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Research Paper

The ageing process and the Quality-of-Life Perception Index: A new urban perspective

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Abstract: The aim of this study is to develop a multidimensional assessment tool based on findings from the AGE-IT comprehensive study conducted from April to June 2025. AGE-IT aimed to explore differences in quality-of-life perceptions among older Italians, drawing on data from 1,631 participants across three diverse Italian regions (Emilia-Romagna, Abruzzo, and Puglia), and collected with a range of standardized tools. Given the lack of evidence-based data on the comprehensive evaluation of objective and subjective quality-of-life perceptions among older people, this study proposes an index that explicitly accounts for a review of these dimensions, including both objective and subjective QoL. Thus, for this present study, the Quality-of-Life Perception Index was developed using data from the AGE-IT study to provide a more holistic and nuanced understanding of quality of life by assigning greater specific weight to a set of territorial variables. The objective Quality-of-Life Perception Index demonstrated acceptable reliability and showed significant variations across regions, sex, age, and mobility status. Women reported significantly higher objective quality of life than men, and transport autonomy emerged as a critical determinant of well-being. The index showed moderate positive correlations with subjective quality-of-life measures, supporting its criterion validity. These findings provide a foundation for comprehensive quality-of-life assessment in older populations and demonstrate that digital skills are strongly linked to advanced forms of e-health engagement, while similar skill levels translate into different uptake levels across countries. For practitioners, this implies that improving e-health adoption requires not only digital skills training but also user-centred service design and system integration, while for researchers it highlights the need to move beyond single indicators and treat later-life digital health inclusion as a context-dependent, hierarchical process rather than a binary divide.

Keywords: quality of life, older people, aging, multidimensional index, objective well-being, Italy, regional differences, gender disparities, transport mobility system

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1. Introduction

The global population is undergoing a significant demographic shift, with a rapidly increasing proportion of older adults. This 'greying' of society presents both opportunities and challenges, making the well-being and quality of life (QoL) of the elderly a paramount concern for policymakers, healthcare providers, and researchers alike. Italy stands at the forefront of this demographic transition, with one of the world's oldest populations. According to recent demographic projections (Billari, 2023), those aged 65 and over represent more than 23% of the Italian population, a proportion that continues to grow (Statista, 2026). This makes the study of QoL of older Italians not only a national priority but also a valuable case study for other aging societies.

Quality of life is a complex and multifaceted concept, broadly defined by the World Health Organization (WHOQOL Group, 1998) as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (p.13).This definition highlights the subjective nature of QoL, although a comprehensive understanding also requires assessing objective conditions that shape an individual's life. Literature consistently emphasizes the need for a multidimensional approach to QoL assessment that encompasses physical health, psychological well-being, social relationships, environmental factors, and economic security.

While numerous standardized tools exist for measuring QoL in older adults, such as the Older People's Quality of Life Questionnaire (OPQOL), the CASP-19, and the WHOQOL-OLD

(Bowling et al., 2003; Bowling, 2005), many of these instruments have limitations. Some focus heavily on health-related aspects, while others lack cultural sensitivity or fail to adequately capture the objective dimensions of well-being. Furthermore, many existing tools were developed in specific cultural contexts and may not fully capture the unique experiences of Italian older people, particularly given the country's significant regional diversity.

The AGE-IT study was conducted between April and June 2025 (see Acknowledgements section at end of the paper for further details). The study sought to address these gaps by examining differences in QoL perceptions among older Italians across diverse regions. The study revealed that existing tools failed to provide a comprehensive, evidence-based evaluation of both objective and subjective QoL. To address this, the Quality-of-Life Perception Index (QLPI) was developed, a novel multidimensional assessment tool. The QLPI is designed to provide a more holistic and nuanced understanding of QoL in the older population by integrating both objective and subjective dimensions and, above all, by assigning greater specific weight to a set of territorial variables, primarily connected to the system of proximity (Carrera, 2025b; Carrera, 2025c).

This paper presents the first stage of this research, focusing on the development and validation of the QLPI's subjective component. The theoretical premise from which this study departs, and on which the index was constructed, is that a quality-of-life index should be grounded in individuals' perceived quality, rather than solely in objective contextual variables. This offers a more faithful representation of human well-being. Thus, well-being is not determined by the mere availability of services and opportunities, but by individuals' real freedom to convert resources into functions they have reason to value. Objective indicators capture formal entitlements and infrastructure provision, yet they often fail to reflect the structural, cultural, psychological, and informational barriers that shape actual access. Subjective perceptions provide important insight into these conversion factors, illuminating how individuals experience and evaluate their own capability sets.

Measuring perceived quality allows researchers to identify discrepancies between nominal provision and genuine usability of resources. Such an approach acknowledges heterogeneity in needs, aspirations, and constraints, and avoids assuming uniform benefit from identical environments. Consequently, perception-based indices better operationalize capabilities by capturing lived opportunities rather than abstract possibilities. This perspective enhances both the analytical validity of quality-of-life assessments and their relevance for equity-oriented policy design. In this paper, we will detail the construction of the QoL index (QLPI), its psychometric properties, and its relationship with key demographic, social, and urban factors, including a specific focus on the role of transportation with specific reference to levels of walkability, a variable often overlooked in traditional QoL assessments, but critical for maintaining independence and social participation in older age.

Several key research questions guide this study. First: What are the key domains that constitute the objective quality of life in the Italian older population? Second: How can these domains be operationalized into a reliable and valid composite index? Third: How does the objective QoL vary across different demographic groups (e.g., by region, sex, and age)? And fourthly: What is the relationship between objective QoL and other vital factors, such as health status, social participation, and mobility? Finally: To what extent does the objective QLPI correlate with subjective assessments of quality of life? By answering these questions, this paper aims to contribute to the growing body of literature on aging and well-being, providing a robust and evidence-based tool for assessing the objective quality of life of older adults. The findings will have important implications for policy and practice, helping identify vulnerable populations and inform the development of targeted policy interventions to improve the lives of older people in Italy and beyond.

2. Literature Review

2.1 Conceptualizing and Measuring Quality of Life

The concept of Quality of Life (QoL) has been a central theme in gerontological research for several decades, reflecting a shift from a purely biomedical view of aging to a more holistic, biopsychosocial perspective. This review synthesizes the existing literature on QoL in older adults, focusing on its multidimensional nature, the distinction between objective

and subjective measures, and key factors that influence well-being in later life, including regional variations, gender differences, and the role of mobility. This body of work provides a theoretical and empirical foundation for the development of the Quality-of-Life Perception Index (QLPI).

Quality of life is widely recognized as a multidimensional construct. As mentioned in the introduction, the World Health Organization (WHOQOL Group, 1998) defines it as an individual's perception of their life in the context of their culture and value systems, and in relation to their goals and expectations. This definition underscores the subjective nature of QoL. However, a comprehensive assessment requires a dual approach that considers both subjective perceptions and objective, measurable life conditions. The objective-subjective axis is one of the least understood but most critical aspects of QoL research, particularly in older populations.

Bowling (2002) proposed a comprehensive multidimensional model of QoL in older age, arguing that self-evaluations of global QoL are influenced by a complex interplay of health, psychological, and social variables, as well as social circumstances. This model emphasizes that QoL is not simply the absence of disease or disability, but rather a positive state encompassing multiple domains of life. The model has been influential in guiding subsequent research and instrument development and the objective–subjective axis is one of the most critical dimensions of quality-of-life research, particularly in studies on older populations (Bowling, 2005; Veenhoven, 2000).

Several instruments have been developed to measure QoL in older people. The most prominent include the Older People's Quality of Life Questionnaire (OPQOL), the CASP-19, and the WHO's own WHOQOL-OLD scale (Bowling, 2009; Hyde, et al., 2003; Power et al., 2005). A comparative study by Bowling and Stenner (2011) found that while all three scales demonstrated acceptable validity, the OPQOL, which was uniquely derived from the views of older people themselves, performed best in criterion validity when compared with global self-rated QoL, as expected. The study reported Spearman's correlations ranging from -0.347 to -0.659 for the OPQOL across different samples, compared to -0.273 to -0.577 for the CASP-19 and -0.128 to -0.466 for the WHOQOL-OLD. This highlights the importance of grounding measurement tools in the lived experiences of the target population. The development of the QLPI builds on this principle by integrating data from a large, diverse sample of Italian older people to create a culturally and contextually relevant index.

The conceptualization and measurement of QoL have evolved significantly over the past decades. Early approaches focused primarily on functional status and health-related quality of life (HRQoL), often using instruments such as the SF-36 or EQ-5D. While these tools remain valuable for assessing health outcomes, they have been criticized for their narrow focus and for failing to capture broader aspects of well-being important to older adults, such as autonomy, social relationships, and environmental quality. More recent approaches have adopted a wider perspective, recognizing that QoL in older age encompasses not only health but also social, psychological, economic, and environmental dimensions. It is within the framework of this perspective, also attentive to the quality of territorial variables and the urban environment, that the index used in this current study is situated.

2.2 Differences and Disparities in Quality of Life

Italy presents a compelling case for studying regional variations in aging, given its significant north-south socioeconomic divide and diverse cultural landscapes. Research has shown that the living environment plays a crucial role in social gerontology in the country. A study by Marcellini et al. (2007) on urban-rural differences in Italy found significant disparities in education, household size, social networks, and technology use among the older. Urban dwellers tended to be more educated, more active, and more technologically adept, while rural older people often had larger, more traditional family structures. The study, which was part of the European MOBILATE 2000 project, included 600 Italian participants and found that a regression analysis of technology use ($R^2 = 0.551$) identified living area, age, and years of education (the strongest predictor) as key explanatory variables. These findings challenge monolithic views of the aging experience and underscore the necessity of a geographically sensitive approach to QoL assessment. The historical context is also essential: Italy underwent a massive transformation from an agricultural to an industrialized country in the post-World War II period. In 1921, the farm sector occupied 59% of the working population, but by 2001,

this had dropped to just 5.3%. This shift was accompanied by significant rural-to-urban migration and changes in family structures, from patriarchal extended families to nuclear families (Golini & Rosina, 2011). These historical and demographic changes have created distinct aging contexts across the country. The AGE-IT study's inclusion of three distinct regions, such as Emilia-Romagna in the north, Abruzzo in the centre, and Puglia in the south, provides a methodologically sound approach to capturing this heterogeneity. The regional differences are likely to be reflected in the objective living conditions of older adults.

A consistent finding in the gerontological literature is the existence of a 'gender effect' in aging: women tend to live longer than men, experience more years of disability, and report a lower quality of life. This paradox has been documented across many countries and cultures. Carmel (2019) reviewed the evidence on health and well-being in late life and found that while some gender differences diminish with aging (e.g., in health behaviours), others persist or even widen. Women generally live longer and with more years of disability, and men often report better subjective health despite similar or worse objective health status. A study by Lee et al. (2020), which used multivariate analysis, confirmed that gender inequality in QoL exists and that gender plays a critical role in QoL among older adults. The researchers argued that female participants' overall social status was lower than that of their male counterparts, and that they were likely to have lower income, more barriers to accessing healthcare, and more household chores. All of these factors could affect their perceived QoL.

Research focusing on older adults living alone further highlights these gender differences, with women reporting poorer health status and lower QoL. Ko and Jung (2019) examined gender differences in health status, quality of life, and community service needs among older adults living alone in South Korea. They found that women had significantly poorer health status and lower QoL than men, and that the two genders had different community service needs. These findings suggest that gender interacts with other social determinants, such as living arrangements and marital status, to shape the aging experience. What emerges, and is confirmed by these studies, is that gender does not directly affect differences in quality of life. Rather, these differences are primarily the outcome of gender-specific factors across the various domains, revealing how cumulative lines of vulnerability are generated and ultimately expressed in differing quality-of-life values. Consequently, any robust QoL index must be sensitive to these gender dynamics, not only by including sex as a key variable but also by analysing its interaction with other domains of life. It is important to note that gender differences in QoL may vary across cultures and cohorts, reflecting different historical experiences, social norms, and policy contexts. The current cohort of older adults in Italy, for example, includes women who may have had limited access to education and employment opportunities in their youth. This could affect their economic security and social status in old age.

2.3 The Critical Role of Transport and Mobility

Mobility is a cornerstone of independence and a critical determinant of QoL in older people. The ability to move within and outside the home affects an individual's capacity to access essential services, maintain social connections, and participate in community life. A recent review by Abdul Latiff and Mohd (2023) conceptualized three pathways through which mobility influences well-being: by providing access to destinations and social connections that improve health and well-being, by promoting physical health through physical activities, and by enhancing the subjective feeling of well-being and autonomy.

Losing the ability to drive or use public transport can lead to significant transport disadvantages, social exclusion, and a decline in QoL. Abdul Latiff and Mohd (2023) identified five main barriers to the use of alternative transportation among older adults: acceptability, affordability, adaptability, accessibility, and safety. Transportation that addresses these barriers ensures that older adults can improve their quality of life through social inclusion and independence in daily activities, enhancing their well-being and health, promoting life satisfaction through the comfort and convenience of age-friendly transport, and encouraging equity by not leaving older adults behind. The importance of mobility has been increasingly recognized in the literature. Clarke and Gallagher (2013) discussed the role of the urban environment for older adults, noting that only 25% walk outdoors regularly and that environmental barriers, such as limited access to public transportation, are frequently reported. Zandieh and Acheampong (2021) explored older adults' perceptions of

opportunities and challenges regarding autonomous vehicles, finding that mobility needs and challenges are central concerns for this population.

As highlighted in a series of qualitative studies conducted within the framework of the Age-It programme (Carrera, 2025b; 2025c), this perspective places at its core the process of constructing the conditions for the right to ageing in the right place, which, as noted, goes beyond the simple right to choose to remain in the place where one has lived (ageing in place), thus avoiding the dispersal of relational capital accumulated over time, towards the right to age in a place rich in opportunities and characterized by high urban quality. It is not merely a matter of enabling individuals to grow old in their own homes and in the places where they live, but of ensuring that the home, the neighbourhood, and ultimately the city as a whole, are capable of supporting health, autonomy, and social participation, thereby giving concrete form to the right to the city (Lefebvre, 1968).

The inclusion of a transport variable in the QLPI is a direct response to this body of evidence, recognizing that mobility is not merely a functional capacity but a key enabler of a high-quality life in old age. In the Italian context, where many older adults live in areas with limited public transport, and where car ownership and driving ability may decline with age, understanding the relationship between transport autonomy and QoL is critical. For this reason, the quality of urban walkability takes on particular importance and a highly distinctive weight, as the possibility of pedestrian movement and crossings within urban spaces. This weight is highlighted in view of its effects on physical health, well-being, and social interaction, dimensions that are in any case deeply interconnected (Carson et al. 2023; Appolloni et al., 2020; Cerin et al., 2025; Pafka & Biraghi, 2025)

3. Methodology

This section details the methodology used in the AGE-IT study and the subsequent development and validation of the objective component of the Quality-of-Life Perception Index (QLPI). It covers the study design, participant characteristics, the measures used, and the statistical procedures employed for data analysis.

The data for this study were drawn from the AGE-IT project, a cross-sectional survey conducted in between April and June 2025. The primary objective of the AGE-IT project was to explore the multifaceted nature of quality of life among older adults in Italy with a view to the possibility of steering policies so that they intervene across the different domains of life and support their quality. The study employed a quantitative survey designed to collect data on a wide range of topics, including demographic characteristics, living conditions, health status, social participation, and subjective well-being.

3.1. Participant selection and sampling

A total of 1,631 community-dwelling adults aged 60 and over participated in the study. The sample was drawn from three diverse regions of Italy to ensure geographic and socioeconomic heterogeneity: Emilia-Romagna in the North (n = 531, 32.5%), Abruzzo in the Centre (n = 500, 30.7%), and Puglia in the South (n = 600, 36.8%). These regions were selected to represent the diversity of the Italian context, with Emilia-Romagna among the wealthiest and most developed, Puglia historically less economically developed, and Abruzzo representing a middle ground.

Participants were recruited through a combination of convenience and purposive sampling methods. Local community centres, senior clubs, and healthcare facilities were contacted to identify potential participants. Inclusion criteria were: (1) age 60 years or older, (2) community-dwelling (not institutionalized), (3) able to provide informed consent, and (4) able to complete the questionnaire in Italian (either independently or with assistance). Exclusion criteria included severe cognitive impairment that would prevent meaningful participation.

3.2 Instrument development and validation

The data were collected using a structured questionnaire index that included a variety of standardized and study-specific items. The questionnaire was administered via CATI interviews by trained research assistants. The key measures used to develop the objective QLPI are described below.

With regard to demographic and socioeconomic variables, participants provided information on their age (calculated from year of birth), sex (male/female), marital status (married, widowed, separated/divorced, single), highest level of education attained (elementary school, middle school, high school 3 years, high school 4-5 years, university/master's degree), and monthly household income (categorized as: none, €500-1000, €1000-2000, €2000-5000, more than €5000), and housing condition. These variables were used to describe the sample and as factors in the analysis of group differences in QoL.

The primary outcome measure of this paper is the objective component of the QLPI, a composite index designed to provide a multidimensional assessment of the living conditions of older adults. Based on the theoretical framework outlined in the literature review, the findings of some qualitative studies conducted within the same Age-IT project and the questionnaire data, the index was constructed from 14 items grouped into four conceptually distinct domains. All items were coded such that higher scores indicate better objective conditions. The final index, referred to as 'qualogg6n' in the dataset, is a continuous score normalized to a 0-10 scale for ease of interpretation. It is important to note that while the QLPI aims to measure the objective quality of life, it does so through the lens of individual perception. Therefore, the index is best understood as a measure of objectively assessed living conditions as reported by individuals, rather than one based on external or administrative data. This approach acknowledges that the individual's experience and evaluation of their circumstances are integral to their quality of life.

The first domain involved 'Economic and Material Conditions'. This domain assesses financial resources and economic security, which are fundamental to meeting basic needs and maintaining a decent standard of living in old age. It is a composite of three items: First, individual monthly income (Question 4.10), which was recoded into five categories (0 = none, 1 = €500-1000, 2 = €1000-2000, 3 = €2000-5000, 4 = more than €5000). Second, perceived adequacy of income to cover family needs (Question 4.11). This was rated on a 1-10 scale, normalized to a 0-2 scale. The third concerned the extent to which the respondent supports other family members with their income (Question 4.12). This was also rated on a 1-10 scale, normalized to a 0-2 scale.

The second domain was 'Autonomy and Mobility'. This domain measures physical independence and the ability to move within and outside the home, which are critical for maintaining independence and avoiding institutionalization. It is composed of two sub-components. First, 'Functional autonomy' focussing on nine basic and instrumental activities of daily living (Question 1.11), including bathing, dressing, personal hygiene, moving around the house, continence, eating, housekeeping, doing laundry, and managing money. Each activity was coded as 1 = autonomous, 0 = needs help. The sum was normalized to a 0-2 scale. The second was 'frequency of walking outdoors' (Question 1.13). It was coded as 0 = never, 1 = once a week, 2 = two or more times a week or every day.

The third domain was 'Social and Cultural Participation'. This domain captures engagement in social and leisure activities, which are essential for maintaining social connections, cognitive stimulation, and a sense of purpose. It is a composite of three sub-indices. First, 'Cultural activities' (Questions 1.24_1 to 1.24_5) referring to: Frequency of participation in cinema, theatre, libraries, museums, and community spaces. It was summed and categorized as 0 = never, 1 = 1-4 activities, 2 = 5-15 activities. The second subindex was 'other social activities' (Questions 1.24_6 to 1.24_10), referring to frequency of participation in parish, gardens and green spaces, gyms, shopping centres, and other venues. It was summed and categorized as 0 = never, 1 = 1-4 activities, 2 = 5-15 activities. The third subindex was 'domestic sociality' (Questions 1.21 and 1.22). This examined whether the respondent meets people at home and the types of people met (relatives, friends, assistants). It was categorized as 0 = no one, 1 = at least one type, 2 = extensive sociality.

The fourth domain was 'Access to Services and Information'. This domain evaluates the ease with which older adults can access essential services and information, which is crucial for maintaining health and well-being. It is a composite of five items. The first is 'ease of

contacting a family doctor' (Question 2.1), coded as 0 = difficult/never, 1 = fairly easily, 2 = easily. The second was 'waiting times for specialist visits' (Question 2.2). It was coded as 0 = more than 6 months, 1 = within 6 months, 2 = within 2 months. The third: Ease of reaching a pharmacy (Question 2.3), using a 1-10 scale, categorizing 0 as low (1-3), 1 as medium (4-7), and 2 as high (8-10). The fourth was the 'perceived accessibility of social and welfare services' (Question 2.6), with a 1-10 scale categorizing 0 as low (1-3), 1 as medium (4-7), and 2 as high (8-10). Finally, the fifth was the 'number of different information sources used' (Questions 1.25_1 to 1.25_6), including newspapers, magazines, television, radio, internet, and other sources. It was summed and categorized as 0 = low (0-1), 1 = medium (2-3), 2 = high (4-6).

In addition to these core domains, the index construction also accounted for the number of self-reported chronic health conditions ('pathologies' in questions 3.1_2 to 3.1_9), which was reverse-coded so that fewer conditions contributed to a higher score. The pathology count was normalized to a 0-2 scale and inverted. The four domains were equally weighted in the final calculation of the QLPI. This decision was made to ensure conceptual and interpretive clarity, ensuring that each domain contributes equally to the overall assessment of the objective quality of life.

A specific variable assessing the primary means of transport for distances of 3 km or more (Question 1.17) was also included in the analysis to examine its relationship with QoL. This variable was coded as follows: 0 = other; 1 = accompanied by friends/relatives; 2 = independent (bicycle, public transport, own car). Additionally, for those who used public transport, an evaluation of public transport quality was collected on a 1-10 scale (Question 1.18).

To assess the criterion validity of the objective QLPI, two single-item measures of subjective QoL were included. Participants were asked to rate their overall quality of life on a scale from 1 (very bad) to 10 (very good) (Question 3.2), and to compare their quality of life to that of their peers on the same 1-10 scale (Question 3.3). These items are commonly used in QoL research and have demonstrated good validity as global indicators of subjective well-being.

3.3 Data analysis

All statistical analyses were performed using STATA with the pandas, numpy, scipy, and scikit-learn libraries. The analysis involved several stages. Descriptive statistics (means, standard deviations, frequencies, and percentages) were calculated to summarize the demographic characteristics of the sample and the distribution of the main study variables, including the overall objective QLPI and its constituent domains. The normality of the QLPI distribution was assessed visually using histograms and quantile-quantile (Q-Q) plots and statistically using skewness and kurtosis. The internal consistency of the newly constructed index and its domains was assessed using Cronbach's alpha. This coefficient measures the extent to which the items in a scale are correlated with one another, and thus whether they measure a familiar underlying construct. An alpha coefficient of .60 to .70 is generally considered acceptable for a broad, multidimensional social science construct, while values above .70 are considered good, and values above .80 are considered excellent. For narrower, more homogeneous scales, higher values are typically expected.

It is also important to recognize that the QLPI is a formative index, in which the indicators are seen as causing or defining the objective quality of life rather than reflecting it. In a formative model, indicators are not expected to be highly correlated with each other; therefore, traditional measures of internal consistency, such as Cronbach's alpha, may be lower than for reflective scales. The primary strength of a formative index lies in its ability to capture the multidimensionality of a complex construct.

A series of inferential statistical tests was conducted to examine group differences in objective QoL. One-way analysis of variance (ANOVA) was used to compare mean QLPI scores across the three regions (Emilia-Romagna, Abruzzo, Puglia) and across different transport autonomy groups (other, accompanied, independent). ANOVA tests the null hypothesis that all group means are equal. A significant F-statistic indicates that at least one group mean differs from the others. Independent samples t-tests were used to assess differences between men and women. The t-test compares the means of two independent groups and tests the null hypothesis that the means are equal. Cohen's d was calculated as a

measure of effect size for t-tests, with values of 0.2, 0.5, and 0.8 typically interpreted as small, medium, and large effects, respectively.

Pearson correlation coefficients (r) were calculated to explore the linear relationships between the continuous objective QLPI score and key variables, including age, number of pathologies, and the two subjective QoL ratings. Pearson's r measures the strength and direction of the linear relationship between two continuous variables, with values ranging from -1 (perfect negative correlation) to +1 (perfect positive correlation). The strength of correlations was interpreted using Cohen's guidelines (1988): small (r = .10), medium (r = .30), or large (r = .50). A correlation matrix was also constructed to examine the intercorrelations among the four QLPI domains and the overall index score. This helps understand the extent to which the domains measure distinct aspects of QoL rather than a single underlying construction. For all inferential tests, a p-value of less than .05 was considered statistically significant. All tests were two-tailed unless otherwise specified.

4. Findings

The demographic characteristics of the sample of 1,631 older adults are summarized in Table 1. The mean age of the participants was 74.8 years (SD = 7.9), with a range from 60 to 99 years. The age distribution showed that the most significant proportion of participants was in the 70-74 age group (28.3%), followed by the 75-79 age group (24.1%). The sample was predominantly female (57.8%, n = 943), with males comprising 42.2% (n = 688). In terms of regional distribution, Puglia had the most significant representation (36.8%, n = 600), followed by Emilia-Romagna (32.5%, n = 531) and Abruzzo (30.7%, n = 500). This distribution reflects the sampling strategy, which aimed to capture diversity across the north, centre, and south of Italy. Regarding marital status, nearly half of the sample was married (49.5%, n = 807), while a significant portion was widowed (35.1%, n = 573). Smaller proportions were separated or divorced (8.3%, n = 135) or had never married (7.1%, n = 116). The high proportion of widowed participants is consistent with the sample's age and reflects women's longer life expectancy. The educational attainment of the sample was varied, with the largest group having completed middle school (37.7%, n = 615), followed by elementary school (27.5%, n = 449). About one-quarter of the sample had completed high school (26.9%, combined across 3-year and 4-5-year programs), and a smaller proportion had university or master's degrees (7.8%, n = 128). This distribution reflects the historical educational opportunities available to this cohort, many of whom would have been of school age in the 1940s-1960s when access to higher education was more limited, particularly in rural areas. The high number of undisclosed data for the independent variable 'Personal income' is consistent with the widespread choice not to disclose one's income level.

Table 1: Demographic Characteristics of the AGE-IT Sample (N = 1,631). Source: *author's own*

Characteristic	Category	N	%
Age	60-69	412	25.3
	70-74	462	28.3
	75-79	393	24.1
	80-84	241	14.8
	85+	122	7.5
Sex	Female	943	57.8
	Male	688	42.2
Region	Emilia-Romagna	531	32.5
	Abruzzo	500	30.7
	Puglia	600	36.8
Marital Status	Married	807	49.5
	Widowed	573	35.1
	Separated/Divorced	135	8.3
	Single	116	7.1
Education	Elementary	449	27.5
	Middle school	615	37.7
	High school (3 years)	150	9.2
	High school (4-5 years)	289	17.7
	University/Master	128	7.8

Monthly Income	None	161	9.9
	€500-1000	548	33.6
	€1000-2000	612	37.5
	€2000-5000	136	8.3
	>€5000	13	0.8
	Not disclosed	161	9.9

4.1 Psychometric Properties of the Objective QLPI

The objective QLPI ('qualogg6n') demonstrated a roughly normal distribution, with a mean score of 6.53 (SD = 1.50) on a 0-10 scale, as shown in Figure 1. The scores ranged from 1.28 to 10.36, indicating a broad spectrum of objective living conditions within the sample. The distribution had a slight negative skew (-0.49), suggesting a small clustering of scores at the higher end of the scale, and a kurtosis of -0.21, indicating a distribution slightly flatter than a normal distribution. These values are within acceptable ranges for parametric statistical analyses.

When the QLPI was categorized into three levels (Low: 0-3.33, Medium: 3.34-6.67, High: 6.68-10), the distribution showed that only 2.7% (n = 44) of participants fell into the Low category, 47.2% (n = 769) were in the Medium category, and 50.0% (n = 815) were in the High category (3 cases had missing data). This suggests that most of the sample had moderate to high objective quality of life, with very few experiencing severely poor conditions. Figure 1 provides a visual representation of the index's distribution, showing both a histogram with overlaid mean and median lines and boxplots by QoL category. The left panel shows a histogram with the mean (red dashed line) and median (orange dashed line). The right panel shows boxplots for each QoL category (Low, Medium, High).

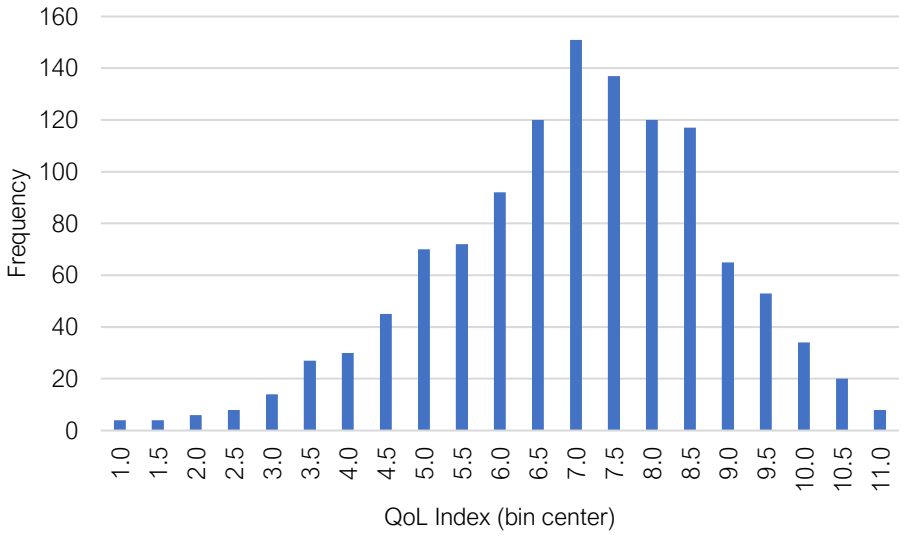

Figure 1: Distribution of the Objective Quality of Life Index (QLPI). Source: *author's own*

4.2 Reliability and consistency

The internal consistency of the overall 14-item index was acceptable for a broad multidimensional construct, with a Cronbach's alpha of .66. This value is consistent with the expectations for an index composed of heterogeneous items measuring different aspects of objective life conditions. It suggests that the items are sufficiently correlated to measure a familiar underlying construct (objective QoL), while also retaining sufficient independence to capture distinct dimensions.

The reliability of the individual domains varied, as expected for short, heterogeneous indicator sets. The Economic/Resources domain had the highest reliability (α = .59), followed by the Social-Cultural Participation domain (α = .44) and the Services & Information Access domain (α = .43). The Autonomy/Mobility domain had a lower alpha (α = .26), which is not

surprising given it combines only two items measuring distinct but related concepts (functional autonomy and walking frequency).

These results, summarized in Table 2, support using the overall index as a continuous predictor in statistical analyses, with the domains useful for interpreting which dimensions are driving the observed associations. The modest reliability of some domains is not uncommon in composite indices that use formative rather than reflective indicators, that is, where the items are seen as defining or causing the construct rather than reflecting it.

Table 2: Internal Consistency of the Objective QLPI and its Domains. Source: *author's own*

Scale	Cronbach's Alpha	N of Items	Interpretation
Overall QLPI	.66	14	Acceptable
Economic/Resources	.59	3	Modest
Autonomy/Mobility	.26	2	Low
Social-Cultural Participation	.44	3	Modest
Services & Information Access	.43	5	Modest

4.3 Descriptive statistics

Table 3 presents the descriptive statistics for each of the four domains of the objective QLPI. The Autonomy/Mobility domain had the highest mean score (M = 9.39, SD = 1.42), indicating that most participants maintained a high level of functional independence. The Economic/Resources domain had a mean of 6.71 (SD = 2.80), the Services & Information Access domain had a mean of 6.42 (SD = 1.86), and the Social-Cultural Participation domain had the lowest mean score (M = 5.88, SD = 2.72). This suggests that, while most older adults in the sample were functionally independent, there was greater variability and lower average scores in social participation and service access.

Table 3: Descriptive Statistics for QLPI Domains (N = 1,631). Source: *author's own*

Domain	N	Mean	SD	Median	Min	Max
Economic/Resources	1,470	6.71	2.80	6.67	0.00	13.33
Autonomy/Mobility	1,631	9.39	1.42	10.00	0.00	10.00
Social-Cultural Participation	1,631	5.88	2.72	6.67	0.00	10.00
Services & Information Access	974	6.42	1.86	7.00	0.00	10.00

*Note. The varying N values reflect missing data for some items within each domain.

Figure 2 provides a visual representation of the mean domain scores with standard deviation error bars, illustrating the relative strengths and weaknesses across the four domains. Higher scores indicate better objective conditions in each domain.

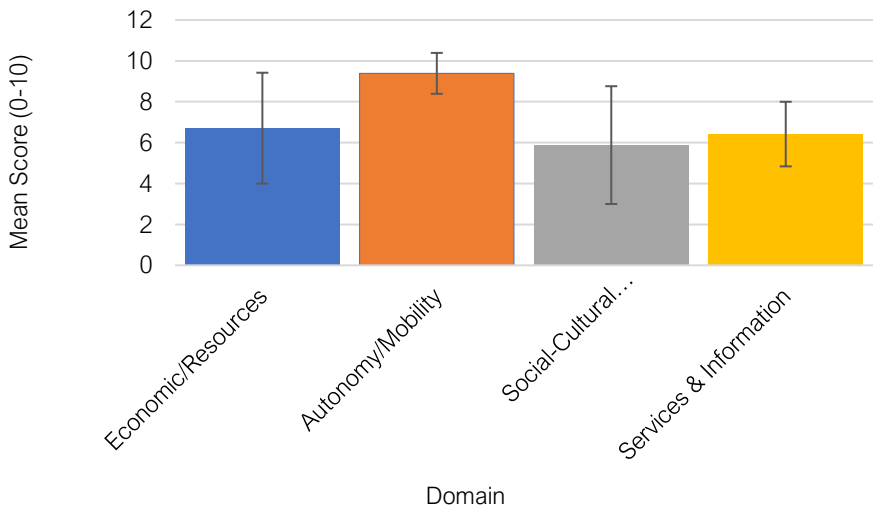

Figure 2: Mean scores by Domain. Source: *author's own*

4.4 Group Differences in Objective Quality of Life

Significant differences in objective QoL were observed across regions, between sexes, and by age. A one-way ANOVA revealed a statistically significant difference in mean QLPI scores between the three regions, $F(2, 1628) = 20.52$, $p < .001$, $\eta^2 = .025$ (small effect size). The descriptive statistics show that Emilia-Romagna had the highest mean QoL score (M = 6.85, SD = 1.42), followed by Abruzzo (M = 6.46, SD = 1.49) and Puglia (M = 6.29, SD = 1.53). This suggests a north-south gradient in objective living conditions, with the northern region showing the best conditions and the southern region showing the poorest. Table 4 presents the mean domain scores by region, revealing that the regional differences were not uniform across all domains. Emilia-Romagna had the highest scores in all domains except Autonomy/Mobility, where Abruzzo had a slightly higher mean. The most significant regional differences were observed in the Services & Information Access domain, where Emilia-Romagna scored substantially higher (M = 7.07) than Puglia (M = 5.96).

Table 4: Mean Domain Scores by Region. Source: *author's own*

Domain	Emilia-Romagna M (SD)	Abruzzo M (SD)	Puglia M (SD)
Economic/Resources	6.91 (2.77)	6.63 (2.88)	6.59 (2.77)
Autonomy/Mobility	9.47 (1.37)	9.42 (1.42)	9.28 (1.46)
Social-Cultural	6.17 (2.66)	5.76 (2.76)	5.73 (2.73)
Services & Information	7.07 (1.74)	6.22 (1.91)	5.96 (1.88)
Overall QLPI	**6.85 (1.42)**	**6.46 (1.49)**	**6.29 (1.53)**

One of the most intriguing findings of this study is that women reported a significantly higher objective quality of life than men. This is a surprising result, as it contrasts with much of the existing gerontological literature, which often reports that women experience a lower quality of life, particularly in later years. While our data suggests this difference is driven in part by a notable advantage for women in the Economic/Resources domain, this finding warrants a circumspect interpretation.

Several factors could contribute to this unexpected result. It may be influenced by cohort effects specific to this generation of older Italians. For example, pension and inheritance laws in Italy may have created a situation where women in this cohort have greater financial security than their male counterparts, particularly in widowhood. Furthermore, there may be contextual considerations related to the social and cultural landscape of the specific Italian regions studied. The higher objective QoL for women could also reflect their social networks and engagement in community life, which, although not fully captured in the economic domain, may contribute to a more robust perception of their objective circumstances. It is also possible that men and women perceive and report their objective conditions differently. Future research should explore these gender disparities in more detail, using qualitative methods to understand the lived experiences behind these quantitative findings.

An examination of the domain scores revealed that women consistently scored higher across all four domains, with the most significant difference observed in the Economic/Resources domain (Women: M = 7.84; Men: M = 5.85). This suggests that the economic security of women in this sample was substantially better than that of men, which may reflect pension systems, inheritance patterns, or other factors specific to this cohort and context. Table 5 presents the mean domain scores by sex. The variable 'Economic / Resources' refers to the objectively declared amount of personal income, not to the subjective assessment of whether income is sufficient to meet one's needs.

Table 5: Mean Domain Scores by Sex. Source: *author's own*

Domain	Male M (SD)	Female M (SD)	t	p	Cohen's d
Economic/Resources	5.85 (2.74)	7.84 (2.50)	-13.92	<.001	-0.75
Autonomy/Mobility	9.35 (1.50)	9.44 (1.29)	-1.26	.209	-0.06
Social-Cultural	5.75 (2.71)	6.07 (2.72)	-2.26	.024	-0.12
Services & Information	6.19 (1.92)	6.68 (1.75)	-4.53	<.001	-0.27
Overall QLPI	**6.17 (1.49)**	**7.02 (1.37)**	**-11.85**	**<.001**	**-0.59**

4.5 Correlates of Objective Quality of Life

As shown in Table 6, age was negatively correlated with objective QoL, with a weak-to-moderate association (r(1629) = -0.29, p < .001). This indicates that, on average, objective living conditions tend to decline with advancing age. When participants were grouped by age, an apparent decline was observed: the 60-69 age group had the highest mean QoL (M = 7.12), while the 85+ age group had the lowest (M = 5.83). The number of chronic health conditions (pathologies) also showed a significant negative correlation with the QLPI, r(1631) = -0.29, *p < .001*, highlighting the strong link between health and objective well-being. Participants with no chronic conditions had a mean QoL of 7.23, while those with 5 or more conditions had a mean of 5.64. Table 6 presents the correlations between age, health, and the QLPI domains, showing that age was most strongly correlated with the Autonomy/Mobility domain (r = -0.30), while pathologies were most strongly correlated with the overall QLPI (r = -0.29).

Table 6: Correlations Between Age, Pathologies, and QLPI Domains. Source: *author's own*

Variable	Economic	Autonomy	Social-Cultural	Services	Overall QLPI
Age	-0.05	-0.30***	-0.23***	-0.11***	-0.29***
Pathologies	-0.14***	-0.24***	-0.18***	-0.15***	-0.29***

Note: *** p < .001

The means of transport used for longer distances was significantly associated with objective QoL. A one-way ANOVA showed a significant difference between groups based on their level of transport autonomy, F(2, 1628) = 143.53, p < .001, η^2 = .150 (large effect size). Those who were independent in their transport (using a bicycle, public transport, or their own car) had the highest mean QoL score (M = 6.84, SD = 1.32, n = 1,255), followed by those who relied on others to accompany them (M = 5.37, SD = 1.55, n = 311), and those who used other means (M = 6.06, SD = 1.69, n = 65). This finding underscores the critical role of mobility in maintaining a high quality of life in old age. The effect size (η^2 = .150) indicates that transport autonomy accounts for 15% of the variance in objective QoL, making it one of the strongest predictors examined in this study.

For those who used public transport, the mean evaluation of public transport quality was 5.81 (SD = 2.63) on a 1-10 scale, suggesting moderate satisfaction with public transport services. Table 7 presents the mean QoL scores by transport autonomy level.

Table 7: Mean Objective QoL Scores by Transport Autonomy Level. Source: *author's own*

Transport Level	N	Mean	SD	95% CI
Other	65	6.06	1.69	[5.64, 6.48]
Accompanied	311	5.37	1.55	[5.20, 5.55]
Independent	1,255	6.84	1.32	[6.77, 6.91]

4.6 Subjective vs. Objective QoL

The objective QLPI showed statistically significant positive correlations with subjective QoL measures. The correlation with self-rated overall QoL was r(1631) = .30, p < .001, and the correlation with QoL compared to peers was r(1631) = .33, p < .001. These moderate correlations provide evidence for the criterion validity of the objective index, confirming that better objective conditions are associated with higher subjective well-being and indicating that the two constructs are distinct and capture different aspects of an individual's life. Figures 3 and 4 illustrate these relationships. As expected, the scatter plots show positive correlations between objective QLPI and subjective QoL ratings. It should be noted that, with reference to the objective quality of life, objective data relating to the timeframes and modes of access to services and to the entire system of proximity were collected first, followed by a subjective assessment of the level of quality of life experienced. Therefore, the data do not constitute duplication but rather capture different aspects of quality of life in line with the theoretical premise of the Capability Approach.

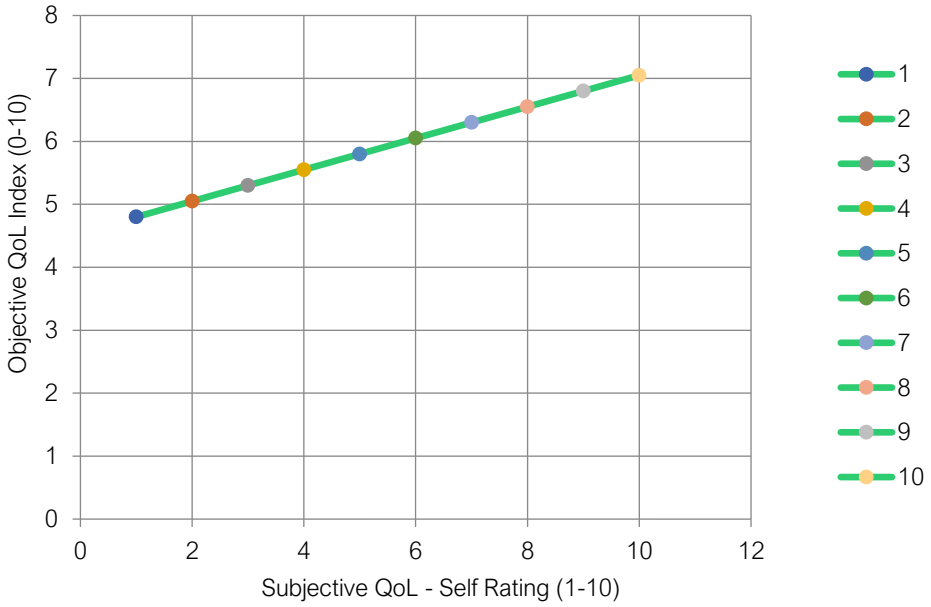

Figure 3: A comparison of subjective and objective QoL ratings, based upon subjective self-ratings.
Source: *author's own*

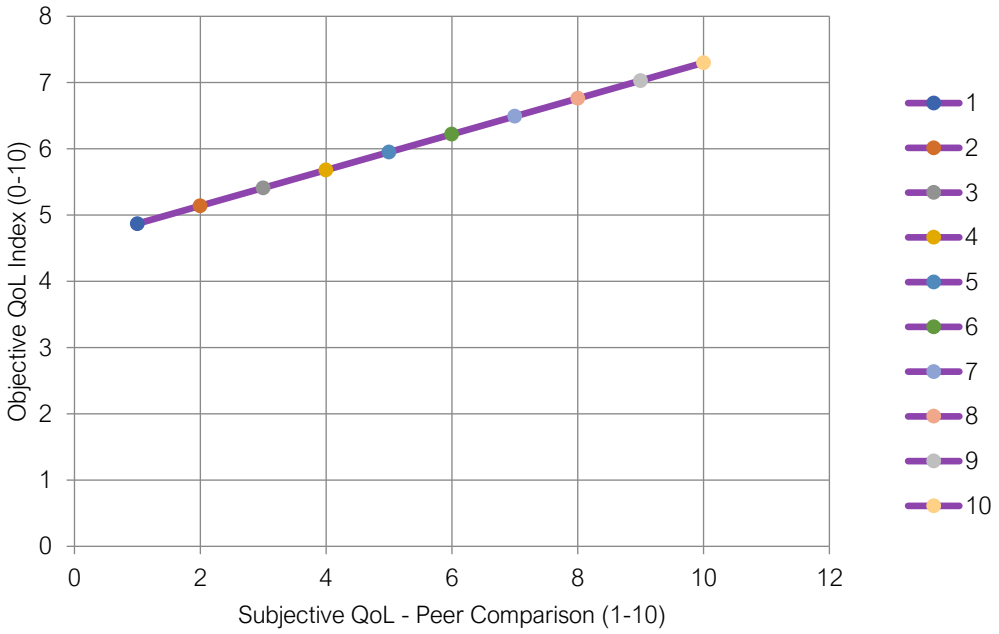

Figure 4: A comparison of subjective and objective QoL ratings, based upon subjective peer ratings.
Source: *author's own*

4.7 Inter-Domain Correlations

Finally, a correlation matrix of the four domains and the overall QLPI (Table 8) revealed that all domains were positively correlated with each other and with the total score. The Services & Information Access domain had the strongest correlation with the overall index (r = .73), followed by the Social-Cultural Participation domain (r = .68) and the Economic/Resources domain (r = .64). The Autonomy/Mobility domain had the weakest, though still significant, correlation with the overall score (r = .36). This pattern suggests that while all domains contribute to the overall picture of objective QoL, access to services and social engagement are particularly strong components. The relatively lower correlation in the

Autonomy domain may reflect the fact that most participants in this community-dwelling sample had high levels of functional independence, leading to less variability in this domain.

Table 8: Correlation Matrix: QLPI Domains and Overall Index. Source: *author's own*

	Economic	Autonomy	Social-Cultural	Services	Overall
Economic	1.00				
Autonomy	0.07	1.00			
Social-Cultural	0.19	0.20	1.00		
Services	0.27	0.26	0.25	1.00	
Overall QLPI	0.64	0.36	0.68	0.73	1.00

Note. All correlations are significant at $p < .001$.

5. Discussion

This study detailed the development and initial validation of the objective component of the Quality-of-Life Perception Index (QLPI), a new multidimensional tool for assessing the well-being of older Italians. The findings provide a nuanced picture of objective QoL in this population, highlighting significant variations based on geography, gender, age, and mobility. This discussion will analyse these findings in the context of the existing literature, consider the study's limitations, and explore the implications for policy and future research.

5.1 Psychometric Properties and Validity

The overall objective QLPI demonstrated acceptable reliability (Cronbach's $\alpha = .66$), a value consistent with the expectations for a broad, multidimensional index composed of heterogeneous items. This level of internal consistency is comparable to other composite indices in social science research and suggests that the QLPI successfully captures a coherent underlying construct of objective living conditions. The moderate, positive correlations between the objective QLPI, for which, as noted, objective data were collected from the perspective of the subjects themselves, and subjective QoL ratings ($r \approx .30$-$.33$) provide essential evidence for the index's criterion validity. This finding aligns with established research on the objective-subjective axis of QoL, which posits that while the two are related, they are distinct constructs. As noted by Iwarsson (1997), the objective-subjective axis is one of the least understood aspects of quality of life, particularly in older populations. Our results confirm that better objective conditions do not guarantee higher subjective well-being, but they are a significant contributing factor. The moderate strength of the correlations suggests that subjective QoL is influenced by many factors beyond objective conditions, including personality, expectations, adaptation, and social comparison processes. It is true that perceived quality of life is influenced by personality, expectations, and processes of relative deprivation; however, as clearly emerged from the survey conducted, a significant weight must be attributed to contextual factors.

The varying reliability of the individual domains (.26 to .59) is not unexpected for short, indicator-based subscales. The Economic/Resources domain showed the highest reliability ($\alpha = .59$), likely because the three items (income level, income adequacy, and family support) are all closely related to financial security. The lower reliability of the Autonomy/Mobility domain ($\alpha = .26$) reflects the fact that it combines only two items measuring distinct aspects of independence. Future refinements of the QLPI could consider adding more items to this domain to improve its reliability, though this must be balanced against the burden on respondents.

5.2 Regional Disparities: The North-South Divide

One of the most striking findings is the significant regional disparity in objective QoL, with a transparent north-south gradient. Participants in Emilia-Romagna reported the highest QoL, while those in Puglia reported the lowest. This finding is consistent with long-standing research on socioeconomic divides in Italy. It supports the work of Marcellini et al. (2007), who documented significant urban-rural and regional differences in the living conditions of older Italians.

The higher QoL in the north may reflect several factors. Emilia-Romagna is one of Italy's wealthiest regions, with a strong economy, low unemployment, and well-developed social services. The region has historically invested heavily in healthcare and social welfare, and it has a reputation for efficient public administration. In contrast, Puglia, while rich in cultural heritage, has historically faced economic challenges, higher unemployment, and less developed infrastructure. These structural differences are reflected in the domain scores, particularly in the Services & Information Access domain, where Emilia-Romagna scored substantially higher than Puglia.

These findings underscore the importance of place as a key determinant of the aging experience. It therefore appears necessary for urban welfare policies to be tailored to socio-territorial specificities, and this highlights the importance of research that provides a database to inform policy choices. They suggest that policies aimed at improving the QoL of older adults must be sensitive to regional contexts and may need to be tailored to address specific local challenges. For example, in southern regions, investments in infrastructure, public transport, and social services may be significant for improving the objective QoL of older adults. The regional disparities also validate the AGE-IT study's multi-region design. A study conducted in only one region would have missed this critical source of variation and would have provided a less complete picture of the aging experience in Italy.

5.3 Age, Health, and the Decline of QoL

The study confirmed the expected negative correlations between objective QoL and both advancing age and the number of chronic health conditions. This is a robust finding in gerontological research, as declining health and functional capacity are significant challenges in later life. The moderate strength of these correlations ($r \approx -0.29$) suggests that while age and health are essential, they are not the sole determinants of objective QoL.

The age-related decline in QoL was most pronounced in the Autonomy/Mobility domain ($r = -0.30$), consistent with well-documented age-related declines in physical function. However, the moderate correlation suggests that many older adults maintain good functional independence even in advanced age. This is encouraging and suggests that interventions to promote healthy aging and prevent disability can have a meaningful impact on QoL.

The correlation between pathologies and QoL highlights the importance of chronic disease management in maintaining well-being in old age. Participants with multiple chronic conditions had substantially lower QoL scores, particularly in the Autonomy domain. This suggests that healthcare interventions that effectively manage chronic diseases and prevent disability could have significant benefits for overall QoL. Given the correlation between chronic illnesses and low levels of quality of life, a set of actions aimed at preventing disability is essential. Therefore, an age-friendly city is not only one that creates friendly conditions for older people, but one that establishes both specific and non-specific conditions that accompany, well before the ageing process itself, the development of a high-quality urban life, offering elements of 'resilience' against disability and functional decline. This shows that engaging with the ageing process primarily requires a rethinking of the theoretical categories through which it is approached, to derive new perspectives and socio-political actions that differ from those of the past.

Interestingly, the correlation between age and the Economic domain was very weak ($r = -0.05$), suggesting that economic conditions do not necessarily decline with age in this sample. Despite this evidence, the importance of policies that compensate for individuals' resources, including economic ones, clearly emerges. This may reflect the stability of pension income in Italy, which provides a relatively secure financial foundation for many older adults. Moreover, it should be recalled that data on income and economic resources collected through respondents' self-reports are among the most unreliable, as they are subject to concealment or, conversely, to inflated reporting to avoid the shame associated with very low incomes.

5.4 Transport and Mobility: A Critical Enabler

Perhaps the most policy-relevant finding is the strong association between transport autonomy and objective QoL. Participants who were independent in their mobility had substantially higher QoL scores than those who relied on others. The effect size ($\eta^2 = .150$) indicates that

transport autonomy accounts for 15% of the variance in objective QoL, making it one of the strongest predictors examined in this study. This finding powerfully validates the inclusion of a transport variable in the QLPI. It aligns with a growing body of literature emphasizing that mobility is a critical enabler of independence, social participation, and access to services in old age. As Abdul Latiff and Mohd (2023) noted, transportation mobility is essential for life satisfaction, as it promotes independence, good health, quality of life, well-being, and social integration among older adults.

The organization of public space, as well as the adequacy and availability of infrastructure and the quality of the urban mobility system, ensuring access to services and opportunities even beyond the immediate local area, are decisive in shaping quality of life and social relationships. As in reinforcing the sense of community among different categories of citizens, particularly those who are socially fragile and vulnerable, such as older people (Hemerijck, 2002; Esping-Andersen, 2000a, 2000b; Pavolini, 2001, 2004; Zajczyk, 2018).

From this perspective, space and the forms of the urban habitat (Carrera, 2020, 2022) can represent a key element, a strategic lever for counteracting the risks of isolation and their repercussions on well-being and quality of life. With regard to public space, drawing on a neo-conflictual and neo-materialist perspective such as that advanced by Harvey (2012) in relation to the right to the city, the quality and material characteristics of urban space can significantly influence patterns of use and the concrete opportunities available to individuals, particularly those who depend more heavily on the characteristics of their urban environment, and especially on their 'system of proximity' (Carrera, 2025b; 2025c). This refers to the network of services located in the area closest to where individuals reside, an empirical articulation of the concept of the 15-minute city (Moreno, 2020), materialized through territorial primary care centres and socio-health facilities, neighbourhood shops, equipped and infrastructure public spaces, an accessible and sustainable mobility system, and the presence of places such as libraries, cinemas, theatres, and museums. This constitutes a system of places and opportunities available to older people that can help ensure high levels of well-being and present themselves as viable daily choices. In other words, this approach seeks to move beyond the risk of conceiving active ageing solely in performative or achievement-oriented terms to which individuals are expected to conform, and instead to redefine it as a continuous possibility for self-determination and choice.

The finding has direct implications for urban planning, public health, and social policy. Investments in accessible public transport, age-friendly infrastructure, and alternative transportation options for older adults who can no longer drive could have a tangible impact on their well-being. The moderate satisfaction with public transport services (M = 5.81 on a 1-10 scale) suggests room for improvement.

In the Italian context, where many older adults live in areas with limited public transport, and where car ownership and driving ability may decline with age, addressing mobility challenges is particularly important (Venezia, 2025). Policies could include a)improving the frequency, accessibility, and affordability of public transport in areas with high concentrations of older adults; b) developing community transport services or volunteer driver programs; c) designing age-friendly urban environments that are walkable and safe for older adults; d) providing subsidies or support for older adults to maintain their own vehicles or access alternative transport options

The strong relationship between transport autonomy and QoL also suggests that a loss of driving ability or transport access could be a critical event that triggers a decline in overall well-being. Healthcare providers and social workers should be aware of this and incorporate mobility assessments and interventions into comprehensive care for older adults.

6. Implications for Policy and Practice

The findings of this study have several important implications for policy and practice. Policies and programs aimed at improving the QoL of older adults should be sensitive to regional contexts. Southern regions may require additional investments in socio-healthcare infrastructures, services, and economic support to achieve the objective conditions for older adults comparable to those in the north.

The strong relationship between transport autonomy, and specifically walkability, and QoL highlights the need for policies that support mobility in older age. This includes investments in

public transport, age-friendly urban design, and alternative transportation options, and investment in infrastructural conditions for pedestrian mobility. The negative correlation between pathologies and QoL underscores the importance of effective chronic disease management and preventive healthcare for maintaining well-being in old age. It is essential to reiterate that policies should be designed to create conditions that are not only age-friendly but people-friendly, in order to counteract the decline of functional abilities, starting from the planning of urban environments that support quality of life across the entire life course.

The QLPI provides a comprehensive, multidimensional assessment of objective QoL that can be used by researchers, policymakers, and practitioners to identify vulnerable populations, monitor trends over time, and evaluate the effectiveness of interventions. As the data show and as confirmed by this survey, women live longer but also experience more years with disability and, for this reason as well, report a lower average level of quality of life. This implies the need to support the conditions that can enhance women's quality of life by intervening in those factors that have a greater specific weight in generating outcomes, such as educational attainment, levels of economic resources, conditions enabling labour market participation (or, conversely, situations of isolation), the quality of socio-territorial services and the system of proximity, and the overall quality of the local territory.

7. Conclusion

In conclusion, this study underscores the importance of moving beyond purely objective metrics toward an understanding of quality of life that reflects individuals' lived experiences. Consistent with the capability approach, well-being emerges not from the formal presence of resources but from people's practical ability to transform them into meaningful outcomes. By incorporating subjective evaluations, the proposed index captures the diverse social and personal conditions that mediate access, including invisible constraints that standard indicators tend to overlook. This perspective reveals gaps between institutional provision and effective use, while recognizing variability in needs, preferences, and adaptive capacities. As a result, perception-informed measurement provides a more nuanced account of opportunity structures and offers a stronger empirical basis for policies aimed at reducing inequalities and expanding real freedoms. Urban space is thus confirmed as a social product: the outcome of decisions, policies, and public choices that can either strengthen or undermine accessibility, quality, and inclusiveness for its inhabitants (Lefebvre, 1974). This study makes a significant contribution to the field of gerontology by introducing and providing an initial validation of the objective component of the Quality-of-Life Perception Index (QLPI). The QLPI is a promising new tool that captures the multidimensional nature of objective well-being among the older in Italy, including variables related to everyday urban space, with particular attention to those attributable to the system of proximity (Carrera, 2025b; 2025c). Based on data from 1,631 participants across three diverse regions, the index demonstrated acceptable reliability and validity and revealed essential patterns of variation in QoL.

The findings confirm the importance of regional context, mobility and territorial quality as key determinants of QoL in later life. The transparent north-south gradient in objective QoL highlights the persistent regional inequalities in Italy and underscores the need for geographically targeted policies. Perhaps most importantly, the study demonstrates that transport autonomy, interpreted in a comprehensive sense, is a critical enabler of high QoL in older age, accounting for 15% of the variance in the objective index. This finding has direct, actionable implications for policy, suggesting that investments in accessible transportation and age-friendly infrastructure can meaningfully improve the well-being of older adults. Health and levels of autonomy may seem self-evident factors, but it is important to emphasize that, given their significant weight, a city is truly age-friendly not if it focuses on its older residents only once they have already entered old age, but if it addresses their needs in earlier phases of life, so that the threshold of 65 years and subsequent ages are faced in the best possible physical, psychological, and social conditions. Such a city therefore invests in the quality of the system of proximity within a framework of territorial democracy and social justice. It is a city that counters the risks of relational poverty and the condition of NEAR (Not Extra-domestic Activities and Relations) (Carrera, 2025b), to which older people, and women in particular, are more exposed, by supporting, both directly and indirectly, through specific and non-specific measures, the conditions that enable their engagement with the territory. This is

achieved through investment in walkability, third places, accessible and adequately infrastructure public spaces, and private spaces rethought in innovative ways (Carrera, 2022; 2026). Finally, it is a city that involves older people in participatory design processes of urban space, embracing and giving form to De Carlo's (2005) call to move beyond the model of 'designing for' toward 'designing with' ones, starting from the recognition of older people's full competence to articulate their own needs and to bring them to the tables of urban planning and design (Carrera, 2025a).

The QLPI represents a significant step forward in the comprehensive assessment of quality of life in older adults. By integrating multiple domains of objective living conditions, such as economic security, autonomy, social participation, and access to services and cultural opportunities in public spaces, the index provides a holistic picture of well-being that goes beyond traditional health-focused measures. The next stage of this research will integrate the subjective dimension, enabling a more complete understanding of the aging experience.

Ultimately, the goal of this work is to provide a robust, evidence-based tool for researchers, policymakers, and practitioners to better understand and improve the quality of life of older adults. This study has several notable strengths. First, it is based on a large sample (N = 1,631) of community-dwelling older adults from three diverse regions of Italy, providing a rich and varied dataset. Second, the QLPI is grounded in a comprehensive theoretical framework and draws on established research on QoL in older adults. Third, the index includes urban, material, and immaterial variables, which are critical determinants of QoL. Fourth, the study provides a thorough psychometric evaluation of the index, including reliability and validity analyses.

However, several limitations should also be acknowledged. The study is cross-sectional, which prevents the establishment of causal relationships. We cannot determine whether poor objective conditions cause lower subjective well-being, or whether other factors influence both. Longitudinal data would be needed to track changes in QoL over time and to better understand the causal pathways between different factors. The sample was not strictly representative of the Italian older population. Participants were recruited through community centres, senior clubs, and healthcare facilities, which may have resulted in a sample that is more socially engaged and healthier than the general population of older adults. This limits the generalizability of the findings. However, the inclusion of three diverse regions provides a valuable snapshot of different aging contexts within the country. The reliability of some of the QLPI domains was modest (α = .26 to .59). While this is common for short, indicator-based subscales, future work could aim to refine these domains by adding or revising items to improve their internal consistency. This must be balanced against the burden on respondents and the desire to keep the instrument relatively brief. All data were collected through self-report, which is subject to various biases, including social desirability bias and recall bias. For some variables (e.g., income, health conditions), objective verification would strengthen the validity of the findings. Finally, there was some missing data, particularly for the income and services domains. While the amount of missing data was generally less than 15% and was addressed using available case analysis, this could introduce bias if the data are not missing at random.

The study also provides indications for future research that can support the deeply interconnected objectives of defining new theoretical categories to analyse and understand the emerging quantitative and qualitative forms of the ageing process, investigating the conditions required to ensure high levels of quality of life for older people, and, consequently, defining the content of socio-territorial policies suited to the profound transformations currently underway. The next stage of this research will integrate the subjective component of the QLPI, allowing for a more complete understanding of how objective life conditions are translated into subjective well-being. Longitudinal research is needed to track changes in QoL over time, identify critical life events that trigger declines in well-being, and establish causal relationships between different factors. The QLPI should be validated in different populations and cultural contexts to assess its generalizability and cultural sensitivity. The QLPI could be used as an outcome measure in intervention studies aimed at improving the QoL of older adults, such as programs to enhance mobility, social participation, or access to services. Further research is needed to understand why women in this sample had higher objective QoL than men. This could include a qualitative study to explore the lived experiences of older men and women, as well as more detailed quantitative analyses of the factors contributing to gender differences.

Future work could also refine the individual domains of the QLPI by adding or revising items to improve their reliability and validity.

Regarding the observed gender differences, particularly the higher QLPI values reported by women, several necessary cautions must be noted. These findings may be influenced by potential cohort effects and by the sample's statistically significant yet not fully representative nature. Moreover, both the research design and the constructed index explicitly refer to the Italian cultural context, which, although articulated across three distinct territorial settings, is characterized by specific social and cultural features. This contextual embeddedness represents a limitation of the present study. However, this constraint will be addressed through the planned extension of the index to other countries, enabling both comparative analyses and a more robust assessment of the QLPI's validity and effectiveness across different socio-cultural environments.

As Italy and other countries continue to age, tools like the new and adequate QLPI will be essential for monitoring the well-being of older populations, identifying areas of need, and evaluating the effectiveness of policies and programs designed to promote healthy, active, and fulfilling aging.

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