where is possible explore some forms of tourism.

Considering the values of the statistics for the global and local autocorrelation analysis, there are some signs of spatial autocorrelation, namely when the variable dependent (nights) is considered in levels.

The coefficients of estimations show signs of convergence. Because, the values of the constant coefficients and the preference for the fixed effects, maybe will be important, in the future, find more data (namely with more years) and try consider more independent variables in the model and test the conditional convergence (associated with the theory of the endogenous growth, where the variable do not converge for the same steady state, but for different steady states, depending of same conditions).

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