Understanding Geographies of Architectural Heritage Abandonment in Inner Areas: A Multi-dimensional Investigation

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Abstract. The international concern about narrowing territorial disparities has resulted in a new territorial policy season focusing on marginal areas. In Italy, such a concern has found a policy translation in the National Strategy for Inner Areas (NSIA), which identifies "the enhancement of natural and cultural resources" as a key sector to promote the development of inner areas. Within the wide scientific debate triggered by this planning direction about cultural capital's role in developing inner areas, a challenging discussion space has been devoted to architectural heritage conservation. Indeed, when focusing on architectural heritage's possible contribution, the planning challenge for the future of inner areas becomes even more complex due to the interaction between the fragility of these territorial systems and the one of heritage assets. Thus, the design of effective development strategies leveraging heritage's potential requires properly identifying and reading the main emerging fragility themes stemming from this interaction, such as the ongoing abandonment processes of architectural heritage. Based on this premise, the paper proposes a multi-dimensional investigation of the architectural heritage abandonment phenomenon in inner areas, aimed at understanding and evaluating its geographies, extent, and peculiar features. After providing a theoretical reflection on the causes and effects of abandonment processes of architectural heritage, the paper delves into a multi-dimensional and quantitative analysis of the phenomenon's extent and features in terms of the relationship between depopulation, built heritage use state, and decay conditions. Finally, the paper reflects on the results from such a preliminary investigation and its opportunities, limitations, and future perspectives in supporting conservation processes from a local development perspective.

Keywords: Architectural heritage · Geographies · Abandonment · Inner areas · Evaluation

1 Introduction

The international concern about narrowing territorial disparities as an essential condition for sustainable development has resulted in a new public policy season devoting attention to marginal and under-developed areas [1].

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In Italy, such a concern has found a policy translation in the National Strategy for Inner Areas (NSIA), which aims at improving life conditions and promoting local development opportunities in areas defined as "inner" according to their distance from basic services [2]. Among the different key sectors to unfolding inner areas' potential, resting on enhancing their territorial capital [3], the NSIA identifies "the enhancement of natural and cultural resources, and sustainable tourism", which are recognized as drivers for wealth and welfare creation [4].

Based on this planning direction and the consolidated recognition of the role of culture in fostering sustainable development and ensuring territorial resilience [5–9], the debate about inner areas' future has produced plenty of reflections on the possible contribution offered by their cultural capital, intended as «an asset which embodies, stores or provides cultural value in addition to whatever value it may possess» [9], in tackling the ongoing marginalization vortex. For instance, Imperiale et al. [10] and Crociata et al. [11] have reflected on the spatial distribution and the role of the Cultural and Creative Industry (CCI) in triggering culture-led development models in inner areas. Tricarico et al. [12] have discussed the opportunities of digital technologies to enhance intangible heritage as a valuable basis for socially innovative development strategies. Furthermore, different scholars have focused on the possible contribution of cultural tourism to inner areas' sustainable growth [13–15].

Within this wide scientific debate about cultural capital's role in inner areas development strategies, a fruitful and challenging discussion space has been devoted to the conservation and reuse of architectural heritage[1] [16–19].

Indeed, when focusing on the possible contribution of architectural heritage conservation, the already challenging planning mandate of tackling depopulation and reversing the ongoing marginalization dynamics in inner areas becomes even more complex [20, 21].

By embracing the extension of the fragility condition from humans to objects [22], such a complexity can be read as stemming from the interaction between the fragility of inner areas territorial systems and the intrinsic fragility of heritage assets [23]. In this sense, the local development challenge, addressed from the heritage conservation perspective, depends on properly managing the encounter between these two fragility dimensions.

If the leading approach to architectural heritage conservation rests on the idea of "removing" fragility conditions, some innovative theoretical positions in the academic debate open to the possibility of considering fragility as a value or an opportunity, thus grounding sustainable development strategies on the recognition and acceptance of the existing fragility conditions rather than on their elimination [24]. In this perspective, it becomes crucial to identify and read the main emerging fragility dimensions related to architectural heritage in inner areas as a fundamental knowledge basis for approaching

[1] In this context, the architectural heritage locution is adopted to identify both single and unique heritage assets (the ones protected by law) and other built assets witnessing traditional construction techniques and materials or relevant local activities, working as a *palimpsest* and expressing a systemic relationship with their reference territorial context, whose significance is recognized by local communities.

conservation from a co-evolutionary point of view [25] and, thus, unfolding its potential toward sustainable development.

Within the multiple fragility elements stemming from the meeting between architectural heritage and inner areas, the recent academic debate about conservation in these territorial contexts [26] has paid attention to the relationship between people and heritage assets, which has often been ignored for the misleading idea that conservation is an expert process rather than a social practice [27]. Furthermore, reflecting on the possible crisis of this relationship hints at another fundamental fragility dimension, returning to the complexity of themes placed on territorial planning for inner areas: architectural heritage abandonment processes. A clear understanding of architectural heritage abandonment processes, which result from a complex interrelation of socioeconomic factors and planning choices, thus, is a determinant research task for endorsing local development processes in inner areas leveraging on their architectural heritage's potential.

Based on this premise, the paper stands as a preliminary attempt to deal with this research task by providing a multi-dimensional investigation of the built heritage abandonment phenomenon in inner areas, aimed at understanding and evaluating its geographies, extent, and peculiar features related to different territorial realities. After providing a theoretical reflection about the causes and effects of abandonment processes of architectural heritage, the paper delves into a multi-dimensional and quantitative investigation of the phenomenon's extent and features by collecting and analyzing open-source data concerning depopulation, built heritage use state, and decay conditions, and critically interpreting their relationships. Finally, based on the results from such a multi-dimensional investigation extended to the 72 project areas selected for the NSIA's first implementation cycle (2014–2020), the paper reflects on its opportunities, limitations, and future perspectives in supporting conservation processes from a local development perspective.

2 Causes and Effects of Abandonment Processes on Architectural Heritage: A Theoretical Reading

The abandonment processes warrant close consideration when reflecting on the architectural heritage conservation issue in local development processes for inner areas. Indeed, these processes are responsible for built heritage decay and, thus, contribute to the risk of losing an extraordinary material witness of traditional architecture, erasing a historically consolidated image of places, and weakening the relationship between people and places [28]. Understanding these processes, central to the NSIA agenda [2], requires weaving architectural themes with the reading of territorial dynamics, thus looking at territories as the production of socioeconomic and historical-cultural sedimentations and as the field for social practices [29].

In this sense, it is worth deepening abandonment in inner areas and its implications for architectural heritage conservation by recognizing its complexity and overcoming the mainstream approach, which attempts to reduce its understanding to identify cause-effect relationships.

This mainstream approach already reveals its ineffectiveness when addressing the causes domain. Indeed, there are multiple causes of abandonment and depopulation processes, and it is cumbersome to identify or classify them. The basic distinctions between

functional and structural causes, natural and anthropic causes, are undoubtedly helpful to understanding the phenomena's extent but speak little for their deeper comprehension [28]. Usually, it is impossible to attribute everything to one single cause or consider a horizontal relationship between different causes [30], thus dismissing ripple effects and the specificities of local geo-historical dynamics. The limits of a causes-based approach to reading abandonment processes become evident when dealing with natural disasters (i.e., earthquakes, landslides, floods) leading to the destruction of entire towns. The existence of resilient towns, able to react to the disaster, as opposed to others dying after the destructive event, shows that it is not a single event that leads to the abandonment and decay of a place, but instead that it can work as a catalyst of ongoing shrinking dynamics [28].

For instance, some valuable studies about the Italian Apennines, hit by a severe earthquake in 2016, focus on the relationship between the disruptive event and local socioeconomic processes, thus showing how the seismic event has accelerated some ongoing dynamics [31]. At the same time, these studies reveal some common but conflicting patterns in the communities' reactions to dramatic events (i.e., resistance or resignation, disaffection or sense of belonging).

Such a finding suggests that another mistake to be avoided in addressing abandonment and depopulation lies in resorting to the similarity of these processes in terms of causes, consequences, and transformations as justification for adopting blind-to-places approaches to understanding and tackling them based on repeating knowledge and action schemes used elsewhere. While completely ignoring the complexity embedded in abandonment processes [32], these approaches report the role of policies in triggering or speeding up abandonment processes when political choices are not coherent with the needs and the specificities of a place and its local community [28]. Furthermore, it is necessary to recognize what Loughlin Kealy defines as the «new quality of abandonment settlements» [33]. Indeed, the acknowledged socio-cultural meaning of traditional settlement for contemporary societies based on a complex mechanism of values attribution rather than on a mere recognition of an aesthetic value brings along essential differences between past and present abandonment processes and, most of all, in the ways to address them [33].

3 A Multi-dimensional Evaluation of Abandonment Processes in Inner Areas: Evidence from the NSIA Pilot Areas

Given the recognized complexity of abandonment phenomena, their understanding must go through an integrated and multi-faced investigation approach. In this sense, other hints for properly framing and delving into the complexity of abandonment processes in inner areas can stem from quantitively analyzing the phenomenon's geographies, extent, and features regarding the relationship between depopulation, built heritage use state, and decay conditions. Such an analysis, although affected by all the limits of a data-based approach and the aggregated inner area territorial scale[2], can help detect specific

[2] The territorial dimension of inner areas, as defined within the NSIA's policy frame, is made up by the aggregation of different municipalities.

phenomenon's declinations to be deepened through real contact with local realities and their evolution.

The analysis refers to the 72 NSIA project areas, selected within its first cycle of implementation (2014–2020), and grounds on several factors, which are relevant metrics for assessing the abandonment phenomenon[3]:

- Percentage variation of resident population in different periods (1971–2011; 2001–2011; 2011–2017) [34];
- Buildings' potential for use, intended as the percentage ratio between the number of disused buildings and the total amount of buildings (in 2001 and 2011) [35];
- Incidence of buildings in a bad conservation state, defined as the percentage ratio between the number of residential buildings in a bad conservation state and the total amount of residential buildings (in 2001 and 2011) [35];
- Incidence of occupied historical residential buildings expressed as the percentage ratio between the occupied residential assets built before 1919 and the total of occupied residential assets [35].

Concerning the extent of abandonment processes, one of the crucial reasons for the national intervention in inner areas, it becomes immediately evident when spatially displaying the pre-mentioned factors and their variation over time. The variation in resident population between 1971 and 2011 (Fig. 1) shows that most of the project inner areas (63 out of 72) have experienced a demographic shrinking process with a different magnitude.

The phenomenon is more evident in southern Italy's regions, such as Abruzzo (with *Subequana* and *Basso Trigno*) and Calabria Region (with the *Grecanica* and *Sila e Presila*), where the population decrease is around 40%. Areas against the leading trend mainly belong to Italian north-western regions: i.e., *Alto lago di Como* e *Valli del Lario*, *Alta Valtellina* and *Valchiavenna* in Lombardia Region; *Bassa Valle* in Valle d'Aosta Region. Nevertheless, the strongest signals of positive demographic trends can be observed in two inner areas from the south of Italy: *Val Simeto* in Sicilia and *Sud Salento* in Puglia. Moving forward the observation time range, the analysis of resident population variation between 2011 and 2017 (Fig. 2) confirms the existence of a steady and ongoing demographic shrinking phenomenon. The majority of the project inner areas (62 out of 72), indeed, still experience a population decrease. Two inner areas, *Sud Salento* in Puglia Region and *Contratto di Foce Delta del Po* in Veneto Region, are affected by an inversion of the previous positive demographic trend, thus showing how this phenomenon is spreading out over the years and how, at the same, it is not possible to trace a common history of abandonment in inner areas.

The emerging unicity and heterogeneity of each inner area's condition, to be carefully considered in designing strategies to tackle abandonment and promote local development, is also evident in some cases where the shrinking trend is inverted. These cases (*Monti Simbruini* and *Alta Tuscia* in the Lazio Region and *Sud-Ovest Orvietano* in the Umbria Region) deserve a critical deepening to understand the reasons behind this path change.

[3] The years taken as reference (1971, 2001, 2011, 2017) depends on the availability of data aggregated for the inner area territorial scale.

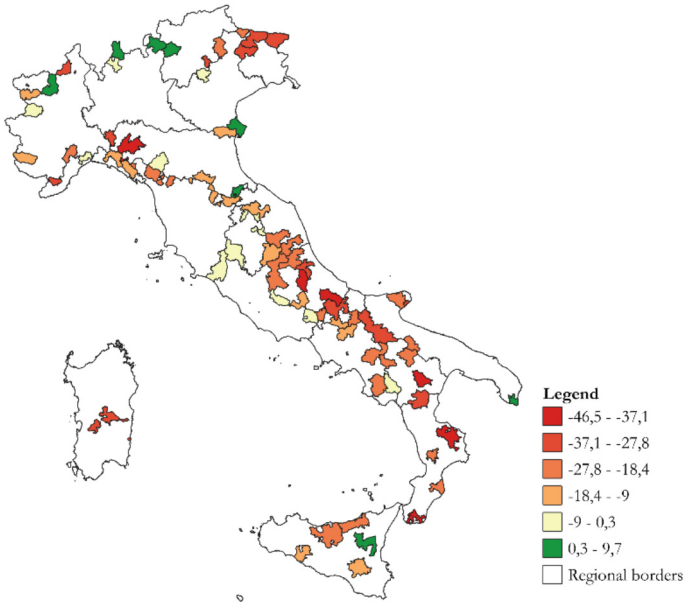

Fig. 1. Variation of the resident population between 1971 and 2011 for each project's inner area (Authors' elaboration on data retrieved from the Territorial Cohesion Agency website).

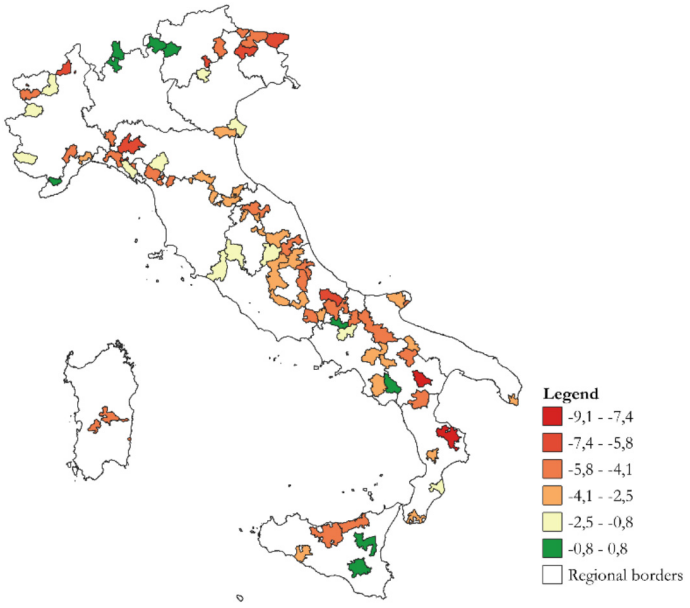

Fig. 2. Variation of the resident population between 2011 and 2017 for each project's inner area (Authors' elaboration on data retrieved from the Territorial Cohesion Agency website)

The abandonment processes under investigation can also be read in terms of effects on built heritage assets by considering buildings' potential for use in 2011, intended as the percentage ratio between the number of disused buildings and the total amount of buildings (Fig. 3). This datum, even if referred to the whole inner area's building stock, clearly reveals the consequences of demographic shrinking on real estate assets' use. Indeed, the highest incidence of disused buildings can be observed in inner areas that, as shown by the previous analyses, have experienced the most severe demographic shrinking processes: the *Subequana* inner area in the Abruzzo Region and the *Grecanica* inner area in the Calabria Region. Furthermore, most areas (52 out of 72) show an incidence of disused buildings in 2011 higher than 5%.

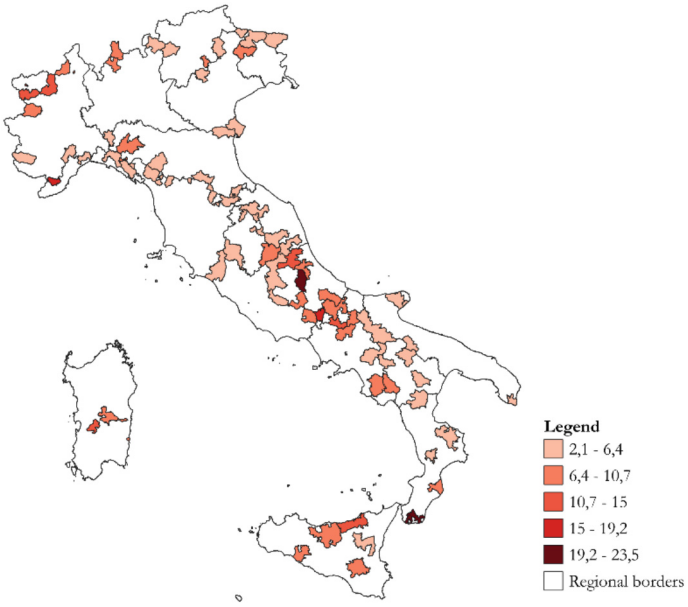

Fig. 3. Variation of the buildings' potential for use between 2001 and 2011 for each project's inner area (Authors' elaboration on data retrieved from the ISTAT 8milacensus website)

A more interesting perspective on the entity and durability of abandonment processes and their effects on architectural heritage in inner areas can be obtained by analyzing other two variables: the variation in the incidence of residential buildings in a bad conservation state between 2001 and 2011 and the variation of the incidence of occupied historical residential buildings in the same period. Concerning the variation of incidence of residential buildings in a bad conservation state for each inner area, the analysis returns a more diversified situation compared to the ones described by the previous variables (Fig. 4). Indeed, most of the inner areas (50 out of 72) have seen an improvement of their buildings' stock conservation state. This result, affected by considering the whole building stock, regardless of assets' age or heritage value, must be carefully interpreted to avoid making simplistic conclusions about a relaunch signal in inner areas. Looking at the most critical realities, they are widespread in the Italian territory: *Calatino*

in Sicilia Region; *Appennino Piacentino-Parmense* in Emilia-Romagna Region; *Val Canale-Canal del Ferro* in Friuli Venezia Giulia Region.

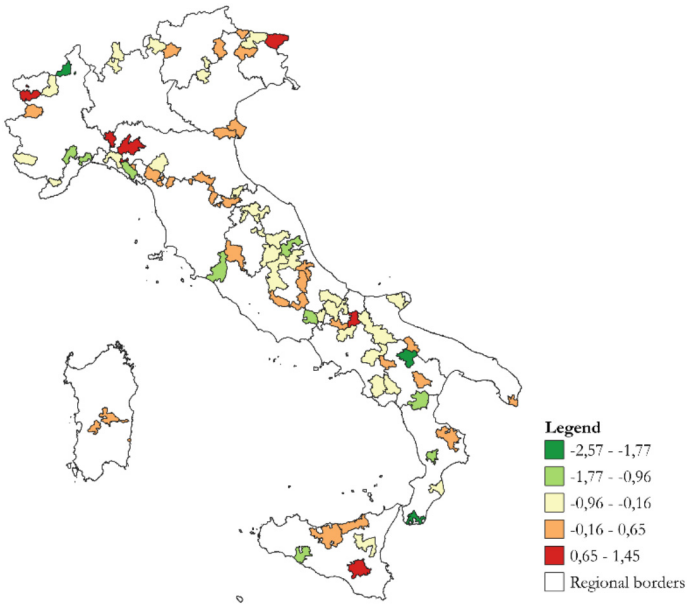

Fig. 4. Variation of the incidence of buildings in a bad conservation state for each project's inner area (Authors' elaboration on data retrieved from the ISTAT 8milacensus website)

At the same time, analyzing the variation in the incidence of occupied historical residential buildings between 2001 and 2011 provides the most interesting results related to the research themes. Indeed, considering this variable as a proxy of historical built heritage use conditions and analyzing its variation over time allows to draw out some reference points for sharply focusing on abandonment processes and their impact on architectural heritage in inner areas. The analysis shows how almost all the project inner areas have experienced a decrease in the incidence of occupied historical residential buildings on the whole number of residential buildings from 2001 to 2011 (Fig. 5). The most critical situations, with a decrease in historical building occupation higher than 10%, can be observed in southern Italian regions (*Area Reventino Savuto* in Calabria Region; *Subequana* in Abruzzo Region) and Liguria Region (*Val Di Vara* and *Valle Arroscia*).

This result deserves specific attention, not only because it stands as the most relevant quantitative reference for bridging abandonment processes to their effects on architectural heritage but also because its critical interpretation can be a starting guide in catching the specificities of each inner area's abandonment history with its implications for architectural heritage conservation from a local development perspective. With this aim, it can be helpful to correlate the incidence variation of occupied historical residential buildings between 2001 and 2011 with the resident population variation in the same period.

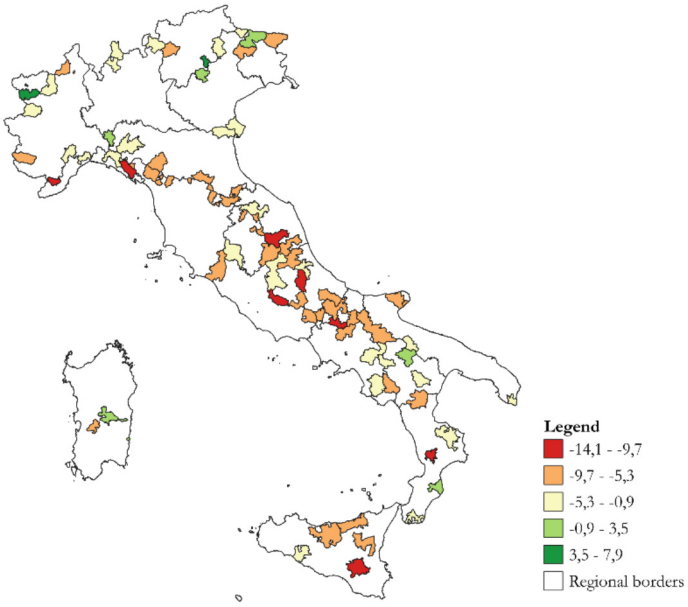

Fig. 5. Variation of the amount of occupied historical residential buildings (Authors' elaboration on data retrieved from the ISTAT 8milacensus website)

This correlation, represented through a scattered plot chart (Fig. 6), in which each project inner area stands as a point in the graph, clearly reveals the existence of heterogeneity in inner areas' abandonment processes and their effects on architectural heritage, thus hinting at the necessity to adopt a place-based approach to address them.

Indeed, based on the analysis results, it is possible to group the 72 project inner areas into four clusters:

- *Cluster 1*: *Population decreases – Occupation increases.* This cluster includes four inner areas (*Alto Bradano, Alta Carnia, Appennino lombardo-Oltre Po pavese*, *Tesino*) where the resident population decrease corresponds to an increase in the incidence of occupied historical residential buildings between 2001 and 2011. This rough result, mainly observed in northern Italy's inner areas, is remarkably interesting since it can prompt a stronger relationship between the local community and historical built heritage;
- *Cluster 2: Population decreases – Occupation decreases.* This cluster, including the majority of project inner areas (49 out of 72), especially in its southern part, reflects the mainstream trend in these territorial realities, on which the dominant narratives about abandonment processes in inner areas and their effects ground. Indeed, inner areas belonging to it are experiencing an abandonment of historical residential buildings as a consequence of a demographic shrinking process;
- *Cluster 3: Population increases – Occupation increases.* The cluster includes only one inner area (*Grand Paradis* in Valle d'Aosta Region), which is experiencing an increase in resident population, flanked by an increase in the incidence of occupied

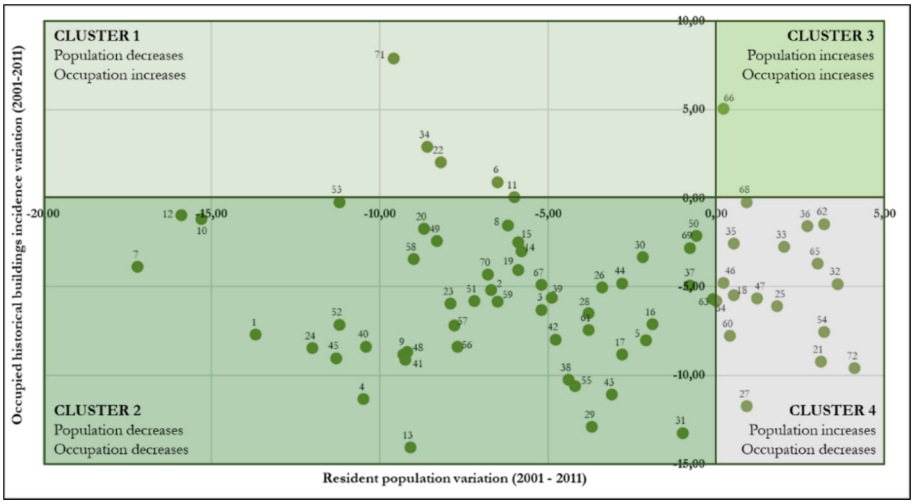

Fig. 6. Correlation between the resident population variation and the occupied historical buildings incidence between 2001 and 2011 (Author's elaboration on data retrieved from ISTAT)[4]

historical buildings. This result must be carefully examined to understand if it stems from a random process or if it finds its reasons in specific top-down or bottom-up planning actions;

- *Cluster 4: Population increases – Occupation decreases.* This cluster, including 17 inner areas, mainly located in the north or the center of Italy, returns the most critical

[4] In the scattered plot, inner areas are identified through a numeric code. The correspondence is: 1 = *Basso Sangro-Trigno*, 2 = *Valfino Vestina*, 3 = *Valle Roveto*, 4 = *Subequana*, 5 = *Alto Aterno-Gran Sasso–Laga*, 6 = *Alto Bradano*, 7 = *Montagna Materana*, 8 = *Marmo Platano*, 9 = *Mercure-Alto Sinni-Val Sarmento*, 10 = *Grecanica*, 11 = *Versante Ionico Serre*, 12 = *Sila e pre Sila,* 13 = *Area Reventino Savuto*, 14 = *Alta Irpinia*, 15 = *Cilento Interno,* 16 = *Tammaro-Titerno*, 17 = *Vallo di Diano,* 18 = *Appennino emiliano*, 19 = *Basso Ferrarese*, 20 = *Appennino Piacentino-Parmense,* 21 = *Alta Valmarecchia*, 22 = *Alta Carnia,* 23 = *Dolomiti Friulane*, 24 = *Val Canale-Canal del Ferro*, 25 = *Alta Tuscia*, 26 = *Monti Reatini*, 27 = *Monti Simbruini*, 28 = *Valle di Comino*, 29 = *Valle Arroscia*, 30 = *Beigua e Unione Sol*, 31 = *Val Di Vara*, 32 = *Antola-Tigullio*, 33 = *Valchiavenna*, 34 = *Appennino lombardo-Oltre Po pavese*, 35 = *Alta Valtellina*, 36 = *Alto lago di Como e Valli del Lario*, 37 = *Appennino Basso Pesarese e Anconetano*, 38 = *Alto Maceratese*, 39 = *Ascoli Piceno*, 40 = *Alto Medio Sannio*, 41 = *Fortore*, 42 = *Mainarde*, 43 = *Matese*, 44 = *Val Bormida*, 45 = *Valli dell'Ossola,* 46 = *Val di Lanzo*, 47 = *Valli Maira e Grana,* 48 = *Monti Dauni*, 49 = *Alta Murgia*, 50 = *Sud Salento*, 51 = *Gargano*, 52 = *Alta Marmilla*, 53 = *Gennargentu – Mandrolisai*, 54 = *Val Simeto*, 55 = *Calatino*, 56 = *Madonie*, 57 = *Nebrodi,* 58 = *Terre Sicane*, 59 = *Garfagnana,* 60 = *Valdarno e Valdisieve, Mugello e Val di Bisenzio*, 61 = *Casentino-Valtiberina,* 62 = *Sud-Ovest Orvietano*, 63 = *Nord-Est Umbria*, 64 = *Valnerina,* 65 = *Bassa Valle,* 66 = *Grand Paradis*, 67 = *Agordina,* 68 = *Spettabile Reggenza,* 69 = *Contratto di Foce Delta del Po,* 70 = *Comelico,* 71 = *Tesino,* 72 = *Val di Sole.*

situation concerning architectural heritage conservation. Indeed, a resident population increase in these areas corresponds to a decreased incidence of occupied historical buildings. This correspondence can suggest that residents favor new buildings rather than historical ones. If confirmed, thus, this result hints at the necessity to trigger a capacity-building process to guide local communities in recognizing their heritage value or to identify other drivers than architectural heritage to foster local development.

4 Discussion and Final Reflections

The paper provides a preliminary and multi-faced investigation of the extent of architectural heritage abandonment processes, their geographies, and peculiarities in inner areas as an essential knowledge basis for assessing the opportunity to leverage heritage potential in designing local development strategies and to define appropriate intervention strategies.

More in detail, it integrates a theoretical reflection about the most relevant themes related to abandonment processes in inner areas with a multi-dimensional quantitative analysis used to bring out specific phenomena that require further investigation through critical reading and questioning. By so doing, the paper attempts to overcome the traditional approach to territorial planning, which has used quantitative analysis as the only basis for policy design rather than as a guiding interpretative layer.

The critical discussion about the causes and effects of abandonment processes reveals the complexity of such a phenomenon, which can be properly addressed only by weaving architectural themes with the reading of territorial dynamics, thus looking at territories as the production of socioeconomic and historical-cultural sedimentations and as the field for social practices. Such complexity is also confirmed by quantitively analyzing the phenomenon's geographies, extent, and features regarding the relationship between depopulation, built heritage use state, and decay conditions in inner areas.

This quantitative analysis, extended to the 72 NSIA project areas, returns a heterogeneous frame in inner areas' abandonment processes and their effects on built heritage, thus revealing the necessity to adopt place-based and people-based approaches to investigating such complex phenomena [36].

Indeed, the highlighted existence of different relationships between the considered factors confirms that abandonment processes and their implication can be understood only by delving into local socioeconomic dynamics. Thus, the urgency to return a historical dimension to abandonment processes by grounding their understanding on a place's local history and reconstructing their economic and productive background is evident [37, 38]. Adopting this historical dimension doesn't mean looking at abandonment processes as concluded historical facts to be faced by protecting from and limiting their consequences in the present or as an incurable fracture in the history of a place. Instead, the historical dimension must stem from deeply considering the history of communities and places as a reservoir of knowledge for connecting with the complexity of such phenomena. At the same time, it is appropriate to address abandonment by recognizing it as an ongoing phenomenon [32] and a natural phase of a place's lifecycle.

In this sense, when declined at the architectural heritage scale, abandonment processes open complex challenges and opportunities for conservation. Indeed, such a sensitive approach to abandonment processes can provide decision-makers and experts in conservation with valuable references to critically assess the opportunity to address the local development challenge from a heritage conservation perspective [39], thus identifying appropriate actions and targets for conservation strategies or, rather, guiding and assisting architectural heritage abandonment.

Of course, the outlined investigation's results suffer from the limits of being aggregated at the inner area territorial scale, thus compensating and hiding differences between municipalities belonging to the same inner area and must be necessarily verified and deepened through direct contact with the territory and its community. In this perspective, future research efforts can be devoted to transposing the quantitative analysis within an inner area territorial context and, by integrating its results with a critical and history-based reading of its socioeconomic dynamics, better assess the opportunity to adopt its findings as guiding elements to design place-based strategies for inner areas local development.

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