Critical Interpretation of SDGs Strategies at Regional Scale: Are There More Important Goals for Italy?

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Abstract. The significance of the Sustainable Development Goals (SDGs) extends not only to the global context but also to the national and regional sphere. Universally adopted by all United Nations Member States in 2015 as a collective call to action to eradicate poverty, safeguard the planet, and ensure prosperity for all, the SDGs offer a comprehensive roadmap for addressing the world's most pressing challenges. Recognizing the interconnected nature of social, economic, and environmental issues, the SDGs underscore the necessity of a holistic and integrated approach to development.

The implementation of the 2030 Agenda at various territorial levels involves the utilization of National Sustainable Development Strategies and Regional Sustainable Development Strategies. Voluntary reviews reveal the formidable challenge of reaching the lower levels of the territorial chain. The absence of specific goals in regional strategies and a lack of economic investments can lead to the erosion of the holistic vision embedded in the 2030 Agenda.

In this synthetic framework, the objective of the paper is to develop a methodological approach to compare the Regional Strategy for Sustainable Development (RSSD) with Regional Competitiveness Index (RCI).

The findings offer a stimulating basis for assessing the correlation in the Italian regions between RSSD and a set of sub-indices of RCI of basic, efficiency and innovation.

Keywords: Holistic vision · Sustainability · Planning for future

1 Introduction

The significance of Sustainable Development Goals (SDGs) cannot be overstated in the global context but also in the local one. Adopted by all United Nations Member States in 2015 as a universal call to action to end poverty, protect the planet, and ensure

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prosperity for all, the SDGs represent a comprehensive roadmap for addressing the world's most pressing challenges. The SDGs recognize the interconnectedness of social, economic, and environmental issues, emphasizing the need for a holistic and integrated approach to development. The goals not only outline a vision for a more equitable and sustainable world but also provide a common language and set of targets and measures for governments, businesses, and communities to work collaboratively towards a shared future.

The implementation of the 2030 Agenda at the national level has gone through National Sustainable Development Strategies (NSDS) and Regional Strategies for Sustainable Development (RSSD) [1]. Each State has participated in defining the indicators for measuring the SDGs and has appointed official bodies for monitoring, such as UNSTAT, EUROSTAT for the EU, and national statistical agencies for individual EU member states (e.g., ISTAT for Italy), as mandated in the EU communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Next steps for a sustainable European future, European action for sustainability in 2016 [2].

We are currently in a phase where voluntary reviews are conducted to adjust the trajectories of individual States or Regions in relation to the common goals of the 2030 Agenda. Voluntary reviews demonstrate how challenging it is to reach the lower levels of the territorial chain (provincial and municipal level), with the exception of capital cities [3].

The EU has reviewed its alignment with UN Goals and set up several data platforms and indicators to bolster community policies. These platforms aid in analysing the consistency between agendas adopted by different member states and community policies. Measurement platforms are also in place for comparing progress among EU regions and member states, with ongoing reviews aimed at enhancing the measurement of progress towards the SDGs within the EU context [4].

Within this wealth, but also complexity of information, the need for a clear measurement of the effects of national choices within the community context and vice versa is evident. These platforms can also prove useful for internal reflections within States, enabling the comparison of regions by simultaneously examining both policies related to the implementation of the 2030 Agenda at the local level (RSSD) and indicators of the economic context in which programmatic choices are made. Moreover, almost five years from 2030 and midway through the targets for 2050, and a decade after the approval of the ONU 2030 Agenda, numerous unexpected disruptive elements have emerged concerning the goals: the COVID-19 pandemic, wars, even in Europe, and the increasing number of natural disasters linked to climate change.

Although the debate on the implementation of the 2030 Agenda in academic circles is rich, in most cases, it is focused on the vertical interpretation of individual goals, thus losing sight of the holistic vision of the 2030 Agenda, which aims for a balance of policies based on territorial specificity. A brief literature review conducted using the keywords "Agenda 2030," "SDGs," and "policy" in the Scopus database for the last five years (2019–2024) yields 179 records. However, only 65 of these records can be deemed comprehensive and aligned with the holistic vision outlined in the 2030 Agenda. Conversely, the remaining records are predominantly focused on individual

goals or specific target issues, such as tourism, gender, health, energy, agriculture, and water. This suggests that a limited number of scholars are actively engaging with the interdisciplinary values envisaged in Agenda 2030, hindering their potential contribution to supporting the development of public policies. Embracing this interdisciplinary vision is crucial for bridging the research gap between theoretical and applied studies.

Furthermore, in this corpus, 24 papers deliver critical assessments, strategic methodologies, and policy perspectives at multilevel scales (Table 1). Among them 6 papers showcase policy and case studies beyond Europe, while 8 focus specifically on European countries. Additionally, only 10 papers delve into broader strategic perspectives on the 2030 Agenda and its impacts.

Table 1. Paper selected with critical reviews, strategic approaches, and policy perspectives at multilevel scales on holistic 2030 Agenda vision.

Publication Title	Year	Source
Analysis of the coverage and discourse of the Sustainable Development Goals and the 2030 Agenda in the Spanish digital press (2015–2022)	2024	[5]
Engaging the United Nations' Agenda 2030 in strategic governance of "Europe's most sustainable city"	2024	[6]
From global goal to local development policy: How partnerships as a policy idea changes through policy translation	2023	[7]
Localizing the sustainable development goals: A multivariate analysis of Spanish regions	2023	[8]
Urban Policies in the Framework of the 2030 Agenda: The Case of Bristol, England	2023	[9]
Agenda 2030: systemic interrelationships between the Sustainable Development Goals	2022	[10]
Can Agenda 2030 bring about "localization"? Policy limitations of Agenda 2030 in the broader global governance system	2022	[11]
Curriculum and the United Nations' sustainable development goals	2022	[12]
Implementing Water-Energy-Land-Food-Climate Nexus Approach to Achieve the Sustainable Development Goals in Greece: Indicators and Policy Recommendations	2022	[13]
SDG interlinkage networks: Analysis, robustness, sensitivities, and hierarchies	2022	[14]
SDGs Implementation in Italy: A Comparative Assessment of Subnational Strategies for Sustainable Development	2022	[15]
Sustainable Development Goals (SDGs): assessment of implementation progress in BRICS and MINT	2022	[16]
Sustainable Development Goals and Sustainability Governance: Norms, Implementation Pathways and Caribbean Small Island Developing States	2022	[17]

(*continued*)

Table 1. (*continued*)

Publication Title	Year	Source
Territorializing and Monitoring of Sustainable Development Goals in Italy: An Overview	2022	[18]
The Territorialization of the 2030 Agenda and the Evolving Policy Framework for Sustainable Development in Italy. The Case of the Metropolitan City of Turin	2022	[19]
Achieving Sustainable Development Goals of Agenda 2030 in Bangladesh: the crossroad of the governance and performance	2021	[20]
Analyzing the contributions of transdisciplinary research to the global sustainability agenda in African cities	2021	[21]
Bringing the Global to the Local: the challenges of multi-level governance for global policy implementation in Africa	2021	[22]
Pathways, contextual and cross-scale dynamics of science-policy-society interactions in transdisciplinary research in African cities	2021	[23]
Policy coherence across Agenda 2030 and the Sustainable Development Goals: Lessons from Finland	2021	[24]
Beyond Agenda 2030: Future-oriented mechanisms in localising the Sustainable Development Goals (SDGs)	2020	[25]
Getting to 2030 - Scaling effort to ambition through a narrative model of the SDGs	2020	[26]
How is progress towards the Sustainable Development Goals measured? Comparing four approaches for the EU	2020	[27]
Insights on the United Nations Sustainable Development Goals scope: Are they aligned with a 'strong' sustainable development?	2020	[28]

The paper acknowledges the importance and opportunity of having numerous comparison and analysis tools proposed by the EU and attempts to apply them. For the Italian case study, it proposes an integrated analysis that combines the significance given by individual Regional Strategy for Sustainable Development (RSSD) to the Goals of the 2030 Agenda and European context indicators at the regional economic level. This analysis investigates towards which SDGs the regions intend to invest and identifies the sectors that are driving investments in the regions. Understand the links between territorial economies and the objectives outlined in the RSSDs, determining whether regional strategies must necessarily be supported by incentivizing mechanisms at the national/community level for effective implementation.

The manuscript is two sections: Comparison between EU Regional Competitiveness Index factors and SDGs indicators at regional scale (Sect. 2) and Critical interpretation (Sect. 3).

2 Comparison Between EU Regional Competitiveness Index Factors and SDGs Indicators at Regional Scale

The European tools used for the comparative reading are:

- SDG Mapper[1]
- Regional Competitiveness Index (RCI)[2] interactive tool.

The SDG Mapper, found on the *KnowSDGs* platform, is a web-based application based of Joint Research Center (JRC) studies [29–38] that provides tools and organizes knowledge on policies, indicators, methods and data to support the evidence-based implementation of the SDGs by enabling users to dynamically map any document against the SDGs at both goal and target levels. Utilizing a keyword approach, the tool offers a robust method for pinpointing specific topics related to the SDGs within the text [39]. The primary goal of the SDG Mapper is to assist users in contextualizing their work within the framework of the SDGs. By doing so, it aims to enhance comprehension of the 2030 Agenda, including its Goals, targets, and indicators. The ultimate objective of the SDG Mapper is to streamline the integration of the SDGs into various policy and decision-making processes. The mapping tool presents diverse data visualizations and furnishes information on the indicators underlying the identified goals and targets. Additionally, it features an SDG reference tracker that enumerates direct references to the 2030 Agenda discovered in the uploaded documents. The application of the automated SDG mapping approach [37] to map RSSD onto the SDGs can contribute significantly to better incorporating the 2030 Agenda into the regional policy landscape.

Results of the mapping process can be downloaded for further comprehensive data analysis and interpretation.

In this paper the interpretation is done using also Regional Competitiveness Index (RCI). The definition of the RCI framework slightly differs from the national framework [40, 41] as it incorporates the perspectives of both businesses and residents [42]. According to this definition, regional competitiveness is defined as the ability of a region to provide an attractive and sustainable environment for firms and residents to live and work. This definition seeks to balance the objectives of business success with those of societal well-being, contributing, at least partially, to the ongoing 'beyond GDP' discussion. Sustainability in this context refers to a region's capacity to offer an appealing environment in both the short and long term [43].

Drawing inspiration from the World Economic Forum's (WEF) framework for the Global Competitiveness Index (GCI), the RCI adapts and extends this framework to the regional context within the EU. The aim is to capture the underlying factors that support a region's long-term economic development. The RCI comprises three sub-indices [43]:

- 'Basic' (fundamental drivers applicable to all types of economies),
- 'Efficiency' (a skilled labour force and a more efficient labour market), and
- 'Innovation' (drivers of improvement at the most advanced stage of economic development).

[1] https://knowsdgs.jrc.ec.europa.eu/sdgmapper.

[2] https://ec.europa.eu/regional_policy/assets/regional-competitiveness/index.html.

These sub-indices are further articulated into 11 pillars, each describing different aspects of competitiveness. According to Dijkstra et al. (2023) in this paper, the pillar highlights include *Institutions, Labour market,* and *Technological* readiness (Fig. 1) [43].

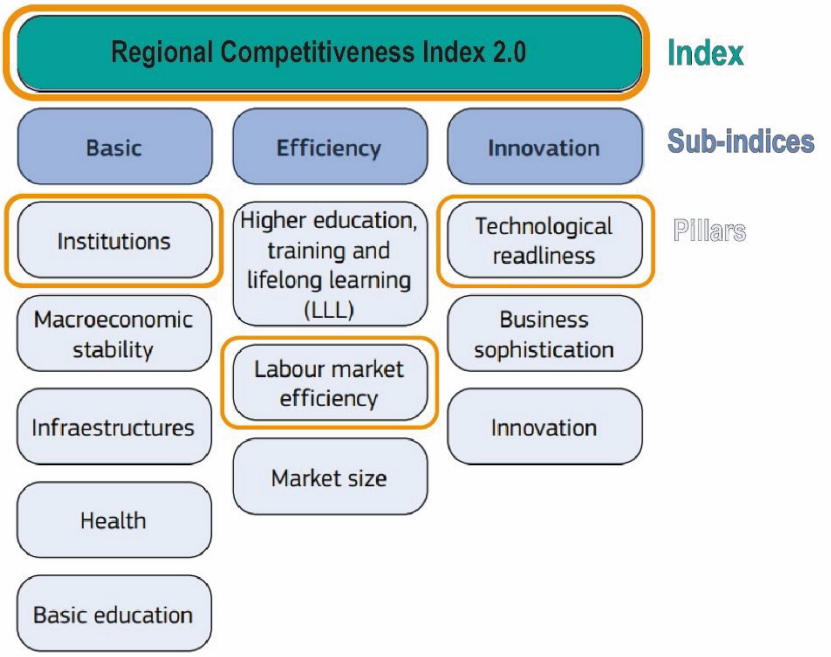

Fig. 1. RCI 2.0 framework structure [43]. The pillars used in the paper in orange.

The 'Institutions' pillar assesses the quality and efficiency of institutions, the perceived level of corruption, and the general regulatory framework within countries. It gauges the extent to which people trust their national legislative and regulatory systems, along with managers' perceptions of the efficiency and reliability of various aspects of the business environment. The 'Labour Market' pillar provides a crucial indicator of a region's economic development. Efficient and flexible labour markets contribute to the effective allocation of resources. The 'Technological readiness' pillar measures the extent to which households and enterprises are using and adopting existing technologies. The adoption and diffusion of new technologies are widely recognized as fundamental to boosting growth and competitiveness [43]. These three pillars assist researchers in identifying the obstacles that the regional sustainable development strategy may face in its specific context, thereby revealing potential constraints on its implementation. It is widely recognized that executing a strategy is not solely the duty of the public sector; instead, it heavily depends on active involvement from the private sector and businesses. The 'Institutions' pillar not only forms the regulatory framework for potential investments but also assesses the institutional climate, indicating whether it's supportive or

not. Assessing 'Labour Market efficiency' in economic development allows us to gain insight into the types of investments best suited for that territory. Similarly, evaluating 'Technological readiness' helps us determine whether the reference context is dynamic enough to effectively utilize innovative technologies.

A deeper understanding of the interplay between regional policies and the 2030 Agenda, encompassing its 17 goals and 169 targets, can enhance policy coherence for sustainable development. This involves reinforcing local capacity to formulate, execute, and monitor cohesive and integrated policies for sustainable development. Effectively implementing the SDGs through a coherent set of actions presents a challenge for regional governments.

The integrated framework is organized into three tables, facilitating a comparative analysis of the impact of the 17 Goals in the RSSD among regions within the same relative range of the RCI. In each table, the left side presents the thematic map of the RCI with bar graphs depicting the reference regions for the three pillars: *Institutions, Labour market,* and *Technological readiness.* On the right side, a bar graph is provided for each region, illustrating the incidence of the SDGs in the RSSD.

Across all of Italy, excluding the Lombardy region, the RCI is below the European average (EU-27, which is set at 100 points). The **first chart** (Fig. 2) represents the Southern regions of Italy and the islands, which have an RCI ranging from 50 to 75 points, the lowest in the country and comparable to other EU regions such as Greece, Romania, Bulgaria, Hungary, Andalusia, and Extremadura (Spain). Additionally, these regions are considered less developed in terms of GDP. All the strategies of these regions focus on Goal 11, while attention to Goal 17 does not seem to be recurrent. It is noteworthy that 'institutions' consistently score below 50 in the respective pillar of the RCI. Both Campania and Sardinia are predominantly focused on Goal 11, each reaching over 20% of citations, despite weaknesses in both institutional aspects and the labour market for the former and greater dynamism for the latter. Puglia, Sicily, and Molise, despite their differences, maintain a more varied distribution among the SDGs. Puglia exceptionally emphasizes Goal 6, likely linked to the attention given to the Puglian aqueduct, and Goal 15. Sicily, on the other hand, focuses on Goals 7 and 8, presumably related to renewable energy, but within a weak 'labour market' context and relatively strong 'technological readiness'. Finally, Molise concentrates on Goal 13, addressing climate change, supported by a sufficiently strong 'labour market'. The strategies of Calabria and Basilicata are still being defined and therefore cannot be evaluated.

The **second chart** (Fig. 3) represents regions with an RCI ranging from 75 to 90 points, consistently below the EU average. In terms of GDP, Abruzzo, Molise, and Marche are considered in transition, while the other regions in the area are deemed developed. All the strategies of these regions focus on Goal 11, with a strengthening of interest in Goals 8, 15, and 13. Additionally, Liguria and Tuscany also show interest in Goal 10. In comparison to less developed regions (Table 1), scores for institutions and the labour market are significantly higher, except for Abruzzo. The labour market indices of Bolzano and Valle d'Aosta align with the EU average.

The **third chart** (Fig. 4) represents regions with an RCI ranging from 90 to 110 points, indicating proximity to the EU average and a higher level of development in terms of GDP. Lombardy is the only region with an RCI above the EU average (EU-27 = 100), similar to regions such as Costa Azzurra, Brittany, and Estonia. The strategies of these regions focus not only on Goals 11, 12, 13, and 8 but also on Goals 3, 4, and 15 (except for Veneto). All regions have a high 'labour market' score around 90 points (except for Lazio). Trento, as a special statute province and equivalent to a region, has stronger 'institutions', and the 'technological readiness' is around 70 points.

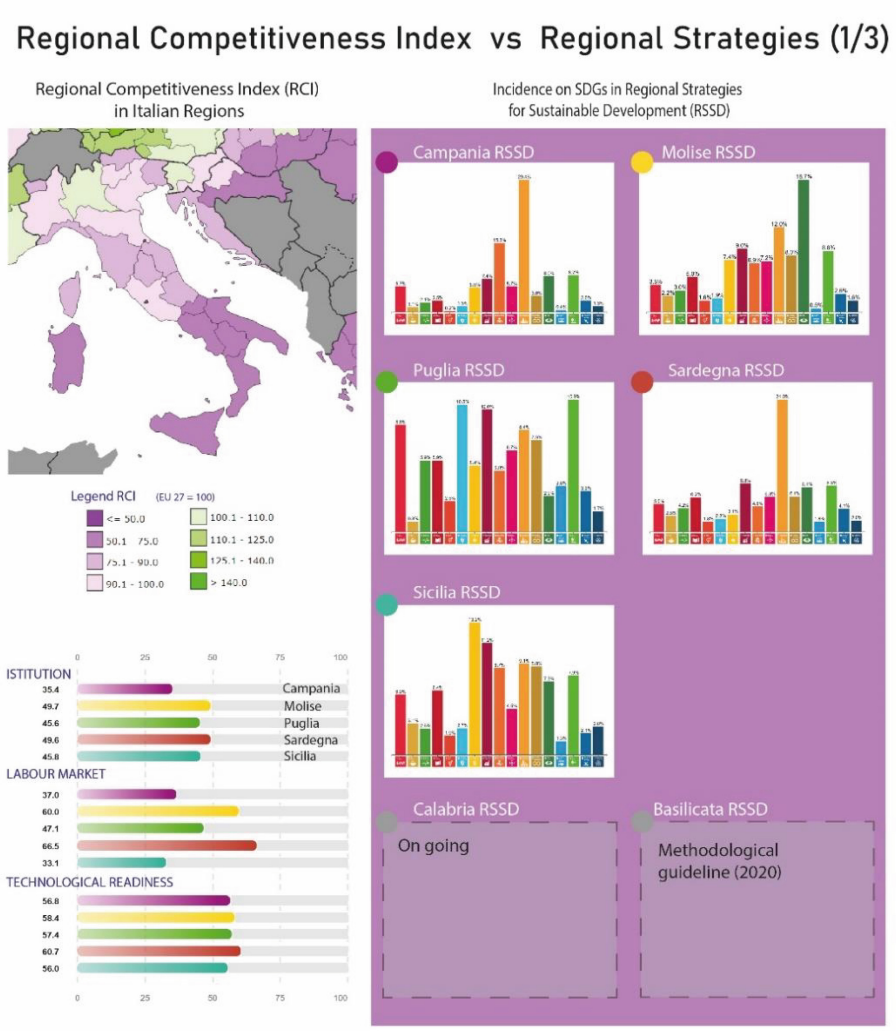

Fig. 2. The chart1 shows the impact of the 17 Goals in the Regional Strategy for Sustainable Development (RSSD) within the same relative range of the Regional Competitiveness Index (RCI) (50–75) among Italian regions.

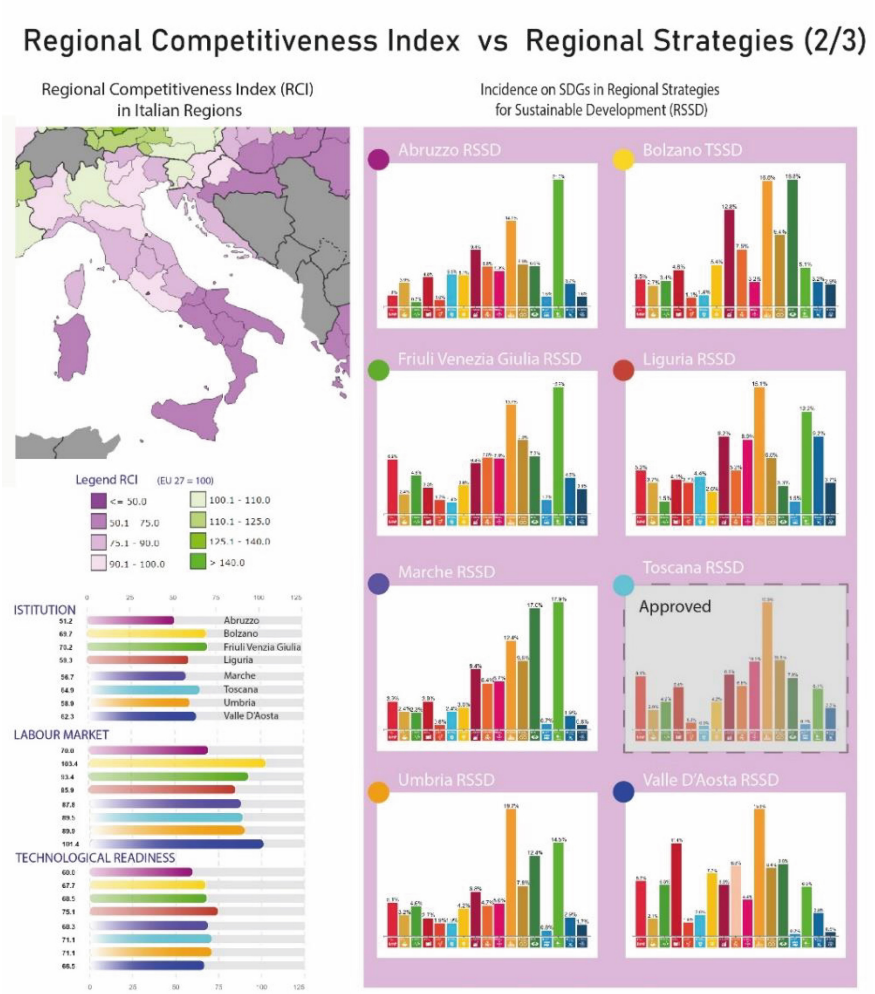

Fig. 3. The chart 2 shows the impact of the 17 Goals in the Regional Strategy for Sustainable Development (RSSD) within the same relative range of the Regional Competitiveness Index (RCI) (75–90) among Italian regions.

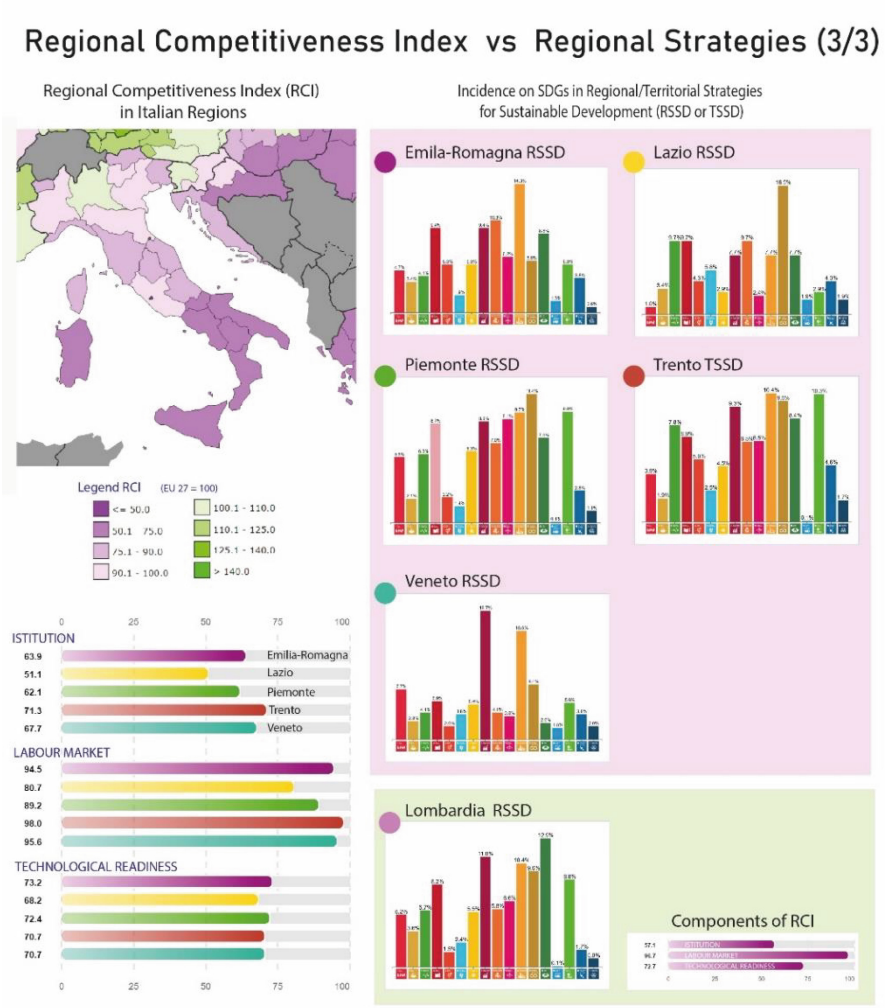

Fig. 4. The chart 3 shows the impact of the 17 Goals in the Regional Strategy for Sustainable Development (RSSD) within the same relative range of the Regional Competitiveness Index (RCI) (90–110) among Italian regions.

3 Critical Interpretation

The present research confirms that "more developed regions (with a GDP per head above 100% of the EU average) perform better than transition (between 75% and 100%) and less developed regions (with a GDP per head of less than 75%) in all components of the RCI" [43].

The RSSDs in less developed regions prioritize the urban dimension, whereas transition regions place greater emphasis on goals associated with environmental themes like climate change, life on land, and water, culminating in production. Additionally,

transitioning regions exhibit a heightened interest in the quality of life influenced by the production system, well-being, and education. Overall, RSSDs consistently assume a marginal role with respect to Goals 16 and 17, affirming the barrier underscored by Widuto in 2022 at the European Parliament Think Tank [44].

The primary obstacles to achieving SDGs at the local level are not jet overcome and they regard a discontinuity in political dedication to sustainable development, insufficient awareness, a lack of coordination across various governance levels and policy departments [45], limited financial resources, and a deficiency in the capacity to track indicators and establish connections among the diverse indicator systems maintained by the UN, Eurostat, as well as national and regional authorities.

The delay in attaining the targets set forth in the 2030 Agenda poses a threat to national competitiveness. The economic repercussions of the postponed policies directed towards the objectives of the 2030 Agenda have not been assessed by the regions yet. Nevertheless, the price of indecision can lead to a decline in competitiveness for the territories and can hinder technological readiness and the evolution of the labour market [46].

Therefore, we need an effort in maximizing synergies and navigating trade-offs across various policy areas; fostering vertical and horizontal cooperation among all levels of governance, including public administrations and other relevant stakeholders; engaging Local and Regional Authorities (LRAs) in the formulation of national strategies; formulating indicators pertinent to the local level; and consulting LRAs to tailor indicators to address local issues and tasks [44].

Similarly to the EU's approach in the 2023 Voluntary Review [19], which examined internal and external relations within the EU, it is advisable to observe the internal and external relations of individual regions. The National Voluntary Review (NVR) and Local Voluntary Review (LVR) of regions should concentrate on strengthening governance, particularly the implementation of SDGs 16 and 17. Achieving this goal requires a heightened awareness of the internal and external implementation of RSSD, encompassing policy coherence and spillover effects. Regions communicate the Agenda's objectives through RSSD, and these objectives should be implemented using territorial and sectoral planning instruments.

The links between local policies and economies and the objectives included in the regional strategy for sustainable development are both multiple and complex. The key points of this connection are based on inclusive and sustainable economic growth that benefits communities, without depleting natural resources. Innovation, economic diversification, and the valorisation of local resources constitute both opportunities and challenges. In fact, local economies are often directly dependent on the natural resources of the area (agriculture, fishing, tourism, etc.). Sustainable development strategies must include the conservation of resources, sustainable management, and the reduction of impacts on the climate and the environment to guarantee renewed spatial justice (Goal 16). In this sense, social equity and territorial cohesion through access to services, education, healthcare and energy, strengthen local economies, which together with innovation and new skills can stimulate the creation of new jobs, businesses and local economic sectors, while offering solutions to climate and environmental challenges within the framework of multilevel governance (Goal 17).

The support incentives within the RSSD to stimulate sustainable practices in businesses, communities and public bodies must be integrated on multiple fronts to be effective: financial incentives, community training and involvement, green public procurement and circular economy, innovation, and research. In this sense, the indicators (environmental, economic, social and governance) allow us to evaluate to what extent the integrated action of incentives can contribute to the achievement of sustainable development objectives, offering a basis for remodulation and reporting. For monitoring, the indicators must be specific, measurable, achievable, relevant, and timely (SMART) and therefore reliable in decision-making processes and performance evaluation.

To enhance coherence between commitments and government actions, a driving force could be provided by the Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) [47].

The use of SEA/EIA, incorporating monitoring indicators from the 2030Agenda, would help ensure a proper understanding of the trajectories of strategic choices made by regions, particularly regarding the interconnection between SDGs.

As emphasized by the Intergovernmental Panel on Climate Change (IPCC) [48, 49], there are indeed various possible scenarios to implement the necessary transitions to fulfil the 2030Agenda. Local authorities must adopt the cultural dimension of the SDGs. This implies that the 2030Agenda should become a way of shaping policies and regulatory acts [50]. In line with the commitment to balance SDGs, as embedded in the ethos of 2030Agenda, it is important to explore the possibility of reassessing the internal structure of local authorities, giving substantial attention to the current connection between sustainability and innovation [51].

In this sense, the gap found (chart 1, 2 and 3) of the three macro regions: north, centre and south which confirms what theorized by Hans Singer [52, 53], through the distinction between "centre" and "periphery" to explain how the economic and social inequalities between and within nations. According to Wallerstein I. [54, 55] and adapting the global model also to individual nations, northern Italy could be associated with the centre, central Italy with the semi-periphery and the south with the periphery [56].

Despite its limitations, centre-periphery theory remains fundamental to understanding power dynamics and spatial inequalities. It offers a framework for analysing how economic policies and therefore incentives can influence the development of countries and regions, highlighting the need for more balanced and sustainable strategies to promote inclusive development.

Future perspectives for this research could involve analysing RSSDs trends based on voluntary revisions that regions will undertake in the future to understand the evolution of the strategies over time. Additionally, the research could be extended to other subregional territorial levels of investigation (such as provinces, homogeneous territorial areas, or municipalities). To broaden the perspective, it could be beneficial to compare the link between regional strategies with other synthetic performance indices of environmental or social nature and also governance, in order to holistically complete the quadruple bottom line model of sustainability [57].

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A.R.; writing - original draft preparation M.P, A.R.; writing - review and editing A.R., M.P G.B.; supervision G.B. All authors have read and agreed to the published version of the manuscript.

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