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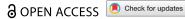
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Sustainable Development Goals in a regional context: conceptualising, measuring and managing residents' perceptions

Pantea Foroudi^a, Reza Marvi^b, Maria Teresa Cuomo^c and Antonio D'Amato^d 🏻

ABSTRACT

This study explores how national-level Sustainable Development Goals (SDGs) are implemented at the regional level in Italy by achieving three objectives: (1) conceptualising local residents' perceptions of the SDGs; (2) creating a scale to measure these perceptions; and (3) validating this scale across Italian regions. Using a six-step methodology, including panel data analysis and surveys with 2303 respondents, this research validates key SDGs significant to Italian regions. The results provide policymakers with a framework to tailor regional policies that resonate with residents' views on SDGs.

resident perceptions; Sustainable Development Goals; sustainability; social business

JEL C83

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1. INTRODUCTION

Extreme poverty, climate change and deforestation are urgent global challenges affecting regions worldwide. In response, the United Nations introduced 17 Sustainable Development Goals (SDGs) in 2015 as part of a comprehensive agenda to address these challenges by 2030. These SDGs have garnered significant attention, particularly in urban areas, given their profound impact on the wellbeing of local residents (Fasoulis, 2021; Le Roy & Ottaviani, 2022; Terzo et al., 2023). The shift towards sustainability has not only transformed urban policymaking, as evident in McKinsey & Co. (2023) and Forbes (Nikel, 2022) reports, but also become a burgeoning area of interest for scholars across research disciplines (Appio et al., 2019; Caragliu & Del Bo, 2022; Graute, 2016; Watson,

The SDGs and the specific policy initiatives aimed at achieving them are increasingly being acknowledged as effective strategies for addressing global challenges (Robert et al., 2021; Sachs et al., 2019; Van Zanten & Van Tulder, 2018; Yin et al., 2022). These goals not only provide a framework for unlocking opportunities in diverse regions (Su & Fan, 2023) but also foster innovative solutions to regional sustainability issues (Watson, 2021). Furthermore, a growing wave of younger citizens is actively urging regional policymakers to embrace sustainable development practices (Chandy et al., 2021; Gonzalez-Arcos et al., 2021; Kiefner et al., 2022).

One critical aspect requiring further attention is the research gap concerning the intersection of SDGs and the regional context, particularly in countries with notable regional differences such as Italy. While there is a growing body of literature on regional sustainability, as acknowledged in prior studies (Cervelló-Royo et al., 2020; Tsolakis et al., 2021), there remains a pressing need to comprehend how regional initiatives can effectively align with the SDGs (Shams et al., 2022). Existing literature (e.g., Montiel et al., 2021; Thomas et al., 2021) often overlooks the nuanced disparities that exist within countries, especially in terms of regional differences such as Italy. Furthermore, there exists a gap in understanding how local perceptions can significantly impact the success or failure of SDG-related policies (D'Adamo et al., 2022).

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For instance, Northern Italians perceive contributing to SDGs related to environmental sustainability more positively, while residents of Southern Italy consider investing in SDGs related to infrastructure and improving access to economic opportunities more positively. Furthermore, residents of the central regions signify the importance of SDGs related to social inclusion and access to healthcare, while residents of the islands view further contributions to SDGs related to economic development more positively (D'Adamo et al., 2022).

This oversight is particularly detrimental as it hampers regional policymakers' ability to develop strategies that are truly reflective of and responsive to the diverse needs of their constituents. In light of this, it is imperative to develop a framework that deciphers residents' views on the SDGs from a regional perspective, as suggested by Angelo and Wachsmuth (2020). Such a framework would be invaluable in bridging this critical research gap.

Addressing this significant research gap can assist regional researchers and practitioners in identifying sustainable policy solutions for implementation in countries with regional differences. The successful implementation of SDGs relies heavily on local actors translating global goals into regionally applicable actions. This necessity is underscored by the fact that approximately 62% of SDG targets cannot be achieved without involving local residents (Gao et al., 2023; Organisation for Economic Cooperation and Development (OECD), 2020) and understanding how they perceive policies contributing to achieving SDGs. Hence, by drawing on moral psychology theory (Haidt, 2007), we explore mechanisms for translating national-level SDGs into regional-level actions and examine how local residents perceive these SDG-related activities in a country with diverse regional differences (i.e., Italy), in a series of steps.

Building on previous studies (e.g., Aslam & Corrado, 2012; Bernini & Tampieri, 2019), we employ a two-pronged approach, evaluating both the regional and individual levels. To do so, in steps 1 and 2, we examine how SDGs can increase residents' subjective and collective well-being. Informed by the findings from these steps, in step 3 we qualitatively investigate how residents' awareness of sustainable policies affects their subjective and collective well-being across the four Italian macro-regions (North, Centre, South and Islands) (research question 2). In steps 4–6, we provide an extended conceptualisation and operationalisation of how local residents perceive the SDGs across different macro-regions in the blue economy (research question 3).

This research extends important streams of regional sustainability literature. First, as discussed previously, the SDGs largely address the country level (Van Zanten & Van Tulder, 2018), and therefore understanding of how to implement them at regional level is still unclear. In this line, our research contributes to the adoption, implementation, and monitoring of SDGs at the regional level in countries with regional differences, viewed through the perspectives of local residents.

Our study provides a robust framework that helps make the SDGs actionable at the region level by identifying the most important SDGs in the context countries with regional differences such as Italy. Accordingly, this study is the first to understand how local residents perceive the SDGs as a set of five conceptually related but distinct dimensions, identify the underlying dimensions, and uncover the influence and role in regional level. By focusing on the SDGs from a local perspective, we contribute to the regional study literature through discussions on localising the SDGs, particularly in countries with regional differences.

Second, we incorporate these identified dimensions into a theoretically grounded framework to explore how policymakers' motivations for contributing to the SDGs can influence local residents' perceptions of the SDGs and, consequently, yield positive regional outcomes in a country characterised by regional diversity. We validate and compare our findings across four distinct regions in Italy. This approach ensures the validity and reliability of our research findings, as different Italian regions exhibit diverse characteristics.

Third, countries with varied regional resources and capabilities often encounter distinct regional sustainability challenges. Consequently, each region develops diverse strategies and solutions. This study illustrates how the heterogeneous regional nature can influence local perceptions of the SDGs. In this line, by cross-checking our findings across the four regions, we enhance their generalisability and external validity. Furthermore, the limitation of the data to a single region can inhibit generalising and proposing models for SDG planning purposes across different regions. As such, comparing our results across the four regions - with their own unique characteristics and SDG needs - can give clarity to the possibility of adoption in other like regions, thereby helping regional researchers and practitioners understand whether the differences between regions is due to contextual issues or not.

Moreover, our study can assist regional and urban policymakers in identifying effective policy interventions and best practices that can be implemented across different regions. By providing a validated framework that is more practical and actionable for regional policymakers, our research aims to address criticisms that the SDGs are too numerous and abstract (Foroudi et al., 2023; Montiel et al., 2021; Van Zanten & Van Tulder, 2018). In addition, our framework offers valuable insights to researchers by elucidating the mechanisms through which the SDGs can be effectively implemented across diverse regions. Through a comprehensive analysis spanning four regions, our study identifies the most successful interventions that can be adapted or replicated to address similar challenges in other regions. This contribution not only enriches academic discourse but also informs policymaking discussions on the localisation of SDGs, particularly in urban areas of developing economies.

The rest of the paper is structured as follows. The following sections presents an overview of the SDGs in the context of reshoring. Steps 1 and 2 delve into the potential of implementing SDGs to enhance residents' well-being. Building

on these findings, in steps 4–6 we explore the impact of residents' awareness of sustainable policies on subjective and collective well-being. The article concludes with a discussion of the theoretical contributions and managerial implications.

2. SDGs IN A REGIONAL CONTEXT

The UN's 17 SDGs represent a transformative approach for regional and subregional policymakers, as highlighted by Watson (2021). These goals offer a framework for addressing major urban challenges such as climate change, biodiversity and poverty. The implementation of SDGs, according to Gao et al. (2023), supports innovative solutions and institutional backing for these challenges. De Guimarães et al. (2020) emphasise the necessity of quantitative global measures to integrate environmental, social and economic objectives. Specifically, SDG 13 focuses on mitigating human impacts on the environment such as waste and resource exploitation (Rizzo et al., 2022), while SDG 8 promotes sustainable economic development and a resilient economy (Martin, 2021). Additionally, SDG 10 aims to foster equitable urban communities, emphasising cultural identity and inclusivity (Watson, 2021). However, achieving these goals involves tradeoffs at the urban level, as noted by de Ruyter et al. (2022), with the three dimensions interlinked in this complex endeavour.

While the 2030 Agenda for SDGs primarily targets nations, regional governance is crucial in advancing SDG implementation. Local regions, by addressing social, ecological and economic dimensions, can significantly contribute to socio-economic and ecological well-being (Amouri et al., 2021; Shams et al., 2022). However, there is a surprising lack of research on how residents perceive and react to regional SDG initiatives, the mechanisms involved, and the development of quantifiable metrics for regional policymakers (Manasakis & Taliouris, 2022; Rizzo et al., 2022; Shams et al., 2022). Implementing SDGs at the regional level is essential for enhancing sustainability efforts and understanding the regional dynamics of sustainable development (Graute, 2016; Hansen, 2022). Regional governments play a pivotal role, creating policies tailored to local needs and circumstances (Bækkelund, 2021; Hansen, 2022). Their approach is characterised by transparency, adaptability, inclusivity and measurability (Breuer et al., 2019; Demeterova, 2023; Watson, 2021). These qualities help in resource allocation, policy implementation and effort evaluation, ultimately aiming to improve individual well-being through SDG achievement (Bansal et al., 2022; Foroudi et al., 2023; Goyeneche et al., 2022; Miola & Schiltz, 2019; Schot & Steinmueller, 2018; Tsani et al., 2020).

Public reactions to SDG-related decisions often elicit strong moral and ethical responses, driven by concerns that transcend personal interest (Haidt, 2003, 2007; Pike et al., 2024; Weckroth & Kemppainen, 2023). Policies that encourage unsustainable practices or unethical behaviour tend to provoke negative emotional responses, while those aligned with sustainable development usually

generate positive reactions (Bourdin et al., 2023; Bourdin & Levratto, 2023). This moral dimension emphasises the importance of integrating various SDG aspects with overall well-being. SDG 3, focusing on good health and wellbeing, is a central element within the SDG framework, with research highlighting its critical role in addressing women's/maternal health, universal health coverage and the global burden of diseases (Blignaut et al., 2021; Dwyer, 2022; Fu, 2021; Pereira & Marques, 2022; Sweileh, 2020; Weerakkody et al., 2021). Moreover, the broader impacts of SDGs on poverty alleviation and sustainable urban planning are recognised for their interconnected benefits that contribute to overall citizen well-being (Casini et al., 2021; De Neve & Sachs, 2020; Goyeneche et al., 2022; Laurett et al., 2021; Painter-Morland et al., 2017).

These findings underscore the significance of wellbeing as a metric for evaluating SDG progress and its intrinsic link to societal welfare (Cervelló-Royo et al., 2020; Di Vaio et al., 2020). Regional initiatives must therefore consider not only environmental and economic outcomes but also the social determinants of health and well-being, aligning with national guidelines and local priorities (Biggeri et al., 2023; Cavalli et al., 2023). This paper proposes a conceptual framework to evaluate residents' perceptions of SDG-related efforts and their impact on regional well-being. Grounded in a comprehensive review of sustainable development in regional contexts (see Appendix A in the supplemental data online), this framework offers quantifiable measures for policymakers to understand how residents view the execution and effectiveness of SDG strategies. By applying this framework, regional policymakers can gain actionable insights into which SDG initiatives are most valued by residents and how these contribute to sustainable well-being. This approach not only emphasises a holistic view of SDG implementation but also enables targeted policy improvements to maximise their positive impact on regional well-

3. GENERAL METHODS

3.1. Scale development for SDGs

To establish a scale for evaluating residents' perceptions of SDGs, we adopted a multidisciplinary strategy, scrutinising the literature across sustainability, management, marketing and corporate sustainable development sectors (Brakus et al., 2009; Churchill, 1979; Diamantopoulos et al., 2008). Employing a mixed-methods approach, including panel data from the Italian National Institute of Statistics (ISTAT) and qualitative interviews, we aimed to construct a robust conceptual model. This approach ensured the scale's validation through a comprehensive questionnaire, addressing methodological challenges by incorporating diverse data sources (Foroudi et al., 2023). The scale development unfolded in two phases over six steps. Initially, we explored the SDGs' impact on subjective well-being across Italy's macroregions: North, Centre, South and Islands, utilising

ISTAT's annual reports. This investigation highlighted how enhanced awareness of sustainable policies among residents significantly influenced both subjective and collective well-being in these regions. For instance, in the South, increased awareness led to targeted interventions improving sustainable urban development, directly reflecting on enhanced local perceptions of SDG achievements.

Subsequently, we deepened our exploration into local residents' perceptions, validating the measurement instruments through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). This rigorous process, drawing on responses from residents across the macroregions, underscored the scale's reliability and validity. A pivotal outcome emerged in step 5, where a comprehensive survey revealed nuanced insights into residents' SDG perceptions. Specifically, in the Islands region, the alignment of local policy initiatives with SDG 14 (Life below water) resulted in marked improvements in marine conservation efforts, illustrating the power of localised, perception-driven policymaking. Finally, step 6's structural equation modelling, linking policymakers' SDG motivations with consumer perceptions and the performance of Italy's blue economy social business, underscored the critical role of local insights in shaping effective and responsive sustainable policies. These examples from Italy's diverse regions demonstrate the practical implications of integrating residents' SDG perceptions into policymaking, leading to successful interventions that align with both local needs and global sustainability objectives.

3.2. Context: regional disparities in Italy

Italy, located in the Mediterranean, with an area 301,330 km², is characterised by diverse terrain: approximately 23% flat, 42% hilly and 35% mountainous (Esposito et al., 2013). The nation is historically divided into North/Central and South/Island regions, leading to persistent socioeconomic and cultural disparities. This division is evident in Italy's four geographical regions - North, Centre, South and Islands - which continue to reflect significant socioeconomic differences (Tosi et al., 2019). Over the past decade, these disparities have widened due to factors such as labour market challenges and demographic shifts, particularly affecting the South and Islands with their economic stagnation compared with the more prosperous North and Central regions (Bratti & Conti, 2018). Urban development trends also vary regionally. The North, particularly the Po Valley, is highly industrialised and faces significant pollution issues, while Central Italy features a stark urban-rural divide with cities such as Rome and Florence as major urban centres. In contrast, Southern Italy and its main islands, Sicily and Sardinia, are economically disadvantaged, heavily relying on agriculture and traditional services such as construction and commerce (di Bella et al., 2021).

These regional differences are further compounded by variations in population density, settlement patterns, agricultural intensity and natural resource distribution (Terzo et al., 2023). Such disparities significantly affect regional implementation of SDGs and the perception of their

benefits by residents. Italy's complex regional dynamics make it a prime case for studying the impact of SDG-related activities on regional well-being (Berman et al., 2020). Additionally, Italy faces significant environmental challenges as the fourth largest emitter of greenhouse gases in Europe (European Parliament, 2023). These issues highlight the critical need for tailored regional policies to address sustainability effectively. ISTAT supports this effort by providing data on individual and collective well-being through the *Benessere Equo e Sostenibile* (BES) (i.e., Equitable and Sustainable Well-being Framework) framework, crucial for assessing life quality across Italy's macro-regions and informing SDG progress (ISTAT, 2023).

4. PHASE 1: SUBJECTIVE AND COLLECTIVE WELL-BEING

To examine the impact of the SDGs on the subjective well-being of Italian residents, we adopted ISTAT's territorial classification system. This system categorises Italy into four macro-regions: North, Centre, South and Islands. While Italy is made up of 20 regions, for territorial homogeneity and contiguity, these are commonly aggregated into the four macro-regions. As our focus in this phase is on Italy's blue economy of social business performance, we selected only coastal regions (i.e., 15 of 20) encompassed in the four macro-regions.

4.1. Step 1: Impact of the SDGs on subjective well-being

The focus of step 1 was on investigating how the SDGs affect the subjective well-being of residents. We specifically measured this impact using BES 8 of the Equitable and Sustainable Well-being Framework in Italy, which comprises four indicators: (1) life satisfaction, (2) engagement in leisure activities, (3) positive expectations for the future, and (4) negative expectations for the future. By employing ISTAT's territorial classification, we were able to examine these effects within the context of the four Italian macro-regions.

The concept of 'subjective well-being' proposed by ISTAT falls under two dimensions. First, the cognitive dimension pertains to the evaluation process by which individuals assess their lives in retrospect in terms of satisfaction. This evaluation is based on certain personal standards such as expectations, desires, ideals and past experiences. Such awareness enables individuals to assess their level of satisfaction on the basis of goal attainment, fulfilment of their aspirations and comparison of their current situation with their ideals, past experiences or achievements of other significant exploits. In essence, satisfaction with life is a product of the cognitive pathway through which individuals evaluate their situation in relation to various aspects and standards. Second, the affective dimension pertains to the emotional experiences of individuals in their daily lives, which can be either positive (pleasant affect) or negative (unpleasant affect) in nature. This dimension is conceptually distinct from the

Table 1. Results of the regression analysis.

	Study 1		Study 2		
Dependent variable	Satisfaction 1	Satisfaction 2	Dependent variable	Trust 1	Trust 2
SDG_6		-0.10748**	SDG_7		-0.0267**
		(-2.17)			(-1.99)
SDG_9		-1.71838**	SDG_8		0.2299**
		(-2.41)			(2.26)
SDG_11		-2.4154*	SDG_11		-5.782***
		(-1.97)			(-3.35)
SDG_15		-1.21044**	SDG_12		15.391**
		(0.01)			(2.98)
Constant	37.13***	205.84***		37.13***	-25.878
	(72.93)	(3.34)		(72.93)	(-0.31)
Region FE	Yes	Yes		Yes	Yes
Year FE	Yes	Yes		Yes	Yes
N	240	238		240	238
F	153.76***	185.62***		47.33***	39.00***
Adjusted R^2	0.9504	0.9535		0.8533	0.8707

Note: *Significance at the 10% level; **significance at the 5% level; ***significance at the 1% level. FE, fixed effects.

cognitive component, as it is determined by different variables (Diener & Emmons, 1984). While the cognitive dimension involves retrospective evaluation of one's life as a whole against personal standards and goals, the affective dimension is linked to current circumstances. However, research on measuring the affective component is ongoing, and thus the BES indicators proposed herein refer only to the cognitive component.

Furthermore, in this step we identified four specific indicators to measure subjective well-being: (1) satisfaction with life, which measures the percentage of individuals aged 14 and over who reported a life satisfaction score between 8 and 10 out of the total population of those aged 14 and over; (2) leisure activities, which measures the percentage of individuals aged 14 and over who reported being fairly or very satisfied with their leisure time out of the total population of those aged 14 and over; (3) positive opinion on future expectations, which measures the percentage of individuals aged 14 and over who believe that their personal situation will improve in the next five years out of the total population of those aged 14 and over; and (4) negative opinion on future expectations, which measures the percentage of individuals aged 14 and over who believe that their personal situation will worsen in the next five years out of the total population of those aged 14 and over residing in Italy (for more details, see Appendix A in the supplemental data

The results of the panel regression analysis show that the models are statistically significant, with an adjusted R^2 of approximately 95%. Column 1 in Table 1 presents the model estimated with only the regional and year fixed effects; column 2 reports only the coefficients of the SDG variables that were significantly different from zero (thus omitting the non-significant coefficients). The

results reveal that both time-specific and macro-regional factors heavily influence people's satisfaction with their own lives. While the regional and year fixed-effects explain the majority of the total variability of the dependent variable, the SDG variables have a limited impact on people's satisfaction with their lives. Specifically, the results indicate that SDGs 6 (Clean and sanitation), 9 (Industry, innovation and infrastructures), 11 (Sustainable cities and communities) and 15 (Life on land) have a significant effect on people's satisfaction.

The missing series data (from 2018 to 2021 of ISTAT) on SDG 4 (Quality education) prevented us from identifying the impact of this goal on individual well-being; as such, we ignored its measurement. We can conclude that individual well-being is strongly influenced by time-invariant regional heterogeneity and time-specific events that affect a given period. Consequently, people's satisfaction with their own lives is highly variable in the short run, due to the events and contingencies that occur from time to time. Moreover, our analysis reveals significant differences in individual well-being (BES 8) among the four macro-regions of Italy, confirming a duality between the North/Centre (more developed) and South/Islands (less developed) macro-regions.

4.2. Step 2: Impact of SDGs on collective well-being

Step 2 investigates how SDGs affect the collective well-being of residents. The concept of 'collective well-being', as proposed by ISTAT, encompasses various dimensions, including the significance of relational networks that enable individuals to pursue their goals by accessing resources beyond their economic and cultural capital. Research (Bourdieu, 1986; Coleman, 1988) suggests that factors such as interpersonal trust, active participation in

associative networks and the prevalence of civic culture all contribute to individual well-being and promote social cohesion. These aspects, in turn, lead to improved public policy outcomes, increased efficiency and reduced economic transaction costs. In the Italian context, informal networks comprising various interpersonal relationships (e.g., familial and friendly connections) hold particular significance. These networks mobilise both human and material resources for individuals, especially during times of crises, and thus play a crucial role in fostering social cohesion and collective well-being (BES 5).

The concept of the traditional 'welfare diamond' (an often used variant of the 'welfare triangle' consisting of the state, the market and civil society) encompasses four domains, each of which plays a crucial role in shaping societal relations; the state domain is excluded from this scheme, however. The civil society domain, which is characterised by a strong emphasis on relational aspects, can be further classified into two key aspects that account for both the traditional and emerging forms of participation in civil society. The first aspect, 'social participation', encompasses both associations and volunteering; the second aspect, 'generalised trust', is critical in promoting social cohesion and can help generate a sense of collective well-being. The social economy domain prioritises the generation of utility beyond purely monetary terms, emphasising the importance of reciprocity and trust in relationships. Such an approach has the potential to enhance the well-being of communities. Recent years have witnessed the emergence of novel forms of participation based on principles of reciprocity, solidarity, and ethical or religious values, which have gained increasing societal significance. In contrast with traditional market activities, these endeavours are not solely driven by individual economic interests but rather prioritise the capital of relationships, social ties, and collaborative efforts. Finally, the *family* domain holds significance in Italian culture, though measuring its complexity is challenging. To address this complexity, we attempted to select indicators that account for the essential aspects of associated life. Moreover, the family context of individuals can serve as a 'crossing' variable for several of the proposed indicators.

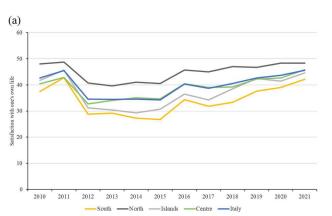
Such an approach can provide valuable supplementary information on the population's behaviour (see Appendix B in the supplemental data online).

Step 2 employs the dependent variable 'trust in other people', operationalised as the percentage of individuals aged 14 and above who believe that most people are trustworthy. The matrix of time-varying indicators representing the degree of attainment of the 17 SDGs for a given region i in year t is denoted by SDGs $_{i,t}$. To address omitted variable bias resulting from time-invariant heterogeneity at the regional level, we incorporate both regional (θ_i) and time (λ_t) fixed effects in our analysis; the error term is represented by $\varepsilon_{i,t}$. The results of our analysis indicate a slight upward trend in collective well-being due to trust in others (Figure 1). Moreover, individuals residing in the South macro-region tend to report lower levels of trust in others than those residing in the other macro-regions.

As noted previously, Table 1 presents the results of the model estimation for both steps 1 and 2. Similar to step 1, dummy variables at the regional and year levels explain the variance of the dependent variable. SDGs 7 (Affordable and clean energy), 8 (Decent work and economic growth), 11 (Sustainable cities and communities) and 12 (Responsible consumption and production) have a significant impact on trust in others. In addition, we found significant differences in collective well-being (BES 5) among the four macro-regions, with the North and Centre regions exhibiting higher levels of well-being than the South and Island regions.

4.3. Step 3: Qualitative study

To understand the influence of residents' awareness of sustainable policies on their subjective and collective wellbeing across Italy's four macro-regions (North, Centre, South and Islands), we developed a scale for measuring perceptions of the SDGs. This was supplemented by qualitative research, underpinned by an exhaustive literature review to identify significant themes for our interviews. Aiming to capture a broad spectrum of viewpoints, our research employed a purposive sampling strategy, conducting 121 interviews across diverse



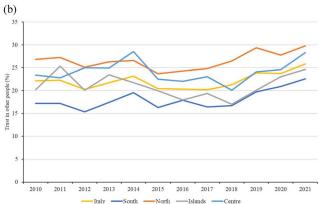


Figure 1. Time trend of well-being in Italian macro-regions for studies 1 and 2, 2010–21: (a) subjective well-being; and (b) collective well-being.

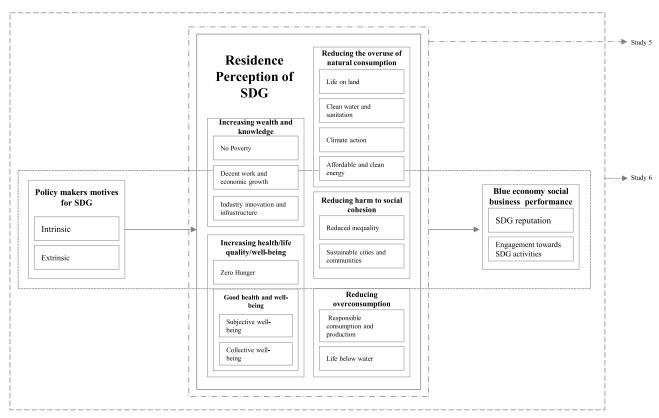


Figure 2. Conceptual model.

demographics, including policymakers, businesspeople, workers, students and farmers. A total of 27 policymakers were interviewed to ensure regional representation (North = eight; Centre = six; South = seven; Islands = six), covering 15 of Italy's 20 regions with a focus on coastal areas for their unique environmental and economic challenges related to SDGs. Regions such as Liguria and Veneto (North), Tuscany and Marche (Centre), Calabria and Puglia (South), and the islands of Sicily and Sardinia were specifically chosen to ensure comprehensive coverage of Italy's macro-regions.

Each interview lasted approximately 45 min, following a structured protocol designed to elicit detailed insights into the residents' SDG perspectives. This approach yielded a rich dataset for analysis, offering deep, personal narratives from participants. Analytically, the study applied thematic analysis to the qualitative data, enabling us to identify key themes related to residents' SDG awareness and its impact on well-being. This methodological combination of scale development, purposive sampling and thematic analysis provided a nuanced understanding of local perceptions towards sustainable policies. One concrete example of successful policy intervention informed by our findings is in the South region, where increased awareness and engagement with SDG 14 (Life below water) among coastal communities led to the implementation of targeted marine conservation policies. These initiatives have resulted in measurable improvements in marine biodiversity and have fostered sustainable local fishing practices, illustrating the practical impact of aligning policy interventions with local SDG perceptions.

During the interviews, we presented a list of the 17 SDGs and asked the interviewees to identify which ones they deemed most relevant to their respective regions. Again, while the SDGs are primarily directed at the national level, the informants found 13 to be pertinent to their regions. For instance, one resident in southern part state that 'policymakers should take firmer actions towards tackling poverty in the region'. In similar vein, a businessman highlighted the importance of 'eradicating poverty' in the region. Similarly, participants emphasised on the importance of decent work. As such, one worker emphasised 'having a chance in achieving decent work conditions and economic/sustainable growth' across the regions. Appendix B in the supplemental data online provides details of the quotations used to identify the related SDGs for each region. In summary, our participants identified 13 SDGs as relevant to their respective regions including no poverty, decent work and economic growth, industry innovation and infrastructure, zero hunger, good health and well-being, life on land, clean water and sanitation, climate action, affordable and clean energy, reduced inequality, sustainable cities and communities, responsible consumption and production, and life below water. Appendix B online provides further details on the informants and a selection of responses from the interviews. Figure 2 shows our conceptual model.

Using NVivo for data management and analysis, we then identified the most significant statements and developed an initial set of 88 measurement items for residents' perceptions of SDGs, informed by construct definitions, the literature review, panel item measurements and

qualitative analysis. To ensure the content and face validity of our measurement items, we sought the judgement of seven experts in the field, which resulted in the removal of six items. Ultimately, we retained 82 items rated on a three-point scale (1 = not at all representative, 2 = somewhat representative, 3 = clearly representative). We retained only the items deemed clearly representative based on established criteria (Zaichkowsky, 1985).

5. PHASE 2: CONCEPTUALISATION OF LOCAL RESIDENTS' PERCEPTIONS OF THE SDGs

5.1. Step 4: Item reduction and dimensionality (pre-study)

In step 4, we aimed to refine understanding of how local residents perceive the SDGs within the context of Italy's blue economy across four macro-regions. The objective was to streamline survey items to better capture key perceptions about the SDGs. This began with a comprehensive literature review, leading to the creation of multi-item Likert scales based on a mix of qualitative studies, panel data and existing research findings. To ensure accuracy, the survey items were first translated into English by a native Italian speaker, then subjected to back-translations by three bilingual experts to maintain language fidelity (Ageeva et al., 2019). Additional validation came from Italian-speaking researchers and managers who assessed the questionnaire for content validity to ensure its appropriateness for diverse contexts and alignment with each SDG dimension.

The study's questions were aligned with international standards, as detailed by Ageeva et al. (2019). Data collection was outsourced to a specialised research firm, which gathered data online over approximately 47 days. From the initial 302 responses, 31 were discarded due to incomplete information, leaving 271 usable responses for analysis. EFA was applied to these responses. Initially, 82 items related to five theoretical constructs were assessed. While these items initially loaded onto different components with eigenvalues > 1, reliability and cross-loading issues led to the exclusion of 22 items in a subsequent phase. The remaining items demonstrated satisfactory reliability, with all Cronbach's alphas > 0.8, as elaborated in Appendix C in the supplemental data online.

5.2. Step 5: Further item reduction and SDG dimension confirmation

We eliminated the number of items measured in step 5 using EFA and CFA. Among the 600 emails sent to residents, 437 questionnaires were returned; we discarded 24 questionnaires with missing values. We ran inferential analysis on the 413 completed and useable questionnaires. The data collected were limited to residents knowledgeable about regional SDGs. Of the respondents, 35.4% were female, 64.6% were between 41 and 50 years of age, 62.3% were postgraduates, and 38% earned more than €35,000 a year. We examined nonresponse bias and common method variance; the results

suggest that the model had good fit and provided support for the validity and interpretability of the 13 factors and 60 items within the context of the selected SDGs (for further details, see Appendix D in the supplemental data online). Figure 3 illustrates our results. Appendix C in the supplemental data online employed rigorous methods to ensure the reliability and validity of our findings.

5.3. Policymakers' motives and residents' perceptions of SDGs

Previous research highlights that sustainable development activities are driven by both intrinsic and extrinsic motives (Freire-Gibb & Nielsen, 2014). Extrinsic motives often align with policymakers' self-interests, such as choosing projects that yield immediate, visible benefits despite not being the most sustainable options (Hu et al., 2023; Meierová & Chvátalová, 2022; Morrison & Weckroth, 2018). On the other hand, intrinsic motives focus on genuinely sustainable strategies aimed at improving the wellbeing of a region's residents (Ala-Mantila et al., 2018; Le Roy & Ottaviani, 2022). These are driven by societal and moral standards, with residents perceiving that policymakers are committed to real sustainability concerns (Ahmad et al., 2023; Rovanto & Finne, 2023). Residents believe that these intrinsic actions by policymakers reflect a dedication to ethical duties and the betterment of society and the environment, fostering admiration and respect among them (Paulraj et al., 2017; Singh et al., 2021; Su & Fan, 2023). This creates a sense of virtue and idealism that inspires local communities. Conversely, when policymakers are perceived as exploiting sustainable development for personal gain, residents react with scepticism and emotions such as disgust and anger, leading to a mistrust in the sincerity of SDG efforts (Acuti et al., 2022; Au et al., 2023; Foroudi et al., 2023; Hur et al., 2014; Leonidou & Skarmeas, 2017).

Such reactions are described by moral psychology as moral emotions, which are automatic responses to social events extending beyond individual interests and impacting society at large (Apostolidis et al., 2022; Haidt, 2007; Shams et al., 2024). Positive perceptions of policy decisions can lead to favourable evaluations of SDGs-related policies and positive resident reactions (Grappi et al., 2015). However, when policies are seen as opportunistic and self-centred, they are likely to be viewed unfavourably, influencing residents' behaviours and attitudes toward sustainability initiatives (Grappi et al., 2020). This understanding helps explain the complex dynamics of how residents interact with and perceive policies within the framework of sustainable development. Thus, we hypothesise the following:

Hypothesis 1: Policymakers' motives for undertaking SDGs can influence residents' perceptions of SDGs.

A region's reputation is shaped by residents' collective perceptions, particularly regarding its efforts towards SDGs, which can significantly enhance its standing as a

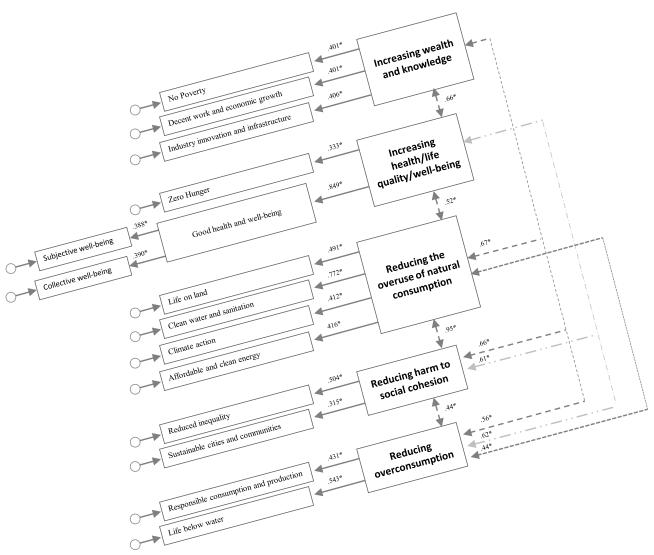


Figure 3. Connections between different Sustainable Development Goals (SDGs) and their effects on well-being and sustainability.

responsible and sustainable area (Su et al., 2020; Wæraas, 2015). When regions actively pursue SDGs, they are seen as desirable locations to live, work and study, attracting both residents and investors (Tosi et al., 2019). Policymakers can leverage this by promoting unique SDGrelated initiatives that underline the region's commitment to sustainability, thereby improving both the regional and resident reputations (Friske et al., 2023; Nikolaeva & Bicho, 2011). Investing in SDGs not only bolsters a region's reputation but also establishes it as a 'legitimate corporate citizen with sustainable plans for the future', which is appealing to potential investors and helps build a sustainable competitive advantage (Friske et al., 2023, p. 378). This strategy fosters valuable and trustworthy relationships with stakeholders, enhancing the region's attractiveness to foreign and domestic companies prioritising sustainable practices (García & Puente, 2016; Masiero et al., 2023; Su & Swanson, 2017).

Furthermore, a strong commitment to sustainability encourages residents to promote their region through their social networks, boosting tourism and local development through sustainable projects (Chaudhuri et al., 2023; Mwesiumo et al., 2022). Regions recognised for their sustainable practices, such as Costa Rica's biodiversity efforts, gain positive perceptions from residents and tourists alike, attracted by responsible consumption and environmental stewardship (Valenciano-Salazar et al., 2022; Victor-Gallardo et al., 2022). Italy exemplifies this approach, with its sustainability policies focusing on engagement and dialogue with stakeholders, attracting visitors keen to experience its natural beauty and environmentally responsible practices (Larrinaga et al., 2020). This dynamic illustrates how regions can enhance their reputations and competitive positioning by actively contributing to and promoting SDGs, aligning with moral psychology theory that positive moral considerations lead to favourable perceptions and increased resident engagement (Grappi et al., 2015). Thus, we posit the following:

Hypothesis 2: Residents' perceptions of SDGs can positively affect the blue economy's social business performance.

5.4. Step 6: Confirming the SDG dimensions 5.4.1. Measure assessment

Step 6 entailed the administration of a questionnaire to residents in the four Italian macro-regions: North (step 6a), Centre (step 6b), South (step 6c) and Islands (step 6d). We collected data between November 2022 and February 2023. In total, 2303 residents provided complete responses: North (n = 395), Centre (n = 641), South (n = 564) and Islands (n = 703). The first question asked whether respondents had full knowledge of the SDGs in their macro-regions, except the non-coastal regions (Lombardy, Piedmont, Valle d'Aosta, Trentino Alto-Adige and Umbria). Appendix E in the supplemental data online shows that the majority of respondents were women (North = 64.8%; Centre = 53.2%; Islands = 52.1%), were between the ages of 31 and 39 years (Centre = 43.4%; South = 37.2%; Islands = 32.1%), and held a postgraduate degree or higher (Centre = 55.2%; South = 70.7%; Islands = 47.9%).

Appendix F in the supplemental data online reports the factors, means, standard deviations and Cronbach's alphas. The reliability of the scale is high, as evidenced by a Cronbach's alpha coefficient of 0.829 among all datasets; thus, the scale is appropriate for the intended research objectives, as it exceeds the threshold of 0.70 for internal consistency and reliability (De Vaus, 2002; Hair et al., 2012; Nunnally, 1978). To evaluate the reliability and convergent validity of the constructs, we computed average variances extracted (AVEs) and composite reliabilities (CR). The AVEs for each construct (North = 0.736; Centre = 0.621; South = 0.737; Islands = 0.574) all exceeded the recommended threshold of 0.5, indicating convergent validity. The CR values for all constructs (North = 0.893; Centre = 0.857; South = 0.933; Islands = 0.869) were greater than the recommended threshold of 0.7, indicating high internal consistency and reliability. Furthermore, the respondents showed a clear differentiation between the research constructs (see Appendix G in the supplemental data online). Based on the results of common method variance, our findings indicated a statistically significant difference between the models, which suggests the presence of shared variance among the variables (see Appendix D in the supplemental data online).

5.4.2. Model estimation

The global statistics indicate an acceptable fit based on the structural equation modelling results and maximum-likelihood parameter estimations. The hypothesised model also exhibits a good fit, as evidenced by the fit indices (root mean square error of approximation – RMSEA): North = 0.049, Centre = 0.056, South = 0.055 and Islands = 0.045; comparative fit index (CFI): North = 0.924, Centre = 0.920, South = 0.924 and Islands = 0.941; Tucker–Lewis index (TLI): North = 0.921, Centre = 0.916, South = 0.921 and Islands = 0.938; and incremental fit index (IFI): North = 0.924, Centre = 0.920, South = 0.924 and Islands = 0.941).

From the standardised estimates (see Appendix H in the supplemental data online), the results of the hypotheses tests show a significant relationship between policymakers' motives for undertaking SDGs and residents' perceptions of these goals across all regions, as evidenced by the following path coefficients and corresponding *t*-values: North: $\gamma = 0.542$, t = 3.189; Centre: $\gamma = 0.398$, t = 3.901; South: $\gamma = 1.129$, t = 5.924; and Islands: $\gamma =$ 0.171, t = 2.219. These results provide support for Hypothesis 1. Moreover, the results show that residents' perceptions of SDGs have a significant, positive effect on the blue economy social business performance across all regions, as evidenced by the following path coefficients and corresponding *t*-values: North: $\gamma = 2.163$, t = 5.91; Centre: $\gamma = 0.497$, t = 5.708; South: $\gamma = 1.14$, t = 8.37; and Islands: $\gamma = 2.674$, t = 2.208. Thus, Hypothesis 2 is supported. Support for the hypotheses has two important considerations. First, the state of SDG implementation in Italy is embryonic; more education and training are required to convey what is truly valid to support this approach. Second, little differences appear among the macro-regions to prove dualism.

6. DISCUSSION

This article explores a research gap by analysing how residents perceive SDGs in relation to their well-being across different Italian regions. While existing studies (Hansen, 2022; Makkonen & Inkinen, 2023; Panzer-Krause, 2019; Sheikh et al., 2023; Su & Fan, 2023; Swain & Ranganathan, 2021) focus on sustainability in regional contexts, none have specifically examined local SDG perceptions. Our findings indicate critical SDGs that enhance well-being, showing that individuals in Italy's South/Island regions report lower well-being than those in the North/Centre, attributed to historical industrialisation differences (Bratti & Conti, 2018). Economic factors, including urban development and proximity to urban centres, also influence these disparities (Fanelli & Romagnoli, 2022).

Steps 1 and 2 demonstrate that regions focusing on a combination of SDGs (specifically, 6-9, 11, 12 and 15) can significantly enhance the subjective and collective well-being of their residents. This finding aligns with those of other regional studies that identify a positive relationship between contributing to SDGs and residents' well-being. Consequently, these studies provide a theoretical foundation for integrating different perspectives to explain the relationship between SDGs and well-being across diverse regions. Step 3 complements these findings by highlighting the importance of SDGs 1-3, 10, 13 and 15 in addressing economic, social and environmental challenges. Our multidimensional research, conceptualised, developed and validated in steps 4-6 demonstrates that residents' perceptions of SDGs are consistent across regions and exhibit strong psychometric properties. Placing SDG perceptions within a comprehensive theoretical framework underscores the significance of contributions to the SDGs and how residents perceive them, as well as the mechanisms predicting positive outcomes for regions. Grounded in moral psychology theory, our results reveal that policymakers' motives have a positive impact on residents' perceptions of the SDGs, subsequently influencing blue economy social business performance across all regions of Italy.

6.1. Theoretical contributions

Our study advances the field of regional studies and contributes to the understanding of the SDGs in regional contexts in several crucial ways. First, building on the existing body of research in sustainability and regional studies (e.g., Pasquinelli et al., 2023; Sheikh et al., 2023; Su & Fan, 2023; Yang et al., 2022) and establishing a vital connection with SDGs (Biggeri et al., 2023; Cavalli et al., 2023), our work represents a notable addition to regional literature. Our research makes a pioneering attempt to provide a comprehensive and robust measurement of how residents perceive SDG-related activities within regional contexts.

Second, we make a significant contribution to the broader fields of sustainability and SDG literature within regional contexts by extending the study of this phenomenon and highlighting its pivotal role in shaping residents' behaviour and attitudes. While previous studies have indeed shed light on the importance of sustainability and the SDGs in regional contexts (e.g., Lever & Sonnino, 2022; Rizzo et al., 2022; Watson, 2021), the majority have concentrated on the macro-level aspects of SDG implementation. By contrast, our resident-focused perspective introduces a fresh and innovative viewpoint to SDG implementation in regional literature. By considering residents' perspectives,

our study offers complementary and novel insights for both regional and sustainability researchers.

Third, through the lens of moral psychology theory, we develop and propose a model that elucidates residents' behaviour in response to their perceptions of the SDGs. In doing so, we introduce and empirically test a new mechanism through which residents' perceptions of SDGs can exert influence on various outcomes within regional contexts. This innovative approach not only advances the theoretical understanding of resident engagement with SDGs but also opens up new avenues for future research. The examination of residents' perceptions of SDGs within a regional context has the potential to catalyse a wide array of future research endeavours.

6.2. Policy implications

Our research has significant and actionable policy implications for regional policymakers. The validated framework presented herein serves as a powerful tool that can aid key stakeholders in a region in assessing the current state of sustainable development. Policymakers can call on the introduced validated measures to make wellinformed decisions on how to contribute to the SDGs and align their policies with residents' perceptions and priorities. Moreover, our research offers valuable insights into the mechanisms that can assist policymakers in formulating effective strategies for advancing SDGs across diverse regions. By focusing on the results of steps 1 and 2, policymakers can prioritise attracting and retaining companies that provide good working conditions and benefits to local residents. Such efforts would be beneficial not only

Table 2. Potential research questions. Potential research questions How does different geographical aggregation affect residents' perceptions of SDGs and well-Contextual being? How do the results of this single-country residents compare with outcomes from more comprehensive international and cross-country study initiatives, and do the empirical results hold up in different global contexts? How does the validated framework differ when tested with small and medium-sized enterprises, non-public firms, and firms from less developed countries? How does expanding the sample size in future studies affect the generalisability of findings? How does the proposed model perform in different regional settings across various countries, and how do these results compare with the original study? Which elements of SDG contributions across different regions create the greatest influence on economic, social and sustainable value creation? In what ways do various suggested precursors impact distinct proposed subcategories? Antecedents How do diverse communication tactics shape residents' attitudes towards the perception of SDGs across different regions? How do local residents from other regions respond to SDG-related reshoring efforts in another Outcomes region? Does a positive perception impact immigration from one region to another region?

Which of the suggested subcategories do local residents deem most significant?

Note: SDGs, United Nations' Sustainable Development Goals.

for economic development but also for social cohesion in the region.

In addition, regional policymakers can play a pivotal role in supporting companies that hire and train lowincome citizens or women, as well as those that produce ecofriendly products. This can be achieved through the enactment of tax reduction rules and legislation that incentivise sustainable practices. Considering the findings of steps 4-6, regional policymakers should take proactive steps to pass legislation that prevents companies from excessively depleting natural resources. Financial support could be extended to companies that invest in upgrading their technology, operations and processes to incorporate sustainable practices, thereby ensuring efficient resource utilisation. Furthermore, our research underscores the significance of addressing healthcare infrastructure deficiencies across regions. Policymakers can collaborate with multinational enterprises to invest in building hospitals and implementing health-related programmes. These initiatives can have a profound impact on improving the overall health and well-being of residents, particularly those in less developed regions (e.g., Calabria, Puglia, Sicily). By learning from successful examples such as Unilever's investment in sustainable farming and healthcare, local authorities can work together with private sector firms to bring about positive changes in their respective regions. Our study provides not only a comprehensive understanding of how residents perceive the SDGs but also practical insights that can guide regional policymakers in making informed decisions, promoting sustainable development and enhancing the well-being of residents.

6.3. Future research

Future research could extend our analysis in several ways. First, given that we examined well-being from local residents' perspective, future research could consider how different geographical aggregation affects residents' perceptions of SDGs and well-being (Aslam & Corrado, 2012). Second, future research could extend our proposed model in different regional settings across different countries to cross-validate our results. Third, future studies could assess the impact of regional engagement in SDG-related activities on local perceptions of SDGs and compare the results with those of our study to validate the findings. Table 2 summarises the potential research questions that future scholars can investigate.

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DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

ETHICS STATEMENT

We confirm that informed consent was obtained from all participants in written form.

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