HOUSING CONDITIONS AMONG ELDERLY PEOPLE USING 2021 ITALIAN PERMANENT POPULATION AND HOUSING CENSUS DATA: URBAN AND RURAL PATTERNS[1]

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Abstract. Urban and rural perspectives provide a vital framework for analysing ageing in contemporary societies. Urban areas often highlight inequalities arising from demographic diversity, while rural regions are typically perceived as more stable, yet remain under-researched (Marcellini et al., 2007). This study investigates housing conditions among elderly people in Italy - including floor space, density standard, and tenure status - according to household composition.The analysis adopts a multidimensional approach that considers territorial disparities by evaluating the influence of both regional contexts and degree of urbanization.

The aim is to explore whether housing conditions for the elderly differ significantly between urban and rural areas. Urban contexts are expected to show greater inequalities due to demographic and social factors, while rural areas may exhibit more uniform patterns. The analysis relies on data from the Permanent Population and Housing Census (PPHC), which integrates administrative sources and surveys. This rich database allows for a direct analysis of multivariate distributions, such as the joint distribution of housing conditions and type of households. The availability of detailed information over time and at a fine territorial level is particularly valuable for examining regional disparities and demographic trends.

1. Elderly people in Italy

In 2021, the reference year of the latest decennial Population and Housing Census(PPHC), the share of the population of working age (15-64) stands at 63.5 per cent, while individuals aged 65 or over make up 23.8 per cent of the total, up 3 percentage points from ten years earlier. This dynamic is common to all Member States in the EU27, but Italy has the highest share of elderly people.

According to demographic projections drawn up by ISTAT on the basis of data as of 1 January 2023, by 2050 people at least 65 years of age could account for 34.5% of the total population, with the incidence of the over-80s rising from 7.6% in 2023 to 13.6% by 2050. This is what comes out of the latest Istat Annual Report (Istat, 2025), which offers alarming food for thought. The ageing of the population leads to

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[1] Sections are attributed as follows: sections 3 and 4 to Angela Chieppa, section 1 to Simona Mastroluca, section 2 to Alessandro Sasso.

significant challenges for society as a whole, which must address complex issues including those related to housing conditions and, consequently, the quality of life of older people. This paragraph provides the contextual background for the analysis presented in the following sections, offering a synthetic overview of the demographic ageing process, household composition of the elderly population, and their housing conditions in Italy.

Based on the 2021 PPHC data, households in Italy with at least one member aged 65 or older are 10.276.199 representing 39.2 percent of total households. In recent years there has also been a significant increase in the elderly living alone. In particular, the share of women who, by choice or need, form one person household reached 56% in 2021, almost double that of men (27%). This phenomenon appears especially marked among older women, peaking between the ages of 75 and 84 (AISP Report 2023). More than 1 in 3 elderly people (36.9%, about 5.2 million) live in households composed exclusively of people in their own age group, probably with their spouse or other family members, with no children or other young adults. Another significant share, 32.7 percent (about 4.6 million), are in multigenerational households. This means that nearly one-third of people aged 65 and over cohabit with members of other generations, such as children or grandchildren, a situation that can foster intergenerational exchange, responsibility sharing, and more direct social and practical support.

As for housing conditions, the majority of those over 64 live in conventional dwellings, a small share, approximately 154,000 (1.1%), in collective living quarters such as retirement homes or care facilities, while an even smaller proportion (0.2%, about 29,000) reside in other housing units[2] or are homeless. Although it is a small percentage, it represents a critical situation that requires urgent efforts for social inclusion, access to primary care services, and policies to deal with poverty and marginalization.

To better describe the housing condition of the elderly living in conventional dwellings, the following variables were considered in this paper: period of construction, useful floor space, density standard[3], tenure status and type of building.

Conventional dwellings that were built before 1919 make up about 9.5% of the total housing stock. On the other hand, conventional dwellings constructed between 1961 and 2000 are much more numerous, totalling nearly 20 million units. They represent the majority of the housing stock, accounting for over half, specifically 56.3%, which highlights the significant growth and development of residential

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[2] 'Other housing units' are huts, cabins, shacks, shanties, caravans, houseboats, barns, mills, caves or any other shelter used for human habitation at the time of the census, irrespective if it was designed for human habitation.

[3] 'Density standard' relates the useful floor space in square meters or the number of rooms to the number of occupants

buildings during the latter half of the 20th century. The majority of occupied conventional dwellings in Italy fall within the size range of 80 to 99 square meters, making up about 26.7% of the total. This is followed by homes sized between 60 and 79 square meters, which account for 20.6%. Additionally, a significant portion of occupied conventional dwellings, around 18.1%, are slightly larger, ranging from 100 to 119 square meters. Average density standard per person is 44.3 m².

In 2021, nearly 72.5 percent of households reside in a home they own, while 20.5 percent live in rented housing. A residual share, on the other hand, occupies the dwelling under some other form of tenure, representing a tiny fraction compared to the prevailing forms of housing enjoyment.

With respect to the territorial distribution, the housing pattern of the elderly by degree of urbanization[4] shows that this segment of the population is more likely to live in towns and suburbs. Specifically, of the more than 14 million people aged 65 and older residing in Italy as of December 31, 2021, almost half live in intermediate density areas, more than a third in densely populated areas (cities) and 18.4 percent in areas with the lowest level of urbanization (rural areas).

In this paper, the results of new and targeted analyses conducted on data from the 2021 Permanent Population and Housing Census (PPHC) are presented. The aim is to explore the housing conditions of the elderly across different levels of urbanization, following a progressive analytical approach, from univariate descriptions to multilevel and multivariate models. First, paragraph 2 provides an initial exploratory assessment of elderly people's housing conditions, focusing, through univariate analyses, on associations between selected housing topics and the degree of urbanization. Next, paragraph 3 presents the results of multivariate and multilevel analyses, aimed at investigating in greater depth the relationships between housing conditions, the urban or rural setting, household structure (e.g., elderly-only or multigenerational households), and individual characteristics such as gender, age, and educational attainment. Particular attention is paid to the selection of statistical techniques suited to the heterogeneous nature of the available data, whether estimating probabilities or modelling discrete outcomes.

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[4] The degree of urbanisation methodology classifies *local administrative units* (LAU) as cities, towns and suburbs, and rural areas based on a combination of geographical contiguity and population density. The basis for the classification is the data for 1 km² population grid cells. Each cell has the same shape and surface area, thereby avoiding distortions caused by using territorial units varying in size.
Cities: densely populated areas where at least 50% of the population lives in one or more urban centres
Towns and suburbs: intermediate density areas where less than 50% of the population lives in an urban centre and at least 50% of the population lives in an urban cluster
Rural areas: thinly populated areas where more than 50% of the population lives in rural grid cells.

2. Housing Conditions by Degree of Urbanization: Age of Building, Tenure Status and Floor Space

The housing conditions of elderly people in Italy differ significantly depending on the degree of urbanization, with urban-rural contrasts evident across several dimensions. The first aspect concerns the period of construction of dwellings occupied by the elderly. Data show that buildings constructed before 1946) are more prevalent in rural areas (22.7%) than in towns and suburbs (13.1%) and cities (14.7%). This reflects a slower pace of housing renewal in rural municipalities and suggests the persistence of ageing housing stock, potentially associated with lower energy performance or accessibility standards. Conversely, dwellings built between 1961 and 1980 dominate across all areas, reaching peaks in cities (42.5%) and towns (40.4%), corresponding to the economic and urban expansion period. Rural areas show a more balanced distribution over the decades. At the regional level, the North-West stands out for a particularly high proportion of elderly living in rural areas in dwellings built before 1946, totalling over 31%. This value is substantially higher than the national average for rural areas (22.7%) and indicates a strong presence of older housing stock in this part of Italy. In contrast, the Center registers a lower share of pre-1946 rural dwellings (24.8%), while the North-East, South, and Islands have even smaller proportions, ranging between approximately 14% and 20%. These differences suggest that the persistence of historic housing in rural areas is more pronounced in the North-West compared to other regions.

Tenure status further highlights territorial inequalities. While homeownership is widespread among elderly households across the country, its incidence increases with decreasing urban density: 81.4% of older adults in cities are homeowners, compared to 86.1% in towns and 87.9% in rural areas. Rental tenure is significantly more common in cities (15%) than in towns (9.7%) or rural areas (6.8%), suggesting greater housing market pressures and possibly more frequent economic vulnerability among urban elderly. Interestingly, the "other" category, comprising free use, service benefits, etc., shows a modest increase in rural areas (5.2%). This may reflect more frequent forms of extended family living or informal agreements for housing use among relatives, which are more typical in less urbanized contexts, where family and property ties tend to be stronger and more deeply rooted in the local area.

Significant territorial differences also emerge. In the South, rental tenure among elderly in cities reaches 18.9%, well above the national urban average, highlighting the fragility of tenure security in this area. Similarly, the South and Islands record the highest shares of elderly in rural areas living under "other" forms of tenure (7.4% and 5.6% respectively), possibly reflecting informal cohabitation patterns. Meanwhile, the North-East presents the most consolidated pattern of ownership

(89.2% in rural areas), suggesting stronger homeowner stability in this part of the country.

Floor space data adds another layer to this territorial narrative. Smaller dwellings (under 60 square meters) are more frequent in cities (10.8%) than in towns (6.8%) or rural areas (6.9%). In contrast, the share of elderly people living in dwellings over 100 square meters rises sharply moving from urban to rural areas: from 39.1% in cities to 49.8% in towns and 53.9% in rural zones. This reflects both different housing market dynamics and possibly differing household structures, with rural elderly more likely to occupy spacious, older homes once shared with larger families. While larger floor space may suggest better living standards, it can also indicate potential underuse of space and higher maintenance burdens for ageing individuals.

The North-East rural areas stand out with over 60% of elderly residents living in dwellings larger than 100 square meters, the highest national share, confirming the region's legacy of larger single-household homes and a tradition of multi-generational rural dwellings. Conversely, cities in the North-West register the highest proportions of elderly living in dwellings under 60 square meters, with 13.4%, well above the national average of 10.8%. In contrast, the Islands show a considerably lower share of elderly in such small dwellings, at only 7.6%, indicating a different spatial housing pattern in this regions. Taken together, these three dimensions point to a coherent territorial pattern. Elderly residents in rural areas tend to live in older, larger, and owner-occupied homes, which may offer stability but also present challenges in terms of accessibility and energy efficiency. On the contrary, urban elderly are more exposed to smaller and newer dwellings but face higher rates of renting and greater market pressures. These contrasts underscore the need for differentiated housing policies that take into account the interaction among dwelling characteristics, tenure security and demographic ageing across diverse territorial settings. Moreover, regional disparities within urban and rural areas signal the importance of considering not only the urban-rural divide but also context-specific factors such as historical housing development and local housing markets.

3. Uncovering Territorial and Individual Patterns in Elderly Housing Conditions

Understanding housing conditions among the elderly requires an analytical framework capable of capturing the multidimensional and territorially embedded nature of such phenomena. To this end, the analysis presented in this paragraph adopts a multilevel analytical design, combining analyses at the municipal level, which reflect contextual and structural characteristics with evaluations at the individual level, taking into account specific personal and household factors.

A distinctive feature of the PPHC is that many housing-related variables, such as floor space, tenure status, and type of building, are produced as model-based estimates. These are highly reliable at aggregated levels, such as municipalities or population subgroups, but less suitable for granular, individual-level inference. As a result, a multilevel strategy is not only methodologically appropriate but also dictated by the architecture of the data.

The first analytical step focuses on municipalities as units of analysis and proxies for the broader territorial context, using the degree of urbanization as a key structural dimension. The aim is to identify homogeneous clusters of municipalities based on demographic and housing characteristics of the elderly population. This allows us to delineate territorial profiles that reflect different combinations of population ageing, housing supply, tenure patterns and settlement structures. The second analytical step shifts to the individual level, investigating whether specific vulnerability profiles—such as elderly individuals living alone and with low education—are subject to differentiated housing conditions depending on the municipal cluster in which they reside. This approach enables a more nuanced analysis of housing inequality by considering the interaction between individual characteristics and territorial context.

The target population of the study considers all individuals aged 65 and over, residing in conventional dwellings. The dataset includes a rich list of variables that could be grouped into three main domains:

−*housing variables*: tenure status (owner, renter, or other); useful floor space and density standard: total and per capita surface; type of building: single-family house or apartment block; period of construction: dwellings built before 1919 considered as 'older buildings' and those built after 2001 as 'recent buildings.

−*sociodemographic variables*: age, sex, educational attainment, citizenship.

−*household composition variables*: household composition: living alone, elderly-only or multigenerational;

−*territorial classification*: degree of urbanization (urban, suburban, rural) and geographical macro-area (North, Centre, South, Islands).

The degree of urbanization serves as a fundamental classification axis in this framework. Defined according to population density and settlement characteristics, it distinguishes densely populated areas (*cities*), with high population density and significant urban centres; intermediate areas (*towns and suburbs*): combining urban and rural traits; thinly populated areas (rural areas): marked by low density and dispersed settlements (Eurostat, 2021).

By combining territorial profiles with individual indicators, this framework enables a refined reading of housing inequalities, helping to identify who is vulnerable, where vulnerabilities concentrate, and how personal and contextual factors jointly shape housing outcomes in later life. This multilevel perspective is

also intended to inform place-sensitive housing policies that move beyond binary urban-rural distinctions.

3.1. Municipal-Level Cluster Analysis

The first analytical step involved constructing a typology of Italian municipalities based on a set of housing and demographic indicators referring to the elderly population (aged 65 or over). The selected variables are: the proportion of elderly residents and those aged 85 or more, the share of women, the share of people (aged 65 or over) living alone, the share of elderly-only and multigenerational households, the proportion of households in rented dwellings, dwelling characteristics: useful floor space, type of building (single vs. multi-unit) and period of construction, the educational attainment (share with low education).

It is important to emphasize that territorial variables—such as the degree of urbanization and geographical macro-area—were not used in the clustering process as the first aim was to identify clusters based solely on housing and demographic characteristics, potentially transversal across territorial classes. However, in all subsequent multivariate and multilevel analyses, territorial variables are included, and the resulting clusters result indeed strongly associated with territorial features.

To address redundancy and ensure parsimony, a Principal Component Analysis (PCA) was applied to the standardized indicators and the resulting components were fed into a Ward's hierarchical clustering algorithm. This procedure led to the identification of eight distinct clusters of municipalities, each representing a typical configuration of housing and demographic characteristics for the elderly population.

Once defined, the clusters were examined in relation to territorial attributes to support interpretation. Table 1 shows the percentage distribution of municipalities within each cluster by urbanization degree (cities, towns/suburbs, rural areas) and geographical macro-area.

The results reveal a strong association between the eight clusters and territorial attributes, especially the degree of urbanization, although this variable was not used as input in the clustering procedure. Urban municipalities are entirely concentrated in a single cluster (Cluster 1). Suburban areas are split across two distinct clusters: Cluster 2, with a marked concentration in the North-West, and Cluster 3, covering a broader range of territories across the Centre, South, and Islands. Even more diversified are the rural areas, which are distributed among five separate clusters. Each rural cluster shows a distinct geographical imprint: Cluster 4 includes rural municipalities predominantly from the South and Islands; Cluster 5 represents a North-West and Central rural mix; Cluster 6 gathers rural areas in Northern regions; Cluster 7 spans the North-East and the Islands; finally, Cluster 8 is almost exclusively composed of North-Western rural municipalities. These patterns confirm

the territorial specificity of the resulting clusters and the greater internal differentiation observed in non-urban contexts, particularly in rural settings.

Table 1 - *Territorial profile of Clusters (Urbanization and Macro-regions).*

Cluster	N.	Cities	Suburbs/Towns	Rural Areas	North West	North East	Centr.Italy	South	Main Islands
1	255	100,0%	0.0%	0.0%.	43.5%	8.2%	5.5%	38.4%	4.3%
2	1.919	0.0%	100.0%	0.0%	54.1%	11.6%	13.0%	15.6%	5.7%
3	687	0.0%	100.0%	0.0%	6.7%	41.3%	4.2%	29.4%	18.3%
4	1.669	0.0%	0.0%	100.0%	8.3%	7.3%	18.2%	50.1%	16.1%
5	1.380	0.0%	0.1%	99.9%	45.8%	9.3%	19.2%	22.6%	3.0%
6	751	0.0%	0.0%	100.0%	50.1%	37.3%	10.9%	1.5%	0.3%
7	598	0.0%	0.0%	100.0%	16.2%	44.6%	1.0%	3.5%	34.6%
8	645	0.0%	0.0%	100.0%	86.2%	9.9%	2.8%	0.6%	0.5%
Total	*7.904*	*3%*	*33%*	*64%*	*38%*	*18%*	*12%*	*23%*	*10%*

Source: Elaborations on Permanent Population and Housing Census (PPHC) data, Istat.

Figure 1 presents a heatmap that synthesizes the distribution of key demographic and housing indicators across the eight municipal clusters identified in the analysis. Each row corresponds to a cluster, while columns represent standardized values of selected variables, including age structure, household composition, tenure status, dwelling characteristics and education levels. The colour gradients highlight deviations from the overall average, allowing for a rapid visual comparison and identification of distinctive cluster profiles.

Figure 1- *Heatmap of key elderly demographic and housing indicators by cluster.*

CLUS.	% Elderly *	% Women	%Over 85	%Low Attein.	% Living Alone	% Elderly-only Households	% Multi-gen. Households	%Rentals	%Low FloorP	%Single Housing	%Rece Buildin
1	21.69	**56.01**	13.68	41.38	26.66	38.07	35.27	**14.18**	**5.66**	12.15	33.04
2	23.19	54.90	14.27	44.88	28.19	**38.82**	32.99	10.05	3.71	22.79	34.37
3	22.77	54.78	14.52	**52.34**	25.48	37.79	**36.73**	6.96	2.85	43.02	**36.01**
4	26.73	54.41	**17.78**	55.26	31.17	34.33	34.51	5.85	3.62	40.57	29.36
5	**30.08**	53.47	**18.43**	49.22	**41.28**	31.88	26.85	7.24	3.78	32.61	21.85
6	22.94	53.53	14.16	45.22	28.55	**38.58**	32.87	8.40	2.69	33.67	34.91
7	26.58	54.24	16.30	**54.04**	27.30	35.60	**37.10**	5.15	1.68	**61.92**	32.69
8	**29.16**	53.48	16.88	45.58	33.90	35.05	31.05	6.69	1.53	**61.19**	18.37
Total Avg	25.77	54.28	16.10	49.15	31.25	35.97	32.78	7.73	3.26	36.80	29.85

Source: Elaborations on PPHC data, Istat.

The main findings can be summarized as follows:

- *Cluster 1 (Urban)* is typified by moderate elderly shares, a higher female proportion, predominantly elderly-only households, high education levels and a tenure status dominated by small rental flats in multi-unit buildings.
- *Cluster 2 (Suburban NW)* exhibits similar demographic features with slightly elevated elderly presence and living alone rates, combined with recent buildings and a high share of rented flats.
- *Cluster 3 (Suburban Elderly Households)* stands out with lower educational attainment but better housing conditions: larger floor space, home ownership and prevalence of one-person households.
- *Cluster 4 (Southern Rural, Multigenerational)* reflects the highest elderly and oldest-old proportions, lower education, predominance of multigenerational households, smaller, older, owner-occupied dwellings.
- *Cluster 5 (Rural NW and Centre, Elderly Living Alone)* records the oldest population, highest living-alone rates, mixed tenure, and small dwellings, indicating elevated vulnerability.
- *Cluster 6 (Northern Rural)* shows moderate elderly shares, medium-sized dwellings, and higher prevalence of recent buildings.
- *Cluster 7 (Rural with Good Housing)* combines high elderly presence with multigenerational households, low education but favourable housing conditions with large-size, one-person households and low rental rates.
- *Cluster 8 (Elderly Rural NW, Living Alone)* features high elderly and living alone shares, mixed tenure with many one-person households but older building stock, indicating potential maintenance issues.

These clusters highlight the marked heterogeneity in elderly housing conditions, shaped by both the urban–rural gradient and regional specificities. This typology reveals not only a clear urban–rural divide, but also significant intra-category disparities—particularly within rural areas—underscoring the limitations of dichotomous classifications. Rural clusters display wide internal variation: some are marked by isolation and limited space, others by better housing conditions but lower levels of educational attainment.

3.2. Individual-Level Vulnerability Profiles across Clusters

The second stage of the analysis focuses on housing vulnerability among older individuals, examined in light of the territorial clusters identified in the previous section. The objective is to assess whether elderly persons with similar sociodemographic characteristics are exposed to different housing risks, depending on the territorial features of the municipality in which they reside.

Two vulnerability profiles were examined, based on potential risk-enhancing covariates:

- education[5]: elderly aged 75+ living alone with high education (upper secondary or tertiary) versus those with low education (primary or lower secondary);
- household-composition: elderly living alone compared to elderly-only households.

The housing risk indicators considered include tenure status (share of renters), dwelling size (share living in units smaller than 60 m²), floor space per person below the national median, and type of building (single-unit vs. multi-unit buildings).

The results of these preliminary exploratory analyses are summarized in Tables 3 and 4 showing, for each profile, how the values of housing risk indicators vary with changes in the covariates and across territorial clusters. Only clusters with significant differences are included. Both the observed percentages and the percentage-point differences among profiles within each cluster are reported, allowing for a clear comparison of housing risks by educational attainment (Table 3) and household composition (Table 4) across territorial contexts.

Table 3 - *Housing Risk Indicators by Education Level for Elderly Living Alone, by Cluster. Values and percentage point differences by profile and cluster.*

	Cluster	Risk Housing Indicators (Educated/Less-Educated)			
		Rent (%)	Single Housing (%)	Low Density (%)	Small Dwellings (%)
1	Urban Elderly Conditions	28 / 26	2.6 / 3.6	13.6 / 15.0	0.1 / 0.2
3	Suburban Elderly Households	60 / 55	1.2 / 1.5	3.3 / 4.8	0.04 / 0.14
6	Rural North Seniors	4 / 7	2.3 / 4.2	11.6 / 15.3	0.03 / 0.13
8	Elderly Rural North-West Living Alone	48 / 60	1.2 / 1.8	5.5 / 6.5	0.35 / 0.57
	Cluster	Difference Between Educated vs Less-Educated (pp)			
		Rent (%)	Single Housing (%)	Low Density (%)	Small Dwellings (%)
1	Urban Elderly Conditions	▲ + 2	▼ − 1.0	▼ − 1.4	▼ − 0.1
3	Suburban Elderly Households	▲ + 5	▼ − 0.3	▼ − 1.5	▼ − 0.10
6	Rural North Seniors	▼ − 3	▼ − 1.9	▼ − 3.7	▼ − 0.10
8	Elderly Rural North-West Living Alone	▼ − 12	▼ − 0.6	▼ − 1.0	▼ − 0.22

Source: *Elaborations on PPHC data, Istat.*

Results in Table 3 highlight substantial variation across clusters in housing outcomes by educational profile. In rural clusters (e.g. 6 and 8), individuals with low education exhibit higher vulnerability, especially in rental rates and housing size. In Cluster 8 (rural north-west), the share of renters among the less educated reaches 60%, compared to 48% among the more educated. Conversely, in highly urbanised areas such as Cluster 1, the gap among education groups narrows considerably, suggesting that housing market constraints may limit the protective role of higher education.

Table 4 compares older individuals living alone to those in elderly-only households. Across most clusters, those living alone experience higher risk,

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[5] Education is used to identify potential vulnerability profiles among older adults, as it serves as a robust socioeconomic proxy and was readily available in the first dataset, derived from census surveys and estimates. Future analyses, integrating additional data sources, could consider variables more directly linked to income

particularly in terms of dwelling size and rental incidence. These differences are more pronounced in clusters with greater urban pressure. For example, in Cluster 8, the share of small dwellings is nearly half a percentage point higher for those living alone (0.57% vs. 0.10%). The evidence indicates that individual vulnerability does not translate into uniform housing disadvantage across space. Territorial characteristics modulate the extent to which education and household composition impact housing outcomes.

Table 4 - *Housing Risk Indicators by Household Composition among Elderly, by Cluster. Values and percentage point differences by profile and cluster.*

	Cluster	Risk Housing Indicators (Alone / Elderly-only Households)			
		Rent (%)	Single Unit (%)	Low Density (%)	Small Dwellings (%)
1	Urban Elderly Conditions	26 / 25	3.6 / 3.4	15.0 / 12.5	0.20 / 0.14
4	Southern Rural Multigenerational	23 / 29	2.5 / 1.9	8.9 / 5.3	0.23 / 0.07
6	Rural North Seniors	7 / 8	4.2 / 3.9	15.3 / 10.5	0.13 / 0.06
8	Elderly Rural North-West Living Alone	60 / 57	1.8 / 1.4	6.5 / 5.0	0.57 / 0.10
		Difference Between Alone vs Elderly-only Households (pp)			
		(positive = higher in Educated profile)			
	Cluster	Rent	Single Unit	Low Density	Small Dwellings
1	Urban Elderly Conditions	▲ +1	▲ +0.2	▲ +2.5	▲ +0.06
4	Southern Rural Multigenerational	▼ −6	▲ +0.6	▲ +3.6	▲ +0.16
6	Rural North Seniors	▼ −1	▲ +0.3	▲ +4.8	▲ +0.07
8	Elderly Rural North-West Living Alone	▲ +3	▲ +0.4	▲ +1.5	▲ +0.47

Source: Elaborations on PPHC data, Istat.

These results support the relevance of a multilevel perspective, which enables a more granular understanding of how structural (municipal-level) and compositional (individual-level) factors jointly shape housing inequalities among older adults, and suggest that further research should include statistical modelling of interactions.

4. Conclusions

This study addresses the complexity of jointly considering territorial, household, and individual-level factors in investigating housing conditions among the elderly, illustrating a significant advantage of the Permanent Population and Housing Census data. Using a multilevel framework, the analysis integrates contextual municipal classifications with individual vulnerability profiles, shedding light on how structural housing inequalities and personal characteristics interact.

The reliance on model-based housing estimates in the 2021 Permanent Census requires analytical approaches that acknowledge the hierarchical nature of data and its varying precision. Aggregated municipal-level data offer a robust basis for territorial classification, while individual-level analysis enables the identification of vulnerable subpopulations within their broader territorial contexts.

The cluster analysis confirms urbanization as a key stratifying dimension. Urban municipalities form a distinct cluster characterized by high rental rates, limited floor space and a concentration of elderly living alone. Suburban areas split into contrasting profiles, such as a North-West cluster with more recent housing and higher renter prevalence, versus a more heterogeneous suburban type with different household and housing conditions. Rural areas prove highly diversified, dividing into multiple clusters ranging from multigenerational households in modest owned homes to aged populations living alone in smaller dwellings. Integrating these territorial clusters with individual vulnerability profiles reveals important interaction effects. Education appears protective against adverse housing outcomes in several rural and suburban clusters but shows limited influence in densely populated urban settings where structural housing constraints dominate. Such findings highlight the need for housing policies sensitive to both individual vulnerabilities and territorial contexts. Building on these results, future research will focus on validating and refining the typology across demographic and housing subgroups, modelling interaction effects through multivariate approaches and enhancing territorial classifications by introducing finer stratifications at municipal, household and individual levels.

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