

Population ageing in European cities: policy challenge and opportunity

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Abstract

In 2018, 101.1 million of EU citizens were over 65, nearly 20% of the total population, which will become 28.5% in 2050. Ageing population poses challenges not only for welfare systems sustainability, but also in terms of suitability of goods and services that should be adapted to the needs of older people, the so-called Silver Economy. In this paper, using representative microdata for 83 European cities, we assess their suitability for the elderly and which of the factors identified by the mainstream literature contribute more to it. To achieve this aim, on the subset of over 65, we build a dichotomous dependent variable identifying if a city is (or is not) a good place to live for elderly people, and a set of covariates falling into the following macro areas: i) development of an age-friendly built environment; ii) knowledge for an active and healthy lifestyle; iii) integrated care services and improved connectivity; iv) olderpreneurship. We assess the relative contribution of each regressor to the explained variance. Our results have several policy implications. First, ranking cities according to their suitability to old people's wellbeing is important to identify relevant patterns in Europe. Second, the recognition of the relative importance of each regressor, together with its significance and sign, provides a powerful tool to assess each the macro area of intervention, and its components, directing policymakers to adopt the right measures according to local needs.

Keywords: Cities, the elderly, Europe, wellbeing

JEL Codes: R50, R28, R13

1. Introduction

The phenomenon of ageing population, resulting from the reduction of birth rates and the lengthening of life expectancy, has been pinpointed as a major concern for several developed countries as it embeds economic, budgetary and social challenges (Kurek & Rachwal, 2011). Indeed, the ageing issue is expected to impact the sustainability of national budgets for age-related spending, in particular healthcare and public pensions. Several institutional bodies like the World Health Organization, the United Nations and the European Commission are recognizing the urgency to design policies aimed at addressing the issue of ageing and turning it into an opportunity for spreading innovation and to develop new businesses, related to the availability of goods, services and healthcare solutions (EC, 2018). New approaches towards the issue of population ageing highlight the need to assess living conditions, productivity, participation in society, social protection and health care solutions (UN, 2019). The set of economic chances, in both public and private sectors, that relate to the sum of economic activities serving the needs of people aged 50 and over¹ has been denominated by the European Union as *silver economy*. The latter is acknowledged to play a major role in the European Union, as the value of its economic activities and spending is expected to reach, by 2025, 31.5% of EU GDP, equal to €6.4 trillion (D'Ambrogio, 2020).

In the European context, the proportion of the population aged 65 and over is increasing in every Member State of the Union, the European Free Trade Association (EFTA) and candidate countries.² However, the size of this demographic phenomenon significantly varies across countries.³ As shown by Figure 1, in 2019 we find the highest shares of elderly population aged 65 or older in Italy (22.8%) followed by Greece (22%), Portugal and Finland (both 21.8%). Conversely, Ireland and Luxembourg have a relatively lower proportion of 65+, respectively equal to 14.1% and 14.4%.

¹ Although the definition of Silver Economy provided by Oxford Economics refers to people aged 50 and over, given the heterogeneity and differences of needs and consumption patterns between older people working and retired seniors, in our analysis, we refer to those aged above 65, named as the “silver generation”, that totally or partially cease to work.

² Population structure and ageing - Statistics Explained (europa.eu) (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_structure_and_ageing#The_share_of_elderly_people_continues_to_increase, Accessed 30/01/2022).

³ European Central Bank Economic Bulletin Issue 2, 2018 (europa.eu) (<https://www.ecb.europa.eu/pub/economic-bulletin/html/eb201802.en.html>, Accessed 30/01/2022).

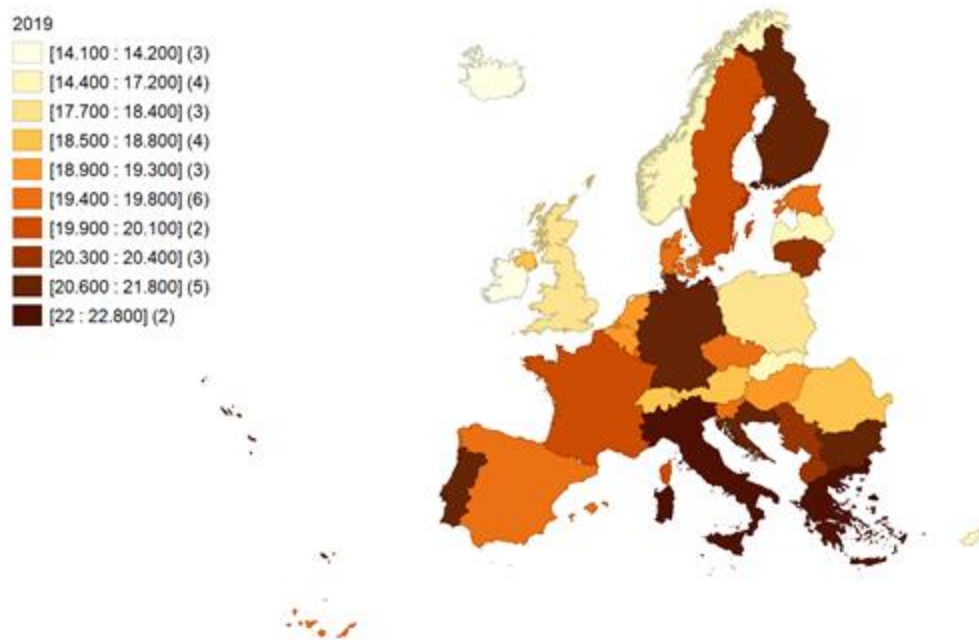


Figure 1: Share of people aged 65 years old or over in 2019. Elaborated by the author.

Source: Eurostat (online data code: demo_pjanind)

From a policy point of view, the great heterogeneity among European countries concerning retirement schemes, pensions, labour markets and the performance of health-care national systems and authorities managing them poses a challenge in addressing systematically the ageing phenomenon.

Within this context, the analysis in this article focuses on the implications of ageing for European cities, as they host around 40% of the EU population (Eurostat, 2015) and are drivers of economic and social development (UN-Habitat, 2015). Urban centres foster both positive and negative externalities due to their ability to generate more wealth, higher productivity, better quality of life and opportunities, while at the same time they are faced with serious issues concerning inequality, migration, safety and social cohesion (Kourtit and Nijkamp, 2015; Adhikari, 2016). Thus, they represent a hub in the search for novel solutions to face challenges and opportunities related to ageing population, since the latter “places increased demand on healthcare, recreation, transportation and other facilities for the elderly” (UN-Habitat, 2016:10). As a consequence, governments have the difficult task of satisfying an increased demand for safety nets, health protection and assistance, which require the management and organisation of service providers, carers and all employees involved in the sectors under the umbrella of the silver economy. Because city governments are closer to their citizens (Beshi

and Kaur, 2020), they have the opportunity to leverage at best their assets (buildings, land, parks) and shape them in relation to the needs of several interest groups. Moving from the general to the specific frame of reference, our study aims to identify the factors that affect the perception of senior European citizens of living in an age-friendly city and how much each of these factors weighs in the overall assessment of inclusiveness. The analysis is based on a representative survey carried out in 83 cities located in 38 European countries in 2019, by the European Commission. This paper develops a framework to evaluate the effects of items pertaining to metropolitan areas on their suitability for the elderly, leaving space for discussion regarding the Covid-19 pandemic developments. The results could guide policymakers on taking actions to shape existing urban environments and welfare programs, enhancing living standards for this particular population group.

The rest of the paper is structured as follows: section 2 reviews the relevant literature, section 3 describes the data and presents the methodology. In section 4 results are shown and section 5 discusses the main findings; finally, the last section concludes.

2. Understanding the Silver Economy in the European context

The dependent variable that works as a proxy for the subjective assessment of urban liveability, by our sample of citizens aged 65 years and over, is embedded in the agreement with the statement “The city where I live is a good place for elderly people”, retrieved from the Master Questionnaire of the Perception Survey on the Quality of Life in European Cities (see Appendix A). In fact, asking whether elderly citizens agree to the fact that the city they live in is inclusive can provide a picture of the cities suitability for this specific age group. Foglia and Pontarollo (2021) analyse in detail the performance levels of European cities according to the suitability dimension, whose results are shown in Figure 2. Summing up the main findings, capital cities, those represented by orange circles, perform worse than urban areas within the same nation. Furthermore, factors affecting the scoring performance are city size and region of residence.: those cities with population up to 500k-1m inhabitants outperform the other cities, and senior citizens living in the Western and Northern regions have a better perception of urban liveability than Southern interviewees.

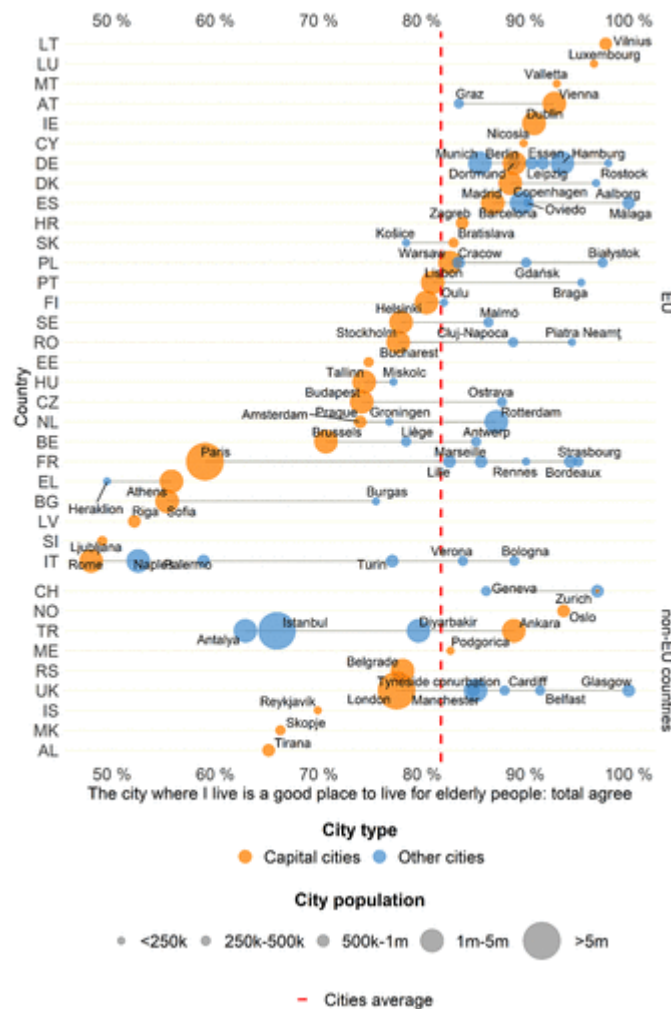


Figure 2: The city where I live is a good place for elderly people: I agree!

Source: Foglia and Pontarollo (2021)

Note: %s based on respondents aged 65+, excluding don't know/not answered

After describing the context of our empirical model, the following section aims to put forward several aspects influencing the dependent variable. Research contributions suggest important determinants concerning age-friendly environments, healthy and active ageing, entrepreneurship and social connectedness. In particular, we ascribe the frame of reference for the categorization of the independent variables to be included in the regression model, to a study by the European Commission (2018). This investigation focuses on the assessment of 10 case studies, resulting from the investigation of policy initiatives at the European level, that demonstrates the heterogeneity of sectors, geographical coverage and growth prospects of the silver economy. It highlights opportunities, challenges and stakeholders that could boost the economic potential of ageing populations, and which could drive its future development.

Among these, various dimensions could be classified according to a specific market for goods or services, like automotive, tourism and robotics, while others are not sector-specific but include a range of diversified applications in practice, such as ‘olderpreneurship’, i.e. the possibility of starting an entrepreneurial activity in later age.

The dimensions in our analysis are related to the following general issues: the development of an age-friendly built environment, knowledge for an active and healthy lifestyle, integrated care services and improved connectivity, olderpreneurship. To begin with, the World Health Organization (WHO) in 2007 drafted a guide for age-friendly cities, explaining the concept of an age-friendly environment. A city should “encourage active ageing by optimising opportunities for health, participation, and security in order to enhance quality of life” (WHO, 2007: 1). Age-friendly settings allow the promotion of healthy ageing by maintaining an individual’s intrinsic capacity - mobility, cognition, vitality, vision and hearing - as long as possible and by empowering people to perform daylife activities, a concept known as ‘functional ability’ (see Kirch, 2008), in such a way that people with different levels of capacity can do the things they value (WHO, 2017). Lawton (1977), Smith (2009) and Schwarz (2012) show that although ageing processes are different from one person to another, there is similarity in how older people interact with the spatial environment they live in. That happens because aged people are subject to sensory and mobility changes, leading to a number of challenges. Age-friendly assessments by Gilroy (2008) and Kerr et al. (2012) highlight several architectural barriers within the environment, limiting older people’s opportunities to conduct their lives and move around their neighbourhood, doing things they value. On the other hand, Annear et al. (2012) and Green (2012) affirm that some features of the physical urban setting promote health, well-being and participation. Among these, the creation of barrier-free public spaces and buildings to boost the ability to walk, associated with the accessibility of public transportation (Green et al., 2014), allow older people to enjoy outdoor spaces in their cities and foster the possibility for social interaction (WHO, 2017). Even the 2030 Agenda for Sustainable Development makes clear, with Goal 11, that cities and human settlements have to be inclusive, safe, resilient and sustainable by providing universal access to safe, inclusive and accessible green and public spaces, in particular for older persons. However, Buffel et al. (2012) identify the so-called “paradox of neighbourhood participation” as the situation in which older people, who are more likely to spend a lot of time in their neighbourhood, are rarely heard in decisions regarding their districts.

As far as the issue of knowledge for an active and healthy lifestyle, WHO defines healthy ageing as “the process of developing and maintaining the functional ability that enables well-

being in older age” (WHO, 2020: 1). Functional ability is made up of the intrinsic capacity of the individual (Araujo de Carvalho et al., 2017), the supportive environmental characteristics and their interplay. Healthy ageing goes beyond lengthening life expectancy without any disease or impairment. The Swedish National Institute of Public Health (2007) defines it as the process of optimising equal opportunities for health to enable older people to take an active part in society and to enjoy an independent and good quality of life. Fernández-Mayoralas et al. (2015) and Punyakaew et al. (2019) prove that participation, a pillar of active ageing, is enhanced by spending time on leisure activities that benefit both physical and mental health and improve life quality. Thus, being socially active and connected to the community may influence the health and well-being of older adults, including fostering positive feelings like autonomy, dignity, achievement, hope and independence (Iwasaki, 2007; Roberson and Pelcova, 2014). On the other side, studies conducted by Patel et al. (2019), Gobbens and van Assen (2018), and Ashida et al. (2008) highlight that being lonely reduces well-being and worsen health, including poor life satisfaction and impaired function in activities of daily life. Active aged people are happier and have better mental health (Sala et al., 2019; Lee, 2005; Gill et al., 1997), are able to maintain flexibility and physical strength (Orsega-Smith et al., 2012), and are less subject to cardiovascular diseases (Petrella et al., 2005).

Moving forward to the issue concerning integrated services and improved connectivity, it is straightforward to assume that a great number of aged people has an impact on both private and public expenditures related to aid and healthcare. The demand for assisting technologies improving their quality of life (Demiris and Hensel, 2008), fostering their independence (Peek et al., 2017), monitoring remotely their health (Scoglio et al., 2019) and enabling real time communications with carers (Alexandru and Ianculescu, 2017) has increased in the last decade. Technological solutions bring about savings related to the reduction in the number of physician’s visits, hospitalisation periods as well as lower costs of long-term care. Moreover, where an older person’s capacity has fallen, provision of assistive technologies is also likely to be important (WHO, 2017). However, the main criticism highlighted by Miskelly (2001) lies in the inadequate awareness of technology (Soar and Al-Hakim, 2020) or in fact that elderly people affected by visual or auditory or even cognitive impairment might find some difficulties when using technology. Local public administrations represent the most public face of the state (Walker and Andrews, 2015) as they interact with citizens during the provision of services, which include social-assistance activities for the elderly. In doing so, such organisations have to shape newly implemented solutions according to demographic changes and issues in the society. Some features of government performance that the European Commission periodically

reviews, in order to rank member countries' fulfilment, include transparency and accountability, digitalisation and service delivery, coordination and implementation.⁴ Lastly, economic opportunities related to the silver economy also encompass the way in which the elderly interact and succeed in the workplace (Krzyniewska, 2021). In the reviewed literature, academics propose different definitions about the age span and the classification of entrepreneurial activities under the heading of later-life entrepreneurs (Rogoff and Carroll, 2009) or silverpreneurs. However, 'grey entrepreneurs' were defined in broader terms by Weber and Schaper (2004) as individuals starting a business over a certain age. Regarding the ability to start an entrepreneurial activity at a later age, there are contrasting opinions about the strengths and weaknesses related to this topic. According to Schøtt et al. (2017) older individuals have the lowest confidence in their own ability to start and run a business and they find it difficult to reconcile business and family commitments. Actually, according to the European Commission (2012), the main barriers to self-employment for seniors in the EU include the inappropriateness of available skills, capital, economic climate and support by public administration. On the other hand, Isele et al. (2014) stated that aged entrepreneurs are knowledgeable about the industry, and have more intuition about which decisions would produce positive outcomes with respect to their younger counterparts. According to Kerr (2017), both push and pull factors influence the decision of older workers to engage in entrepreneurship: the former includes low wage-and-salary employment prospects and financial hardship, related to the lack of social benefits in the form of a pension, whose amount is generally lower than the pre-retirement earnings (Garrouste and Perdrix, 2021). The latter constitutes the set of positive features making self-employment desirable for aged people, such as flexible working days and schedules, greater opportunity for intellectual enrichment, and being socially useful and independent.

3. Data and Methodology

The pertinent questions for the analysis are categorised according to the relevant macro dimensions discussed in section 2, derived by EC (2018) and illustrated in Appendix A. As previously mentioned, the sample was restricted to citizens aged 65+ who answered the QOL in the European Cities survey. From the original Likert scale composed of answers on an ordered 5-level scale, from totally agree to totally disagree, dichotomous categories have been created for all the variables: value 1 indicates agreement with a given statement, or a positive

⁴ <https://ec.europa.eu/social/BlobServlet?docId=19208&langId=en> (Accessed 30/01/2022).

judgement, while 0 means disagreement, or lack of satisfaction. A linear probability model, estimated via Ordinary Least Squares (OLS), has been used to explore the relationship between the dependent variable and drivers of the Silver Economy. The following equation allows to assess the determinants of city inclusiveness for older people:

$$y_{i,j,c} = b_0 + b_1X_{i,j,c} + b_2A_{i,j,c} + b_3B_{i,j,c} + b_4C_{i,j,c} + b_5D_{i,j,c} + \varepsilon \quad (1)$$

where y is the target variable equal to one if the respondent i living in city j of country c strongly agrees or somewhat agrees with the statement “The city I live in is a good place for elderly people”, and zero otherwise; $A_{i,j,c}$, $B_{i,j,c}$, $C_{i,j,c}$, $D_{i,j,c}$ are vectors of predictors related to age-friendly built environment, knowledge for an active and healthy lifestyle, integrated care services and improved connectivity, and olderpreneur, respectively. The coefficients $b_1, \dots, b_5$ have to be estimated. ε is a vector of i.i.d. residuals. The coefficients $b_1, \dots, b_5$ have to be estimated. In addition, vector $X_{i,j,c}$ includes a set of socio-economic characteristics such as gender, educational level and household composition (presence of children) of the individual. Vector $A_{i,j,c}$ includes variables on the assessment of public services and infrastructures’ quality that play a role in mobility and everyday life, including satisfaction with the neighbourhood. Within this first vector, we ascribe the following individual variables: i) satisfaction with public spaces, like pedestrian areas and squares, because the study by Romero-Ortuno et al. (2009) underlines that the issue of safety of aged pedestrians affects several cities; ii) since cultural facilities like museums or libraries may be used to increase the quality of life in old age (Buffel et al., 2012), satisfaction with them can provide useful insights regarding our dependent variable. Referring to the contentment with green public spaces, the study by Kabisch et al. (2021) demonstrates that people aged over 60 years old, spending time and doing exercise outside in parks, are less exposed to cardiovascular risk. iii) Satisfaction with public means of transport, as adequate transport infrastructures, links strongly with aged people’s mobility and independence (Clarke, 2014; Chudyk et al., 2015). The remaining regressors enclosed in vector A include satisfaction with safety in the city, in the neighbourhood and trusting neighbours, as a large body of research shows that these three dimensions are drivers of social inclusion, affecting elderlys’ well-being and participation in society (Charles et al., 2012). Vector B includes the propensity to a healthy and active ageing, which are measured by the respondents’ evaluation of the quality of the air, since the latter is responsible for a number of diseases and could foster or inhibit outdoor activities. Indeed, there is evidence that older people are particularly vulnerable to the quality of air and adverse consequences may be pollution-sensitive pulmonary, cardiovascular and metabolic diseases (Royal College of Physicians,

2016). Moreover, we ascribed to vector **B** two individual variables referred to walking and using a bike, as a mode of transport on a typical day, because the former is widely recognized as the most feasible physical activity that benefits balance, strength and mental state (Okubo et al., 2014), and the latter positively affects cognition, well-being (Leyland et al., 2019) and bloodstream, reducing the fear of falling (Batcir and Melzer, 2018). In addition, the qualitative study by Maula et al. (2019) showed that satisfaction with sports facilities, like indoor halls, may enhance social interaction and promote physical activity maintenance. Among the additional service characteristics included in vector **C**, there are the importance of integration and connectivity related to medical facilities and local public administration that contribute to the assessment of inclusiveness. Satisfaction with hospitals and other health services matters in the analysis since the rising demand of medical care is due to changing health needs and chronic conditions of ageing populations (Beaglehole et al., 2003). We also accounted for two dimensions related to local public administration responsiveness, i.e. satisfaction with the time needed to get a request solved and ease of procedures, which play a decisive role in creating a supporting environment for citizens (Vigoda-Gadot, 2000). Finally, variables belonging to vector **D** are referred to the possibility of becoming self-employed and beginning an entrepreneurial activity. It covers a number of issues related to the easiness of starting a business in later age, such as the assessment of personal means as a form of venture capital, and being satisfied with one's own household income. On this topic, the Global Entrepreneurship Monitor (GEM, 2016) showed that older individuals, whose financial status is somewhat stable, have a potential for becoming an entrepreneur. Furthermore, another individual variable enclosed in vector **D** is the possibility to obtain material help if needed. Birley (1985) pointed out that the presence of formal and informal networks can push the entrepreneurial venture. Moreover, the evaluation of corruption in local administrations can significantly affect the entrepreneurial environment because a corruptive environment instils a low trust culture and prevents business growth (Bagautdinova et al., 2013).

To conclude this section we have to stress that the use of an OLS estimator allows us to quantify the 'relative importance' of each predictor. To achieve this result, the R-squared is decomposed in order to identify the relative contribution of each variable in the right-hand side of equation (1), following the method proposed by Grömping (2006; 2015). The approach accounts for the dependence of partial R^2 on the order of entrance of covariates in equation (1) by averaging over all possible orders. Finally, the robustness of our results is checked using alternative estimators such as logit and probit models.

4. Results

The regression results are presented in Table 1. Column (1) presents the outcomes for the baseline specification in eq.(1), while columns (2) and (3) present the results of specifications including city dummies and country dummies, respectively, as additional controls.

All the seven classes of urban features included in vector **A** are statistically correlated with the suitability of cities for the elderly, even when controlling for country or city fixed effects. First of all, neighbourhood satisfaction is significant with the expected positive sign and accounts for 6.40% of the explained variance, as shown by Figure 3. Moreover, within the seven urban features enclosed in the vector, ‘being satisfied with the neighbourhood’ increases the probability of agreeing about liveability of cities by 10.30%. Such a finding is important because being satisfied with the neighbourhood one lives in contributes to the overall assessment of liveability by the sample. Neighbourhood quality can be perceived through the ease to get services and the interaction with those living nearby, thus referring to the notion of “neighbourhood service accessibility” (Stoeckel et al., 2015). This is a measure of social inclusion that contributes to the perception of residing in a hospitable environment, particularly relevant for older adults. The concept becomes all the more important when designing age-friendly neighbourhood services, reachable by aged people with mobility impairments, that could be experienced when health status worsen, and with age. Second, urban liveability for aged people positively and strongly correlates with the agreement about trusting people who live in the same city, with a probability increase equal to 4.20% as reported by column (2) of Table (1). In addition, the explanatory power of this feature accounts for 4.70%, as graphically represented in Figure 3, of the dependent variable. Having a relationship with other individuals or the society, like the feeling of trusting others and feeling others trust you, has also a significant impact on the wellbeing of the elderly.

Table 1: Determinants of the probability to be satisfied in the city

	(1)	(2)	(3)
Constant	0.322*** (0.022)	0.296*** (0.042)	0.343*** (0.031)
Vector X: Socio-economic characteristics			
Female	-0.008 (0.007)	-0.007 (0.007)	-0.007 (0.007)
Household with no children	0.030**	0.018	0.018

	(0.013)	(0.012)	(0.012)
Household with children with less than 25	0.064	0.059	0.043
	(0.043)	(0.042)	(0.042)
Household with children more than 25	0.014	0.008	0.004
	(0.015)	(0.015)	(0.015)
Secondary education	0.001	0.015*	0.015*
	(0.009)	(0.009)	(0.009)
Tertiary education	-0.010	0.012	0.010
	(0.009)	(0.009)	(0.009)
Vector A: Development of an age-friendly environment			
Satisfaction with public transport	0.042***	0.026***	0.039***
	(0.009)	(0.009)	(0.009)
Satisfaction with cultural facilities	0.013	0.025**	0.027***
	(0.010)	(0.010)	(0.010)
Satisfaction with green spaces	0.025***	0.027***	0.032***
	(0.009)	(0.009)	(0.009)
Satisfaction with public spaces	0.043***	0.044***	0.048***
	(0.009)	(0.009)	(0.009)
Satisfaction with safety of the city	0.035***	0.027***	0.028***
	(0.008)	(0.008)	(0.008)
Satisfaction with trusting other people in the city	0.057***	0.042***	0.048***
	(0.008)	(0.008)	(0.008)
Satisfaction with neighbourhood	0.102***	0.103***	0.101***
	(0.012)	(0.011)	(0.011)
Vector B: Knowledge for an active and healthy lifestyle			
Satisfaction with sport facilities	0.036***	0.027***	0.036***
	(0.010)	(0.010)	(0.010)
Satisfaction with quality of the air	0.041***	0.035***	0.040***
	(0.007)	(0.008)	(0.008)
Mode of transport on a typical day – Foot	0.008	0.010	0.010
	(0.007)	(0.007)	(0.007)
Mode of transport on a typical day – Bike	0.010	0.005	0.010

	(0.012)	(0.012)	(0.012)
Vector C: Integrated services and improved connectivity			
Satisfaction with health facilities	0.061***	0.046***	0.048***
	(0.008)	(0.008)	(0.008)
Satisfaction with time needed to get a request solved by local PA	0.058***	0.050***	0.055***
	(0.008)	(0.008)	(0.008)
Satisfaction with easiness of procedures in local PA	0.046***	0.041***	0.043***
	(0.008)	(0.008)	(0.008)
Vector D: Olderpreneur			
Satisfaction with household income	0.027***	0.022***	0.022***
	(0.008)	(0.008)	(0.008)
Chances of receiving material help	0.077***	0.072***	0.075***
	(0.008)	(0.008)	(0.008)
Corruption in local PA	-0.045***	-0.032***	-0.034***
	(0.008)	(0.008)	(0.008)
City FE	No	Yes	No
Country FE	No	No	Yes
Observations	11,902	11,902	11,902
R ²	0.115	0.178	0.158
Adjusted R ²	0.112	0.169	0.153

Note: Coefficients are tagged with ***, ** and * for the 0.01, 0.05 and 0.1 statistical significance level, respectively. Standard errors in parentheses.

Third, looking at satisfaction with safety, the size of its coefficient decreases when introducing fixed effects; in this case, respondents being satisfied with safety increases by 2.70% the probability of agreeing that the city is a good place for elderly people. This dimension explains 3.68% of the variance.

Fourth, satisfaction with public transportation coincides with the assessment of an age-friendly, easily accessible city. Because urban public means of transport are wide and varied, there is no single policy for prioritising one of them, and yet the focus should be based on comprehensive solutions that include easy ticketing procedures, accessibility, integration, maintenance and safety of vehicles, timing, and periodic evaluation of service quality through surveys. However,

given a lower explained variance, equal to 2.90%, this dimension can be considered currently relatively less important than the previous ones.

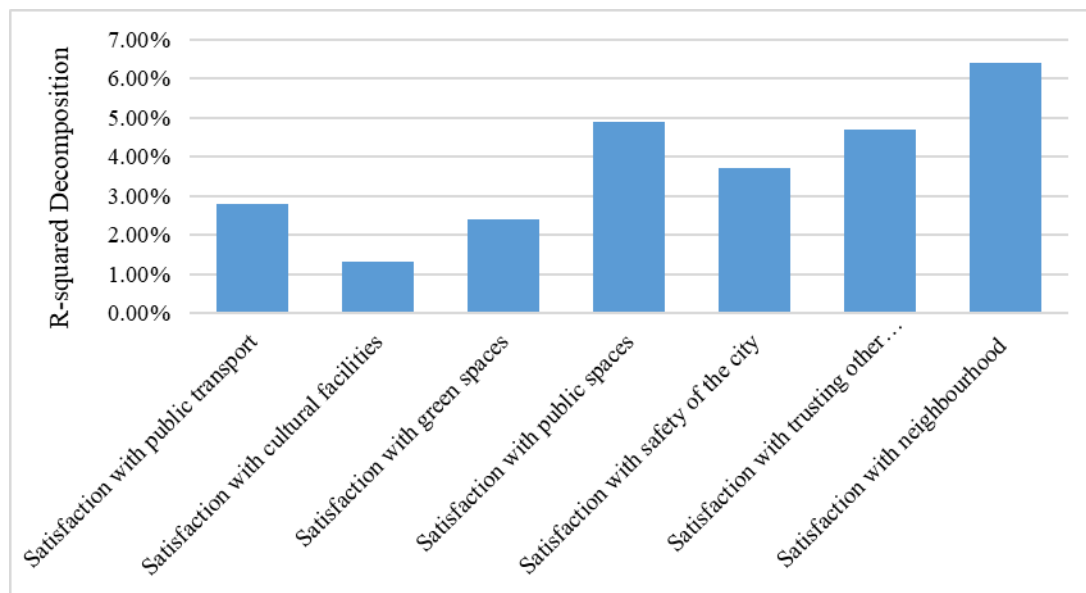


Figure 3: Vector **A** - Development of an age-friendly environment - relative importance of the regressors

Note: Decomposition is based on the estimation of equation (1) reported in column (1), Table 1.

Another feature is the assessment of age-friendly public spaces, which provide a significant contribution to the explained variance, i.e. 3.3%. In this case, the size and significance of coefficient does not change when accounting for country and city fixed effects and being satisfied with public spaces improves by 2.70% the chance that the city is a good place to live. Thus, prioritising pedestrian areas in city centres and historic, cultural and social sights, should include provision of benches and restricting vehicles traffic. Concrete actions that local public administration could take to keep the situation monitored include walkability audits sent out to interest groups and regular pavement maintenance. Moreover, regeneration of urban spaces through beautification projects may raise opportunities for social inclusion ensuring that the elderly can enjoy the outdoors and participate in such projects (EC, 2010). These interventions enhance their effects by smoothing economic and social inequalities, especially when targeted to marginalised neighbourhoods (Ferranna, 2019). Last, satisfaction with cultural facilities, like theatres and museums, is significantly different from zero only when city or country dummies are included. It contributes relatively little to the overall R^2 : 1.27%. We can say that the

importance of this factor depends strictly on the city in which the respondents to the survey live.

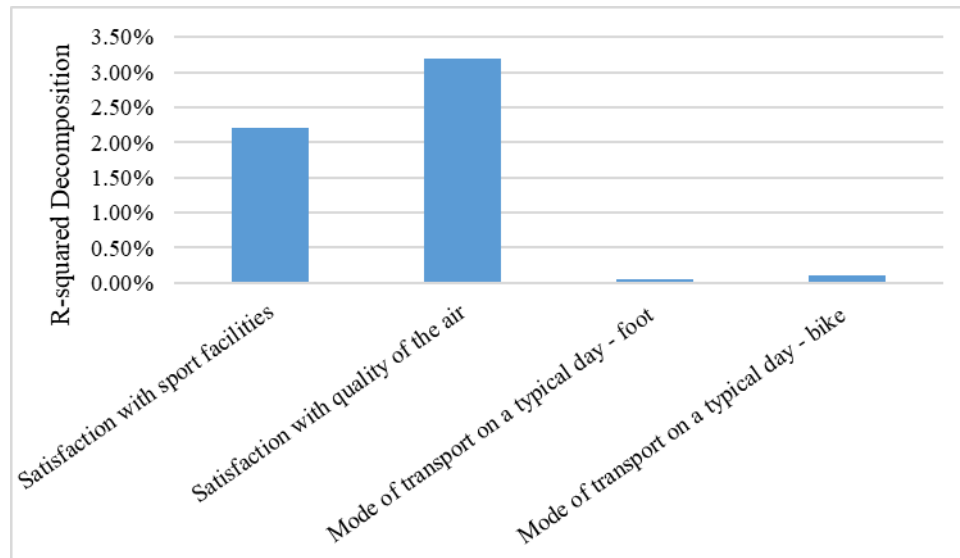


Figure 4: Vector **B** - Knowledge for an active and healthy lifestyle- relative importance of the regressors

Note: Decomposition is based on the estimation of equation (1) reported in column (1), Table 1.

For what concerns vector **B**, i.e. “knowledge for an active and healthy lifestyle”, the coefficients of satisfaction with sport facilities and with air quality are both statistically significant. They have the expected sign. Because walking is the main mode of aerobic exercise among older adults, it is included in this category. However, this feature is not statistically different from zero and, coherently with the results from Table 1, the proportion of explained variance is negligible, and accounts for only 0.05%. Moreover, the use of bikes as a transport mode on a typical day is not significantly different from zero, even when introducing country and city fixed effects, and accounts for 0.10% of the explanatory power, as shown in Figure 4. Conversely, the level of satisfaction with air quality has a substantial significance even when accounting for country or city fixed effects and contributes to 3.20% of the R-squared.

Another regressor contributing to the liveability of the city in an active way is the satisfaction with sport facilities, as a good work-out environment contributes to the wellbeing of aged people. In fact, the explanatory power of being satisfied with sport facilities reaches a value equal to 2.20%. Empowering senior citizens to take active responsibility for their own ageing and creating a healthy life has been the aim of several organisations, ranging from associations

to municipal councils (Scheele et al., 2019). The aim of active ageing strategies is to modify attitudes towards modelling a positive approach to tackle the challenges of ageing. This entails engaging in physical activity that has the potential to maintain muscle strength and cognitive functions, to reduce anxiety and depression, to prevent diseases and to reduce the risk of coronary heart disease, diabetes and stroke (WHO, 2015:70).

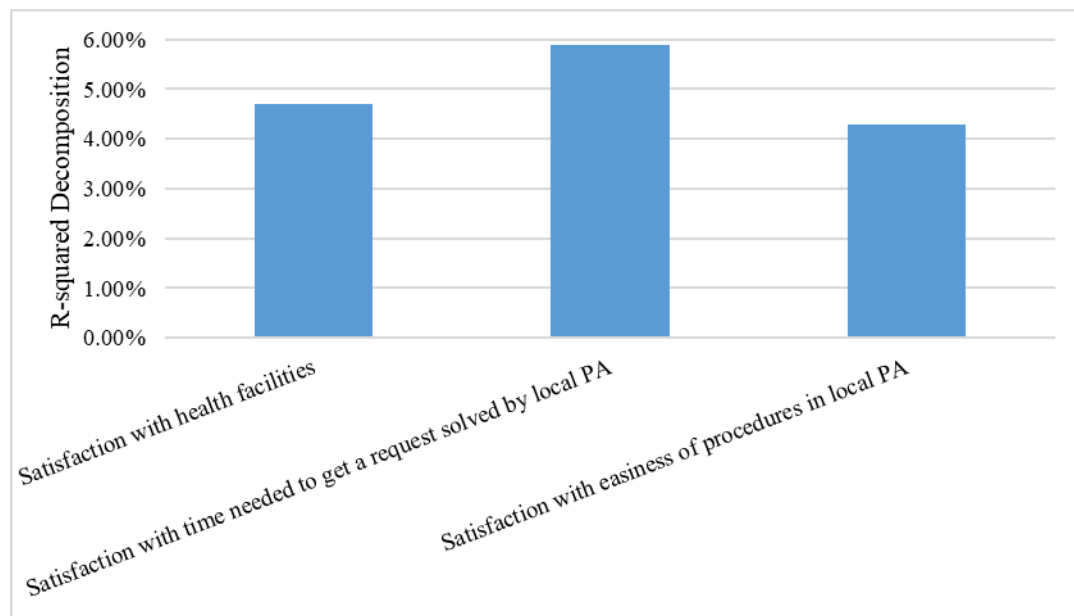


Figure 5: Vector C - Integrated services and improved connectivity - relative importance of the regressors

Note: Decomposition is based on the estimation of equation (1) reported in column (1), Table 1.

Concerning vector C, as shown by Figure 5, satisfaction with the time required for having a request solved by a local PA is the strongest predictor of a city's liveability, contributing to 5.90% of the explained variance. This aspect goes hand in hand with the ease of local public administration' procedures, because aged people rely mostly on local officials to get their daily requests solved and accomplished in a timely manner. Moreover, the widespread use of the internet in the provision of information concerning public administration procedures and requests has threatened older people' accessibility to a range of electronic services.⁵ Among United Nations' regions, Europe has the highest development of eGovernment (UN DESA, 2012: 29), however, special attention towards the technological integration of service providers

⁵ Choi and DiNitto (2013) discuss the benefits that the internet offers to older adults also in terms of physical and functional decline and social isolation. They suggest that computer/internet training for this group of people could play an important role in their social capital.

and final users needs to be paid to ensure that older people are not excluded. Social networks and face-to-face contacts are among the means of support for older people to foster their adoption of eGovernment services (Righi, Sayago and Blat, 2011). For example, several structural reforms announced in the national recovery and resilience plans include administrative simplification and more competences at local level in Belgium and digital PA in Italy.⁶ Further dimensions include being satisfied with health care services and doctors; this increases the chances of agreeing that the city is a good place for elderly people by 4.60%. Aged citizens' feeling of satisfaction with health care services, like hospitals and doctors, accounts for 4.70% of the variance, as reported in Figure 5.

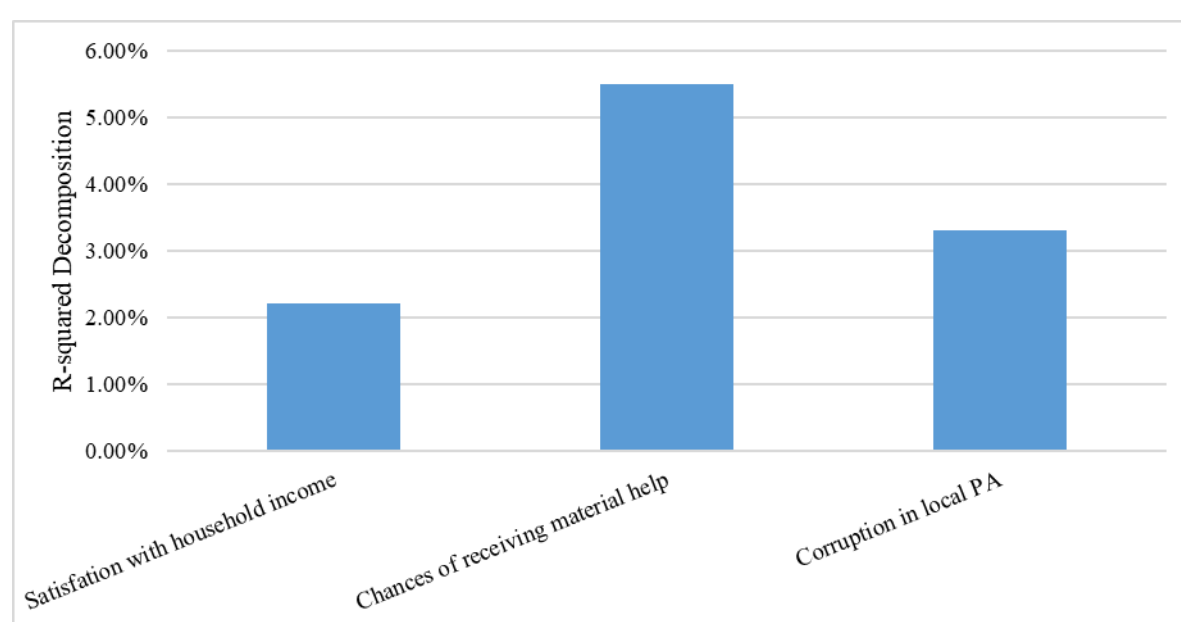


Figure 6: Vector **D** - Olderpreneur - relative importance of the regressors

Note: Decomposition is based on the estimation of equation (1) reported in column (1), Table 1.

Despite clinical conditions of people in their late sixties and more are very heterogeneous when it comes to health status assessment, the needs of ageing populations include a broad range of health services, from acute care to long term care. An effective intervention over time requires a high level of coordination, both between health professionals and across treatment levels and settings like hospitals or doctors' offices, resulting in better services' accessibility, better

⁶ In their Resilience and Recovery Plans Belgium has among its objectives the public administration simplification of administrative procedures, while Italy the digitalisation of the PA, to which devoted € 6.1 billion.

orientation to carers and patients, clear performance evaluation and better exchange of information between doctors and patients.

Among the features that are related to the fourth and last vector, i.e. “oldepreneurs” - vector **D**, surveyed people who feel that if they needed material help they could receive it from relatives, friends, neighbours or other persons they know, they exhibit a probability of finding the city more suitable for older people 7.20% higher than those who think that they would not receive material help. Moreover, as shown in Figure 6, having the possibility to ask for material help is, overall, the strongest predictor of older people’s quality of life in European cities, contributing to 5.50% of the explained variation of the regression model. Because the possibility of being self-employed creates less security in comparison to a regular job, aged entrepreneurs could need the material support of both family members and local government as a business facilitator. An entrepreneurship-friendly culture can be developed via the private and public sectors, including incubators/accelerators and chambers of commerce acting like start-ups networks.

Again, corruption reduces the likelihood of believing that the city is inclusive for aged people by 3.20% compared to those that think that Public Administration is not corrupted. Corruption in the local public administration adversely affects the liveability of European cities and accounts for 3.30% of the explained variance. The Covid-19 outbreak and the consequent restriction measures had an impact on businesses, because of the standstill due to the imposition of social distancing and lockdown, raising potentially the issue of government corruption. Research by Gugiu (2016) proves that the public opinion perceives higher levels of corruption especially during tough economic times, due to the fact that the government plays a role as a business facilitator. Such a powerful involvement could tempt some officials to abuse their position for personal gain. Finally, satisfaction with household income is confirmed to be positive and significant and the addition of country or city fixed effects does not affect the weight and significance of the predicted coefficient.

Vector **X**, capturing socio-demographic characteristics, is not significantly affecting the agreement about city liveability for aged citizens, and its overall explanatory power of the R^2 is almost null. We only observe that individuals living in households without children have a slightly positive perception of better city conditions, as well as individuals with secondary education, controlling for city and country dummies. Overall, demographic features do not matter in expressing one’s own agreement about a good place to live.

5. Discussion

Our empirical findings suggest that, among the urban features under analysis, those linked to the urban environment and the neighbourhood strongly correlate with the subjective agreement of a good place to live in for the elderly, confirming the wide literature about the opportunity of enhancing the quality of life in age-friendly contexts. Our results stress the importance of being satisfied with the neighbourhood, which embraces both a physical and social dimension. Indeed, it would be simplistic to interpret this satisfaction as the mere ability to reach services and facilities like groceries and pharmacies as it also fosters a sense of belonging to the community that can be enhanced through social interaction with neighbours. Similarly, the availability of sport facilities, together with the possibility of breathing clean air, pertinent to the framework of healthy and active ageing, prove to be an important element contributing to the liveability of European cities and essential drivers towards a dignified ageing. Notably because healthier lives could reduce pressure on health systems and improve the sustainability of public spending (Cavill et al., 2006). As far as the set of healthy and active lifestyle-related variables is concerned, the issue of satisfaction with medical facilities should receive further attention due to the spread of Covid-19 and hospitalizations, leading to unintended consequences like staffing shortages and delayed or cancelled procedures. Furthermore, the strong correlation between items pertaining to the provision of services by the local public administration and healthcare facilities and the statement “the city where I live is a good place for the elderly” validated the importance of designing citizen-centered solutions and benefits, accounting for the needs of vulnerable age groups. Finally, the assessment of features associated with the possibility to start an entrepreneurial activity in later age, like the possibility of receiving material help when needed, test as strong predictors of the perception of living in an inclusive city. Thus, it is desirable to find alternative solutions to face the workforce ageing phenomenon that could provide flexibility and better work-life balance. Our results are consistent with the reviewed literature, confirming that both the institutional environment and informal ties can play a role in the venture initiation. However, with our approach, we are able to rank those dimensions that contribute more in explaining the feeling of living in a city suitable for elders, providing, eventually, guidance to policy makers regarding the interventions that should be prioritised. Indeed, in light of such a multifaceted context, the effort required by institutional players is substantial although there could be positive effects enjoyable by the community as a whole. Kohijoki and Koistinen (2021), for example, showed that measures aimed to improve the age-friendliness of a city can also benefit younger generations. Having

in mind the harmful consequences of the COVID-19 pandemic, whose effects have threatened both the lives and safety of older people (UN, 2020), the relevance of considering and analysing the factors affecting urban liveability and inclusiveness for the elderly becomes even clearer. Social distancing measures and inhibited possibility to spend time outdoors could have serious effects on the mental health of aged people, who are at risk of isolation and are less prone to handle “virtual interaction” through new technologies.

6. Conclusions

The article, after a first overview of the main factors related to the silver economy, focuses the attention on analysing 83 European cities on the basis of a recent survey conducted by the European Commission called QoL Survey in European Cities 2019. After identifying, based on EC (2018), four main areas of policy intervention as key for the silver economy, i.e. the development of an age-friendly environment, awareness of an active and healthy lifestyle, integrated services and improved connectivity, and olderpreneurship, some features related to each area have been analysed in terms of their importance in the individual perceptions of a good place to live. The results support the main literature concerning the ageing phenomenon and provide a picture of the urban features that weigh in the subjective assessment of cities livability in Europe by the elderly. The confluence of ageing and urbanisation embeds a considerable opportunity for European cities and those able to enhance the quality of life through healthy and active living standards have a greater potential to exploit the human capital of older adults, as a driver of economic growth, leading to further age-friendly developments.⁷ Moreover, the narrow North-South differences highlighted by the situational analysis suggest that efforts are required to smooth these imbalances and to ensure an equitable quality of life. Given the large variability of sectors enclosed within the *silver economy* and their economic potential, we stress that governments need to plan strategic investments to improve the accessibility of urban infrastructures, while ensuring that participative mechanisms are in place, in order to deliver high quality and people-centred services. Thus, action strategies for fostering social support should be established in accordance with civil society organisations and communities, involving the beneficiaries in their design and implementation. The outcome will benefit current and future generations of older adults.

⁷ Global Coalition on Aging and the McGraw Hill Financial Global Institute
https://globalcoalitiononaging.com/wp-content/uploads/2018/06/AgingUrbanization_115.pdf (Accessed 30/01/2022)

Due to the relative novelty of the dataset employed for the regression analysis, further research is needed in order to investigate how the overall picture has changed during the COVID-19 pandemic, especially because of the enforcement of social distancing measures and restrictions, impacting on the elderly's daily routine and their fruition of cities' amenities.

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[course approach to healthy ageing-draft global strategy and plan of action on ageing and health](#)
[For Web \(who.int\)](#) (Accessed 30/01/2022)

Appendix

Table A1: Description of the variables

<i>Dependent variable</i>	
City is a good place for elderly people	Variable equal to one if the respondent strongly agrees or somewhat agrees to the statement “the city where you live is a good place for elderly people”, zero otherwise.
Vector X: Socio-economic characteristics	
Female	Dummy variable equal to one if the respondent is a female, zero otherwise.
<i>Household composition</i>	
HH Lone parent & children below 25	HH Children below 25 is equal to one if the household is composed of a lone parent or a couple with at least one child aged less than 25, zero otherwise
HH Children above 25	HH Children above 25 is equal to one if the household is composed of a lone parent or a couple with all children aged 25 or more, zero otherwise
HH Others	HH Others is equal to one if the household is composed of one person, a couple without any children or does not correspond to any of the categories defining the first two household dummies, zero otherwise.
<i>Education</i>	
Secondary Education	Secondary Education is equal to one if the respondent completed a lower or upper secondary education ISCED2/3), 0 otherwise.
Tertiary Education	Tertiary education is equal to one if the respondent completed a post-secondary non-tertiary (?), a short-cycle of tertiary education, a bachelor (or equivalent), a master (or equivalent) or a doctoral (equivalent) degree, zero otherwise.
Vector A: Development of an age-friendly environment	
Satisfaction with public transport	Dummy equal to one if the respondent reports to be very satisfied or rather satisfied with the public transport in his/her city or area., zero otherwise
Satisfaction with Cultural facilities	Dummy equal to one if the respondent reports to be very satisfied or rather satisfied with cultural facilities such as concert halls, theatres, museums and libraries in his/her city or area., zero otherwise
Satisfaction with Green spaces	Dummy equal to one if the respondent reports to be very satisfied or rather satisfied with green spaces such as parks and gardens in his/her city or area., zero otherwise
Satisfaction with Public space	Dummy equal to one if the respondent reports to be very satisfied or rather satisfied with public spaces such as markets, squares, pedestrian areas in his/her city or area., zero otherwise
Satisfaction with safety of the city	Dummy is equal to one if the respondent agrees or somewhat agrees that he/she feels safe walking alone at night in the city, zero otherwise.

Satisfaction with the neighbourhood	Dummy is equal to one if the respondent agrees or somewhat agrees that he/she is satisfied with the neighbourhood where he/she lives, zero otherwise.
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Vector B: Knowledge for an active and healthy lifestyle

Satisfaction with sport facilities	Dummy equal to one if the respondent reports to be very satisfied or rather satisfied, with sport facilities, zero otherwise.
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Satisfaction with air quality	Dummy equal to one if the respondent reports to be very satisfied or rather satisfied, with the quality of the air, zero otherwise.
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Mode of transport on a typical day - Foot	Dummy equal to one if the respondent reports that, on a typical day, the mode of transport used most often is foot, zero otherwise.
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Mode of transport on a typical day - Bike	Dummy equal to one if the respondent reports that, on a typical day, the mode of transport used most often is bike, zero otherwise.
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Vector C: Integrated services and improved connectivity

Satisfaction with healthcare facilities	Dummy equal to one if the respondent reports to be very satisfied or rather satisfied with the health care services, doctors and hospitals in his/her city or area., zero otherwise
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Satisfaction with time needed to get a request solved by local PA	Dummy equal to one if the respondent reports that the time it takes to get a request solved by the local public, zero otherwise.
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Satisfaction with easiness of procedures by local PA	Dummy equal to one if the respondent reports that the procedures used by the local public administration are straightforward and easy to understand, zero otherwise.
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Vector D: Olderpreneur

Satisfaction with the income of household	Dummy equal to one if the respondent reports to be very satisfied or rather satisfied, with the quality of the air, zero otherwise.
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Material help	Dummy equal to one if the respondent reports that he/she feels that he/she needed material help (e.g. money, loan or an object) he/she could receive it from relatives, friends, neighbours or other persons he/she knows, zero otherwise.
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Corruption in local PA	Dummy equal to one if the respondent reports that there is corruption in the local public administration, zero otherwise.
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Note: For all covariates described above, the answer category “don’t know/refuses” has been included as a separate one to preserve the sample size. For the sake of brevity, these variables are not reported in the tables.

Table A2: Determinants of city satisfaction (logit model)

	(1)	(2)	(3)
Vector X: Socio-economic characteristics			
Female	-0.072 (0.052)	-0.067 (0.054)	-0.073 (0.053)
Household with no children	0.209** (0.092)	0.135 (0.097)	0.137 (0.096)
Household with children with less than 25	0.546 (0.364)	0.547 (0.373)	0.432 (0.372)
Household with children more than 25	0.084 (0.112)	0.037 (0.118)	0.016 (0.116)
HH_Comp_RENDon't Know	0.061 (0.454)	-0.033 (0.483)	-0.085 (0.472)
Secondary education	-0.019 (0.068)	0.093 (0.073)	0.090 (0.072)
Tertiary education	-0.104 (0.070)	0.065 (0.075)	0.046 (0.073)
Vector A: Development of an age-friendly environment			
Satisfaction with public transport	0.249*** (0.064)	0.161** (0.070)	0.232*** (0.068)
Satisfaction with cultural facilities	0.041 (0.073)	0.136* (0.078)	0.142* (0.076)
Satisfaction with green spaces	0.135** (0.065)	0.166** (0.071)	0.182*** (0.069)
Satisfaction with public spaces	0.256*** (0.063)	0.288*** (0.067)	0.301*** (0.066)
Satisfaction with safety of the city	0.213*** (0.057)	0.180*** (0.062)	0.181*** (0.060)
Satisfaction with trusting the people of the city	0.383*** (0.057)	0.295*** (0.061)	0.331*** (0.059)
Satisfaction with the neighbourhood	0.516*** (0.074)	0.576*** (0.079)	0.537*** (0.078)
Vector B: Knowledge for an active and healthy lifestyle			
Satisfaction with sport facilities	0.232*** (0.069)	0.200*** (0.074)	0.242*** (0.072)
Satisfaction with air quality	0.285*** (0.055)	0.246*** (0.061)	0.299*** (0.058)
Mode of transport on a typical day - Foot	0.072 (0.057)	0.094 (0.059)	0.091 (0.058)

Mode of transport on a typical day - Bike	0.061 (0.095)	0.027 (0.100)	0.064 (0.098)
Vector C: Integrated services and improved connectivity			
Satisfaction with healthcare facilities	0.379*** (0.057)	0.310*** (0.063)	0.309*** (0.062)
Satisfaction with time needed to get a request solved by local PA	0.415*** (0.059)	0.387*** (0.063)	0.417*** (0.062)
Satisfaction with easiness of procedures by local PA	0.336*** (0.057)	0.317*** (0.061)	0.329*** (0.059)
Vector D: Olderpreneur			
Satisfaction with the income of household	0.167*** (0.057)	0.135** (0.063)	0.124** (0.062)
Material help	0.522*** (0.056)	0.529*** (0.060)	0.545*** (0.059)
Corruption in local PA	-0.343*** (0.060)	-0.251*** (0.065)	-0.271*** (0.064)
City FE	No	Yes	No
Country FE	No	No	Yes
Observations	11,902	11,902	11,902

Note: Coefficients are tagged with ***, ** and * for the 0.01, 0.05 and 0.1 statistical significance level, respectively. Standard errors in brackets.