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***On the failure of European planning for less developed regions. The case of Calabria.***

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*ABSTRACT: This study analyzes the negative performance of Calabria's Regional Program 2000-2006, for the enhancement of cultural goods to attract tourism, as an example of the waste of resources in the regional planning under the EU-Italian complex planning procedure for economic convergence. The empirical analysis shows that the variables relating to cultural sites, education sites and sites with tourism or tourism potentialities had no significance or even negative influence. The most significant variable was the number of nonprofit organization present in the municipalities. A relevant part of the funds remained unspent for the purposes of the plan, and it was devoted to other destinations. After the program, the number of visitors and revenues from museum and archeological sites of Calabria is lower than before, while on average in Italy there was a great increase. On the other hand, tourism in Calabria experienced a differential increase, in spite of the waste of the funds of the European regional policy.*

*KEYWORDS: cultural goods; tourism; public policies; public expenditure; Southern Italy.*

*JEL Classification: H4; R1; Z1.*

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## **1. Introduction**

This study analyzes the negative performance of Calabria's Regional Operation Program (POR) 2000-2006. The program was devoted to projects for the enhancement of cultural goods to attract tourism, as an example of a waste of resources in the European Union's ambitious program 2000-2006, for the economic convergence of Europe's less developed regions with the developed ones (Community Support Framework, 2000-2006). The results of Calabrian POR, performed following the guidelines of the Council Regulation No. 1260/1999 of 21 June 1999, and of the related Italian Development and Plan, have been negative. The funds of 231 million Euro, which would activate a similar amount of co-financing, have been dispersed throughout the territory in 546 projects. Notwithstanding, the meticulous selection procedures used to establish the projects (many of those approved) resulted in significant inefficiencies: a large share of the projects were abandoned before completion, resulting in just 63% of the funds allocated being spent. Despite the scale of resources mobilized (nearly 450 million of Euro in a region with 2 million of residents) both the flow of visitors to the cultural sites and, more generally, that of tourists to Calabria have not been enhanced. We show, by statistical analysis, how the variables that determined the allocation of the funds have been incoherent with the proclaimed objectives of valorization of cultural patrimony and the touristic promotion.

The study is divided in eleven sections. Section 2 provides a brief survey of economic literature on this issue. Section 3 provides background information on the POR 2000-2006 in Calabria. Section 4 gives an overview of the cultural heritage endowment of Calabria and of the implementation of the program. Sections 5 presents the econometric methodology, the data set and the empirical results. Section 6 discusses some details of regression analysis. Section 7 demonstrates some statistical results about criminal hubs. Section 8 presents the impact of Calabria's POR project on both culture and tourism. Section 9 discuss coherent projects. Section 10 gives the concluding remarks and policy implications. Section 11 makes suggestions for future researches.

## **2. A survey of literature**

In spite of the optimistic reports of the European Community, (Commission of the European Communities, 2009), in the literature on the European Regional Policies for less developed regions, those of the so-called Objective 1 (Cini, 2003; 2007) predominate the researches demonstrating disappointing results. Some authors argue that the results are

poor in the case of regions with weak institutions and better in the other cases. However, the regions for whom the financial aid is justifiable are the less developed ones. And the weakness of the institutions is one of the main characters of the less developed regions belonging to advanced European countries. Basile, De Nardis and Girardi (2001) demonstrate that in spite of the huge amount of public aid to the poor regions of EU, the distribution of income, labour productivity and employment rates do not show a positive relation with the allocation of the EU structural regional funds, particularly in the Nineties. Boldrin and Canova (2001), argue that to a large degree these policies operated primarily as a transfer of funds with redistributive or assistance purposes rather than serving as agents to simulate or increase growth. Puga (2002) observe that, in spite of the large expenditures on European regional policies, the disparities remained or even widened, mainly because of factors connected with the location theory so that more emphasis should be placed on improving transport structures. Rodriguez Pose and Fratesi (2003) show that the returns to the investments in infrastructures and business support were not significant, and that only investment in education and human capital had positive and significant medium term returns. Ederveen, De Groot and Nahuis (2006) show that European structural funds were very largely ineffective in reducing regional disparities, with the exception of the regions where institutions are of a high quality. Bjorvatn and Coniglio (2006; 2007) maintain that generally – not only in Europe – policies to promote regional development very often have disappointing results and also connect such results with the weakness of institutions. In this case targeted policies create rents that attract rent seekers, so that broad-based policies would be more appropriate. The targeted plans should be adopted for the regions with strong institutions. The first part of the conclusion appears reasonable; nevertheless, the second part is unconvincing. Indeed, where the institutions work well, it seems better to apply the general EU rules on competition, and leave to the market economy system the decision on which sectors can make best use of the subsidies supposedly given to compensate for the regional global externalities (Van der Beek, 2004). Eggert, von Ehrlich, Fenge and König (2007) analyze the impact of EU structural policy on the economic development of German regions between 1995 and 2004, arguing that the EU regional transfers speed up convergence, but have a negative impact on long run aggregate growth. Cappelen, Castellacci, Fagerberg and Verspagen (2003) argue that EU regional policies had significant and positive impact on growth of less developed European regions, and that the effects are much better in a more developed environment. It follows that the suggestion of improving the competence of the receiving environment appears rather *naïve* considering that the environment cannot be changed as long as the traditional social structures remain. Beugelsdijk and Eijffinger (2005) argue that the EU structural regional funds had a positive effect in

the case of the poorer countries such as Greece, and they add that the less “clean” countries (i.e. those more corrupt) did not gain less economic growth from the structural funds. They add that many of those who receive the structural funds are not really eligible and therefore use them inefficiently. In the Italian economic literature – see Giannola and Imbriani (eds., 2003), Lo Cicero and Reganati (2003), Viesti (2003; 2009), Viesti and Prota (2009) – there is a widespread consensus on the fact that the Italian public interventions for the development of Southern Italy failed, in a large part, to reduce the disparities between Centre-North and South. There is also consensus that the Regional funds did not fulfill their objectives. This occurred both because due to the complexity of the procedures and to other factors, as a relevant share of the funds was not allocated before the time limit, and it was diverted to other end; moreover, the share of the funds that was utilized under the prescribed procedures was not properly allocated.

On the other hand, Loddo (2006) with a simplified econometric analysis argues that in Italy, in the period 1994-2004, the poorer regions have caught up with the richer regions, and that the European structural funds had a role in this convergence. However, agricultural funds had only a transitory positive effect, whilst the resources allocated had dubious effects from the distributional point of view and also for the support of employment, education and the human capital. But Vision & Value (2007) shows that in the period 2000-2001 the regions of Southern Italy featured in Objective 1 grew at a rate of 1.23% per year, while those of the Centre-North grew at a 1.24% rate, and EU-15 grew at the 1.96%. Similar results appear in Svimez (2009; 2010). While Cancelo, Faína and López-Rodríguez (2009) maintain that EU regional funds have been effective in promoting growth in the case of Galicia, a Spanish peripheral region in Objective 1. Borbalá-Szabó (2007) instead maintains that in Hungary the impact of the EU regional policies on economic growth have been disappointing. Ederveen and Gorter (2002), Ederveen, de Mooji, Gorter and Nahuis (2002), and Ederveen, de Groot and Nahuis (2006) provide an extensive econometric analysis to show mixed results both from the distributive and the growth perspectives, adding that the impact of these policies on national policies to reduce regional disparities has been negative. Tugores (2008), considering the EU-15 global macroeconomic results, concludes that the contribution of EU regional policy to the convergence among states is unquestionable for Spain, and it represented a factor for the Irish high growth. But that there has not been generally a narrowing among regions inside these states. The critical issues are the possible distortions of the efficient assignment of resources and the risk that the resources placed at the service of cohesion may wind up in the hands of specific interests.

For Krueger (1974) this point leads to the consideration of rent seeking in terms of less developed economies, where rent seeking is the sub-

stitute to the missing stimulus to profit seeking. On rent seeking in EU regional policies see also Bjorvatn and Coniglio (2006; 2007). Outside EU, for rent seeking as a negative phenomenon in regional policies, see Zaoostrovsev (2003) for Russia, Dreger, Rahmani and Eckey (2007) for Iran, and Fisher (2006) for Africa. Golley (2007) reaches mixed conclusions on Chinese regional policies. For rich literature on rent seeking after the seminal works of Buchanan, Tullock and Niskanen see, more generally, for all Cogleton, Hillman and Konrad (eds., 2008).

In the specialized economic literature on cultural goods and on tourism there are several contributions that emphasize the importance of the cultural goods as attractors of touristic flows. See, for example, Goldoni, Rispoli and Troncon (eds., 2006), Colbert (2000), Kotler and Scott (1998), Nantel and Colbert (1992), Grossi and Debbia (eds., 1998), Diggles (1986), Hirshmann (1983). More generally, see Forte and Mantovani (2004), and Cooper *et al.* (1998).

The literature on the specific theme of this research – the Regional funds policies in the area of cultural goods and the development of tourism in Southern Italy – is not equally developed; however see Forte, Magazzino and Mantovani (2010), Mantovani (2010), Spadaro (ed., 2010), Vision & Value (2007), and Ferrari and Cariola (2001).

### **3. Structure of EU Regional Policy 2000-2006 and Calabria's Operational Regional Program (POR) for cultural goods**

The European Regional Policy, for the 2000-2006 program, has been implemented through a complex planning procedure, carried on in a number of stages<sup>4</sup>, starting with Council Regulation No 1260/1999 of 21 June 1999, laying down general provisions on the Structural Funds. According to this Regulation, article 9, the Regional Programs of each Member State should follow the guidelines set forth in a development plan prepared by that Member State in the light of the objectives referred to in Article 1 of the Regulation. This development plan should indicate the priority needs for attaining those objectives, together with the strategy, the planned action priorities, their specific goals and the related indicative financial resources. It follows that the Regional program should present the objectives individuated on the basis of the European Regulation and of the national development program, and should set forth the priorities to attain these objectives, the strategy to reach them, the plan-

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<sup>4</sup> According to Article 9 “programming: means the organizing, decision-making and financing process carried out in a number of stages to implement on a multiannual basis the joint action of the Community and the Member States to attain the Objectives referred to in Article 1”.

ning actions priorities of the strategy and the specific goals, with the financial resources allocated to them. The general objectives of this planning are presented in article 1 of the Regulation with emphatic language, as follows “the Community shall contribute to the harmonious, balanced and sustainable development of economic activities, the development of employment and human resources, the protection and improvement of the environment, and the elimination of inequalities, and the promotion of equality between men and women”. No clear priority emerges from this article.

Cultural development in connection with tourism is explicitly considered by Regulation 1260/99<sup>5</sup>, among the objectives of the European Regional policy. The regulations state: “Whereas cultural development, the quality of the natural and the man-made environment, the qualitative and cultural dimension of life and the development of tourism contribute to making regions economically and socially more attractive in so far as they encourage the creation of sustainable employment”. Here too, the language is nebulous and without any indication of priorities.

This task is devolved to the National Development Plan, which in the Italian case, for the less developed Regions consisted of QCS<sup>6</sup> 2000-2006 approved with the Decision 2050 of the European Commission of July 1, 2000. According to the guidelines of this Plan, each Regional Program of the Regions in Objective 1 should be divided into six axis:

- *Axis 1 - Enhancement of natural and environmental resources.*
- *Axis 2 - Use of local cultural and historical resources.*
- *Axis 3 - Human resource development.*
- *Axis 4 - Expansion and enhancement of local systems development.*
- *Axis 5 - Improving the quality of cities, local institutions and social life.*
- *Axis 6 - Strengthening of networks and service nodes.*

The guidelines of QCS 2000-2006 for Axis 2 suggest that the Southern Italy Regional Programs should focus not only on the most important cultural sites, but also consider the cultural patrimony diffused throughout the territory. Whilst this underlines the importance of cultural goods for the development of touristic activities, it adds that the program should also consider the cultural activities as such and “the entire cultural industry in the broad senses”. However indicators of actions present the capacity of attracting touristic consumptions, and as indicators of results present the number of visitors to Museums.

Calabria’s POR was approved by the Italian Government, in July 2000, and gained the approval of the EU Commission with Decision

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<sup>5</sup> In paragraph 6 of the preliminaries to the articles.

<sup>6</sup> QCS means “Quadro Comunitario di Sostegno”, or “Communitarian Frame of Support”.

2345 of August 8 2000. For this POR, as for any other regional POR of Objective 1, 50% of the funds came from the budget of EU. Of this, nearly 60% of funds came from by European Regional Development Fund (ERDF), which finances productive investment and infrastructure projects, with a further 20% from the European Agriculture Guidance and Development (EAGGF), and the remaining 20% of funds were administered by the European Social Fund (ESF). A residual 0.94% of the EU funds came from Financial Instruments for Fisheries Guidance (FIFG). The remaining 50% of (non-EU) funds came from the finances of the receiving country, in this case Italy. A share of 80% was given by the Central Government, and the remaining 20% was provided by the receiving Regions and by local programs. Therefore Calabria contributed to the POR for 10% of its total funds. Private entities that presented projects had to be co-finance 50% of the cost of the project. Those presented by the public entities were totally financed by the POR. But these projects could have been part of broader projects financed for the remaining part by the public entity applying to the POR.

Axis 2, which is the object of our research, had an European endowment of 231 million Euro, and could mobilize additional Italian public finance resources of a similar amount, so that the total import of the public funds for the project would have been roughly 450 million Euro. It was subdivided in three “measures” pertaining to different kinds of projects, classified by their nature and by the subjects entitled to receive the funds.

- 2.1 *Interventions for the preservation and valorization of cultural goods.*
- 2.2 *Public services for the valorization of cultural goods.*
- 2.3 *Development of entrepreneurial initiatives in these areas*<sup>7</sup>.

Measures 2.1 and 2.3 were administered by the Regional Department of Tourism because cultural goods were financed mainly as an attractor of tourism.

The program, following article 9 of Council Regulations No. 1260/1999, was constructed in a “gothic style”, by four goals, with five programmatic strategies for each goal and seven specific actions, each articulated in a number of sub-actions.

The four goals were described in an emphatic and vague language as follows:

- a) Construction of networks for the enjoyment of cultural and historical heritage, in accordance with already planned network initiatives, and to identify meaningful property at the regional level

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<sup>7</sup> Project funds for development of entrepreneurial initiatives are granted within the limits of the *de minimis* rule.



- on which to focus project resources in order to conserve, protect, and enhance.
- b) Generate managerial services of both public institutions and private entrepreneurs to meet the demand of residents and tourists for cultural heritage resources.
  - c) Qualify and support the training of technical and scientific figures tied to the heritage and cultural tourism sector, primarily for cultural management (organization of cultural institutions and utility companies) and management services for the dissemination of local knowledge (tour services).
  - d) To Develop companies and organizations (public and private, profit and non-profit, cultural foundations) relating to the conservation, enhancement, and management of the development of services that combine the benefits of tourism with cultural resources.

Each of the four goals had to be implemented by the following program strategies:

- a) Concentrating resources around cultural emergencies, identified as key exploitable resources.
- b) Enhance regional cultural identities through the wide range of arts, entertainment, and culture for social and economic development.
- c) Provide the region with infrastructure resources, including “horizontal” factors such as knowledge and training of cultural heritage.
- d) Create an interconnected function system to strengthen the cultural whole (the network of archeological areas, coastal castles, regional libraries, *etc.*).
- e) Fostering entrepreneurship in innovated private management services.

The five program strategies then had to be realized by seven types of actions.

- a) Enhancement of the archeological heritage of Ancient Greece.
- b) Establish a network of archeology of the Magna Graecia region.
- c) Create theme parks related to archaeological sites through the construction of adequate facilities for their use.
- d) Recovery, development, and reutilization of the most valuable elements of architectural and landscape heritage.
- e) Redevelopment of historic centers through the recycling of abandoned buildings.
- f) Construction of multipurpose centers for the integration of cultural activities and entertainment.

- g) Protection of the landscape through projects aimed at recovery and enhancement of the landscape.

Each action had to take in consideration six sub-actions<sup>8</sup>. The sum allocated to this was 231 million Euro, and considering that the amount of funds mobilized was nearly double, there was a large amount for the valorization of the cultural patrimony of Calabria; but could hardly justify the complex articulation of the plan. From this clearly defined priorities did not emerge and the finely targeted economic plan became a discretionary program without any priority. This program occurred on the basis that the Italian QCS 2000-2006 – following Council Regulation 1260/99. And both the QCS and Calabria's POR had the approval of the European Commission. The Italian Government and the EU, therefore, have been responsible of the fact that the regional bureaucracies and politicians could make discretionary choices, with support available in the cumbersome text of the POR.

#### **4. Overview of the cultural heritage endowment of Calabria and of program implementation**

Doubtless, Calabria is rich of cultural goods as many other Italian regions. The Ministry of Artistic and Cultural Goods (MIBAC) maintains 57 archeological sites on over 4,000 hectares of land with nine managing superintendants in the region. There are 19 museums of art, history, and important monuments of which only five require an admission fee. Among them is the National Archeological Museum of Reggio Calabria which has historically maintained the highest number of visitors.

The majority of sites are in the provinces of Cosenza and Reggio Calabria, with 14 and 12 sites respectively. In addition, there are 27 historically significant sites consisting of constructions in historical towns. Of them, 9 are still not officially protected. The remaining 18 historically significant sites – comprised of historical buildings and ruins – have been the object of registration for their protection.

As mentioned above, the most important historical sites consisting of

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<sup>8</sup> The six sub-sections are:

1. Promotion and implementation of innovative initiatives that enhance the cultural heritage and local identities.
2. Events of significant cultural and anthropological value.
3. Preservation of ethnic minorities who have maintained important features of the original cultures.
4. Activities related to the ancient tradition of craft production, music, the production of objects of culture of pastoral farmers, and local foods.
5. Preservation of the oral traditions.
6. Promotion and creation of cultural networks.

constructions. in Calabria are the “defensive systems” made of towers, fortresses and castles dating back to the Ninth century A.D. These tend to be located on hilltops and near the sea. There are 147 castles, 196 towers, and 43 fortified structures officially recorded and protected. But only few of them are correctly preserved.

Officially in Calabria there are 35 “theaters”: 80% of which are privately (non-state) owned. Of this, 50% are conducted by cooperatives, 20% by associations, and the remaining 30% by private companies. The only culturally relevant theater is in Reggio Calabria.

In some areas there are ethnic minorities (i.e. Albanians, Hellenistic, Occitan, and Gypsies) who have retained important features of their cultures of origin.

The multiplicity of cultural goods of Calabria may be disorienting. However it is easy to distinguish the most important of them, by referring to the national classification of the important museums, archeological sites and monuments (inclusive of churches) done by the Ministry of Artistic and Cultural Goods. This classification may appear restrictive as for the historical buildings. We have broadened the list of the major cultural sites of Calabria by including all the castles still preserved (see Table 1).

*Table 1 – Cultural Sites Considered by Municipality and Province.*

	<b><i>Cultural Site</i></b>	<b><i>Municipality</i></b>	<b><i>Province</i></b>
1	Archeological Park of Scolacium	BORGIA	CATANZARO
2	Archeological Museum of Lamezia (Neolithic)	LAMEZIA TERME	CATANZARO
3	Norman Castle	SQUILLACE	CATANZARO
4	State Archeological Museum	AMENDOLARA	COSENZA
5	Archeological Park of Sibari	CASSANO ALLO IONIO	COSENZA
6	Sibarite National Archeological Museum	CASSANO ALLO IONIO	COSENZA
7	National Gallery of Cosenza	COSENZA	COSENZA
8	Norman Swew Castle	COSENZA	COSENZA
9	Antiquarium of Scalea – Torre Cimalonga	SCALEA	COSENZA
10	Norman Castle	CORIGLIANO CALABRO	COSENZA
11	Maritime Aragon Castle	BELVEDERE MARITTIMO	COSENZA
12	Swew Castle	ROSETO CAPO SPULICO	COSENZA
13	Pathirion	ROSSANO CALABRO	CROTONE
14	Nao Tower	CROTONE	CROTONE
15	National Archeological Museum	CROTONE	CROTONE
16	Le Castella	ISOLA DI CAPO RIZZUTO	CROTONE
17	Norman Castle	SANTA SEVERINA	CROTONE
18	Church of Saint Francis of Assisi	GERACE	REGGIO DI CALABRIA
19	Church of Saint Giovannello	GERACE	REGGIO DI CALABRIA
20	“Centocamere” Archeological Area	LOCRI	REGGIO DI CALABRIA
21	Greek Roman Theatre	LOCRI	REGGIO DI CALABRIA
22	National Archeological Museum	LOCRI	REGGIO DI CALABRIA
23	Archeological Area	MONASTERACE	REGGIO DI CALABRIA
24	Leonida Repaci Cultural House	PALMI	REGGIO DI CALABRIA
25	Aragon Castle	REGGIO DI CALABRIA	REGGIO DI CALABRIA
26	Cilea Municipal Theatre	REGGIO DI CALABRIA	REGGIO DI CALABRIA
27	National Archeological Museum	REGGIO DI CALABRIA	REGGIO DI

7			CALABRIA
28	The Catholic	STILO	REGGIO DI CALABRIA
29	Ruffo Castle	SCILLA	REGGIO DI CALABRIA
30	State Museum	MILETO	VIBO VALENTIA
31	National Archeological Museum "Vito Capiabbi"	VIBO VALENTIA	VIBO VALENTIA
32	Norman Swew Castle	VIBO VALENTIA	VIBO VALENTIA
33	Murat Museum	PIZZO	VIBO VALENTIA
34	Murat Castle	PIZZO	VIBO VALENTIA
35	Cistercensis Convent	SERRA SAN BRUNO	VIBO VALENTIA

Source: Forte and Mantovani (2004) with the cooperation of experts of the master in *Archeology and architecture of the classic town*, Mediterranean University of Reggio Calabria, years 2009/2010.

We have also added to the list the Lyric Theater of Reggio Calabria, the only important theater of the region and the cultural center entitled to Corrado Alvaro – Calabria’s most famous writer.

A year after the expiration of the programs, the three Axes relating to culture achieved more success in comparison with the other axes of the POR, but they too were not satisfactory. Axis II has an allocation ratio of about 50% of the fund, as did Axis V (Social and City Life), and Axis VI (Networks). The program for natural and environmental resources (Axis I), for which Calabria has a natural vocation, has a ratio of only 45%. Local systems for development (Axis IV) had a ratio lower than 25% and human resources lower still at below 5%.

At its accomplishment the Cultural POR allocated 63.4% of the available resources, with a share of the project finance abandoned before completion. We here consider the situation in 2007, as resulting by the official accounting at the end of February 2008, when 50% of the funds was allocated, and a further 46.3% was “committed”; of them, only 82% was really spent. The total amount committed was 197 million Euro, whilst the total amount spent was 157 million. 539 projects had been approved for execution, for each of these the average amount committed was 365,000 Euro, and each project on average received 291,000 Euro. Considering this, clearly there was a dispersion of funds in initiatives with a minimal impact on the valorization of Calabria’s important cultural patrimony.

There were only 3 projects exceeding 5 million Euro. They were for the two archeological parks of Solacium in Crotona and the plaster cast and picture gallery in Catanzaro. In the 3-5 million Euro category there

were four projects for the restoration of historic buildings and the structural adjustment of the National Museum of Cosenza, and as well as an appropriation 3 million Euro for the promotion of anthropological heritage.

Only 25 projects approved had budgets from 1 to 3 million Euro. Among them, two projects for the preservation of the Albanian traditions and the creation of network designed to enhance minority languages. Projects with a budget of 500,000 Euro were almost exclusively dedicated to construction and restoration of buildings.

Most projects were in the range between 1,000-250,000 Euro for the improvement of library systems, consolidation of buildings and churches, and the promotion of crafts in the process of “extinction” such as tailors, carpenters, goldsmiths. At the end of 2007, 60.7% of the total number of projects approved were incomplete. The complexity of the procedures and the fragmentation of the expenditure in small project resulted in a large proportion of unfinished projects, seven years after the beginning of the plan. And a share of them has been abandoned before the completion.

*Table 2 – Number of projects per Province.*

<i>Province</i>	<i>Number of projects</i>	<i>Share of projects</i>	<i>Share of population</i>
<b>Cosenza</b>	208	38.8	36.5
<b>Reggio Calabria</b>	147	27.4	28.2
<b>Catanzaro</b>	93	17.4	18.3
<b>Crotone</b>	44	8.2	8.6
<b>Vibo Valentia</b>	44	8.2	8.4

Source: POR Calabria (2009).

As one can see from Table 2, the distribution of the 536 projects by provinces follows closely the provincial distribution of the population, and so one can assume that the voting weight of each province determined the number of projects assigned to it. The fact that the Governor of the centre-right regional Junta in power until 2004 and the Governor of the successive centre-left Junta were respectively of the provinces of Cosenza (Chiaravalloti) and Catanzaro (Loiero) did not substantially affect the distribution of projects by provinces.

Nor was the distribution of funds among the provinces affected by either the differing importance of their cultural goods, their ability to attract tourism or their differing needs of valorization. Therefore, the criterion that prevailed, among the provinces, was that of the distribution of the funds in proportion to their electors.

## **5. Econometric methodology, data and empirical results**

In this section we show statistical and econometric analysis results to shed light on variables that determined the POR 2000-2006 Axis II fund allocation. The dependent variables considered are the number of projects and the amount of money allocated.

In Table 3 some preliminary descriptive statistics are shown.

*Table 3 – Exploratory data analysis.*

<b>Variable</b>	<b>Mean</b>	<b>Median</b>	<b>Standard Deviation</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>Range</b>
<i>Inamounts_pc</i>	4.3061	4.5545	1.7295	-0.4602	3.1263	9.4483
<i>Inpayments_pc</i>	4.0135	4.1609	1.6979	-0.3040	2.9617	9.0586
<i>Incommitment_pc</i>	4.2685	4.5367	1.7243	-0.4921	3.2440	9.5749
<i>Projects</i>	2.5524	1	3.6953	5.5770	41.9537	35
<i>Votes</i>	53.9711	54.0975	6.3680	-0.0132	4.3171	47.0650
<i>Nonprofits</i>	25.1667	10	73.2106	6.5077	47.9020	656
<i>Province</i>	0.0238	0	0.1528	6.2470	40.0244	1
<i>Health structures</i>	0.4619	0	0.4997	0.1528	1.0234	1
<i>University</i>	0.0762	0	0.2659	3.1949	11.2075	1
<i>Nursery</i>	0.3048	0	0.4614	0.8483	1.7196	1
<i>Primary school</i>	0.3238	0	0.4690	0.7531	1.5671	1
<i>Secondary school</i>	0.8524	1	0.3556	-1.9868	4.9474	1
<i>Senior high school</i>	0.3571	0	0.4803	0.5963	1.3556	1
<i>T&amp;C</i>	0.0762	0	0.2659	3.1949	11.2075	1
<i>Touristic attractors</i>	0.2810	0	0.4505	0.9747	1.9501	1
<i>TV&amp;R</i>	0.1952	0	0.3973	1.5377	3.3646	1
<i>Soccer</i>	0.0381	0	0.1919	4.8259	24.2896	1
<i>A&amp;C&amp;A</i>	0.7381	1	0.4407	-1.0831	2.1730	1
<i>A&amp;P</i>	0.0524	0	0.2233	4.0182	17.1462	1
<i>L&amp;P</i>	0.4762	0	0.5006	0.0953	1.0091	1
<i>Museums</i>	0.2048	0	0.4045	1.4633	3.1412	1
<i>Cultural Sites</i>	0.1143	0	0.3189	2.4247	6.8790	1
<i>Criminal Hubs</i>	0.2571	0	0.4381	1.1113	2.2350	1
<i>Councillor</i>	0.0714	0	0.2582	3.3282	12.0769	1

Sources: our calculations on POR (2009) and [www.regione.calabria.it](http://www.regione.calabria.it) data.

The tested projects – those of POR 2000-2006 Axes II as resulting from the regional Report of 29 February 2008 referring to end of 2007<sup>9</sup> – were considered “non continuous” projects, which means they had a specific end date. This specification allowed for simplified testing and analysis. The data set is available on the official website of the Calabria Region in the Reports on POR 2000-2006 and is synthesized in Table 2 and in various other Tables. Statistical analysis was conducted only for cross-section containing municipalities that received POR funds. The focus on the amount per-capita in municipalities that received projects allows us to examine which priorities, if any, have been pursued in allocating the funds among them. We constructed a data set to analyze the relation-

<sup>9</sup>

See: [http://www.regione.calabria.it/calabriaeuropa/index.php?option=com\\_content&task=view&id=120&Itemid=253](http://www.regione.calabria.it/calabriaeuropa/index.php?option=com_content&task=view&id=120&Itemid=253).

ship of the data about the projects in per capita amount for the various municipalities, and the variables described below regarding these municipalities.

A variety of regression techniques were used. First, we ran a *Stepwise* regression, always concentrating on the per-capita amounts, i.e. on the municipalities that received funds<sup>10</sup>.

Afterwards, we ran a GLM model<sup>11</sup>. In particular, these estimators permit us to estimate GLM-like models involving mean-variance specifications that extend beyond those for known exponential family distributions, and to estimate models where the mean-variance specification is of exponential family form, but the observed data do not satisfy the distributional requirements (Agresti, 1990)<sup>12</sup>.

As a third method of estimate, we choose a Robust regression<sup>13</sup>. Finally, we estimated a Quantile regression<sup>14</sup>.

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<sup>10</sup> Stepwise methods provide ways to automate the process of model selection. They work either by subtracting predictors from a complicated model, or by adding predictors to a simpler one according to some pre-set statistical criteria. Stepwise methods cannot consider the substantive or theoretical implications of their choices, nor can they do much troubleshooting to evaluate possible weakness in the models produced at each step. They produce badly biased models in many instances due to over-fitting. Despite their well-known limitations, stepwise methods meet some practical needs and have been widely used.

<sup>11</sup> Nelder and McCullagh (1989) describe a class of *Generalized Linear Models* (GLMs) that extends linear regression to permit non-normal stochastic and non-linear systematic components. GLMs encompass a broad and empirically useful range of specifications that includes linear regression, logistic and probit analysis, and Poisson models.

Crucially, the properties of the GLM maximum likelihood estimator depend only on these two moments. Thus, a GLM specification is principally a vehicle for specifying a mean and variance, where the mean is determined by the link assumption, and the mean-variance relationship is governed by the distributional assumption. In this respect, the distributional assumption of the standard GLM is overly restrictive. McCullagh (1983) offers a full set of distributional results for the quasi-maximum likelihood (QML) estimator that mirror those for ordinary maximum likelihood.

<sup>12</sup> Alternately, Gourioux, Monfort, and Trognon (1984) show that consistency of the GLM maximum likelihood estimator requires only correct specification of the conditional mean. Misspecification of the variance relationship does, however, lead to invalid inference, though this may be corrected using robust coefficient covariance estimation. In contrast to the QML results, the robust covariance correction does not require correction specification of a GLM conditional variance.

<sup>13</sup> An *Iteratively Reweighted Least Squares* (IRLS) procedure obtains robust regression estimates. The first iteration begins with OLS. Any observations so influential as to have Cook's distance  $D$  values greater than 1 are automatically set aside after this first step. Next, weights are calculated for each observation using a Huber function (which downweights observations that have larger residuals) and weighted least squares is performed. After several WLS iterations, the weight function shifts to a Tukey biweight (as suggested by Li, 1985), tuned for 95% Gaussian efficiency (Street, Carroll, and Ruppert, 1988; Hamilton 1992).

<sup>14</sup> As originally proposed by Koenker and Baxistt (1978), quantile regression provides estimates of the linear relationship between  $X$  regressors and a specified quantile of the dependent variable  $Y$ . One important special case of quantile regression is the



We choose the log-linear functional form, and our dependent variable is the natural logarithm of per-capita amounts (*lnamounts\_pc*), and it represents POR funds of each municipality, divided for its population. *Projects* is the number of approved projects; *Votes* is the electoral flows; *Nonprofit* is the number of nonprofit organizations of any kind in the given municipality; *Province* is a dummy variable, that is equal to 1 if municipal is a Province, and equal to 0 otherwise; *Health structures* is a dummy variable, that is equal to 1 if in the municipal area insists at least one hospital, nuthouse or fitness centre, and equal to 0 otherwise; *University* is a dummy variable, that is equal to 1 if in the municipal area there contains an academic institution, and equal to 0 otherwise; *Nursery* is a dummy variable, that is equal to 1 if the municipality has got a nursery, and equal to 0 otherwise; *Primary school* is a dummy variable, that is equal to 1 if in the municipal area there is at least one primary school, and equal to 0 otherwise; *Secondary school* is a dummy variable, that is equal to 1 if in the municipal area there is at least one secondary school, and equal to 0 otherwise; *Senior high school* is a dummy variable, that is equal to 1 if in the municipal area there is at least one senior high school, and equal to 0 otherwise; *T&C* is a dummy variable, that is equal to 1 if in the municipal area there is at least one theatre or a cinema, and equal to 0 otherwise; *Touristic attractors* is a dummy variable, that is equal to 1 if in the municipal area there is at least one disco, aquapark, wine-tasting shop, sport-centre, or a beach, and equal to 0 otherwise; *TV&R* is a dummy variable, that is equal to 1 if in the municipal area there is at least one local TV or radio station, and equal to 0 otherwise; *Soccer* is a dummy variable, that is equal to 1 if in the municipal area there is at least one professional soccer team, and equal to 0 otherwise; *A&C&A* is a dummy variable, that is equal to 1 if in the municipal area there is at least one hotel, camping or farm holidays, and equal to 0 otherwise; *A&P* is a dummy variable, that is equal to 1 if in the municipal area there is at least one airport or seaport, and equal to 0 otherwise; *L&P* is a dummy variable, that is equal to 1 if in the municipal area there is at least one library or local publisher, and equal to 0 otherwise; *Museums* is a dummy variable, that is equal to 1 if in the municipal area there is at least one museum, and equal to 0 otherwise; *Cultural Sites* is a dummy variable, that is equal to 1 if the municipality might be considered as a cultural hub (see Table 1) and equal to 0 otherwise; *Criminal Hubs* is a dummy variable, that is equal to 1 if the municipality might be considered as a criminal hub according to Gratteri and Nicaso (2007) classification, and equal to 0 otherwise (see Table 5) *Councillor* is a dummy variable, that is equal to 1 if the municipality has been represented by a councillor as a member of Regional Government during the period 2000-2006, and equal to 0 otherwise.

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*Least Absolute Deviations* (LAD) estimator, which corresponds to fitting the conditional median of the response variable.

As is shown in Table 4, first of all one notices that there are very few differences in the estimated coefficients among four estimation methods applied. In fact, the coefficients are very similar, while standard errors present slight variations. The second column represents the output of Stepwise Backward Robust OLS estimate. Recall that we choose the log-linear functional form, and our dependent variable is the natural logarithm of per capita amounts (*lnamounts\_pc*). In order to control for heteroscedasticity, we applied White's correction.

Table 4 – Regression Analysis, POR-Calabria (2000-2006).

<i>Dependent Variable: (Inamounts_pc)</i>	<i>Stepwise Backward Robust OLS<sup>a</sup></i>	<i>Robust GLM<sup>a</sup></i>	<i>IRLS</i>	<i>LAD with bootstrapping</i>
<b>Constant</b>	3.4999*** (.1633)	3.4999*** (.1606)	3.4994*** (.1431)	3.6130*** (.2058)
<b>Projects</b>	.2931*** (.0678)	.2931*** (.0666)	.3744*** (.0575)	.3244*** (.0774)
<b>Nonprofit</b>	-.0131*** (.0029)	-.0131*** (.0029)	-.0132*** (.0025)	-.0137*** (.0774)
<b>University</b>	.5930** (.2712)	.5930** (.2666)		
<b>Touristic Attractors</b>	-.4752*** (.1804)	-.4752*** (.1773)	-.4399** (.2002)	
<b>L&amp;P</b>	-.3128* (.1676)	-.3128* (.1647)	-.3705** (.1690)	-.3607** (.1907)
<b>Senior high school</b>	-1.0574*** (.1911)	-1.0574*** (.1879)	-1.0791*** (.1893)	-1.0711*** (.1840)
<b>Number of obs.</b>	210	210	209	210
<b>F test</b>	43.70 (.0000)		45.19	
<b>Log-Likelihood</b>	-321.0666			
<b>Pearson Dispersion</b>		1.295		
<b>R<sup>2</sup></b>	.5874		.5731	
<b>R<sup>2</sup><sub>adj</sub></b>	.5834		.5604	
<b>Pseudo R<sup>2</sup></b>				.3385
<b>BIC</b>	684.9101	-818.4658		
<b>AIC</b>	658.1332			
<b>RMSE</b>	1.1381		1.1462	
<b>Ramsey OV test</b>	2.03 (.1107)			
<b>Mean VIF</b>	2.52			
<b>Tolerance Ratio</b>	.3968			
<b>Skewness-Kurtosis test</b>	.98 (.6129)	0.98 (.6129)	9.46 (.0088)	3.30 (.1920)
<b>Shapiro-Francia test</b>	(.6134)	(.6134)	(.0160)	(.0486)
<b>Shapiro-Wilk test</b>	(.5947)	(.5947)	(.0246)	(.0360)
<b>IQR</b>	1 mild outlier 0 severe outlier	1 mild outlier 0 severe outlier	3 mild outliers 0 severe outlier	9 mild outliers 0 severe outlier
<b>Link test</b>	f.v. significant (f.v.) <sup>2</sup> not Significant	f.v. significant (f.v.) <sup>2</sup> not significant		f.v. significant (f.v.) <sup>2</sup> not Significant

Notes: a: White correction for heteroskedasticity applied. Significance levels: \* 10%, \*\* 5%, \*\*\* 1%. Robust Standard Errors in parenthesis.

About regression analysis, as expected, the number of total projects (*Projects*) is statistically significant, and this explanatory variable tends to

have a positive influence on per capita amounts of the individual municipalities. The presence of museums in the considered municipalities is not relevant for the allocation of per capita funds, nor are the presence of important cultural sites relevant. Also the presence of schools – whether of primary or secondary education – does not seem relevant, whilst the presence of senior high schools is relevant with a negative impact. It appears that in municipalities where there are already important public cultural institutions no attention is required in terms of the allocation of POR's funds for culture. A similar consideration may explain the *L&P*'s negative influence on the allocation of these funds. *Touristic attractors* tend to have a negative impact on dependent variable, too; the reason could be the different kind of tourism that the attractors stimulate. On the other hand one should notice that they are not significant in the LAD estimate. The variables *TV&R*, *A&C&A* and *A&P*, which too may be relevant for tourism, are not significant. On balance, one can argue that the presence of relevant tourist facilities and services does not exert an appreciable influence on the allocation of the Calabrian POR's funds for culture, even if the development of tourism is among the official objectives of the program. Yet, the presence of an academic institution (*University*) increase the funds assigned. This result might provide evidence in support of the idea that where there is a University, the capability of presenting projects to be approved tends to increase – possibly due to the greater competence and intellectual prestige of the authors advocating the project, or their capabilities in lobbying procedures. On the other hand, one can notice that in LAD estimate *University* is not significant and that in IRLS estimate the explanatory variable *University* doesn't have a statistical relevance. This result implies that the presence of an University in a given town it is not important in the policy of the Region as for the allocation of the POR's cultural funds. As previously seen, there is a strong correlation between the presence of nonprofit organizations and the allocation of funds to the municipalities. So, those with nonprofit institutions have been favored on those without them. However, the variable *Nonprofit* shows a negative incidence on the per capita amounts for municipalities which received funds. One can explain this result arguing that the competition among the different nonprofit organizations for these public funds reduced the success of them.

## **6. Regression results: a comment**

According to the diagnostic checks, the goodness-of-fit is acceptable (the coefficient of determination and the adjusted coefficient both are >56%), while the F-stat reveals that set of independent variables (jointly considered) significantly differs from zero, since we strongly reject the

null hypothesis.

Ramsey’ RESET test controls whether non-linear combinations of the estimated values help explain the endogenous variable (Ramsey, 1969). The intuition behind the test is that, if non-linear combinations of the explanatory variables have any power in explaining the endogenous variable, then the model is mis-specified. Since we don’t reject the null hypothesis that the model has no omitted variables, we might conclude that it is well-specified.

The mean Variance Inflation Factor is equal to 2.52. VIF gives a quick check for multicollinearity.  $1/VIF$  tells us what proportion of an explanatory variable’s variance is independent of all the other  $X$  variables. A low proportion indicates potential trouble. VIF values provide guidance but not direct measurements of the increase in coefficient variances. Nevertheless, Chatterjee and Hadi (2006) suggest a sort of “rule of thumb”: if the mean VIF is considerably larger than 1, we could suspect the presence of multicollinearity. With our mean VIF less than 3, and our largest VIF close to 5.5, our regression clearly doesn’t meet both criteria. Moreover, the tolerance statistics is  $>0.2$ , so there is not a multicollinearity problem (Menard, 1995).

*Table 5 – Pairwise correlation matrix for our statistically relevant variables.*

<b>Variable</b>	<b><i>Inamounts_pc</i></b>	<b><i>Projects</i></b>	<b><i>Nonprofit</i></b>	<b><i>University</i></b>	<b><i>Touristic Attractors</i></b>	<b><i>L&amp;P</i></b>	<b><i>Senior high school</i></b>
<b><i>Inamounts_pc</i></b>	1						
<b><i>Projects</i></b>	0.2138	1					
<b><i>Nonprofit</i></b>	0.0084	0.8890	1				
<b><i>University</i></b>	0.0274	0.5461	0.5995	1			
<b><i>Touristic Attractors</i></b>	-0.1156	0.3231	0.3474	0.3396	1		
<b><i>L&amp;P</i></b>	-0.0818	0.2270	0.2422	0.2653	0.2313	1	
<b><i>Senior high school</i></b>	-0.2385	0.3304	0.3255	0.3104	0.3964	0.2843	1

Note: Bonferroni correction applied.

Source: our calculations on POR (2009) and [www.regionalcalabria.it](http://www.regionalcalabria.it) data.

As the Table 5 above shows, there is only a high correlation coefficient between *Projects* and *Nonprofit* ( $r=0.8890$ ); the reason for this lies on the fact that municipalities with a great number of nonprofit organizations tend to elaborate a higher number of projects. Moreover, any other pairwise correlation value is below 0.6. This could also explain the absence of multicollinearity in our regression equation.

Moreover, the pairwise correlation coefficients matrix patently shows us that – either we use Bonferroni-adjusted significance level or Sidak-adjusted significance level – there exists only a troublesome correlation between amounts and payments, but that this collinearity doesn’t distort very deeply our estimate (Abdi, 2007).

Yet, if our model is really well-specified, then if we were to regress *lnamounts\_pc* on the prediction and the prediction squared, the prediction squared would have no explanatory power. This is what *linktest* does (Tukey, 1949; Pregibon, 1979). We find that the prediction squared does have explanatory power, so our specification is not as good as we thought. Although *linktest* is formally a test of the specification of the dependent variable, it is often interpreted as a test that, conditional on the specification, the independent variables are specified incorrectly.

Finally, we analyze the normality of residuals. We conducted three different test to check the Gaussian distribution of residuals: Jarque and Bera test (1987), Shapiro and Wilk test (1965), Shapiro and Francia test (1972). Since all these tests fail to reject the null hypothesis of normality, we are able to conclude in favour of normality assumption.

## **7. Criminal hubs**

In this section we discuss the relevance on Criminal Hubs on POR funds allocation. Moreover, we show some statistical analysis on these organizations.

*Table 6 – Criminal Hubs (Calabria).*

<i>Municipality</i>	<i>Populations</i>	<i>Cultural sites</i>	<i>Non-profit</i>	<i>Projects</i>	<i>Payments</i>	<i>Commitments</i>
<b>Africo (RC)</b>	3,465	0	18	0	0	0
<b>Amantea (CS)</b>	13,268	0	30	3	516,377.36	814,370.28
<b>Bagnara Calabria (RC)</b>	11,230	0	34	1	95,220.11	95,220.11
<b>Bianco (RC)</b>	4,047	0	16	0	0	0
<b>Botricello (CZ)</b>	4,586	0	7	0	0	0
<b>Bova Marina (RC)</b>	3,967	0	23	6	3,676,273.3	5,273,978.4
<b>Bova (RC)</b>	474	0	6	9	2,817,149.8	4,720,996.4
<b>Bovalino (RC)</b>	8,358	0	39	4	465,166.55	1,099,912.5
<b>Bruzzano Zeffirio (RC)</b>	1,401	0	3	0	0	0
<b>Careri (RC)</b>	2,443	0	4	0	0	0
<b>Casignana (RC)</b>	775	0	3	2	2,710,353.5	2,710,353.5
<b>Cassano allo Ionio (CS)</b>	17,565	2	37	8	4,130,568.3	4,505,924.3
<b>Castrovillari (CS)</b>	22,389	0	78	3	169,995.97	190,975.97
<b>Catanzaro (CZ)</b>	95,251	0	535	35	10,128,753	12,005,666
<b>Cetraro (CS)</b>	10,333	0	19	1	14,999.59	14,999.59
<b>Cirò Marina (KR)</b>	13,987	0	26	0	0	0
<b>Cittanova (RC)</b>	10,675	0	27	0	0	0
<b>Condofuri (RC)</b>	5,055	0	6	4	174,792.94	761,156.57
<b>Corigliano Calabro (CS)</b>	38,241	1	71	6	954,893.58	1,258,881.3
<b>Cosenza (CS)</b>	72,998	2	477	18	10,858,300	15,067,260
<b>Crotone (KR)</b>	60,010	2	384	14	10,998,600	11,095,193
<b>Cutro (KR)</b>	10,829	0	11	1	10,000	10,000
<b>Filadelfia (VV)</b>	6,283	0	15	1	10,000	10,000
<b>Fuscaldo (CS)</b>	8,323	0	25	2	639,647.39	681,497.48
<b>Galatro (RC)</b>	2,307	0	2	0	0	0
<b>Gioia Tauro (RC)</b>	17,762	0	55	3	879,815.33	1,117,466.6
<b>Gioiosa Ionica (RC)</b>	7,044	0	21	3	205,452.7	205,452.71
<b>Guardavalle (CZ)</b>	5,315	0	7	1	495,102.38	495,102.38
<b>Lamezia Terme (CZ)</b>	70,501	1	228	12	6,854,918.8	7,299,960.3
<b>Laureana di Borrello (RC)</b>	5,709	0	13	0	0	0
<b>Limbadi (VV)</b>	3,630	0	4	0	0	0
<b>Locri (RC)</b>	12,997	3	65	8	3,465,832.6	4,476,272.1
<b>Mammola (RC)</b>	3,389	0	8	2	651,763.48	707,760.02
<b>Marina di Gioiosa Ionica (RC)</b>	6,440	0	19	1	6,000	6,000
<b>Melicucco (RC)</b>	4,996	0	13	0	0	0
<b>Melito di Porto Salvo (RC)</b>	10,506	0	39	5	1,001,660.8	1,603,608.3

<b>Mesoraca (KR)</b>	7,125	0	20	2	51,666.67	93,333.33
<b>Mileto (VV)</b>	7,157	1	33	2	324,767.58	339,501.24
<b>Monasterace (RC)</b>	3,426	1	16	1	282,436.79	300,000
<b>Montebello Ionico (RC)</b>	6,922	0	16	0	0	0
<b>Oppido Mamertina (RC)</b>	5,559	0	23	4	2,091,343.2	3,613,740.6
<b>Palizzi (RC)</b>	2,709	0	12	1	474,225.96	610,000
<b>Palmi (RC)</b>	19,435	1	45	5	2,356,504.3	3,847,090.1
<b>Paola (CS)</b>	17,195	0	51	4	177,080.93	338,300.98
<b>Petilia Policastro (KR)</b>	9,594	0	28	1	20,000	20,000
<b>Petronà (CZ)</b>	3,010	0	5	0	0	0
<b>Plati (RC)</b>	3,823	0	15	0	0	0
<b>Polistena (RC)</b>	11,591	0	30	4	277,664.95	747,215.03
<b>Reggio di Calabria (RC)</b>	180,353	3	656	28	6,757,632.4	7,950,883.4
<b>Rizziconi (RC)</b>	7,650	0	25	0	0	0
<b>Rocca di Neto (KR)</b>	5,614	0	13	0	0	0
<b>Rocella Ionica (RC)</b>	6,762	0	33	4	5,988,575.9	6,066,275.9
<b>Roghudi (RC)</b>	1,365	0	0	1	220,414.71	494,000
<b>Rosarno (RC)</b>	15,051	0	15	3	485,869.57	1,253,928
<b>San Ferdinando (RC)</b>	4,339	0	11	1	90,000	90,000
<b>San Gregorio d'Ippona (VV)</b>	2,338	0	4	2	373,780.09	373,780.09
<b>San Lorenzo (RC)</b>	3,357	0	8	2	518,201.77	908,805.1
<b>San Luca (RC)</b>	4,106	0	7	1	416,165.48	416,165.48
<b>San Lucido (CS)</b>	5,906	0	16	1	14,997.28	15,000
<b>Seminara (RC)</b>	3,352	0	12	1	452,021.35	463,480
<b>Serra San Bruno (VV)</b>	7,068	1	18	4	371,409.61	1,759,943.8
<b>Siderno (RC)</b>	1,6734	0	34	2	0	55,000
<b>Sinopoli (RC)</b>	2,329	0	3	1	134,797.34	22,5000
<b>Soriano Calabro (VV)</b>	3,068	0	14	2	319,896.86	319,896.86
<b>Staiti (RC)</b>	395	0	3	1	254,919.87	377,000
<b>Stignano (RC)</b>	1,373	0	1	0	0	0
<b>Stilo (RC)</b>	2,816	1	7	1	49,724.21	1,250,000
<b>Strongoli (KR)</b>	6,107	0	9	3	424,873.16	1,676,234.4
<b>Taurianova (RC)</b>	15,799	0	30	0	0	0
<b>Vibo Valentia (VV)</b>	33,957	2	155	12	5,292,731.9	5,526,586.2
<b>Villa San Giovanni (RC)</b>	13,119	0	53	3	136,841.17	136,841.17
<b>Zungri (VV)</b>	2,182	0	5	2	216,402.33	310,744.11
<b>Total</b>	1,019,235	21	3,794	252	90,506,584	115,806,753

Source: Gratteri and Nicaso (2007) for the list of criminal hubs and POR (2009) for the data.



A different consideration may be offered for criminal hubs. They have been preferred over the other municipalities beneficiaries of projects not only for the total amount allocated to them, but also for the per capita allocation of the funds and the amount of funding per project. The difference of this result with that relating to nonprofits may be explained considering that these criminal organizations are oligopolistic groups, not very numerous, so only a small and imperfect competition exists when compared with most of the Calabria's nonprofits.

*Table 7 – Amounts, Payments and Commitment for Calabrian municipalities that received POR funds (Averages for municipalities).*

<b>Variable</b>	<b>With Criminal Hubs</b>	<b>Without Criminal Hubs</b>	<b>All Municipalities</b>
<b>Amounts</b>	2,312,680	549,135.5	1,002,618
<b>Payments</b>	1,676,048	427,097.2	748,256
<b>Commitments</b>	2,144,570	523,041.6	940,005.9
<b>Amounts per capita</b>	446.3187	200.687	263.8494
<b>Payments per capita</b>	293.7673	157.5825	192.6015
<b>Commitments per capita</b>	423.4145	192.3203	251.7445

Notes: total number of projects: 539; total number municipalities with approved projects: 210.

Source: our calculations on POR (2009) and Gratteri and Nicaso (2007) data.

So, we have 539 total projects, distributed as follows:

- 426 to Measure 2.1 (=79.04%)
- 40 to Measure 2.2 (=7.42%)
- 73 to Measure 2.3 (=13.54%).

As part of the total projects:

- 252 to Municipalities with Criminal Hubs (=46.75%)
- 287 projects to Municipalities without Criminal Hubs (=53.25%).

Projects assigned to Criminal hubs as part of a single Measure:

- 191 projects of Measure 2.1 (=44.84%)
- 20 projects of Measure 2.2 (=50.00%)
- 41 projects of Measure 2.3 (=56.16%).

As Table 7 above shows, per capita payments to criminal hubs are 86% greater than those of the non criminal hubs, and the per capita commitments for the criminal hubs are 220% greater than those for the non criminal hubs. Municipalities that are criminal hubs received an average of 2,312,680 Euro, while municipalities that aren't criminal hubs received an average amount of 549,000 Euro (i.e. about 24% of the former). For commitments, the ratio is lower 20%. Clearly, they were less able to obtain the commitment of the allocated sums to their projects.

For payments, the ratio is about 25%. The reason of this difference lies in the higher ratio of the payments to the commitments for the projects of the municipalities that aren't criminal hubs. Indeed, the projects of Measure 2.1 and 2.3 – that require an investment of money by the beneficiaries of the sums committed for the projects – they may maximize their gains and their employment of manpower by non completing the projects. As for the first stage, they may present their expenses as the cost of the project, and the expense for the machinery that they already own, as well as for the wages of the activities that require a lot of manpower and a minimum of materials. Then they may abandon the projects, because they may not really be interested in the concrete results. It is also interesting to observe that criminal hubs have a larger share of the project in Measure 2.2 (which does not require a counter-part by the principals of the projects and consists in services, i.e. in employment) and in Measure 2.3, which consists in projects by private enterprises for the valorization of the cultural goods, in which the labor component might also be quite important.

The projects executed in the criminal hubs, as Table 7 clarifies, were 252. Each project, on average, therefore got 456,000 Euro. However, the total amount spent for the 252 projects allocated to the criminal hubs (see Table 7) was 90,500,000 Euro. Therefore, in criminal hubs each project, on average, received 359,000 Euro. Clearly, criminal hubs were able to get more from this POR, not only per municipality, but also per project.

## **8. Impact of Calabria's POR projects for culture on cultural sites and on tourism**

POR funds for cultural investments finalized to develop tourism, as the statistical analysis has shown, have been mostly dispersed to purposes different from the valorization of the important cultural sites of the region, without any consideration of priorities. This POR might have even harmed the promotion of Calabria's cultural sites, because the unfinished projects are of a high percentage. Moreover, the Central government budget may have overlooked Calabria's cultural sites, assuming that they would be taken care of by the special budget of POR (see Table 8).

*Table 8 – Visitors of museums and revenues for Calabria and Italy (2000-2007).*

	<i>Visitors in 2000</i>	<i>Visitors in 2007</i>	<i>% Change 2007/2000</i>	<i>Revenues 2000</i>	<i>Revenues 2007</i>	<i>% Change 2007/2000</i>
<b><i>Calabrian Museums</i></b>	238,937	212,130	-11.0%	322,602	270,696	-15.8%
<b><i>Italian Museums</i></b>	10,873,054	10,727,703	-1.0%	33,383,807	31,384,733	-6.0%
<b><i>Calabrian Archeological Sites</i></b>	139,639	87,696	-37.0%	0	0	0.0%
<b><i>Italian Archeological Sites</i></b>	16,856,112	16,363,057	-3.0%	28,245,726	34,237,406	21.2%
<b><i>Calabrian Museums and Monuments</i></b>	378,576	299,826	-21.0%	322,602	270,696	-16.1%
<b><i>Italian Museums and Monuments</i></b>	30,175,826	34,443,097	14.1%	77,017,081	106,033,174	37.7%

Source: MIBAC and SISTAN data.

*The lack of tourist development of the archaeological sites in comparison to the Italian Calabria*

Despite the importance of the sites of high archaeological value, their value through funding of the POR Calabria did not receive money, as they were and still are, free of admission fees. But the phenomenon is more dramatic since 2000, the start of the POR, when visitors to the sites decreased dramatically from 140,000 in 2000 to 88,000 in 2007. As for the Italian archaeological sites, in 2000 they attracted 17 million visitors with revenues of 28 million Euro. In 2007 the number of visitors fell to 16 million – a decrease of 3%. Despite this slight decline in visitors, revenues increased significantly, from 28 million Euro in 2000 to 34 million in 2007 – with a significant increase of 21%.

*The unsatisfactory situation of the touristic valorization of Calabrian museums in comparison to the Italian ones*

The situation of museums in Calabria is not rosy. In 2000 the number of visitors to Calabrian museums was of 238,000, and it fell to 212,000 in 2007 – a drop of 11%. The revenues declined from 322,000 in 2000 to 271,000 in 2007 – 16% decrease. This is comparable the Italian archaeological sites, which have seen their revenues increase by 21%, whilst the number of visitors to these sites fell by 6%.

*Visitors and revenues to Italian museums and monuments*

In 2000, visitors to Italian museums and monuments were approximately 30 million with a revenue of 77 million Euro. In 2007, Italian mu-

seums and monuments attracted 34,443,097 visitors and produced gross revenues of 106 million Euro. There is an increase in the flows of visitors since 2000 of about 13% for the visitors and of more than 38% for the revenues. For the archeological sites at the national level, 2007 witnessed a decrease in visitor numbers of about 6% when compared with the number of visitors in 2000. The amount of revenues of such sites increased by 21%, from 28.2 million in 2000 to 34.2 million Euro in 2007.

The coexistence of these two divergent trends between Calabria and Italy shows that the POR for the culture of Calabria missed the objective of attracting new visitors to Calabria's important cultural sites.

Furthermore the objective of connecting Calabria's archeological sites into a unique system - which appears among the objectives of the POR - has not been realized.

#### *Tourism in Calabria and in Italy*

On the other hand, tourism in Calabria between year 2000 and 2007 has experienced a great increase of arrivals (nearly 45%) and presences (nearly 39%), with a spectacular increase in those of the number of foreigners. Arrivals of the foreigners in this period increased by 78.3% more than the double the increase in Italians whose numbers increased by 40% (see Table 9).

*Table 9 – Tourist's flows in Calabria and in Italy (2000-2007).*

<b>Presences Italians/Foreigners</b>	<b>2000</b>	<b>2006</b>	<b>% Change 2006/2000</b>	<b>2007</b>	<b>% Change 2007/2000</b>
ITALIA	338,885,143	366,764,778	8%	376,641,751	11%
CALABRIA	6,282,074	8,155,053	30%	8,731,335	39%
<b>Presences Foreigners</b>	<b>2000</b>	<b>2006</b>	<b>% Change 2006/2000</b>	<b>2007</b>	<b>% Change 2007/2000</b>
ITALIA	140,356,985	156,861,341	12%	163,465,680	16%
CALABRIA	882,837	1,479,247	68%	1,542,133	74%
<b>Arrivals Italians/Foreigners</b>	<b>2000</b>	<b>2006</b>	<b>% Change 2006/2000</b>	<b>2007</b>	<b>% Change 2007/2000</b>
ITALIA	80,031,637	93,044,399	16%	96,150,083	20%
CALABRIA	1,083,078	1,476,026	36%	1,568,519	45%
<b>Arrivals Italians</b>	<b>2000</b>	<b>2006</b>	<b>% Change 2006/2000</b>	<b>2007</b>	<b>% Change 2007/2000</b>
ITALIA	44,924,162	51,850,572	15%	53,276,961	19%
CALABRIA	946,977	1,244,549	31%	1,325,825	40%
<b>Arrivals Foreigners</b>	<b>2000</b>	<b>2006</b>	<b>% Change 2006/2000</b>	<b>2007</b>	<b>% Change 2007/2000</b>
ITALIA	35,107,475	41,193,827	17%	42,873,122	22%
CALABRIA	136,101	231,477	70%	242,694	78%

Source: ISTAT.

The Italian trend too has been positive but has been much less pronounced than that of Calabria both for the arrivals and the presence, both of the foreigners and of the Italians. Arrivals, in Italy as a whole, had an increase of 20.4%, less than half the rise of Calabria's. Presence of tourists increased by 11.1% ,i.e. less than one third of the increase witnessed in Calabria. The arrival of foreigners, in Italy as a whole, in the considered period increased by 20%, about a quarter of Calabria's percentage, whilst the arrivals of Italians increase by 18.6%, slightly less than half Calabria's rise. Considering that in the same period the number of visitors to the Calabria's cultural sites diminished substantially one can argue that the great increase in the flow of tourists – and particularly of foreign tourists – to Calabria was due to reasons not associated with the attractiveness of its cultural sites. Additionally, Calabria's POR 2000-2006 which had been conceived for the enhancement of cultural sites as an important factor for the development of tourism, has been irrelevant or negative from this point of view.

## 9. Coherent projects

Only a part of the available funds of Calabria's POR 2000-2006 was spent on programs. The remaining part was destined to other regional expenditures which could be considered coherent with the POR, thus increasing the funds available to the Region for its ordinary administration.

This result coincides with those of the other Italian Regions which benefitted from Objective 1 of the European Regional Programs 2000-2006.

*Table 10 – Italian European Regional Program 2000-2006 Coherent Projects.*

<i>Axis</i>	<i>Absolute Values (mln €)</i>	<i>% Financial Endowment</i>	<i>% Identified Projects</i>
<i>Natural Resources</i>	4,173	54.5	38.9
<i>Cultural Resources</i>	794	31.5	26.6
<i>Human Resources</i>	1,542	18.6	15.8
<i>Local Development Systems</i>	4,092	27.7	22.4
<i>Towns</i>	1,433	70.2	44.6
<i>Infrastructural Investments</i>	8,377	85.7	64.0
<i>Technical Assistance</i>	23	2.6	2.5
<i>Total</i>	20,434	44.5	34.7

Source: Svimez (2010).

Indeed only 55.5% of the 45.9 billion Euro allocated for this program was spent on projects (see Table 10). The remaining 44.5% was allocated to coherent projects. They represent a share of 34.7% of the value of the approved projects. The difference between the percentage of the value of the approved projects and the higher percentage of coherent projects – relative to the total executed projects – is explained by the fact that a share of the project approved remained unfinished, so that the value of the projects executed was smaller<sup>15</sup>.

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<sup>15</sup> The analysis of the composition of the funds allocate to coherent project instead than to the European Regional Program for Sothern Italy shows that the highest percentage regards infrastructures and natural resources (mostly agriculture). The lowest percentage regards human resources and local systems. Clearly in these last areas the pressure groups minimized the amount of funds unspent out of the European Development Programs.

## 10. Concluding remarks and policy implications

Most research on the effectiveness of the European Regional Programs for the convergence of less developed regions analyze the issue by connecting the execution of these programs to the economic performance of these regions. These researches, generally, conclude that the programs did not have satisfactory results, from the perspective of growth, except in particular cases. These studies, however interesting, are mostly macroeconomic studies. They do not focus on the institutions and procedures, and related performance of these plans in the context of the resulting projects. Here we consider the European-Italian process which has been originated and implemented under the Regional Operational Program of Calabria 2000-2006, in the area of valorization of cultural goods for the development of tourism. We have demonstrated that its complex targeted structure, with its apparent rigorousness, allowed for discretionary behavior of politicians and of the bureaucracy in charge of its execution. The result was a proliferation of projects that did not pursue any priority and that in a large proportion remained incomplete.

Our empirical analysis for Calabria's case study has shown that mostly reasons connected with pressure groups, rather than cultural and touristic objectives explain the allocation of the funds. There is no significant statistic relationship between the important cultural sites and the allocation of funds. Furthermore, the regression with the approved project has shown that the presence of at least one museum is not significant, as for the allocation of per capita funds to the municipalities. Also the presence of schools – whether of primary or secondary education – does not seem relevant, while the presence of high schools is relevant with a negative impact. It seems that because in these municipalities there are already some important public cultural institutions, they do not need attention as for the allocation of POR's funds for culture. A similar consideration may explain the *L&P*'s (libraries and publishers) negative influence on the allocation of these funds. The presence of an academic institution (*University*) increase the funds assigned. This result might provide evidence that where there is a University, the capability of presenting projects suited for approval tends to increase, likely because of the greater competence and intellectual prestige of their authors. On the other hand, one can notice that in LAD estimate *University* is not significant and that in IRLS estimate the explanatory variable *University* doesn't have a statistical relevance. Touristic attractors tend to have a negative impact on dependent variable, too. Moreover, one should notice that they are not significant in LAD estimate. The variables *A&C&A* (hotels, camping, farm-holidays), *TV&R* (television and radio stations), and *A&P* (aero-terminals and ports) which are relevant for tourism, are not statistically significant yet. On balance, one can argue that cultural goods as attractors of tourism were neglected in the allocation of Calabria's POR

funds for culture. However, this had been possible because the program allowed discretionary powers to be granted to the regional bureaucracies and politicians. But one cannot put the blame primarily on them, since Calabria's POR was constructed in that way following the European and Italian guidelines and had the approval of the Italian Government and of the European Commission.

Considering the flows of visitors and flows of money paid by them to the cultural sites in 2000 when the program was not yet operational and in 2007 after its completion and it emerged that these flows, as for the museum and other sites considered in the official statistics decreased by 11% in terms of visitors and by 16% in terms of revenues. The opposite happened in Italy, with an increase of about 14% in the number of visitors and nearly 30% in the amount of revenues. On the other hand, tourism in Calabria between 2000 and 2007 experienced a great increase of both arrivals (nearly 45%) and presences (nearly 39%), with a relevant increase of 78.3% in the foreign tourists. Calabria's tourism thus grew at a rate much greater than the average Italian rate, in spite of the failure of the POR for culture to operate as a stimulus for its growth. And one may, therefore, argue that the taxpayer's resources were wasted.

## **11. Suggestions for future researches**

Here we considered the institutions and effects of the European Policy for the development of the less developed regions via the Regional funds, focusing on Calabria's cultural sector and its impact on tourism, which is potentially a very important axis for the development of Calabria and, more generally, for Southern Italy. What emerged was that the excess of targeted planning allowed a discretionary behavior of the bureaucracy and of the politicians who were inefficient, demonstrated a lack of effectiveness, and fostered rent seeking.

More generally, there is a strong need for further detailed scientific research on the allocation and impact of European Structural Funds, also in relation to the new convergence and cohesion Program 2007-2013. It is paradoxical that on the one hand EU maintains that tax exemptions for the less developed regions economy of the community distort market competition, while on the other hand, the EU taxpayers' money finances projects supposedly promoting convergence and cohesion in these regions provided that they derive from a regional plan following EU planning guidelines.



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