How to Address Marginalization in Small Towns: An MCDA Approach to Evaluating Different Strategies in Campania Region

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Abstract. In recent years, the struggle against territorial marginalization in small towns has been central to national and international policy agendas. In Italy, several structural incentives and policies have been set to deal with this issue, but only some villages could capture the opportunities provided. In addition, some small towns have stood out for innovative and spontaneous strategies to tackle marginalization. In this context, the research compares different de-marginalizing strategies and tools recently implemented by some small villages in Campania Region (Italy). More in detail, it focuses on three municipalities: Mirabella Eclano (Av), where, as part of the de-marginalization strategy, is adopted the legal instrument "administrative barter"; Guardia Sanframondi (BN), where the shrinking dynamics are tackled by attracting new residents; and Preturo Irpino (AV), where the implemented strategy rests on migrants reception and integration. Since marginalization is universally acknowledged as a multi-dimensional phenomenon, the comparison is performed through an MCDA approach based on social, economic, and spatial criteria relevant to interpreting and counteracting it. On the one hand, the results from this comparison can guide the replicability and adaptation of the considered strategies to other realities. On the other hand, it allows reflecting on the selected strategies' capacity to address the different 'marginalization' dimensions included in the analysis.

Keywords: Marginalization · Small villages · Strategies · MCDA · Comparison

1 Introduction

The struggle against territorial marginalization has been central to national and international policy agendas in recent years. The 20th-century leading urbanization model's crisis, indeed, has triggered reflections about the role of marginal areas in promoting sustainable and balanced territorial development [1]. Considering marginalization as "an involuntary position and condition of an individual or group at the margin of social, political, economic, ecological, and biophysical systems, that prevent them from access

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to resources, assets, services, restraining freedom of choice, preventing the development of capabilities, and eventually causing extreme poverty" [2], well returns the complexity related to dealing with this phenomenon at the territorial level. Indeed, marginalization cannot be reduced to a mere accessibility issue but must be intended as a multidimensional phenomenon, thus raising the necessity for tailored and integrated strategies to be addressed [3].

In Italy, the consequent marginality-tackling challenge has found a privileged implementation territorial context in the small-town dimension. Small towns are defined as municipalities with less than 5000 inhabitants, but the small town categorization also includes 600 municipalities with more than 5000 inhabitants due to adverse economic or demographic conditions [4, 5]. Indeed, most of them are characterized by a severe socio-economic marginality, made evident by the ongoing negative demographic trend with the consequent depletion of their human capital [6].

In any case, small towns are relevant nationally since they account for 69% of Italian municipalities, cover 70% of the national territorial surface, and host almost 17% of the Italian resident population. The relevance of the ongoing marginalization phenomenon in this territorial reality can be immediately grasped from a demographic perspective. Indeed, small towns are experiencing a steady depopulation process: their average drop in resident population stands at 3% between 2012 and 2017 [4].

The increasing attention on the marginality, with specific reference to the inner areas and the small towns, characterized by and extraordinary "territorial capital" [7, 8], has led the Italian Government to develop several structural incentives and policies to tackle this marginalization dynamics. The most relevant ones can be identified in:

- The National Strategy for Inner Areas (SNAI). It was launched in 2014 as the national declination of the European Strategy toward territorial cohesion [9]. It aims to tackle the negative demographic trends affecting some marginal areas, defined as "inner areas", by promoting local development initiatives and rebalancing essential services (education, healthcare, and mobility) [10]. The funding for the SNAI implementation's first cycle (2014–2020), drawing both on national and European resources, accounts for around 2, 1 billion euros [11];
- The Budget Law 2021 – Funding for Marginal Municipalities. The law provides 180 million euros of funding to promote the recovery of existing buildings belonging to the municipality's real estate assets, to support new business activities starting, and to incentivize residence transfer in small towns [12];
- The PNRR 2021 – National Plan Borghi. It allocates 760 million euros to support the recovery of built heritage assets and economic development based on local vocations and specificities [13].

Besides these structural incentives and policies, some small towns implemented marginalization-tackling strategies based on specific juridical tools, fiscal incentives, and innovative actions. Among them, for instance, it is possible to consider the initiative "Case a 1 euro" (Houses for one euro) through which public administrations create conditions for an easy access to housing, while promoting the recovery and maintenance of the municipal built heritage assets.

These strategies stand as a local declination of a broader national policy effort. For this reason, understanding their implementation opportunities and effectiveness,

according to the reference territorial context's specificities, can be a valuable tool for better orienting planning decisions toward tackling marginalization in small towns.

Based on these premises, the paper deals with this understanding attempt by providing a methodological approach to compare different marginalization-tackling strategies implemented in small towns and drawing out some preliminary reflections on their effectiveness and implementation opportunities. This approach is tested on a case study: different marginalization-tackling strategies implemented in three small towns from Campania Region. In this sense, Sect. 2 introduces the case study by describing the three selected reference territorial contexts and the peculiarities of the implemented strategies. Section 3 describes the adopted approach that acknowledges the marginalization phenomenon's multi-dimensional nature and finds an appropriate methodological reference in Multi-Criteria Decision Analysis. Section 4 describes the methodological approach implementation to the different strategies comparison, whose results are discussed in Sect. 5. Finally, Sect. 6 considers the proposed approach's opportunities as an operative tool for small towns-focused planning, its replicability, and room for improvement.

2 Strategies to Address Marginalization in Small Towns: Evidence from Campania Region

The marginalization phenomenon, a common trait of small-town realities in the whole national territory, is even exacerbated in the Southern Regions, which suffer from an overall socioeconomic underdevelopment condition [14]. Among them, the small-town reality is particularly relevant in Campania Region since it accounts for 61% of municipalities and covers 58% of the regional territorial surface [4]. For this reason, it can be worth searching for marginalization-tackling strategies to be taken as study elements for the comparison within this territorial context. More in detail, the paper focuses on three different strategies related to different small towns in Campania Region, and implemented in recent years:

- "Attracting new residents" in Guardia Sanframondi (BN). Guardia Sanframondi is a small town in Benevento Province with a resident population of 4611 units in 2022 (Fig. 1). The implemented marginalization-tackling strategy, dating back to 2016, aimed at tackling the ongoing steady demographic shrinking by attracting new residents. This strategy, promoted by the municipality's mayor, was inspired by an unexpected and unofficial event: a Scottish journalist and writer, Clare Galloway, fell in love with the municipality and decided to devote to it an episode of the American TV show 'How Hunters International'. Such a media promotion created an international interest in Guardia Sanframondi that the major decided to leverage by joining different international fairs and organizing several international events in the municipality;

- "Administrative barter" in Mirabella Eclano (AV). Mirabello Eclano is a small town in the north of Avellino Province with a resident population of 6808 units in 2022. In this territorial context, indeed, the declining birth rate is flanked by an increase in the number of young people leaving due to the lack of job opportunities. The implemented marginalization-tackling strategy leverages the "administrative barter".



Fig. 1. Guardia Sanframondi's historical center (photo by M. Rossitti, 2022)

It is a juridical tool introduced by the "Decreto Sblocca Italia" in 2014 [15] and integrated by the Italian Public Contract Code, D. Lgs. n. 50/2016 [16], as modified by the D. Lgs. n. 57/2017, art. 190. The administrative barter is a contract between a public administration and a private citizen: it consists of an exemption or reduction of

local taxes in return for community services (i.e., cleaning and maintenance works for public spaces, recovery of abandoned buildings and open spaces) [17]. The Mirabella Eclano municipality deliberated the application of the "administrative barter" juridical tool in 2017 [6].

- "Migrants reception" in Petruro Irpino (AV). Petruro Irpino is a small town in Avellino Province with a resident population of 293 units in 2022. The implemented marginalization-tackling strategy, focusing on migrants' reception and integration, finds similar applications in several small towns spread over the national territory [18]. The Preturo Irpino municipality launched a SPRAR project to host asylum seekers from different countries. Indeed, the SPRAR (System for the Protection of Asylum-Seekers and Refugees) is a legal institute introduced by the Law n. 189/2002, regulating the collaboration among local administrations and third-sector entities to promote the effective reception and integration of migrants voluntarily [19]. Concerning Petruro Irpino, the municipality set several reception and integration activities based on the direct engagement of the existing local community (education and training programs) [20].

3 An MCDA Approach to Comparing Marginalization-Tackling Strategies in Campania Region

The willingness to understand the effectiveness and implementation opportunities of various strategies, dealing with marginalization in different ways, calls for the definition of a robust methodological approach toward their assessment and comparison. In this perspective, recognizing the multi-dimensional nature of the marginalization issue, which affects multiple dimensions of territorial development (demographic, economic, socio-cultural), hints at adopting Multi-Criteria Decision Analysis (MCDA) as methodological ground. Indeed, MCDA methodologies allow for comparing alternatives based on a heterogenous set of qualitative or quantitative indicators, thus dealing with evaluation issues involving multiple dimensions [21–23]. Their application can be traced to two macro-phases, which can be identified as:

- The Problem Structuring phase. It involves the alternatives definition and the decision issue's modeling into a decision tree, which displays: the overall objective for the evaluation task; the related specific objectives in the form of criteria; the sub-criteria to detail specific objectives, and the indicators to measure alternatives' performance according to each sub-criteria [24];
- The Method Implementation phase. It focuses on the different alternatives' performance measurements and the data processing or aggregation, thus providing the analysis results [25].

Scientific literature in the MCDA field shows the existence of about 100 different methodologies [25]. Thus, choosing the appropriate multicriteria method to support the addressed evaluation task stands as a challenging and fundamental research point toward the methodological approach robustness.

3.1 MCDA to Comparing Marginalization-Tackling Strategies: Which Methodology?

The willingness to identify the appropriate methodology for comparing the different marginalization-tackling strategies calls for a comparative assessment of the suitability of the MCDA methods according to the evaluation task's specificities.

Given the impossibility of considering all the 100 available MCDA methodologies, this comparison requires a field choice. It can consist in focusing on the most frequently applied methodologies [26], which are:

- Analytic Hierarchy Process (AHP);
- Analytic Network Process (ANP);
- Elimination Et Choix Traduisant la Réalité (ELECTRE);
- Multi-attribute utility theory (MAUT);
- Measuring Attractiveness by a Categorical Based Evaluation (MACBETH);
- Preference Ranking Organization Method for Enrichment Evaluation (PROMETHEE);
- Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS).

The selected MCDA methodologies' comparison can be performed using an evaluation framework including exogenous and endogenous criteria [27]. More in detail, exogenous criteria deal with the reference context for the method's application, while endogenous criteria consider the different methodologies' specific features. According to the evaluation task's specificities, relevant exogenous criteria for the methods' comparison can be identified in:

- The "number of evaluation elements". It focuses on the number of alternatives and sub-criteria to be taken as a reference for the evaluation.
- The "typology of indicators". It considers the reference variables for measuring alternatives' performances according to the selected sub-criteria.

Regarding endogenous criteria, instead, they can be identified in:

- The "solution approach". It expresses the approach to solving evaluation problems;
- The "type of solutions". It considers the kind of solution achievable through a specific method's application and can be interpreted in light of the specificities of the addressed evaluation task.

Once this minimum reference criteria set is defined, it is possible to perform the MCDA methodologies' comparison by building a descriptive matrix of their features (Table 1). Such a matrix, indeed, can be used as an information frame for the MCDA methods' choice according to its suitability for the specific task under consideration.

In this perspective, the comparison among different marginalization-tackling strategies can be configured as an evaluation issue with a small number of sub-criteria and alternatives potentially involving both qualitative and quantitative indicators. According to it, an acceptable and even more interesting solution can be represented by alternatives with the same score but different solutions, thus admitting an outranking solution approach. Thus, entering the MCDA methodologies' descriptive matrix with this evaluation task's specification returns the Elimination Et Choix Traduisant la Réalité (ELECTRE)

as the appropriate MCDA tool to support the comparison among different strategies in small towns.

Table 1. MCDA methodologies' comparison based on exogenous and endogenous criteria

MCDA methodologies	*Exogenous criteria*		*Endogenous criteria*	
	Number of evaluation elements	*Typology of indicators*	*Solution approach*	*Type of solutions*
AHP	Large number of sub-criteria and small number of alternatives	Mixed	Full aggregation approach	The alternative with the highest global score
ANP	Large number of sub-criteria and small number of alternatives	Mixed	Full aggregation approach	The alternative with the highest global score
ELECTRE	Small number of sub-criteria and alternatives	Mixed	Outranking approach	Alternatives with the same score but different behaviors / The alternative with the highest global score
MAUT	Small number of sub-criteria and large number of alternatives	Quantitative	Full aggregation approach	The alternative with the highest global score
MACBETH	Large number of sub-criteria and alternatives	Qualitative	Full aggregation approach	The alternative with the highest global score
PROMETHEE	Large number of sub-criteria and alternatives	Mixed	Outranking approach	Alternatives with the same score but different behaviors / The alternative with the highest global score
TOPSIS	Large number of sub-criteria and alternatives	Mixed	Goal, aspiration, or reference-level approach	Medium

The ELECTRE is an MCDA method based on processing a system of pairwise comparisons among the alternatives to be assessed [28]. Indeed, its grounding idea is to measure the degree to which scores and associated weights confirm or contradict

the dominant pairwise relationship among options [29]. The steps for performing a multicriteria evaluation based on the ELECTRE method can be identified in:

1. The Decision tree framing. This step belongs to all the multicriteria methodologies and requires identifying the relevant criteria for the assessment, the related sub-criteria and, for each sub-criteria, the related indicator;
2. The Impact matrix definition. It requires the measurement of the alternatives to be assessed according to the defined sub-criteria and indicators;
3. The Impact matrix standardization. It requires adopting a standardization procedure to turn the measured performances into dimensionless values ranging from 0 to 1;
4. The Pairwise comparison of alternatives. It derives a dominance relationship for each pair of alternatives using a net concordance index, an expression of how much an alternative is better than the others, and a net discordance index, expressing to what degree an alternative is worse than the others;
5. The Alternatives' final ranking definition. It requires combing each alternative's net concordance and net discordance index.

4 The ELECTRE Method Implementation to Compare Marginalization-Tackling Strategies in Small Towns

Once the ELECTRE method is identified as the appropriate reference methodology for the addressed evaluation task, it is possible to compare the selected marginalization strategies in Campania Regions' small towns. In this sense, the pre-mentioned steps for the ELECTRE implementation are declined to the case study's specificities by resorting to the software Definite 3.0 (Fig. 2).

Starting from the Decision tree framing, the overall objective is identified in understanding which strategy can be more effective in tackling marginalization in small towns. The criteria are defined according to the different main dimensions of the marginalization phenomenon at the territorial scale: demographic, economic, and socio-cultural. Sub-criteria and indicators are then selected through a literature review referring to the SNAI's Indicators Grid 2014–2020 [30] and the Rete Rurale Nazionale's Context Indicators 2014–2020 [31] (Table 2).

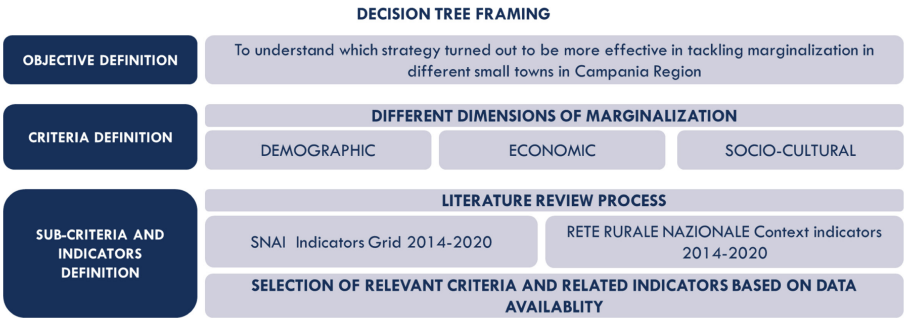

Fig. 2. Decision tree framing

The Decision tree framing, thus, provides all the necessary evaluation elements to build up the Impact matrix (Table 2) by measuring the different marginalization-tackling strategies' performances according to the selected sub-criteria and indicators (Table 3).

Table 2. Definition of criteria, indicators, scale, and units of measurement

Criteria	Sub-criteria	Indicator	Scale	U.M	min/ max
Demographic	Population dynamics	Percentage variation in the resident population between 2014 and 2022	*Ratio*	%	max
	Population structure	Variation in the aging index between 2014 and 2022	*Ratio*	%	max
Economic	Real estate market dynamics	Percentage variation in the real estate market value between 2014 and 2022	*Ratio*	%	max
	Wealth market dynamics	Per Capita Income variation between 2014 and 2020	*Ratio*	%	max
	Labor market dynamics	Variation in the employment rate between 2014 and 2020	*Ratio*	%	max
Socio-cultural	Tourism attractiveness	Percentage variation in the number of bed-places in tourist accommodations between 2014 and 2019	*Ratio*	%	max
	Local community vitality	Variation of third-sector entities between 2014 and 2022	*Ratio*	n	max

The measured performances are standardized by applying the standardization procedure by maximum row score and are taken as the basis for the pairwise comparison of the considered strategies. Finally, the anti-marginalization strategies ranking stems from adopting an indifferent system of weights, thus assuming that all the sub-criteria have the same importance in evaluating the strategies' effectiveness.

5 Results

Applying the Electre method, based on the defined decision tree and considering an indifferent system of weights, returns the "Migrant reception and integration" strategy, implemented in Petruro Irpino, as the favorable one for tackling marginalization in small towns (Fig. 3).

Table 3. Impact matrix

Sub-criteria	U.m	Guardia Sanframondi	Mirabella Eclano	Petruro Irpino
Percentage variation in the resident population between 2014 and 2022	%	−9,78%	−11,90%	−5,79%
Variation in the aging index between 2014 and 2022	%	72,45%	11,97%	−141,76%
Percentage variation in the real estate market value between 2014 and 2022	%	−20,71%	−13,41%	0,00%
Per Capita Income variation between 2014 and 2020	%	14,81%	8,03%	2,67%
Variation in the employment rate between 2014 and 2020	%	5,18%	2,92%	4,79%
Percentage variation in the number of bed places in touristic accommodations between 2014 and 2019	%	67%	373%	0%
Variation of third-sector entities between 2014 and 2022	n	1	0	1

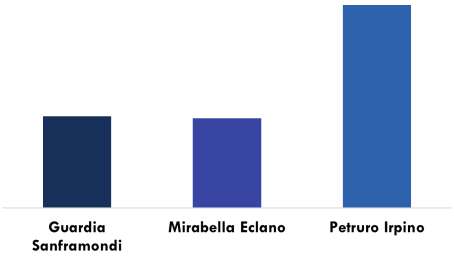

Fig. 3. Marginalization-tackling strategies' ranking

However, some interesting observations can be drawn out by analyzing the partial results from the comparison (Fig. 4).

Indeed, if the "Migrants reception and integration" stands out as the most effective strategy in tackling marginalization from a demographic perspective, focusing on the economic and socio-cultural dimensions provides slightly different results. More in detail, considering the economic dimension, "Migrants reception and integration" emerge as effective as the "Attracting new residents" one in tackling marginalization.

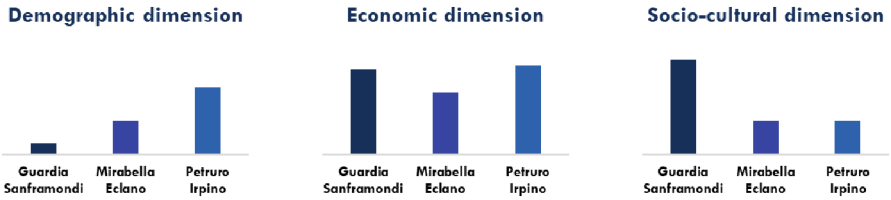

Fig. 4. Partial results from the marginalization-tackling strategies' comparison

Instead, considering marginalization from a socio-cultural perspective, "Attracting new residents" stands out as the favorable strategy to be implemented.

6 Final Considerations and Future Perspectives

The paper proposes a methodological approach toward comparing different marginalization-tackling strategies, resting on different tools and actions, implemented in some of Campania Region's small towns. It moves from recognizing the complexity of marginalization and addresses it as a multi-dimensional phenomenon. In this sense, it attempts to capture the strategies' effectiveness and implementation opportunities by considering the different relevant dimensions for its declination at the territorial scale. Its, even partial, results hint at a higher effectiveness of strategies resting on attracting new forms of residents rather than giving incentives to the local community's staying. Of course, this preliminary finding must be confirmed by extending the analysis to other territorial realities and a broader range of strategies.

Indeed, the paper is an initial research step towards comprehensively assessing marginalization-tackling strategies in Campania Region and at the national level. At this stage, it limits the comparison to three strategies. Its further development, thus, will be firstly devoted to drawing out a complete census of all the implemented strategies against marginalization in small towns in the Campania Region.

The results from the comparison, based on applying the ELECTRE method, are obtained by adopting an indifferent system of weights. In this sense, further research efforts should be devoted to defining the weights of the different marginalization dimensions through interaction with relevant stakeholders. Together with it, the set of sub-criteria, currently limited due to the data availability, will be enriched by considering further sub-criteria able to capture other aspects of the investigated phenomena. Finally, once a complete picture of marginalization-tackling strategies is built, the proposed approach can be refined by clustering small towns based on their features (i.e., resident population). Such a clustering operation, indeed, can lead to deepening and better catering the investigation of the different strategies' effectiveness toward making them a useful information level to orient further possible operational strategies for the valorization of the territorial capital and the human capital – especially young people – of this territorial context. In any case it must be emphasized that any perspectives of development for this areas, characterized by competitive factors "non-relocatable", are possible only through a shared approach, in line with cohesion policy.

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