Article

A Spatial Analysis of the Achievements, in Terms of Regional Development, Accomplished by the Initial EU-Member Cohesion Fund Beneficiaries Using a Synthetic Indicator

José Antonio Rodríguez Martín [1], José María Martín Martín [2,*], José Antonio Salinas Fernández [3], Karla Aída Zermeño Mejía [4] and Karen G. Añaños Bedriñana [5]

1   Department of Applied Economics, University of Granada, 18011 Granada, Spain; josearm@ugr.es
2   Faculty of Business and Communication, Business Area, International University of La Rioja, 26006 Logroño, Spain
3   Department of Spanish and International Economics, University of Granada, 18011 Granada, Spain; jasalinas@ugr.es
4   Department of Fundamentals of Knowledge, University of Guadalajara, Centro Universitario del Norte, Carretera Federal 23, km. 191, Santiago Tlaltelolco, 46200 Guadalajara, Mexico; karla.zermeno@cunorte.udg.mx
5   Department of Constitutional Law, University of Granada's Institution of Peace and Conflicts Investigation, University of Granada, 18071 Granada, Spain; karengananos@ugr.es
*   Correspondence: josemaria.martin@unir.net

Abstract: This study proposes construction of a synthetic indicator to measure progress toward the objective of economic and social cohesion among the regions of Spain, Greece, Ireland and Portugal within the framework of European Community Regional Policy and the spatial disparities among these countries. Our aim is to integrate, in a single indicator, a large number of variables defined by the European Commission to monitor improvements in regional development, classified according to the objectives of the Europe 2020 Strategy to promote smart, sustainable and inclusive growth. To achieve this goal, we use the Pena distance method for the year 2013.

1. Introduction

Since its creation with the Treaty of Rome, the European model of economic integration has become a model to be fulfilled as new countries are incorporated [1]. Integration is not, however, a process designed from the outset to materialize immediately or according to a single plan, rather, it must be based on concrete achievements in stages that begin by creating de facto solidarity among European Union (EU) countries [2].

Although the first antecedents of Community Regional Policy on integration are articulated in the preamble of the Treaty of Rome, which recognized the need to reduce inequalities among European countries and regions [3] and began formally in 1975 after the accession of Ireland, this policy did not reach its present dimension until decade's later [4]. The policy has thus developed from its original goal of reducing regional economic disparities, measured essentially in terms of gross domestic product (GDP) per capita of the Community territories, into a broader concept of economic and social cohesion [5].

Since the 1990s, a series of rural development aid programs (Leader Approach) has been implemented in European rural areas in order to solve the demographic, social, and economic problems that rural areas experience [6]. This road has not been easy, and EU member states must again join forces to clarify the unresolved questions about the future of the EU, especially with regards to promotion of economic and social cohesion within its territory [7]. To this end, the European Regional Policy was proposed as a strategic investment aimed at all EU regions and cities to boost economic growth and improve EU inhabitants' quality of life [8]. More specifically, the main objective of this policy is both to promote the progress of less-developed areas [9] and to provide complementary support to social groups less favoured by the integration process [10].

More recently, the Regional Policy has contributed to developing research and development and innovation (R & D & I), an EU priority since the Lisbon Strategy for growth was launched in 2000 [11]. Although conceived within the framework of this community project as the "largest solidarity operation between countries in history", the measures proposed in the Strategy are conditioned by the limited resources of the Community budget [12].

From a historical point of view, the minimal resources of Community finances relative to the GDPs of all member states have not encouraged further deepening of European integration, as evidenced as early as the MacDougall Report for a Community of nine Member States [13]. Subsequently, the Sapir Report [14] states that, due to lack of resources, the Community's budget cannot be the determining factor for economic growth and employment creation in the EU in the future. Further, the EU is committed to extensive restructuring of its expenditure items, prioritizing issues such as solidarity among territories.

We develop our study within this conceptual framework. Its goal is to construct a synthetic indicator that complements the European Commission's classification of the regions to receive more or less funding, which is based solely on the criterion of GDP per capita. Related research in this context—covering different areas, variables and/or methodologies—includes recent studies [7,10,15–19]. The territorial scope of analysis in our research is innovative and pioneering in that it focuses on classifying the regions of Spain, Greece, Ireland and Portugal, the original Cohesion countries. The goal pursued by creating this synthetic indicator based on a wide group of variables is being able to offer a measurement of the degree of development achieved by European regions. Said goal is coherent with the vision of the European regional policy, which considers development as something more than just economic growth. The synthetic indicator here proposed must be built by taking into consideration variables relative to the pillars of Europe's development strategy. The distance method defined by Pena (DP2) system offers a methodology that is able to aggregate the information provided by a group of variables. This methodology overcomes a number of problems that are a common characteristic of other alternative synthetic indicators. Below, the defining characteristics of this indicator will be explained in detail. However, in order to make it clearer for the reader as of now, the DP2 solves problems such as the duplicity of information provided by the variables, the aggregation of information expressed in different units and the weighting of each variable objectively. The result is a single value that gathers a great deal of information. Moreover, said value is calculated objectively and is useful to measure more comprehensively the achievements in terms of regional development. The analysis also identifies the variables that have the greatest impact on the economic and social development of the regions within the framework of the Europe 2020 Strategy for Growth.

The Cohesion Fund is an EU redistributive instrument whose main goal is to promote territorial cohesion by financing projects in the Transport and Environmental territorial development components [20]. In the period 2014–2020, the Regional Policy will be conditioned by the Europe 2020 Strategy of intelligent, sustainable and integrating growth [11]. The new proposals aim to reinforce the strategic dimension of regional policy and guarantee that the EU's investment will focus on long term objectives in matters of growth and labour, setting a series of ambitious objectives in five priority areas: employment, innovation, education, social integration and climate/energy [11]. Thus, the territorial differences of the EU might be analyzed not only by taking into consideration the per capita income

level of each region, but also by using other relevant variables for the regional development [10]. To do so, we extend the approach normally used to measure regional disparities, which includes GDP per capita only [16]. For Sen [21], resources (GDP or income) only have value to the extent that they enhance human life.

2. Evolution of EU Regional Policy

Although the principle of solidarity of interests among countries expressed by R. Schuman laid the foundations of budgetary policy at the start of the European Communities, first-period implementation of this policy consisted almost exclusively of agricultural expenditure, and Community institutions had hardly any financial autonomy [22]. According to Fernández [23], Regional Policy reached maturity after the entrance of Greece (1981), and subsequently Spain and Portugal (1986), including cohesion as a key objective in the integration processing response to increasing interregional inequalities. The Single European Act (1987) provided the definitive impetus for Community solidarity strategy, making it possible for regions to adapt to the Community project, although with greater difficulty [24].

In 1988, the European Council achieved a commitment to double the financial allocation of the Structural Funds in the period 1988–1993, to reform its operations and to implement the four basic principles of Regional Policy (concentration, programming, partnership and additionality) [24]. Formally initiated in 1989, EU cohesion policy has since passed through a series of metamorphoses, while becoming the most financed EU policy and, since then, has shifted into a financial tool to promote investment for growth and jobs [25], thus becoming one of the priority policies in the EU. In this sense, population growth should not be allowed to tax the available resources but should enable more investment to enable a level of higher real capital growth per person. What this means is that if public and private investment fail to keep pace with the population growth, each worker will become less productive, stunted at a time when creativity and innovation make essential ingredients for regional integration to progress [26].

At the same time, another important contribution is research considering a more complex approach to regional disparities based on more indicators offering complementary information [27], as this study has set in line with previous ones [10]. Natural resources, income, infrastructure, health, poverty, infant mortality, child nutrition, inequality, among others, and social cohesion combined explain the socio-economic development of a region and society [28].

Medeiros [25] proposes a new set of priorities for the EU cohesion policy revolving around territorial cohesion. They include: green economy, balanced territory, social cohesion and good governance. Thus, they revolve around closer integration of the EU territory and stronger foundations for sustainable development [29]. It is thus necessary to identify the areas in which budgetary efforts should be concentrated to increase the impact of the European Cohesion Policy on the goal of economic and social convergence of the regions [30].

The financial resources of the Structural Funds were thus strengthened and the Cohesion Fund established in 1993 to support economic convergence under the Delors II package and implementation of the Maastricht Treaty. This new fund was intended to co-finance infrastructure and environmental projects in countries with a GDP per capita of less than 90% of the EU average: Spain, Greece, Ireland and Portugal, as detailed by Holgado [31]. The role of the infrastructure is key, transportation is generally perceived as a catalyst for economic development [32].

Subsequently, the "major enlargement" of the EU with countries in Central and Eastern Europe in 2002 was a turning point in the growing role of economic and social cohesion during the 2000–2006 programming period [33]. Finally, the Lisbon Treaty, signed by the heads of state on 13 December 2007 (effective 1 December 2009), reaffirmed the priority of reinforcing economic, social and, in a new way, territorial cohesion [34].

Of the three objectives, Objective 1 covered the less-developed regions, whose GDP per capita was less than 75% of the Community average and which absorbed most of the financial resources (two thirds of the Structural Funds). Objective 2 covered the regions that exceeded the 75% threshold. Objective

3 aimed to support the adaptation and modernization of policies and of the education, training and employment systems. The programming period 2007–2013 brought significant changes in Community Regional Policy through the Goteborg agreements [34] and the renewed Lisbon Strategy. One of the main developments was replacement of Objective 1 with the Convergence Objective, which finances the poorest regions, those with a GDP per capita of less than 75% of the EU average. The Convergence Objective also provisionally included regions affected by the statistical effect (phasing-out), that is, regions below the threshold for the EU-15 rather than the EU as extended by successive enlargements. The remaining regions were included in the new Regional Competitiveness and Employment Objective, which replaced former Objectives 2 and 3 for 2007–2013, and whose budget allocation aimed to finance promotion of innovation, entrepreneurship, protection of the environment, accessibility, adaptability and development of the labour market [35].

Finally, the Europe 2020 Strategy defines the Cohesion Policy objectives for the current period 2014–2020 [36]. It is a growth strategy aimed at achieving an intelligent, sustainable and inclusive economy. These three priorities mutually reinforce each other to help the EU and its member states generate high levels of employment, productivity and social cohesion [37]. The growth and job creation target for 2014–2020 concentrates European funds on the Convergence Objective, which covers the least-developed regions, defined as those whose GDP per capita is below 75% of the EU average. In parallel, a new category was re-established for regions no longer eligible for the Convergence Objective but whose GDP per capita did not exceed 90% of the average (termed "Regions in Transition") in order to prevent them from being harmed by the sudden reduction in European funds.

At present, the 28 countries of the European Union are composed of a total of 276 regions, according to the Commission's statistical classification derived from the Nomenclature of Territorial Units (NUTS) [2]. According to the GDP per capita indicator, the region with the highest value in purchasing power parity in 2014 was the UK's Inner London, at 148,000 euros per inhabitant/year. The region with the lowest value was Severozapaden (Bulgaria), with 8200 euros per inhabitant/year.

This great disparity between two Community regions clearly justifies the need to supplement the process of economic integration and enlargement of the Union with measures to promote economic cohesion among territories. To address this need, following this introduction and explanation of the statistical method applied, our study provides a synthetic indicator of a set of variables defined by the European Commission [8,38] to measure progress in regions' economic and social cohesion. Before the paper's conclusion, we provide a measure of the most significant variables that determine this progress in order to enable prioritization of financial resources in the corresponding areas to achieve better results in the most disadvantaged regions. To achieve this goal, we use the Pena distance method for the year 2013.

3. Materials and Methods

To achieve our research goals, the distance method defined by Pena (DP2) [39] and expanded by Zarzosa [40] and Somarriba [41] is used to develop the synthetic indicator. This technique has been widely used in similar work on development, well-being and quality of life at regional and national level [18,25,42–55].

The indicator developed by this method enables comparison between the regions studied based on the information provided by a set of variables [56]. It produces a territorial ranking according to the objective to be measured—in our case, level of economic and social development achieved by European regions for the year studied, incorporating a large number of variables. This indicator has the advantage of solving a large number of problems [43]—such as aggregation of variables expressed in different measurements, arbitrary weighting and duplication of information [41,54]. To obtain synthetic indicators, Somarriba and Pena [43] compare the DP2 indicator to other methods, such as principal component analysis and data envelopment analysis (DEA).

So, DEA has some limitations. It involves subjectivity in choice of the partial indicators [43], does not fulfil the principle of uniqueness and monotony, and does not maintain the variance with

changes of origin and/or scale in the units of measure [57,58]. The principal component analysis also fails to fulfil some mathematical properties, not only of uniqueness and monotony but also and especially of neutrality, properties verified in the DP2 method [40,49]. For an exhaustive study of the DP2 indicator and its properties, see [10,16,18,39–42,46,48,50,54–56,59,60].

Pena [39,56] defines this indicator, for a region r, as:

$$DP_2 = \sum_{i=1}^{n}\left\{\left\{\frac{d_i}{\sigma_i}\right\}\left\{1 - R^2_{i,\ i-1,...1}\right\}\right\},$$

with $R^2_1 = 0$, where $d_i = d_i\,(r*) = |x_{ri} - x*_i|$ with the baseline, which coincides with the minimum vector, and where: n is the number of variables, x_{ri} is the value of the variable i in region r, and σ_i is the standard deviation of variable i.

$$R^2_{i,i-1,i-2,...,1}$$

$R^2_{i,i-1,\,...\,,1}$ is the coefficient of determination in the regression of X_i over X_{i-1}, X_{i-2}, $\ldots$, X_1, which is already included. This coefficient measures the part of the variance of each variable explained by the linear regression estimated using the variables defined above [49]. The factor $(1 - R^2_{i,i-1,\,...\,,1})$ is a "correction factor" [39] that avoids redundancy by eliminating from the partial indicators the information already contained in the preceding indicators [61]. The synthetic indicator thus includes only the new information for each variable [59]. The calculation of the DP2 indicator is iterative. In this process, the entry order of the variables is determined by the amount of information they provide to the measurement in question. The proposal of Pena consisted in ranking the variables hierarchically by their absolute coefficient of correlation with the synthetic indicator in descending order. This process should begin with an initial solution: the given that each variable is correlated amongst themselves. Thus, the correction factors would assume a value of 1 in each case, given that $R^2_{i,\ i-1,\ i-2,\ ...,\ 1}$ equals zero. The result of this process is the Frechet Index, which represents the maximum value that the DP2 indicator can take for every country. From this step onwards, the variables are ranked according to their correlation with the Frechet Indicator, from most to least correlated. Once the synthetic indicator has been calculated, the variables are ranked once again, according to their degree of correlation with it. This process continues until the indicator reaches convergence.

The DP2 indicator fulfils the properties desirable in a synthetic indicator, as demonstrated by Zarzosa [40,47], Pena [56], Cuenca [45] and Zarzosa and Somarriba [18]. The ordering of the variables in the DP2 method corresponds to their relative importance, measured in terms of linear correlation with the final synthetic indicator. The baseline in this study coincides with the minimum vector of the year of study. The synthetic distance indicator designed to compare regions must be invariant relative to the reference base taken for each region, such that it is the same for all regions [40]. We thus take as reference base the value of a fictitious region that would be generated by the lowest values observed for the variables used [16] and associated with study of the objectives of the Europe 2020: A strategy for smart, sustainable and inclusive growth [11] (Table 1).

The DP2 method is defined as a synthetic indicator that aggregates the information contained in a set of variables. Following the objectives of this study, the variables selected for the research were taken from the EU's Economic and Social Cohesion Reports [8], classified according to the objectives of the Europe 2020 Strategy [11]. As in the case of the "Lisbon Agenda", the excellent options contained in the Europe 2020 strategy have to a very great extent conditioned the design of regional and cohesion policy for 2014–2020 [38].

To measure progress at sub-national levels, we dropped from the European Statistical Office (Eurostat) portfolio of cohesion those indicators lacking unbundled and updated information at NUTS level 2. Our study includes a total of 15 indicators, distributed among six dimensions, following the Europe 2020 Strategy: Research and Development; Competitiveness and Business Environment; Education; Transport; Environment; and Social Inclusion, Poverty and Health (Table 1). The variables that contribute negatively to the objective of economic and social development when integrated into

the synthetic indicator were multiplied by (−1). A higher value of DP2 thus shows greater distance from the least desirable theoretical framework, represented by a minimum value in the set of partial indicators considered as associated with the Europe 2020 Strategy. This minimum would be attributed a value of zero in the synthetic economic and social development indicator [18].

Table 1. Partial Indicators of Economic and Social Cohesion according to the objectives of European Strategy 2020.

Objectives Europe 2020 Strategy	Dimensions	Indicators	Data Year
Smart Growth	Research and Development	Research & Experimental Development expenditure as % of GDP	2013
		Patent applications to the European Patent Office per million of active population (average 3 years)	2010–2012
	Competitiveness and Business Environment	GDP in Purchasing Power Standards per inhabitant	2013
		Unemployment rates (15 years or over) (- sign)	2013
		Difference between unemployment rates of females and males (- sign)	2013
		Employment rates of age group 20–64	2013
		Employment rate difference between females and males of age group 20–64 (- sign)	2013
		Unemployment rates of young people (15–24) (- sign)	2013
	Education	Tertiary educational attainment of age group 25–64 (%)	2013
		Early leavers from education and training (from 18–24 years) (- sign)	2013
Sustainable Growth	Transport	Victims in road accidents per million inhabitants (- sign)	2013
		Freight transported by road by region of loading (Tm/Km^2) (- sign)	2013
	Environment	Municipal waste generated per inhabitant (Kg/year) (- sign)	2012
Inclusive Growth	Social Inclusion, Poverty and Health	People at risk of poverty or social exclusion (- sign)	2013
		Life expectancy at birth	2013

The reference year for the data was either 2013 or, in its absence, the nearest available year. We chose the year 2013 for analysis because it marked the end of a Common Regional programming period. The programming period 2007–2013 has seen substantial changes in concentration, programming, co-participation and additionality (CRP) due to the Lisbon and Goteborg agreements and the Renewed Lisbon Strategy (RLS) [25]. Finally, to establish an order or hierarchy based on the amount of information that each indicator contributes to the DP2 in our method [46], we construct the Ivanovic discrimination coefficient (DC) [62], as defined by Zarzosa [40] and Somarriba [49]:

$$DC_i = \frac{2}{m(m-1)} \sum_{j,l>j}^{k_i} m_{ji} m_{li} \left| \frac{x_{ji} - x_{li}}{\overline{X}_i} \right|,$$

where: m is the number of regions.

His measure, analyzed by Zarzosa [40], between 0 and 2, these values correspond to the two extreme theoretical cases as regards discriminant power. If a variable takes the same value for all countries, DC equals zero, indicating that this variable holds zero discriminant power. By contrast, if a variable only has a value other than zero for one country (and in the remainder, $m - 1$ is equal to zero), DC is equal to two and the variable has full discriminant power [59].

It is best to select the variable that provides the most discrimination between regions in terms of the partial indicators [18,61]. As mentioned above, if a variable discriminates totally, with a value of two in the coefficient, it provides very important information and will be useful to explain the differences in the level of objectives in the Europe 2020 Strategy attained in the territories studied (Table 1).

4. Results

The synthetic indicator DP2, constructed from the partial indicators included in Table 1, enables classification of the regions of Spain, Greece, Ireland and Portugal according to their degree of economic and social development. The result is shown in Tables 2 and 3, which ranks the 41 regions from best to worst, as mentioned above. In this context, we must indicate that, for the period 2007–2013, of a total of 347,410 million euros in current prices, the European Cohesion policy (Structural and Cohesion Funds) granted Spain aid of 35,217 million euros in current prices; Greece 20,240 million; Portugal 21,511 million and Ireland 901 million [63].

On the other hand, in 2013, Spain's GDP per capita registered 95% of the EU average, with a negative evolution from the beginning of the programming period, 2007. Greece and Portugal had the same value, 75% of the EU average in 2013, also with falling values for the GDP per capita from the start of the programming period. Ireland was situated above the average, with 126% in 2013 [8]. According to our results, the last column of Tables 2 and 3 includes the region's classification, taking into account its eligibility in the current Regional Policy programming period (2014–2020) according to the criterion of GDP per capita.

Three groups are obtained (Table 1):

1. Group 1 = Regions eligible for the Convergence Objective.
2. Group 2 = Regions in transition.
3. Group 3 = More-developed regions.

The resulting classification (Tables 2 and 3) shows, first, a distance of almost 15 points between the best-positioned (Basque Country) and worst-positioned (Autonomous City of Ceuta) regions in the year 2013. We used the classification of regions in the 2014–2020 programming period: 1 = Regions covered by the Convergence Objective; 2 = Regions in transition (Phasing Out); 3 = More-developed regions. We can thus affirm a relatively high disparity between the regions analysed according to the values of the variables included in the synthetic indicator (Table 1).

Table 2. Territorial classification. Best and worst region of each of the four countries (2013), according to indicator of the distance method defined by Pena (DP2) and regional eligibility in the 2014–2020 programming period.

Position	Country	Region	Synthetic Indicator DP2	Regional Eligibility
1	Spain	Basque Country	20.48	3
4	Ireland	Southern and Eastern	18.33	3
12	Portugal	Metropolitan Area of Lisbon	15.39	3
13	Ireland	Border, Midland and Western	15.35	3
21	Greece	Attica	12.04	3
25	Portugal	Algarve	11.35	2
40	Greece	Western Macedonia	7.83	2
41	Spain	Autonomous City of Ceuta	5.54	3

Source: Author based on Eurostat [64] and European Commission data [38].

Table 3. Territorial classification (2013), according to indicator DP2 and regional eligibility in the 2014–2020 programming period.

Position	Country	Region	Synthetic Indicator DP2	Regional Eligibility
1	Spain	Basque Country	20.48	3
2	Spain	Chartered Community of Navarre	20.11	3
3	Spain	Community of Madrid	19.75	3
4	Ireland	Southern and Eastern	18.33	3
5	Spain	Catalonia	17.95	3
6	Spain	Aragon	17.74	3
7	Spain	La Rioja	16.72	3
8	Spain	Galicia	16.05	3

Table 3. *Cont.*

Position	Country	Region	Synthetic Indicator DP2	Regional Eligibility
9	Spain	Castile and Leon	15.89	3
10	Spain	Principality of Asturias	15.66	3
11	Spain	Cantabria	15.47	3
12	Portugal	Metropolitan Area of Lisbon	15.39	3
13	Ireland	Border, Midland and Western	15.35	3
14	Portugal	Central	14.87	1
15	Portugal	Northern	14.70	1
16	Spain	Valencian Community	14.08	3
17	Portugal	Autonomous Region of Madeira	13.20	3
18	Spain	Region of Murcia	12.71	2
19	Portugal	Autonomous Region of the Azores	12.15	1
20	Spain	Balearic Islands	12.14	3
21	Greece	Attica	12.04	3
22	Portugal	Alentejo	11.75	1
23	Spain	Castile-La Mancha	11.53	2
24	Spain	Extremadura	11.50	1
25	Portugal	Algarve	11.35	2
26	Spain	Canary Islands	11.04	2
27	Greece	Crete	11.04	2
28	Spain	Autonomous City of Melilla	10.83	2
29	Spain	Andalusia	10.43	2
30	Greece	North Aegean	10.40	2
31	Greece	Central Macedonia	10.39	1
32	Greece	South Aegean	10.25	3
33	Greece	Epirus	9.65	1
34	Greece	Eastern Macedonia and Thrace	9.55	1
35	Greece	Thessaly	9.49	1
36	Greece	Peloponnese	8.62	2
37	Greece	Western Greece	8.51	1
38	Greece	Central Greece	8.36	2
39	Greece	Ionian Islands	8.05	2
40	Greece	Western Macedonia	7.83	2
41	Spain	Autonomous City of Ceuta	5.54	3

Source: Author based on Eurostat [64] and European Commission [38].

The average of the synthetic indicator DP2 for the five worst-positioned regions is 7.66 points, a distance of almost 12 points from the average of the top five regions (19.32 points). This result reveals a maximum interregional distance of almost 15 points between the first and last region (Tables 2 and 3), or relatively high regional disparities in the year analysed. The regions ranked highest are those located mainly in the northeast of Spain (Basque Country, Chartered Community of Navarre, Catalonia and Aragon), as well as its capital (Community of Madrid). Also among the top five are the southern and eastern regions of Ireland, home to Dublin and its metropolitan area (Tables 2 and 3). In Portugal, the first-ranked region is the metropolitan area of Lisbon, in twelfth place (Table 2). In the case of Greece, however, we must descend to twenty-first place to find the country's first region, again the national capital (Attica), in line with the results of Lahusen [65]. The lowest portion of the classification includes most of the regions of Greece (11 out of 13) and, in last position, the Autonomous City of Ceuta (Spain).

In intermediate positions, we find several regions of the south-central Iberian Peninsula, Alentejo and Algarve in Portugal, and Murcia, Castile-La Mancha, Extremadura, Melilla and Andalusia in Spain. The Balearic Islands and the so-called ultra-peripheral regions (the Azores and Madeira in Portugal and the Canary Islands in Spain) all show values close to the average of the synthetic indicator (12.85) (Tables 2 and 3).

The information on eligibility of regions in the current period 2014–2020 (last column of Tables 2 and 3) shows, paradoxically, that two of the ten worst-situated regions no longer belong to the

Convergence Objective (Autonomous City of Ceuta and South Aegean). Classified as "more developed", these territories can only finance 50% of project costs and receive fewer financial resources in overall terms than the regions covered by the Convergence Objective. Moreover, the regions ranked last in the classification are four regions of Greece (Western Macedonia, Ionian Islands, Central Greece and the Peloponnese), identified as "regions in transition" during the period 2014–2020 using the criterion based on GDP per capita. These regions will thus receive a smaller budgetary allocation and will only be able to finance a maximum of 60% of project costs, even though they show greater backwardness if we consider all variables studied (Tables 1–3). Two regions of Portugal (central and northern) in a relatively high position (fourteenth and fifteenth, respectively, of a total of 41) will receive funds under the 2014–2020 Convergence Objective, although they ranked higher than six regions included in the "more-developed" group.

In conclusion, the results of the synthetic indicator DP2 reveal deterioration in the economic and social development of some regions during the previous programming period 2007–2013, even though these regions were either classified as "in transition" or completely excluded from the Convergence Objective. At the same time, while ranked among the last ten positions, Greece's South Aegean was excluded from the Convergence Objective and continues to be included among the more-developed areas in the current period 2014–2020. The case of the Autonomous City of Ceuta is also worth noting. It is ranked last and was chosen as a phasing out region between 2007 and 2013 but included "as an exception" in the group of more-developed regions during the 2014–2020 budget framework. Finally, other cases with strikingly low rankings (Tables 2 and 3) are the Greek regions of South Macedonia (fortieth) and Central Greece (thirty-eighth), both chosen as regions in transition for 2014–2020 and even included among the more-developed regions in 2007–2013.

4.1. Discriminatory Power of the Variables

In this section, we use the results of the DC to identify which variables provide the most information in the final result of the synthetic indicator. Table 4 presents the values of the coefficient, which represents the discriminating power of each partial indicator included. If we analyse the results obtained in 2013 for the variables with the greatest inequality in interregional values, the most discriminating variable is "Difference between unemployment rates of females and males", included in the Competitiveness and Business Environment dimension. The second-most-discriminating variable is "Freight transported by road by region of loading (Tm/Km^2)", which is related to the volume of commodities generated by the regions.

Another of the most informative variables is "Employment rate difference between females and males of the age group 20–64". These results show relatively significant differences between regions in an area important to the economic and social development of a territory, gender equality in the labour market [66]. When compared to other studies, such as Rodríguez [16] and Holgado [25], this indicator shows increasing power of discrimination among the variables generally associated with employment and unemployment.

In third and fifth place are two variables associated with research and experimental development. The first reflects research results ("Patent applications to the European Patent Office (EPO) per million of active population"), and the second, resources invested in research development and enhancement ("Research & Experimental Development expenditure as percentage of GDP") (Table 3). It is also worth stressing that two variables related to education and unemployment also have relevant power of discrimination: "Early leavers from education and training (18–24 years)" and "Unemployment rates (15 years or over). These results reinforce the need to invest in education to reduce interregional differences and to drive smart growth, goals also included in the European 2020 Strategy. Finally, beyond the variables mentioned above, the results confirm that the other partial indicators have relatively low power of discrimination, with no significant differences in their values among the 41 community regions. As the divergences are not zero (value 0 in the coefficient), we retain these variables when calculating the synthetic indicator (Table 4).

Table 4. Order of partial indicators of cohesion by discrimination coefficient (DC).

Position	Partial Indicators	Ivanovic Discrimination Coefficient (DC)
1	Difference between unemployment rates of females and males	0.98
2	Freight transported by road by region of loading (Tm/Km^2)	0.50
3	Patent applications to the European Patent Office per million of active population (average 3 years)	0.43
4	Employment rate difference between females and males of age group 20–64	0.34
5	Research & Experimental Development expenditure as % of GDP	0.32
6	Victims in road accidents per million inhabitants	0.24
7	Early leavers from education and training (18–24 years)	0.24
8	Tertiary educational attainment of age group 25–64 (%)	0.21
9	Unemployment rates (15 years or over)	0.14
10	People at risk of poverty or social exclusion	0.11
11	GDP in Purchasing Power Standards per inhabitant	0.10
12	Unemployment rates of young people (15–24 years)	0.08
13	Municipal waste generated per inhabitant (Kg/year)	0.07
14	Employment rates of age group 20–64	0.05
15	Life expectancy at birth	0.02

Source: Author based on Eurostat [64] and European Commission [38].

4.2. Order of the Variables

Table 5 presents the top four partial indicators in the ranking in order of entry of their variables in the DP2 and their importance in the final indicator, taking into account the absolute values of the coefficients of linear correlation between the values of the indicator for each region and the synthetic indicator.

Note that this procedure only eliminates the redundant information [10,43,46]. Variable 1: "Difference between unemployment rates of females and males" has a correction factor of 1, indicating that this variable contributes the most useful (new) information in the synthetic indicator's object of study (Table 5). The second variable in order of entry is "Patent applications to the European Patent Office (EPO) per million of active population (average 3 years)", with a correction factor of 80%. This means that 80% of the information provided by this indicator is introduced in the measurement of development of the initial EU-member Cohesion Fund beneficiaries. The next variable in order of entry is "Research & Experimental Development expenditure as % of Gross Domestic Product", which retains ~64% of the information, with a high relative importance in the final result of the DP2. These variables could therefore be used to design specific measures targeted at improving each country's progress towards the objectives of the Europe 2020 Strategy in coming years. It is important to emphasize that one priority of the European 2020 strategy is precisely to promote smart growth through more effective investments in education, research and innovation [11].

Table 5. The correction factor $(1 - R^2)$, which indicates the new information of each partial indicator incorporated.

Position	Partial Indicators	Correction Factor $(1 - R^2)$
1	Employment rate difference between females and males of age group 20–64	1.0
2	Patent applications to the European Patent Office per million of active population (average 3 years)	0.80
3	Research & Experimental Development expenditure as % of GDP	0.64
4	Difference between unemployment rates of females and males	0.61

Source: Author based on Eurostat [60] and European Commission [38].

That R & D-related variables are among those with the greatest discriminating power and the greatest correction factor (Tables 4 and 5) indicates that there are still significant disparities in this area among the regions analysed. In our research, for example, the indicator value associated with number of patents registered is neither constant nor homogeneous among the areas of Spain, Portugal, Greece and Ireland analysed.

5. Discussion and Conclusions

This paper develops a synthetic indicator to measure the degree of economic and social development in the regions of the Cohesion countries, based on a large number of variables and within the framework of the EU 2020 Strategy. This approach complements the information provided by GDP per capita in the classification of priority territories for actions under Community Regional Policy by incorporating a greater number of dimensions or areas of study.

To achieve these objectives, we applied Pena's statistical method DP2 to integrate a large number of variables expressed in different measurements and to eliminate duplicate information and arbitrary weighting of data. Since this method also fulfils a series of mathematical properties desirable in a synthetic indicator and enables estimation of the disparities between the territories studied, it is more suitable than other methods of aggregation.

We calculate the indicator in 41 regions of Spain, Portugal, Ireland and Greece for 2013, based on fifteen variables drawn from the Cohesion Reports of the EU and organized into six dimensions proposed by the Commission in the Europe 2020 strategy. The NUTS 2 Community Territorial Statistical Classification was used for regional allocation of Structural Funds. The results obtained allow us to draw the following conclusions:

From a territorial perspective, the results show considerable distance between the best- and worst-positioned regions in the classification (Tables 2 and 3), with the Autonomous City of Ceuta ranked last. Paradoxically, Ceuta was designated a phasing-out region in the period 2007–2013 and was thus ineligible for inclusion in the 2014–2020 Convergence Objective.

Likewise, the South Aegean (Greece) is ranked low in the classification but is included in the group of most-developed regions. Although the Greek regions of Western Macedonia and Central Greece obtained low values for the variables analysed, they have been defined as regions in transition in the current period of Regional Policy.

Similarly, two regions of Portugal (Central and Northern) occupy relatively high (above-average) positions in the ranking obtained, although they are covered by the Convergence Objective in the programming period 2014–2020.

The most advanced regions are located in the northeast of Spain, and in the regions of the countries' national capitals, such as the Community of Madrid (third), Southern and Eastern Ireland (fourth), and the Metropolitan Area of Lisbon (twelfth). In Greece, in contrast, the region of Attica (Athens) is in the middle of the classification (twenty-first) (Tables 2 and 3).

The values of the DP2 indicator reveal some general disparities among the regions analysed in economic and social development, in line with other studies [5,15,16,25,67]. These disparities could be taken into account in programming future Regional Policy by increasing efforts in areas with lower values in the variables analysed.

If we examine the discriminating power of variables with the most unequal values between regions, the variables related to the objective of smart growth established in the Europe 2020 Strategy are the most striking. Specifically, gender differences in employment and unemployment, research results (patents) and investment in R & D register the greatest differences in values between the regions. Among the most discriminating is the variable "Freight transported by road by region of loading (Tm/Km^2)", part of the sustainable growth objective.

Of the five variables that contribute most to explaining the interregional differences, three are linked to the goal of smart growth. Promotion of research and innovation must be included as

an essential future priority to develop these territories, especially those ranked lowest (Tables 2 and 3). Our results align with the findings of other studies [36].

The other variables show less-significant differences between regions, with more constant values in almost half of the variables considered. However, progress between regions is still unequal in some dimensions relevant to economic and social development, such as Research and Development and Competitiveness and Business Environment.

It is thus appropriate not only to include such variables in future synthetic measures of regional development but also to take them into account in future territorial allocation of Community aid under the Cohesion Objective.

As to the relative impact of each variable, the correction factor of the synthetic indicator of development shows that four variables studied (Table 5) contribute especially important information for determining and measuring progress towards the objectives of the Europe 2020 Strategy to promote smart, sustainable and inclusive growth in countries.

The variable that correlates most closely with the synthetic indicator is "Employment rate difference between females and males of the age group 20–64", which provides 100% of its information to the synthetic indicator. The next variables in order of entry are "Patent applications to the European Patent Office (EPO) per million of active population (average 3 years)" and "Research & Experimental Development expenditure as % of GDP", which retain 80% and 64% of the useful information, respectively.

With significant challenges still to be addressed in the Europe 2020 Strategy, it is necessary to design and implement actions and measures that generate the greatest impact for more intense reduction of the regional disparities in the EU. These areas are closely related to narrowing gender gaps in the labour market and to promoting research and development (Tables 4 and 5). Specific measures could be designed to improve performance on these variables in the backward areas of the four countries in the classification (Tables 2 and 3).

To conclude, this paper proposes a way to visualize the socio-economic reality of regions at a given time, especially following the period 2007–2013, in a context of economic crisis in which three of the initial Cohesion countries—Spain, Portugal and Greece—registered a very negative tendency in terms of GDP per capita relative to the EU average. Results show that unemployment is highly polarized across the EU regions. Portugal, Spain or Greece are experiencing high rates of unemployment forming clusters in space and time. By contrast, Germany, Austria, and nearby regions are more resilient to the economic crisis strains thus creating spatial clusters of low rates of unemployment [68].

This study aims to contribute greater nuance to knowledge of the impact of the variables considered in order to achieve greater economic and social development in these countries. We can continue to compare the countries after the end of the period 2014–2020 to evaluate their evolution, as well as that of any other countries analysed in future studies with similar objectives and regions using the same or other methodologies—goals we share with other researchers.

Promotion of solidarity, smart and sustainable growth, and gender equality in the EU is a priority for the future of the European integration process, which can serve as an example in these or other respects for other areas of integration globally. We believe that monitoring is central to assessing performance on the Lisbon Objectives, given the slow, unequal pace of progress registered by some regions in the initial EU-member beneficiaries of the Cohesion Fund toward fulfilment of the Objectives, as shown by our study. The results obtained point out certain reflections and assessments that are useful to make recommendations regarding public policies. Firstly, the measurement systems of the achievements of the least developed regions seems obsolete and of limited descriptive ability. Nowadays, at the international scale, achievements in terms of development are not assessed only in terms of GDP growth or job creation. As this indicator shows, the regions still dealing with socioeconomic challenges would receive lower grants, or none at all, if only the official criteria are taken into consideration. This paper proposes then that it is more logical to consider the evaluation of the variables related to the dimensions that comprise the Europe 2020 Strategy. We must also keep

in mind that the goal of Europe's regional policy is to improve social and economic cohesion as well as to improve the quality of life, something that cannot only be achieved by means of economic growth. Therefore, the processes that evaluate the achievements of regional policies must be improved. Such evaluation should not be considered a minor thing given that the continuity of important flows of investment are dependent upon it. Moreover, said flows of investments are the means by which the desired convergence is reached.

The analysis of the discriminant power of the variables shows that the achievements relative to the job market cannot be evaluated only by taking into consideration the number of positions that have been created. Aspects such as the level of education or gender equality are key to reach an inclusive and competitive development. In relation to this, it is important to note that not every growth is sustainable at long-term, nor offers the same benefits to local communities. The analysis of the variables shows how important it is to support the development of education, investigation and innovation. These ideas lead to two important implications for public policies. The first is related to an aforementioned aspect: the necessity to enhance the achievements of regional development altogether with the evaluation criteria associated with Europe's regional policy. Secondly, the importance of moving towards by means of a model of growth focused on knowledge and inclusion.

Author Contributions: J.A.R.M. and J.M.M.M. designed and coordinated the research. K.A.Z.M. and J.A.S.F. were in charge of the bibliographic research and part of the conclusions. K.G.A.B. and K.A.Z.M. were in charge of the data treatment and the collection of the information derived from it as well as part of the conclusions.

Conflicts of Interest: The authors declare that they have no conflict of interest.

References

1. Monnet, J. *Los Estados Unidos de Europa han Comenzado: La Comunidad Europea Delcarbón y el Acero. Discursos y Alocuciones 1952–1954*; Instituto de Estudios Europeos-Ediciones Encuentro: Madrid, Spain, 2008.
2. Monnet, J. *Memoirs*; Collins: London, UK, 1978.
3. Lázaro, L. La Política de Cohesión europea: Cohesión y perspectivas. *Rev. Galega Econ.* **2012**, *21*, 1–30.
4. Hooghe, L.; Keating, M. The politics of European Union Regional Policy. *J. Eur. Public Policy* **1994**, *1*, 367–393. [CrossRef]
5. Cuadrado, J.R.; Marcos, M. Disparidades regionales en la Unión Europea: Una aproximación a la cuantificación de la cohesión económica y social. *Investig. Reg.* **2005**, *6*, 63–89.
6. Nieto, A.; Cardenas, G. The Rural Development Policy in Extremadura (SW Spain): Spatial Location Analysis of Leader Projects. *ISPRS Int. J. Geo-Inf.* **2018**, *7*, 76. [CrossRef]
7. Cuenca, E.; Rodríguez, J.A. Evolution of expenditure in the budget of the European Union (1957–2002). *Eur. Plan. Stud.* **2007**, *8*, 1113–1126.
8. European Commission. *Comprender las Políticas de la Unión Europea: Política Regional*; European Commission: Brussels, Belgium, 2014.
9. López, M. The social dimension of European Cohesion Policy in a 27-state Europe: An analysis of the European Social Fund. *Eur. J. Soc. Work* **2009**, *13*, 359–373.
10. Rodríguez, J.A.; Holgado, M.M.; Salinas, J.A. Un indicador de desarrollo económico y social regional en el sur de la Unión Europea. *Rev. Cienc. Soc.* **2014**, *20*, 267–278.
11. European Commission. *EUROPA 2020. Una Estrategia Para un Crecimiento Inteligente, Sostenible e Integrador*; European Commission: Brussels, Belgium, 2010.
12. González, J.L.; Benedicto, M.A. *La mayor Operación de Solidaridad de la Historia: Crónica de la Política Regional de la UE en España*; Plaza and Valdés: Madrid, Spain, 2006.
13. MacDougall, D. *Report of the Study Group on the Role of Public Finance in European Integration*; Commission of the European Communities: Brussels, Belgium, 1977.

14. Sapir, A. *An Agenda for a Growing Europe: Making the EU System Deliver, Report of an Independent High Level Group Established at the Initiative of the President. Can Europe Deliver Growth?* European Commission: Brussels, Belgium, 2003.

15. Del Campo, C.; Monteiro, C.; Oliveira, J. The European regional policy and the socio-economic diversity of European regions: A multivariate analysis. *Eur. J. Oper. Res.* **2008**, *187*, 600–612. [CrossRef]

16. Rodríguez, J.A.; Holgado, M.M.; Salinas, J.A. An index of social and economic development in the community's Objective-1 regions of countries in Southern Europe. *Eur. Plan. Stud.* **2012**, *20*, 1059–1074.

17. Viegas, M.; Antunes, M. Convergence in the Spanish and Portuguese NUTS 3 Regions: An exploratory spatial approach. *Intereconomics* **2013**, *48*, 59–66. [CrossRef]

18. Zarzosa, P.; Somarriba, N. An assessment of social welfare in Spain: Territorial analysis using a synthetic welfare indicator. *Soc. Indic. Res.* **2013**, *111*, 1–23. [CrossRef]

19. García-Velasco, M.; Delgado-Márquez, B.L. ¿Contribuyen los fondos estructurales a la configuración de la base de conocimiento en Europa? Análisis a través de un índice sintético. *Investig. Reg.* **2016**, *34*, 175–199.

20. Medeiros, E.; Zêzere, J.L.; Costa, N. The EU Cohesion Fund and Spatial Planning Strategies in Transport and Risk Prevention: Portugal (1995–2013). *Eur. Struct. Invest. Funds J.* **2016**, *4*, 57–79.

21. Sen, A. *The Idea of Justice*; Penguin: London, UK, 2010.

22. Strasser, D. *La Hacienda de Europa*; Ministerio de Hacienda: Madrid, Spain, 2018.

23. Fernández, D. *Fundamentos Económicos de la Unión Europea*; Thomson: Madrid, Spain, 2007.

24. Garrido, R.; Mancha, T.; Cuadrado, J.R. La Política Regional y de Cohesión de la Unión Europea: Veinte años de avance y un futuro nuevo. *Investig. Reg.* **2007**, *10*, 239–266.

25. Medeiros, E. European Union Cohesion Policy and Spain: A territorial impact assessment. *Reg. Stud.* **2017**, *51*, 1259–1269. [CrossRef]

26. Stutz, F.; Warf, B. *The World Economy. Geography, Business, Development*; Pearson Education Limited: Upper Saddle River, NJ, USA, 2012.

27. Pîrvu, R.; Bădîrcea, R.; Manta, A.; Lupăncescu, M. The Effects of the Cohesion Policy on the Sustainable Development of the Development Regions in Romania. *Sustainability* **2018**, *10*, 2577. [CrossRef]

28. Potter, R.; Binns, T.; Elliott, J.; Smith, D. *Geographies of Development. An Introduction to Development Studies*; Pearson Education Limited: Essex, UK, 2008.

29. Argüelles, M.; Benavides, C. *Economía y Política Regional*; Delta Publicaciones Universitarias: Madrid, Spain, 2012.

30. Medeiros, E. From Smart Growth to European Spatial Planning: A new paradigm for EU Cohesion Policy post-2020. *Eur. Plan. Stud.* **2017**, *25*, 1856–1875. [CrossRef]

31. Holgado, M.M.; Salinas, J.A.; Rodríguez, J.A. A synthetic indicator to measure the economic and social cohesion of the regions of Spain and Portugal. *Rev. Econ. Mund.* **2015**, *39*, 223–240.

32. Zhao, J.; Guo, D.; Wang, J.; Yang, Z.; Zhang, H. Examining the Association of Economic Development with Intercity Multimodal Transport Demand in China: A Focus on Spatial Autoregressive Analysis. *ISPRS Int. J. Geo-Inf.* **2018**, *7*, 56. [CrossRef]

33. Mancha, T.; Gallo, M.T. Política regional y cohesión europea: Perspectivas 2014–2020. *Ekonomiaz* **2013**, *43*, 170–199.

34. European Commission. *Libro Verde Sobre la Cohesión Territorial: Convertir la Diversidad Territorial en un Punto Fuerte*; European Commission: Brussels, Belgium, 2008.

35. European Commission. *Strategic Report on the Renewed Lisbon Strategy for Growth and Jobs: Launching the New Cycle (2008–2010)*; European Commission: Brussels, Belgium, 2007.

36. Cordero, G. La promoción de la innovación en la Política Regional y de Cohesión en el período 2014–2020: Su aplicación en España. *J. Reg. Res.* **2015**, *33*, 161–186.

37. European Commission. *Reorientar la Política de Cohesión de la UE Para Obtener el Máximo Impacto en el Crecimiento y el Empleo: La Reforma en Diez Puntos*; European Commission: Brussels, Belgium, 2013.

38. European Commission. *Sexto Informe Sobre la Cohesión Económica, Social y Territorial: Inversión Para el Empleo y el Crecimiento*; European Commission: Brussels, Belgium, 2014.

39. Pena, B. *Problemas de la Medición del Bienestar y Conceptos Afines, una Aplicación del caso Español*; Instituto Nacional de Estadística (INE): Madrid, Spain, 1977.

40. Zarzosa, P. *Aproximación a la Medición del Bienestar Social*; Secretariado de Publicaciones: Valladolid, Spain, 1996.

41. Somarriba, N. *Aproximación a la Medición de la Calidad de Vida en la Unión Europea*; Universidad de Valladolid: Valladolid, Spain, 2008.

42. Murias, P.; Martínez, F.; Miguel, C. An economic well-being index for the Spanish provinces: A data envelopment analysis approach. *Soc. Indic. Res.* **2006**, *77*, 395–417. [CrossRef]

43. Somarriba, N.; Pena, B. Synthetic indicators of quality of life in Europe. *Soc. Indic. Res.* **2009**, *96*, 115–133. [CrossRef]

44. Zarzosa, P. Estimación de la pobreza en las Comunidades Autónomas españolas, mediante la distancia DP2 de Pena. *Estud. Econ. Apl.* **2009**, *27*, 397–416.

45. Cuenca, E.; Rodríguez, J.A.; Navarro, M. The features of development in the Pacific countries of the African, Caribbean and Pacific Group. *Soc. Indic. Res.* **2010**, *99*, 469–485. [CrossRef]

46. Rodríguez, J.A. Propuesta de un índice de bienestar social en los Países Menos Adelantados (PMA) de África. *Econ. Soc. Territ.* **2011**, *5*, 19–40. [CrossRef]

47. Zarzosa, P. The social welfare in Spain before the crisis: Territorial and chronological analysis. *Int. J. Adv. Manuf. Technol.* **2012**, *1*, 165–171.

48. Ray, S. An index of maternal and child healthcare status in India: Measuring inter- and intra-state variations from capability perspectives. *Soc. Indic. Res.* **2014**, *117*, 195–207. [CrossRef]

49. Somarriba, N.; Zarzosa, P.; Pena, B. The economic crisis and its effects on the quality of life in the European Union. *Soc. Indic. Res.* **2015**, *120*, 323–343. [CrossRef]

50. Rodriguez, J.A.; Jiménez, J.D.; Salinas, J.A.; Martin, J.M. Millennium Development Goals 4 and 5: Progress in the least developed countries of Asia. *Soc. Indic. Res.* **2015**, *129*, 489–504.

51. Somarriba, N.; Zarzosa, P. Quality of life in Latin America: A proposal for a synthetic indicator. In *Indicators of Quality of Life in Latin America*; Tonon, G., Ed.; Springer International Publishing AG: Cham, Switzerland, 2016.

52. Canaviri, J.A. Measuring the concept of wellbeing: A first approach for Bolivia. *Int. J. Wellbeing* **2016**, *6*, 36–80. [CrossRef]

53. Rodriguez, J.A.; Martin, J.M.; Jiménez, J.D.A. Synthetic Indicator of Progress towards the Millennium Development Goals 2, 3 and 4 in the Least Developed Countries (LDCs) of Asia. *Appl. Res. Qual. Life* **2018**, *13*, 1–19.

54. Somarriba, N.; Zarzosa, P. Quality of life in the European Union: An econometric analysis from a gender perspective. *Soc. Indic. Res.* **2018**, 1–22. [CrossRef]

55. Martin, J.M.; Salinas, J.A.; Rodriguez, J.A. Comprehensive evaluation of the tourism seasonality using a synthetic DP2 indicator. *Tour. Geogr.* **2018**. [CrossRef]

56. Pena, B. La medición del bienestar social: Una revisión crítica. *Estud. Econ. Apl.* **2009**, *27*, 299–324.

57. Rodriguez, J.A.; Martín, J.M.; Salinas, J.A. Assessing MDG 6 in Sub-SaharanAfrica: A Territorial Analysis Using a Synthetic Indicator. *Rev. Econ. Mund.* **2017**, *47*, 203–222.

58. Martin, J.M.; Salinas, J.A.; Rodriguez, J.A.; Jiménez, J.D. Assessment of the Tourism's Potential as a Sustainable Development Instrument in Terms of Annual Stability: Application to Spanish Rural Destinations in Process of Consolidation. *Sustainability* **2017**, *9*, 1692. [CrossRef]

59. Zarzosa, P. *La Calidad de Vida en los Municipios de la Provincia de Valladolid*; Secretariado de Publicaciones: Valladolid, Spain, 2005.

60. Rodríguez, J.A.; Holgado, M.M.; Salinas, J.A. An Index of progress towards the MDG1 in Southern Africa and the Horn of Africa. *Appl. Res. Qual. Life* **2013**, *8*, 467–480.

61. Cuenca, E.; Rodríguez, J.A. Medición de las disparidades entre indicadores asociados al bienestar social en los Países Menos Adelantados (PMA) de Asia. *Rev. Econ. Mund.* **2010**, *25*, 83–108.

62. Ivanovic, B. Commentétablir une liste des indicateurs de développement. *Rev. Stat. Apliquée* **1974**, *22*, 37–50.

63. European Commission. *Cohesion Policy 2007–13 Commentaries and Official Texts*; European Commission: Brussels, Belgium, 2007.

64. Eurostat. *Europa en Cifras. Anuario Eurostat 2014*; Publications Office of the European Union: Luxembourg, 2015.

65. Lahusen, C. European Integration, Social Cohesion, and Political Contentiousness. In *Economic and Political Change in Asia and Europe*; Andreosso, B., Royall, F., Eds.; Springer Science: New York, NY, USA, 2013.

66. Elborgh-Woytek, K. *Las Mujeres, el Trabajo y la Economía: Beneficios Macroeconómicos de la Equidad de Género*; International Monetary Fund: Washington, DC, USA, 2013.

67. Puga, D. European Regional Policies in light of recent location theories. *J. Econ. Geogr.* **2002**, *2*, 373–406. [CrossRef]

68. Grekousis, G. Further Widening or Bridging the Gap? A Cross-Regional Study of Unemployment across the EU Amid Economic Crisis. *Sustainability* **2018**, *10*, 1702. [CrossRef]