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an Italian Analysis of
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Sustainable Development and Territorial Differences: an Italian Analysis of Economic Sustainability

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Sustainable development has become a principle guiding governments in defining their policies and actions. Each government has to decide how global objectives ought to be incorporated into national planning processes, policies and strategies. In doing so, it is fundamental to consider not only national specificities, but also and above all sub-national ones. This is even more a necessity for Italy, a country historically characterized by strong specificity and regional differences, which are aptly epitomized by the so-called North-South gap. In this article, the situation of the Italian Regions as the achievement of the SDGs will be analyzed to monitor and evaluate their strengths and weaknesses. We will focus on the four goals belonging to the economic dimension of sustainable development. The research methodology consists in using synthetic techniques. In particular, we, first, synthesized an index for each goal considered, and then we constructed the measure of economic sustainability.

INTRODUCTION

The concept of sustainable development has been at the center of the scientific and institutional debate for over thirty years. Despite its popularity, it is a concept difficult to define. Many researchers (La Camera 2005; Gibson 2010; Elliott 2013; Grober 2016) have reconstructed its evolution, linked to the international debate on this issue. The concept of sustainable development can be understood in its complexity only by recalling the main phases of its history. The first systematic reflection on the importance of sustainability for economic growth was probably that of the so-called *Club of Rome*, which intended to understand the causes and the long-term consequences of the growth model of those years². The results of this analysis, published in 1972 in the book *Limits to Growth* (Meadows *et al.* 1972), showed the limits of that growth model, not based on conditions of environmental and economic stability. The authors distinguish between growth and development, pointing out how growth can be an obstacle to development, in particular to the sustainable one, and focusing on the need to take into account the scarcity of resources.

The conclusions of the analysis of the Club of Rome gave rise to a lively debate in subsequent years and are the basis of the work of the *Brundtland Commission*, whose report, *Our Common Future* (WCED 1987), contains the best

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² The Club of Rome commissioned a group of researchers from the Massachusetts Institute of Technology (MIT) to carry out a study to investigate the causes and the long-term consequences of the growth of five variables: population, industrial capital, food production, consumption of natural resources and pollution (La Camera 2005:1-2).

known definition of sustainable development. “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987: 41). The definition emphasizes the intergenerational aspect of the concept. “In essence, sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development; and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations” (WCED 1987: 43). There has been an evolution of the meaning of sustainability, focused no more only on the scarcity of resources and the importance of their conservation (as in the analysis of the Club of Rome), but also on the achievement of present and future well-being. Economic growth is no longer considered as a limit to development; the prerequisite for sustainable development is a relationship between human activities - including economic ones - and the environment, which does not diminish the possibilities for future generations to satisfy their needs. At the United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992, this idea was reiterated. Furthermore, for the first time the Rio Summit underlined the importance of defining policies aimed at achieving sustainable development, by identifying 27 principles and an action programme, the so-called *Agenda 21*, to help governments in obtaining this goal.

The Brundtland Commission's definition highlights one of the main features of sustainable development, the need to pursue the well-being of current generations while ensuring it for future generations. The way to achieve this objective is to conceive development as a *multidimensional concept*, taking into account economic, social and environmental aspects. “Nowadays, the definition focuses on this holistic approach linking economic development, social inclusion and environmental sustainability” (Sachs and Pan 2015: 6). As clearly stated in *The Future We Want* (United Nations General Assembly 2012), the long-term stability of the society can only be reached through the integration of these three *pillars*. Thus, sustainable development is a three-way holistic framework, involving three complex systems - economic, social and environmental - interacting each others. The importance of these components can be better understood by reporting the definition of development proposed by Sen: “development can be seen as a process of expanding the real freedoms that people enjoy” (Sen 2000: 3). Undoubtedly, economic growth plays a central role in the satisfaction of human freedoms. However, the idea that a good society is not just an economically prosperous society is now universally shared. Thus, there are also other important factors that allow individuals the realization of their needs and freedoms, first the social cohesion and inclusion and the quality of the environment in which they live. This is the central point that allows us to move from the concept of development to that of sustainable development. We have to underline that there is no consensus in literature on this position. “One of the main obstacles to developing a common conceptual framework incorporating social, economic and ecological problems is the lack of genuine consensus among experts in each discipline as to how ecological, economic and social systems relate to one another” (Elliott 2012: 40). In other words, the debate focuses on the role to be given to each component and their mutual relations. Turner, Pearce and Bateman

(1993) suggest that the various approaches and definitions differ from each other because they are linked to two opposite perspectives, respectively labelled as *strong* and *weak* sustainability. The first one, the *ecocentric* perspective, emphasizes environmental protection and criticizes the idea that environment is instrumental and subjected to human needs. “In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it” (UNCED, 1993: 2). This principle is strongly rejected by the different ecocentric perspectives³ developed over the years. Human society is only a part of nature and environment cannot be considered as a dimension of sustainable development. Nevertheless, it is the necessary condition for any kind of human activity, including the development. The second one, the *technocentric* perspective, focuses on free markets and considers the environment instrumental to satisfy human needs. It is based on a different understanding of the role and importance of the economic dimension, in terms of both development and growth. As underlined by R. Solow, we do not have to worry about the scarcity of resources: the only thing we have to leave to future generations is the capacity to create well-being and not some particular natural resource (Endress 2015).

Despite the criticism, the three-way holistic framework remains the dominant model in literature and is the basis of the system of objectives and indicators developed by the United Nations. This idea is based on an anthropocentric view according to which, in order to be sustainable, development must ensure the satisfaction of the needs of present and future generations, combining economic growth, social inclusion and the environment and setting measurable targets focused on priority sectors. Therefore, governments have to make choices on how best to use its total capital stock today to increase current economic activities and welfare and to save or even accumulate for future generations. The individuation of a set of goals is undoubtedly useful for defining policies and actions. The UN Conference on Sustainable Development held in Rio on June 2012, also known as *Rio+20 Summit*, identified a number of principles that should inspire the definition and the choice of the Sustainable Development Goals (SDGs). “SDGs should be action-oriented, concise and easy to communicate, limited in number, aspirational, global in nature and universally applicable to all countries” (United Nations General Assembly 2012: 47). Over the next three years, it developed an intensive debate involving governments, civil society and other stakeholders around the world, which led to the adoption of the so-called *Agenda 2030* at the UN Sustainable Development Summit in September 2015. The SDGs form a part of the *Agenda 2030*: they are a framework of 17 goals and 169 targets across social, economic and environmental areas of sustainable development, defined according to the principles of *Rio+20 Summit*. However, it is clear that not all the targets are applicable to all countries and in the same way. For this reason, it is essential to identify a global indicator framework to know and monitor the situation of each country with respect to each goal and target, so as to be able to plan and implement actions that take into account the strengths and weaknesses of the different national realities. The global indicator framework was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and

³ For a complete analysis of the ecological paradigm on sustainable development, please see Elliott 2013.

adopted by the UN General Assembly on 6 July 2017. It includes 244 indicators, divided among the 17 goals and 169 targets.

According to the *Agenda 2030*, each government must develop indicators at national and sub-national level, focusing on the territory. Thus, it is fundamental to take into account not only national specificities, but also and above all sub-national ones. This is even more a necessity for Italy, a country historically characterized by strong regional specificities and differences, which find their radicalization in the so-called *North-South gap*. In the context of the implementation of the SDGs, the Regions, local authorities with legislative power and therefore with the authority and tools to define policies, assume particular importance. Moreover, after the constitutional reform of 2001, the legislative power of the Regions (and the matters in which they have competence) has considerably increased. It is clear, therefore, that the full and correct achievement of the SDGs for Italy cannot ignore the analysis of the situation of the Regions and their direct involvement in the definition of strategies and actions.

The aim of this work is to try to examine and interpret the Italian situation as to the achievement of the SDGs, based on the analysis of the Regions, to highlight potential differences or territorial homogeneity. In particular, we will focus on the four goals, belonging to the *economic dimension* of sustainable development, according to the three-way holistic framework:

- Goal 8 – Decent work and sustainable growth.
- Goal 9 – Sustainable industry, innovation and infrastructure.
- Goal 10 – Reducing inequalities.
- Goal 12 – Sustainable production and consumption.

The situation is profoundly different in the various regions of the country. Therefore, we cannot ignore the need to take into account the different territorial entities. We will try to highlight the characteristics of the Regions with respect to the four SDGs considered, also comparing them with the Italian situation.

DATA AND METHODS

We selected 18 basic indicators, divided in four set, one for each of the goals considered. The source was Istat; in particular, we used three datasets: *Indicators for the United Nations Sustainable Development Goals*; *Indicators for the Measurement of Equitable and Sustainable Well-being*; *Territorial Indicators for Development Policies*. The units of analysis are the Italian Regions, considering the autonomous provinces of Trento and Bolzano instead of Trentino Alto Adige. The latest available data, updated in July 2018, have been used and all the selected indicators are in time series from 2010 to 2016. The selection of variables was influenced by the need to have data available at regional territorial disaggregation level. This meant that we could not take into account variables of potential interest (e.g. individuals in absolute poverty), because they did not have data available at regional level. Table 1 shows the basic indicators used in this work and their definition.

As mentioned above, the aim of this article is to compare the different Italian Regions with respect to their situation in the four SDGs belonging to the economic sustainability dimension. To do this, we summarized each set of basic

indicators in composite indices through a method of aggregation that will be illustrated below.

TABLE 1

BASIC INDICATORS: GOAL; DESCRIPTION; POLARITY.

	Basic Indicators	Description	Polarity
	Unemployment rate	Ratio between the total number of unemployed and the labour force (sum of employed and unemployed people).	-
	Total employment rate	Percentage of total population aged 15 to 64 employed.	+
	Non-participation rate	Percentage of unemployed people aged 15-74 plus potential labour force aged 15-74 (persons who are inactive not having looked for a job in the past 4 weeks but willing to work) on total labour force aged 15-74 plus potential labour force aged 15-74.	-
	NEET	Share of the population aged 15 to 29 who is not employed and not involved in education or training.	-
	Involuntary temporary employment	Percentage of employees aged 20 to 64 working on fixed-term contracts because they were unable to find a permanent job on total employees.	-
GOAL 9	Manufacturing value added as a proportion of total value added	The manufacturing value added indicator at current prices is presented relative to total value added.	+
	R&D intensity	Percentage of R&D expenditure on GDP.	+
	Impact of knowledge workers on employment	Percentage of employees with tertiary education (ISCED 5, 6, 7 e 8) in scientific-technological occupations (ISCO 2-3) on total employees.	+
	Business websites dissemination index	Percentage of enterprises (with more than 10 employees), in the industry and services sectors, with website.	+
	Business broadband diffusion index	Percentage of enterprises (with more than 10 employees), in the industry and services sectors, with broadband connection.	+
	Proportion of individuals using Internet	Individuals aged 6 years and over using the Internet in the last 3 months, per 100 individuals.	+
GOAL 10	Growth rates of household income per capita	Growth rates of household income per capita of the total population.	+
	Disposable income inequality	Ratio of total equivalised disposable income received by the 20% of the country's population with the highest income (top quintile) to that received by the 20% of the country's population with the lowest income (lowest quintile).	-
	Adjusted disposable income per capita	The indicator reflects the purchasing power of households and their ability to invest in goods and services or save for the future, by accounting for taxes and social contributions and monetary in-kind social benefits.	+
	Relative median at-risk-of-poverty gap	Distance between the median equivalised total net income of persons below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold itself, expressed as a percentage of the at-risk-of-poverty threshold.	-
GOAL 12	Separate collection of municipal waste	Tons of municipal waste object of separate collection on total municipal waste.	+
	Production of municipal waste	Tons of municipal waste produced for each inhabitant.	-
	Number of organizations/enterprises with EMAS registration	This indicator is defined as the number of EMAS-registered organisation. The Eco-Management and Audit Scheme (EMAS) is a voluntary environmental management system implemented by companies and other organisations from all sectors of economic activity including local authorities, to evaluate, report on and improve their environmental performance.	+

The objective is to construct a synthetic index of economic sustainability, starting from the four constructed for each goal, which allow us to compare and monitor the situation of the different Italian Regions with respect to their level of economic sustainability. By following the classical Lazarsfeld's model (1958), indicators should be developed through a hierarchical design, requiring the definition of different components. The first component is the definition of the

phenomenon, its domain and its general aspects (in our case, the economic sustainability. The second component are the latent variables and their (possible) dimensions, which represent each aspect allowing the specification of the phenomenon. The third component is the identification of basic indicators. In the majority of the cases, the latent variable can be measured only indirectly through observable elements which are called *indicators* of the reference variable. Each basic indicator represents what can be actually measured in order to investigate the corresponding variable. In other words, the indicator is what relates concepts to reality. (Maggino 2017: 91–92). We assumed that our model of measurement is *formative*, since indicators are viewed as causing the latent variables (rather than being caused by it, such as in the *reflective approach*). This means that changes in formative indicators determine changes in the value (and meaning) of the latent variable. According to this approach, indicators are not interchangeable (omitting an indicator is omitting part of the construct); the measurement model does not explain and is not influenced by the correlations between indicators; internal consistency is of minimal importance: two uncorrelated indicators can both serve as meaningful indicators of the same construct (Maggino 2015). Figure 1 shows the conceptual structure of the synthetic sustainability indicator.

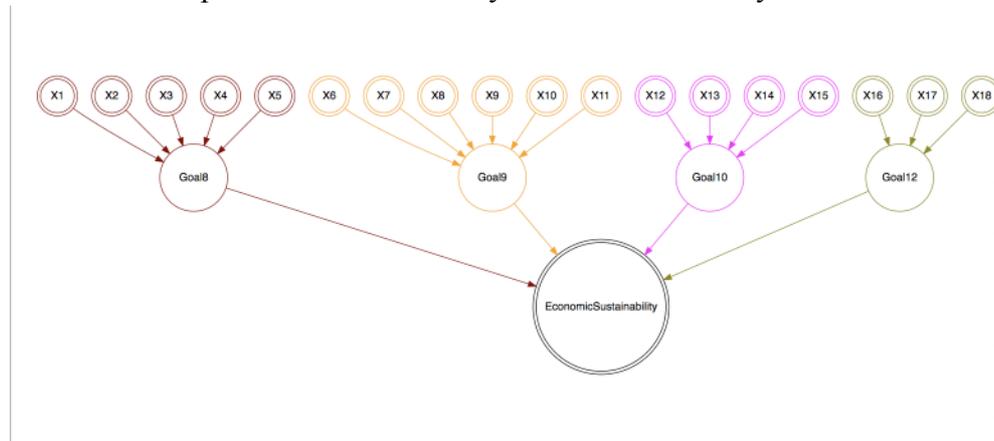


Fig. 1 – *Conceptual structure of the economic sustainability index.*

We followed the *composite indicators approach* to construct our synthetic indices. From the operational point of view, the construction of a composite index is a step-by-step process: after the definition of the phenomenon and the selection of basic indicators, the following phases are the normalization of the individual indicators and the aggregation of the normalized indicators (Mazziotta and Pareto, 2017). For the synthesis of the basic indicators, we used the *Adjusted Mazziotta-Pareto Index (AMPI)*, which is the method using by Istat for the construction of composite indicators of equitable and sustainable well-being (BES). It is a partially non-compensatory composite indicator based on a Min-Max standardization and a re-scaling of the basic indicators in a range [70; 130], according to two goalposts, representing a minimum and a maximum value of each variable for all units and time periods (Mazziotta, Pareto, 2016). Given the original matrix (1):

$$X = \{x_{ij}\} = \begin{pmatrix} x_{11} & \cdots & x_{1m} \\ \vdots & \ddots & \vdots \\ x_{n1} & \cdots & x_{nm} \end{pmatrix} \quad (1)$$

where $i=1,\dots,n$ are the units of analysis and $j=1,\dots,m$ are the variables, we calculate the normalized matrix as follows (2):

$$r_{ij} = \frac{(x_{ij}-Min_{x_j})}{(Max_{x_j}-Min_{x_j})} * 60 + 70 \quad (2)$$

where x_{ij} is the value of the indicator j in the unit i and Min_{x_j} and Max_{x_j} are the goalposts for the indicator j . In the normalization, it is necessary to define the polarity of the basic indicators, i.e. the sign of the relation between the indicator itself and the phenomenon to be measured. Therefore, the type of composite we want to construct defines polarity. For example, in the case of goal 8, if we intended to construct a composite whose increase coincides with an improvement in work (as in the case of this article), the employment rate would have positive polarity, while the unemployment rate would be negative; if, on the contrary, we wanted to construct a composite whose increase indicates a worsening of work, the employment rate would have negative polarity, while the unemployment rate would be positive. If the basic indicator has positive polarity, the formula (2) is used; if it has negative polarity, the (3) is calculated:

$$r_{ij} = \frac{(Max_{x_j}-x_{ij})}{(Max_{x_j}-Min_{x_j})} * 60 + 70 \quad (3)$$

The polarity of basic indicators used in this paper is reported in table 1. The goalposts are defined as (4):

$$Ref_{x_j} \pm \Delta \text{ where } \Delta = \frac{(Sup_{x_j}-Inf_{x_j})}{2} \quad (4)$$

where Inf_{x_j} e Sup_{x_j} are the minimum and maximum of indicator j across all time periods considered and Ref_{x_j} is the reference value for indicator j (Mazziotta e Pareto 2017: 178). In this article, the goalposts have been constructed using as reference the value assumed by Italy in the year 2010 for each basic indicators considered. Thus, using this normalization procedure, each indicator considered will assume the value 100 for Italy in 2010 and all the other values, of each unit for all the years, will be expressed in reference to this value, allowing a comparison in time and space. The AMPI is given by (5):

$$AMPI^{\pm} = \mu_{r_i} \pm \sigma_{r_i} * cv_i \quad (5)$$

where μ_{r_i} , σ_{r_i} and $cv_i = \sigma_{r_i}/\mu_{r_i}$ are the mean, the standard deviation and the coefficient of variation of the unit i and the sign \pm depends on the kind of phenomenon measured. All values will be approximately within the range [70,130], and 100 will represent the reference value (in our case, that of Italy in 2010). In this paper, all the composites are positive, i.e., increasing values of each index correspond to positive variations of the phenomenon considered in each goal; then we used AMPI with negative penalty (AMPI).

RESULTS AND DISCUSSION

The figures in appendix report the charts with the time series of the composite indices for each goal considered. In each chart, the Italian Regions are compared to the national data. As specified in the previous section, the composites have been constructed taking as reference the value assumed by Italy in each basic indicator in 2010. In this way, the value of the composite for Italy in 2010 was set at 100. However, this number itself does not mean much. For a complete and better understanding of the meaning of composites, in fact, it is always necessary to refer to the basic indicators used and to the situation of the unit in the year chosen as the reference value. For this reason, the analysis of each goal was introduced by a reconstruction of the Italian situation in 2010, referring to the values of the basic indicators. Subsequently, we analyzed the evolution of the Italian data over the period considered and, finally, we compared the regional data and trends with the national ones.

Work has always been one of the topics at the centre of public debate in the country. The Italian situation in 2010 with respect to this issue seems to have been affected by the *Great Recession*, the financial and economic crisis that began in 2007 in the United States and that, in different ways, affected the entire planet, without being completely overcome even today. The indicators relating to goal 8 have suffered a marked worsening compared to the period before the crisis: for example, the unemployment rate increased from 6.8% in 2006 to 8.4% in 2010; the non-participation rate in 2010 reaches 17.5% (in 2006 it was 14.5%). The Italian scenario appears even more *dramatic* if inserted in the European context⁴: for example, in 2010 the percentage of people aged 15-29 years neither employed nor included in an education or training course (NEET) in Italy was 22%, while the EU28 average was 15.2%; the employment rate was 57.4% in the country, with the EU28 at 64.1%. This worsening characterizes the entire period considered in this work: as shown in figure A1 in the appendix, between 2010 and 2016 the composite of goal 8 for Italy lost 10 points, going from 100 to 90. The decrease is linked to the worsening of all the basic indicators considered.

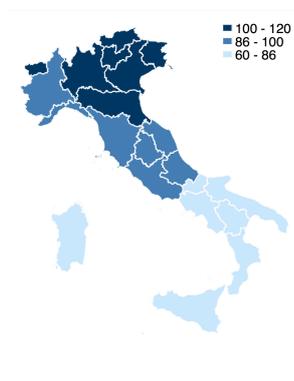


Fig. 2 – Cartogram goal 8: Italian Regions. Composite index year 2016.

Regional data show a split in the country. All the Regions confirm the negative national trend, recording a general worsening compared to 2010. The Northern

⁴ The source of European data is Eurostat (<https://ec.europa.eu/eurostat/data/database>). For an analysis of Italy in the European context with regard to economic sustainability, please see: Alaimo L.S. 2018. “Sustainable Development and National Differences: an European Cross-National Analysis of Economic Sustainability.”

Regions have values higher than the national ones throughout the period considered; among the Central Regions, Tuscany, Umbria and Marche have values higher than the national ones, while Lazio is perfectly in line with the latter; finally, all the Southern Regions (with the exception of Abruzzo, in line with Italy) are well below the national figure. The North-South gap is evident in the chart in figure 3, showing the composite values of goal 8 for the year 2016.



Fig. 3 – Cartogram goal 9: Italian Regions. Composite index year 2016.

As for goal 9, data grew in 2010, even if they were still far from the EU28 average: the percentage of expenditure on research and development, for example, in Italy was only 1.2% of GDP, while the European average was almost 2%. Even today, the distance between Italy and Europe is clear. The trend of the national composite, shown in figure A2, is growing throughout the period considered, with the value reaching 121 in 2016. This increase is linked to the improvement of all the basic indicators considered; in particular, it is influenced by the increasing diffusion of the Internet and web services for families and enterprises. In 2016, more than 60% of Italians claim to have used Internet in the last three months, compared to 40% in 2010; businesses with broadband connections are 94% (83% in 2010) and 71% of them have a website (60% in 2010). Regional trends are positive and the causes are the same as those examined for the national data. As highlighted for goal 8, also in this case the distance between the North and the South of the country is marked and still far from being filled, as shown by the cartogram in figure 2.

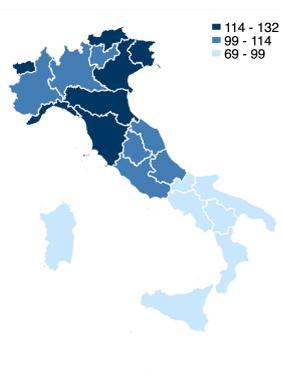


Fig. 4 – Cartogram goal 10: Italian Regions. Composite index year 2016.

Inequality has always been another *hot* topic in Italy and it has become even more central in the public debate due to the economic crisis. In 2010, the indicators are all decreasing when compared to the previous years and this trend goes on in following years. Between 2010 and 2016, the disposable income

inequality index goes from 5.7 to 6.3 and the relative median at-risk-of-poverty gap goes from 19% to 21%. Figure A3 shows how the time series for Italy touches the lowest value in 2012 (95), and then gradually rises over the following years, mainly due to the increase in the adjusted disposable income per capita. The regional trends are very similar to the national one. As shown in figure 4, Italy appears to be divided between Northern and Southern Regions.

With regard to goal 12, the Italian situation in 2010 was better than that of the previous years and continued to improve in the following years. The production of municipal waste goes from 544 kilograms per inhabitant in 2006 to 536 kilograms per inhabitant in 2010, to reach 497 kilograms per inhabitant in 2016. In 2016, the separate collection of municipal waste reached 52.5%, while in 2010 it was only 35%. Likewise, the composite is growing steadily throughout the period considered as shown in Figure A4. With reference to regional data, the gap between North and South appears less marked, with some Northern Regions (Liguria, Valle d'Aosta, Friuli Venezia Giulia, Emilia Romagna) presenting values below the national average and some Southern Regions with values in line (Campania) or even higher than the national figure (Sardegna). Regional trends are all positive, with composite values on the increase between 2010 and 2016. The improvements are largely depending on the increase of the separate collection of municipal waste, registered in all the Italian Regions. Figure 5 reports the cartogram showing the 2016 data for the composite.

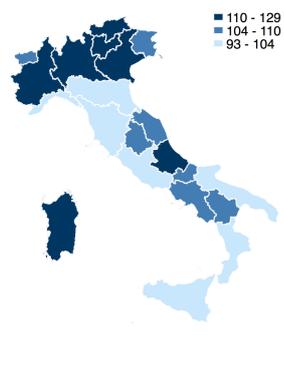


Fig. 5 – Cartogram goal 12: Italian Regions. Composite index year 2016.

As mentioned above, the composite index of economic sustainability was obtained from the synthesis of the four composites examined. As shown in Figure A5, the national and regional trends are moderately increasing between 2010 and 2016. The difference between the various areas of the country is evident. Figure 6 shows the map with the 2016 data of the composite and highlights the presence of three distinct groups of Regions. The first group is made up of the North-East Regions together with Piemonte and Lombardia and presents the best performances, with values that vary between 110 and 122. These regions have higher values than the Italian ones in all the goals considered. A second group includes the central Regions, together with Valle d'Aosta, Liguria and Abruzzo. They have composite values between 100 and 110 and have different performances in the different goals. For example, Valle d'Aosta has higher values than the Italian ones in goals 8 and 10, in line in goal 12 and far below in goal 9. Finally, the Southern Regions have values between 75 and 100 and trends below the national ones in practically all goals (some exceptions are present in goal 12).

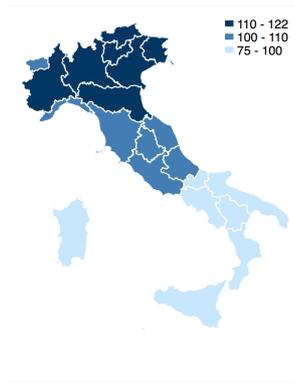


Fig. 6 – Cartogram economic sustainability index: Italian Regions.
Composite index year 2016.

CONCLUSIONS

Sustainable development, apart from being a central theme in the international debate, is today an essential necessity that must guide the definition of policies and the choices of allocation and use of resources. From this point of view, a central role is played by the territorial realities, in order to be able to define and calibrate policies and actions in the best possible way. Italy has always been characterized by deep differences between the various areas of the country, which should lead to specific interventions for specific problems. In this paper, we have taken into consideration economic sustainability, studying the four goals belonging to this dimension according to the SDGs framework. The analysis identified the differences existing between the various Italian Regions, making explicit the gap between the North and the South of the country. The situation regarding two themes, work and inequality, appears to be particularly sensitive. These themes are at the centre of the political debate today more than in the past. They are also issues in which the *North-Sud gap* appears even deeper.

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APPENDIX

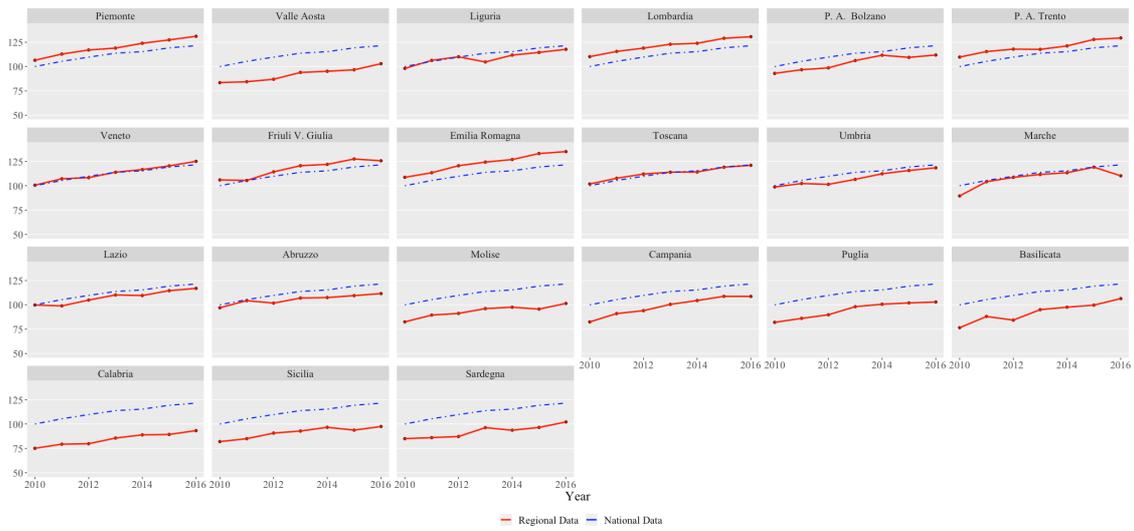


Fig. A1 – AMPI Goal 8: regional and national data; time series 2010-2016

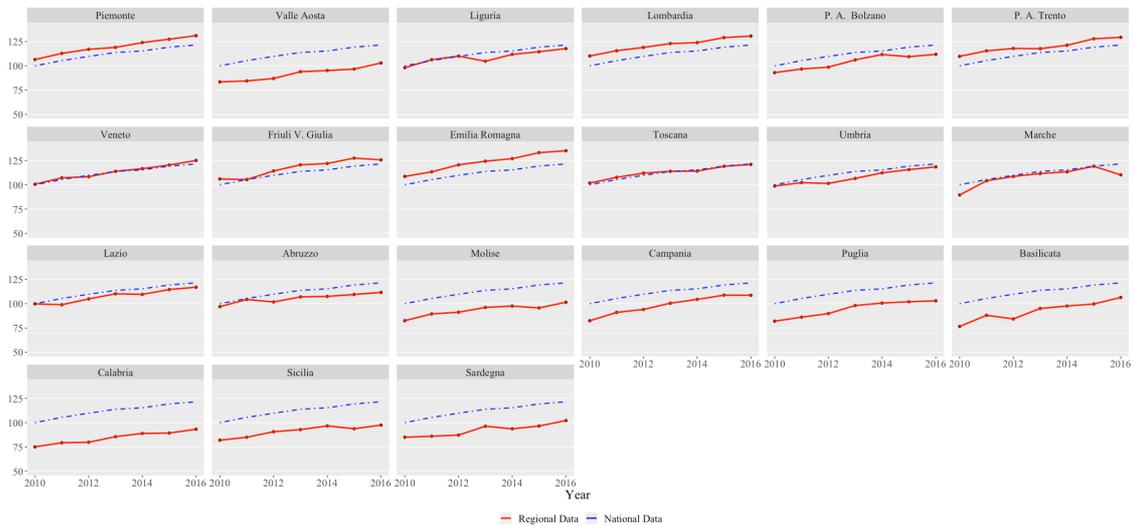


Fig. A2 – AMPI Goal 9: regional and national data; time series 2010-2016

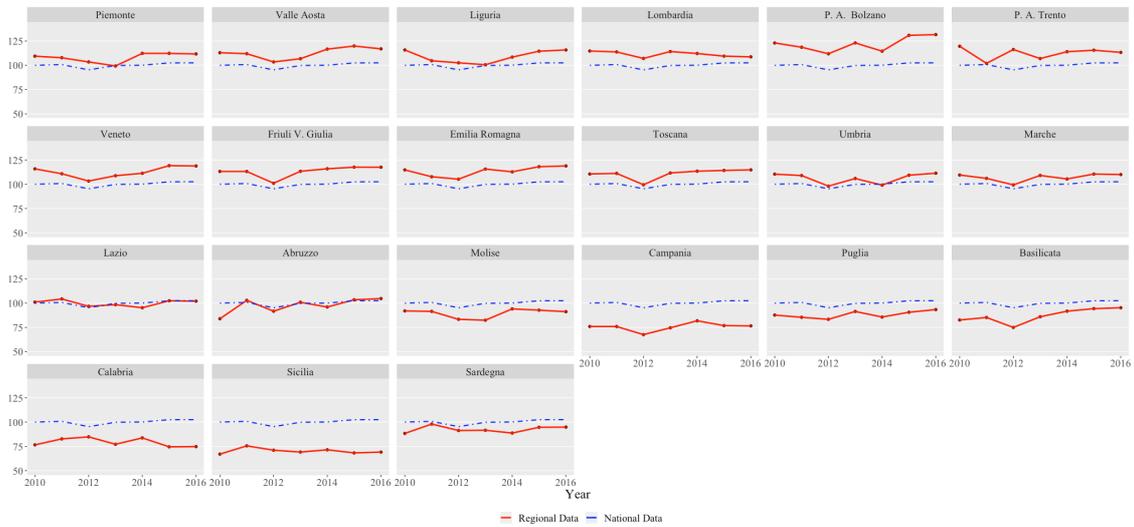


Fig. A3 – AMPI Goal 10: regional and national data; time series 2010-2016

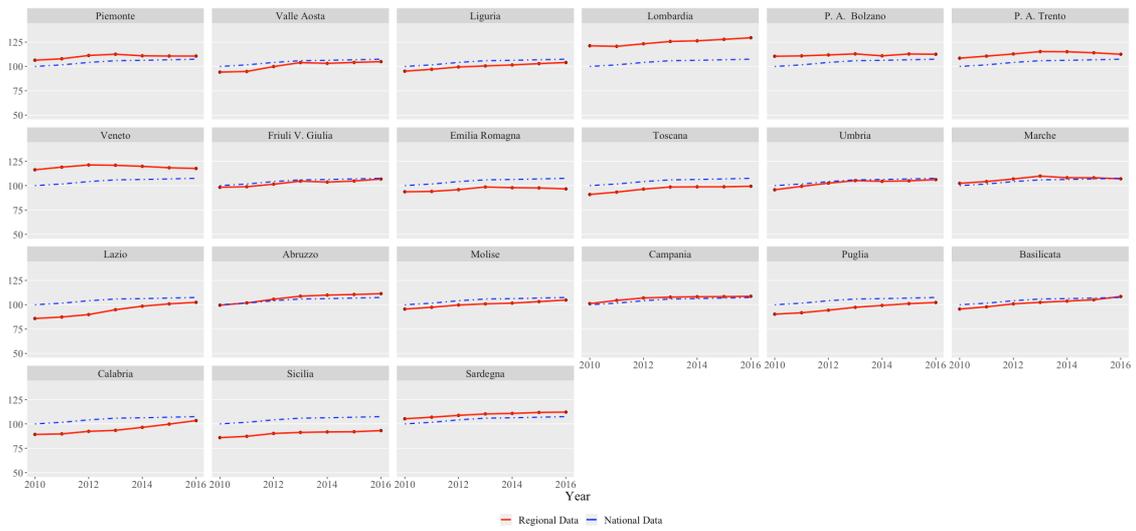


Fig. A4 – AMPI Goal 12: regional and national data; time series 2010-2016

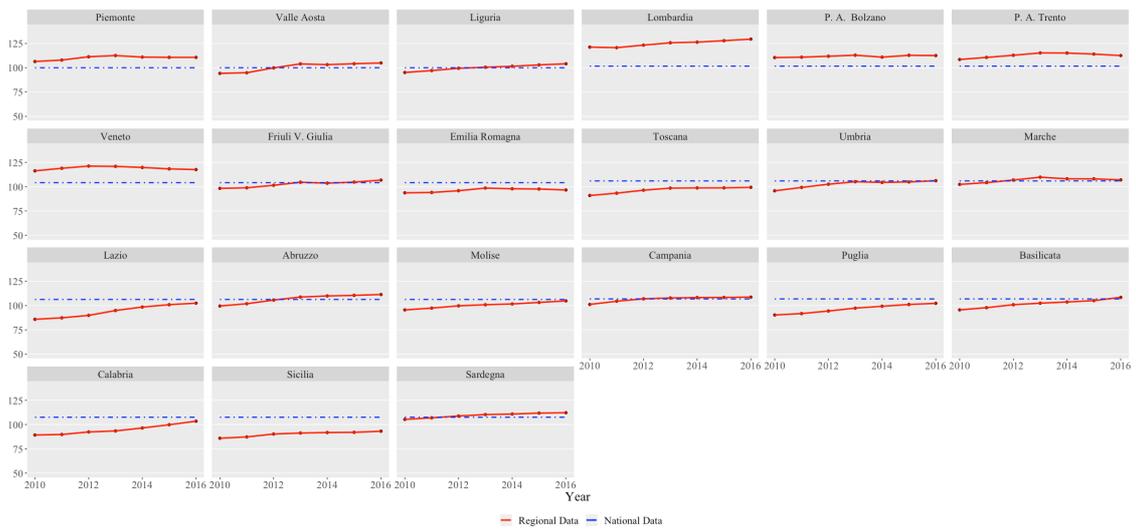


Fig. A5 – AMPI Economic Sustainability Index: regional and national data; time series 2010-2016