

Prostorska analiza tveganja stanovanjske in socialne prikrajšanosti: vpliv dejavnikov staranja in lokalnega okolja

Spatial analysis of the risk of housing and social deprivation: the impact of ageing factors and the local environment

Simon Starček, Dušan Petrovič

UDK: 364.652.4:911.375.1
Klasifikacija prispevka po COBISS.SI: 1.01
Prispelo: 22. 5. 2025
Sprejeto: 8. 9. 2025

DOI: doi.org/10.15292/geodetski-vestnik.2025.04.502-537
SCIENTIFIC ARTICLE
Received: 22. 5. 2025
Accepted: 8. 9. 2025

IZVLEČEK

Stanovanjska in socialna prikrajšanost je družbeno in prostorsko pogojen pojav, ki presega materialno pomanjkanje ter vključuje omejen dostop do virov, storitev in ustreznega bivalnega okolja. Na to obliko prikrajšanosti vplivajo številni dejavniki, pri čemer so za razumevanje stanovanjske ranljivosti in prostorske (ne)pravičnosti ključni staranje prebivalstva, urbanizacija in prostorske spremembe. Prispevek preučuje vpliv stanovanjskih razmer, ekonomskih značilnosti lokalnega okolja, kakovosti bivalnega prostora in dejavnikov, povezanih s staranjem prebivalstva, na indeks tveganja stanovanjske in socialne prikrajšanosti v slovenskih občinah. Z uporabo geografsko obtežene regresije analiziramo lokalne prostorske vplive in ugotovljamo, da globalni model podcenjuje prostorsko raznolikost teh pojavov. Uporabljeni kartografski prikazi razkrivajo prostorske razlike v vplivu obravnavanih dejavnikov, kar omogoča boljše razumevanje vzorcev prikrajšanosti. To lahko bistveno prispeva k oblikovanju učinkovitejših in prostorsko ciljanih ukrepov, ki so prilagojeni potrebam starajočega se prebivalstva.

KLJUČNE BESEDE

stanovanjska ranljivost, prostorska neenakost, indeks tveganja stanovanjske in socialne prikrajšanosti, geografska obtežena regresija, starejši, Slovenija

ABSTRACT

Housing and social deprivation is a socially and spatially conditioned phenomenon that extends beyond material scarcity and encompasses limited access to resources, services, and adequate living environments. This form of deprivation is shaped by various factors, among which population ageing, urbanisation, and spatial transformations are pivotal for understanding housing vulnerability and spatial (in)justice. This paper investigates the impact of housing conditions, local economic characteristics, the quality of the residential environment, and ageing-related demographic processes on the risk index of housing and social deprivation across Slovenian municipalities. Employing geographically weighted regression, we assess local spatial effects and demonstrate that global models tend to underestimate the degree of spatial heterogeneity of these phenomena. The applied cartographic visualisations highlight spatial disparities in the influence of the examined determinants, thereby providing deeper insights into the patterns of deprivation. These findings can significantly inform the design of more effective and spatially targeted policy measures, particularly tailored to the needs of an ageing population.

KEY WORDS

housing vulnerability, spatial inequality, housing and social deprivation risk index, geographically weighted regression, elderly, Slovenia

1 INTRODUCTION

Ensuring social justice and reducing socio-economic disparities remain central tasks of contemporary nation-states, especially in the context of rapid demographic transitions. Crucial in this regard are carefully designed policies that guarantee equal opportunities for health, well-being, and dignified living conditions for all citizens, particularly for socially and economically vulnerable groups (World Health Organization, 2022). Effective and accessible social protection mitigates the risk of social exclusion and enhances the resilience of individuals and households to various forms of insecurity (OECD, 2020a). A major challenge lies in ensuring equal opportunities irrespective of material status, a goal that is especially pressing for the elderly population. Population ageing is among the most profound and far-reaching demographic trends of the 21st century, affecting almost all societal subsystems - from labour markets to social security and housing policy (OECD, 2019; United Nations, 2019; World Health Organization, 2021a). According to United Nations projections (UN DESA, 2023), by 2030 the global number of people aged 60 or above will exceed 1.4 billion, reaching more than 2.1 billion by 2050. These trends are equally evident in Europe, where the proportion of older age groups is increasing across all EU Member States, EFTA countries, and candidate countries. Moreover, the process of internal ageing is taking place within the elderly population, with the fastest growth observed among the oldest-old (80+ years). In the EU, their share is projected to rise from 5.9% to 14.6% by 2100. Significant changes in the demographic structure are also expected in Slovenia. In 2024, people aged 65 or over already represented 22% of the total population, and according to EUROPOP 2019 projections, this share will surpass 31% by 2100 (Eurostat, 2023; Statistični urad RS, 2025b). These demographic shifts significantly affect the demand for adjustments in housing, social, and healthcare policies and call for long-term strategic planning at multiple governance levels.

Since the beginning of the 21st century, cities worldwide have been confronted with dynamic spatial and demographic transformations characterised by both urban growth and the accelerated ageing of the urban population (Incaltarau, Kourtiti and Pascariu, 2024). The increasing share of older residents in urban areas necessitates substantial adaptations of spatial, housing, and social infrastructure (UN DESA, 2020; World Health Organization, 2021b). Many existing residential buildings are inadequately designed to meet the needs of an ageing population - often lacking elevators, wider corridors, or other architectural solutions that would enable safe and independent living. The shortage of accessible green spaces and public areas further restricts opportunities for physical activity, recreation, and social interaction, thereby reducing the quality of life in old age. At the same time, many older urban residents inhabit dwellings with high rents, costly maintenance requirements, and recurrent expenses that frequently exceed their financial capacity, thereby amplifying the risk of housing insecurity and social exclusion. In search of more affordable living conditions, part of the elderly population relocates to suburban and rural areas. Yet these areas are facing a sharp population decline, the abandonment of agricultural land, the deterioration of the building stock, and the loss of public services. Access to healthcare, assisted living facilities, and essential infrastructure is often limited in rural settings, which can further undermine the social and residential security of older people (UN-Habitat, 2020a; World Health Organization, 2021a; D'Souza, 2019). In this context, the concept of spatial justice emerges as a central framework for understanding and addressing socio-spatial inequalities. It emphasises the equitable distribution of resources, access to services, and investments in public infrastructure for all residents, particularly the

most vulnerable groups (Madanipour, Shucksmith and Brooks, 2021). The imbalance between urban and rural development thus exacerbates spatial injustice (UN-Habitat, 2022; OECD, 2020a; Haque, Das and Patel, 2022). The Ministry of the Environment and Spatial Planning (Ministrstvo za okolje in proctor, 2016) warns that in Slovenia the areas most affected by depopulation in the future will be those already exhibiting a high ageing index. Data from the Statistical Office of the Republic of Slovenia (Statistični urad RS, 2025f) confirm that the old-age dependency ratio is highest in rural areas (34.6) and suburban zones (34.7), while it is slightly lower in larger cities (32.8), further reinforcing the need for spatially adjusted policy measures.

In many European countries, including Slovenia, homeownership has become the predominant form of housing over the past decades. This trend stems from historical and political transformations, most notably the large-scale privatisation of public housing stock and the underdevelopment of a regulated institutional rental sector (Kemeny, 1995). Slovenia stands out for its exceptionally high rate of homeownership among the elderly - more than 85% of older residents live in owner-occupied dwellings, placing the country among those with the highest levels of elderly homeownership according to the SHARE survey (Mandič, 2016). However, ownership does not necessarily guarantee greater housing or financial security. Many older people reside in energy-inefficient and functionally inadequate dwellings that require high maintenance and heating costs. Given their limited incomes, these expenses often significantly constrain resources available for other essential needs (Lavrač, 2016). Comparable circumstances are observed in other countries with high levels of homeownership, such as Spain, Italy, and several Eastern European states, where ownership frequently fails to provide protection against poverty but rather masks underlying housing deprivation (Delfani, De Deken and Dewilde, 2015; Soaita and Dewilde, 2021).

Spatial and demographic development patterns in Slovenia reveal pronounced regional disparities, manifested in the uneven distribution of population and differences in economic activity across territories. A high degree of settlement dispersion is characteristic, with numerous smaller settlements - particularly in peripheral urban fringes and border regions - experiencing population decline and accelerated ageing. At the same time, suburbanised areas are rapidly expanding along major transport corridors, especially the motorway network. Such expansion fosters spatial fragmentation, disrupts natural linkages, and hampers access to public services (Ministrstvo za naravne vire in prostor, 2023; UMAR, 2020). The shortage of affordable housing in urban centres, combined with a simultaneous increase in vacant dwellings in rural areas, deepens spatial imbalances and reduces the functional capacity of specific regions. Among the most vulnerable are elderly communities residing in poorly accessible environments with limited access to essential public services, which undermines their quality of life and heightens the risk of poverty and social exclusion (Banovec, 2019; Filipović Hrast et al., 2018). Comparable trends are observed across many European countries, where population ageing coincides with declining service accessibility in rural areas (OECD, 2020a; UN-Habitat, 2020b).

In this respect, housing conditions are increasingly recognised as a decisive factor of housing and social deprivation. Poverty is not confined merely to the lack of material resources but also encompasses restricted access to resources, services, and opportunities for active social participation (Atkinson, 2003; Humer and Kalin, 2020). Among the elderly in particular, poverty is often manifested in inadequate housing, insufficient access to healthcare services, and limited social networks (Leskošek, 2017; Filipović Hrast et

al., 2018). It is also associated with feelings of social exclusion and powerlessness, which further deepen spatial and social inequalities. Housing poverty, as a distinct form of deprivation, is expressed through multidimensional scarcity - living in physically inadequate, energy-inefficient, or oversized dwellings, restricted access to basic infrastructure, and the financial inaccessibility of housing (Cañón and Navarro, 2023; FEANTSA and Fondation Abbé Pierre, 2023; OECD, 2021). D'Souza (2019) emphasises that adequate housing constitutes one of the fundamental human needs, essential for safeguarding individual dignity. The European Commission (2024) further underscores that safe, high-quality, and affordable housing is crucial for preventing poverty and fostering social inclusion of vulnerable groups, especially the elderly. Housing poverty is also strongly associated with systemic factors such as housing policy, taxation and transfer mechanisms, and rental subsidies (Liu et al., 2023). Housing costs frequently represent the largest share of household expenditure, and persistently excessive costs increase the risk of deprivation. As Soja (2009) argues, housing functions as an essential spatial resource through which social differences are realised or reinforced - particularly with regard to access to housing quality, services, and life opportunities.

This paper examines the interrelations between housing and social deprivation and the housing, spatial, and economic conditions of the population. Following a review of domestic and international research findings, the focus is placed on analysing the housing conditions of the elderly, with particular attention to the impacts of demographic change, urban development, and the risks of deprivation within the context of an ageing society. Based on data for all 212 Slovenian municipalities, we applied multiple regression to estimate the general associations between the observed variables, while geographically weighted regression was employed to account for the spatial variability of risk factors. The key results are further illustrated through thematic maps, which provide a clearer insight into spatial differences across municipalities and serve as a tool for supporting targeted planning. The study introduces new evidence on the importance of improving housing and other living conditions as crucial determinants in reducing the risks of poverty, social exclusion, and spatial inequalities.

2 REVIEW OF RESEARCH TO DATE

In recent decades, housing issues have become a central topic of research and policy debate, as they are increasingly linked to contemporary forms of poverty and social exclusion. Housing affordability is embedded within broader social and demographic processes such as urbanisation, the shortage of affordable dwellings, and population ageing (Chirisa and Matamanda, 2016; Silva, 2021). The most vulnerable groups often include the elderly, the homeless, migrants, and persons with various forms of disability (Enström and Wilhelmsson, 2019; Kim and Yoo, 2021; Lozano Alcántara and Vogel, 2021). A significant shift in housing policy for older people is represented by the United Nations Principles for Older Persons (United Nations, 1991), which underpin the approach to developing age-friendly cities, and by the World Health Organization's Global Strategy on Ageing (World Health Organization, 2017), which highlights the importance of age-adapted environments and housing justice.

Research across different European countries confirms that housing represents a locus where multiple forms of deprivation accumulate (Keller and Hruška-Tvrđý, 2011; Dustmann, Fitzenberger and Zimmermann, 2018). Comparative studies reveal pronounced differences in housing experiences between

urban and rural areas and across countries (D'Souza, 2019; Soaita and Dewilde, 2021; Davies et al., 2008). Numerous studies analyse the impact of housing poverty on the physical and mental health of the elderly, identifying loneliness, high housing costs, and inadequate living conditions as key risk factors (Kim and Seo, 2024; Lee, 2022). Sýkorová, Nytra and Tichá (2014) emphasise that elderly populations are particularly vulnerable to the macroeconomic and social processes that shape housing poverty and social exclusion - especially those living alone, widows, the less educated, the oldest-old, poorer elderly, and those facing physical or mental health problems. These conditions act both as causes and consequences of social exclusion (Hossain et al., 2022). Studies also show that the effects of homeownership on the risk of poverty vary across countries. In some contexts, high homeownership rates mitigate poverty (e.g., in Australia, where many older people live in fully paid-off dwellings), whereas in others (e.g., Japan) homeownership does not function as a safety net for financial stability in old age (Saunders, Watanabe and Wong, 2015; Delfani, De Deken and Dewilde, 2015).

In Slovenia as well, older people largely remain in owner-occupied dwellings, yet often in energy-inefficient, oversized, and functionally inadequate units (Filipović Hrast et al., 2018). Banovec (2019) notes that between 2011 and 2018, population ageing contributed to a marked decline in the already limited stock of public rental housing, further reducing opportunities for relocating to more suitable dwellings in later life. The spatial dimensions of ageing reveal that the impact of this process will be particularly pronounced in rural areas, where higher proportions of elderly residents, settlement depopulation, and declining accessibility of services are already evident. Kerbler (2015) warns that in environments where ageing processes have been unfolding for longer and with greater intensity, more severe depopulation of settlements can be expected. This diminishes the functional capacity of local environments, reflected in the deterioration of infrastructure, the abandonment of economic activities - particularly in agriculture - and the decline of the built and cultural landscape (Starček and Gerbec, 2022). Such contexts often give rise to secondary marginalisation, whereby vacant properties are occupied by socially vulnerable groups, a process that may accelerate negative social and spatial trends and adversely affect perceptions of safety and quality of life within the community (Kvik et al., 2022).

In parallel, there is growing interest in the use of spatial analyses and cartographic methods for identifying and representing areas with higher risks of poverty and housing or social deprivation. The spatial dimension of poverty was recognised as crucial already within the framework of the Millennium Development Goals. As Corral et al. (2022) emphasise, knowing where the poor are is fundamental for addressing poverty effectively. Xie et al. (2016), for instance, employed satellite imagery and convolutional neural networks to develop predictive poverty models for several African countries, while Aiken, Rolf and Blumenstock (2023) highlight their utility for the allocation of humanitarian aid. Henninger and Snel's (2002) study, which utilised cartographic visualisation of poverty in Ecuador, revealed the spatial heterogeneity of poverty and demonstrated intra-regional differences. Numerous international studies confirm that well-designed cartographic representations significantly contribute to the development of more spatially sensitive and targeted policies across different domains - particularly in the planning of social housing, the mitigation of energy poverty, and the prioritisation of public resource and service allocation (Carrosio, Cogliati Dezza and Cosma, 2023; Fabbri and Gaspari, 2021). Such representations make it possible to identify locally specific vulnerabilities, such as areas with high housing cost burdens, adverse environmental impacts, low energy efficiency, or limited access to public infrastructure, thereby

enabling policymakers to develop more effective and equitable measures at both national and local levels. Cartographic depictions of poverty, as instruments of spatial justice, are increasingly applied in policy frameworks, implementation measures, and targeted interventions addressing access to food, healthcare, housing, and infrastructure (Hyman, Larrea and Farrow, 2020; Rizzini Ansari, 2022; Szonyi et al., 2006).

3 METHODOLOGY

3.1 Research Design

The central research focus was directed towards analysing the housing conditions of the elderly population (65+) in Slovenia, with the objective of examining the interrelations between their living arrangements and the associated risk of housing and social deprivation. The empirical part of the study was grounded in a quantitative analytical approach, complemented by descriptive data processing for the preliminary analysis of spatial and demographic characteristics. Since the risk of housing and social deprivation is shaped by a combination of individual and spatial factors, the research design was based on a holistic approach that incorporated both the personal characteristics of older people - who are generally more vulnerable - and the broader context of the local environment. Building on the concept of multidimensional measurement of housing poverty and social deprivation, and drawing on methodological approaches established in the literature on composite indicator construction (e.g., Boarini and d'Ercole, 2006; Nolan and Whelan, 1996), we developed a composite index of housing and social deprivation at the municipal level. The index was calculated as an unweighted sum of standardised (*z*-scores) values of three components capturing the income, employment, and living-standard dimensions of socio-material deprivation: average net wage, unemployment rate, and severe material deprivation rate. The latter denotes the proportion of individuals whose living conditions are severely constrained due to limited household financial resources, rather than personal choice or lifestyle. These are individuals deprived of at least four of the following nine items of material well-being: the ability to regularly pay mortgage or rent, housing-related expenses, or loan instalments; the ability to keep the dwelling adequately warm; to cover unexpected expenses; to afford a meal with meat (or vegetarian equivalent) every other day; to afford a one-week annual holiday for all household members; or to own a car, a washing machine, a colour television, and a telephone. To ensure interpretative consistency and comparability across municipalities, the composite indicator values were normalised using the min-max method to the interval [0, 1], where higher values represent a greater risk of deprivation at the municipal level.

Based on the available statistical data, we constructed a hierarchical regression model grounded in a set of explanatory variables reflecting demographic, economic, and housing characteristics. To gain a deeper understanding of spatial patterns and inter-municipal differences in the effects of individual variables, the classical multivariate approach was complemented with geographically weighted regression analysis, which enables spatially sensitive modelling at the local level.

3.2 Data Sources

In the empirical part of the study, we relied on a combination of various data sources capturing demographic, social, and housing characteristics of the Slovenian population, including information on ownership and property attributes among individuals aged 65 and above. We used data from the Sur-

veying and Mapping Authority of the Republic of Slovenia (Geodetska uprava RS, 2023) on buildings and their units owned by members of the observed age group, encompassing 495,234 registered units. Particular attention was given to data on dwelling floor area and façade renovation. Complementary sources included data from the ESPON programme (2020), such as the Quality of Life Index; data from the Ministry of Finance (Ministrstvo za finance, 2024) on municipal development coefficients, published in accordance with the Regulation on the Methodology for Determining the Development Level of Municipalities for 2024 and 2025 (Uredba o metodologiji za določitev razvitosti občin za leti 2024 in 2025, 2023); and data from the Statistical Office of the Republic of Slovenia, such as the old-age dependency ratio (i.e., the ratio of the number of persons aged 65 or older to the number of working-age persons aged 15–64, multiplied by 100), the percentage of people for whom housing costs represent a heavy burden (the share of individuals living in households where housing-related expenses - rent, heating, electricity, water, and other associated costs - exceed 40% of disposable household income), and the percentage of employed persons over the age of 60. We also employed data from the Pension and Disability Insurance Institute of Slovenia on the average pension at the municipal level and average pensions by age groups (65+). The purpose of the analysis was to examine how spatial and housing conditions, along with selected factors specific to the elderly population (aged 60 or 65+), influence exposure to the risk of housing and social deprivation. For this purpose, we designed a multi-level analytical framework based on a hierarchical model incorporating both individual characteristics and contextual variables.

3.3 Cartographic Representation of Factors Affecting the Housing and Social Deprivation Index

To enhance the understanding of the spatial distribution of the examined factors, the results of the geographically weighted regression were visualised in the form of thematic maps. The visualisation is based on the values of regression coefficients for individual explanatory variables. Their purpose is to provide both experts and the wider public with an insight into spatial differences among Slovenian municipalities regarding the influence of specific factors. Given the nature of the data and their spatial attachment to municipalities, we employed a choropleth map for the representation. The values of regression coefficients were classified into eight classes of negative and eight classes of positive values. For this purpose, we applied the equal frequency classification method, which ensures that each class includes approximately the same number of municipalities. Such an approach provides a more balanced visual representation of spatial patterns, preventing numerically dominant groups or extreme values from overshadowing other data. Consequently, the cartographic visualisation gains in clarity, comparability, and informational value (Slocum et al., 2023). Each class is represented by a specific colour. The colour scale ranges from dark green, indicating the lowest negative values, to light purple, denoting the highest positive regression coefficients, as illustrated in the accompanying legends. The choropleth maps are designed at a scale that allows for the display of all municipalities at the national level. For easier orientation, urban municipalities are marked with their official abbreviations (MOC for Municipality of Celje, MOK for Municipality of Koper, MOKK for Municipality of Krško, MOKR for Municipality of Kranj, MOL for Municipality of Ljubljana, MOM for Municipality of Maribor, MOMS for Municipality of Murska Sobota, MONG for Municipality of Nova Gorica, MONM for Municipality of Novo mesto, MOP for Municipality of Ptuj, MOSG for Municipality of Slovenj Gradec, and MOV for Municipality of Velenje).

4 RESULTS

4.1 Housing and Social Deprivation Index

The spatial analysis of the composite index of housing and social deprivation across Slovenian municipalities (Figure 1) reveals marked regional diversity. The highest index values, indicating the greatest risk, are recorded predominantly in northeastern and eastern Slovenia - particularly in Pomurje, Podravje, Zasavje, and parts of the Savinja and Koroška statistical regions. These areas are simultaneously characterised by higher unemployment (Zavod RS za zaposlovanje, 2025) and lower income levels (Statistični urad RS, 2025e). This spatial distribution underscores the significant role of local characteristics in shaping living conditions and confirms the necessity of spatially adapted approaches to addressing housing and social deprivation.

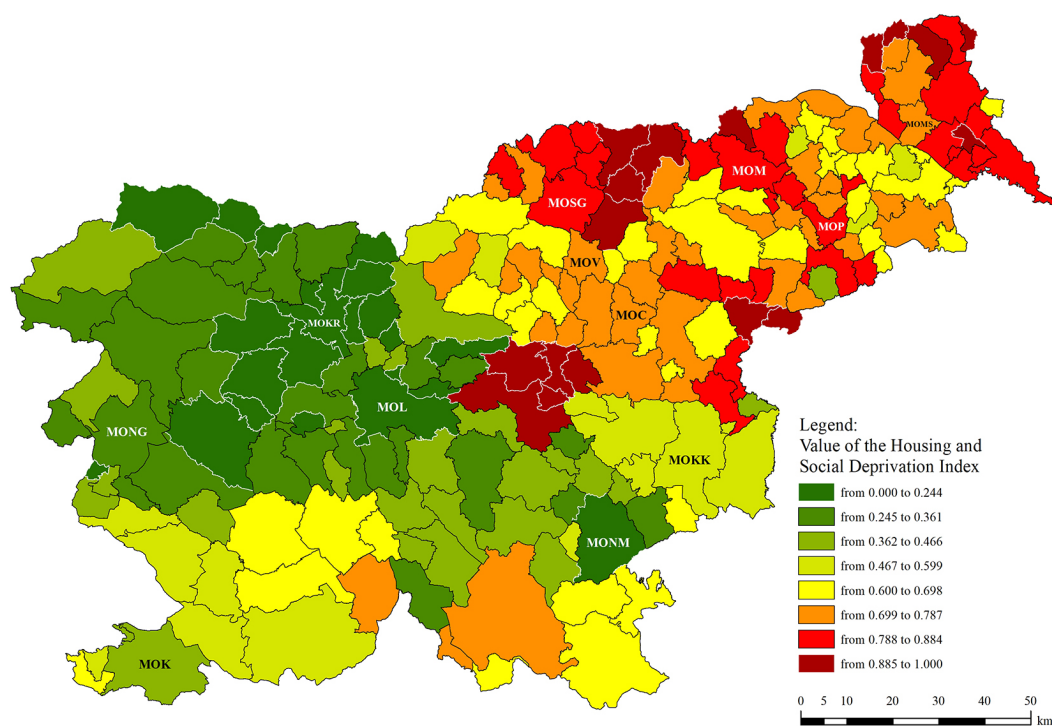


Figure 1: Values of the Housing and Social Deprivation Index at the municipal level, Slovenia, 2024.

4.2 Characteristics of dwellings owned by persons aged 65 and over

The analysis of data from the Surveying and Mapping Authority of the Republic of Slovenia (Geodetska uprava RS, 2023) shows that more than 62% of dwellings owned by individuals aged 65 or over are located in single-family houses, around 29% in multi-apartment buildings, and approximately 8% in two-dwelling houses. Only half a percent of dwellings owned by older persons are located in assisted housing or other specialised forms of accommodation. The housing stock owned by the elderly population is largely outdated, energy-inefficient, and infrastructurally deficient, which can adversely

affect their quality of life as well as their social and functional vulnerability. Older people predominantly own relatively large single-family houses (with an average net floor area of approximately 180 m²). These units are characterised by a low share of connections to the sewage network and a low proportion of renovated façades. Deficiencies are also evident in multi-apartment buildings, as more than two-thirds of such structures lack an elevator. Furthermore, three-quarters of dwellings owned by older persons are located on the second floor or higher, which restricts their mobility. Differences in the average age of single-family versus multi-apartment buildings, the average size of dwellings, and the extent of building renovations, as presented in Table 1, further highlight disparities in the living conditions of the elderly.

Table 1: Characteristics of dwellings in single-family and multi-apartment buildings in Slovenia owned by persons aged 65 and over

Indicator	Single-family houses	Multi-apartment buildings
Average age of building (in years)	70.9	61.2
Average net floor area of dwelling (m ²)	180.9	68.5
Average net floor area of living spaces (m ²)	101.6	56.6
Renovated façade (%)	23.9	28.4
Renovated roof (%)	47.0	45.4
Renovated windows (%)	30.1	30.1
Presence of elevator (%)	0.1	30.5
Connection to sewage system (%)	36.3	93.2
Average age of dwelling owner (in years)	Woman: 75.6 Man: 74.3	Woman: 74.7 Man: 73.6

4.3 Results of Multiple Regression Analysis

For the implementation of the multiple regression analysis and geographically weighted regression, we employed the variables presented in Table 2. The table includes basic descriptive statistics (minimum, maximum, and mean values, as well as standard deviation), together with a brief description and data source for each variable.

Table 2: Descriptive statistics of the variables used, with description and data sources

Podatek	Description and source	Min	Max	Mean	Std. dev.
y: Housing and Social Deprivation Index	Composite indicator (own calculation)	0.00	1.00	0.59	0.23
x ₁ : Old-age dependency ratio	Ratio between the number of persons aged 65 and over and the working-age population (Statistični urad RS, 2025f)	19.7	59.80	33.33	5.76
x ₂ : Municipal development coefficient	Municipal development coefficient for the years 2024 and 2025 (Ministrstvo za finance, 2024)	0.26	1.35	1.00	0.15
x ₃ : Quality of life index	Composite index including factors such as health, education, environment, and safety (ESPON, 2020)	0.33	0.70	0.53	0.087

Podatek	Description and source	Min	Max	Mean	Std. dev.
x_4 : Housing costs as a heavy burden	Percentage of the total population for whom housing costs represent a heavy burden (Statistični urad RS, 2025a)	20.00	36.00	27.70	4.52
x_5 : Average age of dwelling owners	Average age of dwelling owners (65+) (Geodetska uprava RS, 2023)	73.10	77.20	74.58	0.72
x_6 : Usable floor area of dwellings	Average usable floor area of all dwellings (Statistični urad RS, 2025d)	58.80	116.10	87.74	10.13
x_7 : Share of employed elderly (60+)	Share of employed persons aged 60+ in the total population of the same age group (Statistični urad RS, 2025c)	0.50	19.60	6.02	1.81
x_8 : Non-renovated façade	Percentage of dwellings owned by persons aged 65+ with a non-renovated façade (Geodetska uprava RS, 2023)	19.30	85.70	61.67	13.74

Min - minimum value; Max - maximum value; Mean - average value; Std. dev. - standard deviation

To analyse the relationships between housing characteristics, spatial indicators, and elements of living conditions, we designed a national regression model, the key results of which are presented in Table 3.

Table 3: Results of the regression analysis

$R^2_{OLS_1} = 0,816$; $AIC_c = -353.146$					
	B	St. error B	β	t	VIF
Constant	2.148	0.950		2.262*	
x_1 : Old-age dependency ratio	0.003	0.002	0.083	2.029*	1.834
x_2 : Municipal development coefficient	-0.392	0.073	-0.256	-5.400**	2.488
x_3 : Quality of life index	-0.479	0.137	-0.178	-3.491**	2.874
x_4 : Housing costs as a heavy burden	0.033	0.002	0.647	15.284**	1.977
x_5 : Average age of dwelling owners	-0.027	0.013	-0.082	-2.075*	1.723
x_6 : Usable floor area of dwellings	0.002	0.001	0.075	2.000*	1.563
x_7 : Share of employed elderly (60+)	-0.005	0.005	-0.041	-1.007	1.856
x_8 : Non-renovated façade	-0.001	0.001	-0.075	-1.881	1.775

$R^2_{OLS_1}$ - coefficient of determination for the national model including all explanatory variables from x_1 to x_8 ; AIC_c - corrected Akaike Information Criterion; B - unstandardised regression coefficient; St. error B - standard error of B; β - standardised regression coefficient; t - t-value; * $p < 0,05$; ** $p < 0,001$; VIF - Variance Inflation Factor

The results of the national regression model demonstrate the extent to which housing and socio-economic conditions influence the Housing and Social Deprivation Index - the dependent variable (y). The old-age dependency ratio (x_1) exerts a positive and statistically significant effect on the observed deprivation. This indicates that a higher proportion of older persons (65+) relative to the working-age population increases the risk of deprivation. The old-age dependency ratio reaches its highest values in municipalities in Pomurje, Zasavje, the western part of the country, and certain border municipalities, where the Housing and Social Deprivation Index also attains its highest levels. In the context of an ageing society, this points to the structural vulnerability of local environments, where demographic pressures coincide with a lack of adequate measures to ensure dignified, safe, and age-adapted housing, particularly for the elderly. Similar conclusions are drawn by Lafortune and Balestat (2007), who emphasise that an

ageing population places increasing pressure on local systems of long-term care, housing infrastructure, and social welfare, with especially pronounced effects on the deprivation of the elderly in remote and demographically threatened regions.

The level of municipal development (x_2) proved to be an important protective factor against the observed deprivation, indicating that more developed municipalities exhibit a lower risk of housing and social deprivation. Such municipalities generally provide better conditions for dignified, safe, and stable living not only for the elderly but for the entire population. A higher level of development often entails improved access to the labour market, public services, healthcare, educational and social infrastructure, and stronger institutional support - all of which contribute to reducing social risks. The disparities between more and less developed municipalities are thus reflected not only in economic indicators (e.g., employment, income, investment) but also in broader dimensions of social well-being, such as poverty risk, social exclusion, housing insecurity, and the demographic (un)attractiveness of the local environment. Dax et al. (2017) similarly emphasise that the degree of local development is directly linked to the developmental potential of regions, including quality of life, social cohesion, and community resilience against the risks of exclusion. Less developed municipalities are frequently exposed to higher levels of deprivation across various population groups (Kühn, 2015). UNECE (2021) further stresses that local capacities are a key precondition for implementing effective policies for an ageing population. The level of community development is therefore directly connected to spatial justice.

A protective effect was also confirmed for the Quality of Life Index (x_3), which encompasses various dimensions of well-being such as health, safety, education, working conditions, and accessibility of services. This variable exerts a negative and statistically significant effect on the value of the observed deprivation index, indicating that municipalities with higher quality-of-life scores experience lower risks of housing and social deprivation. The data show that the lowest levels of deprivation are observed in municipalities where the Quality of Life Index reaches higher values, particularly in the central and western parts of the country. This underscores the importance of comprehensive local development and spatial well-being as key factors in ensuring safe, affordable, and adequate housing, as well as in reducing the risk of social deprivation (Marques et al., 2019; Ustaoglu and Williams, 2024).

A particularly pronounced effect was observed for variable x_4 : the percentage of residents for whom housing costs represent a heavy burden, which emerged as the strongest positive predictor of higher values of the observed deprivation index. High housing costs substantially contribute to population vulnerability (Imankulova, 2024), especially in regions characterised by lower incomes and poorer energy efficiency of dwellings (Holzmann, 2023; Karpinska and Smiech, 2023). The analysis results confirm that areas with the highest share of residents reporting financial overburden due to housing expenses (Koroška, Zasavska, Podravska, Pomurska, and Primorsko-Notranjska statistical regions) are simultaneously those with the highest risk of deprivation. This finding highlights the importance of policies aimed at reducing housing costs and promoting affordable and high-quality living conditions - particularly for socially vulnerable population groups.

The results of the regression analysis indicate that the average age of dwelling owners aged 65 and over (x_5) has a negative and statistically significant effect on the observed Housing and Social Deprivation Index. According to data from the Pension and Disability Insurance Institute of Slovenia (Zavod za

pokojninsko in invalidsko zavarovanje Slovenije, 2024), the average pension (observed in the group of retirees aged 65+) is higher in the older age cohorts compared to younger pension recipients. The average old-age or partial pension that ceased in 2023 was, among those aged 90 years and above, 36.2% higher than in the group aged 65–69 (69.5% higher among men). In addition, the average newly granted old-age or partial pension in 2023 was 88% higher for persons over 70 than in the 65–69 age group (107% higher among women). The results of the bivariate spatial analysis (bivariate Moran's $I = 0.465$; $p < 0.001$) confirm a statistically significant spatial association at the municipal level between average gross pension and the average age of dwelling owners (65+). A statistically significant negative relationship is also observed between the age of dwelling owners (65+) and the net floor area of their dwellings. Smaller dwellings of older retirees entail lower running, heating, maintenance, and management costs. Importantly, households headed by individuals aged 65+ in Slovenia are the least indebted among all age groups. In the age group 65–74, only 15.8% of households hold financial obligations linked to mortgages or other forms of debt, while after age 75 this share falls to only 5.7%. In comparison, the average debt incidence in the 16–64 age group amounts to 37.7% (European Central Bank, 2023). Lower debt levels and longer periods of asset accumulation strengthen housing and social security (Munnell et al., 2020). Housing security and financial stability among the elderly are also often linked to living arrangements, particularly extended or multigenerational households, which remain relatively common in Slovenia. Dolenc (2016) reports that at the beginning of 2015, at least two households resided in 42% of single-family houses in Slovenia. In 60% of such extended households, at least three generations cohabited, most often a married couple with children and one parent of the spouses, typically the mother or mother-in-law. Multigenerational households are to a large extent also a consequence of limited access to suitable and affordable housing for young people and young families (Ahrendt et al., 2016; OECD, 2021). In such arrangements, financial burdens can be shared among several members, thereby reducing the strain on individuals and lowering the risk of poverty (Cohn et al., 2022; Karagiannaki and Burchardt, 2024). Moreover, older people are often entitled to supplementary benefits for assistance and care, which provide an additional protective mechanism. The effect of variable x_5 is consistent with the findings of Davidoff (2012), who highlights that with increasing age and higher levels of wealth among the elderly, the share of resources allocated to housing expenditure declines. Consequently, the risk of housing and social deprivation is reduced. Although the explanatory variable x_5 is limited to older (65+) dwelling owners, this group holds significant social importance, as stable holders of housing assets who constitute a key element of the social and housing system. Dewilde and Raeymaeckers (2008) emphasise that high levels of homeownership among the elderly substantially mitigate vulnerability and improve overall well-being indicators at the local level.

The average usable floor area of dwellings (x_6) has a positive and statistically significant effect on the risk of housing and social deprivation. In many municipalities (particularly in parts of the Goriška, Gorenjska, Koroška, Savinjska, and Notranjsko-Kraška statistical regions), dwellings are relatively large. When such dwellings are inadequately occupied (e.g., one or two persons living in a house with four or more rooms), this creates functional distress and suboptimal use of living space. Oversized dwellings may lead to energy inefficiency, increased maintenance costs, and a psychosocial sense of loneliness and inadequacy (OECD, 2021). Eurostat (2020) and Age Platform Europe (2022) highlight multiple risks, particularly among elderly occupants of oversized dwellings.

Variables x_7 and x_8 , which are not statistically significant in the regression model ($p > 0.05$), are not discussed in detail, as their effects are not confirmed with sufficient statistical probability and therefore do not provide a reliable basis for empirical conclusions or recommendations.

4.4 Results of geographically weighted regression

To further deepen the spatial dimension of the model, we employed the geographically weighted regression (GWR) method, which allows for the analysis of local variations in the effects of explanatory variables at the municipal level. GWR was selected due to the uneven spatial distribution of the analysed phenomena, which requires an approach adapted to the local characteristics of municipalities. The results of the spatial autocorrelation analysis indicate that the most appropriate specification for the selected model is the use of a fixed kernel with a bandwidth of $\beta = 28.9$ km. Spatial weights were calculated using the exponential kernel method. To mitigate the risk of spatial autocorrelation and local multicollinearity, variables x_7 and x_8 were excluded from further local modelling. The national model constructed in this manner has a coefficient of determination $R^2_{OLS} = 0.811$ ($AIC_c = -353.207$). The residual analysis (standard prediction errors) in the geographically weighted regression model shows that most municipalities fall within expected statistical deviations, confirming the reliability of the local model. The explanatory power and spatial variability of the effects of individual factors are presented in detail in Table 4.

Table 4: Results of geographically weighted regression

	$R^2_{GWR} = 0.879, AIC_c = -372.226$			
	$\overline{B}_i$	Std. dev. B_i	Min B_i	Maks B_i
Konstanta	1.777	0.796	0.039	3.837
x_1 : Old-age dependency ratio	0.004	0.004	- 0.006	0.008
x_2 : Municipal development coefficient	- 0.299	0.133	- 0.737	- 0.074
x_3 : Quality of life index	- 0.377	0.257	- 0.863	0.070
x_4 : Housing costs as a heavy burden	0.031	0.007	0.015	0.039
x_5 : Average age of dwelling owners	- 0.023	0.010	- 0.047	- 0.001
x_6 : Usable floor area of dwellings	0.001	0.001	- 0.005	0.003

R^2_{GWR} - coefficient of determination of the local model including all explanatory variables from x_1 to x_6 ; AIC_c - corrected Akaike Information Criterion; $\overline{B}_i$ - mean value of local unstandardised regression coefficients B_i ; Std. dev. B_i - standard deviation of coefficient values B_i ; Min B_i - minimum value of coefficient B_i ; Maks B_i - maximum value of coefficient B_i

The value of the coefficient of determination of the local regression model ($R^2_{GWR} = 0.879$) indicates that, on average, it explains the variance of the linear relationship between the dependent variable and the selected explanatory variables better than the national model ($R^2_{OLS_1} = 0.816$; $AIC_c = -353.146$) and also better than the national model without variables x_7 and x_8 ($R^2_{OLS_2} = 0.811$; $AIC_c = -353.207$). The mean values of the unstandardised coefficients of the explanatory variables in the local regression models exhibit the same sign as in the national model and display similar average values. Using thematic maps, we illustrate the spatial distribution of the effects of the selected explanatory variables at the municipal level - those variables which, in the global model, have the most statistically significant influence on the dependent variable - namely, variables x_2 , x_3 and x_4 .

Figure 2 illustrates the spatial variability of the effect of the municipal development coefficient (x_2) on the observed risk index of housing and social deprivation. In more developed municipalities, the relationship

with the observed deprivation index is negative. Conversely, less developed municipalities - particularly in the Savinja, Zasavje, Podravje, Pomurje, and Koroška statistical regions - exhibit higher values of regression coefficients, indicating that in these areas the risk of housing and social deprivation is greater and more strongly associated with lower levels of municipal development.

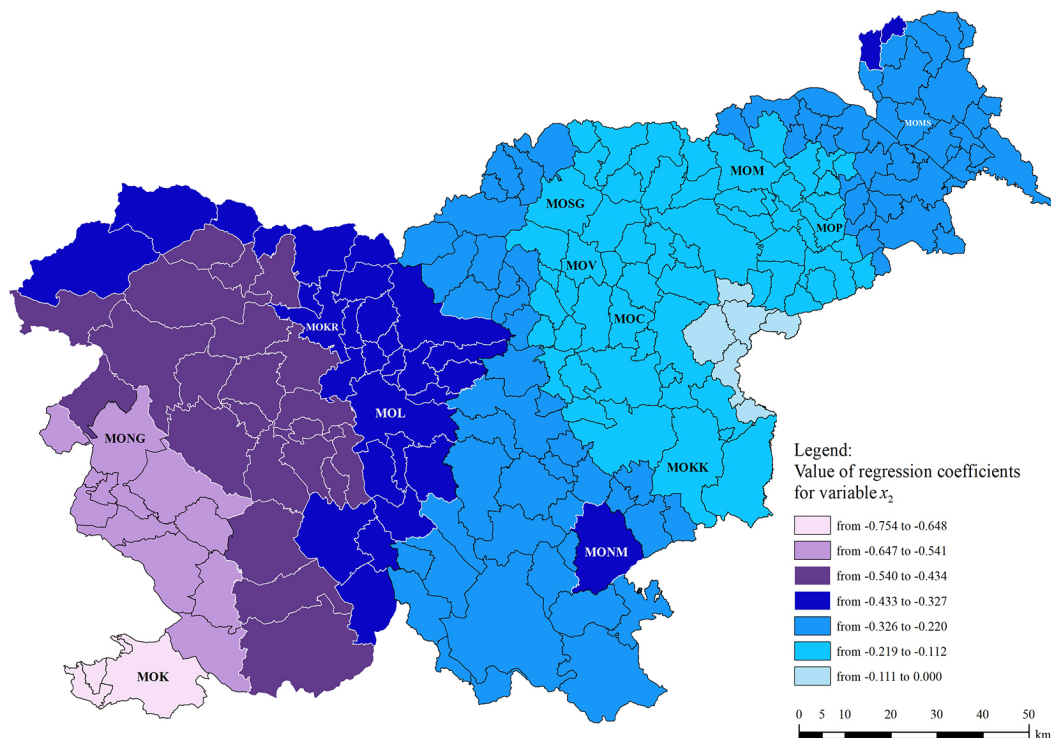


Figure 2: Spatial distribution of regression coefficients for explanatory variable x_2 : Municipal development coefficient, Slovenia, 2024–2025.

The regression coefficient values of the Quality of Life Index (x_3), shown in Figure 3, are negative across almost the entire territory, confirming the finding of the global model that higher quality of life contributes to a lower risk of the observed deprivation. Nevertheless, spatial differences in the effect of this factor can be observed. The strongest negative influence is present in the eastern and northeastern parts of the country (Pomurje, Koroška, parts of the Savinjska statistical region, and the eastern part of Podravje), where municipalities are simultaneously among the less developed (according to the development coefficient) and record lower values of the Quality of Life Index. This indicates that improving quality of life in these municipalities would potentially have the greatest effect in reducing the risk of deprivation under consideration. In contrast, regression coefficients in central Slovenia (Ljubljana and the wider region), parts of Gorenjska, Goriška (Municipality of Nova Gorica, Idrija etc.), and coastal municipalities (Municipality of Koper, Piran etc.) show lower values. In these areas, where the Quality of Life Index is already relatively high, its effect on reducing deprivation is less pronounced. This may suggest that the effects are already saturated, or that deprivation in these areas arises from other factors.

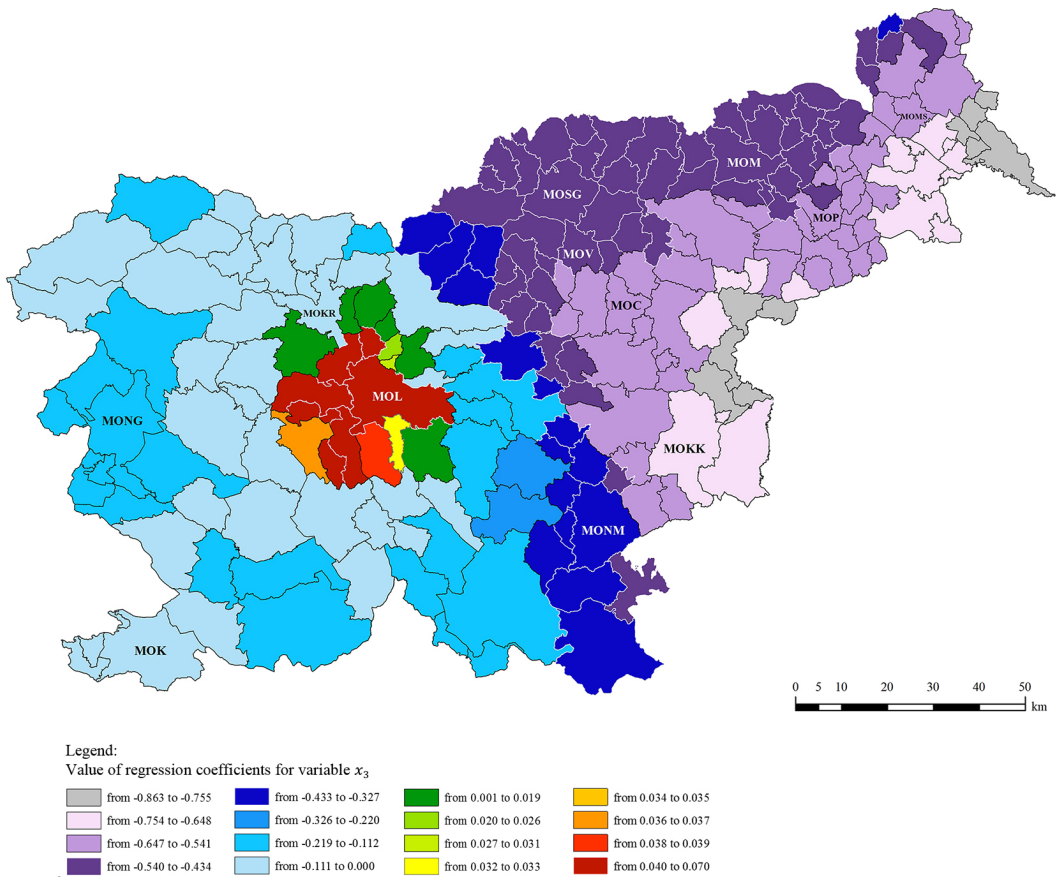


Figure 3: Spatial distribution of regression coefficients for explanatory variable x_3 : Quality of Life Index, Slovenia, 2020.

Figure 4 shows that the effect of variable x_4 (the share of residents for whom housing costs represent a heavy burden) is most pronounced in the Central Slovenia region (particularly in the Ljubljana area), Gorenjska, and parts of northern Notranjska, including Southeastern Slovenia. In these areas, the regression coefficients reach their highest values, represented in dark orange and red on the map. This indicates that housing costs exert a stronger influence on the level of housing and social deprivation in these regions compared to the rest of Slovenia. High coefficient values coincide with spatially confirmed patterns of housing unaffordability, high rental prices, and elevated living costs. According to the Surveying and Mapping Authority of the Republic of Slovenia (Geodetska uprava RS, 2025), in 2024 the average price of apartments in multi-apartment buildings in the Ljubljana real estate market area was 2.9 times higher than in Prekmurje; the price of residential houses was 4.5 times higher; and the price of land for residential construction was 40 times higher. Data from the Statistical Office of the Republic of Slovenia (Statistični urad RS, 2025h) further indicate that in those Slovenian regions where the regression coefficients for explanatory variable x_4 attain the highest values, 62.1% of the total Slovenian population resides who, based on their income (before social transfers, including pensions), fall below the poverty threshold. These regions are also home to 54.3% of all persons in Slovenia identified as severely

materially deprived (lacking at least 5 of 13 deprivation items) and 69.4% of all inhabitants living in overcrowded dwellings (Statistični urad RS, 2025g).

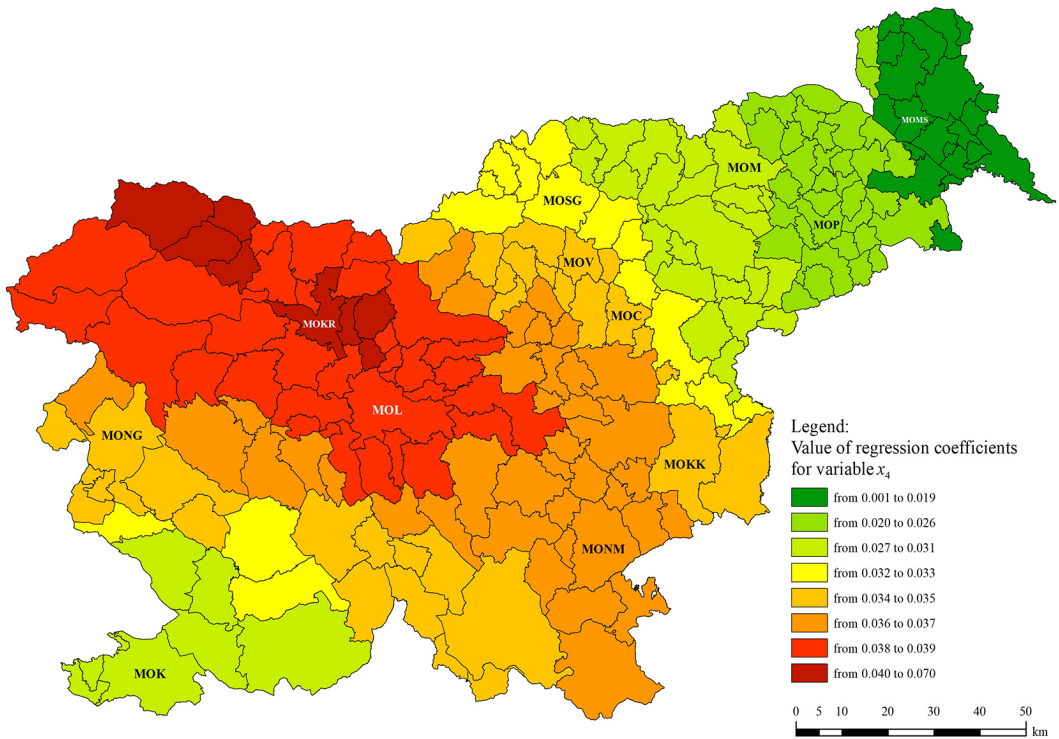


Figure 4: Spatial distribution of regression coefficients for explanatory variable x_4 : percentage of residents for whom housing costs represent a heavy burden, Slovenia, 2024.

5 DISCUSSION AND CONCLUSION

Demographic shifts, particularly population ageing, combined with developmental and environmental challenges, create new circumstances for the planning of social protection and housing policies. The conducted analysis of the housing stock owned by residents aged 65 and over in Slovenia revealed that it is relatively old, functionally inadequate for the needs of the elderly, and energy inefficient, which is consistent with the findings of several previous studies. At the same time, energy renovation of existing buildings represents one of the major opportunities for reducing the household carbon footprint and for lowering long-term energy expenditures. Among the owners of these energy-inefficient and often oversized residential units are many individuals with low disposable incomes, which constrains their capacity to invest in necessary renovations and adaptations (Hafner Fink et al., 2024). The research further confirmed that higher age of dwelling owners (65+), supported by higher average pensions, lower indebtedness, and smaller housing units, contributes to greater housing and social security and reduces the risk of deprivation. Nevertheless, although older individuals own a substantial share of the housing stock, this asset remains underutilised both as a means of improving their residential standards and as a source of long-term financial security (Kerbler, Sendi and Filipovič Hrast, 2019; Marcinkiewicz and Chybalski, 2022; UNECE, 2021).

The findings of the research presented in this paper confirm the strong interconnection between the age structure of the population aged 65 and over, municipal development, the quality of the residential environment, housing costs, and the level of risk of housing and social deprivation. The spatial patterns of the examined factors reveal a high level of deprivation risk in particularly vulnerable areas - most notably in less developed, more remote settlements with poorer accessibility to various public services. Hafner Fink et al. (2024) emphasise that two-thirds of the elderly living in rural areas lack direct (walking) access to a pharmacy, half lack access to a post office or bank, and more than 40% lack access to a grocery store. Particularly vulnerable are municipalities in the Savinja, Zasavje, Podravje, and Koroška statistical regions. The results thus confirm that the risk of housing and social deprivation extends beyond the level of individual circumstances and reflects structurally determined spatial and social inequalities.

Geographically weighted regression and cartographic representations proved to be useful tools for a deeper understanding of spatial patterns of social and housing deprivation risks. The model designed with geographically weighted regression explained, on average, the variance of the linear relationship between the selected explanatory variables and the observed dependent variable better ($R^2_{GWR} = 0,879$) than the national models ($R^2_{OLS_1} = 0,816$ or $R^2_{OLS_2} = 0,811$). Through the results of geographically weighted regression and thematic maps of local regression coefficients, we highlighted critical areas and demonstrated the spatial variability of the strength of the examined factors' effects. This enables more effective, spatially adapted, and targeted measures, instead of universal solutions that overlook local conditions and needs.

In the future, more effective prevention and management of housing and social deprivation risks in Slovenia will require strengthening the resilience of the housing system to demographic change. A key priority will be to improve access to high-quality, affordable, and energy-efficient housing and to direct development policies towards a comprehensive reinforcement of the capacities of those areas identified by the study as more vulnerable. This calls for a holistic, cross-sectorally coordinated approach, the upgrading of existing measures, and the systematic integration of population ageing as a strategic challenge into all levels of spatial and social planning. Spatially determined disparities in deprivation must be systematically identified and addressed through targeted, data-driven solutions that enable a fairer and more sustainable development trajectory.

Literature and references:

- Age Platform Europe. (2022). Adequate housing in older age. Brussels: Age Platform Europe. <https://www.age-platform.eu/adequate-housing-in-older-age/>, pridobljeno 7. 4. 2025
- Ahrendt, D., Dubois, H., Jungblut, J.-M., Roys, M., Nicol, S., Ormandy, D., Ezratty, V., Fox, T., Sennett, J., Pittini, A. (2016). Inadequate housing in Europe: Costs and consequences. Dublin: Eurofound.
- Aiken, E., Rolf, E., Blumenstock, J. (2023). Fairness and Representation in Satellite-Based Poverty Maps: Evidence of Urban-Rural Disparities and Their Impacts on Downstream Policy. V E. Elkind (ur.), Proceedings of the Thirty-Second International Joint Conference on Artificial Intelligence (IJCAI-23) - Special Track on AI for Good (str. 5888–5896). International Joint Conferences on Artificial Intelligence.
- Atkinson, A. B. (2003). Multidimensional Deprivation: Contrasting Social Welfare and Counting Approaches. *Journal of Economic Inequality*, 1 (1), 51–65.
- Banovec, T. (2019). Kako do primernih najemnih stanovanjnih ob statistično ugotovljeni količini praznih ali slabo poseljenih stanovanj. Ljubljana: Zveza društev upokojencev Slovenije.
- Boarini, R., d'Ercole, M. M. (2006). Measures of Material Deprivation in OECD Countries. OECD Social, Employment and Migration Working Papers No. 37. Paris: OECD, Directorate for Employment, Labour and Social Affairs.
- Cañón, L. A., Navarro, C. (2023). Housing poverty. V J. Silber (ur.), Research handbook on measuring poverty and deprivation (str. 252–261). Edward Elgar Publishing.
- Carrosio, G., Cogliati Dezza, V., Cosma, S. (2023). Welfare Energetico Locale: un anno di sperimentazione per nuove politiche pubbliche. Rapporto scientifico. Roma: Fondazione Basso, Forum Disuguaglianze e Diversità.
- Chirisa, I., Matamanda, A. (2016). Addressing urban poverty in Africa in the post-2015 period: Perspectives for adequate and sustainable housing. *Journal of*

- Settlements and Spatial Planning, 7 (1), 79–87.
- Cohn, D., Menasce Horowitz, J., Minkin, R., Fry, R., Hurst, K. (2022). Financial Issues Top the List of Reasons U.S. Adults Live in Multigenerational Homes. Washington: Pew Research Center.
- Corral, P., Molina, I., Cojocaru, A., Segovia, S. (2022). Guidelines To Small Area Estimation for Poverty Mapping. Washington: The World Bank.
- D'Souza, R. (2019). Housing poverty in urban India: The failures of past and current strategies and the need for a new blueprint. ORF Occasional Paper, 187. New Delhi: Observer Research Foundation.
- Davidoff, T. (2012). Housing Wealth over the Life Course. V S. J. Smith (ur.), International Encyclopedia of Housing and Home (str. 697–702). Amsterdam: Elsevier Ltd.
- Davies, K., Harvey, A., Ireland, D., King, P., Mount, F., Offord, M., Pennington, M., Rowley, L., Singh, A., Watt, C. (2008). Housing Poverty. From Social Breakdown to Social Mobility. Westminster: The Centre for Social Justice.
- Dax, T., Copus, A., Kahila, P., Fritsch, M., Kovács, K., Tagai, G., Weber, R., Grunfelder, J., Löfving, L., Moodie, J., Ortega-Reig, M., Martínez, A., Piras, S., Meredith, D. (2021). European Shrinking Rural Areas: Challenges, Actions and Perspectives for Territorial Governance. Final Report. Luxembourg: ESPON EGTC.
- Delfani, N., De Deken, J., Dewilde, C. (2015). Poor because of low pensions or expensive housing? The combined impact of pension and housing systems on poverty among the elderly. International Journal of Housing Policy, 15 (3), 260–284.
- Dewilde, D., Raeymaeckers, P. (2008). The trade-off between home-ownership and pensions: individual and institutional determinants of old-age poverty. Ageing & Society, 28, 805–830.
- Dolenc, D. (2016). Ata, mama, dedi, babi ... Gospodinjstva in družine v Sloveniji. Ljubljana: Statistični urad RS.
- Dustmann, C., Fitzenberger, B., Zimmermann, M. (2018). Housing Expenditures and Income Inequality. The Economic Journal, 132 (645), 1709–1736.
- Enström, C., Wilhelmsson, Ö. M. (2019). The long-term consequences of youth housing for childbearing and higher education. Journal of Policy Modeling, 41 (5), 845–858.
- ESPON. (2020). Atlas on Quality of Life in Slovenia. Luxembourg: ESPON EGTC.
- European Central Bank. (2023). Household Finance and Consumption Survey - wave 2021. Frankfurt am Main: European Central Bank.
- European Commission. (2024). Social housing and beyond – Operational toolkit on the use of EU funds for investments in social housing and associated services. Luxembourg: European Commission, Publications Office of the European Union.
- Eurostat. (2020). Ageing Europe - statistics on housing and living conditions. Brussels: Eurostat.
- Eurostat. (2023). EUROPOP 2023. Demographic balances and indicators by type of projection. Brussels: Eurostat. https://ec.europa.eu/eurostat/databrowser/view/proj_23ndbi/default/table?lang=en, pridobljeno 7. 4. 2025
- Fabbri, K., Gaspari, J. (2021). Mapping the energy poverty: A case study based on the energy performance certificates in the city of Bologna. Energy and Buildings, 234 (1), 110718.
- FEANTSA, Fondation Abbé Pierre. (2023). 8th Overview of Housing Exclusion in Europe 2023. Brussels, Paris: FEANTSA, Fondation Abbé Pierre.
- Filipović Hrast, U., Sendi, R., Hlebec, V., Kerbler, B. (2018). Moving House and Housing - Preferences in Older Age in Slovenia. Housing, Theory and Society, 36 (1), 76–91.
- Geodetska uprava RS. (2023). Podatki katastra nepremičnin v lasti fizičnih oseb, starejših od 65 let. Ljubljana: Geodetska uprava RS. pridobljeno 9. 4. 2025
- Geodetska uprava RS. (2025). Poročilo o slovenskem nepremičninskem trgu za leto 2024. Ljubljana: Geodetska uprava RS.
- Hafner Fink, M., Uhan, S., Filipović Hrast, M., Gerdina, O., Jagodič, A., Kerbler, B., Sendi, R., Šeme, A., Koščak, R. (2024). Stanovanjska anketa 2024 - Vsebinsko poročilo o rezultatih analize. Ljubljana: Univerza v Ljubljani, Fakulteta za družbene vede, Center za raziskovanje javnega mnenja in množičnih komunikacij; Urbanistični inštitut RS.
- Haque, I., Das, D. N., Patel, P. P. (2022). Housing Poverty in Kolkata: Can Rental Market Reforms Be the Viable Solution? V S. Bandyopadhyay (ur.), Kolkata - The Colonial City in Transition. Reflections in Geographies of Urban India (str. 93–106). London, New York: Routledge.
- Henninger, N., Snel, M. (2002). Where Are the Poor?: Experiences With the Development and Use of Poverty Maps. Washington: Arendal, World Resources Institute, UNEP/GRID-Arendal.
- Holzmann, S. (2023). Mieter:innen und einkommensschwache Haushalte bei Energieeffizienz benachteiligt. Wirtschaftsdienst, 103 (3), 192–197.
- Hossain, B., Nagargoje, V. P., Sk, M. I. K., Das, J. (2022). Social exclusion and mental health among older adults: cross-sectional evidence from a population-based survey in India. BMC Psychiatry, 22, 409.
- Humer, Ž., Kalin, A. (2020). Poročilo o spremljanju revščine in socialne izključenosti v Sloveniji. Ljubljana: EAPN Slovenija.
- Hyman, G. G., Larrea, C., Farrow, A. (2020). Poverty mapping case studies. The Alliance of Bioversity International and CIAT Dataverse. Cambridge: Harvard College.
- Imankulova, S. (2024). The Impact of Regional Socio-Economic Policy on Housing Accessibility for Different Population Groups. Bulletin of Science and Practice, 10 (10), 272–278.
- Incaltaurau, C., Kourtit, K., Pascariu, G. C. (2024). Exploring the urban-rural dichotomies in post-pandemic migration intention: Empirical evidence from Europe. Journal of Rural Studies, 111, 103428.
- Karagiannaki, E., Burchardt, T. (2024). Living Arrangements, Intra-Household Inequality and Children's Deprivation: Evidence from EU-SILC. Child Indicators Research, 17, 2319–2359.
- Karpinska, L., Smiech, S. (2023). Multiple faces of poverty. Exploring housing-costs-induced energy poverty in Central and Eastern Europe. Energy Research & Social Science, 105, 103273.
- Keller, J., Hruška-Tvrđý, L. (2011). Stratifikace domácností v Ostravě a nová sociální rizika. V L. Tvrđý (ur.), Industriální město v postindustriální společnosti. 4. díl Závěrečná monografie (str. 89–114). Ostava: ACCENDO - Centrum pro vědu a výzkum.
- Kemeny, J. (1995). From Public Housing to the Social Market: Rental Policy Strategies in Comparative Perspective. London: Routledge.
- Kerbler, B. (2015). Population aging in Slovenia: A spatial perspective. Acta Geographica Slovenica, 55 (2), 304–314.

- Kerbler, B., Sendi, R., Filipovič Hrast, M. (2019). Trajnostne oblike stanovanjske oskrbe starejših v Sloveniji. Urbani izziv. Posebna izdaja, 9, 81–89.
- Kim, G. H., Seo, B. I. (2024). The Effect of Housing Poverty on Subjective Health among the Elderly Living Alone: Double Mediating Effects of Self-Esteem and Depression. *The Journal of Welfare and Counselling Education*, 13 (2), 201–226.
- Kim, J., Yoo, S. (2021). Perceived Health Problems of Young Single-Person Households in Housing Poverty Living in Seoul, South Korea: A Qualitative Study. *Journal of Environmental Research and Public Health*, 18, 1067.
- Kühn, M. (2015). Peripheralization: Theoretical Concepts Explaining Socio-Spatial Inequalities. *European Planning Studies*, 23 (2), 367–378.
- Kvik, A., Rose, J., Curriero, F. C., Crifasi, C. K., Pollack, C. E. (2022). The association between vacant housing demolition and safety and health in Baltimore, MD. *Preventive Medicine*, 164, 107292.
- Lafortune, G., Balestat, G. (2007). Trends in Severe Disability Among Elderly People. Assessing the Evidence in 12 OECD Countries and the Future Implications. Paris: OECD.
- Lavrač, I. (2016). Kako lahko starejši prilagodijo svojo stanovanjsko potrošnjo svojim padajočim dohodkom. V B. Majcen (ur.), *Značilnosti starejšega prebivalstva v Sloveniji - prvi rezultati raziskave SHARE* (str. 196–205). Ljubljana: Inštitut za ekonomska raziskovanja.
- Lee, J. E. (2022). The Effect of Housing Poverty on Depression among the Elderly: A Moderated Moderation Model of Family Relationship Satisfaction and Disability. *Korea Gerontological Society*, 42 (3), 455–479.
- Leskošek, V. (2017). Revščina starejših žensk v Sloveniji = Poverty of elderly women in Slovenia. *Javno zdravje*, 1 (1), 66–73.
- Liu, M., Feng, X., Zhao, Y., Qiu, H. (2023). Impact of poverty alleviation through relocation: from the perspectives of income and multidimensional poverty. *Journal of Rural Studies*, 99, 35–44.
- Lozano Alcántara, A., Vogel, C. (2021). Rising housing costs and income poverty among the elderly in Germany. *Housing Studies*, 38 (7), 1220–1238.
- Marcinkiewicz, E., Chybalski, F. (2022). Income-Poor, Asset-Rich? The Role of Homeownership in Shaping the Welfare Position of the Elderly. *LWS Working Paper Series*. Esch-Belval: Cross-National Data Center in Luxembourg.
- Madanipour, A., Shucksmith, M., Brooks, E. (2021). The concept of spatial justice and the European Union's territorial cohesion. *European Planning Studies*, 30 (5), 807–824.
- Mandič, S. (2016). Stanovanjske razmere in mobilnost starejšega prebivalstva - Slovenija v primerjalni perspektivi. V B. Majcen (ur.), *Značilnosti starejšega prebivalstva v Sloveniji - prvi rezultati raziskave SHARE* (str. 183–195). Ljubljana: Inštitut za ekonomska raziskovanja.
- Marques, T. S., Saraiva, M., de Matos, F. L., Maia, C., Ribeiro, D., Ferreira, M., Amante, A. (2019). Assessing territorial vulnerabilities and spatial inequalities: the case of Portugal. V L. Fregolent et al. (ur.), *Planning for transition: book of papers* (str. 566–576). Venezia: AESOP.
- Ministrstvo za Finance. (2024). Koeficienti razvitosti občin in obseg sofinanciranja investicij iz državnega proračuna za leti 2024 in 2025. Ljubljana: Ministrstvo za Finance.
- Ministrstvo za naravne vire in prostor. (2023). Strategija prostorskega razvoja Slovenije 2050. Ljubljana: Ministrstvo za naravne vire in prostor, Direktorat za prostor in graditev.
- Ministrstvo za okolje in prostor. (2016). Poročilo o prostorskem razvoju. Ljubljana: Ministrstvo za okolje in prostor, Direktorat za prostor, graditev in stanovanja.
- Munnell, A. H., Walters, A. N., Belbase, A., Hou, W. (2020). Are homeownership patterns stable enough to tap home equity? *The Journal of the Economics of Ageing*, 17, 100277.
- Nolan, B., Whelan, C. T. (1996). Measuring Poverty Using Income and Deprivation Indicators: Alternative Approaches. *Journal of European Social Policy*, 6 (3), 225–240.
- OECD. (2019). *World Population Ageing 2019*. Paris: OECD. <https://www.oecd.org/en/topics/ageing.html>, pridobljeno 8. 4. 2025
- OECD. (2020a). *Rural Well-being: Geography of Opportunities*. Paris: OECD Publishing.
- OECD. (2021). *Building for a Better Tomorrow: Policies to Make Housing More Affordable*. Paris: OECD Publishing.
- Prabhakar, R. (2019). A house divided: asset-based welfare and housing asset-based welfare. *International Journal of Housing Policy*, 19 (2), 213–231.
- Rizzini Ansari, M. (2022). Cartographies of poverty: Rethinking statistics, aesthetics and the law. *Environment and Planning D: Society and Space*, 40 (3), 567–585.
- Saunders, P., Watanabe, K., Wong, M. (2015). Poverty and Housing Among Older People: Comparing Australia and Japan. *Poverty & Public Policy*, 7 (3), 223–239.
- Silva, P. (2021). *Fighting Against Housing Poverty In Portugal: Just A Change*. New York: Borgen Magazin.
- Slocum, T. A., McMaster, R. B., Kessler, F. C., Howard, H. H. (2023). *Thematic Cartography and Geovisualization*. Fourth Edition. Boca Raton: CRC Press.
- Soaita, A. M., Dewilde, C. (2021). Housing stratification in Romania: mapping a decade of change. *Journal of Housing and the Built Environment*, 36, 1055–1076.
- Starček, S., Gerbec, F. (2022). Stanovanjska revščina med starejšimi v Sloveniji v luči tveganj socialne zaščite in vključenosti. V E. Korpič-Horvat (ur.), V. Leskošek (ur.), D. Senčur Peček (ur.), A. V. Antončič (ur.), N. Orešek (ur.), *Socialna država in revščina* (str. 619–652). Maribor: Univerzitetna založba.
- Statistični urad RS. (2022). Gospodinjstva po številu članov. Ljubljana: Statistični urad RS. <https://podatki.gov.si/dataset/surs05f4005s>, pridobljeno 9. 4. 2025
- Statistični urad RS. (2025a). Delež gospodinjstev (%) po bremenu stanovanjskih stroškov za gospodinjstvo. Ljubljana: Statistični urad RS. <https://podatki.gov.si/dataset/surs0868215s>, pridobljeno 9. 4. 2025
- Statistični urad RS. (2025b). Delež prebivalcev, starih 65 ali več let (%). Ljubljana: Statistični urad RS. <https://pxweb.stat.si/SiStatData/pxweb/si/Data/-/OSC10065.px>, pridobljeno 9. 4. 2025
- Statistični urad RS. (2025c). Delovno aktivno prebivalstvo po občinah prebivališča, petletnih starostnih skupinah in spolu. Ljubljana: Statistični urad RS. <https://podatki.gov.si/dataset/surs0764621s>, pridobljeno 9. 4. 2025
- Statistični urad RS. (2025d). Izbrani kazalniki po občinah. Ljubljana: Statistični urad RS. <https://podatki.gov.si/dataset/surs1906911s>, pridobljeno 9. 4. 2025

- Statistični urad RS. (2025e). Povprečne mesečne plače pri pravnih osebah po dejavnostih (SKD 2008) in statističnih regijah delovnega mesta. Ljubljana: Statistični urad RS. <https://pxweb.stat.si/SiStatData/pxweb/si/Data/-/07010215.px>, pridobljeno 9. 4. 2025
- Statistični urad RS. (2025f). Prebivalstvo - izbrani kazalniki po stopnji urbanizacije, Slovenija, letno. Ljubljana: Statistični urad RS. <https://podatki.gov.si/dataset/surs05c1017s>, pridobljeno 9. 4. 2025
- Statistični urad RS. (2025g). Stopnja prenaseljenosti stanovanja 2024. Ljubljana: Statistični urad RS. <https://podatki.gov.si/dataset/62886992-4682-4963-b4ab-2d2f1fdc959b/resource/386d993e-7e19-4bf9-ac52-a11f39cefa37>, pridobljeno 9. 4. 2025
- Statistični urad RS. (2025h). Stopnja tveganja revščine pred socialnimi transferji 2024. Ljubljana: Statistični urad RS. <https://podatki.gov.si/dataset/surs0867236s>, pridobljeno 9. 4. 2025
- Sykorová, D., Nytra, G., Tichá, I. (2014). Housing in Old Age and Poverty. Ostrava: University of Ostrava, Faculty of Social Studies.
- Szonyi, J. A., De Pauw, E., La Rovere, R., Aw-Hassan, A. (2006). Poverty Mapping in Rural Syria for Enhanced Targeting. Research Papers in Economics. V International Association of Agricultural Economists Conference, Gold Coast, Australia, August 12–18, 2006. Queensland: International Association of Agricultural Economists, Australian Agricultural and Resource Economics Society.
- UMAR. (2020). Poročilo o razvoju 2020. Ljubljana: Urad Republike Slovenije za makroekonomske analize in razvoj Ljubljana (UMAR).
- UN DESA. (2020). World Urbanization Prospects - The 2018 Revision. New York: United Nations, Department of Economic and Social Affairs, Population Division.
- UN DESA. (2023). World Population Prospects 2022. New York: United Nations Department of Economic and Social Affairs - Population Division (UN DESA).
- UN-Habitat. (2020a). Housing for Older Persons: A Policy Framework. Nairobi: United Nations Human Settlements Programme (UN-Habitat).
- UN-Habitat. (2020b). World Cities Report 2020: The Value of Sustainable Urbanization. Nairobi: United Nations Human Settlements Programme (UN-Habitat).
- UN-Habitat. (2021). Cities and Pandemics: Towards a More Just, Green and Healthy Future. Nairobi: United Nations Human Settlements Programme (UN-Habitat).
- UN-Habitat. (2022). World Cities Report 2022: Envisaging the Future of Cities. Nairobi: United Nations Human Settlements Programme (UN-Habitat).
- UNECE. (2021). #Housing2030: Effective Policies for Affordable Housing in the UNECE Region. Geneva: United Nations Economic Commission for Europe (UNECE).
- United Nations. (1991). United Nations Principles for Older Persons. New York: United Nations.
- United Nations. (2019). World Population Ageing 2019. New York: United Nations.
- Uredba o metodologiji za določitev razvitosti občin za leti 2024 in 2025. Uradni list RS št. 132/2023.
- Ustaoglu, E., Williams, B. (2024). The Inter-Relationships of Territorial Quality of Life with Residential Expansion and Densification: A Case Study of Regions in EU Member Countries. *Urban Science*, 8 (1), 1–33.
- World Health Organization. (2017). Global strategy and action plan on ageing and health. Geneva: World Health Organization.
- World Health Organization. (2021a). Decade of Healthy Ageing: Baseline Report. Geneva: World Health Organization.
- World Health Organization. (2021b). Global report on ageism. Geneva: World Health Organization.
- World Health Organization. (2022). World Report on the Social Determinants of Health Equity. Geneva: World Health Organization.
- Zavod RS za zaposlovanje. (2025). Stopnja registrirane brezposelnosti. Ljubljana: Zavod RS za zaposlovanje. <https://www.ess.gov.si/partnerji/trg-dela/trg-dela-v-stevilkah/stopnja-registrirane-brezposelnosti/>, pridobljeno 9. 4. 2025
- Zavod za pokojninsko in invalidsko zavarovanje Slovenije. (2024). Uživalci pravic iz pokojninskega in invalidskega zavarovanja 2023. Ljubljana: Zavod za pokojninsko in invalidsko zavarovanje Slovenije.
- Zavod za pokojninsko in invalidsko zavarovanje Slovenije. (2025). Uživalci pokojnin po občinah. Ljubljana: Zavod za pokojninsko in invalidsko zavarovanje Slovenije.
- Xie, M., Jean, N., Burke, M., Lobell, D., Ermon, S. (2016). Transfer Learning from Deep Features for Remote Sensing and Poverty Mapping. V Proceedings of the 30th AAAI Conference on Artificial Intelligence (str. 3929–3935). Washington: Association for the Advancement of Artificial Intelligence.

Starček S., Petrovič D. (2025). Spatial analysis of the risk of housing and social deprivation: the impact of ageing factors and the local environment. *Geodetski vestnik*, 69 (4), 502–537.

DOI: <https://doi.org/geodetski-vestnik.2025.04.502-537>

Prostorska analiza tveganja stanovanjske in socialne prikrajšanosti: vpliv dejavnikov staranja in lokalnega okolja

OSNOVNE INFORMACIJE O ČLANKU

GLEJ STRAN 500

1 UVOD

Zagotavljanje socialne pravičnosti in zmanjševanje družbenih razlik ostajata osrednji nalogi sodobnih držav, še posebej v kontekstu hitrih demografskih sprememb. Ključnega pomena pri tem so premišljene politike, ki omogočajo enake možnosti za zdravje, blaginjo in dostojno življenje vseh prebivalcev, zlasti tistih, ki so družbeno in ekonomsko ranljivejši (World Health Organization, 2022). Učinkovita in dostopna socialna zaščita prispeva k zmanjšanju tveganja socialne izključenosti in krepi odpornost posameznikov in gospodinjstev proti različnim oblikam negotovosti (OECD, 2020a). Poseben izziv je zagotavljanje enakih možnosti ne glede na gmotni položaj, kar postaja še posebej pomembno pri starejši populaciji. Staranje prebivalstva je med najizrazitejšimi in najbolj daljnosežnimi demografskimi trendi 21. stoletja, saj vpliva na skoraj vse družbene podsisteme – od trga dela do sistemov socialne varnosti in stanovanjske politike (OECD, 2019; United Nations, 2019; World Health Organization, 2021a). Po napovedih Združenih narodov (UN DESA, 2023) bo do leta 2030 na svetu več kot 1,4 milijarde ljudi, starejših od 60 let, do leta 2050 pa naj bi to število preseglo 2,1 milijarde. Tovrstni trendi so prisotni tudi v evropskem prostoru, kjer se v vseh državah članicah Evropske unije, državah EFTA ter državah kandidatkah povečuje delež prebivalstva v starejši starostni skupini. Ob tem poteka tudi notranje staranje te skupine, saj se najhitreje povečuje delež najstarejših, starih 80 let in več – v Evropski uniji naj bi se do leta 2100 povečal s 5,9 % na kar 14,6 %. Pomembne spremembe demografske strukture so pričakovane tudi v Sloveniji. Leta 2024 so starejši od 65 let predstavljali že 22 % celotnega prebivalstva, po projekcijah EUROPOP 2019 pa naj bi ta delež do leta 2100 presegel 31 % (Eurostat, 2023; Statistični urad RS, 2025b). Takšne spremembe močno vplivajo na potrebe po prilagajanju stanovanjskih, socialnih in zdravstvenih politik ter zahtevajo dolgoročno strateško načrtovanje na vseh ravneh.

Od začetka 21. stoletja se mesta po vsem svetu spopadajo z dinamičnimi prostorskimi in demografskimi spremembami, ki jih zaznamujeta rast in hitro staranje urbanega prebivalstva (Incaltarau, Kourtiti in Pascariu, 2024). Naraščanje deleža starejših v urbanih območjih zahteva prilagoditve prostorske, stanovanjske in socialne infrastrukture (UN DESA, 2020; World Health Organization, 2021b). Mnoge obstoječe stanovanjske stavbe niso ustrezno zasnovane za potrebe starajočega se prebivalstva – pogosto nimajo dvigal, širših prehodov ali drugih arhitekturnih rešitev, ki bi omogočale varno in samostojno bivanje. Pomanjkanje dostopnih zelenih površin in javnih prostorov dodatno omejuje možnosti za gibanje, rekreacijo in druženje, kar zmanjšuje kakovost življenja v starosti. Ob tem številni starejši prebivalci mest bivajo v stanovanjih z visokimi najemninami, stroški vzdrževanja in tekočimi izdatki, ki pogosto presegajo njihove finančne zmožnosti ter povečujejo tveganje za stanovanjsko negotovost in socialno izključenost. V iskanju dostopnejših bivalnih razmer se del starejšega prebivalstva seli v primestna in podeželska območja, ki pa se srečujejo z intenzivnim upadanjem števila prebivalcev, opuščanjem kmetijske

rabe, propadanjem stavbnega fonda in izgubo storitev javnega pomena. Dostop do zdravstvene oskrbe, oskrbovanih stanovanj in osnovne infrastrukture je v številnih podeželskih območjih omejen, kar lahko še dodatno poslabša socialno in bivanjsko varnost starejših (UN-Habitat, 2020a; World Health Organization, 2021a; D'Souza, 2019). V tem kontekstu postaja koncept prostorske pravičnosti osrednji okvir za razumevanje in naslavljanje družbenih neenakosti, ki so prostorsko pogojene. Opozarja na pomen pravične porazdelitve virov, dostopa do storitev ter vlaganj v javno infrastrukturo za vse prebivalce, zlasti za najranljivejše skupine (Madanipour, Shucksmith in Brooks, 2021). Neuravnotežen razvoj med mestnimi in podeželskimi območji tako pogloblja prostorsko nepravičnost (UN-Habitat, 2022; OECD, 2020a; Haque, Das in Patel, 2022). Ministrstvo za okolje in prostor (2016) opozarja, da se bodo v prihodnje najhitreje praznila tista območja v Sloveniji, ki že danes izkazujejo visok indeks staranja prebivalstva. Podatki (Statistični urad RS, 2025f) potrjujejo, da je koeficient starostne odvisnosti starih najvišji prav na podeželju (34,6) in v predmestjih (34,7), medtem ko je v večjih mestih nekoliko nižji (32,8), kar dodatno potrjuje potrebo po prostorsko prilagojenih ukrepih.

V številnih evropskih državah, tudi v Sloveniji, se je v zadnjih desetletjih kot prevladujoča oblika bivanja uveljavilo lastništvo. Ta trend izhaja iz zgodovinskih in političnih sprememb, predvsem množične privatizacije javnega stanovanjskega fonda in pomanjkljivega razvoja institucionalno urejenega najemnega stanovanjskega sektorja (Kemeny, 1995). Slovenija izstopa po posebej visoki stopnji lastništva med starejšimi – več kot 85 % starejših prebiva v lastniških stanovanjih, kar jo po raziskavi SHARE uvršča med države z najvišjo stopnjo stanovanjskega lastništva v tej starostni skupini (Mandič, 2016). Vendar lastništvo ne zagotavlja nujno večje stanovanjske ali finančne varnosti. Mnogi starejši živijo v energetske potratnih in funkcionalno neustreznih stanovanjih, ki zahtevajo visoke stroške vzdrževanja in ogrevanja. Zaradi omejenih prihodkov ti stroški pogosto močno omejujejo sredstva za druge osnovne življenjske potrebe (Lavrač, 2016). Podobne razmere so v drugih državah z visokim deležem lastništva stanovanj, kot so Španija, Italija in več vzhodnoevropskih držav, kjer lastništvo pogosto ne zagotavlja zaščite pred revščino, temveč prikriva stanovanjsko prikrajšanost (Delfani, De Deken in Dewilde, 2015; Soaita in Dewilde, 2021).

Prostorski in demografski razvojni vzorci v Sloveniji razkrivajo izrazita regionalna neskladja, ki se kažejo v neenakomerni porazdelitvi prebivalstva ter razliki v gospodarski aktivnosti med posameznimi območji. Značilna je visoka stopnja poselitvene razpršenosti, pri čemer se številna manjša naselja, zlasti na obrobjih mest in v obmejnih regijah, srečujejo z upadanjem prebivalstva in intenzivnim staranjem. Obenem se ob glavnih prometnih koridorjih, predvsem ob avtocestnem križu, pospešeno razvijajo suburbanizirana območja. Takšna širitev prinaša prostorsko razdrobljenost, prekinitev naravnih povezav in otežen dostop do storitev javnega pomena (Ministrstvo za naravne vire in prostor, 2023; UMAR, 2020). Pomanjkanje dostopnih stanovanj v mestnih središčih ob hkratnem naraščanju števila praznih bivalnih enot na podeželju pogloblja prostorsko neravnotežje ter zmanjšuje funkcionalnost nekaterih regij. Med najbolj ranljivimi so starejše skupnosti, ki živijo v slabo dostopnih okoljih z omejenim dostopom do osnovnih javnih storitev, zaradi česar se znižuje kakovost bivanja in povečuje tveganje za revščino ter socialno izključenost (Banovec, 2019; Filipović Hrast et al., 2018). Podobne trende zaznavajo številne druge evropske države, kjer staranje prebivalstva poteka vzporedno z zmanjševanjem dostopnosti do storitev na podeželskih območjih (OECD, 2020a; UN-Habitat, 2020b).

V tem pogledu postajajo stanovanjske razmere vse bolj prepoznan dejavnik stanovanjske in socialne prikrajšanosti. Revščina namreč ni omejena zgolj na pomanjkanje materialnih sredstev, temveč vključuje tudi omejen dostop do virov, storitev in možnosti za aktivno družbeno udeležbo (Atkinson, 2003; Humer in Kalin, 2020). Posebej pri starejših se revščina pogosto izraža kot neustrezno bivališče, pomanjkanje dostopa do zdravstvenih storitev in socialnih mrež (Leskošek, 2017; Filipović Hrast et al., 2018). Ob tem gre tudi za občutek družbene izključenosti in nemoči, kar še pogloblja prostorsko in socialno neenakost. Stanovanjska revščina kot posebna oblika prikrajšanosti se kaže v večrazsežnem pomanjkanju – v fizično neustreznih, energetsko potratnih ali prevelikih stanovanjih, omejenem dostopu do osnovne infrastrukture ter cenovni nedostopnosti bivanja (Cañón in Navarro, 2023; FEANTSA in Fondation Abbé Pierre, 2023; OECD, 2021). D'Souza (2019) poudarja, da je primerno stanovanje ena temeljnih človekovih potreb, ključna za zaščito dostojanstva posameznika. Evropska komisija (European Commission, 2024) ob tem opozarja, da so varna, kakovostna in dostopna stanovanja nujna za preprečevanje revščine ter spodbujanje socialne vključenosti ranljivih skupin, zlasti starejših. Stanovanjska revščina je močno povezana tudi s sistemskimi dejavniki, kot so stanovanjska politika, davčni in transferni mehanizmi ter subvencioniranje najemnin (Liu et al., 2023). Stroški bivanja pogosto zajemajo največji delež življenjskih izdatkov, dolgočasno previsoki stroški pa povečujejo tveganje za prikrajšanost. Po Soji (2009) stanovanje deluje kot pomemben prostorski vir, na podlagi katerega se uresničujejo ali poglobljajo družbene razlike – zlasti glede dostopa do kakovosti bivanja, storitev in življenjskih priložnosti.

Prispevek obravnava povezave med stanovanjsko in socialno prikrajšanostjo ter stanovanjskimi, prostorskimi in ekonomskimi razmerami prebivalstva. Po pregledu domačih in mednarodnih raziskovalnih ugotovitev se osredotočimo na analizo bivanjskih razmer starejših, pri čemer izpostavimo vplive demografskih sprememb, urbanega razvoja in tveganja prikrajšanosti v okvirih starajoče se družbe. Na podlagi podatkov za vseh 212 slovenskih občin smo izvedli multiplo regresijo za oceno splošnih povezav med opazovanimi spremenljivkami, medtem ko smo za prostorsko variabilnost dejavnikov tveganja uporabili geografsko obteženo regresijo. Ključne rezultate prikazujemo tudi s tematskimi kartami, ki omogočajo jasnejši vpogled v prostorske razlike med občinami in služijo kot orodje za podporo ciljno usmerjenemu načrtovanju. Prispevek uvaja nova spoznanja o pomenu izboljšanja bivalnih in drugih razmer prebivalstva kot ključnih dejavnikov za zmanjšanje tveganja revščine, socialne izključenosti in prostorskih neenakosti.

2 PREGLED DOSEDANJIH RAZISKAV

V zadnjih desetletjih so stanovanjska vprašanja postala osrednja tema raziskovalnih in političnih razprav, saj se nanje vse bolj vežejo sodobne oblike revščine in socialne izključenosti. Stanovanjska dostopnost je vpeta v širše družbene in demografske procese, kot so urbanizacija, pomanjkanje cenovno dostopnih stanovanj in staranje prebivalstva (Chirisa in Matamanda, 2016; Silva, 2021). V najranljivejši položaj so pogosto postavljeni starejši, brezdomci, migranti in osebe z različnimi oblikami oviranosti (Enström in Wilhelmsson, 2019; Kim in Yoo, 2021; Lozano Alcántara in Vogel, 2021). Pomemben premik na področju stanovanjske politike starejših prinašajo načela Združenih narodov za starejše (United Nations, 1991), ki so temelj pristopa k oblikovanju starosti prijaznih mest in globalna strategija Svetovne zdravstvene organizacije o staranju (World Health Organization, 2017), v kateri je poudarjen pomen okolij, prilagojenih starosti in stanovanjski pravičnosti.

Raziskave v različnih evropskih državah ugotavljajo, da so stanovanja prostor, kjer se kopičijo številne oblike prikrajšanosti (Keller in Hruška-Tvrđý, 2011; Dustmann, Fitzenberger in Zimmermann, 2018). Primerjalne študije kažejo na izrazite razlike v stanovanjskih izkušnjah med mesti in podeželjem ter med državami (D'Souza, 2019; Soaita in Dewilde, 2021; Davies et al., 2008). Številne raziskave analizirajo vpliv stanovanjske revščine na fizično in duševno zdravje starejših, kjer se kot dejavniki tveganja postavljajo osamljenost, visoki bivanjski stroški in slabe bivalne razmere (Kim in Seo, 2024; Lee, 2022). Sýkorová, Nytra in Tichá (2014) poudarjajo, da so za makroekonomske in družbene procese, ki vplivajo na stanovanjsko revščino in socialno izključenost, še posebej ranljivi starejši, predvsem tisti, ki živijo sami, vdove, manj izobraženi, stari starejši, revnejši in starejši, ki se spopadajo s fizičnimi ali duševnimi zdravstvenimi težavami, saj so ti dejavniki tako vzrok kot posledica socialne izključenosti (Hossain et al., 2022). Raziskave kažejo, da se vplivi lastništva stanovanj na tveganje revščine med državami razlikujejo. V nekaterih državah visoka stopnja lastništva revščino blaži (npr. v Avstraliji, kjer mnogi starejši bivajo v odplačanih stanovanjih), medtem ko v drugih (npr. na Japonskem) ne predstavlja varnostne mreže za finančno stabilnost v starosti (Saunders, Watanabe in Wong, 2015; Delfani, De Deken in Dewilde, 2015).

Tudi v Sloveniji veliko starejših ostaja v lastniških stanovanjih, a pogosto v energetsko neučinkovitih, prevelikih in funkcionalno neprilagojenih enotah (Filipović Hrast et al., 2018). Banovec (2019) opozarja, da se je med letoma 2011 in 2018 zaradi staranja prebivalstva opazno zmanjšal že tako omejen obseg javnih najemnih stanovanj, kar dodatno zmanjšuje možnosti za selitev v primernejše stanovanje v starosti. Prostorski vidiki staranja razkrivajo, da bo vpliv tega procesa izrazitejši na podeželju, kjer že danes zaznamo višji delež starejših, praznjenje naselij in upad dostopnosti do storitev. Kerbler (2015) opozarja, da se v okoljih, kjer procesi staranja potekajo že dlje in z večjo intenzivnostjo, pričakuje izrazitejša praznjenje naselij. S tem se zmanjšuje funkcionalna zmogljivost lokalnih okolij, kar se odraža v slabši vzdrževanosti infrastrukture, opuščanju gospodarskih dejavnosti, zlasti v kmetijstvu, ter propadanju grajene in kulturne krajine (Starček in Gerbec, 2022). V takih okoljih se pogosto pojavi sekundarna marginalizacija, kjer prazne nepremičnine zasedejo socialno ranljive skupine, kar lahko pospeši negativne socialne in prostorske trende ter vpliva na občutek varnosti in kakovosti življenja v skupnosti (Kvik et al., 2022).

Vzporedno s tem narašča zanimanje za uporabo prostorskih analiz in kartografskih metod za prepoznavanje in prikaz območij z večjim tveganjem revščine ter stanovanjske in socialne prikrajšanosti. Prostorska razsežnost revščine je bila prepoznana kot ključna že v okviru razvojnih ciljev tisočletja. Kot opozarjajo Corral s sodelavci (2022), je za njeno uspešno naslavljanje bistveno vedeti, kje so revni. Xie s sodelavci (2016) so na podlagi satelitskih posnetkov in konvolucijskih nevronske mreže izdelali napovedni model revščine za več afriških držav, Aiken, Rolf in Blumenstock (2023) pa poudarjajo njihovo uporabnost za razporejanje humanitarne pomoči. Raziskava Henningerja in Snela (2002) je s podporo kartografskega prikaza revščine v Ekvadorju razkrila prostorsko heterogenost revščine in pokazala razlike tudi znotraj regij. Številne mednarodne študije dokazujejo, da ustrezno zasnovani kartografski prikazi bistveno prispevajo k oblikovanju bolj ciljno usmerjenih in prostorsko občutljivih politik na različnih področjih, zlasti pri načrtovanju socialnih stanovanj, obravnavi energetske revščine ter določanju prioritet pri razporejanju virov in storitev javnega pomena (Carrosio, Cogliati Dezza in Cosma, 2023; Fabbri in Gaspari, 2021). Takšni prikazi omogočajo prepoznavanje lokalno posebnih ranljivosti, kot so območja z visoko stanovanjsko obremenitvijo, negativnimi okoljskimi vplivi, slabo energetsko učinkovitostjo ali omejenim

dostopom do javne infrastrukture, kar odločevalcem omogoča razvoj učinkovitejših in pravičnejših ukrepov na nacionalni in lokalni ravni. Kartografski prikazi revščine se kot orodja prostorske pravičnosti vse pogosteje uporabljajo tudi v politikah in izvedbenih ukrepih ter ciljno usmerjenih intervencijah dostopa do hrane, zdravstvenega varstva, stanovanj in infrastrukture (Hyman, Larrea in Farrow, 2020; Rizzini Ansari, 2022; Szonyi et al., 2006).

3 METODOLOGIJA

3.1 Metoda dela

Osrednji raziskovalni poudarek je bil usmerjen v analizo bivanjskih razmer starejših prebivalcev (65+) v Sloveniji s ciljem preučiti povezave med njihovimi pogoji bivanja in vplivom na tveganje stanovanjske ter socialne prikrajšanosti. V empiričnem delu smo raziskavo zasnovali na kvantitativnem analitičnem pristopu, ki smo ga dopolnili z deskriptivno obdelavo podatkov za osnovno analizo prostorskih in demografskih značilnosti. Ker na tveganje stanovanjske in socialne prikrajšanosti vpliva niz individualnih in prostorskih dejavnikov, smo za obravnavo izhajali iz celostnega raziskovalnega pristopa, ki vključuje tako osebnostne značilnosti starejših, ki so po navadi bolj ranljivi, kot širši kontekst lokalnega okolja. Na podlagi koncepta večrazsežnega merjenja stanovanjske revščine in socialne prikrajšanosti ter upoštevajoč metodološke pristope, uveljavljene v literaturi o oblikovanju sestavljenih kazalnikov na obravnavanem področju (npr. Boarini in d'Ercole, 2006; Nolan in Whelan, 1996), smo zasnovali sestavljen indeks stanovanjske in socialne prikrajšanosti na ravni občin kot neuteženo vsoto standardiziranih (*z*-vrednosti) treh komponent, ki zajemajo dohodkovni, zaposlitveni in življenjski vidik socialno-materialne prikrajšanosti: povprečno neto plačo, stopnjo brezposelnosti in stopnjo resne materialne prikrajšanosti. Slednja predstavlja odstotek oseb, katerih življenjske razmere so močno omejene zaradi omejenih finančnih virov gospodinjstva, in ne zaradi lastne izbire oziroma navad. To so osebe, ki so materialno prikrajšane za vsaj 4 od 9 elementov materialne prikrajšanosti – ne morejo si privoščiti rednega plačila hipoteke ali najemnine, rednih stanovanjskih stroškov, odplačevanja kreditov, primerno ogrevanega stanovanja, poravnave nepričakovanih izdatkov, mesnega ali enakovrednega vegetarijanskega obroka vsaj vsak drugi dan, enotedenskih letnih počitnic za vse člane gospodinjstva, osebnega avtomobila, pralnega stroja, barvnega televizorja in telefona. Da bi zagotovili interpretacijsko enotnost in omogočili primerljivost med občinami, smo vrednosti sestavljenega kazalnika z min-max metodo normalizirali na interval [0, 1], kjer višje vrednosti predstavljajo večje tveganje prikrajšanosti na ravni občin.

Na podlagi razpoložljivih statističnih podatkov smo oblikovali hierarhični regresijski model, ki temelji na naboru pojasnjevalnih spremenljivk demografskih, ekonomskih in stanovanjskih značilnosti. Za poglobljeno razumevanje prostorskih vzorcev ter razlik v vplivih posameznih spremenljivk med občinami smo klasični multivariatni pristop dopolnili z geografsko obteženo regresijsko analizo, ki omogoča prostorsko občutljivo modeliranje na lokalni ravni.

3.2 Uporabljeni podatki

V empiričnem delu raziskave smo se oprli na kombinacijo različnih podatkovnih virov, ki zajemajo demografske, socialne in stanovanjske značilnosti prebivalcev Slovenije, med drugim podatke o

lastništvu in lastnostih nepremičnin v lasti starejših od 65 let. Uporabili smo podatke Geodetske uprave RS (2023) o stavbah in njihovih delih, katerih lastniki spadajo v opazovano starostno skupino, kar je zajemalo 495.234 evidentiranih enot. Pri tem so nas dodatno zanimali podatki o uporabni površini stanovanj in obnovi fasad. Dopolnilni viri vključujejo podatke programa ESPON (2020), kot je indeks kakovosti življenja, podatke o koeficientih razvitosti občin, ki jih Ministrstvo za finance (2024) objavlja v skladu z Uredbo o metodologiji za določitev razvitosti občin za leti 2024 in 2025, in podatke Statističnega urada RS, kot so koeficient starostne odvisnosti starih (tj. razmerje med številom starejših, starih 65 let ali več, in številom delovno sposobnih prebivalcev, starih od 15 do 64 let, pomnoženo s 100; angl. *old-age dependency ratio*), odstotek prebivalcev, za katere so stanovanjski stroški veliko breme (odstotek oseb, ki živijo v gospodinjstvih, kjer stroški bivanja – najemnina, stroški ogrevanja, elektrike, vode in drugi povezani stroški – presegajo 40 % razpoložljivega dohodka gospodinjstva), in odstotek zaposlenih, starejših od 60 let. Uporabili smo podatke Zavoda za pokojninsko in invalidsko zavarovanje Slovenije o povprečni pokojnini na ravni občin in povprečnih pokojninah po starostnih razredih (65+). Cilj analize je bil preučiti, kako prostorske in bivanjske razmere in izbrani dejavniki, ki se nanašajo izključno na starejše prebivalce (starejše od 60 oziroma 65 let), vplivajo na izpostavljenost tveganju stanovanjske in socialne prikrajšanosti. V ta namen smo oblikovali večnivojski analitični okvir z uporabo hierarhičnega modela, ki temelji na nizu individualnih značilnosti in kontekstualnih spremenljivk.

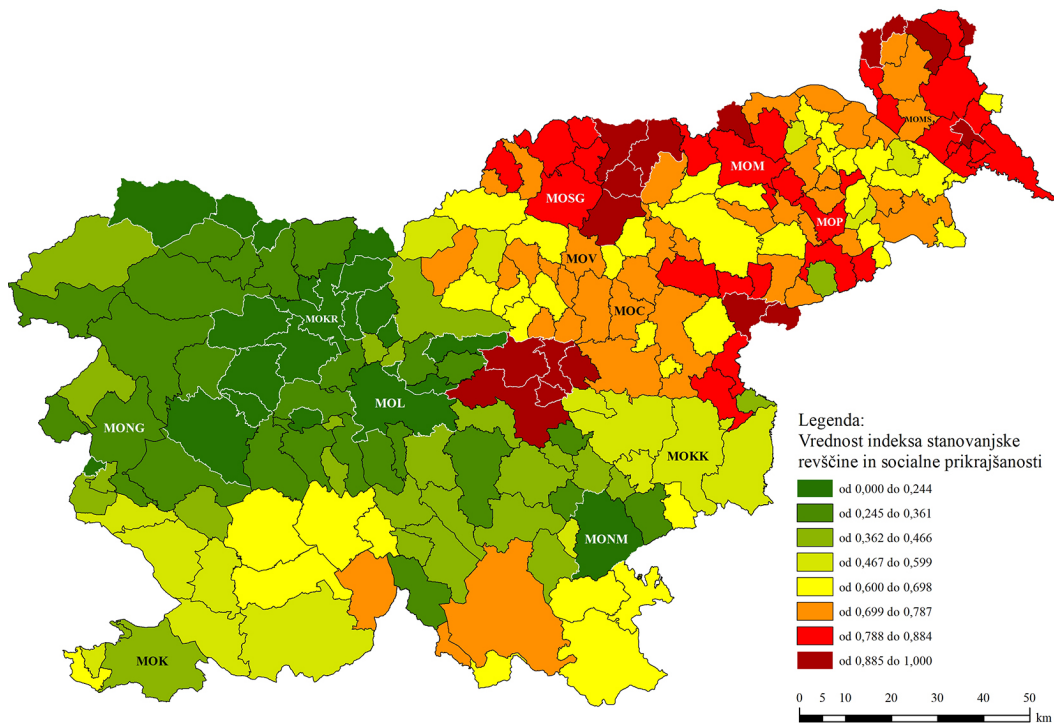
3.3 Kartografski prikaz dejavnikov vpliva na indeks stanovanjske in socialne prikrajšanosti

Za boljše razumevanje prostorske razporeditve obravnavanih dejavnikov smo rezultate geografsko obtežene regresije prikazali v obliki tematskih kart. Prikaz temelji na vrednostih regresijskih koeficientov za posamezne opazovane spremenljivke. Njihov namen je strokovni in širši javnosti omogočiti vpogled v prostorske razlike med slovenskimi občinami glede vpliva posameznih dejavnikov. Glede na naravo podatkov in njihovo prostorsko vezanost na občine smo za prikaz uporabili kartogram. Vrednosti regresijskih koeficientov so razvrščene v osem razredov negativnih in osem razredov pozitivnih vrednosti. Pri tem smo uporabili metodo enakih frekvenc (angl. *equal frequency classification method*), ki omogoča, da je v vsakem razredu vključeno približno enako število občin. Takšen pristop zagotavlja bolj uravnoteženo vizualno predstavitev prostorskih vzorcev, saj preprečuje, da bi številčno prevladujoče skupine ali ekstremne vrednosti vizualno zasenčile druge podatke. Kartografski prikaz s tem pridobi na preglednosti, primerljivosti in informativni vrednosti (Slocum et al., 2023). Vsak razred je označen z določeno barvo. Barvna lestvica prehaja od temno zelene, ki ponazarja najnižje negativne vrednosti, do svetlo vijolične, ki ponazarja najvišje vrednosti regresijskih koeficientov, kot je prikazano v pripadajočih legendah. Kartogrami so izdelani v merilu, ki omogoča prikaz vseh občin na nacionalni ravni. Za lažjo orientacijo so mestne občine na kartogramih označene z njihovimi uradnimi kraticami (MOC za Mestno občino Celje, MOK za Mestno občino Koper, MOKK za Mestno občino Krško, MOKR za Mestno občino Kranj, MOL za Mestno občino Ljubljana, MOM za Mestno občino Maribor, MOMS za Mestno občino Murska Sobota, MONG za Mestno občino Nova Gorica, MONM za Mestno občino Novo mesto, MOP za Mestno občino Ptuj, MOSG za Mestno občino Slovenj Gradec in MOV za Mestno občino Velenje).

4 REZULTATI

4.1 Indeks stanovanjske in socialne prikrajšanosti

Prostorska analiza vrednosti sestavljenega indeksa stanovanjske in socialne prikrajšanosti po slovenskih občinah (slika 1) kaže na regionalno raznolikost. Najvišje vrednosti indeksa, ki kažejo na največje tveganje, so zabeležene predvsem v severovzhodni in vzhodni Sloveniji, zlasti v Pomurju, Podravju, Zasavju in delu savinjske ter koroške statistične regije. Ta območja so hkrati zaznamovana z višjo brezposelnostjo (Zavod RS za zaposlovanje, 2025) in nižjimi dohodki (Statistični urad RS, 2025e). Takšna prostorska porazdelitev kaže na pomembno vlogo lokalnih značilnosti pri oblikovanju življenjskih pogojev in potrjuje potrebo po prostorsko prilagojenih pristopih pri naslavljanju stanovanjske in socialne prikrajšanosti.



Slika 1: Vrednosti indeksa stanovanjske in socialne prikrajšanosti na ravni občin, Slovenija, 2024.

4.2 Značilnosti stanovanj v lasti starejših od 65 let

Rezultati analize podatkov Geodetske uprave RS (2023) kažejo, da se več kot 62 % stanovanj, katerih lastniki so starejši od 65 let, nahaja v enostanovanjski stavbi, okrog 29 % v večstanovanjski stavbi in okrog 8 % v dvostanovanjski stavbi. Le pol odstotka stanovanj, katerih lastniki so starejši od 65 let, se nahaja v oskrbovanih stanovanjih ali drugih posebnih oblikah bivanja. Stanovanjski fond v lasti starejših prebivalcev je po večini zastarel, energetske neučinkovit in infrastrukturno pomanjkljiv, kar lahko vpliva na njihovo kakovost življenja ter socialno in funkcionalno ranljivost. Starejši so lastniki razmeroma velikih enostanovanjskih stavb (povprečna neto površina meri približno 180 m²). Zanje je značilen nizek delež

priključenih na kanalizacijsko omrežje ter nizek delež obnovljenih fasad. Pomanjkljivosti so zaznane tudi v večstanovanjskih objektih, saj je več kot dve tretjini teh stavb brez dvigala. Tri četrtna stanovanj v lasti starejših oseb je v drugem ali višjem nadstropju, kar omejuje njihovo mobilnost. Razlike v povprečni starosti enostanovanjskih in večstanovanjskih stavb, povprečnih površinah stanovanj in obnovljenosti gradbenih elementov, prikazanih v preglednici 1, dodatno osvetljujejo bivanjske razlike starejših.

Preglednica 1: Značilnosti stanovanj v enostanovanjskih in večstanovanjskih stavbah v Sloveniji, katerih lastniki so starejši od 65 let

Kazalnik	Enostanovanjske stavbe (hiše)	Večstanovanjske stavbe
Povprečna starost stavbe (v letih)	70,9	61,2
Povprečna neto površina stanovanja (v m ²)	180,9	68,5
Povprečna neto površina bivalnih prostorov (v m ²)	101,6	56,6
Obnovljena fasada (v %)	23,9	28,4
Obnovljena streha (v %)	47,0	45,4
Obnovljena okna (v %)	30,1	30,1
Prisotnost dvigala (v %)	0,1	30,5
Priključek na kanalizacijo (v %)	36,3	93,2
Povprečna starost lastnika stanovanja (v letih)	Ženske: 75,6 Moški: 74,3	Ženske: 74,7 Moški: 73,6

4.3 Rezultati multiple regresijske analize

Za izvedbo multiple regresijske analize in geografsko obtežene regresije smo uporabili spremenljivke, predstavljene v preglednici 2. Preglednica vključuje osnovno opisno statistiko (najmanjše, največje in povprečne vrednosti ter standardni odklon) ter kratek opis in vir posameznih spremenljivk.

Preglednica 2: Opisna statistika uporabljenih spremenljivk, z opisom in viri

Podatek	Opis in vir	Min	Maks	Povprečje	St. odklon
y : Indeks stanovanjske in socialne prikrajšanosti	Sestavljen kazalnik (lastni izračun)	0,00	1,00	0,59	0,23
x_1 : Koefficient starostne odvisnosti starih	Razmerje med številom oseb, starejših od 65 let, in delovno aktivnim prebivalstvom (Statistični urad RS, 2025f)	19,7	59,80	33,33	5,76
x_2 : Koefficient razvitosti občine	Koefficient razvitosti občin za leti 2024 in 2025 (Ministrstvo za finance, 2024)	0,26	1,35	1,00	0,15
x_3 : Indeks kakovosti življenja	Sestavljeni kazalnik, ki vključuje dejavnike, kot so zdravje, izobrazba, okolje in varnost (ESPON, 2020)	0,33	0,70	0,53	0,087
x_4 : Stanovanjski stroški veliko breme	Odstotek vseh prebivalcev, za katere so stanovanjski stroški veliko breme (Statistični urad RS, 2025a)	20,00	36,00	27,70	4,52
x_5 : Povprečna starost lastnikov stanovanj	Povprečna starost lastnikov stanovanj (65+) (Geodetska uprava RS, 2023)	73,10	77,20	74,58	0,72
x_6 : Uporabna površina stanovanj	Povprečna uporabna površina vseh stanovanj (Statistični urad RS, 2025d)	58,80	116,10	87,74	10,13

Podatek	Opis in vir	Min	Maks	Povprečje	St. odklon
x_7 : Delež zaposlenih starejših (60+)	Delež delovno aktivnih oseb, starejših od 60 let, v celotni populaciji iste starostne skupine (Statistični urad RS, 2025c)	0,50	19,60	6,02	1,81
x_8 : Neobnovljena fasada	Odstotek stanovanj v lasti starejših od 65 let z neobnovljeno fasado (Geodetska uprava RS, 2023)	19,30	85,70	61,67	13,74

Min – najmanjša vrednost; Maks – največja vrednost; Povprečje – povprečna vrednost; St. odklon – standardni odklon

Za analizo povezav med značilnostmi stanovanj, prostorskimi kazalniki ter elementi življenjskih pogojev smo zasnovali nacionalni regresijski model, katerega ključni rezultati so prikazani v preglednici 3.

Preglednica 3: Rezultati regresijske analize

	$R^2_{OLS_1} = 0,816; AIC_c = - 353.146$				
	B	St. nap. B	β	t	VIF
Konstanta	2,148	0,950		2,262*	
x_1 : Koeficient starostne odvisnosti starih	0,003	0,002	0,083	2,029*	1,834
x_2 : Koeficient razvitosti občine	-0,392	0,073	-0,256	-5,400**	2,488
x_3 : Indeks kakovosti življenja	-0,479	0,137	-0,178	-3,491**	2,874
x_4 : Stanovanjski stroški veliko breme	0,033	0,002	0,647	15,284**	1,977
x_5 : Povprečna starost lastnikov stanovanj	-0,027	0,013	-0,082	-2,075*	1,723
x_6 : Uporabna površina stanovanj	0,002	0,001	0,075	2,000*	1,563
x_7 : Delež zaposlenih starejših (60+)	-0,005	0,005	-0,041	-1,007	1,856
x_8 : Neobnovljena fasada	-0,001	0,001	-0,075	-1,881	1,775

$R^2_{OLS_1}$ – determinacijski koeficient za nacionalni model, ki vključuje vse pojasnjevalne spremenljivke od x_1 do x_8 ; AIC_c – popravljen Akaikejev informacijski kriterij (angl. *corrected Akaike information criterion*); B – nestandardizirani regresijski koeficient; St. nap. B – standardna napaka B; β – standardizirani regresijski koeficient; t – t -vrednost; * $p < 0,05$; ** $p < 0,001$; VIF – *variance inflation factor*

Rezultati nacionalnega regresijskega modela kažejo, koliko bivanjske in socialno-ekonomske razmere vplivajo na indeks stanovanjske in socialne prikrajšanosti – spremenljivko (y). Koeficient starostne odvisnosti starih (x_1) pozitivno in statistično značilno vpliva na opazovano prikrajšanost. To pomeni, da večji delež starejših oseb (65+) glede na delovno aktivno populacijo povečuje tveganje prikrajšanosti. Koeficient starostne odvisnosti starih je najvišji v občinah v Pomurju, Zasavju, zahodnem delu države in nekaterih obmejnih občinah, kjer dosega najvišje vrednosti tudi indeks stanovanjske in socialne prikrajšanosti. V kontekstu starajoče se družbe to opozarja na strukturno ranljivost lokalnih okolij, kjer ob demografski obremenitvi hkrati primanjkuje ustreznih ukrepov za zagotavljanje dostojnega, varnega in prilagojenega bivanja predvsem za starejše. Podobno ugotavljata Lafortune in Balestat (2007), ki izpostavljata, da starajoča se populacija pomeni vse večji pritisk na lokalne sisteme dolgotrajne oskrbe, stanovanjske infrastrukture in socialnega varstva, kar se še posebej odrazi v prikrajšanosti starejših v odročnejših in demografsko ogroženih regijah.

Kot pomemben zaščitni dejavnik za opazovano prikrajšanost se je v modelu izkazala raven razvito-

sti občine (x_2), kar pomeni, da razvitejše občine kažejo nižje tveganje za stanovanjsko in socialno prikrajšanost. Te občine praviloma tudi zagotavljajo boljše pogoje za dostojno, varno in stabilno bivanje ne le za starejše, temveč za celotno prebivalstvo. Višja raven razvitosti pogosto pomeni boljši dostop do trga dela, javnih storitev, zdravstvene, izobraževalne in socialne infrastrukture ter večjo institucionalno podporo, kar vse prispeva k zmanjševanju socialnih tveganj. Razlike med razvitimi in manj razvitimi občinami se tako ne odražajo zgolj v ekonomskih kazalnikih (npr. zaposlenosti, dohodkih, investicijah), temveč se zrcalijo tudi v širših dimenzijah družbene blaginje, kot so tveganje revščine, socialna izključenost, stanovanjska negotovost in demografska (ne)privlačnost lokalnega okolja. Na to opozarjajo tudi Dax s sodelavci (2017), ki ugotavljajo, da je stopnja lokalne razvitosti neposredno povezana z razvojnim potencialom območij, vključno s kakovostjo bivanja, socialno kohezijo in odpornostjo skupnosti proti tveganjem izključenosti. Manj razvite občine so pogosto izpostavljene višjim stopnjam prikrajšanosti različnih skupin prebivalstva (Kühn, 2015). UNECE (2021) izpostavlja, da so lokalne zmogljivosti tudi ključen pogoj za izvajanje učinkovitih politik za starajočo se populacijo. Razvitost lokalne skupnosti je zato neposredno povezana tudi s prostorsko pravičnostjo.

Zaščitni vpliv je bil potrjen tudi za indeks kakovosti življenja (x_3), ki zajema različne dimenzije blaginje, kot so zdravje, varnost, izobraževanje, delovni pogoji in dostopnost storitev. Ta spremenljivka negativno in statistično značilno vpliva na vrednost opazovanega indeksa prikrajšanosti, kar pomeni, da občine z višjo oceno kakovosti življenja zaznavajo nižje tveganje stanovanjske in socialne prikrajšanosti. Podatki kažejo, da najnižjo prikrajšanost zaznavajo občine, kjer indeks kakovosti življenja dosega višje vrednosti, zlasti v osrednjem in zahodnem delu države. To poudarja pomen celostnega lokalnega razvoja in prostorske blaginje kot ključnega dejavnika pri zagotavljanju varnega, dostopnega in primerne bivanja ter nižjega tveganja socialne prikrajšanosti (Marques et al., 2019; Ustaoglu in Williams, 2024).

Posebej izrazit vpliv je pokazala spremenljivka x_4 : odstotek prebivalcev, za katere so stanovanjski stroški veliko breme, ki je najmočnejši pozitivni napovednik višje vrednosti opazovanega indeksa prikrajšanosti. Visoki stanovanjski stroški pomembno prispevajo k ranljivosti prebivalstva (Imankulova, 2024) zlasti v regijah z nižjimi dohodki in slabšo energetske učinkovitostjo stanovanj (Holzmann, 2023; Karpinska in Smiech, 2023). Rezultati analize podatkov potrjujejo, da so območja z najvišjim deležem prebivalcev, ki poročajo o finančni preobremenjenosti zaradi bivanja (koroška, zasavska, podravska, pomurska in primorsko-notranjska statistična regija), hkrati območja z najvišjim tveganjem prikrajšanosti. Ta ugotovitev poudarja pomen politik, ki se usmerjajo v zniževanje stanovanjskih stroškov in spodbujanje cenovno dostopnega in kakovostnega bivanja – zlasti za socialno ranljive skupine prebivalstva.

Rezultati regresijske analize kažejo, da ima povprečna starost lastnikov stanovanj, starejših od 65 let (x_5), negativen in statistično značilen vpliv na opazovani indeks stanovanjske in socialne prikrajšanosti. Po podatkih Zavoda za pokojninsko in invalidsko zavarovanje Slovenije (2024) je povprečna višina pokojnine (opazovano v skupini upokojencev, starejših od 65 let) v starejših starostnih skupinah višja kot med mlajšimi uživalci pokojnin. Povprečna starostna oziroma delna pokojnina, ki je prenehala v letu 2023, je bila pri starih 90 let in več v povprečju za 36,2 % višja kot v skupini starih med 65 in 69 let (pri moških je bila višja za 69,5 %). Poleg tega je bila v letu 2023 povprečna novouveljavljena

starostna oziroma delna pokojnina pri osebah, starejših od 70 let, za 88 % višja kot v starostni skupini 65–69 let (pri ženskah je bila višja za 107 %). Rezultati bivariatne prostorske analize (bivariatni Moranov $I = 0,465$; $< 0,001$) potrjujejo statistično značilno prostorsko povezanost na ravni občin med povprečno bruto pokojnino in povprečno starostjo lastnikov stanovanj (65+). Statistično značilna negativna povezanost je med starostjo lastnikov stanovanj (65+) in neto površino njihovih stanovanj. Manjša stanovanja starejših upokojencev pomenijo tudi nižje tekoče stroške, stroške ogrevanja, vzdrževanja in upravljanja. Pomembno je poudariti, da so gospodinjstva starejših od 65 let v Sloveniji najmanj zadolžena med vsemi starostnimi skupinami. V starostni skupini 65–74 let ima finančne obveznosti, povezane s hipotekarnimi ali drugimi oblikami dolga, le 15,8 % gospodinjstev, po 75. letu pa ta delež upade na zgolj 5,7 %. Povprečna stopnja zadolženosti v starostni skupini 16–64 let znaša 37,7 % (European Central Bank, 2023). Nižja stopnja zadolženosti ter daljše obdobje kopičenja premoženja krepi stanovanjsko in socialno varnost (Munnell et al., 2020). Stanovanjska varnost in finančna stabilnost starejših se pogosto povezuje tudi z oblikami bivanja, zlasti z razširjenimi oziroma večgeneracijskimi gospodinjstvi, ki so v Sloveniji še vedno razmeroma pogost pojav. Dolenc (2016) izpostavlja, da sta na začetku leta 2015 v 42 % enostanovanjskih stavb v Sloveniji prebivali vsaj dve gospodinjstvi. V 60 % takšnih razširjenih enodružinskih gospodinjstev so skupaj bivale vsaj tri generacije, pri čemer je v polovici teh primerov šlo za zakonski par z otroki in enega od staršev zakoncev, najpogosteje mater ali taščo. Večgeneracijska gospodinjstva so precej tudi posledica slabše dostopnosti primernih in cenovno dosegljivih stanovanj za mlade in mlade družine (Ahrendt et al., 2016; OECD, 2021). V večgeneracijskih gospodinjstvih se lahko finančna bremena porazdelijo med več članov, s čimer se znižuje obremenitev posameznika in zmanjšuje tveganje revščine (Cohn et al., 2022; Karagiannaki in Burchardt, 2024). Poleg tega so starejši pogosto upravičeni do dodatka za pomoč in postrežbo, kar je dodaten zaščitni mehanizem. Vpliv spremenljivke je skladen z ugotovitvami Davidoffa (2012), ki izpostavlja, da z naraščajočo starostjo in višjo stopnjo premoženja starejših upada delež sredstev, namenjenih za stanovanjske izdatke. Posledično se znižuje tveganje stanovanjske in socialne prikrajšanosti. Čeprav je pojasnjevalna spremenljivka x_5 omejena na starejše (65+) lastnike stanovanj, ima ta skupina pomembno družbeno težo, saj so kot stabilni nosilci lastništva stanovanj pomemben del socialnega in stanovanjskega sistema. Dewilde in Raeymaeckers (2008) pri tem izpostavljata, da visoka stopnja lastništva stanovanj med starejšimi pomembno prispeva k zmanjšanju ranljivosti ter izboljšuje skupne kazalnike blaginje na lokalni ravni.

Na tveganje stanovanjske in socialne prikrajšanosti pozitivno in statistično značilno vpliva povprečna uporabna površina stanovanj (x_6). V mnogih občinah (predvsem v delu goriške, gorenjske, koroške, savinjske in notranjsko-kraške statistične regije) so stanovanja velika. Če so neustrezno zasedena (npr. ena do dve osebi živita v hiši s štirimi ali več sobami), to ustvarja funkcionalno stisko in ne pomeni optimalne izrabe bivanjskega prostora. Prevelika stanovanja lahko povzročajo energetska neučinkovitost, zvišujejo stroške vzdrževanja ter krepijo psihosocialni občutek osamljenosti in neprilagojenosti (OECD, 2021). Eurostat (2020) in Age Platform Europe (2022) izpostavljata številna tveganja predvsem med starejšimi uporabniki prevelikih stanovanj.

Spremenljivki x_7 in x_8 , ki v regresijskem modelu nista statistično značilni ($p > 0,05$), posebej ne razlagamo, saj njun vpliv ni potrjen z zadostno statistično verjetnostjo in zato nista zanesljiva podlaga za empirične sklepe ali priporočila.

4.4 Rezultati geografsko obtežene regresije

Za nadaljnjo poglobitev prostorske razsežnosti modela smo uporabili metodo geografsko obtežene regresije, ki omogoča analizo lokalnih variacij učinkov pojasnjevalnih spremenljivk na ravni posameznih občin. Geografsko obtežena regresija je bila izbrana zaradi neenakomerne prostorske porazdelitve analiziranih pojavov, kar zahteva pristop, prilagojen lokalnim značilnostim občin. Rezultati analize prostorske avtokorelacije kažejo, da je za izbrani model najprimernejša uporaba fiksnega jedra s pasovno širino $\beta = 28,9$ km. Prostorske uteži smo izračunali z metodo eksponentnega jedra. Zaradi tveganja prostorske avtokorelacije in lokalne multikolinearnosti smo iz nadaljnjega lokalnega modeliranja izključili spremenljivki x_7 in x_8 . Takšen nacionalni model ima determinacijski koeficient $R^2_{OLS_2} = 0,811$ ($AIC_c = -353.207$). Rezultati analize preostankov (standardnih napak napovedi) v geografsko obteženem regresijskem modelu kažejo, da je večina občin zajetih znotraj pričakovanih statističnih odklonov, kar potrjuje zanesljivost lokalnega modela. Pojasnitvena moč in prostorska variabilnost učinkov posameznih dejavnikov sta podrobno predstavljene v preglednici 4.

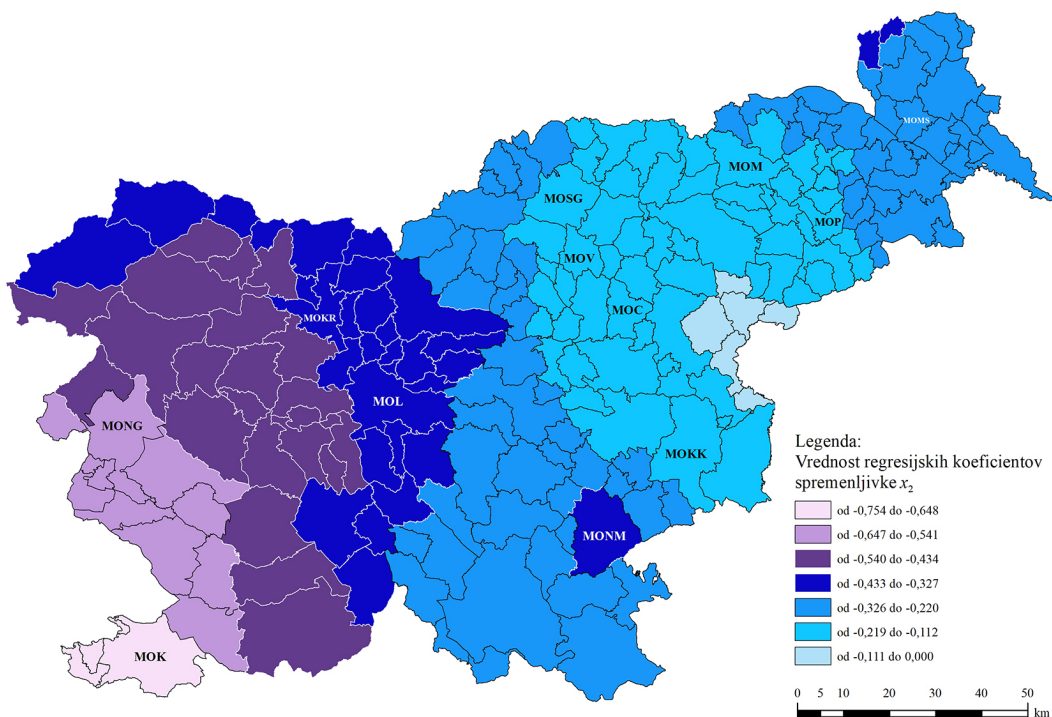
Preglednica 4: Rezultati geografsko obtežene regresije

	$\overline{B}_i$	$R^2_{GWR} = 0.879, AIC_c = -372.226$ St. odkl. B_i	Min B_i	Maks B_i
Konstanta	1,777	0,796	0,039	3,837
x_1 : Koeficient starostne odvisnosti starih	0,004	0,004	-0,006	0,008
x_2 : Koeficient razvitosti občine	-0,299	0,133	-0,737	-0,074
x_3 : Indeks kakovosti življenja	-0,377	0,257	-0,863	0,070
x_4 : Stanovanjski stroški veliko breme	0,031	0,007	0,015	0,039
x_5 : Povprečna starost lastnikov stanovanj	-0,023	0,010	-0,047	-0,001
x_6 : Uporabna površina stanovanj	0,001	0,001	-0,005	0,003

R^2_{GWR} – determinacijski koeficient lokalnega modela, ki vključuje vse pojasnjevalne spremenljivke od x_1 do x_6 ; AIC_c – popravljen Akaikejev informacijski kriterij (angl. *corrected Akaike information criterion*); $\overline{B}_i$ – povprečna vrednost lokalnih nestandardiziranih regresijskih koeficientov B_i ; St. odkl. B_i – standardni odklon vrednosti koeficientov B_i ; Min B_i – najmanjša vrednost koeficienta B_i ; Maks B_i – največja vrednost koeficienta B_i

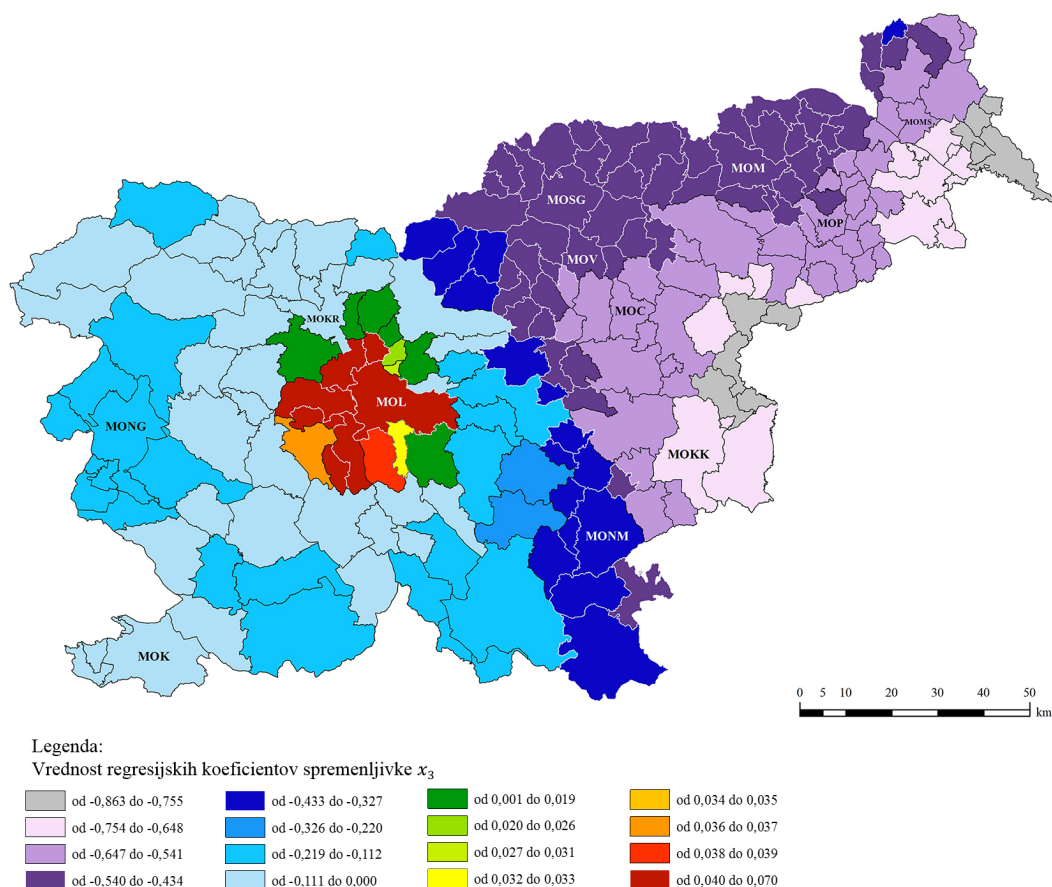
Vrednost determinacijskega koeficienta lokalnega regresijskega modela ($R^2_{GWR} = 0,879$) kaže, da v povprečju bolje pojasni varianco linearne povezanosti odvisne spremenljivke glede na izbrane pojasnjevalne spremenljivke kot nacionalni model ($R^2_{OLS_1} = 0,816$; $AIC_c = -353.146$) in tudi kot nacionalni model brez spremenljivk x_7 in x_8 ($R^2_{OLS_2} = 0,811$; $AIC_c = -353.207$). Povprečne vrednosti nestandardiziranih koeficientov pojasnjevalnih spremenljivk lokalnih regresijskih modelov imajo enak predznak kot pri nacionalnem modelu in podobne povprečne vrednosti. S tematskimi kartami prikazemo prostorsko porazdelitev vpliva izbranih pojasnjevalnih spremenljivk na ravni občin, ki v globalnem modelu najbolj statistično značilno vplivajo na odvisno spremenljivko, in sicer za spremenljivke x_2 , x_3 in x_4 .

Slika 2 prikazuje prostorsko variabilnost vpliva koeficienta razvitosti občin (x_2) na opazovan indeks tveganja stanovanjske in socialne prikrajšanosti. V razvitejših občinah je negativna povezanost z opazovanim indeksom prikrajšanosti. Nasprotno pa imajo manj razvite občine, predvsem v savinjski, zasavski, podravski, pomurski in koroški statistični regiji, višje vrednosti regresijskih koeficientov, kar pomeni, da je v teh območjih tveganje stanovanjske in socialne prikrajšanosti večje in bolj povezano z nižjo razvitostjo občin.



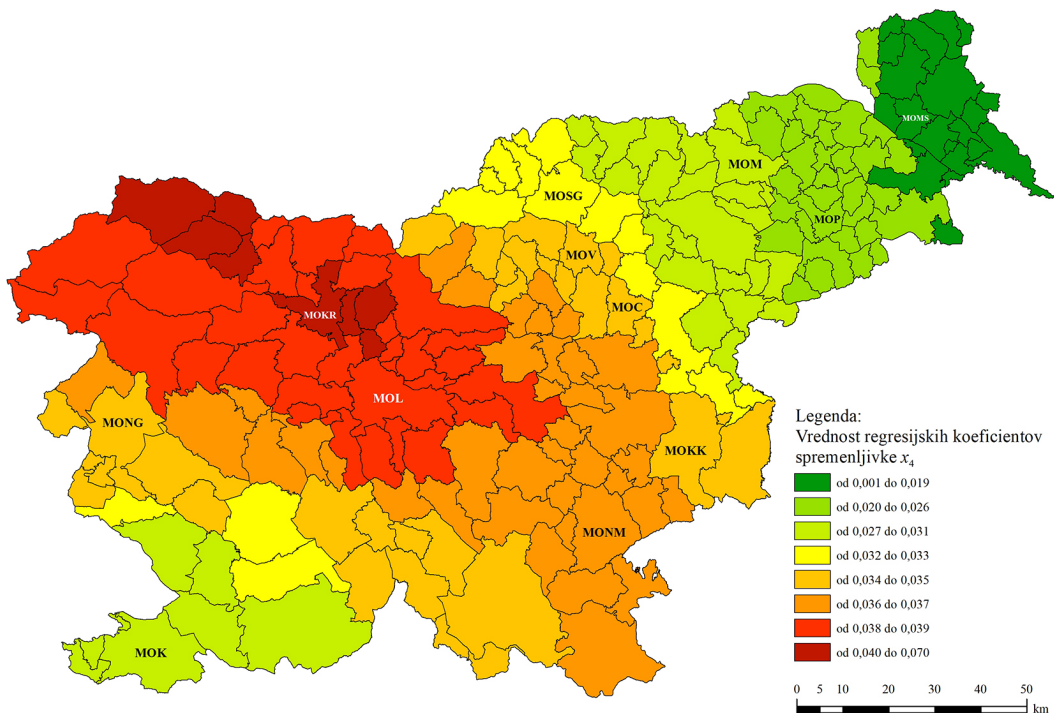
Slika 2: Prostorska porazdelitev regresijskih koeficientov pojasnjevalne spremenljivke x_2 : koeficient razvitosti občine, Slovenija, 2024–2025.

Vrednosti regresijskih koeficientov indeksa kakovosti življenja (x_3), prikazane na sliki 3, so negativne po skoraj celotnem ozemlju, kar potrjuje ugotovitev globalnega modela, da višja kakovost življenja prispeva k nižjemu tveganju obravnavane prikrajšanosti. Vendar pa je opaziti razlike v vplivu tega dejavnika po prostoru. Najmočnejši negativni vpliv je prisoten v vzhodnem in severovzhodnem delu države (Pomurje, Koroška, del savinjske statistične regije ter vzhodni del Podravja), kjer so občine hkrati med manj razvitimi (glede na koeficient razvitosti) in z nižjo vrednostjo indeksa kakovosti življenja. To pomeni, da ima izboljšanje kakovosti življenja v teh občinah potencialno največji učinek na zmanjšanje tveganja obravnavane prikrajšanosti. Nasprotno pa so regresijski koeficienti v osrednji Sloveniji (Ljubljana in širša regija), v delu Gorenjske, Goriške (Nova Gorica, Idrija idr.) in obalnih občinah (Koper, Piran idr.) nižjih vrednosti. V teh območjih, kjer je indeks kakovosti življenja že relativno visok, njegov vpliv na zmanjšanje prikrajšanosti ni tako izrazit. To lahko nakazuje, da so učinki že izkoriščeni oziroma da se prikrajšanost tam pojavlja zaradi drugih dejavnikov.



Slika 3: Prostorska porazdelitev regresijskih koeficientov pojasnjevalne spremenljivke x_3 : indeks kakovosti življenja, Slovenija, 2020.

S slike 4 je razvidno, da je vpliv spremenljivke x_4 – delež prebivalcev, za katere so stanovanjski stroški veliko breme – najizrazitejši v osrednjeslovenski regiji (zlasti na območju Ljubljane), Gorenjski in delu severne Notranjske, vključno z jugovzhodno Slovenijo. Na teh območjih regresijski koeficienti dosegajo najvišje vrednosti, kar je na karti prikazano s temno oranžno in rdečo barvo. To kaže, da imajo stanovanjski stroški v teh regijah močnejši vpliv na stopnjo stanovanjske in socialne prikrajšanosti kot drugod po Sloveniji. Visoke vrednosti koeficientov sovpadajo s prostorsko potrjenimi vzorci cenovne nedostopnosti stanovanj, visokih najemnin in višjih življenjskih stroškov. Po podatkih Geodetske uprave RS (2025) so bile leta 2024 povprečne cene stanovanj v večstanovanjskih stavbah na tržno analitičnem območju Ljubljana 2,9-krat višje kot v Prekmurju, cene stanovanjskih hiš 4,5-krat višje, cene zemljišč za gradnjo stanovanjskih hiš pa 40-krat višje. Po podatkih Statističnega urada RS (2025h) na območjih slovenskih regij, kjer regresijski koeficienti za pojasnjevalno spremenljivko x_4 dosegajo najvišje vrednosti, živi 62,1 % vseh prebivalcev Slovenije, ki glede na svoj dohodek (pred socialnimi transferji, vključno s pokojninami) padejo pod prag revščine. Na teh območjih prebiva tudi 54,3 % vseh oseb v Sloveniji, ki so opredeljene kot resno materialno prikrajšane (vsaj 5 od 13 elementov prikrajšanosti), ter 69,4 % vseh prebivalcev, ki živijo v prenaseljenih stanovanjih (Statistični urad RS, 2025g).



Slika 4: Prostorska porazdelitev regresijskih koeficientov pojasnjevalne spremenljivke x_4 : odstotek prebivalcev, za katere so stanovanjski stroški veliko breme, Slovenija, 2024.

5 RAZPRAVA IN ZAKLJUČEK

Demografske spremembe, zlasti staranje prebivalstva, v povezavi z razvojnimi in okoljskimi izzivi oblikujejo nove okoliščine za načrtovanje politik socialne zaščite in bivanja. Izvedena analiza stanja stavbnega fonda v lasti prebivalcev, starejših od 65 let, v Sloveniji je pokazala, da je ta razmeroma star, funkcionalno neprilagojen potrebam starejših in energetsko potraten, kar ustreza ugotovitvam nekaterih predhodnih raziskav. Ob tem je prav energetska prenova obstoječih objektov ena večjih priložnosti za zmanjševanje ogljičnega odtisa gospodinjstev ter dolgoročno znižanje stroškov porabe energije. Med lastniki teh energetsko neučinkovitih in pogosto prevelikih stanovanjskih površin so številni posamezniki z nizkimi razpoložljivimi dohodki, kar omejuje njihove možnosti za vlaganja v nujno prenovo in prilagoditve (Hafner Fink et al., 2024). Raziskava je med drugim potrdila, da višja starost lastnikov stanovanj (starejših od 65 let), podprta z višjimi povprečnimi pokojninami, nižjo stopnjo zadolženosti in manjšimi stanovanjskimi enotami, prispeva k večji stanovanjski in socialni varnosti ter zmanjšuje tveganje prikrajšanosti. Čeprav imajo starejši posamezniki v lasti znaten delež stanovanjskih nepremičnin, to premoženje ostaja premalo izkoriščeno kot sredstvo za izboljšanje njihovega bivalnega standarda ali kot dolgoročna finančna varnost (Kerbler, Sendi in Filipovič Hrast, 2019; Marcinkiewicz in Chybalski, 2022; UNECE, 2021).

Ugotovitve v prispevku predstavljene raziskave potrjujejo močno povezanost med starostno strukturo prebivalstva, starejšega od 65 let, razvitostjo občine, kakovostjo bivanjskega okolja in stanovanjskimi stroški ter stopnjo tveganja za stanovanjsko in socialno prikrajšanost. Prostorski vzorci proučevanih

dejavnikov kažejo na visoko raven tveganja obravnavane prikrajšanosti na posebej ranljivih območjih, predvsem v manj razvitih, odročnejših naseljih je dostopnost do različnih javnih storitev slabša. Hafner Fink s sodelavci (2024) ob tem izpostavljajo, da dve tretjini starejših na podeželju nima neposrednega (peš) dostopa do lekarne, polovica do pošte ali banke ter več kot 40 % do trgovine z živili. Med posebej ranljivimi izstopajo občine v savinjski, zasavski, podravski in koroški statistični regiji. Rezultati tako potrjujejo, da tveganje stanovanjske in socialne prikrajšanosti presega raven individualnih okoliščin ter odraža strukturno pogojene prostorske in družbene neenakosti.

Geografska obtežena regresija in kartografski prikazi so se izkazali kot uporabna orodja za poglobljeno razumevanje prostorskih vzorcev tveganj socialne in stanovanjske prikrajšanosti. Model, zasnovan z geografsko obteženo regresijo, je v povprečju bolje pojasnil varianco linearne povezanosti med izbranimi pojasnjevalnimi spremenljivkami ter opazovano odvisno spremenljivko ($R^2_{GWR} = 0,879$) kot zasnovana nacionalna modela ($R^2_{OLS_1} = 0,816$ oziroma $R^2_{OLS_2} = 0,811$). Z rezultati geografske obtežene regresije in tematskimi kartami vrednosti lokalnih regresijskih koeficientov smo poudarili kritična območja in prikazali spreminjanje moči vplivov obravnavanih dejavnikov po prostoru. To omogoča učinkovitejše in bolj prostorsko prilagojene, ciljno usmerjene ukrepe, namesto da bi sprejemali univerzalne rešitve, ki spregledajo lokalne razmere in potrebe.

V prihodnje bo za učinkovitejše preprečevanje in obvladovanje tveganj stanovanjske in socialne prikrajšanosti v Sloveniji nujno treba okrepiti odpornost stanovanjskega sistema proti demografskim spremembam. Ključno bo izboljšati dostopnost kakovostnih, cenovno dosegljivih in energetsko učinkovitih stanovanj ter usmerjati razvojne politike v celostno krepitev zmogljivosti tistih območij, ki jih je raziskava prepoznala kot bolj ranljiva. To zahteva celovit, medsektorsko usklajen pristop, nadgradnjo obstoječih ukrepov in dosledno vključevanje staranja prebivalstva kot strateškega izziva v vse ravni prostorskega in družbenega načrtovanja. Prostorsko pogojene razlike v prikrajšanosti je treba sistematično prepoznavati ter jih nasloviti s ciljno usmerjenimi in na podatkih temelječimi rešitvami, ki bodo omogočale pravičnejši in trajnostno naravnan razvoj.

Literatura in viri:

Glej literaturo na strani 516.



Starček S., Petrovič D. (2025). Prostorska analiza tveganja stanovanjske in socialne prikrajšanosti: vpliv dejavnikov staranja in lokalnega okolja.

Geodetski vestnik, 69 (4), 500-535.

DOI: <https://doi.org/geodetski-vestnik.2025.04.502-537>

doc. dr. Simon Starček

Fakulteta za pravo in ekonomijo

Krekov trg 1, SI-1000 Ljubljana

e-naslov: simon.starcek@kat-inst.si

doc. dr. Dušan Petrovič

Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo

Jamova cesta 2, SI-1000 Ljubljana

e-naslov: dusan.petrovic@fgg.uni-lj.si