European Commission

New perspectives on territorial disparities

From *lonely places* to places of opportunities

Joint Research Centre

Graphic project: Laura Spirito and Silvia Mondello

New perspectives on territorial disparities

From *lonely places* to places of opportunities

Table of contents

Abstract

Persisting territorial disparities across and within the EU represent, together with so-cioeconomic inequalities, a potential threat to the future of the European project. These inequalities are related to several spatial phenomena such as depopulation, limited access to services, lack of connection to the physical or digital network, and have been further exacerbated by the impact of the COVID-19 pandemic. Therefore, it is crucial to understand existing challenges and opportunities across European locations against territorial, social, environmental, demographic and economic disparities to produce evidence for improving policies coherently with the principles of leaving no place and no one behind.

This work introduces the exploratory concept of *lonely places,* which is spatially embed-ded and identifies a plurality of places that present a vulnerability in terms of lack or insufficient local endowment, accessibility, or connectivity. Although the term 'lonely' is mainly employed with reference to people, this study presents a unique spatial, multi-scalar and interdisciplinary approach to places. It aims at creating knowledge going beyond traditional operational classes of policy programmes (e.g., national or regional), the urban/rural dichotomy, or administrative boundaries. This work also includes several dimensions (e.g., physical infrastructure, access to schools, cultural facilities, democratic participation, migrants' integration, etc.), which are all useful to create fully integrated policies.

The identification and assessment of *lonely places* are based on a quantitative analysis ap-plying several methodologies to a combination of both traditional and experimental data, gathered at different levels of granularity and mostly with European coverage. Findings from this research enhance and support evidence-based policy actions to favour cohesion among territories and avoid the possibility that places might act as an obstacle to individ-uals to achieving their full potential. Results presented in this report can also inform other specific EU policies and frameworks, as well as policies at national, regional, and local levels.

Foreword

The places where we live may not define us, but they impact the ability of every citizen, young and old, to reach their full potential and live their best life.

Therefore, it is important for policy-makers to clearly understand the characteristics of all places, how to turn them into places of opportunity, for every generation. One clear example of this is that growing territorial inequality places limits on our lifestyle and life choices; it creates a feeling of being left behind. The pre-existing disparities between various parts of our Union have been aggravated by the COVID pandemic. This has the potential to create a geography of discontent and a lack of confidence in our democracy. This is unacceptable.

This is why we must act now at the EU level to bring new perspectives to our policy-making and to create places of opportunity across our continent. The first step is by making a thorough diagnosis of the problem at hand and carrying out a full screening of the existing challenges and opportunities. This Policy Report provides a solid foundation for our future work.

As the European Commission Vice President for Democracy and Demography, a key focus of my work is on the well-being of citizens, wherever they may live. If we are to succeed in providing appropriate support to citizens, we need to work on the improvement of physical and digital infrastructures, the provision and accessibility of public services, the connectivity within and among places, and the reduction of the risk of poverty as well as the gender inequalities which often co-exist in those places. Throughout this process, and as part of the European Union's Child Guarantee, we must ensure that children have access to the services they need and are supported throughout their childhood and into their adult lives.

As we engage on supporting vulnerable places, we must start by analysing the impacts on different communities and regions that have been affected in a disproportionate manner. In order to do this, we need to apply a broad perspective and to use highly disaggregated data to ensure that we cater for the full complexity of these issues. We need a place-based integrated approach and scientific knowledge to inspire informed and evidence-based policies and actions. This will build citizens' confidence and trust in our policy-making.

The Joint Research Centre (JRC), the science and knowledge service of the European Commission, has contributed to various EU initiatives such as the Green Paper on Ageing, the Atlas of Demography and the Long Term Vision for Rural Areas. The JRC is therefore well placed to publish the robust scientific evidence in support of this new endeavour: New perspectives on territorial disparities. From *Lonely Places* to places of opportunities.

The findings from this report provide a relevant basis for addressing a number of EU priorities and policies. Among these we can find the European Pillar for Social Rights, the Common Agricultural Policy, Cohesion Policy, the Urban Agenda for the EU, the Territorial Agenda 2030, the Action Plan on Integration and Inclusion, the Digital Education Action Plan as well as various policy initiatives dealing with energy, transport, connectivity, environment or climate. Besides its application to EU wide policies, the knowledge about territorial disparities presented in this report can also inform policies at the national, regional and local level across every Member State of the European Union. In this way, the EU as a whole has access to vital information in the policy-making process, which contributes to showing how our democratic institutions can effectively respond to and deliver for citizens' needs , at all levels, and especially where it is needed most.

European Commission Vice-President
for Democracy and Demography,
Dubravka Šuica

Acknowledgements

EDITORS
Paola Proietti[1,2]
Patrizia Sulis[1,2]
Carolina Perpiña Castillo[1,2]
Carlo Lavalle[1,2]

AUTHORS
Paola Proietti[1,2]
Patrizia Sulis[1,2]
Carolina Perpiña Castillo[1,2]
Carlo Lavalle[1,2]
Jean-Philippe Aurambout[1,2]
Filipe Batista e Silva[1,2]
Claudio Bosco[1,3]

Carlotta Fioretti[1,2]
Fabrizio Guzzo[1,2]
Chris Jacobs-Crisioni[1,2]
Mert Kompil[1,2]
Andrius Kučas[1,2]
Martina Pertoldi[1,2]
Alessandro Rainoldi[1,2]

Marco Scipioni[1,3]
Alice Siragusa[1,2]
Guido Tintori[1,3]
Jayne Woolford[1,4]

---

1   European Commission, Joint Research Centre
2   Urban and Territorial Development Unit (B3)
3   Demography, Migration and Governance Unit (E6)
4   Knowledge for Finance, Innovation and Growth Unit (B7)

Executive summary

This report identifies *lonely places* **and their associated challenges focusing on territories across the EU-27 Member States.** Moreover, it highlights new opportunities and policy recommendations to balance territorial disparities. An in-depth understanding of *lonely places* can provide evidence to identify priority areas to target through policy actions. These actions can increase the opportunities people can access locally, enabling them to achieve more satisfactory well-being.

Lonely places, **as a multidisciplinary and multi-scalar concept, can refer to a plurality of places that present a certain vulnerability in terms of local endowment, accessibility, or connectivity.** *Lonely places* **can be found in remote and rural areas as well as cities. The concurrence and interactions among vulnerabilities can make one place more lonely than others.**

In 2020, the European Commission, under the von der Leyen presidency, set several **political priorities.** 'Europe fit for the Digital Age', 'An economy that works for people', 'A new push for European democracy', and 'A European Green Deal' **can all benefit from the analytical approach and the cross-sectorial evidence of this report**. **The work presented also has strong linkages with** thematic areas and actions included in the Communication on a **Long-Term Vision for Rural Areas,** which aims at shaping the future of dynamic, connected, resilient and prosperous rural areas for 2040. In the framework of the **Cohesion Policy,** this work can help foster cohesion and reduce inequalities, while also informing some specific EU cohesion 2021-2027 investments, namely those dealing with a 'Smarter Europe', a 'More connected Europe', a 'Social Europe' and a 'Europe closer to citizens'.

This study has been prepared by the J**oint Research Centre, the science and knowledge service of the European Commission, under the umbrella of the Knowledge Centre for Territorial Policies framework.** Through a new perspective and new evidence, the term *lonely places* aims at recognising the inherent characteristics of territories even beyond administrative definitions. The report retains certain linkages with terminology already associated with specific aspects of territorial disparities. However, the *lonely places* concept has a broader scope and directly targets European policies and instruments able to support local development and territorial cohesion. The *Lonely Places* report, therefore, acknowledges the traditional concept of 'loneliness' associated mostly with people, but focuses on the territorial perspective.

LONELY PLACES AND THEIR CHALLENGES

Access to essential services, the variety of urban amenities, digital connectivity, demographic change, the level of political engagement, and the existence of targeted policy interventions are essential elements for a prosperous society. Each typology of *lonely places* presented in this report refers to a specific type of disconnection or deprivation that an area experiences in relation to these issues. In this sense, **a *lonely place* can...**

… BE TERRITORIALLY DECLINING – Some EU regions have been facing a **profound demographic change in combination with low economic growth.** This situation has arisen mainly **in remote locations (far from cities) putting them in a vulnerable situation.** Along with this, remote areas present the highest rates of population losses among the younger and more active age cohorts. This is an important challenge for the whole of society, since the working-age population supports public and social services for the dependent population. The decline in population in remote areas was also mirrored by losses in employment and growth. Remoteness, along with these socioeconomic trends, limits resilience to potential shocks.

… HAVE A LACK OF SERVICE PROVISION – The availability of and access to essential services such as schooling are essential social rights. Primary schools are considerably affected by demographic changes. **School provision is under pressure in municipalities that have small populations of school-age children.** In particular, **access to primary schools is poorer in rural areas and people have to travel longer distances to reach a school.** Based on 2018 population and school distributions, 90 % of the municipalities without a primary school were rural. **EU municipalities facing the risk of school closure will need to implement practical solutions,** such as consolidation of schools, active mobility pathways and/or e-learning, to ensure that children continue their education path.

… BE DIGITALLY DISCONNECTED – Access to good quality Internet connection is becoming a fundamental right. However, territorial disparities regarding access to high-speed networks persist, with **urban areas in most Member States enjoying the highest speed of broadband connection, whereas rural and remote areas lag behind.** Across the EU-27, important variations can be identified between and within countries. Digitally disconnected places can also exist within large and very well-connected cities (neighbourhoods, districts, etc.). However, **the most vulnerable municipalities are those that present a combination of low-speed, low population density and a remote location** (far from urban centres).

… BE DISENGAGED FROM PARTICIPATION IN ELECTIONS – Participatory democracy is one of the foundations of the European Union. Voter turnout can be a key indicator of citizens' interest in political processes. **From the European Parliament elections of 2019, it is possible to observe the municipalities with the highest disengagement from European politics by looking at their voter turnout.** The degree of urbanisation and population density influence political engagement. However, a lower electoral turnout also seems to be influenced by other factors, including education, income, and age. Evidence from this work can help policymakers target their interventions more precisely and support actions in specific territories.

… BE POORLY EQUIPPED WITH URBAN AMENITIES – Cultural spaces, restaurants and bars, parks and green areas are essential features of a city. Across the capital cities of the EU-27, **urban liveliness strongly varies in relation to access to amenities that offer leisure, shopping, and essential services.** Areas offering a higher variety of amenities improve the quality of life of their residents, especially those with limited mobility, while a lack of diversity in urban amenities may lead some areas in cities to become marginalised places. Spatial disparities among neighbourhoods will need **specific policy interventions and adaptation measures to improve accessibility to certain amenities.**

... EXPERIENCE THE CO-OCCURRENCE OF MULTIPLE TERRITORIAL VULNERA-BILITIES – Many EU places are facing a variety of challenges at the same time. **A multidimensional identification of** *lonely places* **can capture the spatial co-occurrence of vulnerabilities at different scales. More than 1 200 EU municipalities showed the co-occurrence of multiple dimensions of** *lonely places.* The countries with the highest intensity of territorial loneliness are Czechia, Spain, France, Greece, Hungary, and Slovakia. Economic indicators highlighted a prevalence of *lonely places* in Greece, as the country with the highest number of municipalities where different typologies of *lonely places* co-occur.

OPPORTUNITIES AND POLICY RECOMMENDATIONS

Demographic change, the transformation of our societies into more technologically advanced ones, and the ongoing COVID-19 pandemic are societal challenges that can be transformed into new opportunities. While in remote and rural areas affordable houses or proximity to natural spaces are valuable assets, cities can provide better accessibility and connectivity, a wide variety of amenities (at least at the aggregate level), and a broad range of economic activities. **A good understanding of what characterises a** *lonely place,* **therefore, is crucial for the development and implementation of policies to seize the potential of every place and to enhance overall quality of life. These should aim at:**

IMPROVING DIGITALISATION – Connectivity and digitalisation are essential aspects in addressing some of the weaknesses of rural and remote communities, as well as in marginalised, deprived, or declining areas within large cities. **Innovation and technological advancement** could improve access to services, knowledge and information flows, cooperation, productivity, and access to markets. **Societal actors must be involved before, during and after the whole digitalisation process,** and their needs should be taken on board in the development of digital services. **EU funds should be focused especially on connecting places with a rollout that is quick enough to foster new and competitive firms and favour broadband access to groups previously excluded.**

PROMOTING THE GREEN TRANSITION – **Remote and rural areas can play a crucial role in the transition to a green and sustainable Europe, ensuring the stewardship of natural resources and mitigating the effects of climate change.** Key opportunities for an alternative local economic development of rural and remote areas include: improving energy efficiency, promoting sustainable tourism, reducing dependence on imported fuels and increasing the deployment and use of low-carbon and renewable energy sources. Similarly, **cities, as major contributors of emissions and pollutants, can help to make Europe climate-neutral by 2030 through a shift towards active and low-carbon forms of mobility, better urban planning, for example concerning urban amenities greener infrastructure, and more energy-efficient buildings.**

INCREASING RESILIENCE – Building resilience in a territory **requires a holistic reading of different phenomena to deal successfully with different types of shock** (e.g., financial crises, natural disasters, pandemics, political conflicts, etc.). In general, being more resilient means fostering innovation and technologies, improving connectivity and accessibility, having demographically balanced territories, while strengthening and diversifying the economy and promoting conservation of the environment. **An effective bottom-up approach to building resilience should integrate local communities,** taking into account their specific circumstances.

ENSURING SOCIAL INTEGRATION AND PARTICIPATION – **Poor education, scarce job opportunities, and inadequate access to public services and infrastructure** are identified as the main reasons for the decline of some EU municipalities. The interactions of these factors **can produce a vicious circle which often results in an outmigration, especially of women and younger people, from remote rural areas to urban centres.** Strategies focused on ensuring greater participation in the labour market, politics, entrepreneurship, farms, and business, together with a better provision of social and family services, might help to reverse this trend. Furthermore, **with many areas having an ageing population, a genuine silver economy based on goods and services that target older people** (social care, long-term health care, transport, housing services, etc.) **could address social isolation as well as attracting investments** to local economies. Alongside social integration, **participation in electoral processes, as a fundamental right, reflects interest and trust in institutions.** The identification of possible areas of discontent and disaffection towards politics needs tailored policy actions and communication campaigns to encourage democratic participation.

ENHANCING ACCESSIBILITY TO SERVICES – Communities with fewer pupils face an increased risk of school closure and/or having to travel further to school. Specific policy actions and measures are required to create realistic plans to ensure adequate and equitable education provision for Europe's youth. **In rural, remote, and sparsely populated areas facing a likely deterioration in school accessibility, digital tools and e-learning can complement active modes of transport and infrastructure as solutions to the provision of education.**

IMPLEMENTING PLACE-BASED APPROACHES AND NATIONAL POLICIES – Cohesion Policy is the main EU strategy to reduce disparities in the level of development between European regions. A specific type of place-based policy, namely **Integrated Strategies for Sustainable Urban Development,** is implemented in neighbourhoods with poor access to services and reduced social capital and opportunities. **Urban strategies can support areas characterised by socioeconomic difficulties, poor quality of the built environment, and neglected public spaces both in the core of cities and their commuting zones.** Finally, national strategies and territorial instruments target development and unlock opportunities in places where particular vulnerabilities are identified. **Crucial considerations for the successful implementation of these policies include effective multi-level governance system and funding, the appropriateness of implementation mechanisms, strategic and administrative capacity.**

LEVERAGING THE EFFECTS OF COVID-19 – The COVID-19 pandemic has exacerbated pre-existing territorial inequalities. Alongside its negative socioeconomic effects, **the pandemic has also produced some positive effects** such as improvement in inner-city air quality and the development of digital infrastructures and e-services. The accelerated use of teleworking has resulted in a **temporary outflow of people from cities to more rural areas,** often to second homes, with associated changes in housing preferences. The pandemic has also significantly impacted the EU economy (e.g., tourism), especially in some countries. Current **recovery programmes and instruments might offer a unique opportunity to tackle historical weaknesses and introduce radical changes to speed up transitions** towards a more resilient, fairer, greener, and connected Europe.

Introduction

The characteristics of places where people live can prevent them from reaching their full potential and satisfactory well-being. In fact, an individual's chances are determined not only by demographic characteristics, like age or gender, but also by the opportunities available in her/his societal context: health services and green areas, access to education and knowledge, digital connectivity, and the inclusive access to the city (European Commission, 2022; Sandel, 2020; Stiglitz, 2012; Wilson, 2012). These aspects are even more crucial for people with fewer resources, as they might not have the possibility to move elsewhere, either because of economic, cultural, or linguistic constraints, or reasons linked to age.

There cannot be perfect equality across geographical space (Soja, 2010), but some of these differences in opportunities, coupled with a lack of effective policies, may be detrimental to the common good. They can also carry a potential threat to the future of the European project, as a reaction to a perceived broken social contract (Blanchard and Rodrik, 2021).

Disparities become even more visible by observing places rather than individuals, as those spared from economic and social hardship and with good access to healthcare or schools for their children, might resent the shrinking of life chances of others living in the same place.

The COVID-19 pandemic has exacerbated pre-existing inequalities, creating new divisions that will need time to address. However, the recovery programmes and instruments currently being deployed might also offer a unique opportunity to tackle historical weaknesses and speed up some transitions, making them more inclusive, and introducing radical changes in terms of a more resilient, fairer, greener and connected society.

In light of this, it is crucial to produce a timely and thorough diagnosis of existing challenges and opportunities related to territorial, social, environmental, demographic, and economic disparities across Europe. A full comprehension of these challenges and their interlinkages can produce evidence to improve policies, especially for the benefit of the youngest and of those living in vulnerable conditions, in line with the principle of leaving no place and no one behind.

1.1 THE EXPLORATORY CONCEPT OF *LONELY PLACES*

To achieve this objective, this report introduces a new exploratory concept, that of *lonely places*. So far, the term 'lonely' has been used in the literature mostly to refer to people. It is usually associated with the difference between the network of relationships individuals would like to have compared with that which they actually have. It also relates to their feelings about this (D'Hombres et al., 2020; DG EMPL, 2018; Russell, 1982). Researchers have also discussed the difference between loneliness and other related concepts, such as social isolation and solitude (Long and Averill, 2003; Russell, 1982; Zavaleta & Samuel, 2014). Other studies investigate how the feeling of loneliness depends on the relationship between individual characteristics or conditions (e.g., age, disability, sexual orientation, and unemployment: see Borys et al., 1985; Garcia et al., 2020; Farinha Rodrigues, 2019), as well as characteristics of the living environment, both at the meso- and macro level (e.g., poor neighbourhood, foreign country see Savikko, et al., 2005; van Tilburg, & Fokkema, 2020). Recent work also analyses policies to fight individual loneliness[5], given its potential negative impact on health (Holt-Lunstad, 2017; Mihalopoulos et al., 2020), and

---

5   JRC Data Catalogue – European Commission (*https://data.jrc.ec.europa.eu*).

also how the feeling of loneliness has changed as a consequence of the COVID-19 pandemic (Baarck et al., 2021).

In this context, this report introduces the concept of *lonely places* which, unlike previous work, is spatially embedded. **This concept identifies a plurality of places that present a certain vulnerability in terms of lack of or insufficient local endowment, as well as accessibility or connectivity (spatial and/or digital), with other territories.**

In this sense, remote places experiencing depopulation and economic decline are considered *lonely* for the sake of this report. *Lonely places* are also territories with a disadvantage in access to basic services and infrastructure, either for all their residents or for some specific groups. In this respect, some depopulating areas might experience disadvantaged access to local schools, which hampers the future social mobility of children living in those areas and favours the emigration of young families. Furthermore, some towns or suburbs might be less digitally connected than others, while some neighbourhoods in cities might experience high levels of socio-economic deprivation. Even city neighbourhoods lacking access to everyday services are *lonely places*, as they do not guarantee their residents – especially those in vulnerable conditions such as older people – access to the urban services they need. Finally, places that experience a particularly low electoral turnout are also considered *lonely places*, as this phenomenon might be interpreted as a form of withdrawal and disconnection from the democratic process.

From this initial description of *lonely places*, and the different typologies of *lonely places* that will be presented in this report, it will be clear that the concept of **lonely places** **is related to several terms already used in the literature and in national policy discourses to refer to spatial disparities. These include** *'España vaciada'* **in Spain,** *'Aree interne'* **in Italy, and** *'Municipios do interior'* **in Portugal.** These terms describe areas (or territories) that are far from centres offering essential services, are affected by depopulation, poor access to services, social distress, weak institutional engagement, and economic decline. **Other examples include the concept of** *'fractures territoriales'* **and** *'quartiers prioritaires'*

developed in France around two territorial features – declining industrial areas and small towns, but also priority neighbourhoods within cities.

Starting from these terms, the concept of *lonely places* **aims to bring local, regional, and national concepts and policies within the same conceptual framework.** The new term can help to refine the terminology used to refer to the toolkit for fostering local development, as it can be employed to refer to local territories beyond administrative boundaries and the well-known urban-rural dichotomy, even within a comparative perspective. Furthermore, the *lonely places* concept has an interdisciplinary vocation, as it includes considerations of physical infrastructure, access to schools, cultural facilities, participation in democracy, migrant integration, etc. It also offers an unprecedented analytical lens, leveraging highly disaggregated data based on a combination of both traditional and experimental sources with European coverage. A non-exhaustive list of data includes: unique demographic databases and data on voter turnout; economic data from the Annual Regional Database of the European Commission's Directorate General for Regional and Urban Policy (ARDECO), maintained and updated by the Joint Research Centre; granular data on urban amenities from online platforms; high-resolution data about broadband coverage and network quality; data from the STRAT-Board: a tool developed by the Joint Research Centre in collaboration with the Directorate General for Regional and Urban Policy (DG REGIO) that provides access to information on EU-supported urban and territorial development strategies.

Finally, the concept of *lonely places* **implies a shared responsibility to transform them into places of opportunities.** *Lonely places* – thanks to bottom-up initiatives, their institutions, and ecosystems – have a responsibility to reinvent themselves in order to guarantee better opportunities for their current and future inhabitants, as well as develop better connections with other territories. External contributions (policies, funding, and peer-to-peer exchanges) at local, regional, national and European levels, are also crucial to help reduce the vulnerabilities that characterise *lonely places*, where these are detrimental to the present and future well-being of their inhabitants.

1.2 POSITIONING THE WORK IN THE LITERATURE

This work on *lonely places* focuses on the local endowment across places and accessibility and connectivity across and within areas. These characteristics might make the concept of *lonely places* appear to be similar to that of **inner peripheries** (ESPON, 2017), which also takes the degree of disconnection into account. However, the concept of *lonely places* considers many more variables than inner peripheries, which are identified on the basis of car-travel times to regional centres, low economic potential (expressed in terms of potential accessibility to services-of-general-interest), poor car accessibility to private and public services, negative development (negative population, negative Gross Domestic Product (GDP) development and increasing unemployment).

The new concept also differs from the concept of **lagging behind-ness,** which refers almost exclusively to economic characteristics (Stiglitz et al., 2009) and from other **interdisciplinary inequality frameworks,** (e.g., the OECD Well-being Index, the Social Progress Index). While the latter share the interdisciplinarity of the concept of *lonely places*, they generally compare administrative units of the same level (usually the regional one) and focus on available official indicators. In contrast, the *lonely places* analysis integrates traditional and emerging data sources, at the finest possible spatial granularity.

The concept of *lonely places* also relates to the concept of **places that do not matter** (Rodríguez-Pose, 2018), **places left-behind** (Sandbu, 2020), and **places of discontent** (Dijkstra et al., 2020; McCann, 2020). These are identified as places experiencing long periods of decline in productivity and employment, often linked with agriculture/industrial sectors, outmigration, and perceived unfairness by their inhabitants. They are also usually discussed in relation to anti-establishment votes or, more generally, votes for populist parties, as a sign of protest (Rodríguez-Pose, 2018). The term *lonely places*, however, covers a wider variety of places and aims to advance a constructive perspective, leveraging challenges to unlock opportunities through policies.

Similarities can also be found with a concept elaborated in 1991 by Alain Touraine in his article, *Face l'exclusion.* Touraine noted that modern societies are formed as networks, where **divisions arise according to the opportunity and the desire to participate in the network or to be disconnected from it** (Wasserman & Faust, 1994). This concept has been revamped recently by Jeremy Rifkin in his book *The Age of Access* (Rifkin, 2000), in which he discusses the shift in importance in modern societies **from ownership to access.**

The concept of *lonely places* is also related to the concept of **fairness,** but only in terms of **equality of opportunity.** Fairness refers to an 'ethical judgement about the appropriateness of an object (behaviour, treatment, process or outcome) with respect to a subject (individual or group)' (D'Hombres et al., 2020), and does not have any explicit spatial connotation. Instead, the work on *lonely places* considers the distribution of territorial features – a subset of equality of opportunity concerning the spatial endowment of territories.

The *lonely places* concept also partially relates to that of spatial in/justice, discussed in the literature by Soja (2010) and other scholars. According to these authors, **spatial justice** is a way of looking at justice from a critical spatial perspective, where the main focus is to understand how political outcomes or processes create lasting spatial structures of privilege versus disadvantage. In contrast, the analysis presented in the present report takes the current endowment of resources and connections across space as given and focuses specifically on how to make them more sustainable in the future, in the light of the current policy framework.

1.3 POLICY IMPACT

Findings from this research might support the development of transformative actions towards a more sustainable Europe in line with the **2030 Agenda for Sustainable Development and its Goals.**

The analytical lens adopted and the cross-sectoral evidence on how to create opportunities for *lonely places* can also foster actions along several of the **political priorities set by the European Commission under the von der Leyen presidency,** notably 'Europe fit for the digital age', 'An economy that works for people', 'A new push for European democracy', and 'A European Green Deal'[6].

This report can also inform **specific EU policies initiatives and frameworks,** including: the Long-term Vision for Rural Area, the Urban Agenda for the EU, New European Bauhaus, the Territorial Agenda 2030, the Action Plan on Integration and Inclusion, the Digital Education Action Plan, the European Pillar for Social Rights, the EU Strategy on the Rights of the Child and the European Child Guarantee, and those dealing with energy, transport, connectivity, the environment and climate.

Furthermore, **cohesion** is a core value for the EU[7] and is the primary policy reference for this work. In the past, the main effort of cohesion policy was to favour convergence by reducing inequalities between better-off regions and those lagging behind, especially with respect to economic performance. In recent years, there has been a general shift towards the concept of sustainable future, from economic, social, territorial, and environmental points of view, for all places and people. Other criteria have therefore been included to guide the distribution of EU cohesion funds (youth unemployment, low level of education, climate change, and the reception and integration of migrants). Moreover, new levels of government have been entitled to receive funding, integrating the concept of place-based policies (Barca,

2009), and increasing the actual inclusiveness of these policies.[8] The knowledge base for policies must therefore also evolve to ensure no place and no one is left behind. The present report on *Lonely Places* reflects these changes.

The knowledge about territorial disparities presented in this report can also inform current and forthcoming **national, regional, and local policies** across the EU-27 Member States.

1.4 STRUCTURE OF THE REPORT

This report follows a modular structure, with seven thematic contributions preceded by the present introduction **(Chapter 1).** This first chapter introduces the concept of *lonely places* and provides the context and the motivation for the analysis. It also includes a conceptual map.

Chapter 2 deals with past and future demographic and socioeconomic patterns and identifies areas that are both remote and characterised by depopulation and negative economic performance. These are most often associated in the public imaginary with *lonely places*.

Chapter 3 investigates changes in access to education in recent years, focusing on the closure of local schools, which might be perceived as the withdrawal of central government from local communities and therefore as a form of exclusion of some places from the educational system.

Chapter 4 explores connectivity to high-speed broadband across Europe. The broadband network is critical for accessing e-services (e.g., education, health, public administration) and provides the opportunity to attract and retain inhabitants in rural and remote areas, where physical access to services is generally limited. It can therefore be seen as a complementary infrastructure, providing connection between places.

---

6   This report was completed in Autumn 2021, therefore it does not include reference to subsequent policies and/or circumstances.

7   Cohesion Policy is enshrined in the Treaty on the Functioning of the European Union (Art. 174).

8   Martin, et al., 2021 provides a discussion on spatial policies distinguishing among spatially targeted, place sensitive and place-based policies.

Chapter 5 proxies *lonely places* with territories with a high level of withdrawal from European political participation, by looking at voter turnout during the European Parliamentary elections of 2019.

Chapter 6 focuses on European capital cities, investigating how the lack of spatial access to a wide variety of amenities can also occur in very connected places, such as main urban centres.

Chapter 7 focuses on disadvantaged neighbourhoods in Functional Urban Areas that are targeted by strategies of sustainable urban and territorial development. It discusses whether improving the quality of life in these neighbourhoods, through place-based policies, generates the enabling conditions that also favour the integration of migrants.

Chapter 8 provides an assessment of a selection of existing national, regional, and local approaches for territorial development, coupled with European Commission policy instruments and funding, that tackle one or more typologies of *lonely places*. Insights from these interventions are expected to stimulate reflections and debate on the future of place-based policies for *lonely places*.

Chapter 9 builds upon the results provided by the previous thematic chapters. It presents an overall analysis of *lonely places* by investigating their stratification across different domains, performing a multi-criteria analysis at the spatial scale of municipalities and for the case study of Greater Paris. The objective of this analysis is to understand where each of the different typologies of *lonely places* is located and where a stratification of more than one typology occurs, in order to deploy the most appropriate policy intervention.

Finally, **chapter 10** summarises the main findings of the work and provides suggestions to support the development of evidence-based policies to transform *lonely places* into places of opportunities.

Conceptual map

Long-lasting processes of depopulation are culminating in **pression on local service provision**, such as **schools**.

SEE CHAPTER 3

Broadband access is worst in remote and rural areas. Disparities also exist within urban areas.

SEE CHAPTER 4

The **variety of amenity typologies** in an area has **impact on the daily routine** of residents.

SEE CHAPTER 6

Even in urban areas might exist places with **poor quality of the built environment, neglected public spaces** and **segregation**.

SEE CHAPTER 7

Strategy

Remote areas experience **higher rates of population loss** compared to non-remote ones.

The **level of democratic dis(engagement) varies** across and within countries.

Strategy

Building on the **principles of a place-based, integrated approach, strategies and policy instruments** can support *lonely places* becoming **places of opportunities.**

Carolina Perpiña Castillo
Jean-Philippe Aurambout
Filipe Batista e Silva

HIGHLIGHTS

In this chapter, remote areas, defined as locations far from cities, are characterised from a demographic and socioeconomic perspective. Based on these aspects, thresholds associated with depopulation and negative economic performance for the 2001-2018 period were used as a proxy to identify *lonely places*.

Remote areas have experienced higher rates of population losses, compared to non-remote areas, particularly among the younger and active age cohorts, leading to an accelerated ageing of the population.

The decline in population in remote regions was mirrored by losses in employment, especially in the agriculture and industry sectors. Gross Value Added, Gross Domestic Product per capita and income grew during the 2001-2018 period at a lower rate in remote regions.

Remote regions have recovered more slowly from the 2008 global financial crisis than other regions, highlighting their limited resilience to potential socioeconomic shocks.

Place-based policy strategies might help to seize existing opportunities in remote territories, such as the silver economy, multi-locality, new teleworking patterns, the digital and green transitions, the integration of women and youth and the diversification of the economy.

Territorial loneliness

Looking at challenges and opportunities in EU remote and depopulating areas

2.1 INTRODUCTION

Many EU regions, in particular remote and rural areas, have suffered from demographic changes such as population ageing and/or a continuous population decline over the last decades. Recent projections suggest that this trend will continue – the share of people over 65 could reach 30 % of the EU population, while the working and youth population[9] will decline by 2030 (Eurostat, 2020)[10]. Along with this, it is estimated that the EU will experience an overall shrinking of its population, which will be more pronounced in remote areas. In particular, remote areas that have experienced a steady depopulation process generally present a lower median share of children and working-age population and a higher median share of older people (European Commission, 2021a).

In many territories **depopulation is caused by natural population change** (resulting from a decline in both fertility and mortality), **negative net migration or both,** associated with rapid ageing which is happening widely across the EU (Goujon et al., 2021). These trends result from a vicious circle of inter-related social and economic factors involving the outmigration of younger people to urban centres. Such a situation leads to an extra pressure on the working age population (currently there are less than two people of working age for every retiree), as it needs to support public and social services for the dependent population through taxation (OECD, 2020a).

Nowadays, there is an increasing perception of territorial disparities within and among EU regions. Fewer job opportunities, lower access to public services such as education and health, transport and infrastructure (physical and digital), as well as a higher risk of poverty and social exclusion are both causes and consequences of the demographic decline of rural and remote regions in Europe (European Commission, 2017a; European Commission, 2020c; Price et al., 2017). Besides the **low density of population that characterises some remote areas, long distances between small settlements limit the social and economic interaction opportunities,** leading to limited 'agglomerative advantages' and weak economies of scale, resulting in a low socioeconomic development (European Parliament, 2021).

A region's economic and demographic structure is a key factor in the speed and ability with which it can develop and recover from shocks. This has been demonstrated by the resilience of certain territories strongly affected by several crises over the last years (Benczur et al., 2020; Rizzi et al., 2018). This is particularly true **in remote and rural regions** where **the economic performance in terms of Gross Domestic Product (GDP) per capita, productivity and employment rates on average are below those of urban regions and regions close to a city.** The majority of remote and rural regions are dependent on traditional primary sectors and low value-added services, with less diversified economic activities (Perpiña et al., 2018). In those places the effects of the COVID-19

---

9 The youth population is defined as those people aged less than 15 years.
10 Outcomes from the LUISA territorial modelling platform reflects similar demographic trends by 2050 (Perpiña et al., 2021a).

pandemic may have unfolded in a different way with respect to predominantly urban areas. A large share of older people, fewer options to work remotely, lower incomes, lack of specialised health centres and staff, large distances to hospitals, lower accessibility to internet, etc. make these areas socioeconomically vulnerable (OECD, 2020a).

While this demographic change is not new, some past and recent crises (financial, COVID-19, etc.) have exacerbated the situation in some remote and rural areas, making them more vulnerable. Whereas remote and rural areas are still subject to distance penalties, some **new technologies and digital infrastructure can increase access to fundamental (public) services** such as e-health and e-learning (Gruber et al., 2014). Maintaining the focus on innovative and sustainable approaches, the green and digital transitions should help accommodate the impact of economic, societal, and demographic change in remote areas (European Commission, 2020a; European Commission, 2019; European Commission, 2017b).

In this context, the objective of this chapter is twofold. Firstly, it provides background evidence and analysis regarding the demographic challenges of EU remote areas and their economic performance compared to non-remote areas. **Linked to remoteness and with defined thresholds for depopulation and low economic performance,** *lonely places* **are therefore considered a sub-set of places in all remote areas that fit those criteria.** Secondly, a range of opportunities and perspectives have been explored to promote sustainable, resilient and inclusive development, as well as improved well-being, in those areas. This chapter also features a case study focusing on France to gain a better understanding of household composition and the phenomenon of multi-locality in remote areas.

2.2 DATA AND METHODOLOGY

The spatial delineation of remote areas is often based on the distance – measured by driving time – to the nearest urban region/city, in combination with the population affected by long distances (Dijkstra and Poelman, 2008; Perpiña et al., 2021a). **In the present analysis, remote areas are defined as places whose majority of the population live at a distance higher than 45-minute drive by car from the nearest city** (of at least 50 000 inhabitants) as defined in European Commission 2021a (Figure A1, Appendix 1).

The characterisation of remote and non-remote regions relies on **past population trends as well as future projections per age groups and gender** for the years 2001, 2011 and 2021. Demographic data are derived from the Eurostat official census and projections, in combination with historical local population data since 1961 and the 2018 LUISA population map.

Data relative to **regional economic performance were extracted from the ARDECO database** which is elaborated by the Joint Research Centre in collaboration with DG for Regional and Urban Policy. The economic indicators included were **sectoral employment and Gross Value Added (GVA), Gross Domestic Product (GDP) and income**. The results are presented making a distinction between pre-crisis (2000-2007) and post crisis (2008-2018) periods.

Throughout this chapter **two geographical levels were distinguished** for comparability, statistical and mapping purposes across the EU-27: **municipalities and regions.** Based on official definitions (European Commission, 2021a), the term *'remote areas'* refers to local administrative units (LAUs, municipalities) while *'remote regions'* refers to the regional level[11]. Complementary information about data description, definitions, terminology, and methods used in the analysis can be found in Appendix 1.

---

11 The classification of LAUs is based on the degree of urbanisation while the classification of NUTS 3 (Nomenclature of Territorial Units for Statistics) level regions refers to the Urban-Rural regional typology. Both categories are defined in Commission Implementing Regulation (EU) 2019/1130 of 2 July 2019 on the uniform conditions for the harmonised application of territorial typologies.

2.3 RESULTS

2.3.1 Depopulation and ageing in remote areas

In 2018, the population living in the EU-27 reached almost 447 million inhabitants, following an upward trend since 1960. Covering 46.4 % of the EU territory, **remote areas were home to about 37 million people** (8 % of the EU's population). **Of those, more than 10 million people lived in a region that experienced depopulation.** The population living in remote regions decreased by 1.1 million since 2001, while the EU population increased by almost 19 million, notably in urban regions and in regions close to a city. Population density in remote regions was about 27 inhabitants/km², compared to urban regions (438 inhabitants/km²) and rural regions close to a city (69 inhabitants/km²) (see Table A1, Appendix 1).

Overall, **EU remote areas have experienced the strongest population decline compared to non-remote areas,** varying considerably across Member States (Figure 1). Indeed, observing trends in remote areas (Figure 2 and Figure A2, Appendix 1), **three different country depopulation profiles** can be identified:

- A trend towards accelerated population losses that reflects a country-wide negative trend and, therefore, cannot be directly attributed to remote areas. This occurred in Bulgaria, Latvia, Lithuania, Croatia, Hungary and Romania.
- Population decline in remote areas while the entire country grew as in Germany, Finland, Slovenia, Slovakia and Sweden. A disproportionate decrease in relation to the country occurred most strikingly in Poland, Italy and Spain.
- Countries that either alternate decreases and increases over time or show a positive trend. These patterns can be observed in Cyprus, France, Belgium, Greece, Austria, Czechia and Luxembourg.

The deepest EU depopulation from 1961 to 2018 was observed in remote rural areas with a -0.42 % compound annual growth rate. Remote rural areas have consistently been losing population, particularly during the 1961 to 1971 period, reaching an annual decline of −0.8 % (Figure 2). Rural areas, despite the overall negative growth rates, were gaining population during the 1981-2011 period. On the other hand, **cities and, to a larger extent, towns, and suburbs, have seen their population increasing at a higher rate,** exceeding 1 %, in particular during the first decade, where a 'rural exodus' can be observed. Only during the most recent period, 2011-2018, remote towns and suburbs also experienced a moderate decline.

Figure 1: Population change (in percentage) in remote versus non-remote regions between 2001 and 2021 (EU average 0.18 and 0.57, respectively).

Source: Own elaboration. **Note 1:** No available data from the 2001 census for Belgium, Germany, Croatia, Malta and Sweden. **Note 2:** No region is classified as remote in Cyprus, Czechia, Luxembourg, The Netherlands and Slovakia at NUTS 3 level.

Figure 2: Depopulation in remote areas using compound annual growth rate between 1961 and 2018 for the EU-27 countries, per decades.

Decades	
	1961-1971
	1971-1981
	1981-1991
	1991-2001
	2001-2011
	2011-2018

ES -1.30
HR -1.15
BG -1.13
PT -0.95
LV -0.91
LT -0.91
RO -0.85
HU -0.82
EE -0.68
FI -0.67
IT -0.63
EL -0.50
CY -0.48
CZ -0.32
SK -0.24
DE -0.24
SE -0.24
PL -0.10
AT 0.00
SI 0.07
FR 0.09
BE 0.12
DK 0.14
NL 0.49
MT 0.55
LU 0.71

Source: Own elaboration from the historical population data and 2018 LUISA population map aggregated at country level from roughly more than 98 000 municipalities. The numbers in the graph correspond to the average annual growth rate for the whole time period (1961-2018).

Figure 3: Population pyramid in 2001, 2011, 2021 in remote regions at EU level.

	2021
	2011
	2001

Female
Male

> 85
65-84
50-64
30-49
15-29
0-14

5 4 3 2 1 0 1 2 3 4 5

Million people

Source: Own elaboration based on the 2001, 2011 census and 2021 projections (Eurostat), aggregated from regional level. No data for Belgium, Germany, Croatia, Malta and Sweden.

Population in remote regions has been progressively ageing, with the proportion of people aged over 50 increasing[12], while younger cohorts have been steadily decreasing[13] (Figure 3). The cohort with the largest increase corresponds to the population aged 85+. In terms of gender, between 2001 and 2021 the shares of young and adult women (up to 49 years old) decreased more than those

12 Population aged between 50-64 and 65-84 increased by 15% and 18%, respectively.

13 Decrease in population between 15-29 years (-27% in remote vs -16% in non-remote areas); decrease in population between 30-49 years (-15% in remote vs 2.4% increase in non-remote areas).

Figure 4: Population change (in percentage) by age groups in remote regions between 2001 and 2021.

Source: Own elaboration on 2001, 2011 census and 2021 projections from Eurostat. No data for Belgium, Germany, Croatia, Malta and Sweden in the 2001 census.

of men, especially in remote regions (see also Figure A3 and Table A1, Appendix 1).

When considering the population that left remote regions, **cohorts below 49 years of age were the most affected during the last 20 years.** This happened with different intensity in most of countries, except in France and Ireland, which showed an increase in most age groups (Figure 4). This is in contrast with **the older generation,** which **tended to increase, above the EU average,** by more than 39 % for the population 65+ years in Denmark, Ireland, France and Finland, and by more than 113 % for 85+ years, especially Slovenia, Greece, Romania, and Poland. **Remote rural regions faced the most pronounced ageing situation,** compared to intermediate remote and rural regions close to a city (see also Table A1, Appendix 1).

2.3.2 Economic growth in remote regions

In 2018 **employment in remote regions accounted for 6.7 % of total employment,** representing roughly 13.6 million people in the EU. Non-market services and wholesale activities (tertiary sector) accounted for more than half of the total employment, followed by industry (16.9 %) and agriculture (12 %). **Between 2000 and 2018, more than 7.2 % jobs were lost in remote areas,** especially in the agriculture and industry sectors.

Trends after the 2008 crisis (Figure 5) showed that employment in remote regions dropped drastically across all economic sectors (–10 %), except for the financial & business services sector, which increased by 3 %. The highest declines, in both remote and non-remote regions, were registered in the construction and agriculture sectors, with respective decreases of 28 % and 22 %. Employment in agriculture has been continuously decreasing across all regional typologies, and particularly in remote and rural regions, where it reached –40 % (see also Table A2, Appendix 1). These numbers present a **sharp contrast with the situation before the financial crisis, where employment in remote regions was steadily increasing** (annual growth rate of 0.52 %) in all sectors (except in agriculture) and indicate that, so far, economic recovery in remote areas has not taken place.

Similarly to employment, **GVA in remote regions represented only around 5.7 % of the EU's total** in 2018. The highest contribution to total GVA in both remote and non-remote regions comes from non-market services, financial & business services and the wholesale, transport and information sectors (altogether accounting for more than 67 %). Agriculture was the only sector that experienced a 5 % decline during the pre-crisis period. **Income per capita showed positive trends in both pre- and post-crisis periods.**

Figure 5: Employment and GVA per sector, income and GDP/capita comparing remote and non-remote regions in the EU-27 between two periods on time: 2000-2007 and 2008-2018.

Source: Own elaboration based on ARDECO database. **Note:** NACE2 Sectors from ARDECO database corresponding to: A: Agriculture, Forestry and Fishing / B-E: Industry (excluding Construction) / F: Construction / G-J: Wholesale, Retail, Transport, Accommodation & Food Services, Information and Communication / K-N: Financial & Business Services O-U: Non-market Services.

2.3.3 Resilience capacity in remote regions from a socioeconomic perspective

During the 2008-2018 period, densely populated areas, such as cities or towns, were more resilient to the shock of the 2008 financial crisis (OECD, 2020). As shown in Figure 6, before the global financial crisis, total employment grew in all three territorial typologies up to 2008 when it felt drastically. **After the crisis, employment in remote regions grew slower than in rural and urban regions and never reached the pre-crisis levels**. A continuous decline in total population is noticeable in remote and rural regions during the whole period, while the opposite trend occurred in urban and intermediate regions.

Temporal variations in annual percentage change for population and employment in remote versus rural regions is shown in Figure 7. At EU level, **a drop-in annual change rate of population occurred approximately 2 years after the 2008 drop in employment** (starting point of the global financial crisis) reflecting the relationship between both factors. A similar behaviour was observed for several countries such as Ireland, Bulgaria, Poland, Croatia, Portugal, and Latvia. In other countries (e.g. Spain), an increase in employment was immediately followed by an increase in population in both remote and non-remote regions.

During the post financial crisis' period, **non-remote regions performed economically better than remote regions in most countries, from the perspectives**

Figure 6: Evolution of EU-27 population (left Y-axis) and employment (right Y-axis), both measured in million people, in remote, rural and urban regions between 1996 and 2020.

Remote regions

----- Population   ——— Employment

Rural regions

----- Population   ——— Employment

Urban regions

----- Population   ——— Employment

Source: Own elaboration based on ARDECO database.
Note: Values on the Y-axis do not have the same range. This is to make visualisation and comparison easier between the three typologies.

of employment, incomes, GVA and GDP/capita. Spain, Austria, Slovenia, Germany and Finland, however, had a slightly better economic performance in remote regions (better recovery) for all or some of the indicators. Greece presented negative values for all four economic indicators, especially in non-remote regions (see also Figure A4, Appendix 1).

Figure 7: Evolution of the annual change rate for population and employment in EU remote regions versus non-remote regions for the whole period: 2000-2018.

----- Remote regions
----- Non remote regions
Employment
Population

Source: Own elaboration based on ARDECO database.

2.3.4 Where are the most vulnerable EU remote areas and regions?

In view of the vulnerable and receding situation of the EU remote areas, especially after the 2008 financial crisis, **this section analyses regions (NUTS 3 level)** and municipalities (LAU level) affected by depopulation, along with a low or negative economic growth. **Population, employment, GDP, and income are the key features selected for identification as an initial typology of** *lonely places* – locations where the socioeconomic conditions are not favourable for prosperous and sustainable territorial development.

In the EU-27, nearly 17 % of all the regions are defined as remote (Figure 8). However, **the importance of remoteness varies according to the number of remote regions and the population living there in each country.** Latvia, Greece, Croatia, Finland, Sweden and Hungary are the countries with the highest shares of population living in remote regions (ranging from 20 % up to 34 %) and with the highest number

Figure 8: Average annual growth rate, in %, applied to population, GDP, employment and income in remote areas between 2008 and 2018.

Annual change rate in %

< -2   -2   -0.5   0   0.5   > 0.5

of regions classified as remote, together with Portugal and Estonia. **Around 30 % of the population in remote regions lives in a region that experienced depopulation.** Some countries suffered from a profound depopulation process that affected almost all regions. This happened in Hungary, Lithuania, Latvia, Bulgaria, Romania, Portugal and Spain, where some regions reached −2.5 % annual growth rate. Remote regions in Ireland, Sweden and Slovenia showed an opposite trend.

Employment in remote regions appears to follow a similar spatial pattern as population. This is reflected in Romania, Bulgaria, Latvia, Lithuania or Croatia. Income and GDP also show similar patterns to each other. Greece leads the list of economically declining countries, in both GDP and income, followed by some regions in the north of Ireland, central and southern Italy, and eastern Croatia. France, Spain and Portugal seem to be in a less negative economic situation. In general terms, **during the period 2008–2018, GDP**

Figure 9: EU remote and non-remote municipalities with equal or lower than −1 % annual growth rate as a threshold to be considered a depopulating area.

Source: Own elaboration based on the historical population data 1961-2011 and the LUISA 2018 population map.

Municipalities subject to depopulation – annual change rate of −1 % in 2001-2018

- ■ Remote areas
- ■ Non remote areas
- □ Not affected by depopulation

Azores   PT

Madeira

Canary Islands   ES

500 km

and income continued to increase in many other remote regions.

At the municipal level, the analysis focused on (de)population trends (Figure 9). Depopulation was higher in the municipalities located in some Mediterranean countries (Greece, Spain, Croatia and Southern Italy), Romania, Bulgaria, Portugal, ranging from -1% and more than -10%. Baltic countries (Estonia, Latvia and Lithuania) and Nordic countries (Northern part of Finland and Sweden) have also undergone depopulation during the last decades. A **peculiar spatial pattern of depopulation,** forming a ring around capitals and major cities, is also present in most of the countries mentioned. The most noticeable cases are probably around Berlin, Bucharest, Madrid, Riga, Sofia, Tallinn and Vilnius. Coastal areas do not seem to be as affected by depopulation as other inner parts of certain countries (Portugal, Spain, France, Italy, Croatia, etc.). **This population dynamic is probably a consequence of outmigration from populations living in remote and rural areas to major urban centres and coastal areas, looking for better opportunities.**

2.4 CASE STUDY FOR FRANCE

Remote rural areas in France[14] correspond to about 4% of local administrative units and host approximately 1.3% of the total French population. Overall, they have a higher fraction of people living alone (17%) than non-remote areas (13%), as well as more families without children (53% against 44% in non-remote areas). Families in remote areas also tend to be slightly smaller, with more one-child families (47% against 43%) and fewer larger families of 3 or more (14% against 10% in non-remote areas). **Remote rural areas have an older population than non-remote areas** with a higher proportion of the population in the 55-79 age group, as well as in the 80+ class (Figure 10). **Ageing is particularly marked in people living alone in remote rural areas, with 65% aged over 55.**

Figure 10: Proportion of age groups living alone in remote rural areas and non-remote areas

Age groups living alone %

In non-remote areas

In remote areas

■ 15-24   ■ 25-54   ■ 55-79   ■ > 80

Source: Own elaboration.

The higher proportion of older individuals in remote areas is also reflected in employment statistics with **44% of household reference person registered as retirees** (44% against 33% in non-remote areas). Remote areas also show a higher proportion of people working in agriculture and small businesses and a lower proportion of high- and intermediate-income jobs. Statistics on the presence of empty buildings show almost no difference between rural remote areas and other areas, indicating that abandonment is not currently an issue in rural remote France. However,

Figure 11: Comparison of dwelling types between remote rural areas and non-remote areas

Dwelling types %

In non-remote areas

In remote areas

In remote areas

■ Primary   ■ Secondary   ■ Empty

Source: Own elaboration.

---

14 France was selected as a case study due to the availability of high-resolution demographic and socioeconomic data in remote regions obtained from the *Institut national de la statistique et des études économiques* (INSEE) in order to analyse other related indicators in remote areas.

nearly 50 % of houses are second homes in remote rural areas against only 7 % in non-remote areas and 14 % in non-remote rural areas (Figure 11). **This statistic is very significant and suggests that the population present in remote rural areas may vary significantly during the year** when occasional residents are present, such as during holiday periods.

2.5 OPPORTUNITIES AND POLICY RECOMMENDATIONS

The characterisation of remote areas based on persistent depopulation and a shrinking labour force, combined with weak economic development was used as a proxy to identify *lonely places* in this chapter. In spite of the challenges faced by some EU remote areas, **a range of opportunities and perspectives could be explored to promote sustainable, resilient, and inclusive development and increase well-being in those places**. Below is a review of various opportunities and perspectives that often appear in the literature, and which may be considered to tackle some of the challenges identified.

Lower cost of living in pleasant settings. Remote and rural areas present lower housing and living costs; they benefit from a proximity to nature, lower pollution, more space, as well as direct access to places of high cultural significance or natural beauty (Nadi et al., 2015). In many cases, forest and natural areas also provide beautiful landscapes, which are highly valued by society and contribute to the attractiveness and cultural identity of these areas.

Building on the silver economy[15]. Remote and rural areas present a higher proportion of older people than other regions, with some remote areas actively gaining retirees. This population, often associated with a higher purchasing power, is likely to require specific goods and services, which could lead to the development of new jobs, particularly in the care sector (Sherpa project, 2020). The development of such services in remote and rural areas could also help alleviate problems of loneliness and isolation, increase the well-being and social engagement of older people, and attract investment to local economies.

Promoting and supporting the integration and **participation of women and younger individuals** in the labour market, politics, entrepreneurship, farms, and businesses, together with a better provision of social and family services (e.g., childcare or an adequate workforce ensuring access to affordable and quality long-term care for older people) might help reverse the current outmigration of these populations from remote areas to urban centres (European Commission, 2021a).

Promoting multi-locality. In some countries there is a strong relation between remote rural locations and the proportion of second homes, which indicates that a significant share of the population may be present on a short-term basis, living a 'multi-locality lifestyle'. The adoption of a multi-locality perspective on issues such as taxation, for example, could have a positive impact on the local economy, and could help improve infrastructure and attractiveness (Ovaska et al., 2020). The presence of many second homes could also create business opportunities in the areas of building maintenance, remote management technology, as well as services (security, landscaping).

Improving Internet connectivity and digitalisation could contribute to the delivery of essential services (e-health, e-commerce and e-banking, e-mobility, etc.), e-governance and participatory processes, e-tourism hubs and products, improve productivity in farming and the agri-food sector, develop local e-networks and communities, remote working, local technology hubs, etc (Perpiña et al., 2021b; European Commission, 2021a).

Promoting innovation, market modernisation and the diversification of economic activities could be key components in nurturing rural and remote economies, helping them overcome limitations associated with distance to markets, higher transportation costs, and lack of critical mass. In line with this, the green and digital transitions offer key directions to make the most of the transition to a low-carbon economy, including renewable energies (biomass conversion to energy), ecosystem services (carbon fixation, biodiversity enhancement), sustainable land use, resource extraction and transportation (European Commission,

---

15 This term refers to a general shift in demand for products and services that reflects the specific needs and preferences of older people.

2019). Rural tourism could also be developed as an alternative or complement to farming activities, benefiting also from initiatives in landscape valorisation and conservation (Barranco et al., 2021).

Harnessing the wild and natural capital. Remote rural areas are particularly suited to environmental restoration and rewilding activities. Such activities are already supporting local enterprises and the development of a nature-based economy, with jobs and revenues connected to wild nature, particularly in the Greater Côa Valley (PT), the Central Apennines (IT), the southern Carpathian Mountains (RO), the Velebit (CZ) or the Rhodope Mountains (BG) (Rewilding Europe, 2021).

The effect of the COVID-19 pandemic. The COVID-19 crisis has accelerated the deployment and usage of digital technologies that might foster new and competitive firms and enhance the quality of life in remote rural areas (ENRD, 2021b; ERNACT, 2019). The drastic increase in the use of teleworking has resulted in a temporary outflow of people from cities to more rural areas (Nathan and Overman, 2020). This, along with lower property prices and rural lifestyle, could become attractive to the younger population and could help to reduce current depopulation trends (Perpiña et al., 2022). However, the suitability of remote rural locations is tied, to some extent, to the availability of high-speed Internet and telecommunications.

By implementing place-based strategies in remote and rural areas, transformative actions might help to achieve some of the Sustainable Development Goals (Siragusa et al., 2020). The outcomes presented here can especially be linked to the promotion of economic growth (Goal 8), achievement of gender equality (Goal 5), and building resilient infrastructure and fostering innovation (Goal 9).

2.6 CONCLUSIONS

This chapter analyses **Europe's remote municipalities and regions from a demographic and economic perspective, focusing on the 2001-2018 period, in order to identify** *lonely places.* Most remote regions across the EU consistently performed less well than other regions, based on indicators related to popula-

tion structure, depopulation processes and economic growth. This poor performance and limited attractiveness also makes such regions potentially more vulnerable and less resilient in relation to shocks such as the financial crisis, the COVID-19 pandemic, and with limited capacity to reverse ongoing demographic changes (such as depopulation and ageing).

It is important to comprehensively analyse **remote areas as they face different, and in some cases stronger, challenges than rural regions close to a city,** especially in terms of declining population and level of economic development. For instance, remoteness is highly correlated with regional outflows of working-age populations, reflecting the economic distance from market and services. **It is also crucial to disentangle remoteness from rural and other territorial typologies in order to implement the best place-based solutions.** However, the lack of data on economic performance limits the identification of *lonely places* at the local level.

While there is no 'one-size-fits-all' solution to reverse the trends we have reviewed here, **place-based policy strategies might help to leverage existing opportunities in some of these territories,** such as the silver economy, multi-locality, new teleworking patterns and, of course, the natural capital. In this context, measures promoting the integration of women and young people, diversification of the economic structure, and the improvement of connectivity, while also preserving cultural heritage, must also be considered.

In line with the EU regional results presented, evidence from a **case study in France** indicates that **remote municipalities have the highest share of older people, with many retirees also living alone.** Remote areas also host a **large proportion of second homes** as temporary residences. This large number of 'ready to move-in' dwellings may represent an opportunity for remote areas, particularly in the light of the COVID-19 pandemic, which saw a large number of city dwellers relocate to second homes in rural areas.

Chris Jacobs-Crisioni
Mert Kompil

HIGHLIGHTS

Demographic changes are likely to affect the delivery and accessibility of public services.

This chapter analyses changes in access to schools (2011-2018) that may be caused by population decline through possible primary school closures. It focuses on the areas where access to schools is most jeopardised and constitutes a second typology of *lonely places* in terms of this report.

Empirical results suggest that a current decline in numbers of school-age children (pupils) has been preceded by long-lasting population changes in municipalities.

Municipalities with smaller initial pupil populations in 2011 have higher chances of substantial increases in average distances from schools.

Potentially, distance learning (e-education) and cycling can be considered practical policy options to help pupils overcome greater distances to schools in those municipalities.

Primary schools

Accessibility in municipalities with a declining population

3.1 INTRODUCTION

Centrally led measures to rationalise the provision of public services, in a context of ageing and depopulation, have put pressure on the availability and accessibility of essential services such as schooling and healthcare in parts of Europe (OECD/EC-JRC, 2021). This is problematic from the point of view of children's school performance and healthcare outcomes, as these depend on access to relevant facilities (Thorsen, 2017; Williams and Wang, 2014; Talen, 2001). In particular, schools have a broader societal function in small communities and their closure is often expected to accelerate community decline (Elshof et al., 2014 and 2015; Salant & Waller, 1998). Empirical evidence on school closures as catalysts of community decline is still inconclusive (Barakat, 2015). Nevertheless, communities believe they have a stake in retaining schools, so it is not surprising that school closures often arouse strong sentiments locally.

Besides considerations regarding school performance and community outlook, school closures can have a detrimental effect on children's independent mobility. Tranter and Whitelegg (1994) define children's independent mobility as *'their freedom to travel around their own neighbourhood or city without adult supervision'*. Such freedom is often noted as important for children's physical, intellectual and psychological development. It entails important benefits for parents and society, as well as economic and environmental impacts of escorting children to their activities.

Unfortunately, children's independent mobility seems to be in decline, with increasing numbers of children being escorted by their parents or brought by car (Shaw et al., 2013). Perceptions of unsafety and negative attitudes towards walking and cycling are important factors in this decline of independent mobility. Parents are more likely to allow their children to travel to school unaccompanied when those children are older and if their distance to school is shorter and safe (Shaw et al., 2013).

Given that education systems are governed by national and regional authorities in the EU, it is pertinent for them to understand where school closures have been likely. This raises the questions of (a) where the impacts of school closures might be felt the most, and (b) how access to education can also be ensured in depopulating regions. In many places, loss of school access is the result of long-run processes of depopulation, meaning that current problems associated with depopulation could have been foreseen a long time ago. Given the long-run nature of these processes, depopulation is also not easily reversed and remains a challenge. **Depopulation, presumably, has led to a sparser distribution of schools in some of the regions in Europe.** This holds particularly true where the number of school-age children, hereafter called 'pupils', decreased below a necessary critical mass. Currently, the effects of depopulation on school provision cannot be directly observed and measured as the necessary data on school locations, school closures and changes in pupil numbers are not available EU-wide.

A considerable effort, however, has been made to measure service provision and accessibility across the EU, as well as to elaborate policy interventions to overcome the challenges posed by demographic change. In a number of ESPON projects (Breuer et al., 2013; Rauhut et al., 2013), access to services across the EU has been studied conceptually and practically for selected case studies in Europe. Kompil et al. (2019) introduced a method to simulate the location of services of general interest, separating local, intermediate, and regionally relevant service locations and outlined regional disparities in service accessibility. OECD (2021) discussed current best policy practices to overcome the challenges for public service delivery that some regions in the EU will face because of the foreseen demographic change. Finally, based on LUISA[16] population projections for 2035, OECD/EC-JRC (2021) quantified the current and potential future annual costs of and access to educational and health care services, discussing disparities between countries, regions, degrees of urbanisation and the implications of future changes in service demand.

In this context, this chapter establishes spatial simulations of school locations based on estimated local changes in school demand between 2011 and 2018. These simulations attempt to reproduce the provision of primary schools, as deteriorating access to primary schools is likely to affect the lives of pupils and parents alike. Schools are therefore analysed to establish the characteristics of municipalities that have lost considerable pupil populations and to identify the EU municipalities where primary school closures are likely. In municipalities were pupil counts dwindle, and pupils' average distance to simulated schools has increased above a certain threshold, school provision is certainly under pressure. Such municipalities are considered as a second typology of *lonely places* in the context of this report. Following this introduction, the chapter continues with a section on data and methods. The characteristics and distribution of those municipalities with

deteriorating school accessibility are elaborated in the 'results' section. Policy options and potential solutions to overcome increased travel distance to schools are subsequently discussed. The chapter closes with a short reflection on the subject of service accessibility within the perspective of the *lonely places* concept.

3.2 DATA AND METHODS

This study uses population data that describe EU-wide population distributions in 1 km² grid cells, broken down into 5-year age cohorts in order to analyse local changes in pupil populations (Jacobs-Crisioni et al., 2020)[17].

Population data at such fine granularity is crucial for the selection of the pupil population. There is considerable heterogeneity across the EU regarding the ages in which children attend primary school. In line with other research (OECD/EC-JRC, 2021) and for the sake of international comparability, the present study is based on typical primary school pupil ages in the EU, i.e. between 6 and 11 years old.

The analysis also requires accurate and comprehensive primary school locations across the EU territory at two recent moments in time. While Eurostat has collected comprehensive datasets on school locations in Europe, such data were unfortunately not available for multiple moments in time. This is resolved here by leveraging refined school allocation procedures to allocate likely school locations, based on estimated local pupil populations. The model proposed, therefore, was run using population distributions in 2011 and 2018 for all 27 EU countries at fine spatial resolution. The allocation method yields a map of scattered points, each indicating a modelled school location. Road distances were also mapped from every 1 km² grid cell in Europe to the closest school point aggregated to the municipal level using pupil-weighted averages.[18]

---

16 LUISA Territorial modelling platform – *https://joint-research-centre.ec.europa.eu/luisa_en*.

17 As inputs, it also uses the LUISA 100m population grids for 2011 and 2018 aggregated at 1 km² (Batista e Silva et al., 2020; Pigaiani and Batista e Silva, 2021). At the municipality level, 2011 EU census and 2018 municipality population per age groups are also included (Bosco et al., 2021).

18 For visualisation and further analyses, pupil numbers and estimated distances to closest schools were aggregated to recent municipal borders, for which historical population trends are available (Gløersen & Lüer, 2013). The advantage of this aggregation is that depopulation and its impacts on school provision can be compared with long-run population trends.

Finally, a discrete logit model was developed and applied to explore prior factors associated with a decrease in access to simulated school locations by pupil populations. As explanatory variables, the logit model uses pupil populations in 2011 and municipal population changes between 1981 and 2011. More information about the allocation procedure, the discrete logit model and data can be found in Appendix 2.

3.3 RESULTS

3.3.1 Exploring changes in the number of primary school pupils

During the last decades, there has been a substantial change in the pupil population aged between 6 and 11 years in most Member States. Figure 12 shows estimated changes in the population of primary school pupils between 2011 and 2018 in the EU-27. **The number of primary school pupils has increased in many countries such as in Czechia, Sweden, Estonia and Slovenia.** According to Eurostat (2021), increases in pupil populations in Czechia and Sweden are due to increases in fertility, following notable dips in the early 2000s. However, this increase in fertility

has not been enough to reverse population decline in the long run. **In some other Member States, the total pupil population has decreased, including in Portugal, Denmark, The Netherlands, Croatia, Romania, Lithuania, Hungary, Cyprus and Italy.** Both Portugal and Denmark have seen considerable dips in fertility in the early 2010s (Eurostat, 2021), causing decreases in pupil population. Besides population and fertility trends, migration flows within countries probably played an important role in local pupil populations.

Figure 13 presents municipalities that have seen the most considerable changes in number of pupils between 2011 and 2018. Pupil population increase or decrease is considered substantial when it implies at least a 19 % decrease or increase in population size[19] (see Logit Model 1, Table A3, Appendix 2). A considerable heterogeneity in pupil population change across municipalities is observed when this threshold is applied. Some countries, such as Belgium, Czechia, Sweden, Estonia show limited changes or even general increases, while Portugal, Romania, Lithuania show generally substantial population decreases. Other countries such as France, Germany and Spain present simultaneous increases and decreases across their territories.

Figure 12: Percentage change (estimated) in the number of primary school pupils by Member States, from 2011 to 2018.

Source: Own elaboration.

19 Pupil population decrease is considered substantial when the decrease is lower than the first quartile of factor pupil population changes in the analysed data. Data analysis shows that the first quartile of municipal pupil population changes is a factor of 0.84, implying roughly a 19 % decrease in size.

Population decline is seen as a persistent phenomenon that has been relevant in municipalities for a very long time. Pupil numbers in 2011 and total population change between 1981 and 2011 are highly significant variables for subsequent pupil population loss between 2011 and 2018. **Substantial pupil population loss is more likely if the initial pupil population (1981) was higher, and pupil population loss is more likely to be substantial when the municipal population decreased considerably between 1981 and 2011.** Thus, current population decrease can be predicted by population decline or limited population growth. This persistency in local population decline means that the process and its implications can be foreseeable. Given the slow rate of such demographic processes, interventions to reverse depopulation are only likely to be effective for places where the effects of population decline are not already advanced. The next section will identify the characteristics of those communities and the impacts that depopulation has likely to have had on school provision.

Figure 13: Change in number of primary school pupils by municipality, between 2011 and 2018.

Source: Own elaboration based on the LUISA population estimates broken down by age group (Pigaiani and Batista e Silva, 2021; Jacobs-Crisioni et al., n.d.).

Change in number of primary school pupils

- ■ Substantial decrease (>19 % reduction)
- ■ Limited change
- ■ Substantial increase (<19 % growth)
- □ No data

Azores   PT

Madeira

Canary Islands   ES

500 km

3.3.2 Where and why is access to primary schools under threat?

Given that in the 2011-2018 period depopulation has been an important process in parts of the EU territory, it can be expected that in several local communities some of the primary schools (simulated) will disappear, and travel distances to school will increase substantially. Due to the nature of the school simulations adopted, **this study focuses foremost on the distance to the closest simulated school location, as this provides a reliable indication of the local impacts of potential school closures.**

An element to take into consideration, therefore, is the difference in municipal population size across Europe that may influence these distances and, in turn, the results (Jacobs-Crisioni et al., 2014; Openshaw, 1983). These distances are computed as the average distance that pupils in a municipality would need to travel to the closest primary school, based on the location-allocation procedure (see Appendix 2). Despite the general, slight increase in pupil populations across the EU, **it is estimated that small municipalities in particular have endured pupil population loss and distance increases,** confirming that small communities are bearing the brunt of processes of depopulation and demographic change in the EU (Table 1).

Once distances to schools are computed, only the municipalities that have at least a factor of 2.5[20] increase in distance to the closest schools between 2011 and 2018 are considered. All municipalities where distances to the nearest schools have increased above this threshold are shown in Figure 14. **These are municipalities where school provision is likely to have come under severe pressure recently, with possible major implications for both the local remaining pupil populations and communities** (De Haan et al., 2016; Lyson, 2002; Talen, 2001). A particularity of some of the countries is that they exhibit a considerable decline in pupil numbers, but do not show a similarly sizeable increase in travel distances. Examples are Lithuania, Portugal and Romania. Possible explanations might be that either travel distances were already high at the outset or that, because of the population is concentrated, there is still sufficient demand for schools in the municipalities, even after pupil populations declined.

It is also worth mentioning that distance increases are expected in several municipalities in Czechia, despite substantial growth in pupil populations. Uneven population growth between municipalities may possibly mean that faster-growing neighbouring municipalities become dominant school providers in a district. From a community perspective in terms of school provision,

Table 1: Changes in average distance to primary schools and number of students by municipal size.

Municipal population class	Average distance per pupil (km)		Change in average distance	Number of primary school pupils		Change in number of pupils
2011	2011	2018		2011	2018	
< 250	4.42	4.51	2.0%	10.3	10.2	-0.8%
250–1 000	3.31	3.37	2.0%	37.4	37.3	-0.2%
1 000–5 000	2.19	2.21	0.8%	161.4	160.6	-0.5%
5 000–10 000	1.54	1.53	-0.2%	456.7	465.9	2.0%
10 000–25 000	1.24	1.22	-1.4%	963.8	998.1	3.6%
> 25 000	0.90	0.89	-1.2%	4450.9	4714.1	5.9%

Source: Own elaboration.

20 This means at least a 150% increase in distance to schools.

those municipalities that combine, on the one hand, an increase in distances to the closest school above the mentioned threshold and, on the other hand, a considerable decline in the number of pupils, can therefore be considered potential *lonely places.*

To identify the factors that are driving significant increases in school distance, a second method was proposed (see Logit Model 2, Table A3, Appendix 2).

This confirms the finding that **smaller 2011 pupil populations and reductions or lower growth in pupil population between 2011 and 2018 significantly increase the chance of substantial increases in distance to schools.** School provision is therefore particularly under pressure in communities with small pupil populations in 2011 and in communities that lost a considerable part of the pupil population between 2011 and 2018.

Figure 14: Municipalities in which average pupil distance to the closest allocated primary school increased by more than 150 % between 2011 and 2018 model results.

Source: Own elaboration.

Table 2: Statistics for the municipalities with considerable increase in distance to primary schools between 2011 and 2018 – estimated values, per degree of urbanisation.

Criteria	Type of info	Urban	Suburban	Rural	Total
Municipalities with more than 50% increase in distance to primary schools	Number	389 (4%)	1105 (12%)	7615 (84%)	9109
	Population (000)	3363 (22%)	4979 (32%)	7193 (46%)	15535
Municipalities with more than 100% increase in distance to primary schools	Number	241 (4%)	635 (10%)	4959 (86%)	5835
	Population (000)	1479 (20%)	1713 (25%)	3890 (55%)	7082
Municipalities with more than 150% increase in distance to primary schools	Number	107 (4%)	220 (8%)	254 (88%)	581
	Population (000)	503 (21%)	349 (14%)	1568 (65%)	2420
Municipalities with more than 2 km increase in distance to primary schools	Number	93 (2%)	344 (6%)	5737 (92%)	6174
	Population (000)	94 (2%)	525 (11%)	4115 (87%)	4734
Municipalities with more than 4 km increase in distance to primary schools	Number	18 (1%)	75 (4%)	1597 (95%)	1690
	Population (000)	11 (1%)	30 (4%)	737 (95%)	778
Municipalities **without** a school in 2011	Number	83 (2%)	265 (7%)	3250 (90%)	3598
	Population (000)	129 (7%)	359 (20%)	1362 (73%)	1850
Municipalities with only one school in 2011 and lost this only school in 2018	Number	156 (3%)	546 (10%)	5028 (87%)	5730
	Population (000)	270 (5%)	1142 (21%)	3944 (74%)	5356

Source: Own elaboration.

The study further explores the distribution of municipalities by degree of urbanisation (European Commission, 2020e) in order to better understand the characteristics of communities with substantial loss of school access. Table 2 provides information on the number and population of municipalities with certain characteristics and a corresponding share of population in urban, suburban and rural areas. The main conclusion is that **primary school accessibility in rural areas is lower, and people have to travel larger distances to reach a service area.** Indeed, almost all municipalities (90%) without a primary school in 2011 were rural. This is in line with the results presented in Kompil et al. (2021), where there were sizeable difference in access to education between cities and rural areas. In cities, the EU-wide average distance to the nearest primary school is 2.5 km, while in remote rural areas this average distance is 7.5 km.

From 2011 circumstances have worsened the most for rural communities. For instance, 84% of the municipalities with more than a 50% increase in distance to primary schools have rural characteristics. Out of all municipalities with a greater than 150% increase in distance to primary schools, 88% are rural, representing 65% of the EU population that witnessed such substantial distance increases, according to the simulated school locations. Similarly, in the groups of municipalities that face at least 2 km or even 4 km increases in distance to primary schools, the share of the number of rural munici-

palities becomes 92 % and 95 % respectively, representing 87 % and 95 % of the population in those municipality groups. The fact that rural municipalities are even more dominant in terms of absolute (rather than relative) increases in school distance reflects the fact that **rural municipalities already often faced much longer distances to school at the outset.**

One final group concerns municipalities that are not allocated a school and therefore depend on another municipality to provide for primary schools. **It is estimated that 3 598 municipalities had no primary schools in 2011.** Within this group, 90 % of municipalities are rural, representing 73 % of all inhabitants in municipalities without a school. The simulation suggests that **more than 5 000 municipalities in the EU could have lost their only school from 2011 to 2018, therefore affecting over five million people.** Similarly, the majority (87 %) of the municipalities that might have lost their only primary school are rural municipalities.

3.3.3 Can improved mobility options help mitigate increased distances to primary schools?

The estimated increases in distance to schools, as discussed in the previous section, are an expected consequence of depopulation and ageing, given fairly strict school size requirements that hitherto led to school consolidation. More generally, OECD (2021) identified two potential paths to mitigate the negative impacts of demographic change. These are (a) **institutional and organisational restructuring,** which may assist in improving the efficiency of small schools, so that school consolidation can be avoided and communities may maintain their school; (b) if school consolidation is unavoidable, its implications for travel may be minimised **by adopting comprehensive and digital approaches,** stimulating local support, and improving the geographical mobility of pupils and teachers.

One element that has received scarce attention in the service provision debate so far is the potentially

detrimental effect that school consolidation can have on children's independent mobility. Arguably, when school consolidation forces parents to bring their children to school by car, **the resulting shift from walking to school to being driven to school affects the autonomy of pupils at a potentially considerable social cost.** Such a cost would be felt through additional transport costs incurred by parents, limits on participation in the workforce for those parents, reduced freedom of movement for pupils, and the environmental costs of car-based travel. Through possible EU carbon-taxation schemes, the costs of bringing children to school by fossil-fuelled car may increase substantially in the near future.

This study has a unique vantage point to scan the potential for improving primary school pupils' geographical mobility. The possibilities that different transport means may offer to obtain or retain independent access to schools have therefore been studied for municipalities that face considerable travel distance increases. The assumption here is that children of primary school age will travel to school actively if distance permits. **Key factors in adopting active transport are perceived safety and distance to school.** In the Netherlands, decades of deliberate policies favouring active transport over motorised transport mean that both the infrastructure and perceived safety are conducive to walking and cycling. Consequently, 70 % of children walk or cycle school, with well over half of all primary school children aged 9 years or over travel independently (Masoumi et al., 2020).

The present analysis only considers municipalities that are expected to face an increase in distance to the closest school by at least 150 %, with distance increases obtained from this study's modelling exercise. Subsequently, t**he share of pupil populations within a 15-minute walking (1.25 km at 5 km/h), cycling (5 km at 15 km/h) or e-cycling (e-bikes, 7.5 km at 25 km/h) distance have been computed for the 2011 and 2018 school and population distributions,** with travel distances obtained from a fine-grained road network.[21] If pupils cannot reach the closest school by any of those modes of transport,

---

21 The requisite presence of safe infrastructure for walking and cycling, meteorological conditions and the presence of steep inclines on the route, are not accounted for, even though they can be very relevant for actual mode choice. Public transport options are also explicitly not included, due to the complexity of collection systems and scheduling, which make generalizations of accessibility by public transport too challenging for the scope of this chapter.

Figure 15: Share of pupil population within 15 minutes of walking, cycling, or driving to the nearest primary school – based on the 2018 population and school distributions.

Percentage of pupils living within a 15-minute...

...**drive** 100 %

...**ride** with an e-bike 99.8 %

...**ride** 98.3 %

...**walk** 57.1 %   to primary school
                                                                                  in 2018

Source: Own elaboration.

they are assumed to travel by car or public transport. Both car-based and public transport involve adult supervision, which removes some of the autonomy that active transport modes offer, especially to older children. Given that most manufacturers currently advise limiting the use of e-bikes to those aged 12 years or over, they might seem irrelevant for primary school children's independent mobility. However, some manufacturers are already selling e-bikes for children, and the advantages of assisted cycling are obvious, especially for territories where cyclists are challenged by a hilly terrain.

The share of pupil population that can potentially walk, cycle, or use an e-bike to access the nearest primary school within 15 minutes is shown in Figure 15. With school distributions based on 2011 population distributions, **58 % of the pupil population analysed can walk to a school within 15 minutes.** This share of the population slightly decreases to 57 % by 2018. Another **41 % of pupils live too far away to walk to their school within 15 minutes but can still cycle to a school within that time.** Thus, 98 % of the pupil population can potentially reach their primary school within 15 minutes, with sustainable, generally available and cheap transport options. **For a small portion of pupils, walking or cycling is not an option;** however, almost all pupils could potentially still use an e-bike to access their schools within 15 minutes.

Where school consolidation is necessary, fewer pupils will be able to walk to their schools. Fortunately, this does not affect a very large proportion of the pupil population. In areas where it is an option, **cycling is a viable alternative to walking, with similar benefits**

for sustainability, health, and children's autonomy. It is important to emphasise that these numbers do not reflect actual mode choices, as many children will be brought by school bus or motor vehicle, despite short travel distances. In any case, many Member States currently lack the necessary infrastructure and street design to support safe cycling and walking. On the other hand, the COVID-19 crisis has spurred many cities in Europe to make more of their cycling networks. These networks could improve opportunities for children's independent mobility, alongside the immediate environmental benefits that cycling brings. It is to be hoped that these city responses during COVID-19 pandemic are not abandoned when the crisis is over, and, on the contrary, may extend to the remainder of the European territory.

3.4 OPPORTUNITIES AND POLICY RECOMMENDATIONS

In territories where school consolidation is unavoidable, school closures may lead to considerable travel distance increases for pupils. The results of the present study show that smaller initial pupil populations and lesser growth in pupil population between 2011 and 2018 significantly increase the likelihood of having to travel further to school. As increased travel distances are associated with lower pupil achievement (Zimmer et al., 2009), mitigating measures are called for to ensure equitable education provision for Europe's youth, as outlined in the fourth Sustainable Development Goal (Siragusa et al., 2020) and given that early childhood education has a lasting effect on achievement in school and beyond (Cassio et al., 2021). Coordination would be

needed to ensure that the remaining schools are in locations that offer limited travel increases for an expanding catchment area.

As noted in a recent OECD policy report (2021), digital solutions for education need to be embraced. **Particularly in rural and remote rural areas, partial provision of education services using digital solutions might help to overcome distance barriers.** This should go hand-in-hand with the initiatives envisaged by the Digital Education Action Plan (2021-2027), a policy initiative to support the sustainable and effective adaptation of the education and training systems of EU Member States to the digital age.[22] At this point, it is important to note that such solutions might have a complementary rather than a primary role. Apart from this, digital and online education is very much dependent on the availability and quality of broadband connections. Therefore, as is also discussed and further explored in a separate chapter in this report, it is crucial to address problems and challenges that affect digital connectivity and access to high-speed broadband across European regions.

The restructuring of school networks and increasing travel distances for school children also call for serious action on active mobility. In most cases and in many regions in Europe, travel distances to primary schools are short. **Mobility solutions for short distances have been shifting towards policies that support active modes of transport, e.g., walking and cycling** (Banister, 2008; Nieuwenhuijsen and Khreis, 2016). Active mobility options are known for their desirable ecological and economic outcomes, as well as health benefits (Brown et al., 2016; Mulley et al., 2013; Rabl and Nazelle, 2012; Martínez-Gómez et al., 2011). Walking and cycling are also the only fundamental independent mobility options for primary school pupils. It may not be possible to fully develop or build the necessary infrastructure for safe walking or cycling, especially in some regions or in parts of rural or remote regions. Those regions with remote-rural characteristics are more likely to have deteriorating school accessibility because of a sparsely distributed population and / or possible population decline (see for example, Goujon et al., 2021 and OECD/EC-JRC, 2021). However, it should again be considered as a long-term policy option to

(further) **develop walkable roads and safer bicycle infrastructure around primary schools,** which in many countries and cities in Europe already exist. **These mobility options provide major advantages and have huge potential to reduce the negative impacts of increasing school distances.**

Finally, the results in this chapter indicate that school closure is preceded by a process of population decline, which in turn is a slow and generally predictable phenomenon. Given the slow pace of population change, it is unlikely that a reversal of local population decline will rapidly relieve pressure on small schools. Other interventions are therefore desirable in order to maintain equitable education for children in declining municipalities. **Given that population decline may generally be predicted, it is recommendable to develop informed local population projections, in order to create realistic plans for future service provision.**

3.5 CONCLUSIONS

School provision is under pressure in municipalities that had small pupil populations in 2011 and in municipalities that have witnessed a considerable decline in pupil populations recently. Population trends between 1981 and 2011 are a relevant predictor for significant pupil population decline between 2011 and 2018. Municipalities that saw limited population growth or even population decline historically are therefore more likely to have experienced considerable drops in pupil numbers recently. **Current issues with school provision are thus, to a large degree, driven by long-lasting historical trends.** Even if it is possible to reverse these population trends, this will probably take a very long time. In the meantime, a public response will be necessary, while institutional and organisational restructuring may ensure that small local schools can remain in operation efficiently or consolidate with other schools.

This study shows that after school consolidation, almost all children (more than 98 %) in affected communities will still have a school that can be reached by walking or cycling. There is some evidence that,

---

22 *https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en*

besides other psychological and physical benefits, active travel improves cognitive performance (Martínez-Gómez et al., 2011). This implies that promoting active transport modes could provide a better future for targeted children. **If school consolidation is unavoidable, this ought to be paired with serious investments to allow pupils to reach their schools actively and safely.** Any negative school performance effects of longer travel distances may to some degree be offset by the benefits of active travel.

Looking through the prism of the challenges of school provision, the present results suggest that, above all, rural places across the EU are at risk of becoming *lonely places*. Often long-lasting processes of depopulation are culminating in pressures on local service provision, such as the availability of primary education. **For small communities, losing their school may have a negative impact on the independent mobility of children, may add travel burdens on children's parents, and may mean the loss of a central location for socialising and community activities.** Given that the driving demographic processes are slow and persistent, it will require creativity and perseverance to provide a positive alternative.

Patrizia Sulis
Carolina Perpiñá Castillo

HIGHLIGHTS

High-speed broadband represents an essential infrastructure to drive the economic and social development of territories.

This chapter focuses on exploring the spatial patterns of broadband access and speed across the Member States in the EU, identifying relevant spatial disparities across and within countries and regions.

Results show that significant differences exist in network speed across the EU-27 countries. Territorial disparities are even more relevant, with most Member States in urban areas enjoying easy access to the highest broadband available (> 100 Mbps), whereas in rural areas a significant percentage of residents have access to an average speed below the minimum standard of 30 Mbps.

Areas in vulnerable conditions, characterised by a combination of low speed, high latency, low population density and remoteness, are identified as *lonely places* in the context of this chapter.

Unveiling spatial patterns of access to the broadband network is important as it can inform policy with quantitative evidence of the current situation. Exploiting the potential that digitalisation represents for education and training, cooperation and networking, access to services and markets, can make rural and remote areas more attractive to people and businesses.

Digital connectivity and the urban-rural divide

Exploring the spatial access to high-speed broadband across Europe

4.1 INTRODUCTION

High-speed broadband increasingly represents an essential infrastructure to drive the economic and social development of territories. Therefore, **the lack of broadband network or poor access to a high-speed connection might cause significant disparities among places and citizens and leave some areas behind in terms of access to services and opportunities, diminishing the quality of life of residents.**

In 2019, more than 185 million households (96.6%) had access to at least one of the main fixed broadband networks in the EU-27 (DESI project, 2020). However, the adoption and the deployment of high-speed broadband across the EU territory appears to proceed slower than expected. The EU sets specific targets for the 2020: 'access to 30 Mbps or above by all citizens and at least 50% of household with a connection over 100 Mbps' (Feijóo et al., 2018). Unfortunately, such targets have not been reached yet. Furthermore, the deployment of broadband infrastructure has not been even across countries and regions. These aspects call for urgent action to meet the target and address the territorial disparity in access to broadband, especially the gap between highly populated urban areas and rural places far from cities.

Previous studies by the EC on broadband coverage in Europe (2020) have indicated relevant improve-ments in broadband coverage in rural areas in the EU (from 9% in 2011 to nearly 59% in 2019). However, broadband coverage in rural areas, and especially in remote regions, is still rather lower than the national coverage (around 7.4%), with approximately only two-thirds of the population having access to high-speed broadband (speed faster than 30 Mbps) across the European territory (Broadband coverage in Europe, 2019).

This connectivity gap, often recognised as an urban-rural digital divide, represents an important challenge to face for some countries and policy makers (DESI project, 2020), and **may require a joint effort by both public and private initiatives.** The lack of accessibility to a high-speed broadband network reinforces existing spatial disparities regarding the impact of distance, isolation, and high transport costs, effectively acting as a barrier to social, technological, and market development.

The implementation of broadband infrastructure may induce high economic returns, leading to economic growth (Gruber et al., 2014). It can also increase access to fundamental (public) services, such as health and education, fostering sustainable and inclusive growth. In this regard, access to broadband connectivity is particularly important for areas that are considered marginalised and disconnected from a territorial perspective, such as rural and remote areas, often characterised by poor access to physical services such as schools, hospitals, post offices and

so on (Perpiña et al., 2021b). In this specific case, the broadband infrastructure can play a critical role in the socioeconomic sustainability of places, and it can have a tangible impact on businesses and residents, and represents a potential alternative and faster way of accessing some fundamental services (notably e-learning and e-health). For example, adequate access to broadband may increase the likelihood that people remain and contribute effectively to their local economy and community (Townsend et al., 2015).

Furthermore, high-speed broadband, as a critical infrastructure, might act as an incentive to challenge the current depopulation trend in rural and remote areas, opening up different opportunities. For example, exploiting the potential for remote working (see Sostero et al., 2020) through a fast, reliable broadband connection represents an opportunity for retaining inhabitants and avoiding the necessity for people to move or commute to more densely populated areas, with positive consequences in retaining the social and economic capital in depopulating areas.

Therefore, uncovering the spatial patterns of access to the broadband network across different areas in the EU is critical to understanding the needs of different places, also in terms of quality of the broadband connection (i.e., broadband speed). Such **quantitative evidence can inform policy of the current situation, highlighting the areas to target.** However, the lack of high-resolution and homogeneous data available for several EU countries did not allow previous work to perform in-depth spatial analysis at granular level, with results often limited to aggregate figures at country or regional level.

The present work aims at filling these gaps in current research, employing an extensive data set to perform an exploratory analysis of the spatial patterns of broadband access in the EU-27. **The focus of the analysis is to investigate the spatial accessibility of broadband and the quality of the connection in relation to the degree of urbanisation of the European territory, with particular attention to the urban-rural digital divide and remote areas.**

4.2 DATA AND METHODOLOGY

This work employs an extensive data set provided by Ookla® (Speedtest® by Ookla®, 2020) and containing spatial information about the presence of broadband network and the quality of the connection for the last quarter of 2020 in the 27 EU Member States. Each record includes several attributes for both the fixed and mobile broadband networks, associated with each spatial unit.[23] This analysis employs: the average download speed (measured in kilobits per second); the average latency (measured in milliseconds); the number of tests performed in the analysis unit.

The analysis also uses population figures for 2018 provided by the JRC (Pigaiani et al., 2021), to assess the share of population (as a percentage) and the population density (inhabitants per square kilometre), aggregated at municipal level by degree of urbanisation.[24]

The spatial analysis is performed by applying descriptive statistics and spatial tools to analyse spatial patterns of broadband network across the EU. For the municipalities, the boundaries are those defined in 2018. The network speed was classified into three categories: below 30 Mbps (minimum), between 30 and 100 Mbps (optimal), and higher than 100 Mbps. The analysis also explores the main differences across areas classified according to the different degree of urbanisation[25] (city, town and rural areas), including remoteness. Geospatial computational tools are used to analyse and visualise spatial patterns for broadband accessibility concerning average speed and population shares per degree of urbanisation for fixed and mobile networks.

To identify *lonely places* and understand the territorial similarities of European municipalities, an unsupervised learning technique[26] was applied at municipal (LAU2) level, regardless of their degree of urbanisation, using the following attributes: average speed and latency to establish the presence of a reliable connection (especially in terms of remote working and access to e-service); population density as a proxy

---

23 Grid cells of approximately 610.8 metres by 610.8 metres at the equator (18 arcsecond blocks).

24 These categories are classified at municipal level as: City; Town and Suburb, close to a city; Town and Suburb, remote; Rural area, close to a city; and Rural area, remote. In particular, remote locations are defined as areas where the majority of the population lives more than a 45-minute driving time by car from the nearest city.

25 See Dijkstra, L. and Poelman, H. (2008).

26 k-means clustering algorithm.

for density of urbanisation; remoteness classification as a proxy of distance from major urban centres.

4.3 RESULTS

4.3.1 Broadband accessibility and speed for fixed and mobile networks at country level

When comparing broadband speed at country level, significant differences can be observed among EU Member States. **Whereas some countries do not meet an average speed access of at least 30 Mbps, others enjoy broadband connection with over 100 Mbps** (very high speed). **Regarding fixed broadband, EU average speed for fixed broadband connection is 59 Mbps, ranging from 131 Mbps in Denmark to 15 Mbps in Greece. Denmark, Sweden, The Netherlands and Luxembourg show an average speed higher than 100 Mbps** (very good connection). Regarding mobile broadband, differences are also noticeable, although less pronounced than the fixed network. EU average speed for mobile broadband connection is 41 Mbps. Out of 27 EU countries, 22 show an average speed close to the EU average, with the Netherlands and Denmark at the top of the ranking.

Results show how, for fixed broadband, the majority of the population in all countries has access to speeds above 30 Mbps and often above 100 Mbps (except for Greece). For mobile broadband, most residents in each country have access to speed up to 100 Mbps, with a higher percentage of citizens only accessing speeds under 30 Mbps (Figure A6, Appendix 3).

Figure 16 shows a comparison of average speed for fixed and mobile broadband networks at the municipality level. It is possible to notice specific spatial patterns of higher speed connections around urban areas, whereas outside urban areas differences are more heterogeneous between countries. Such spatial differences are more pronounced for fixed broadband than for mobile.

Figure 16: Average broadband speed for fixed (left) and mobile (right) networks at municipality level, EU-27.

Source: Own elaboration.

Regarding fixed broadband, the highest values for average speed can be observed in northern Member States, with Denmark and the Netherlands presenting a pretty homogeneous access to high-speed broadband. In other countries, such as in France and Spain, the situation appears more heterogeneous, with noticeable differences across the territory, with patterns highlighting a fast average speed in the main urban areas and major cities (e.g., Paris). Spatial patterns in Italy seems to follow the Apennine mountains, with connection under 30 Mbps around the inner areas of Central Italy and Sardinia. Croatia and Greece show the opposite pattern to northern countries, with a low-speed broadband connection across the whole country.

Regarding mobile broadband, the average speed is generally lower than fixed broadband in all countries, with only a few areas having more than 100 Mbps average speed. Ireland and Romania show poor access to broadband connection, whereas the Benelux region presents a fairly homogeneous picture. It is interesting to note how the Alpine region across France, Italy and Austria appear to have better connectivity with mobile broadband (right figure, over 30 Mbps) than with fixed broadband (left figure, under 30 Mbps). The same pattern can be observed in Central Italy and Sardinia, Croatia, and partially in Greece. Finally, it is worth mentioning how Baltic countries present almost perfectly overlapping patterns for both fixed and mobile broadband average speed.

4.3.2 Broadband accessibility and speed for fixed and mobile networks across cities and rural municipalities

Figure 17 further strengthens the evident geographical disparities in digital access, comparing the average speed for municipalities classified as cities and rural areas. Comparing broadband access in urban

Figure 17: Share of population with access to broadband in cities (left) and rural (right) municipality per speed category at country level, EU-27.

Source: Own elaboration.

and rural areas at country level, a neat digital divide is noticeable between the two spatial categories. In most EU-27 cities, the urban population has access to broadband speed over 30 Mbps, and a good percentage also to 100 Mbps. However, in rural areas the situation is quite different, with a significant percentage of residents having access to an average speed below 30 Mbps, and very few countries showing access to over 100 Mbps broadband for rural populations (Denmark, Sweden, the Netherlands, Luxembourg). It can also be noticed how countries

like Denmark, Sweden, the Netherlands and Malta provide access to high-speed broadband to almost the entire population.

At local level, these results are even more evident when overlapping the spatial patterns of average speed (for fixed broadband) and the classification of municipalities according to degree of urbanisation, as illustrated in Figure 18. Results show that **urban areas present the highest speed in broadband connection, revealing how the areas already most**

Figure 18: **Bivariate map showing the spatial concurrence between average speed and degree of urbanisation, EU-27.**

Source: Own elaboration.

connected in terms of physical networks (i.e., with roads and railways) are also the most connected from the digital point of view. Overall, a significant difference can be observed between the average speed in cities in comparison to the other urbanisation categories in all countries. This fact is especially true for rural (and remote) areas, which show the lowest connection speed in most of the countries (in greyish colour). Most of the rural municipalities are characterised by low to a very low-speed broadband connection, although some northern countries (Sweden, Denmark) show an exception to this trend and rather good access to a broadband network. For some rural areas in the inner part of countries such as France and Spain, data on speed are not available, possibly due to the lack of a critical mass of population to justify the deployment of broadband infrastructure.

4.3.3 Broadband accessibility and quality in remote areas

Network speed is most problematic in remote municipalities, where the average speed is significantly lower than the national averages, especially in countries such as Belgium, Spain, France and Portugal

(see Figure 19 below). Moreover, countries like Spain, France and Italy contain a very large number of remote municipalities to which a reliable broadband connection is yet to be provided. Conversely, Denmark, Sweden and Finland provide access to broadband speed higher than 30 Mbps almost everywhere.

Looking at the municipalities classified as remote (i.e., 45 minutes or more from the nearest city, by road), it is possible to notice which countries show the widest divide between the average speed in remote areas and the average speed across the whole country (Figure A7, Appendix 3). Belgium shows the widest difference, followed by Spain, Portugal, France, and Netherlands. However, these countries show an average speed higher than 30 Mbps in remote areas too, whereas others, although with a smaller divide between areas, have access to broadband speed lower than 30 Mbps in remote areas. Access to broadband by population in remote areas is similar to that of rural areas. Countries that also guarantee access to high-speed broadband to the majority of residents in remote areas include Denmark, Sweden, the Netherlands and Luxembourg. On the other hand, Greece, Croatia and Cyprus show very limited access

Figure 19: Average speed for fixed broadband for remote areas and overall country, EU-27.

to broadband faster than 30 Mbps for residents in remote areas.

4.3.4 Identification of *lonely places* according to their digital (dis)connection

Following the results for remote areas, this analysis will now identify which are the most marginalised and disconnected places from a digital perspective – which can be seen as *lonely places* in the context of this report. The first selection includes all municipalities that have access to (fixed) broadband with a speed below 30 Mbps. The results show that the clear majority of those municipalities are classified as rural areas. To refine this selection, areas are further distinguished between remote and non-remote, to also include the dimension of physical connection in the analysis. Figure 20 illustrates the results of this selection: it is clearly evident that the digital divide is not merely a matter of urban-rural, but mostly a matter of urban versus non-urban.

Figure 20: Municipalities with broadband connection under 30 Mbps, EU-27.

Source: Own elaboration.

To further refine **the selection and identification of** *lonely places,* more factors are taken into consideration to better understand the similarity among EU municipalities across countries in terms of scarce access to digital connection. An unsupervised learning technique[27] is applied to perform the cluster analysis on all municipalities, regardless of the degree of urbanisation. The cluster analysis assigned data to different labels **according to four attributes characterising each municipal unit: average speed (fixed network), average latency (fixed network), population density, remoteness classification of the municipality.** The results are illustrated in Table 3 below.

The four groups resulting from cluster analysis:

- Municipalities assigned to label 0 are remote areas (mainly rural) with poor condition in terms of broadband access;
- Municipalities assigned to label 1 are non-remote areas (mainly towns and suburbs) with fair broadband conditions;
- Municipalities assigned to label 2 are non-remote densely populated areas (cities) which enjoy very good broadband connection in terms of speed and latency;
- Municipalities assigned to label 3 are remote areas (possibly towns) with access to very good broadband speed.

The results of the cluster analysis are also mapped in Figure 21, to show patterns of similarity across countries in terms of spatial access to high-speed broadband infrastructure. Observing Figure 21, one can notice that **not all places that are remote and scarcely populated are also necessarily disconnected from a digital point of view,** as areas included in label 3, which show quite a good average speed. At the same time, **places that would not be considered as disconnected from the physical perspective (not remote and with high population density) can be effectively disconnected from the broadband perspective** (label 1, low speed and high latency). Label 2 are the highest-connected areas from all points of view, and are indeed highly populated areas, often corresponding to big cities and capital cities.

Municipalities belonging to cluster 0 can be identified as *lonely places*, presenting the following characteristics:

- very low speed connection, with the average speed below the standard of 30 Mbps (24.7 Mbps);
- high latency resulting in a very slow responsive connection (44.8 m/s);
- low population density therefore probably scarcely populated rural areas (27.8 inhab/km²);
- classified as remote, which implies places far away from major urban centres and therefore also physically disconnected.

Table 3: **Results of cluster analysis.**

Label	Number of areas for label	Average speed (Mbps)	Average latency (m/s)	Pop. density (inhab/km²)	Remoteness
0	22 624	24.7	44.8	27.8	yes
1	43 720	31.8	33.8	76.7	no
2	14 031	145.3	17.4	356.5	no
3	2 835	152.3	19.8	61.1	yes

Source: Own elaboration.

27 This unsupervised learning technique uses a k-mean algorithm for reference see Arthur, D., & Vassilvitskii, S. (2007). k-means++: the advantages of careful seeding, p 1027–1035. *Society for Industrial and Applied Mathematics.*

Figure 21: Cluster analysis assigning municipalities to groups according to broadband speed, latency, population density, remoteness. Label 0 identifies *lonely places,* EU-27.

Source: Own elaboration.

4.4 OPPORTUNITIES AND POLICY RECOMMENDATIONS

The challenges that the EU faces, such as the green and digital transitions, demographic change, or the ongoing COVID-19 pandemic, can be turned into opportunities, also for rural and remote communities. Therefore, it is necessary to establish and follow guiding principles applied to several aspects, namely human capital, innovation, investment, and governance, for planning and managing the future development of digitalisation processes (DESI project, 2020). Changes in the economy and labour market driven

by the digital transformation (Gonzalez et al., 2019) can be exploited to create new solutions for areas in vulnerable conditions, such as rural regions, in order to overcome their status of (physical) remoteness and lack of critical mass. In rural economies, innovation often occurs with entrepreneurs in rural regions creating innovative products and processes through an aggregation of smaller changes, such as incrementally learning by doing (OECD, 2020a).

Without policy support, a lack of or poor access to high-speed broadband might leave some areas behind. Unveiling spatial patterns of access to the

broadband network is important, as it can inform policy with quantitative evidence of the current situation (Perpiña et al., 2021b). Furthermore, it is also critical to highlight how to overcome current disadvantages and barriers to development to seek new opportunities. In this sense, there are several possibilities for improving the current disadvantaged conditions of rural and remote areas, exploiting the potential that connectivity and digitalisation represent for education and training, cooperation and networking, access to services and markets, to make them more attractive to people and businesses. **Access to broadband and data, and building digital skills are elements that might help to foster new business and economic activities in rural and remote areas** (Centeno et al, 2022). However, digitalisation can be an opportunity only if its rollout is quick enough to enable rural businesses to remain competitive, especially in remote areas (European Commission, 2021b; ENRD, 2021a; North et al., 2020).

In remote and rural areas, where the primary and secondary sectors play and important role, digital innovation might help to improve productivity and reduce environmental impact (e.g., digital farming, sensors in agri-food, modelling to optimise resource use and production and processing practices). This is also true for services, where digital technologies can help develop e-services (such as education, health, bank, and mobility), and e-governance and participatory processes, as explored in Smart Villages (ENRD, 2021b). Linked to this idea, the future 'Smart Town' enhancement is focused on some priority areas to facilitate new digital services to serve its stakeholders and communities: digital hubs, e-health centres, multi-functional public media, distribution/collection hubs for local consumers, among others. An important part of the investment should be focused on connecting and inter-connecting towns and villages with distinct territorial service infrastructures (ENRD, 2021a).

The Rural Development Policy has been supporting investments in broadband networks by creating, expanding, and improving broadband infrastructure in rural areas. This policy, together with other EU initiatives, implemented more than 4 400 projects to install or improve broadband connections serving around 18 million people in rural areas (European Commission, 2017b). The European Commission has been successfully promoting the development of Smart Villages, focusing on the use of digital and innovative solutions to provide jobs and business opportunities in agriculture and other sectors in the rural economy, as well as better services for rural citizens. Notably, roughly EUR 6 billion have been made available to Member States between 2014 and 2020 for broadband infrastructure projects, illustrating the variety of support offered by the Common Agricultural Policy (Martinez Juan et al., 2021).

Beyond funding, the Commission also worked on several other fields to help Member States implement faster roll-out of broadband. In 2017, the Commission launched a network of Broadband Competence Offices (BCOs) to support Member States and to advise local and regional authorities on ways to develop broadband to deploy next-generation broadband networks (NGA), especially in rural and remote regions. At the same time, the Commission also implemented an 'Action Plan for Rural Broadband', with concrete actions undertaken at Commission level, aiming to help Member States advance broadband rollout in rural and remote areas (European Commission, 2021b).

Previous experiences of digital transformation driven by high-speed broadband in local communities highlight how pilot projects are essential to understand the real costs and benefits of building networks in the political and geographical landscape of rural areas. Furthermore, rural service centres are the first that need to be connected, as key drivers of the local economy and society (ENRD, 2021a). Magnatti (2020) gives examples of good practice in EU rural and remote communities to solve the issue of broadband connectivity, presenting the solutions implemented, taking into account social, territorial and economic aspects, as well as presenting lessons learned from cases that were not successful.

4.5 CONCLUSIONS

In this chapter, we explored the spatial patterns of broadband accessibility and quality in Europe, using a high-resolution data set recently made public by Ookla®. Results showed that noticeable differences in speed network exist across the EU-27 countries, with the EU average speed around 59 Mbps for fixed broadband and around 41 Mbps for mobile broadband. The analysis of the spatial patterns of broadband accessibility revealed that in Member States urban areas enjoy easy access to the highest broadband available, whereas rural and remote areas, far from high densely populated centres, may not even reach the minimum standard of 30 Mbps required by the European targets. On average, the percentage of EU-27 population with access to broadband speed higher than 30 Mbps is around 70% in cities across all countries. However, in rural areas the situation is very different, with a significant percentage of residents with access to an average speed below 30 Mbps. Furthermore, the analysis shows how spatial disparities in broadband access are also present in urban areas.

Overall, the results confirmed existing spatial disparities, well known as the urban-rural digital divide, and in fact they reinforced this evidence, highlighting a new paradigm of urban-nonurban divide, where even areas classified as non-rural (e.g., towns and suburbs) do not have access to high-speed connection. Finally, t**he analysis identified several particularly vulnerable areas as** *lonely places,* **characterised by a combination of low speed, high latency, low population density and remoteness**. These areas experience the worst conditions in terms of physical and broadband accessibility and network quality, directly affecting the quality of life of citizens residing in such disconnected places. **This is where the EU can support the rollout of digital infrastructure to provide access to the service for the residents.**

Marco Scipioni
Guido Tintori
Claudio Bosco

HIGHLIGHTS

The chapter contributes to the identification of *lonely places,* by looking at spatial patterns of electoral turnout across Member States in the European Parliament elections of 2019.

Mapping territorial patterns of voter turnout at high geographical resolution may help to identify areas of political disengagement and withdrawal from democratic participation.

The work relies on a newly created dataset that harmonised electoral data at municipal level. In addition to turnout, it considers some characterisations of places, such as rural/urban and population density.

Overall, there is great variation in distribution of turnout rates by degree of urbanisation across Member States.

Fine-grained spatial disaggregation makes it possible for policymakers and politicians alike to target their interventions more precisely.

The European Parliament Elections of 2019

Which places show withdrawal from electoral participation?

5.1 INTRODUCTION

The overarching approach of this report is to work towards the introduction of a novel concept, that of *lonely places,* which is multi-scalar and formed by territorial features defined from different points of observation. Within this context, this chapter explores the extent to which the domain of electoral participation may help to identify one tile of the mosaic.

In this vein, electoral participation rates at municipality level (corresponding to Eurostat's Local Administrative Units or LAU) in the 2019 European Parliament (EP) elections are used as a prism to map the democratic (dis)engagement of EU territories at a granular level. In addition, the descriptive work is expanded by means of a few preliminary analyses of whether turnout outcomes might be associated with territorial features, such as their characterisation as urban/rural or in terms of population density.

Classic theories of democracy look at voter turnout as a key indicator of citizens' interest in political processes and, to some extent, of democratic quality. In this regard, it is useful to keep in mind that some scholars argue that relatively low turnout rates or decline in political participation are considered as a 'natural' development for established democracies. In some cases, empirical evidence shows that declin-

ing participation may even be associated with high levels of satisfaction with democracy, as well as good interpersonal and political trust (Ezrow and Xezonakis, 2016; Parvin, 2018). However, **most of the literature interprets low turnout as a consequence of entrenched social and economic inequalities, a symptom of discontent towards the political and institutional settings by citizens who do not see their participation as meaningful and might become dissatisfied with democracy** (Birch, 2018; Lijphart, 2012; Cześnik, 2006).

The academic debate has thoroughly disentangled the complex factors accounting for turnout variations, including their relationship with electoral systems and frequency, changes in political and institutional circumstances, country-specific values, social norms and attitudes, political trust, democratic legitimacy, population size and composition (Blais, 2006; Blais and Dobrzynska, 1998; Franklin, 2004; Cancela and Geys, 2016; Geys, 2006; Gray and Caul, 2000; López and International Institute for Democracy and Electoral Assistance, 2002; Merrifield, 1993; Saunders, 2012).

The reasoning underlying the conventional democratic theory on citizens' participation resonates well with recent research strands that focus on territorial characteristics as a driver of political behaviour.[28] In

---

28 For a brief overview of studies adopting a territorial approach to analyse voting behaviour, see G. Tintori, Ch. 2, in (Scipioni et al., 2019, 18–19).

EU policy circles, this approach has found substantial development in the analytical work promoted by DG REGIO in the context of the Geography of EU discontent (Dijkstra et al., 2019; De Dominicis et al., 2020). These analyses relate territorial socioeconomic characteristics and disparities across the EU with political outcomes. One of their main findings is that Europe is currently experiencing an urban-rural divide. In addition, they posit that areas that experienced loss of economic status show higher degrees of political discontent, which manifests itself through votes for parties opposed to EU integration, as well as lower turnout rates.

The descriptive work of this chapter pursues the relatively narrow task of flagging local areas that may be catalysts for further investigation as potential *lonely places*. Data limitations hamper a proper analysis of how disengagement from politics and withdrawal from political participation might be associated with specific characteristics of places at high spatial resolution. To this end, in fact, multivariate analyses would be necessary, including other indicators alongside voter turnout and territorial characterisation (e.g., demographics and socioeconomic variables such as income, education, or employment), which are currently not available at municipal level across Member States, if not patchily and for few greater city areas. Nonetheless, the final chapter of the report provides an example of combining electoral turnout data with territorial data derived from the analyses carried out in other chapters of this report.

5.2 DATA AND METHODOLOGY

Against this background and **in light of the fact that participatory democracy is one of the foundations of the European Union, this chapter explores spatial patterns of voter turnout for the EP elections of 2019, using a newly created dataset 29 that harmonised electoral data at high geographical resolution for fourteen Member States:** Austria (AT), Germany (DE), Finland (FI), France (FR), Croatia (HR), Italy (IT), Lithuania (LT), Latvia (LV), Netherlands (NL), Poland (PL), Portugal (PT), Romania (RO), Sweden (SE), Slovakia (SK).

The sources of the electoral data for the Member States included in the dataset are the official electoral bodies of each country. The original electoral data were collected at the lowest electoral geography available (e.g., polling station and/or municipal level). In all cases, the geographical identifiers in the national electoral databases were harmonised with the 2019 Eurostat reference of the municipalities (LAUs)[30]. Each municipality of the electoral dataset was also classified by degree of urbanisation, according to Eurostat's *Methodological manual on territorial typologies* (Eurostat, 2018), thus falling into the category of Cities (densely populated areas), Towns and Suburbs (intermediate density areas), or Rural Areas (thinly populated areas).

As mentioned, the process followed in order to create a single, harmonised dataset required a number of steps. For some Member States (e.g., SE), the entire electoral dataset was available at higher level of disaggregation than the municipality, so all the data were aggregated upwards, making sure that each municipal unit included all votes without loss of information. In other cases, (e.g., AT, DE), the electoral data of some larger cities (e.g., capitals) were available at a lower disaggregation level than the municipal one and were therefore disaggregated according to the 2019 Eurostat municipal classification, only for those specific geographical entities.

---

29 The dataset holds the electoral statistics in their entirety. However, for the purpose of this study, its use in this chapter is limited exclusively to the number of registered electors and turnout. Details of the applied methodology, technical procedures, validation process and R-codes are going to be published in M. Scipioni, G. Tintori, The European Parliament Elections dataset: Harmonising electoral data across Member States at LAU level, *JRC Technical Report, forthcoming.* Consistently with the election date, the dataset adopts Eurostat's LAUs classification of 2019.

30 Source: *https://ec.europa.eu/eurostat/web/nuts/local-administrative-units*. Similarly, when aggregations were performed at regional level (e.g., NUTS 3), the reference was always the same 2019 Eurostat table (which contains the 2016 NUTS 3 classification).

For other Member States (e.g., IT, HR), the administrative boundaries changed during 2019, with the merging of two LAUs into one or the loss of LAU status for others, according to Eurostat, but still appearing as an autonomous unit (municipality) in the electoral data. In all of these cases, the ultimate reference was always the 2019[31] Eurostat LAU classification. When data were aggregated to NUTS 3 (e.g., Figure 22), this was done based on the same 2019 table referred to above (which also contains the 2016 NUTS 3 classification). In addition to the harmonisation of the geographical boundaries, one of the most important choices was what to do with postal voting and voting from abroad. The vote from abroad is counted differently across Member States.[32] Apart from a few cases, the data sources did not allow the external votes to be assigned to a specific municipality. With regard to postal voting, the data landscape is also extremely heterogeneous.[33] While exploring possible solutions on how to distribute the postal vote to the underlying municipal units (e.g., by assigning the votes in proportion to the population), for the purpose of this study, both the external and postal votes were excluded from the analysis.[34]

With these caveats in mind, the rest of this chapter showcases some examples of how maps, at different territorial scales, may contribute to the observation of territorial disparities in electoral participation and shows a few place-centred snapshots of areas where disengagement from EP elections may be relatively high.

5.3 RESULTS

5.3.1 Mapping turnout of EP elections of 2019 at different geographical scales

This section presents an overview of the territorial patterns of voter turnout for the 2019 EP elections at municipal level. To place the detailed overview in the right perspective, it is first worth illustrating the context more generally as well as mentioning some specificities linked to electoral data. Figure 22 maps the turnout rates aggregated at NUTS 3 to provide a broad overview of all 14 Member States considered in the dataset. **The figure showcases how variations of rates vary from a minimum value of 18.7 % to a maximum of 74.4 %, with the EU aggregate turnout being 50.7 %.** Figure 23 replicates the same map with the regions (i.e. Eurostat NUTS 3) covered by the electoral dataset, characterised by their urban-rural typology, as provided by Eurostat – namely, 'Predominantly urban' (yellow), 'Intermediate' (pale blue), 'Predominantly rural' (dark blue)[35]. *Prima facie,* a merely observational consideration would be that the regions with higher turnout rates run down along a central corridor that includes northern Germany, part of eastern Austria, up to central Italy. In Figure 23, regions along the same corridor are quite heterogeneous in terms of urban-rural typology.

---

31 More precisely, the table 'Correspondence table LAU – NUTS 2016, EU-28 and EFTA / available Candidate Countries', the 'Validated' version, for the year 2019. This is retrievable at *https://ec.europa.eu/eurostat/web/nuts/local-administrative-units*.

32 Some assign it to the voter's latest municipality of residence (assimilated vote by biographical ties); some to the electoral district of the capital city (assimilated vote to capital constituency); some to the national total (whole country is one voting constituency); some to specific external districts (special representation).

33 So far, Lithuania is the only case where it was possible to connect turnout, valid, invalid, and total votes by either physical or postal voting to each municipality. In some other cases (e.g., AT and DE), it could be technically feasible to assign it to the capital cities, but the data sources did not allow to do the same for the municipalities in the rest of the country, since postal votes are reported at an electoral geography that aggregates several LAUs.

34 In each Member State, an indicator was added to the dataset for all votes that were reported to be either postal or from abroad. As a consequence of this choice, for some Member States (in particular, AT and DE), the turnout value at municipal level may be undercounted. Further, if postal vote happened to be concentrated in, say, urban areas, not including it may lead to aggregation based on degree of urbanisation to be biased.

35 Eurostat classifies NUTS 3 regions on the basis of the share of their population in rural areas as follows: 'Predominantly urban' if the share of the population living in rural areas is below 20, 'Intermediate' if the share of the population living in rural areas is between 20 and 50, 'Predominantly rural' if the share of the population living in rural areas is higher than 50 (Source Eurostat: *https://ec.europa.eu/eurostat/web/rural-development/methodology*).

Figure 22: Turnout of EP elections 2019 by NUTS 3 (harmonised dataset 14 Member States).

Source: Scipioni and Tintori, The European Parliament Elections dataset.

Figure 23: Eurostat Urban-Rural Typology NUTS 3.

Source: Eurostat: *https://ec.europa.eu/eurostat/web/rural-development/methodology*

However, in the case of turnout data, comparing turnout rates across nations is not advisable, given their strong dependence on country-based factors, ranging from the institutional – such as the electoral regulations (i.e., whether voting is compulsory or not), the electoral system (e.g., majoritarian, proportional or mixed), elector registration methods – to the administrative – such as voting options (e.g., in person only, by mail, in advance, by proxy), voting dates (e.g., weekday or holiday, single or multiple day). In addition, turnout is determined also by each country's specific normative culture when it comes to participating in elections, as well as the length and salience of electoral campaigns. In this respect, it is more sensible to carry out longitudinal and within-countries comparisons.

Figure 24 shows the historical trend of voter turnout for the EP elections from 1979 to 2019 for all the EU Member States at aggregate level, as well as for the 14 Member States included in the dataset. **Overall, at EU aggregate level, there has been a constantly declining trend in electoral participation from 1979 to 2014. The last elections of 2019 marked**

a notable inversion of the trend, with an 8 percent increase of the turnout from the previous round. When looking at the 14 Member States included in the dataset, **IT, PT and to a lesser extent FI stand out for not conforming to the recent inversion of trend.** Another element to consider is that, traditionally, there is a considerable disparity in EP and national parliament NP voter turnout. This has been true since the first EP election in 1979. Even though it is not the focus of this analysis, it is important to mention **that the gap between NP and EP turnout levels is often remarkable and explained by scholars mainly in terms of instrumental motivation, that is by the salience of elections for voters** (Cox, 2003; Franklin, 2002; Reif and Schmitt, 1980).

Figure 25 plots turnouts for each EP election side-by-side with the immediately preceding NP election to highlight the disparity between NP and EP turnout. It is limited to the four Member States included in the dataset that held EP elections since the first round of 1979. Overall, it is possible to witness a general decline in conventional political participation for the considered Member States in both types of election.

Figure 24: Turnout EP Elections 1979–2019, EU average and 14 Member States of the dataset.

	1979	1984	1989	1994	1999	2004	2009	2014	2019
EU	62.0	59.0	58.4	56.7	49.5	45.5	43.0	42.6	50.7
DE	65.7	56.8	62.3	60.0	45.2	43.0	43.3	48.1	61.4
FR	60.7	56.7	48.8	52.7	46.8	42.8	40.6	42.4	50.1
IT	85.7	82.5	81.1	73.6	69.8	71.7	66.5	57.2	54.5
NL	58.1	50.9	47.5	35.7	30.0	39.3	36.8	37.3	41.9
PT		72.4	51.1	35.5	39.9	38,6	36.8	33.7	30.8
SE				41.6	38.8	37.9	45.5	51.1	55.3
AT				67.7	49.4	42.4	46.0	45.4	59.8
FI				57.6	30.1	39.4	38.6	39.1	40.8
LT						48.4	21.0	47.4	53.5
LV						41.3	53.7	30.2	33.5
PL						20.9	24.5	23.8	45.7
SK						17.0	19.6	13.1	22.7
RO							29.5	27.7	32.4	51.2
HR								20.8	25.2	29.9

Turnout rate

13.1   85.7

Figure 25: EP and NP turnout gap, 1970s–2019 (DE, FR, IT, NL).

It is worth noting that in-country turnout differences between EP and NP elections are particularly large, with the relative exception of Italy – however, even there the gap seems to widen in the last two rounds – and of one single data point for France.

These few annotations concerning the complexity of using voter turnout from a comparative perspective and as a lens to monitor levels of disengagement from politics are a necessary caveat to frame the ensuing mapping exercise and descriptive analyses within their actual interpretive power.

To fully appreciate the analytical capability associated with data at higher spatial resolution, Figure 26 and Figure A8, Appendix 4 pair a series of maps for two Member States, respectively Croatia and Romania.[36] The maps at the top show the Member State's turnout rate, calculated respectively at municipal and regional level. To make the map more readable, the

Figure 26: Turnout of EP elections in Croatia and Eurostat territorial typology by municipality and region (National turnout 29.9 %).

36 For reason of space constraints, the maps are limited to a couple of examples.

data were sorted in quintiles for both levels. The number of observations were divided into five equal parts and assigned a sequential colour ramp for each class. The bottom maps replicate the same municipalities and regions characterised respectively by Eurostat degree of urbanisation and urban-rural typology.

This map pairing offers an opportunity to observe how much richer and more nuanced the information is at municipal level, and how fine-grained spatial disaggregation brings an added value to the analysis of a key political phenomenon, such as electoral turnout. For example, it is possible to note how, for both cases, the in-country, spatial variation in turnout values becomes flattened when calculated at regional level, thus making it harder to identify smaller pockets of disengagement towards electoral participation. Moreover, it is interesting to underline how **the variations in voter turnout may be substantial even between bordering municipalities belonging to the same region**. Once again, this is something that gets entirely lost when the same data are plotted at regional level. Conversely, **it is not as easy to appreciate visually whether variations in turnout rates exhibit a pattern in terms of urban-rural divide, particularly at municipality level.** The only consideration that this map pairing allows for is that high turnout rates (dark green) also occur frequently, for both cases, in municipalities and regions that are characterised as rural.

In this respect, an alternative option to observe visually whether patterns of urban-rural divide are present is to single out and map voter turnout by municipalities classified as rural areas and compare them with municipalities classified as cities, towns and suburbs. Figure 27 illustrates the case of Italy.

In the example, it is evident how patterns of voter turnout are less linked to the degree of urbanisation than to broader geographical divisions. This observation is valid for several of the Member States included in the dataset (e.g., DE, PL, SE). While remarking that these are just descriptive considerations, it should be noted that turnout maps of the EP 2019 elections do not seem to display a clear-cut urban-rural divide.

Figure 27: Voter turnout by municipality classified by degree of urbanisation (cities & towns vs rural) (National turnout 54.5%).

The next part of this section investigates this issue more deeply, also introducing population density as a proxy to characterise municipalities as an alternative to Eurostat degree of urbanisation.

5.3.2 Turnout rates by degree of urbanisation and population density

There is great variation in distribution of turnout rates by degree of urbanisation across Member States. Some of this variation is due to sheer geographical classification. In fact, some Member States present very few municipalities classified as 'cities'

(e.g., AT, FI, HR, LT, LV), whereas other Member States have numerous municipalities classified as such. It is important to keep this consideration in mind before making any comparisons among Member States.

For many Member States, there is a large variation in turnout within each country as well as within each degree of urbanisation. (Figure 28). This is conveyed in the graph by the fact that, within country and degree of urbanisation, points are spread out along the y-axis. For instance, in the case of rural areas in DE and FR, data points cover more than three quarters of the y-axis. Further, it can be noticed that the medians of turnout rates by degree of urbanisation

Figure 28: **Distribution of voter turnout rates by degree of urbanisation and Member States.**

in some countries tend to increase with lower levels of urbanisation (e.g., AT, FR, NL), while in others the opposite is the case (e.g., FI, PL, PT, SE). This may be an additional indication, to be further explored with more refined analyses, that classifications in terms of degree of urbanisation per se do not exhaustively account for the variation in turnout rates witnessed at municipality level.

Another way to explore patterns in turnout rates by degree of urbanisation is to ask whether the distribution of degree of urbanisation within the entire country or within a specified bracket of the turnout rate distribution differs. Put differently, this means asking whether a specified typology of degree of urbanisation is under- (or over-) represented in municipalities with a very low (or high) turnout rate

Figure 29: Share of municipalities by degree of urbanisation in the country and within the first decile of turnout rate.

compared to within the entire country. To investigate this, the distribution of municipalities by degree of urbanisation was calculated in each Member State considered, as provided by Eurostat. This was understood as the baseline distribution of degree of urbanisation for each Member State. **Turning the attention to the electoral dataset and, for each Member State, the municipalities in the 10% with the lowest turnout rates were singled out, always considering their degree of urbanisation.** While the first decile is an arbitrary cut-off[37], it is helpful to observe whether any of the three categories of degree of urbanisation is over- or under-represented in the selected subgroup of municipalities that displayed significantly low turnout rates at the 2019 EP elections. Figure 29 reports this comparison for each Member State with (top) the municipalities extracted by turnout rate (the bars denoted by '… in first decile of turnout rate') and (bottom) the national distribution of municipalities by degree of urbanisation (the bars denoted with '… in country'). Incidentally, it is worth remarking that the overwhelming majority of municipalities in most of the Member States considered are classified as rural, except for NL (as clearly shown by the bars denoted with '… in country' in Figure 29).

Looking at the electoral data, it is possible to see that an over-representation of rural areas in the low turnout subgroup is present in IT, LT, PL, FI, HR, PT, SE, LV, and SK. There are two noteworthy exceptions to this trend, namely FR and NL. In those two countries it is possible to observe a larger share of the municipalities in the first decile of turnout rate being classified as 'cities' as compared to the national share.

In addition to degree of urbanisation, each municipality's population density was also considered in order to look at possible relationships with turnout outcomes. The population density was converted to its log for ease of interpretation. Information regarding population density is already included in the clas-

sification related to degree of urbanisation. However, other sources of information are also part of that classification, namely geographical contiguity, and minimum population thresholds. The option also to portray the relationship between population density and turnout rate was to emphasise the relationship between a sheer demographic variable and turnout.

Results of an ordinary least squares (OLS) regression are shown in Table A4, Appendix 4 where turnout rates at municipal level are regressed on a few demographic variables as well as degree of urbanisation. The old age dependency ratio - that is, the ratio of those aged 65+ over the cohort 15-64[38] is positively related to turnout rates, suggesting that **municipalities with** higher old age dependency – that is, with **relatively older population – tend to have higher turnouts (Model 2 and 3). The log of population density is negatively related to turnout rates (Model 2), indicating that those from more urbanised surroundings tend to show up less in voting booths in EP elections. This is confirmed by swapping population density with the degree of urbanisation classification (Model 3), which indicates that while 'Cities' tend to have lower turnout rates compared to 'Towns and suburbs', 'Rural areas' have higher turnout rates relative to the same baseline**[39].

In future analyses, interactions between these interrelated factors will be further explored – as it is known (also from chapter 2) that rural areas tend to also be older than more urbanised settings – and more covariates included to address some of the concerns listed in the previous sections regarding what the literature indicates as shaping turnout. As mentioned previously, data limitation prevented this analysis from already including other socioeconomic features.

---

37 This exercise was also repeated with a cut-off at 20%, and the results remain approximately the same. Additional figure available upon request.

38 This follows Eurostat definition, see *https://ec.europa.eu/eurostat/web/products-datasets/-/tps00198*. This variable is labelled as 'olddep1' in the corresponding table.

39 The reader should interpret these results as correlational, and consider that even basis statistical socioeconomic controls – inter alia, average level of education, or GDP per capita – could not be included here because of data limitation. These results are likely to suffer from omitted variable bias.

5.4 OPPORTUNITIES AND POLICY RECOMMENDATIONS

While it remains the full competence of EU Member States to regulate aspects of the European Parliament electoral procedure that are not harmonised at EU level, Article 22 of the EU Treaty (TFEU) and Articles 39 and 40 of the EU Charter of Fundamental Rights affirm that mobile EU citizens have the right to vote and stand as a candidates under the same conditions as nationals of the Member State in which they reside for the European Parliament and municipal elections. The Electoral Directives regulate such rights.[40]

The European Commission constantly monitors whether the exercise of such rights is not only formally granted by Member States but is actually implemented and facilitated. In June 2020, the European Commission published a report on the 2019 European Parliament elections[41], reviewing the conduct of the 2019 elections and the implementation of the Commission's electoral package and confirmed that strengthening democratic participation is one of its key priorities. The same objective featured prominently in the report *On progress towards effective EU citizenship* published by the European Commission in December 2020[42].

Against this background, an analysis of turnout dispersion across Europe could help the European Commission and Member States authorities to **identify possible target areas and audiences withdrawing from electoral participation, thus tailoring policy actions and communication campaigns to encourage their democratic engagement.** The European Parliament Elections dataset harmonised at municipal level across Member States can be instrumental in supporting the European Commission's impact assessment of the Electoral Directives, as well as the preparation of the electoral packages, in view of the next round of EP elections.

5.5 CONCLUSIONS

The descriptive analyses presented here showcase how mapping territorial patterns of voter turnout for the EP elections of 2019 at municipal level helps to identify areas of political disengagement and withdrawal from electoral participation with high granularity. In addition, the descriptive observations of territorial disparities in political disengagement by degree of urbanisation and population density offer further insights about possible areas of discontent and disaffection towards European politics.

In the context of this report, this work may represent a starting point to detect *lonely places,* in terms of relative withdrawal from participation in EP elections. It thus offers one piece of the jigsaw puzzle of EU *lonely places* that the final chapter will try to put together.

---

40 *https://ec.europa.eu/info/policies/justice-and-fundamental-rights/eu-citizenship/electoral-rights_en*

41 Report on the 2019 elections to the European Parliament, *https://ec.europa.eu/info/files/com_2020_252_en.pdf_en*, and the accompanying Staff Working Document, *https://ec.europa.eu/info/files/swd_2020_113_en.pdf_en*.

42 Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions under article 25 TFEU On progress towards effective EU citizenship 2016-2020 COM/2020/731 final, *https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:731:FIN*

Patrizia Sulis
Paola Proietti

HIGHLIGHTS

This chapter focuses on exploring spatial patterns of distribution of urban amenities among EU-27 capital cities to uncover inner *lonely places* in cities or places characterised by a low variety of amenity typologies, revealing disparities in spatial access to urban services.

The spatial distribution of urban amenities in cities represents an important feature that can influence the quality of life of citizens in relation to urban mobility, local environmental impact and congestion, and sociability.

Moreover, exploring the relationship between the distribution of amenities and the residential location of citizens in vulnerable conditions, like the elderly, is useful for making cities and human settlements more inclusive, safe, resilient, and sustainable.

It is critical to have a quantitative understanding of the actual need, in terms of essential services and specific amenities, in order to define the target of urban policy and planning and to prioritise the deployment of European, national, or local policies, as well as the intervention of private investors and the non-profit sector.

Lonely places within cities

A comparative analysis of amenity distribution in European capital cities

6.1 INTRODUCTION

Amenities ('pleasant places') are location-specific goods (Diamond and Tolley, 2013). The distribution of specific amenities in the urban space (neighbourhood, district) has been extensively studied in previous work (among others, Daams et al., 2019; Montalto et al., 2019). Several **scholars regard the variety of urban amenities in cities as important because they help to make places attractive to live and work in** (Gehl, 2011), **more lively** (Jacobs, 1961), **and also because they help to create a sense of attachment to places** (Howie et al., 2010). Recent work has confirmed such empirical knowledge by estimating the relationship between urban amenities and human mobility in different cities, with more visitors to neighbourhoods with a higher diversity of amenities (Sung et al., 2013; De Nadai et al., 2016). This also results in an increased diversity of the people visiting such neighbourhoods and greater numbers of people in the streets at different hours of the day. These are all elements that are also fundamental in terms of safety and security in public spaces (Jacobs, 1961).

The availability of and access to different amenity typologies at the local level are also recognised as improving quality of life at local and city scale, in terms of greater access to urban services by citizens in their daily routines (Bell, 1976; Ellder et al., 2020, Calabrese et al., 2010, Moreno et al., 2021), **lower local environmental impact, and also present enhanced potential for sociability** (see Ettema et al., 2014) **and more healthy lifestyles.** In this respect, **the combination of well-endowed areas and increased**

use of mobility modes such as walking and cycling is known to help reducing the vulnerability of people from disadvantaged groups in relation to mobility poverty** (e.g., low-income earner and youth, see Southworth, 2005) or those in conditions of reduced mobility (e.g., senior citizens, see Andersson et al., 2018; Elldér et al., 2020) as it also recently became evident during the COVID-19 pandemic.

Despite extensive previous work on amenities, few studies cover such a large number of cities or have access to a variety of amenities as wide as in the present study, thanks to the extensive high-resolution data set employed here, which contains geo-localised information on more than three million amenities in the capital cities of the EU-27. This work also attempts to identify *lonely places* **in cities, which, in this specific study, are the most marginalised places in terms of their low variety of amenity typologies.**

Results from this work might inform policies aimed at promoting more equal access to services at the local scale, as well as in relation to slow mobility modes (i.e., walking and cycling), and, in general, to develop comprehensive and sustainable planning strategies for cities, leaving no place and no person behind.

6.2 DATA AND METHODOLOGY

The analysis employs an extensive data set collected through the Google Maps API in 2018 containing information about urban amenities for the capital cities of the 27 EU Member States. Data have been collected within the boundaries of 'Cities' and 'Greater

Cities' for the EU-27 capital cities.[43] The attributes selected for the analysis are the typology of the amenity (restaurant, school, hospital, etc.) and the location (geographical coordinates) of the amenity.

The analysis is organised in two parts. The first part focuses on identifying spatial patterns of amenities within cities. Data have been aggregated to a 500 m² cell grid, to compare results across cities beyond the specific administrative boundary. **Amenities have been selected and aggregated into three sub-groups representing a specific aspect to observe in the urban dimension of local access to amenities and quality of life:**

- *urban leisure* includes art galleries, museums, theatres and concert halls, cinemas, discos and clubs, parks and gardens, cafes, bars, and restaurants.
- *shopping* includes grocery shops, speciality food shops, liquor shops, markets, big food shops, shopping centres, personal care shops, clothing shops, goods shops, and convenience shops.
- *essential* (local) *services* include banks and post offices, pharmacies, hospitals, general practitioners (GP) and dentists, crèches, primary schools, secondary schools, food shops, places of worship, parks, and gardens.

This analysis is performed using a Machine Learning cluster technique (Sulis and Manley, 2019; Sulis and Lavalle, 2020) to measure the similarity[44] of each cell according to the predominance of certain typologies. Cells with a similar distribution of amenity typologies are labelled under the same class.

The second part of the analysis focuses on the spatial relationship between the variety of amenities

and the presence of elderly residents (over 65 years old) in the city of Paris. The objective is to understand if there are areas in the city of Paris where people over 65 years old might have more difficulties in reaching the services they need in their daily routine.[45] It employs a selection of urban amenities that are generally most used by the elderly at the local level[46] and includes: arts and entertainment, banks and post offices, restaurants, groceries, libraries, medical centres, parks, pharmacies, personal care (hair salons etc.). Data have been aggregated at census tract level.[47] The corresponding information about the distribution of the elderly population for Paris has been sourced from the 2015 census.[48]

6.3 RESULTS

In this section, results for a selection of cities are illustrated. The city selection has been made to present a summary of the results and to group cities that are comparable in terms of size, morphology and geographical context. The results are presented separately for each urban function (leisure, shopping, essential/local service), in order to highlight similarities in the spatial patterns of different subgroups of amenities across the cities.

Looking at the results, the areas with a balanced variety of amenities are those where residents have a wider offer of services at the local level, with no need to travel too far in the city for daily needs. This is valid for all amenity typologies, but it is especially important for the categories of shopping and essential service, whereas for urban leisure, a certain aggregation of amenities around the central area of cities is expected. However, **leisure amenities have a different attractiveness in comparison to other**

---

43 'Cities' boundary corresponds to the local administrative unit (LAU), where the majority of the population lives in an urban centre of at least 50 000 inhabitants. 'Greater Cities' boundary represents an approximation of the urban centre when it stretches far beyond the administrative city boundary, see *https://ec.europa.eu/eurostat/web/cities/spatial-units*.

44 The similarity is calculated using the Jensen-Shannon distance metric on the discrete distributions of amenities located in each grid cell.

45 A spatial autocorrelation method is employed, calculated in two steps. Firstly, Global Moran I is calculated, to explain the overall distribution of the two variables and their clustering characteristics. Results vary between -1 and 1 and respectively indicate the maximum negative (perfect dispersion) and positive (complete clustering) autocorrelation across space, whereas zero means a completely random spatial pattern. Secondly, Local Moran is also calculated, to identify the location of those possible clusters and their characteristics (Moran, 1948). This analysis is carried out using the GeoDa software (*https://geodacenter.github.io*, Anselin, 2003; Anselin et al., 2010).

46 This selection followed a previous example from New York City, see *https://snoopeep.github.io/eqmap_mb0510*, based on Yang and Diez-Roux, 2012.

47 IRIS (Iots Regroupés pour Information Statistique), available at *https://geocatalogue.apur.org/catalogue/srv/fre/catalog.search#/metadata/urn:apur:irisod*.

48 *https://www.insee.fr/fr/statistiques/3627376*

function such as grocery shopping or primary schools, and a different temporal scale (Schläpfer et al., 2021; Alessandretti et al., 2020) **in respect to daily needs for a good quality of life.** For example, grocery shopping or school are needed every day, whereas time for leisure and culture in the city is usually reserved for weekends and holidays. **This aspect was therefore considered when evaluating the results.**

Considering the general scope of this report, which is to identify *lonely places*, the criterion chosen for identifying an area as 'lonely' in this chapter was the diversity of amenity typologies located in a place and available to residents at the local scale. Following this criterion, **the areas within cities that show the lowest variety of amenities, with a distribution characterised by a neat prevalence of a single typology (approximately above 60% of the total of amenities in the area) are identified as 'lonely'.** A scarcity of variety in the available services at the neighbourhood scale may have a relevant impact on the quality of daily life of the residents, also leading to the risk of mono-functionality. For each function, areas with no amenities are indicated in light grey and not considered in the cluster analysis. Furthermore, for each sub-group, areas with the highest (yellow) and lowest amenity (blue) variety are illustrated as well as intermediate areas (dark grey).

6.3.1 Spatial distribution of urban leisure related amenities

a) Paris, Rome, Berlin
In Paris and Rome, one can observe a clear distinction in the patterns of leisure amenities between the city centres and the outer areas, whereas in Berlin there is a balanced mix of amenities both in the central and peripheral areas. The majority of cells show a preponderance in the combination of eating-out amenities, especially restaurants and bars, with a similar distribution found in all three cities. In Paris and Berlin, some areas also show a combination of eating-out (restaurants, bars and cafes) and cultural amenities (art galleries in Paris). In Rome, it is possible to identify a clear spatial pattern for museum location in the city centre. In all cities, one can notice areas that show a preponderance for specific amenities: restaurants (the same can be observed in all cities); parks and gardens. Rome also shows some areas with a balanced variety of amenities accessible to

residents at the local scale. This label is also common to other cities described later in this section.

b) Stockholm, Copenhagen, Helsinki
Copenhagen and Stockholm both show a balanced mix of leisure amenities across the city, with many areas characterised by a predominance of two leisure amenities: restaurants (in Copenhagen and in Stockholm) and parks and gardens. In Helsinki, results show a difference in patterns between the city centre and the outer areas: common combinations are restaurants and parks and gardens, and eating-out amenities (restaurants, bars and cafes). In Stockholm and Copenhagen, it is possible to observe areas with a balanced mix of amenities accessible at the local scale, similar to that highlighted in Rome. In all cities, areas characterised by the prevalence of a single leisure amenity can be observed. The typologies that are predominant in these areas are cafes, or parks and gardens, or restaurants. These areas are preponderant in outer areas of Helsinki and more homogeneously spread in the other cities.

c) Warsaw, Prague, Budapest
Prague and Budapest show a distinction in the amenity patterns between central and peripheral areas, with a combination of eating out amenities (restaurants, cafes and bars) in the city centre of both cities. Warsaw (Figure 30) instead shows different combinations of the same leisure amenities (restaurants and bars; or restaurants and cafes). All three cities also present areas that are characterised by the predominance of one specific amenity, such as restaurants or parks and gardens. In Prague and Budapest it is possible to identify areas that show a higher variety of leisure amenities, including culture and entertainment, accessible at the local scale.

d) *Lonely places* in urban leisure
Whereas certain typologies of leisure amenities, such as theatres or museums, are expected to be located mainly in central areas in the cities, other typologies, such as eating out and entertainment (i.e., cinemas and parks), are expected and encouraged to be located in different areas in cities. In the results, one can observe common patterns in the cities regarding the distribution of leisure amenities. All cities show areas characterised by the neat prevalence of a single amenity typology: restaurants, cafes, parks. Rome also shows areas in the city centre where museums represent the predominant amenity. Areas characterised

Figure 30: Warsaw, places with a high variety of leisure amenities (in yellow) versus places characterised by the predominance of one typology (in blue). Light grey are areas with no leisure amenities, dark grey indicates different combinations of leisure amenities.

- ■ High variety
- ■ Low variety
- ■ Average variety
- ■ None of the targeted amenities

High variety

Low variety

by such a low variety of available services usually tend to attract people only during certain times of the day (for example, during the evening for eating out or during the day to visit museums). In this perspective, those areas can be identified as *lonely places* in the cities.

6.3.2 Spatial distribution of urban shopping related amenities

a) Paris, Rome, Berlin

Patterns of shopping amenity distribution are quite similar in all three cities and are characterised by a noticeable difference in terms of variety of the amenities accessible at the local scale between central and peripheral areas. The most common distributions in the central areas are a mix of clothing, goods, grocery and personal care shops in Berlin (Figure A10, Appendix 5) and Rome, whereas in Paris the most common combination of shopping-related amenities includes goods, clothing and personal care, with amenities related to food shopping less common in the city centre. In all three cities, areas outside the centre appear to be characterised by the predominance of one specific typology of shopping amenity: personal care (in Berlin and Paris); grocery shops; and goods shops. Rome and Berlin also show some areas with a strong presence of big food shops in outer areas. Both in Paris and Berlin, few areas across the cities show a wide variety of shopping amenities accessible to residents at the local level.

b) Stockholm, Copenhagen, Helsinki

In Copenhagen, most areas across the city are characterised by the prevalence of a single shopping amenity. In Stockholm and Helsinki, results show quite sparse locations for shopping amenities, especially in the outer areas of the two cities. The most common combinations in the three cities are personal care, goods, and clothing shops (Copenhagen and Stockholm), and personal care, grocery and goods (Helsinki), particularly in the city centres. Areas characterised by a predominance of goods shops (in Copenhagen and Stockholm), and grocery shops are instead more frequently located in the outer areas. In all three cities, several areas show a wide variety of shopping amenities accessible at the local scale.

c) Warsaw, Prague, Budapest

The three cities show similar patterns in the distribution of shopping amenities, with central areas showing a mix of amenity typologies, whereas other areas show a predominance of specific shopping amenities. Furthermore, in all cities, several areas present a higher variety of shopping amenities accessible at the local scale. The most common combination in the city centres include personal care, goods and clothing (in Warsaw and Prague), personal care, goods and grocery shops (in Warsaw and Budapest). In outer areas, it is possible to observe places characterised by the prevalence of grocery shops or personal care shops. In Prague, areas with a high presence of goods shops are also common (similarly to Copenhagen, see Figure 31, blue bars).

d) *Lonely places* in urban shopping

Regarding amenities related to urban shopping, a local presence of various typologies of amenities for daily needs is the optimal condition and should be encouraged in neighbourhoods. Observing the results, one can notice that all cities present places in the outer urban areas characterised by the prevalence of three distinct typologies: grocery, goods, and personal care shops. In addition, Helsinki, Rome and Stockholm also show places where clothing shops are the prevalent typology, generally in the inner areas of the city. In Rome and Berlin, there are also areas with a high presence of large food shops. In all these cases, one can notice how a low variety in the typologies of shops available at the local level has consequences on how people need to move across cities to fulfil their daily needs. This aspect is particularly relevant for shops like groceries or personal care (e.g., hair salons), which may need to be visited frequently but are not available in many areas at the local level for certain demographics (e.g., the elderly). To sum up, then, the abovementioned areas with low variety can be identified as *lonely places* in this specific context. In particular, areas showing scarce or no presence of local grocery shops, markets and personal care shops can pose some disadvantages to their residents.

Figure 31: Copenhagen, places with a high variety of shopping amenities (in yellow) versus places characterised by the predominance of one typology (in blue). Light grey are areas with no shopping amenities, dark grey indicates different combinations of shopping amenities.

- High variety
- Low variety
- Average variety
- None of the targeted amenities

Source: Own elaboration.

6.3.3 Spatial distribution of urban essential services

e) Paris, Rome, Berlin

The three cities present very distinct patterns, with very few similarities between Paris and Rome (Figure 32), which appear to be characterised by a higher variety of amenity distributions in central areas and a predominance of single amenity typologies in the other areas. In Berlin, on the other hand, there is no clear pattern distinguishing between central and outer areas of the city. In Paris and Rome, the city centre appears to be characterised by a combination of mixed services including health, banks and food shops. In Rome, unsurprisingly, the city centre shows a preponderance of worship amenities. Places in outer areas are, instead, mostly characterised by the predominance of a single urban service at the local scale, including parks and gardens, food shops, education amenities (primary and secondary schools in Paris) and health amenities. In Berlin, the most common combinations include health service and food shops, and health and crèche. Areas characterised by the predominance of a single service at the local scale include parks and gardens, food shops, and health facilities. In all three cities, several areas present a higher variety of urban services accessible at the local scale.

f) Stockholm, Copenhagen, Helsinki

Copenhagen and Stockholm shows heterogeneity in the distribution patterns of urban services, with no neat differences between central and outer city areas, whereas this difference is noticeable for Helsinki. The most common combinations are health, banks and food shops (in Copenhagen, Stockholm, and Helsinki). In Copenhagen, several areas across the city are characterised by the predominance of a single service including food shops, crèches, and parks, whereas in Stockholm, areas outside the city centre are also characterised by the predominance of single services, such as food shops, and places of worship. In Helsinki, outer areas show a predominance of single services such as crèches, and parks. In Stockholm and Helsinki, several areas show a variety of urban services accessible at the local scale. This combination is quite common in Stockholm, whereas in Helsinki fewer areas are characterised by such a high variety of service amenities.

g) Warsaw, Prague, Budapest

Whereas Warsaw shows no clear difference in amenity patterns between city centre and outer areas, Prague (Figure A9, Appendix 5) and Budapest show noticeable variations in this sense. In Warsaw, the most common combinations include health, banks and food shops. Areas characterised by a single service include food shops, and crèches. In Prague and Budapest, inner areas show a combination of health, banks and food shops. In Prague, a mix of various services and a high presence of health facilities is also common in the centre. Outer areas of these cities are characterised by mixed combinations with the predominance of crèches (in Prague and in Budapest), parks, and places of worship. Once again, in all three cities several areas show a wide variety of service amenities at the local scale accessible to residents.

h) *Lonely places* in urban essential services

Essential services such as education and health should, ideally, be widely available and easily accessible at the local scale, as they are fundamental for the daily needs of residents and can have a significant impact on their quality of life. Most of the cities in the analysis show several areas characterised by a low variety in the typologies of services available to residents at the local level. Such places show a prevalence of single amenity typologies such as: places of worship, crèches, parks, general practitioners (GP), local food shops (groceries, supermarkets). In Warsaw some areas are characterised by a clear prevalence of banks and post offices. In the case of essential services, areas with a high presence of certain typologies (e.g., GP, schools, food shops) can hardly be considered marginalised, although a wider variety in the availability of services would be preferable. This may not be the case for areas that show a prevalence of places of worship or banks, and a scarcity or absence of food shops, schools, or GPs, however, which can therefore be considered as *lonely places*.

Figure 32: Rome, places with a high variety of essential services amenities (in yellow) versus places characterised by the predominance of one typology (in blue). Light grey are areas with no essential services, dark grey indicates different combinations of essential services.

Legend:
- High variety
- Low variety
- Average variety
- None of the targeted amenities

	High variety	Low variety
GP/dentist		
Bank/post office		
Crèche		
Food shop		
Hospital		
Park/garden		
Pharmacy		
Primary school		
Secondary school		
Worship place		

Source: Own elaboration.

6.3.4 Spatial access to local amenities for older people

Senior citizens in cities should be able easily to access fundamental services, such as local food shops, health facilities, but also culture and leisure amenities, at the local level, for example by walking. Therefore, a quantitative understanding of the relationship between the distribution of elderly residents and amenities at the district or neighbourhood level might be particularly useful to assess the quality or unevenness of access to local amenities such as grocery shops, medical centres, parks etc. To explore this relationship, **the analysis first investigated if people over 65 live clustered or dispersed within Greater Paris,** identifying the location and characteristics of these clusters (if any)[49]. Secondly, **the analysis explored the relationship between the distributions of people over 65 years old and the spatial location and variety of a selection of amenities**[50] to understand the availability of amenities nearby.[51] The results are shown in Figure 33.

The analysis of the univariate distribution of people over 65 (Figure 33, top) shows a significant high concentration cluster of elderly people in the south-east and south-west of Paris (dark yellow), whereas the north-east and south of the city show a low concentration of senior residents (light blue). The pattern of distribution of elderly persons also shows some outlier areas spread across the city. Such spatial outliers are areas with a high presence of senior citizens surrounded by areas with low presence of residents over 65 (light yellow). On the other hand, it is also possible to observe areas of low concentration surrounded by areas with a high incidence of elderly persons (dark blue).

Observing the joint distribution of elderly persons and variety of amenities,[52] (illustrated in Figure 33, bottom), it is possible to identify clusters of high concentration of residents over 65 surrounded by clusters of low variety of services (light yellow areas in Figure 33, bottom). These areas appear to be quite small and sparsely distributed in the city, therefore they might not represent a relevant problem in terms of marginalised (lonely) places. The analysis also shows places with a high concentration of elderly persons and a high variety of amenities that are useful for them (dark yellow), as well as places with a low presence of elderly persons and a wide variety of amenities (dark blue), which reflect places where elderly people might want to live.

Looking at the relationship between the distribution of senior citizens over 65 and specific typologies of amenities (Figure A11, Appendix 5), the results show that there is quite a good availability of grocery shops at the local level close to areas where elderly people are living, although several areas with a high concentration of senior residents show a low incidence of parks. These areas might be targeted by urban policy with specific strategies aimed at improving the current situation and quality of life of residents, given that well maintained green spaces favour social interaction, help reduce vulnerability to heat and also encourage physical activity (Kompil et al., 2021).

---

49 This was realised by calculating the univariate values for the Global and Local Moran I.

50 This was realised by calculating the bivariate values of the Global and Local Moran I.

51 Regarding the univariate distribution of seniors and amenities, results show a tendency towards a spatial concentration of the elderly over 65 (0.275; p < 0.05), which is higher than the concentration observed for the population sub-groups between 65 and 79 (0.252; p < 0.05) and over 80 years old (0.255; p < 0.05). Regarding the variety of amenities that each cell contains, it was calculated using Shannon Entropy (see Cox, 2016). Results show quite a homogeneous distribution of amenity variety in the city of Paris (0.088; p < 0.05) This was calculated using the Shannon Entropy Index (see Cox, 2016). The Shannon Entropy, in this context, quantifies the uncertainty in predicting the typology of an individual amenity in a specific cell from the dataset including all the amenity typologies.

52 This was calculated using the bivariate Local Moran's I: 0.062; p < 0.05.

Figure 33: Local Moran's I on distribution of people aged 65 or over (top) and bivariate local Moran's I on the distribution of elderly and variety of amenities (bottom).

Population over 65

☐	Not significant		2 737
■	High —— high		348
■	Low —— low		368
■	Low —— high		109
■	High —— low		72
	Local	Neighbouring	

Population over 65 – Entropy
amenities variety

☐	Not significant		3 109
■	High —— high		179
■	Low —— low		141
■	Low —— high		149
■	High —— low		56
	Local	Neighbouring	

Source: Own elaboration.

6.4 OPPORTUNITIES AND POLICY RECOMMENDATIONS

Results obtained in this study represent quantitative evidence on the availability of urban amenities in cities, and show how important spatial data and analysis at high-resolution are to achieve an understanding of the current urban situation. These data can inform the conception and implementation of policies aimed at improving the quality of life of residents (not only in cities but also in towns and rural areas). In particular, a quantitative evaluation of the current availability, variety, and localisation of amenities in cities is essential to prioritise interventions, considering that a balanced and accessible mix of amenities brings several benefits: it favours walkability, and encounters, it fosters a sense of attachment to places, enhances the level of safety experienced and also counteracts segregation (Sabater et al., 2017).[53]

Besides this, **having a satisfactory endowment of amenities in cities, specifically accessible for the elderly, contributes to an ageing society in a sustainable way** (European Commission, 2021d; OECD, 2015)[54], and favours initiatives in the context of at least one of the actions suggested by the UN Decade for Healthy Ageing – the creation of 'age-friendly environments'. It also helps to inform several initiatives undertaken by the World Health Organisation's Global Network for Age-friendly Cities and communities.[55] Finally, it favours 'ageing in place', which means the permanence of the elderly at home, instead of their institutionalisation in care homes. This might be beneficial for the elderly if coupled with other initiatives to prevent the dissociation from their social network and from the physical environment they are used to (Fernández-Carro, 2014). This can also provide new opportunities for creating new jobs, fostering the removal of physical and social barriers, and implementing policies, services, products, and infrastructure in the context of the care sector and the silver economy.

More generally, **understanding the relative distribution of amenities in comparison to specific population groups is also crucial if cities are to progress towards the Agenda 2030,** which is globally set. In particular, actions favouring a better endowment of amenities within cities might help to achieve Sustainable Development Goal 3, which is related to ensuring healthy lives and promoting well-being for all, at all ages, SDG 10 on reducing inequality, and SDG 11, which is focused on making cities and human settlements inclusive, safe, resilient, and sustainable, leaving no one behind (United Nations, 2015).

During the European mandate of 2014-2020, around 17 billions of ERDF have been allocated directly to cities to develop strategies of Sustainable Urban Development (SUD), together with locally led development strategies and Integrated territorial investments. **Among the priorities mentioned in the strategies, some were closely linked to reducing congestion and pollution and favouring the liveability of cities. Also in the 2021-2027 mandate, there will be funds allocated directly to cities** to continue progressing towards urban sustainable development.

Together with ERDF Funding, the Leipzig Charter provides a key policy framework document to foster sustainable urban development in Europe. It supports the vision of a 'green city' to fight global warming, also through the shift towards active and low-carbon forms of mobility; a **'productive city'**, where central urban areas are transformed into attractive multifunctional spaces providing opportunities for living, working, hospitality and leisure; a **'just city'**, where socially balanced, mixed and safe neighbourhoods support the integration of all social, ethnic groups and generations.

---

53 This goes in the direction of the concepts of 'the 15-Minute City' (Moreno et al., 2021) – where people can work, shop, play, and go to school within a small radius of their homes. This concept has gained momentum across different cities, even if this concept is currently debated in the literature for example by Glaeser (2021) who argues that these 'neighbourhood archipelagos' should be well connected among each other in order not to contribute to segregation.

54 This analysis can be replicated for other segments of the elderly population following Sanderson & Scherbov, 2010.

55 https://www.who.int/publications/i/item/WHO-FWC-ALC-18.4

6.5 CONCLUSIONS

This chapter presented an exploratory analysis of the similarities and differences in the spatial patterns of urban amenities in the EU-27 capital cities. The analysis relied on more than three million POIs and involved the use of several analysis techniques. First, a Machine Learning technique was applied to measures the similarity of each spatial unit according to the distribution of amenity typologies in each cell area, clustering grid cells (500 m²) with a similar distribution, not only in terms of amenity typologies, but also in terms of number of amenities for each typology. **The analysis identified places with a low variety of amenities for three main urban functions: urban leisure, shopping and essential services. Results from this analysis make it possible to identify** *lonely places* **in areas characterised by the clear prevalence of a single typology,** as such places cannot offer people adequate access to the services that they might need in their daily routine.

To further explore this later aspect, **the city of Paris was selected as a case study, with a specific focus on areas inhabited by senior citizens.** This part of the analysis employed spatial autocorrelation to identify if clusters characterised by a high presence of people over 65 in the city of Paris were also characterised by any particular issue concerning the availability and variety of local services in surrounding areas. **Generally, the elderly have good access to amenities, whereas there are some specific amenities that are more equally accessible within close walking distance (groceries) than others (parks).**

A quantitative understanding of the availability of and spatial access to urban services that have an impact on the quality of life of citizens is of paramount importance for the production of urban policies that can target the current situation and prioritise interventions to improve conditions of residents, especially those more vulnerable, as is the case of elderly citizens in the example of Paris.

Carlotta Fioretti
Paola Proietti
Guido Tintori

HIGHLIGHTS

The chapter focuses on a typology of *lonely places,* which are deprived neighbourhoods within Functional Urban Areas (FUAs) characterised by physical, economic, and social disadvantage, and where a high percentage of migrants live.

This study considers if EU supported urban and territorial strategies targeting FUAs, and aimed at transforming *lonely places* into places of opportunities, can also indirectly contribute to migrants' integration.

Urban strategies promoted by the EU Cohesion Policy, through a place-based approach, push local administrations to pursue territorial integration, coordinating measures at the scales of the functional area, municipality, and neighbourhood.

Cross-sectoral integration allows infrastructural and economic interventions to be combined with social ones, which has been shown to be particularly suitable to address migrant needs.

For people living in the most vulnerable conditions among those living in worst-off areas (e.g., transit migrants, the homeless) a combination of the place-based approach with a people-based approach has to be considered in terms of leaving no place and no one behind.

Urban strategies for *lonely places*

Exploring the influence of a place-based approach to migrant integration

7.1 INTRODUCTION

The Cohesion Policy is the main strategy adopted by the European Union to reduce disparities in the level of development between regions. Part and parcel of this policy is the European Regional Development Fund (ERDF). **During the European mandate of 2014-2020, EUR 17 billion of ERDF have been allocated directly to cities to develop strategies of sustainable urban development (SUD)[56] through an integrated and place-based approach.** SUD strategies have two main characteristics: first, they are integrated and aim at tackling jointly environmental, economic and social challenges that affect urban areas; second, urban authorities must be directly involved in their implementation. **Along with the SUD, Integrated Territorial Investment (ITI) and Community-led Local Development (CLLD) strategies complete the list.** ITI allows the integration of investments from different funds and can be used as an implementation mechanism of SUD. CLLD is particularly suitable for small areas such as neighbourhoods or small towns, and promotes bottom-up approaches and the engagement of the local community (Fioretti et al., 2020).

Against this background, this chapter shares some of the findings of a JRC exploratory research activity that looks at whether urban strategies supported by the Cohesion Policy in Functional Urban Areas (FUAs), may particularly benefit disadvantaged areas within the targeted territory, where also high shares of migrants live.[57]

The issues of deprived areas within cities is largely discussed in the literature and in policy debate, highlighting the role of space as a fundamental dimension in structuring the process of exclusion of vulnerable groups (Murie and Musterd, 2004). In these areas physical elements of disadvantage (e.g., poor location, poor built environment, lack of common facilities and services, run-down public spaces, and housing) combine with socioeconomic deprivation and concentration of categories in vulnerable condition, including low-income migrants (Tintori et al., 2018). In the specific case of migrants, their concentration in disadvantaged neighbourhoods can hinder their integration and upward mobility. In this sense, **deprived neighbourhoods represent pockets of socio-spatial disadvantage,** 'excluded places' that become increasingly isolated from the rest of

---

56 *https://ec.europa.eu/regional_policy/en/policy/themes/urban-development*

57 This chapter is produced in the context of an Exploratory Research Activity of the Joint Research Centre of the European Commission and summarises the main findings from that work. More details on the project and on the specific case studies are available in Fioretti C., Proietti P., and Tintori G. (eds), *A place-based approach to migrant integration.* EUR 30926 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-45232-4, doi:10.2760/505944, JRC127151.

the city (Skifter Andersen, 2002). **In the context of this analysis, they are identified as *lonely places* in Functional Urban Areas (FUAs), where categories in vulnerable conditions risk becoming trapped, within the broader context of a well-served and viable territory.** The Functional Urban Area is defined as a city and a less densely populated commuting zone (Dijkstra et al., 2019). It can aggregate multiple municipalities with different levels of density and degrees of urbanisation. What characterises a FUA are not administrative boundaries, but the functional relations between its parts.

Immigrants' residential patterns in the EU are complex and varied. **Core city districts have been a traditional affordable entry point for immigrants, but centrifugal forces like gentrification have increasingly pushed them towards low-demand areas on the outskirts of cities and in small towns outside urban cores** (Millington, 2012; Annunziata et al., 2021). A wealth of recent literature has analysed the growing presence of migrants outside gateway cities (Glick Schiller and Çağlar, 2011; Barberis and Pavolini, 2015), in small towns, peri-urban and rural areas (e.g., Kreichauf, 2015; Morén-Alegret, 2008; Fioretti ed., 2016). **Nonetheless, even if migrants tend to be more dispersed, they still depend on core cities for job opportunities and services. In this context, the spatial dimension of migrants' daily life concerns wide, interconnected, multi-scalar, circular territories that transcend administrative boundaries. For this reason, Functional Urban Areas qualify as an appropriate unit of analysis to investigate the described dynamics.** Moreover, the focus on *lonely places* in FUAs offers a chance to discuss which is the proper spatial scale for integrated policy action: specific neighbourhoods only; the municipal boundaries or the wider functional area?

After this introduction, the chapter provides a brief description of the empirical approach and the data used. Then, it presents an overview of the EU territorial instruments active across FUAs and the share of migrants residing in the targeted areas. This section relies on data available with EU coverage. The following section considers to what extent urban and territorial strategies address issues directly or indirectly related to migrant integration in FUAs, through in-depth analyses of five case studies (Athens, Liège, Malmö, Paris, and Venice) conducted by external experts. The last part discusses briefly how the findings from this analysis might be of use for policymaking purposes.

7.2 DATA AND METHODOLOGY

The first phase of the analysis aimed at understanding the distribution of urban and territorial development strategies and share of migrants across European FUAs.[58] The data sources employed in the first part of the analysis were the following:

- The STRAT-Board database[59] provides information on the EU cohesion policy and in particular urban and territorial strategies for the policy framework 2014-2020. For each strategy, the dataset provides a range of attributes, such as the thematic objectives, the territorial focus and instruments, and a few defining keywords.
- Eurostat City Statistics (Urban Audit database) gives information on the number of residents, detailing how many of them are EU or non-EU migrants.[60]

The second phase of the analysis aimed at selecting a number of FUAs suitable to qualify as case studies and then analysing them by combining data available at both the EU level and locally. The FUAs of Athens, Liège, Malmö, Paris, and Venice were selected because considered particularly interesting among those fulfilling all the criteria. More information on data, methods and criteria for the selection of case studies can be found in Appendix 6.

---

58 The adopted FUAs version (and related boundaries) is the 2018.

59 More information on the strategies and STRAT-Board are available here: *https://urban.jrc.ec.europa.eu/urbanstrategies*.

60 An EU migrant is defined as a person living in the reporting country who has the nationality of another EU country than the reporting one. A non-EU migrant, instead, is defined as a person living in the reporting country with a third country nationality, someone who has not the nationality of any of the Member States of the European Union.

7.3 RESULTS

7.3.1 The EU perspective: Overview of strategies and migrants in FUAs

In the 2014-2020 period, there were 988 urban and territorial strategies across European FUAs, some of them covering more than one FUA at the same time. The strategies are territorially unevenly distributed (Figure 34) and a higher number of strategies is not observed where there are more migrants.

The STRAT-Board database provides information on the themes the strategies are focusing on. First it shows the ERDF investment priorities used by each strategy. ERDF is the main fund that supports strategies of sustainable urban development and in 2014-2020 targeted 11 Thematic Objectives, each

Figure 34: Map showing the share of migrants below/over the national mean and the number of strategies per FUA.

Source: Own elaboration. Data from STRAT-BOARD and Eurostat.

Non-EU born migrants share compared to national mean

- Below national mean
- Over national mean
- No data

Number of strategies

1-38

Azores   PT

Madeira

Canary Islands   ES

500 km

one structured in up to 7 investment priorities.[61] It is worth noting that no investment priority among the 40 originally included in the regulations explicitly mentions migrants.[62] The following **priorities** are the most cited among the strategies existing in FUAs: priority 4e – Promoting low-carbon strategies for all types of territories, in particular for urban areas, including the promotion of sustainable multimodal urban mobility and mitigation-relevant adaptation measures; priority 9b – Providing support for physical, economic and social regeneration of deprived communities; Investment priority 9b appears to be particularly suitable for targeting deprived neighbourhoods with high shares of migrants, and leveraging their integration through a place-based approach. Another priority that is used to promote services for migrant inclusion is 9a – Investing in health and social infrastructure (…) reducing inequalities in terms of health status, promoting social inclusion through improved access to social, cultural and recreational services (…), which is also quite recurrent across EU FUAs.

Moreover, the STRAT-Board database provides, for each strategy, a series of **keywords**[63] identified by Managing Authorities[64] to describe the strategies qualitatively. Over the total number of strategies, 169 have no keyword attached, while the others vary from 1 to 20 keywords per strategy. The most recurring keywords observed are *social inclusion* (619), *mobility* (496), *culture and heritage* (397), *jobs and skills* (370). From this survey a separate question asked if the strategy was targeting migrants and or refugees; the answer was affirmative for only 7 strategies (in Austria, Cyprus, Czechia, and Germany). Instead, the keyword *disadvantaged neighbourhoods* is mentioned 237 times and is present overall in strategies located in Portugal, Spain, France, and Bulgaria. The keyword *integration of migrants and refugees* is mentioned only 25 times, in Austria, Ger-

many and Sweden. Finally, *diversity* just 5 times, all in Slovakia (Figure 35).

As for the **implementation mechanism across Functional Urban Areas** (Table A1, Appendix 6), 2 % of strategies are Operational Programme (SUD), 43 % are Priority Axis (SUD), 21 % are ITI and 34 % are CLLDs. Among these different implementation mechanisms, ITI can be used both for SUD or for other territorial strategies, and promotes an integrated approach, involving investments from the three main structural funds: the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund. Instead, CLLDs have a strong participative element, particularly useful when the objective of the strategies is to foster social cohesion, enhance citizens' participation and capacity building and encourage a bottom-up approach. Precisely, CLLDs might be the most appropriate type of strategy to enhance migrants' agency in cities. Despite this propensity, a stronger presence of CLLDs across the FUAs with a higher presence of migrants cannot be observed and, more generally, the uptake of CLLDs in urban areas has usually been low (Fioretti et al., 2020).

From the thematic objectives and keyword analysis, as expected in a context of place-based policies, it is clear that very few strategies explicitly mentioned migrants as their target. However, a large number of strategies focused on social inclusion and improving disadvantaged neighbourhoods, issues, and territories where the migrant population is commonly concentrated. **From the EU-data level, therefore, no positive correlation emerges between the number of migrants (both EU and non-EU) and the number of strategies.** Moreover, **no connections emerge between the presence of migrants, type of implementation mechanism, keywords, and thematic**

---

61 Regulation n. 1303/2013 of the European Parliament and of the Council of 17 December 2013.

62 In June 2018 with the so-called Omnibus regulation (2018/1046 Art.271 (2) Omnibus) a new investment priority was introduced to respond to the challenges posed by increasing flows of migrant and refugees: 9(e) supporting the reception and the social and economic integration of migrants and refugees. It is also true that by that time the majority of strategies had already been drafted.

63 Keywords were identified thanks to a survey filled in by Managing authorities. The survey provided a list of 34 keywords: Social inclusion; Air quality; Housing; Circular economy; Digital transition; Mobility; Jobs and skills; Energy; Climate adaptation; Urban-rural linkages; Nature based solutions; Governance; Entrepreneurship and SMEs; Health; Ageing; Integration of migrants and refugees; Research and innovation; Abandoned spaces; Culture and heritage; Youth; Low carbon; Education; Social innovation; Disadvantaged neighbourhoods; Gender equality; Participation; Public spaces; City management; Spatial planning, Sustainable Tourism; Smart Specialisation; Rural development; Coastal development; Diversity.

64 Under the auspices of the EU's cohesion policy for 2014-20, the managing authority is responsible for the efficient management and implementation of the operational programme. A managing authority may be a national ministry, a regional authority, a local council, or another public or private body that has been nominated and approved by a Member State.

objectives. Nonetheless, the recurrent focus of the strategies on disadvantaged neighbourhoods suggests that it might be worth exploring more in depth the extent to which these place-based policies might also enable the integration of migrants. To answer this question, the research relied on five case studies concerning the Functional Urban Areas of Athens, Liège, Malmö, Paris, and Venice.

7.3.2 The broad picture of the five case studies

In this section, the five FUAs of the case studies are described with data available at the European level[65] (see Figure A2, Appendix 6). Note that while Paris and Athens stand out for the number of inhabitants and extension of their areas, Liège, Malmö and Venice show comparable territorial contexts, with a pop-

---

65 All data in this section refer to the most recent year in the Urban Audit dataset (*https://ec.europa.eu/eurostat/web/cities/data/data-base*) for the respective variable

Figure 35: Use of keywords associated with strategies in each FUA.

Source: Own elaboration. Data from STRAT-BOARD.

Keyword use in strategy targeting Functional Urban Areas

- Diversity
- Integration of migrants and refugee
- Disavantaged neighbourhooods
- Social inclusion
- Functional Urban Areas

Azores   PT

Madeira

Canary Islands   ES

500 km

ulation comprising between 500 000 and 1 million inhabitants. These five case studies also present a great variety in the composition of their migrant population in terms of origin, type, and historical flows. In all cases, **the FUAs have a higher migrant population than the average, calculated across all FUAs of the same country.** Notably, Paris and Athens show a much higher number of foreign residents than the national averages. Figure A3, Appendix 6 also shows that Liège has a higher share of EU migrants compared to non-EU migrants; Malmö has similar shares for both, while Athens, Paris and Venice have higher shares of non-EU migrants.

Concerning the distribution of strategies, the five case studies cover both countries with a more polarised distribution of strategies in a few FUAs (Italy, France) and countries with a more homogeneous distribution of strategies across all the FUAs (Belgium, Greece, and Sweden). They have different numbers of strategies, ranging from 21 in the FUA of Paris, to 5 in Athens, 3 in Malmö, 2 in Venice, and 1 in Liège. Looking at the **implementation mechanisms,** in Liège, Paris and Venice all strategies are SUD, in Athens 4 strategies are SUD and 1 non-SUD ITI and in Malmö 1 strategy is SUD and 2 are CLLDs.

The keywords associated with the strategies implemented in the five case studies vary. The keyword *integration of migrants and refugees* is only mentioned in Malmö, together with 13 other keywords; *disadvantaged neighbourhoods* is mentioned only in Venice with 9 other keywords. *Diversity* is not present at all across the case studies. Overall, the most recurrent keywords across the five case studies are *mobility, public spaces, jobs and skills, entrepreneurship and SMEs,* and *research and innovation.*

Regarding **ERDF investment priorities,** Liège focuses on low-carbon strategies and the environmental revitalisation of cities. As for Malmö, there is a strong focus on entrepreneurship and research and innovation. For Paris, there are several missing values, but the available information about some of the

priorities concentrates on entrepreneurship, housing, inequalities in terms of improved access to social, cultural, and recreational services, and physical, economic, and social regeneration of deprived areas. The same appears for Venice, where the thematic focus is on social inclusion, e-inclusion, and improvement of deprived areas. In Athens, investment priorities cover a wide range of domains, with more than 12 mentioned for each strategy, thus making it difficult to identify a hierarchy.

Regarding the **territorial focus**[66] of strategies, in Paris most (6) are implemented on neighbourhoods, while 3 focus on Functional Urban Areas (for 11 strategies this information is not available).[67] In Athens, 2 strategies out of 5 focus on urban networks, one covers the administratively defined municipality, one the Functional Urban Area, and one an aggregation of multiple administrative units in rural areas. In Liège, the strategy focuses on the entire FUA. In Malmö, one strategy focuses on the administrative city and 2 on multiple administrative units in rural areas. One strategy in Venice focuses on the administrative city and the other strategy on the entire FUA.

7.3.3 The local perspective: strategies and migrants in the FUAs of Athens, Liège, Malmö, Paris, and Venice

The evidence collected by local experts has allowed for a more in-depth evaluation of similarities and differences among case studies. In the following sections, socioeconomic profiles, migrants, governance strategies and projects within the selected FUAs will be highlighted, extracting selective examples from the cases.[68]

7.3.3.1 A socioeconomic profile of the FUAs

Athens and Paris are large metropolitan, urban areas and the main demographic and economic core of the respective countries. The **Athens** FUA gathers

---

66 The territorial focus refers to the specific area the strategy focuses on. In STRAT-Board, Managing Authorities could classify their strategies according to 6 types of territorial focuses. More information can be found in the STRAT-Board glossary.

67 It is important to specify that in France the territorial focus is multiple because it involves at the same time the scale of large agglomerations and a specific target on priority neighbourhoods, so the declared territorial focus may depend on the interpretation given by the respondent to the survey.

68 For a detailed account of the case studies see Fioretti et al., 2021.

together about 40 % of the Greek population and more than 50 % of the country's economic activity, with innovation, education and many other significant services concentrated there. The **Paris** urban region is France's economic and commercial centre and contributes to a third of the country's GDP (EUR 709 billion in 2019). From a demographic viewpoint, while the core population of Paris has not grown since the '60s, the larger metropolitan area increased by half. **Liège, Malmö, and Venice** have all shared an important role as industrial towns in their respective countries. Even though less central than in their recent past, both Liège and Venice are still relevant industrial poles. In Liège, the manufacture of steel goods remains important. In Venice, the mechanical, chemical, glass factories and the shipyard still play a key role in the economy. On the other hand, deindustrialisation and globalisation induced the renewal of Malmö into a post-industrial urban area, based on growing public and private service providers.

A few considerations emerging from the case studies are that **all five FUAs have been major attractors of foreigners, but with a significant diversity in the composition and waves of migrants.** For example, substantial immigration to **Athens and Venice** is relatively recent, starting to grow progressively during the 1990s with the transition in Eastern Europe and the Balkan crises. Over the years the countries of origin have changed, inflows from Balkan countries have dropped, while influx from some new EU Member States such as Romania have risen, as well as some non-EU groups (for example, Pakistan nationals in Athens and Bangladesh nationals in Venice). On the other hand, in **Malmö,** the traditional inflows of immigrants from neighbouring Nordic countries, which were relevant in the 1990s, recently decreased and large numbers of refugees arrived into the country, mostly from outside the EU (notably Iraq, Syria, Bosnia-Herzegovina, Lebanon, Iran and Afghanistan).

Both **Paris and Liège** share a long history of the presence of immigrants. According to recent accounts (OECD, 2018), 15 % of the Paris population has a foreign nationality, and 20 % is foreign-born, among which more than a third have acquired French nationality. In 2016, the Paris region, Île-de-France, received around 40 % of the asylum seekers welcomed by the whole country (24 020 out of 63 649), of which nearly half in Paris. In Liège, the post-WWII immigration of workers has been progressively replaced by new immigration channels (e.g., family reunification, asylum seekers, students), making it a multicultural urban area. After the economic crises of 2008, the city also experienced the arrival of new waves of immigrants from southern Europe, revamping old migration routes that were prominent after WWII (Lafleur and Stangherlin, 2016).

7.3.3.2 Spatial distribution of migrants within the five case studies

In **Athens,** in the late 1990a the city centre was affected by a process of decline of quality of life that pushed the better-off Greek nationals to move towards the suburbs. The drop in population was partly compensated by the inflow of immigrants who mainly occupied the most undesirable small apartments in the lower floors (ground floors or semi-basements) of typical Athenian apartment blocks. In this way, immigrants have significantly reinforced vertical segregation in the housing stock of the city centre.

In **Paris,** migrants are also not equally distributed. The northern fringe of the metropolitan territory, corresponding to the *Etablissements Publics Territoriaux* (EPT)[69] of Boucle Nord de Seine, Plaine Commune, Paris Terres d'Envol, Est Ensemble et Paris Grand Est, as well as the EPT of Grand Orly Seine Bièvre on the Southern side, all register a percentage of foreign-born residents above the regional average (which is 21 %), peaking in Plaine Commune (37.5 %). All the above mentioned EPTs also register high percentages of young people (less than 20 years old); large families (three or more children); high unemployment; people on social benefits and relying on social housing (Cremaschi et al., 2021). In addition, migrants in deprived neighbourhoods count for 30 % of the local residents, while the city's average is 20 % (INSEE, 2015).

---

69 A Territorial Public Establishment (établissement public territorial EPT) is an administrative structure with the status of a public intermunicipal cooperation establishment created in 2016 as part of the creation of the Greater Paris Metropolitan area (métropole du Grand Paris MGP).

In 2018 in the **Malmö** FUA, the relevant percentage of foreign-born residents was found besides the core city (33.8%), and also in suburban and rural small municipalities with fewer than 50 000 inhabitants, like Burlöv (32.3%), Eslöv (18.5%), Trekkeborg (16.9%), Staffanstorp (13.3%) and Skurup (13.2%). **Liège** also presents significant disparities in terms of the concentration of its foreign population. In 2020 among the 53 municipalities that constitute the FUA, the municipalities of Liège, Herstal, Seraing, Saint-Nicolas and Ans represent 71.9% of the FUA foreign population.

In the case of **Venice,** foreigners in the *città diffusa*[70] are themselves spread out and, in most municipalities, the presence of immigrants ranges from 5% to 10% over the total of the population. The Venice municipality has the highest presence (13.2%), followed by the hinterland, namely in Spinea (10.1%) and Quarto d'Altino (10.9%). Local data show that most immigrants living in the metropolitan area are employed in the hospitality sector (waiters, accounting for 21% of the new employment relationships, followed by non-qualified personnel in restaurant services (12.8%), and cooks in hotels and restaurants, (6.6%). Even if they work in the core city of Venice, many migrants are obliged to live in the surrounding municipalities, where the housing market is affordable, and commute to work, making the transport issue central.

7.3.3.3 The governance of the strategies

Strategies entail a multilevel governance system. **Managing Authorities** are in charge of the operational programmes that finance strategies. In the case of Athens, Liège and Paris the Managing Authorities were regional, while, in the case of Venice, there were, respectively, a regional and a national Managing Authority for the two strategies, and in the case of Malmö, two different national Managing Authorities for SUD and CLLD strategies.

The elaboration of the strategies and the selection of projects were delegated to the **local level.** The responsible authority never coincided with the entire FUA. Where the strategy concerned only one municipality (for the SUD of Malmö, central Athens, and Piraeus), the responsible body was the corresponding local authority. When the strategy targeted a larger agglomeration, different arrangements were put in place. It should be noticed that migrant groups were not directly involved in the governance system of strategies, although in Malmö, Paris and Venice, **local associations working with migrants** in the targeted neighbourhoods were involved at project level, being in certain cases the beneficiaries.

In the case of Liège, the strategy was outsourced to a sub-regional entity called GRE-Liège, corresponding to the Liège province (slightly larger than the Eurostat FUA), whose board of directors is made up of various public and private stakeholders. In the Athens FUA, two SUD strategies were designed and implemented respectively by the Development Association for Western Athens, covering 7 municipalities, and an ad-hoc group of three municipalities which later formed the Municipal Association for Southern Attica. In Paris, the strategies were managed by the Public Territorial Establishments – *Établissements publics territoriaux* (EPT) which form an intermediate level between the Greater Paris metropolitan authority and the single municipalities. The case of Venice is peculiar, because although both SUD strategies target agglomeration of municipalities, the responsible body was the Local Authority of Venice, which centralises the process and cooperates with the other municipalities on a project basis.

7.3.3.4 How do strategies and projects intercept migrants?

The case studies then looked to see if the strategy itself, or the projects selected to implement it, addressed migrants by focusing on *lonely places* within cities. Overall, EU-supported urban and territorial strategies **do not strive for migrant inclusion as a primary goal, neither are immigrants an explicit target for the ensuing policies** – the Swedish case is the only exception. This was expected, given the place-centred rationale at the core of the funding schemes, and the absence of migrant integration

---

70 Venice has a peculiar territorial structure, with the dominant presence of its historical centre in the lagoon, and the Functional Urban Area structured as a 'diffuse city' (città diffusa in the definition of Indovina, 1990; Besussi et al., 1998), characterised by low density development and where residential, commercial, agricultural, and industrial (SMEs) uses are intertwined.

among the investment priorities of the ERDF. To different extents, strategies and projects tackle specific areas where the presence of migrants is high and that are characterised by socio-spatial deprivation. Particularly, **where the aim of the policy is to reconnect the *lonely places* with the rest of the FUA, the place-based approach intercepts and involves the migrant population.** Below, each case study is described with its particularities.

In **Athens** the four ITI strategies cover parts of the FUA territory and specifically target some areas with a high concentration of migrants, especially in central Athens, but also to a certain extent in the southern and western sectors (e.g., an enclave in Egaleo). **Strategies are focused on innovation and economic growth, as well as on social cohesion, but only rarely they mention immigrants and refugees *per se.* However, projects address several issues of high importance to migrants and refugees, like labour market integration, basic skills, welfare support (food, income), etc.** As in other cases, these issues are dealt with as part of the effort to tackle poverty and increase the well-being of the entire population. Unlike other case studies, the experts found that in Athens the language barrier was a significant obstacle for migrants and refugees to benefit from some of these actions (e.g., participating in upskilling seminars).

In **Paris, all ITIs target the priority neighbourhoods of the domestic City Policy (see Chapter 8) characterised by lower wages, high unemployment rates and also high share of migrants. The inclusion of migrants is not an explicit objective of the ITI scheme, but it is part of the projects of some territories. The strategies of some territories explicitly address the integration of migrants, others implicitly thematise it, and some do not address it at all. In general, actions are not based on structural investments but rather on the 'empowerment' of migrants and their 'know-how'.** Most of the projects concern linguistic capacities, language learning, access to employment and remedying school dropout, which implicitly benefits immigrants. Some ITIs promote projects in the form of language tuition, job training, and support towards finding employment, or rights-awareness and combating discrimination.

In **Venice,** the two SUD strategies worked intensively in areas where the presence of immigrants is significant.[71] The 'area-based' approach of the strategy allows for the integration of different thematic actions and projects, as well as sustaining transverse networks that involve old and young people, immigrants, and natives. Besides the fact that **immigrants were never an explicit target, some of the priority issues they face have actually been targeted by strategies. For example,** Venice has worked with Marcon and Quarto d'Altino to invest in three lines of intervention: housing renewal, promotion of co-housing, shelters for homeless people. In addition, **Venice has worked with Spinea, Salzano and Mirano on smart mobility[72] to reinforce green public transport whose connexions benefit both immigrants and the students living in these areas.**

In **Liège,** the 'Integrated Urban Development' axis of the ERDF operational Programme promotes projects of physical/infrastructural rehabilitation in areas such as Herstal and Seraing, which are characterised by the presence of poor-quality buildings, industrial wasteland, and a significant foreign population (Figure 36). Figure 37 shows the spatial variation of the *synthetic difficulty index* created by Grippa et al (2015)[73]. Both figure 36 and 37 show that the **projects are implemented in areas where there is a correlation between the presence of foreign-born population and different types of socioeconomic difficulty.** In Liège, immigrants are targeted because of their socioeconomic conditions, while their 'immigrant' background is not openly discussed in relation to the strategy.

Finally, in the case of **Malmö** the target on migrants and refugees is more explicit. The SUD strategy relies on a **strong focus on place-based patterns of inequality and housing segregation.** There are also projects which explicitly target migrants and refugees, focusing on employment, increasing job opportunities

71 In Mestre and Porto Marghera, as well as in other small municipalities like Spinea.

72 Purchase of electric, hybrid and Euro VI environmental class buses for the local public transport service in urban areas.

73 This index aggregates 23 indicators divided into 4 dimensions (origin; income, precarity on the job market; precarious household and transfer income).

and educational achievements, as a way to counter-act discrimination and enhance networking. These projects are located in Sofielund, Lindängen and especially Rosengård, which have a higher share of foreign-born individuals than the average for the city of Malmö, and also lower employment levels for for-eign-born individuals. Concerning the CLLD strate-gies, Lundaland's strategy mentions diversity among its objectives, but doesn't focus explicitly on migrant integration. **In the CLLD of Söderslätt there is an explicit focus on migrant integration, with atten-tion to newly-arrived refugees and their families, to give them the opportunity to create their own companies.**

Figure 36: Share of foreign-born migrants in the municipalities targeted by the strategy in the FUA of Liège.

Source: Own elaboration. Data from STRAT-BOARD for the strategies, from Eurostat for the perimeter of the FUA and of the municipalities and from Statbel (Direction générale statistique – Belgium) for migrants.

Figure 37: Synthetic difficulty index in the municipalities targeted by the strategies in the FUA of Liège.

Source: Own elaboration. Data from STRAT-BOARD for the strategies, from Eurostat for the perimeter of the FUA and data from Grippa et al. 2015 for the synthetic difficulty index.

7.4 OPPORTUNITIES AND POLICY RECOMMENDATIONS

The in-depth analysis of the five case studies sustains the argument that urban and territorial strategies for FUAs target relatively disadvantaged places within their territory and may be instrumental to migrant integration. A first consideration is that **FUAs appear as an appropriate spatial scale** for this type of investigation, considering that a residential concentration of migrants was detected in specific areas across FUAs, pertaining not exclusively to the core city. **These areas are characterised by high levels** of socio-spatial deprivation and can be ascribed to the category of *lonely places.*

EU-funded instruments encourage working across administrative boundaries, while strategies often target an agglomeration of municipalities that cover at least part of the FUA. In the analysed cases, a **lack of institutional bodies at the FUA level leads to new forms of governance at an intermediate level,** such as partnerships across municipalities. Moreover, the case studies demonstrated that even when the strategy applies to an aggregation of municipalities or to the entire FUA, the targeting of specific neigh-

bourhoods and priority areas through a place-based approach is still possible and viable. **This is aligned with the multi-level approach to the regeneration of urban deprived areas and neighbourhoods prompted by the Urban Agenda for the EU.**[74] **This is also in line with the recommendations fostered by the New Leipzig Charter,**[75] which highlights the need for harmonised coordination of measures at the three spatial scales: neighbourhood, municipality, and Functional Urban Areas.

Another interesting point emerging from the case studies is that **migrants are more likely to be considered when the strategy is cross-sectoral and integrates actions from multiple policy areas** (Fioretti et al., 2020). This can be facilitated by the combination of different funds, in particular from ERDF with ESF, the first supporting infrastructural measures and the second social measures. In the upcoming programming period, the Cohesion Policy offers more flexibility in terms of funds and the aggregation of thematic objectives. In particular, this will be fostered in the ERDF regulations[76] by the introduction of Policy Objective 5 (PO5 – Europe closer to citizens, through which it will be possible to combine activities financed under all other policy objectives, including PO4, which provides a specific objective on migrants),[77] enabling a genuinely **multi-sectoral integrated approach tailored to the local context.**

Moreover, the close cooperation and integrated use of the funds will be sustained by the two instruments, ITI and CLLD, which will both be suitable for the development of sustainable urban development strategies (Regulation (EU) 2021/1060 of the European Parliament and of the Council of 24 June 2021). Finally, the new Common Provisions Regulation is aimed at reducing fragmentation of rules, delivering a common set of basic rules for seven

funds, including the AMIF (Asylum Migration and Integration Fund).[78] This fund promotes the efficient management of migration flows and the implementation, strengthening and development of a common Union approach to asylum and immigration.

This is especially important, because it will allow the **combination of a place-based approach (sustained by the ERDF) with a people-based approach (sustained by the ESF+**[79] **and the AMIF),** referred to all those policies which tackle disadvantage, directly targeting specific groups of people in vulnerable condition (e.g., single parents, long-term unemployed, low-wage migrants). The case studies in fact revealed a possible shortcoming of the place-based approach which risks being less effective in intercepting migrants in the case of more categories in vulnerable conditions, such as transit migrants or refugees. In these cases, the place-based approach promoted by the urban strategies should be complemented by specific integration projects, for example sustained by AMIF or other specific channels, like the Urban Innovative Actions on the Integration of Migrants and Refugees.

Finally, the implementation of strategies and allocation of funds to the most vulnerable areas within FUAs and the benefit they bring to the people living there, including migrants, is in line with leaving no one behind, which is central to achieving the 2030 Agenda. **Reference to these strategies might be included in the local monitoring of Sustainable Development Goals** (Siragusa et al., 2020), **especially SDG 10 (Reduced Inequalities) and SDG 11 (Sustainable cities and communities)**.

---

74 *https://ec.europa.eu/futurium/en/system/files/ged/action_plan_urban_poverty.pdf*

75 The New Leipzig Charter provides a key policy framework document for sustainable urban development in Europe. It is available here: *https://ec.europa.eu/regional_policy/en/information/publications/brochures/2020/new-leipzig-charter-the-transformative-power-of-cities-for-the-common-good*.

76 Regulation (EU) 2021/1058 of the European Parliament and of the Council of 24 June 2021.

77 PO4 – specific objective (iv) – promoting the socioeconomic integration of third country nationals, including migrants through integrated actions, including housing and social services.

78 The Asylum, Migration and Integration Fund (AMIF) was set up for the period 2014-20, with a total of EUR 3.137 billion for the seven years. The proposed budget for the AMIF for the 2021-2027 period, will amount to EUR 9.882 billion.

79 The ESF+ integrates the former European Social Fund (ESF), the Youth Employment Initiative (YEI), the Fund for European Aid to the Most Deprived (FEAD) and the EU Programme for Employment and Social Innovation (EaSI), allowing funding to be used in an efficient and coherent manner, see *https://ec.europa.eu/esf/main.jsp?catId=62&langId=en*.

7.5 CONCLUSIONS

Even in the context of supposedly connected and attractive areas like major European FUAs, it is possible to detect *lonely places,* defined as pockets of socio-spatial deprivation. Research and data confirm that **migrants are often over-represented in populations at risk of poverty and discrimination and tend to live in these disadvantaged areas.** In this respect, then, the hypothesis that migrants may indirectly benefit from all the place-based strategies considered finds support from the case studies analysed.

The study showed that the goal of the Cohesion Policy to reduce the economic, social and territorial disparities that still exist between EU regions may have a key impact on disadvantaged places within FUAs. In particular, **integrated urban and local development strategies, which aim at improving the living conditions of Functional Urban Areas and their population, have the potential to transform *lonely places* into places of opportunities, thus enabling migrant integration as well.**

A key to success in these terms is the integrated place-based approach, in other words the possibility of combining different policy areas sustained by different funds, but also combining different territorial scales of action, namely the neighbourhood, the municipality and the functional area. A combination of the place-based approach with a people-based approach has to be considered in terms of strengthening social resilience and leaving no place and no one behind. The use in the analysis of the STRAT-Board database and the selection of the FUAs as the main geographical focus of the analysis have the advantage, compared to other works in the literature, of providing a new perspective on the phenomenon, combining a EU level analysis with in-depth local studies. Results from this work can inform the 2021-2027 Cohesion Policy as well as the Urban Agenda for the EU.

Carlotta Fioretti
Fabrizio Guzzo
Martina Pertoldi
Jayne Woolford

HIGHLIGHTS

This chapter gives an overview of four cases of national policy relying on the place-based approach to address territorial inequalities in different typologies of territories, from low-density and marginal areas, to medium-sized cities suffering economic decline, to deprived neighbourhoods in large urban areas.

These are existing strategies and policy instruments which could eventually address the challenges of *lonely places* and help transform them into places of opportunities.

In addition, the analysis highlights the contribution of EU Cohesion Policy territorial instruments to domestic policy frameworks in supporting local development strategies.

The policy experiences discussed here have shown the relevance of evidence, data and stakeholder mobilisation in the definition of territories of intervention and the design of the strategies.

They have also illustrated that a lack of strategic and administrative capacity is a serious threat, hampering the effective design and implementation of public interventions.

Supporting the transition from *lonely places* to places of opportunities

National approaches and EU instruments

8.1 INTRODUCTION

This chapter investigates local development policy experiences targeting areas presenting challenges similar to those that characterise *lonely places* in the context of this report. **This chapter analyses policies in four Member States (Italy, France, Poland and Portugal) which build on the principles of a place-based integrated approach**[80].

In Italy, the focus is on marginalised inner areas that are targeted by the *National Strategy for Inner Areas,* with the ultimate objective of counteracting depopulation and ageing trends and transforming these areas into spaces of opportunities by enhancing the quality/quantity of collective services (health, education and mobility) and supporting local development projects. **In France, the analysis deals with distressed urban neighbourhoods, characterised by multiple forms of deprivation.** These areas are the target of the long-term City Policy, whose main objective is to improve the quality of the built environment and the connection of these areas with the rest of the city, while providing better essential services and job opportunities for residents. **In Poland, the attention is placed on small and medium-sized**

cities that are losing their economic functions due to deindustrialisation processes. These cities are more at risk of losing their young population and are struggling to provide high quality public services in relation to the labour market, education, and health. The Package for Medium Cities aims to restore the role of the medium-sized city as an important centre of social and economic activity and enhance territorial cohesion. Finally, **in Portugal, the focus is placed on the so-called 'Interior' area of the country,** which is addressed by the national Programme for the Enhancement of the Interior, whose main objective is to promote economic revitalisation, with the ultimate goal of retaining and attracting people to the interior of the country and balance regional asymmetries.

In line with the *lonely places* concept developed in this report, these policy experiences target different typologies of territories that suffer from multiple forms of vulnerability. Table A5, Appendix 7 illustrates in detail the connection between the policies and their target territories with some of the dimensions underlying the *lonely places* concept discussed in previous chapters. Implemented within the EU Cohesion Policy, the policies examined rely for their implementation on a mix of national and EU instruments and ap-

---

80 Place-based interventions support the well-being of people through the development of places, tailoring the interventions and the investments to specific spatial contexts intentionally and explicitly, to tap their untapped potential (McCann and Rodríguez-Pose, 2011). First, the place-based approach assumes that the social, cultural, and institutional characteristics of territories really matter. Second, it advocates for the input of new knowledge (innovation) as the main source of development. Third, it considers underdevelopment traps, acknowledging that the development of places is often prevented by rent-seeking local elites. Finally it supports an open and informed debate, where new knowledge and ideas derive from the interaction of local groups and external actors involved in the policy. Exogenous policy intervention is seen as a trigger for endogenous changes (Barca et al., 2012).

proaches. The analysis deals with policy objectives, territorial focus and modalities of intervention. The analysis presents preliminary results and discusses the main challenges, highlighting commonalities as well as differences between the policy experiences analysed. Insights from these interventions are expected to stimulate reflection and debate on the future of place-based policies for *lonely places*.

The rest of this chapter is organised as follows: the next section illustrates data sources and the empirical strategy; section 8.3 presents the four national policy experiences; finally, section 8.4 provides some concluding remarks.

8.2 DATA AND METHODOLOGY

Evidence was mainly derived from official documents, reports and academic papers. A literature and document review was complemented (especially when lacking) by consultations with seven key stakeholders: public officials at national and EU level, and experts. Semi-structured interviews were conducted through email exchanges and videoconferences and followed a common draft which was then adapted to the different cases.

Data on EU Cohesion Policy-funded territorial instruments were derived from the STRAT-Board database, which details information on the EU urban and territorial strategies for the policy framework 2014-2020 (*https://urban.jrc.ec.europa.eu/strat-board*)[81].

The research was developed in three main steps. The first entailed the selection of cases (details are given in Appendix 7). The second step concerned the description of each case and the third and final step entailed a comparative analysis of the four cases.

8.3 RESULTS

8.3.1 Italy

8.3.1.1 The National Strategy for Inner Areas

The National Strategy for Inner Areas (NSIA) targets those territories that are distant from centres providing a range of essential services (education, health, and mobility). Resulting from the sum of intermediate areas, peripheral areas and ultra-peripheral areas, inner areas cover 60% of the national territory, represent half of Italian municipalities and host 23% of the entire population (13.5 million inhabitants).[82]

The main goal of the NSIA is to improve demographic trends and transform these areas into spaces of opportunities. To achieve this goal the strategy builds on an integrated approach, characterised by two main interconnected line of actions: The first aims at improving the quantity and quality of essential services, namely education, health, and mobility. This line is funded with resources managed by the different competent national ministries. The second strand of interventions promotes local development initiatives, which are funded by a combination of European Structural and Investment Funds managed by the Italian regions (Barca et al., 2014).

The NSIA is deployed in a multi-level governance setting. The EU and the national government set the main goals and rules, and provide EU and national funding; regional governments select the areas and allocate EU Structural Funds and, finally, local authorities formulate and implement the territorial development strategies.

For each local strategy, the expected results and corresponding monitoring indicators are discussed and agreed upon through a deliberative process, involving local authorities and communities as well as the national and regional authorities. Strategies

---

81 In particular, the data focus on Sustainable Urban Development (SUD) strategies and the following territorial instruments: Integrated Territorial Investment (ITI) and Community-led Local Development (CLLD). For each strategy, the dataset provides information on the territorial coverage and on the localisation of a reference site.

82 Since the mid-20th century, a marginalisation process has affected a significant part of these territories (namely peripheral and ultra-peripheral areas). This process is characterised by severe ageing and depopulation trends, land abandonment, deterioration of natural resources and cultural heritage, poor access to collective services (schools, public transport, health facilities, broadband services, etc.), associated with job loss and structurally weak local economies (Barca et al., 2014).

and detailed action plans are built around these expected results through co-decision and co-design processes (Barca et al., 2014; Lucatelli and Storti, 2019).

The NSIA is based on an experimental approach. It does not cover all territories classified as inner areas, but concentrates resources on pilot areas. Implementation and the results of public action in these pilot areas are expected to be continuously monitored in order to support a learning process aimed at improving strategy design and implementation, and the launch of the NSIA in other territories in the 2021–2027 programming period. Monitoring and evaluation are two central elements of this policy framework that support its experimental approach. At the end of 2020, regional administrations selected 72 pilot areas with the approval of the Inner Areas Technical Committee *(Comitato Tecnico Aree Interne),* which has provided analytical and methodological support for the selection of the areas and the strategy design process at local level (Figure 38). These pilot areas include more than 1 000 municipalities (13 % of the Italian municipalities), with around 2 million inhabitants (3.4 % of the national population). Peripheral and ultra-peripheral areas constitute 60 % of these territories and, on average, each pilot area includes around 15 municipalities with 30 000 inhabitants.

The design and formal approval of the local strategies has been taking a long time. At mid-2020, the pilot areas were in different stages of the strategy cycle: 67 had approved their strategies, of which 39 had signed the Framework Agreement and were in the implementation phase. The Framework Agreement is the implementation mechanisms for local strategies, which contains the list of measures and the associated (national and ESIFs) resources, as well

Figure 38: The selected 72 pilot areas of the strategy, highlighting the ones also targeted by ITI or CLLD supported by Cohesion Policy 2014–2020.

☐ Pilot areas of the National Strategy for Inner Areas (NSIA)
■ Targeted by Integrated Territorial Investment (ITI)
■ Targeted by Community-Led Local Development (CLLD)
☐ NUTS 2

Source: Own elaboration. *Comitato Tecnico Aree Interne* (2019) and STRAT-BOARD.

as the responsibilities of each (national, regional, and local) public administration involved in strategy implementation and monitoring (NUVV, 2020).

8.3.1.2 EU and national funding and thematic integration

The resources already allocated to approved local strategies amount to EUR 700 million, of which 70 % ESIFs, 21 % national funding and the remainder, other public and private funding (NUVV, 2020). Structural Funds are allocated by regional administrations. Regarding the use of integrated territorial strategies sustained by the Cohesion Policy 2014–2020, as shown in Figure 38, the regional administrations of Calabria, Campania, Friuli Venezia

Giulia, Liguria, Marche, Molise, Piemonte and Umbria targeted the pilot areas with the Integrated Territorial Investment (ITI) instrument.[83] Puglia and Sicilia supported local strategies through the Community-Led Local Development instrument.[84] In addition, several regions funded interventions in the pilot areas through the LEADER/CLLD instrument of their respective regional rural development programmes (European Agricultural Fund for Rural Development).

The approved strategies cover different themes. As shown in Table A6, Appendix 7, of the 39 strategies in the implementation phase, **a large part of the resources are allocated to collective services: 16 % of the overall funding to mobility measures, 12 % to education, 11 % to health and social services and 8 % to digital services. The rest goes to local development initiatives** (NUVV, 2020).[85] Within the NSIA the different municipalities composing the pilot area are required to cooperate. In particular, the joint management of municipal functions and services, which are relevant to the achievement of the objectives of the local strategy, is a condition for accessing funding (Barca et al., 2014).[86] In general, the associated municipal functions and services concern civil protection, school transport, ICT services, land registry, general administration, culture and tourism and other areas (Fusco et al., 2019; Monaco, 2020; Picucci et al., 2020).

Although it is too early to gather evidence on the socioeconomic impact of this policy in the pilot areas, some preliminary insights are available.

- **The launch of the strategy had the merit of opening a national debate and raising awareness of the future of a large part of the country** (De Rossi, 2018). Also, the Ministry of University and Research has allocated EUR 10 million to PhD programmes on the NSIA and another EUR 9 million will fund 'municipal doctorates' in the inner areas to promote sustainable local development strategies in line with the UN's SDGs.[87]

- The 'inner areas' method has strengthened networks of actors and co-operation behaviours. It has also helped to build strategic capacities in local communities, while promoting the reorganisation of municipal functions and services and the experimentation of new modes of interaction of public authorities across different spatial scales. It has brought the national ministries closer to local authorities to devise practicable solutions regarding the provisions of essential services (Giua and Sonzogno, 2019; Lucatelli and Monaco, 2018; Monaco, 2020). Particularly important, in this respect, was the role of the Inner Areas Technical Committee.[88]

- **Delays in the implementation have been the result of the new method introduced by the strategy and the complexity of the process (different government levels and actors involved, co-decision and co-design, etc.), as well as on the lack of habit and capacities of territories to debate and plan their own development paths** (Lucatelli and Storti, 2019; NUVV, 2020). Efforts to reduce delays in the policy process and to facilitate the integration of different funds seem to be needed in the future.

- **Finally, weak strategic and administrative capacities can hamper the effective design and implementation of public intervention in the inner areas** (Lucatelli and Monaco, 2018). Proposals have been made to strengthen the technical structures of the associated municipalities (De Luca and Lanzani, 2020) and under the new national recruitment plan for public administrations, launched in 2021, a share of the new hires will be assigned to municipalities

---

83 Article 36 of Common Provisions Regulation N° 1303/2013

84 Article 33 of Common Provisions Regulation N° 1303/2013

85 Examples of intervention regard the launch of new community health and telemedicine services, public transport services, distance learning and new educations services, vocational training, refurbishment of school buildings, strengthening of local production systems and creation of producers' consortia (Monaco, 2020).

86 In that respect, the association requirement for municipalities was fulfilled by 64 out of 72 areas in 2020. For the remaining areas the agreements were still in the process of being finalised (NUVV, 2020).

87 https://www.agenziacoesione.gov.it/news_istituzionali/dottorati-comunali

88 It brought together staff from different ministries (together with regional administrations, the associations of Italian municipalities and a few other entities) and acted as a centre of expertise and an external impartial actor working with local communities to promote innovation and overcome rentiers' resistance to change (Barca et al., 2012).

of the pilot areas to strengthen their technical capacities. Future policy developments are expected to include administrative capacity building measures.

8.3.2 France

8.3.2.1 The City Policy
(La Politique de la Ville)

Since the '80s the debate on socio-spatial inequality progressively gained importance in France. Scholars and policymakers defined as 'sensitive neighbourhoods' all those districts within or at the outskirts of main cities and metropolises where social and economic disadvantage seems to be concentrated. This definition was intended from the outset to define a geography of priority areas for policy action. Since 1982 human and financial resources were mobilised to intervene in those neighbourhoods, and since 1988 this experimental action was mainstreamed into a national policy called *Politique de la Ville* – City Policy (Collectif, 1997).[89] These types of urban challenges relate to those discussed in chapter 7 of this report.

'The *Politique de la Ville* can be considered as a policy fighting exclusion, with a territorial framework, targeting urban areas where social precariousness is strong, carried out by the State in contractual partnership with local communities' *(Cour des Comptes,* 2002, p.5, translation by the chapter's authors).

The City Policy works according to the overarching principle of 'integration' which means:

- Multiple dimensions of intervention (planning, urban design, social inclusion, education, local economy, security)
- Joint action of various government departments and multiple stakeholders at different levels.
- Integration of sectoral policies and funding resources.

Since 1990 the policy is coordinated at national level by a specific ministry (today the Ministry for Territorial Cohesion – *Ministère de la Cohésion des territoires et des Relations avec les Collectivités territoriales*). Furthermore, **the policy is implemented through two national agencies: the National Agency for Urban Renewal (ANRU –** *Agence Nationale pour la Rénovation Urbaine***) and the National Agency for Territorial Cohesion (ANCT –** *Agence Nationale de la Cohésion des Territoires***).**

The main objective of the ANRU is to accompany urban projects to achieve a holistic transformation of disadvantaged neighbourhoods: improving their connections with the rest of the city; and promoting social and functional mix.

The ANCT also provides support for capacity building in strategic planning, to those local communities that lack it. In addition, it has a role of coordination for the use of European Structural and Investment funds, which are managed at regional level.

It is difficult to quantify the overall budget of the City Policy and its evolution, given that it comes from the integration of specific and mainstream funding. However, it can be said that for 2021 it has been programmed within the total fund of the Ministry a budget of EUR 515 million (increased in respect to 2020). Moreover, the EU structural funds dedicated to Sustainable Urban Development (Art. 7 of European Regional Development Fund regulation 2014-2020) have been used in coordination with it.

The French City Policy is based on a partnership agreement between different levels of government (national, regional and local), local communities, other public bodies and the housing associations. Since 2014, with the reform of the Lamy law *(loi Lamy),*[90] this city partnership agreement is represented by the so-called *contrat de ville.* In the 2014-2020 programming period, throughout France, there were 453 *contrats de ville* covering the three areas of action: urban renewal, social inclusion and local economy.

---

89 More recently, scholars (Benbassa and Attias, 2017; Cabannes, 2018) talk about multiple territorial fractures, and underline the complexity of socio-spatial inequalities, where disparities along different variables emerge in different types of territories. Still, Cabanne (2018) highlights how income inequalities are higher in large urban areas, and poverty rate (income < 60% of median income) is higher in core cities in respect to rural areas.

90 *Loi n° 2014-173 du 21 février 2014 de programmation pour la ville et la cohésion urbaine*

Moreover, the City Policy, as reformed by the Lamy law, promotes the empowerment of local communities through the introduction of the principle of co-construction with inhabitants, and of the Citizen Councils *(Conseils Citoyens).* In line with this, in 2017 the President of France, Emmanuel Macron launched an initiative called 'national mobilisation for the inhabitants of the neighbourhoods' calling for a collective awareness at national and local level.

This policy is characterised by an effort to statistically define and study the geography of areas of vulnerability, as demonstrated by the studies carried out by the National Institute for Statistics and Economic Studies *(Institut national de la statistique et des études économiques* – INSEE) since the early '90s (Tissot, 2004). Since 2014, the Lamy law introduces new criteria for the establishment of the priority areas targeted by the *contrat de ville,* based only on the concentration of poverty (based on income). A total of 1 514 neighbourhoods, of which 1 300 in metropolitan France, were identified as 'priority areas' for intervention on the basis of two criteria:

- Minimum number of inhabitants: 10 000;
- Median income: 60 % below the national median income, weighted by the local fiscal income of the urban unit where the neighbourhood is located.

This last indicator appeared to be correlated to all the other social indicators historically used to trace the previous zoning of City Policy: share of young people, single-parent families, households receiving housing benefit or APL *(aide personnalisée au logement),* unemployment rate, social housing, and immigrant population (Renaud and Sémécurbe, 2016). To identify these pockets of 'low income', the ministry used the INSEE method, which consists of analysing the national territory through a grid with squares of 200 m per side.

Moreover, INSEE provides **yearly thematic factsheets on different themes (demographics, education, employment, income, economic environment, and housing) for all the priority areas** of the *Politique de la Ville,* serving as a basis for a regular

observation of the territories. This is complemented by several online tools and mapping instruments which provide data, analyses, methods and good practices concerning the territories targeted by the City Policy and other territorial polices.[91]

8.3.2.2 Synergies with EU policy instruments

European Structural and Investment Funds (ESIFs) can be employed within this domestic framework. Regional Authorities have been responsible for managing ESIFs since 2014. Coordination and implementation of the funds and the monitoring of the Partnership Agreement is performed by the National Agency for Territorial Cohesion. During the 2014-2020 programming period more than EUR 1 billion of ESIFs was planned to be employed through territorial instruments. In particular, EUR 721 million (corresponding to nearly 10 % of the total ERDF and ESF allocation) has been devoted to Sustainable Urban Development (art. 7 of ERDF regulations) and has been employed in the priority neighbourhoods of the City Policy (Source: own elaboration on data from ESI Funds Open Data Platform).

Figure 39 shows the localisation of priority areas of the City Policy highlighting in different colours those also targeted by SUD and those that are not. Moreover, the map shows the wider areas addressed by the SUD strategies. Of the 226 SUD strategies identified in STRAT-Board, 150 are implemented through a priority axis of a regional Operation Programme, and 76 are implemented through Integrated Territorial Investments.

In view of the 2021-2027 programming period, the ANCT has launched a survey of Managing Authorities to capture their ambition in the use of EU funds for local development. In line with previous experiences, 8 regions have declared they plan to use Integrated Territorial Investments (ITIs). Moreover, a few regions plan to use Community Led Local Development both in rural and urban areas. **As established by the new regulation 8 % of the European Regional Development Fund (ERDF) will be devoted to Sustainable Urban Development, but regions also declared to**

---

91 Like the ANCT website *(agence-cohesion-territoires.gouv.fr)* the SIG Ville website *(sig.ville.gouv.fr),* the website of the National Observatory of the *Politique de la Ville (onpv.fr)* as well as the portal of the Territorial Observatory *(observatoire-des-territoires.gouv.fr).*

be willing to use ERDF funding to apply a territorial approach for rural areas, in order to respond to growing territorial inequalities by also investing in in more fragile and less dense territories.

During 2014-2020 the national agency promoted the creation of an Urban Europe Network to create a community of practice formed by urban authorities implementing SUD strategies, and in particular ITIs. This network was aimed at providing guidance, facilitating exchange of good practice between cities, and ensuring coordination across levels of government and European institutions. In the upcoming programming period, a similar network will be created with two strands: one for urban development and another for rural development, to ensure a better coordination of different EU funds in promoting local strategies, including EARDF.

Although it is difficult to assess the result of this long-term and complex policy, the following strong points can be highlighted:

Figure 39: Map of the priority areas of the City Policy and Sustainable Urban Development (SUD) strategies supported by Cohesion Policy 2014-2020.

Priority areas of the City Policy

- Targeted by Sustainable Urban Development (SUD)
- Not targeted by Sustainable Urban Development (SUD)
- Sustainable Urban Development (SUD)
- NUTS 2

Source: Own elaboration. *data.gouv.fr*, 2015 and STRAT-BOARD, 2021.

- City Contracts and Citizen Councils are instruments which make it possible to operationalise the place-based approach, building multi-level and multi-stakeholder governance systems, where local and external actors interact, integrating endogenous and exogenous resources and ideas to promote change.
- National bodies like the INSEE play a key role in providing highly disaggregated data and indicators that make it possible to consolidate an evidence-based approach, first to identify the areas targeted by the policy, second to monitor the impact of the policies. Moreover, data and analysis are publicly displayed in dedicated websites promoting transparency and knowledge sharing.

- The integration of multiple sources of funding, mainstream and specific, domestic and ESIFs, makes it possible to tackle a variety of themes, to ensure cross-sectoral integration and to better respond to emerging local needs and changing priorities.
- **National designated bodies like the National Agency for Territorial Cohesion and the French Urban Europe Network not only have a role of coordination, but also provide methodological support, peer-learning and sharing of good practices to increase the capacity of public authorities at different levels.**

8.3.3 Poland

8.3.3.1 The Polish Responsible Development Strategy and Package for Medium-sized Cities

While all the Polish regions have developed faster than the EU as a whole since EU accession, the pace of convergence with the EU average is unequal. An economic division between Western and Eastern Poland remains with pronounced territorial disparities also visible at sub-regional level and between urban and rural areas (European Commission, 2020f). Since 1989 there has been a strong deindustrialisation in many Polish cities and a number of medium or smaller cities that were based around a single industry or plant have fallen into decline. The 2011 OECD urban review in Poland[92] (OECD, 2011) identified development disparities, especially within Functional Urban Areas and a lack of infrastructure and services in small and medium-sized cities.

In Poland, the national Strategy for Responsible Development towards 2020 (with a perspective to 2030), adopted in 2017[93], **recognises that persisting spatial socioeconomic disparities are one of the most significant threats to Poland's economic development.** The Polish approach to territorial cohesion evolved from the previous focus upon large cities and their growth dynamic to one in which cities losing population and functions were identified as an area of strategic intervention. The Strategy for Responsible Development recognised two areas of strategic intervention: areas at risk of permanent marginalisation and medium-sized cities losing socioeconomic functions. The latter are the focus of the Pakiet dla Srednich Miast (Package for Medium-sized Cities) which aims to restore the role of the medium-sized city as an important centre of social and economic activity within a polycentric settlement pattern.

8.3.3.2 Medium-sized cities losing their socioeconomic functions

The delimitation of the areas whose socioeconomic functions have fallen either in absolute or relative terms between 2004 and 2014, was undertaken by the Polish Academy of Sciences in 2016.[94] The analysis was based upon a series of development problems such as declining population (especially mobile, working age, well-educated and entrepreneurial individuals) and a resulting deteriorating age structure, supply and demand imbalances in the labour market, loss or 'leaching' of economic functions, the closure of large companies and social problems such as unemployment. These areas need in many cases to restructure their industrial base, improve the business and entrepreneurial environment, increase employment and labour market participation of their inhabitants, improve the quality of life of their residents and their access to public services.

The seven indicators adopted were: change in registered population, population forecast until 2035, change in the number of unemployed, change in municipal budget own resources/revenue, change in number of nights spent in the area's accommodations (reflecting events and business-related tourism), changes in the number of registered companies and changes in the representation of the largest companies in the Poland 2 000 List.[95] On the basis of the criteria, 255 municipalities throughout Poland were identified as at risk of losing their young population, socioeconomic functions including public services related to the labour market, enterprise adaptability, education and health aspects. They are mostly rural towns with more than 15 000 inhabitants as well as powiats' capitals.[96]

---

92 *https://www.funduszeeuropejskie.gov.pl/media/72570/raport_en_final.pdf*

93 *https://www.gov.pl/documents/33377/436740/SOR_2017_streszczenie_en.pdf*

94 *https://www.gov.pl/web/fundusze-regiony/pakiet-dla-srednich-miast*

95 Rzeczpospolita publishes every year the top 2 000 companies in Poland based upon their revenues, employment, and results.

96 Powiats are the second level unit of local government and administration in Poland, equivalent to a county or district (LAU-1).

8.3.3.3 The evolution of the ESIF approach from the 2014-2020 programming period to the new programming period

Under the 2014-2020 ESIF programming, Poland focused on the role of the large regional capitals as areas of strategic intervention. The National Spatial Development Concept 2030 (NSDC) – the main strategic document defining the vision of the country's spatial development – and the National Strategy for Regional Development, contained a vision of the spatial development of the country as based upon a polycentric metropolitan network approach. **A focus on developing a network of well-connected, cooperating cities in metropolitan areas was expected to stimulate wider economic development** (Ministry of Investment and Economic Development, 2019).

The 17 regional capitals and their functional areas were obliged to create Sustainable Urban Development (SUD) strategies implemented through Integrated Territorial Investments (ITI) for co-financing by 2014-2020 regional operational programmes as well as other national programmes. Additional areas also qualified and were able to create ITI-based mechanisms funded through regional programmes (Mendez et al., 2021; Ferry et al., 2018). The introduction of ITIs in Poland created an opportunity for partnership and building local level capacities, and filled an institutional void in relation to territorial development. The ITIs for the most part covered multiple funds and multiple thematic objectives, providing the opportunity for thematic integration that transcended the local government boundaries (Mendez et al., 2021).

The Polish approach to territorial cohesion subsequently evolved from one focusing exclusively on large cities and their growth dynamic to one focused upon smaller urban areas losing population and functions. However, while the Medium-sized Cities Package [97] enabled a discussion to begin around the needs of Polish medium cities and their role in regional economic development, it had no specific funding envelope attached. Its appearance mid-way through the 2014-2020 programming period hindered its coherent integration and alignment with ESI funding. Without an obligatory territorial focus upon areas of strategic intervention, it was left to the individual regions to determine their approaches and areas of focus leading to a rather piecemeal or heterogeneous approach.

Figure 40: Municipalities eligible for the Package of Medium-size Cities: overlap with Cohesion Policy 2014-2020 SUD, CLLD and ITI strategies.

Municipalities Package Medium-size cities
Community-Led Local Development (CLLD)
Integrated Territorial Investment (ITI)
Sustainable Urban Development (SUD)
NUTS 2

Source: Own elaboration. Polish Academy of Sciences, 2016 and STRAT-BOARD, 2021.

97 https://www.gov.pl/web/fundusze-regiony/pakiet-dla-srednich-miast

Figure 40 shows that the recently designated medium-size cities demonstrate little overlap with the areas targeted by EU urban and territorial strategies. In only a few cases they fall within the Functional Urban Areas targeted by the Sustainable Urban Development (SUD) ITI strategies. In the Warmińsko-Mazurskie and Lubelskie Voivodeships a total of six non-SUD ITIs specifically targeted medium-sized cities. Meanwhile, in Podlaskie Voivodeship and Kujawsko-Pomorskie Voivodeships medium cities were part of the aggregation of municipalities targeted by Community-Led Local Development strategies. The map provides a visual representation of the general lack of consideration of medium-size cities under Cohesion Policy territorial instruments to date. Nevertheless, where they have been included in 2014-2020 national or regional operational programmes, medium cities have been offered preferential treatment in calls for proposals, dedicated calls or a ring-fenced allocation to enable them to compete with more developed competitors. Regions such as Swietokrzyskie held dedicated calls for medium-sized cities under their regional operational programmes and investments have generally aimed at improving innovation, entrepreneurship, and employment locally.

This rather fragmented implementation under the 2014-2020 programmes meant that funding was potentially available across a variety of ESIF programmes and territories in Poland, but not all and hence medium cities benefitted to varying degrees. For example, by March 2020 approximately EUR 376 million worth of funding had been invested in projects covering 142 of the 255 eligible cities. When also taking into account capacity-building activities however, participation is much greater and 247 of the cities had been involved in some aspect of the package. In some regions (e.g., Podlaskie), all of the eligible cities have participated in the package to some degree (Medium-sized Cities Package, Implementation Report, 2020). The participation of medium-sized cities under the 2021-2027 programmes should increase as it becomes obligatory for the regions to address the identified areas in their operational programmes, and with the extension of ITI approach to medium-sized cities.

The territorial approach in Poland and its incorporation into ESIF programming is shifting and continues to evolve as the programming documents are being prepared and negotiated. Nevertheless, some key considerations can be highlighted:

- **The successful implementation of the Medium-sized Cities Package has been hindered by its introduction mid-way through an ESIF programming period and hence its lack of alignment to and obligatory funding through the 2014-2020 programmes.** A piecemeal and fragmented approach resulted, in which eligible areas had uneven opportunities to apply for support. **The strengthened approach for the 2021-2027 programming period, with an obligatory targeting of areas of strategic intervention, is expected to improve coherence in implementation, overall impact, as well as visibility of the package.**
- Participation in the package to date has tended to reflect the quality of local government although the number of cities benefitting under the package has been enhanced through capacity-building activities.
- **A key area of concern is the concentration of funding upon places that lack an entrepreneurial climate and a strong regional innovation ecosystem and their ability therefore to successfully absorb the funds and ensure they contribute to regional economic development.** Policy objectives and interventions relating to innovation and R&D could be the most problematic for example, highlighting the need for place-based policy interventions to reflect and respond to the characteristics of the places that they seek to develop.

8.3.4 Portugal

8.3.4.1 Deep-rooted geographies of disparities

The Portuguese territory shows huge regional development disparities, particularly between the denser coastline and the depopulated and largely rural areas in the hinterland (Magalhães Ferreira, 2019). Population loss in Portuguese rural municipalities has been increasing particularly since the 1960s, due to migration movements to Lisbon and Porto as well as external migration, and has recently reached critical levels (Farinha Rodrigues, 2019). Within this

enduring geographical dichotomy, more advanced and recent readings recognise different territorial subsystems, which are seen to require differentiated place-based integrated policies *(Programa Nacional da Politica de Ordenamento do Território,* PNPOT, 2019). However, the identification of a large portion of the hinterland as critical for policy action is a long-lasting notion in the national political debate, leading to recurrent attempts to reverse persistent trends. The analysis carried out by Medeiros (2016) for measuring territorial cohesion in Portugal between 1990 and 2010 shows 'a troubling picture of marked unbalanced territorial trends in the Portuguese territory over the last several decades, despite large financial support from EU Cohesion Policy'.

8.3.4.2 A new policy framework – The Programme for the Enhancement of the Interior

In Portugal, key reforms relevant to regional and local development have recently been initiated (Bachtler and Downes, 2019). First, since 2015 decentralisation and regionalisation reforms received a new impetus, strengthening regional level governance and addressing the transfer of new competencies from the central government to the municipalities, in some cases aiming to strengthen existing inter-municipal communities (OECD, 2020b). Second, following the creation of a specific State secretariat responsible for the Interior (2015), in 2019 a new Ministry for Territorial Cohesion was established, providing more favourable framework conditions to address territorial disparities and to apply a place-based approach. Finally, with the establishment of the Committee for the Enhancement of the Interior in 2015, a process of refocusing of regional policy on the inner areas of the country was initiated to promote economic revitalisation in those territories that are more affected by regressive demographic dynamics (population loss, ageing) and overall lower levels of economic/social progress (lower education levels, poor service deliver, lower income, etc.). This process led to the adoption of the National Programme for Territorial Cohesion in 2016, later renamed Programme for the Enhancement of the Interior.[98] **The Programme for the Enhancement of the Interior explicitly addresses this persistent sit-**

uation of territorial inequalities and asymmetries, by declaring the Interior as a pillar for economic development and territorial cohesion in the country.

The Programme targets low density territories, now described as Interior, in 165 municipalities and 73 civil parishes (out of 305 municipalities in Portugal) and covers around two-thirds of the Portuguese territory, which are home to 2.2 million people. Both the concept of Interior and that of low-density territories are often identified with rural areas but they are not coincident. If it is true that the delimitation of the area quite mirrors previous definitions of low density, for the first time it follows a multi-criteria approach (Ministry of Territorial Cohesion Portugal 2021) based on density; demography; settlement structure; geographical features and socioeconomic features, identifying territories 'not only demographically impaired but also economically (weak and undiversified economic activity, with high unemployment rates), with weak urban centres, weak institutional engagement, weak networking, partnerships and citizen participation' (Almeida, 2018). Interior areas are then identified with a 'loss of economic, social and symbolic centrality,' a loss that is reflected in the lack of social, economic and institutional 'thickness' necessary to endure development strategies that are supported in time (Carvalho, 2018).

This new vision assumes that, in spite of clear disadvantages, the Interior has an untapped potential to contribute to local and national development. Overall goals of equality and correction of territorial disparities are pursued through a set of interconnected measures, which are implemented by means of nine investment programmes. The Programme has endorsed territorialised projects and (to some extent) integrated actions that combine different policy areas, encouraging partnerships between local authorities, Inter-municipal communities, higher education institutions, business associations, companies, and local development associations. Before the last revision, Cohesion Policy investments in the Interior were only allowed under positive discrimination according to the following options: 1) Dedicated calls; 2) Preferential scoring criteria in calls and 3) Increased financial support. Significantly, the Programme now includes specific interventions targeting the territories

---

98 *https://www.portugal.gov.pt/pt/gc22/area-de-governo/coesao-territorial/estrategias*

of the Interior, as well as investment programmes with definite budget and selection criteria. Measures are financed through national and European funds, with a large contribution of EU regional programmes.

8.3.4.3 Opportunities for the next Cohesion Policy programming period (2021-2027)

According to Ferreira & Catarino (2018), several obstacles have hindered the take-up of the place-based approach in Portugal for the period 2014-2020: an enduring sectoral logic, lack of a strategic framework to avoid fragmentation of the interventions, poor governance arrangements, and increasing detachment between a limited community of experts and policymakers, who master the glossary of EU policy and the management of EU funds, **and local communities**. Under some conditions, and in the view of Cohesion Policy programming for 2021-2027, it seems that the Programme for the Enhancement of the Interior can help overcome some of those challenges.

This is relevant considering that:

- **EU funding in Portugal is extremely high, above all if compared to domestic resources.**
- When analysing the territorial tools made available through Cohesion Policy, in 2014-2020 Portugal has invested around EUR 2.4 billion in 209 urban and territorial strategies, i.e. of 105 Sustainable Urban Development (SUD), 22 Integrated Territorial Investment (ITI) and 82 Community-Led Local Development (CLLD) strategies. These figures[99] place Portugal among the first EU countries both in terms of funding and number of strategies for integrated development. Looking at the territorial coverage of strategies, the maps in Figure 41 show that CLLD strategies cover the entire Interior, while SUD strategies focus around small and medium-sized cities. ITI strategies support inter-municipal associations at NUTS 3 regional level and are implemented across the whole country except for Algarve.

Figure 41: Map of CLLD, ITI and SUD strategies supported by Cohesion Policy 2014-2020 that are located (entirely or partially) in the Interior.

Source: Own elaboration. CIC n.55/2015; STRAT-BOARD, 2021.

99 Elaborated on data from ESI Funds Open Data and the STRAT-Board database.

- ITI and CLLD strategies are mentioned in the Programme documents as appropriate to meet the development objectives set for the Interior but no apparent role in its implementation can be appreciated. This is not surprising considering that the Programme was approved in the middle of the programming period 2014-2020, meaning that EU investments were already allocated outside this framework. Nowadays, with the Programme well established, territorial tools can be programmed for the 2021-2027 period with the aim of fostering strategic thinking, moving from projects to strategies.

- Even if not yet fully operationalised, the Programme for the Enhancement of the Interior has the merit of introducing two key concepts: the first is cross-sectoral integration among departments and ministries, and the second concerns multi-level and multi-actor governance. Implementing these concepts will require good institutional capacity for developing integrated strategies, able to connect national sectoral policy with municipal or supra-municipal policies. It is important that capacity building activities are supported in the next programming period because those territories with the greatest need to develop strategies, interventions, and projects to deal with demographic loss are, most of the time, those that suffer more for the lack of capacity (Monteiro, 2019).

8.3.5 Comparative analysis

A place-based and integrated approach to development policy applies to the four explored policy experiences, which tackle spatial inequalities in different typologies of territories. Despite the differences, there is a strong emphasis in all cases on the fragility and long-term underperformance of those places and, at the same time, on their untapped development potential. Table A7, Appendix 7 provides an overview of the main characteristics of the policies.

In all cases, the identification of targeted areas is based on a set of indicators relying on official statistics and the work of national research institutions, as in the case of the Polish Academy of Sciences. The identification of the target areas follows a multi-criteria approach and includes demographic, socioeconomic and geographic indicators. In France and Italy online instruments are also available to produce and share data, analyses, methods, and good practices on the targeted areas, and through that knowledge, to better tailor the policies to the local needs and challenges and to monitor the progress and impact of interventions.

Another key characteristic of the place-based approach consists of building a *multi-level and multi-actor governance system* where different levels of government, and different stakeholders collaborate to trigger endogenous changes through an external policy intervention. In this respect a divide between the cases analysed emerges. On the one hand, France and Italy have developed policy delivery mechanisms – the city partnership agreement in France and the framework agreement in Italy – which are based on a *contractual agreement* between government actors placed at different levels. For every targeted geographical area, an *ad hoc* agreement clearly establishes roles, responsibilities and the financial commitments required of each partner.

On the other hand, Poland and Portugal, whose respective policies have been elaborated more recently, are still in the process of fully establishing the formal mechanisms for delivery. In the case of Poland, however, the implementation of Integrated Territorial Investment strategies during the EU Cohesion Policy 2014-2020 programming period led to a step change in terms of *partnership working* across local government boundaries and thematic areas, and hence in governance. It has to be hoped that these results can be repeated through the extension of this approach to medium-sized cities in the upcoming programming period. In Portugal, administrative and political decentralisation towards local authorities and intermediate bodies is in progress, which affects the definition of a new balance with regard to their agency.

From the viewpoint of *coordination of funding sources,* France and Italy were able to integrate domestic resources with European funds, also using the territorial instruments made available by the EU Cohesion Policy. Both Portugal and Poland had developed their national strategies mid-way through the 2014-2020 programming period, ini-

tially without a specific funding envelope attached and that arguably hindered a coherent integration of funding schemes. At the same time, with the beginning of the new programming period, the momentum seems favourable for combining domestic strategies with the EU Cohesion Policy territorial instruments, and funding and improving integration and alignment between the strategies and funding programmes.

Strategic and administrative capacities at all levels are crucial in territorial development strategies. Preliminary evidence from the Italian experience shows that inadequate skills and resources can hamper the effective design and implementation of strategies on the ground. Although still at an early stage of policy implementation, similar issues are already apparent in the Portuguese and Polish cases. Future policy developments in all examined experiences are expected to include capacity building measures. In addressing administrative capacity, of particular interest is the role played by national bodies – respectively the Inner Areas Technical Committee in Italy and the National Agency for Territorial Cohesion and Urban Europe Network in France – in providing legitimacy as well as analytical, methodological and strategic support to local actors.

8.4 CONCLUSIONS

The four cases presented in this chapter contribute to the debate on *lonely places* from a policy perspective, bridging the discussion on spatial disparities with the place-based approach, as promoted in the four Member States, and set out by the EU regional policy. The cases, in fact, show a growing sensitivity of Member States towards a place-based approach to foster opportunities. There are two ways of framing discussions around new opportunities for *lonely places.* On the one hand, there are, in fact, **development opportunities in *lonely places* that have been underestimated for a long time and that can contribute to strengthening nationwide development.** On the other hand, even if less frequently, there is an awareness that **contemporary societal challenges create new demands which *lonely places* are well positioned to address.** For example, rural areas as in the case of Italian Inner Areas, or Portuguese Interior, can become places for the sustainable production of food, which is supported by the evolving consumer demand for better quality and healthy food, eco-living, preservation of biodiversity and the fight against climate change, as pinpointed by the recently published long-term vision for the EU's rural areas (COM(2021) 345).

Place-based policies should recognise and deal with both types of opportunities. Concluding, the *lonely places* concept, as a new conceptual framework, can help to keep together different experiences, and stimulate further debate. A next step in the research agenda, starting from the strengths and weaknesses of existing experiences and the opportunity represented by the territorial instruments of the Cohesion Policy, would be that of systematizing a policy methodology that could help address the challenge of transforming *lonely places* into *places of opportunities* across Europe in the post COVID-19 era.

Patrizia Sulis
Andrius Kučas
Carolina Perpiña Castillo
Paola Proietti

Towards a multidimensional identification of *lonely places*

Throughout this whole report, many different typologies of *lonely places* have been identified; this chapter of the report provides an assessment of the *lonely places* identified in the previous chapters by combining several variables at the territorial and urban level. The aim of this chapter is to put together and compare the conditions that make one place lonelier than others, considering the interaction among the different spatial characteristics that have been previously defined in terms of accessibility, connectivity, depopulation etc. In this chapter, they are represented as spatial layers and combined together to evaluate the co-occurrence of spatial disparities that result in multiple conditions of lonely place. The method employed to define these scenarios is a multi-criteria data analysis supported by a Geographical Information System. **This analysis makes it possible to investigate the co-occurrence of spatial disparities characterising the *lonely places* across the EU-27 municipalities and in the case study of the Greater City of Paris.**

9.1 ANALYSING THE CO-OCCURRENCE OF SPATIAL DISPARITIES

The method selected **to evaluate the stratification of spatial attributes defining *lonely places*** is a customised tool (Kučas, 2010) based on **Multi-criteria Data Analysis supported by a Geographical Information System** (MCA-GIS). The added value of using MCA-GIS is to combine the information of different attributes characterising a place with its geographic location[100]. In this analysis, the tool is used to evaluate the co-occurrence of spatial attributes and layers extracted from previous chapters and identifying *lonely places* according to each specific topic (depopulation, broadband speed, etc.). Those layers and their underlying data are the criteria that are combined to evaluate the stratification of *lonely places*. The tool weights each criterion and subsequently performs a ranking analysis among them.

One of the most important steps of the MCA method is the selection of the criteria (spatial layers) describing the phenomenon (in this case, the *lonely places*) and the definition of the scenarios to evaluate, including the different combinations and alternatives explored in such scenarios. Two scenarios are considered for the EU municipalities, and three scenarios

---

100 This integrated method has been applied within a large number of disciplines (Jankowski, 1995), from renewable energies (Voivontas, 1998; Perpiña et al., 2013; Perpiña et al., 2015) to regional and urban planning (Grabaum and Meyer, 1998) and social inequality (Kučas et al., 2020).

are considered for the case study of Paris. A different weight[101] is assigned to each criterion according to the importance and impact it has in the scenarios (see Table 3 and Table 5). A 'minimise/maximise' utility function is assigned to each criterion during the definition of the scenarios, according to the objective to be achieved. In this case, the focus is on the co-occurrence of attributes for *lonely places:* for example, a place would be more lonely if the broadband speed is lower[102]. Further information about definitions, methods and statistics can be found in Appendix 8.

9.2 CHARACTERISATION OF *LONELY PLACES* ACROSS THE EU

For the co-occurrence of *lonely places* at the municipal level, this analysis considered all those municipalities that were identified as *lonely places*

in chapters 2, 3, and 4 of this report. The analysis therefore included the following criteria:

- **depopulating** municipalities: those with an annual population growth rate equal to or lower than – 1 %, considered as a threshold for a depopulating area;
- municipalities **with access to (fixed) broadband with a speed of under 30 Mbps,** located at more than a 45-minute drive from locations that are classified as urban centres;
- municipalities **in which average pupil distance to the closest allocated primary school** has increased by more than 150 % between 2011 and 2018.

To observe the co-occurrence of these criteria, two distinct scenarios have been elaborated (see Table 4). In overlapping criteria, **Scenario A** considers as

Table 4: Description of Scenario A and B. Criteria selection and description, utility functions and weights used for the analysis at the municipality level.

Id.		Criteria description	Justification: the loneliest municipalities are those	Objective (utility) function	
				Scenario A*	Scenario B*
🏠	1	Distance to schools	with longest distance to primary schools	Maximise (0.238)	Maximise (0.126)
📶	2	Digital connectivity	with lowest broadband speed	Minimise (0.370)	Minimise (0.135)
📊	3	Depopulation	with high depopulation rate	Minimise (0.392)	Minimise (0.136)
€	4	GDP (index)	with lowest GDP		Minimise (0.142)
€📊	5	Income (index)	with lowest income		Minimise (0.138)
✨	6	GVA (index)	with lowest GVA		Minimise (0.138)
💼	7	Employment (index)	with lowest employment rate		Minimise (0.044)
📊	8	Population change (ratio)	with highest (negative) populationchange rate		Minimise (0.141)

Source: Own elaboration. * Weights for each criteria are provided in brackets, based on Kučas, 2010. The sum of all weights per scenario is equal to 1.

101 Weights have been used as the inputs for the ranking scenarios using the MCA technique and have been selected using an automated approach (machine-based, see Kučas et al., 2010).

102 In this study, two methods are explored: the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS, see Hwang and Yoon, 1981), and the Simple Additive Weighting (SAW). The final SAW and TOPSIS values ranged from 0 to 1 (higher rank value meaning that a place is more lonely than others). To better understand which criterion had the strongest impact on the ranking, Pearson correlation was calculated between values of each criterion and ranks of SAW and TOPSIS across all areas (see Table A9 and A10 in the Appendix).

the loneliest municipalities those that are remote, with a high depopulation rate (utility function set to *Minimise* as the underlying variable measures population growth), with the lowest broadband speed *(Minimise),* and with an increased distance to primary schools *(Maximise).* **Scenario B** was also explored as an additional analysis, considering economic variables (from chapter 2) such as Gross Domestic Product (GDP), Gross Value Added (GVA), employment and income. In this scenario, the loneliest municipalities are those that have the worst digital connectivity *(Minimise),* have been depopulating *(Minimise),* with an increased distance to primary schools *(Maximise)* and a decrease in the economic variables *(Minimise).*

Looking at the values in Table 4, the indicator on depopulation turned out to be the most significant (0.392) for Scenario A, whereas GDP (0.142) is the most significant indicator for Scenario B. These automatically assigned weights mean these indicators are the key driver of evaluations[103].

By evaluating all municipalities identified as *lonely places* from chapters 2, 3 and 4 of this report, the analysis identified **1 201 municipalities in Scenario A that show the co-occurrence of multiple conditions of *lonely places.*** Those **municipalities are located in 18 countries** out of the 27 countries considered in the analysis. They are considered lonely as they belong to all three typologies of *lonely places* identified in this report, namely depopulation, digital connectivity, and distance to schools. Each of these municipalities show a different degree of territorial loneliness that varies according to the intensity of each criteria evaluated.

Figure 42: Number of municipalities per country where multiple conditions of *lonely places* co-occur, Scenario A.

According to the ranking results for Scenario A (Table A8, Appendix 8), countries with the highest intensity of territorial loneliness are Czechia, Spain, France, Greece, Hungary, and Slovakia. Looking at a single criterion, Spain is the country experiencing the highest proportion of *lonely places* in term of increased distance to school, whereas France has the largest share of municipalities with low broadband speed connection, and Czechia the country experiencing depopulation in most of its municipalities.

Figure 43 shows the ranked *lonely places* following Scenario A (longest distances to the school, lowest broadband speed, and highest depopulation). Results from Scenario A indicate that **Greece and Spain are the most affected countries by territorial disparities with the highest number of *lonely places.***

---

103 One difference to highlight is that the variables included in Scenario A were directly available at the municipal level, whereas in Scenario B the economic values have been assigned to municipalities using NUTS 3 data available.

Results also indicate that the municipalities identified as *lonely places* are spatially quite heterogeneous and appear not to be easily aggregated. From a policy perspective, the implications are that specific policy aimed at mitigating some of those disparities would need to be applied at a very disaggregated level, **targeting specific areas rather than having an overall approach at the regional/country level.** Furthermore, looking at the relationship between the variables (Pearson's correlation, Appendix 8, Table A9), the **increased distance to schools appears to be**

the attribute that characterises poor performance of the municipalities in comparison to the others.

Results from Scenario B made it possible to identify that introduction of economic data into the analysis highlighted a prevalence of territorial loneliness, especially in Greece. **Based on economic indicators, municipalities in Greece are identified as the loneliest** among the EU18 countries (further information about Scenario B is availble in Appendix 8).

Figure 43: Scenario A, ranking *lonely places* at the municipality level.

Source: Own elaboration based on the quantiles per criteria: depopulation, broadband speed and distance to primary schools. (Table A2 in Appendix 8 provides information on the relation between SAW and TOPSIS weighted results).

Ranking results at municipal level

- ◼ Low-moderate (0-60 %)
- ◼ High (60-80 %)
- ◼ Very high (80-100 %)

Azores   PT

Madeira

Canary Islands   ES

500 km

9.3 CHARACTERISATION OF *LONELY PLACES* IN GREATER PARIS, FRANCE

For the case study of the Greater City of Paris, the analysis considered **three different scenarios to identify the areas where a co-occurrence of conditions for *lonely places*** happens. Unlike the municipal analysis, where the input of the MCA-GIS were sub-samples of municipalities already labelled as lonely according to chapters 2, 3 and 4, the input data of this analysis are taken from chapters 4, 5 and 7 and include the full set of IRIS census tracts of Paris (3 625 polygons)[104]. Although the analyses of the above-mentioned chapters were performed at different granularity levels, the IRIS boundaries represent a common spatial unit of analysis for the city of Paris, as the population information employed in the analysis is supplied for these spatial boundaries. Broadband data from chapter 4 has also been aggregated at IRIS boundary level.

The criteria considered in these scenarios include:
- The average **broadband speed per area,** measured in Mbps calculated as in chapter 4;
- The **variety of amenities per area** is calculated as in chapter 5[105]. The amenities selected for

the analysis include: arts and entertainment, banks and post offices, restaurants, groceries, libraries, medical centres, parks, pharmacies, personal care (hair salons etc.).

Additional information concerns:
- The **share of elderly population per area,** according to the IRIS data and calculated as in chapter 6;
- The **share of migrant population** per area, calculated as in chapter 7.

Similarly to Section 1.2, the **three scenarios have been elaborated overlapping the different criteria.** All scenarios consider as the loneliest places those with lowest broadband speed (access to fixed broadband under 30 Mbps speed) and low variety of amenities (low value of Shannon's entropy)[106]. These data were combined with information on the spatial distribution of the elderly population (Scenario D) or of migrants (Scenario E).

Ranking was performed at the IRIS census tract level using three different scenarios (Table 5):
- **Scenario C** focuses on underserved areas, with lowest broadband speed and variety of amenities;

Table 5: **Scenario descriptions. Criteria selection and description, utility functions and weights used for the analysis at the city level in Paris (FR).**

Id.		Criteria description	Justification: the loneliest census tracts are those	Objective (utility) function		
				Scenario C*	Scenario D*	Scenario E*
	1	Amenities variety	with lowest variety of amenities (less opportunities to their inhabitants)	Maximise (0.629)	Maximise (0.379)	Minimise (0.370)
	2	Digital connectivity	with lowest broadband connectivity	Minimise (0.371)	Minimise (0.290)	Minimise (0.280)
	3	Immigrants	share of migrant population			Maximise (0.349)
	4	Elderly Population	share of elderly population		Minimise (0.334)	

Source: Own elaboration. * Weights are provided in brackets, based on Kučas, 2010. The sum of all weights per scenario is equal to 1.

104 IRIS is an acronym of 'aggregated units for statistical mlnformation', and represents the fundamental unit for dissemination of infra-municipal data in France (see Chapter 6).

105 The variety of amenities per area is calculated based on Shannon's entropy. In this case, Shannon's entropy quantifies the uncertainty in predicting the typology of an individual amenity in a specific census tract from the dataset including all the amenity typologies, see Cox, 2016.

106 The variety of amenities at the local scale of a city is important in relation to the access to urban services at the local level by citizens in their daily routines (see Chapter 6).

Figure 44: Ranking *lonely places* at census level for the three scenarios: Scenario C, underserved areas; Scenario D, underserved areas and elderly; Scenario E, underserved areas and migration population.

- **Scenario D** analyses the co-occurrence of underserved areas and places with a high concentration of the elderly in the city;
- **Scenario E** analyses the co-occurrence of the relationship between underserved areas and places with a high concentration of migrant population.

Figures 44 shows the spatial location of the areas with the highest stratification of *lonely places* attributes within the Greater City of Paris, as well as the severity of their conditions. According to data in Table 5, higher value of weights indicates higher fit of the scenario to the 'lonely' condition for places. This means that not all areas of the city will be considered *lonely places*, but only those that are classied as 'very high lonely' (Figure 44), because they are not well served for amenities and digital instratructure, and there is the co-occurrence of this condition with a high concentration either of senior individuals or migrants. Results show that broadband speed and the variety of amenity distribution in Paris is quite scattered (Figure 44.C). However, **underserved areas with a high presence of elderly citizens are mainly located in the south-west part of the city** (Figure 44.D), whereas **underserved areas with high presence of migrant population are more concentrated in the north-east part of the city** (Figure 44.E). The analysis suggests that, regarding policy interventions in *lonely places*, two main approaches are possible: prioritis the *lonely places* with the highest vulnerability (where several disparities co-occur) and intervene with integrated and holistic policy interventions; or consider a larger area to target with sectoral policies, focusing on issues to address (e.g., broadband speed, or access to service, or others).

9.4 *LONELY PLACES AND OPPORTUNITIES*

This report has illustrated many different typologies of *lonely places*: from rural-remote areas to deprived districts inside big cities, all places that are facing the challenge of a marginalisation process. The analysis presented in this chapter is an **assessment of the stratification of *lonely places* at different spatial scales** (EU municipalities, urban census tracts) with the objective of **identifying relevant areas to target through policy action.** This assessment is not merely quantitative, according to individual indicators;

rather it is based on the co-occurrence of several attributes identifying spatial disparities.

Regarding the EU municipalities, results show that **1 201 municipalities show the spatial co-occurrence of multiple vulnerabilities characterising *lonely places*,** in terms of depopulation, remoteness, low-speed broadband connection, and access to basic service such as primary schools. Overall, **8.9 % of the municipalities** analysed (representing 3.9 % of the EU population) were characterised as *lonely places*. Countries presenting the highest intensity of territorial loneliness are Czechia, Spain, France, Greece, Hungary and Slovakia. Within those countries, **1.4 % of the municipalities** (representing 0.4 % of the EU population) were identified for the co-occurrence of all criteria characterising *lonely places* in their territories. These results indicate that multi-dimensional policies are needed to address spatial disparities in these areas.

Regarding the case of Greater Paris, the analysis identified areas presenting a combination of scarce access to high-speed broadband and services required for daily needs (local food shops, post offices, etc.), and a significant presence of population subgroups that might experience a fragile condition, such as the elderly and migrants. Following the analysis results, different approaches can be applied to tackle the vulnerable conditions of *lonely places* that would require targeted actions. From a policy perspective, this approach can be replicated and applied as a decision-support tool for policy makers.

This analysis mirrors the identification of vulnerable places performed in several countries in the EU-27, as described in Chapter 8 (e.g., In Portugal in the context of the Programme for the Enhancement of the Interior or in France in the context of the Politique de la Ville). However, **the results obtained from the analysis of *lonely places* are highly disaggregated and comparable across the EU, making it possible to inform territorial and urban policies with geographical and quantitative evidence, to address the issues and prioritise interventions.** Depending on the resources available and the type of intervention that can be put in place, the threshold used to identify *lonely places* can be modified to select more places presenting the spatial vulnerabilities characterising them. Alternatively, it can be possible

to select a sub-sample of the territories identified as *lonely places* to prioritise the interventions. There are several options to select this sub-sample. One would be to follow an experimental approach, like the one used to select which inner areas where to focus the actions foreseen by the Italian National Strategies on Inner Areas (NSIA). In this case, results of actions in the pilot areas could be monitored to support a learning process and improve strategy design and implementation, for the extension of the programme to other areas in a subsequent phase. Another option for sub-sampling would be to focus on areas that, together with depopulation and low access to primary schools, broadband network, and amenities, also show other vulnerabilities, for example a low voter turnout.

Figure 45 shows data on voter turnout in the 2019 Parliamentary election in *lonely places* and on average across countries. It is possible to notice that *lonely places* in Italy, Romania, Poland, and Portugal present an average turnout lower than the turnout across the country, whereas in Spain, France, and Slovakia the majority of *lonely places* presents an average turnout higher than the average turnout across the country. This aspect might suggest to focus **specific attention to those *lonely places* that have the lowest participation rate, which can be interpreted in literature as a symptom of political discontent.** In this case, a dedicated intervention with EU funding, coupled with capacity building actions, might be useful to implement policies able to increase the well-being of individuals living in those places, lower discontent and scepticism (Bachtrögler

& Oberhofer, 2018; Borin et al., 2018; Crescenzi et al., 2020; Dellmuth & Chalmers, 2018; Rodríguez-Pose & Dijkstra, 2021), and favour positive change.

As for the typologies of policy actions to anticipate, **depending on the level of co-occurrence of *lonely places* typologies, sectoral policies might be favoured when a place presents characteristics belonging to a single typology, whereas a more integrated approach should be preferred for places experiencing the co-occurrence of multiple typologies.** However, the identification of vulnerable areas to target through policies and the identification of the most effective typology of intervention to implement are not the only relevant elements in order to have efficient and equitable policies. Place-based policies might be difficult to design and implement. The quality of institutions, together with dynamic social contexts characterised by trust, reciprocity, and the collaborative nature of public-private relations, are important conditions for the **effective implementation of strategies aimed at reducing inequalities and unleashing the development potential of territories.** Strengthening networks across local entities, sharing knowledge and good practices, increasing the coherence of action and cooperation across institutions, improving the local strategic capacity and the collaborative nature of public-private relations are all important conditions for the effective implementation of strategies aimed at **transforming *lonely places* into places of opportunities and bringing the EU closer to its citizens.**

Figure 45: Voter turnout in *lonely places* versus average turnout in the country.

Conclusions

From *lonely places* to places of opportunities

This report provides a new perspective on territorial disparities throughout the EU-27 Member States, by introducing a new exploratory, spatially embedded concept, that of *lonely places*. This concept has not identified a unique typology but a plurality of places that present some vulnerabilities in terms of lack or insufficient local endowment, low accessibility, or low connectivity (spatially and digitally) with other territories. This concept makes it possible to bridge several terms already used in the literature to refer to disparities and in local, regional, and national discourses. It can also be used to underpin a wider European vision and directly target the formulation and implementation of European policies and instruments.

In the chapters of this report two key, complementary blocks are analysed: the first identifies *lonely places* and their challenges by focusing on individual challenges (from Chapter 2 to Chapter 6), **and then by looking at the co-occurrence of several typologies of *lonely places* in the same territory** (Chapter 9). **The second block focuses on specific policies that might be deployed to support the transformation of *lonely places* into places of opportunities and provides some recommendations on how to make these policies more effective** (Chapters 7 and 8).

The identification of *lonely places*, their challenges and opportunities were comprehensively analysed, based on a unique analytical lens, leveraging highly disaggregated spatial and statistical information from a combination of both traditional and experimental sources of territorial data. This **highly dis-aggregated data analysed through a multiplicity of quantitative and qualitative methods have enabled the identification and assessment of places needing policy interventions.**

While the term 'lonely' has traditionally referred to people, this report introduces **a**n unexplored concept of *lonely places*, which involves territorial aspects from a broader perspective. Challenges in *lonely places* are identified in relation to potential impacts caused by demographic change, a weak economic development, poor access to essential services (e.g., education and amenities) and digital connectivity, as well as the lack of democratic participation. Such challenges have been addressed from the neighbourhood level to a broader territorial context, passing through the municipal (cities, rural and remote areas), Functional Urban Area and regional level. Despite these challenges *lonely places* also offer a range of opportunities in terms of social, economic, and environmental benefits.

The conclusions and knowledge about territorial disparities presented in this report can support some of the main EU political priorities and objectives. **The Europe 2020 strategy can benefit from the outcomes of this report.** For instance, results on the uneven quality of the broadband connection can inform the priorities 'Europe fit for the Digital Age' and 'A European Green Deal, while 'A new push for European democracy' can be supported by the assessment of democratic (dis)engagement. **This report can also inform relevant EU policies and initiatives such as the Cohesion Policy, underlining the importance of fostering territorial cohesion and reducing inequal-**

ities throughout place-based policy strategies based on presented case studies. **The rural dimension of the report can can inform the Rural Observatory and support the recent EU Communication on a Long-Term Vision for Rural Areas and Rural Development policy** in shaping the future of more dynamic, connected, resilient and prosperous rural and remote areas. In addition, the urban dimension, provides useful insights to the **Urban Agenda and the Territorial Agenda 2030, in particular, together with the New Leipzig Charter,** providing a good basis for integrated and sustainable territorial and local development, paying special attention to deprived neighbourhoods within the context of cities and larger territories.

10.1 WHERE ARE *LONELY PLACES* AND HOW CAN THEY SEIZE THEIR OPPORTUNITIES?

LONELY PLACES CAN BE FOUND IN MANY REMOTE AREAS IN EUROPE **(Chapter 2).** During the last decades, remote areas have experienced the highest population decline, particularly among the younger and active age population, while the older population share (65+ years) continues to increase, aligned to the overall EU ageing trend. The demographic change it is linked to employment losses (mainly in the agriculture and industry sectors), especially in those regions characterised by a structurally weak economy resulting in outflows of workforce. Remote regions are inherently subjected to distance barriers (e.g., higher transport costs) limiting economic development and influencing their resilience to potential socioeconomic shocks.

Opportunities have been identified in remote areas to promote a sustainable, resilient and inclusive development and increase the social well-being. Remote and rural areas can play a crucial role in the environmental and sustainable transition, as already underlined by the Green Deal, via nature restoration, reducing emissions, providing efficient eco-system services, and safeguarding biodiversity. Diversification of economic activities for local development can also take place by improving energy efficiency, reducing dependence on imported fuels, boosting renewable energy sources and sustainable tourism. An inclusive society calls for the participation and integration of all community members in

rural and remote areas. Investments in new technologies and digitalisation may contribute to the adoption of solutions for individuals and institutions (teleworking, e-learning, e-health, e-governance), while creating an attractive space for networking, local business, and growth. Some solutions may thus increase territorial resilience by developing an integrated approach, where local communities are at the core of the process.

LONELY PLACES ARE IDENTIFIED AS MUNICIPALITIES WHERE PRIMARY SCHOOL PROVISION IS UNDER PRESSURE, ESPECIALLY IN RURAL AREAS **(Chapter 3).** Schools typically have a broader societal function in small communities, and their closure may accelerate community decline and lead to unequal provision of education. The impacts of demographic change considerably affect the accessibility of primary schools. The current decline in pupil numbers has been preceded by a local, long-lasting depopulation process. Municipalities with a smaller initial pupil population in 2011 are expected to have longer travelling distances to schools, mainly in rural and remote areas. While most children in affected communities are still likely to have a school that is within walking or cycling distance, there will be significant variation across and within EU countries.

Opportunities in municipalities under high risk of school closure require institutional and organisational support to preserve the quality and equitability of education. They also have to ensure that local schools can remain in operation efficiently or consolidate schools in order to keep the educational costs reasonable. *Ad hoc* actions and policies are needed to improve mobility and active modes of transport (i.e. walking and cycling) for their ecological, economical and health benefits. In regions with rural and remote characteristics, a combination of active mobility long-term policy plans and digital solutions for education (e.g., e-learning) also need to be considered in order to lessen the negative impact of increasing school distances. These solutions are in line with the Digital Education Action Plan (2021-2027) to support the sustainable and effective adaptation of the education and training systems of EU Member States to the digital age. Evidently, digital, and online education is tied to the availability and quality of the local broadband connection.

***LONELY PLACES* ARE CHARACTERISED BY LOW QUALITY OF BROADBAND CONNECTION, RE-INFORCING THE DIGITAL DIVIDE (Chapter 4).** Urban areas present the highest speed in broadband connection, with roughly 70% of their population enjoying high-speed access. Therefore, those areas already most connected in terms of physical networks (i.e., roads and railways) are also the most digitally connected. A significant difference is observed between the average speed in cities in comparison to other types of settlement (i.e. towns, rural) for all types of network (fixed and mobile). This is especially true for rural and remote areas with low population density, which have the lowest speed connection (under 30 Mbps) and the highest latency (response time) in most of the Member States. Despite this, digitally disconnected places can also exist elsewhere, even within very well-connected and large cities (neighbourhoods, districts, etc.).

In places with poor connectivity, opportunities will depend on the deployment of high-speed connectivity. The key prerequisite for the EU digital transformation is internet connectivity. Access to very high-speed networks and the promotion of digital skills and entrepreneurship can be a tangible opportunity to enhance access to services (e.g., education, health), knowledge and information flows, networking and governance, or sustainable food production and access to markets (e.g., hubs for local consumers). Despite recent improvements in high-speed broadband, only 59% of households in rural regions have access to broadband, and mostly at speeds below 30Mbps. EU funds and private investments should work together to invest in infrastructure, technology and digital literacy as mentioned in the Digital Decade strategy. The importance of remote working has drastically increased by the COVID-19 pandemic. As a result, rural and remote areas could become more attractive to the young and working-age population if the benefits of digitalisation becomes a reality. New perspectives for people to stay in rural areas, as families, could also emerge thanks to the affordability of housing, proximity to nature and healthier lifestyles, along with a more digitalised community as part of the Smart Villages initiative.

***LONELY PLACES* AS AREAS OF DISCONTENT AND DISAFFECTION TOWARDS EUROPEAN POLITICS AND INSTITUTIONS (Chapter 5).** The outcomes of the 2019 European Parliament (EP) elections reflected the extent of democratic (dis)engagement of EU territories. With a constant decline in electoral participation between 1979 and 2014, the last (2019) elections reversed this trend (with an 8% increase in turnout) but not in all countries. Analysis of 14 of the EU-27 Member States showed that variations in regional turnout ranged from 18% to 74%, with an EU average of 51%. Average turnout rates tend to increase with lower levels of urbanisation (i.e. more rural areas) in Austria and France, while the opposite happens in Finland, Poland and Portugal. An older population also has a positive influence, with higher turnouts, while population density is negatively related to turnout, supporting previous findings.

Opportunities in places where citizens withdraw from electoral participation. Voter turnout can be a key indicator of citizens' interest in political processes and institutions. The Commission monitors this EU right by assessing progress towards effective EU citizenship. Generally, low turnout is interpreted as a consequence of entrenched social and economic inequalities, a symptom of citizens' discontent and dissatisfaction with the political and institutional settings. Territorial and socioeconomic characteristics (e.g., income, education, or employment) are deemed to be major drivers of political behaviour when it comes to identifying possible target areas and populations that are withdrawing from European politics. Turnout information can thus help to tailor policy actions and communication campaigns to encourage democratic participation where there appears to be political disengagement.

***LONELY PLACES* AS AREAS WITH A LOW VARIETY OF AMENITIES WITHIN EUROPEAN CAPITAL CITIES (Chapter 6).** An understanding of the provision of essential services (e.g., banks, pharmacies, schools) and specific amenities (leisure and shopping) in cities is crucial for the design of targeted urban policy and planning. The spatial distribution and accessibility of amenities varies greatly within cities. A poor variety of amenities or mono-functionality in a specific neighbourhood can have an impact on the daily routines of residents, especially those in

vulnerable conditions. From the case study in Paris, older people enjoy good access to amenities such as groceries, whereas parks are less accessible for them within walking distance. Overall, all EU-27 capital cities are characterised by areas with a good variety of amenities, mixed areas, and areas with only one typology, while there are clearly differences between inner and outer urban areas.

Opportunities in cities whose residents do not enjoy the full benefits of amenities and services. Access to urban functions favours walkability, encounters, fosters the sense of attachment to places and the level of safety, as well as counteract exclusion in more vulnerable groups (e.g., older people or migrants). Older people should have easy access to fundamental services (e.g., health facilities) but also culture and leisure amenities within cities. A poor endowent of amenities can prevent citizens from achieving a satisfactory quality of life. Assessing this is essential in order to inform local policymaking about the targets to address and to prioritise interventions that improve conditions for residents. As set out in the Agenda 2030, cities can help to ensure healthy lives and promote well-being, by reducing inequality, and becoming more inclusive, safe, resilient, and sustainable. These goals to continue progressing towards sustainable urban development are also in line with the Leipzig Charter.

LONELY PLACES **AS NEIGHBOURHOODS WITHIN FUNCTIONAL URBAN AREAS EXPERIENCING SOCIO-ECONOMIC DEPRIVATION (Chapter 7).** Integrated strategies of Sustainable Urban Development – supported within the EU's Cohesion Policy during the programming period 2014-2020 – aim at reducing economic, social, and territorial disparities through a place-based approach. Evidence suggests that these EU-supported urban and territorial strategies do not have migrant inclusion as a primary goal, but they apply to territories where the residential presence of migrants is high, therefore potentially contributing, even if indirectly, to the increased well-being of migrants. This was confirmed in all the case studies analysed (Athens, Liège, Malmö, Paris, and Venice). Migrants are more likely to be considered when the strategy is cross-sectoral and integrates actions from multiple policy areas, that can be facilitated by the combination of different funds.

Opportunities in *lonely places* characterised by socio-spatial deprivation throughout place-based and territorial policies. The lack of institutional bodies to target priority areas at the FUA level will lead to new forms of governance. This is aligned with a multi-level approach to the regeneration of urban deprived areas and neighbourhoods prompted by the Urban Agenda for the EU. The recommendations fostered by the New Leipzig Charter also highlight the need for harmonised coordination of measures at the three spatial scales – neighbourhood, municipality, and Functional Urban Areas. The place-based approach has been seen to be less effective in intercepting vulnerable groups such as transit migrants or refugees. In these cases, the place-based approach should be complemented by a people-based approach, for example, sustained by AMIF (Asylum Migration and Integration Fund) or the Urban Innovative Actions.

TERRITORIAL DEVELOPMENT POLICIES IN ITALY, PORTUGAL, POLAND, AND FRANCE TARGET AREAS PRESENTING CHALLENGES SIMILAR TO THOSE THAT CHARACTERISE *LONELY PLACES* (Chapter 8). In all four cases, the identification of targeted areas follows a multi-criteria approach and relies on official statistics and national institutions. Regarding the governance system, France and Italy have developed a delivery mechanism and contractual agreement between government actors placed at different levels, with specific roles, responsibilities, and the financial commitment of each partner. Portugal and Poland, on the other hand, are still in the process of establishing formal mechanisms of delivery. Italy and France integrated domestic resources with EU funds, while Poland and Portugal are still missing a specific funding envelope. All territorial development policies examined are expected to include capacity building measures at all levels of governance as crucial element for the success of these policies.

A MULTIDIMENSIONAL IDENTIFICATION OF *LONELY PLACES* IS POSSIBLE (Chapter 9). At the municipal level, depopulation, travel distance to schools, remoteness, digital connectivity, and economic performance (GDP, income, GVA and employment) were considered as variables of interest in identifying where several typologies of *lonely places*

co-occur. 1 201 municipalities (9 %) across EU were identified as the loneliest places (mainly in Czechia, Greece, Spain, France), affecting more than 3.8 % of the EU population. However, while Spain experiences the highest shares of *lonely places* in terms of distance to school, France has the largest share of low-speed broadband and Greece the highest in terms of low economic performance. The co-occurrence of *lonely places* was also studied at the intra municipal level for the case study of Paris. According to the data, in the Greater Paris, both access to quality broadband and to physical amenities are homogeneously distributed in the city, while underserved areas with a high presence of older people are mainly located in the south-west of the city, and underserved areas with a high presence of migrants are more concentrated in the north-east.

Opportunities in territories with multi-dimensional characterisation of *lonely places*. Priority areas to target through policy interventions were identified, depending on the level of co-occurrence of typologies of *lonely places* in the same territory. Specific policies might be beneficial when a place presents a single lonely place typology, while a more integrated approach should be preferred in order to exploit the potential of places experiencing the co-occurrence of multiple typologies. Transforming a *lonely place* in a place of opportunity can unleash the local development potential and increase the well-being of its current and future inhabitants. Facilitating a syncronised improvement of *lonely places,* for example by focusing on those that present the co-occurrence of all typologies of vulnerabilities in their territory or those that belong to the same typology of *lonely places* has the potential to also increase the aggregate well-being (Garcilazo et al., 2010).

10.2   THE WAY FORWARD IN *LONELY PLACES*

- The framework of *lonely places* implies a **shared responsibility to transform them into places of opportunities**. This responsibility should involve all governance levels to ensure that the full potential of territories can be untapped for the benefit of all European citizens.
- **This report points to recommendations** with respect to framing urban development in a territorial context **to promote a balanced territorial development** and the use of an integrated development approach in **cities, functional areas, rural areas and regions.**
- Results also recommend EU policies to promote a more **comparable approach in the implementation of territorial development policies** for the support to deprived, disadvantaged and marginalised areas.
- **Putting science and knowledge closer to policy action through the concept of *Loney Places* is a valuable source of inspiration for further investigation**. Future work might extend this effort to other typologies of *lonely places*, for example based on other economic, social or environmental attributes

References

Alessandretti, L., Aslak, U. & Lehmann, S. (2020). The scales of human mobility. *Nature,* 587, 402–407.

Almeida, M. A. P., (2018) Fighting depopulation in Portugal: Local and central government policies in times of crisis, *Portuguese Journal of Social Science,* 17:3, pp. 289–309, available at: doi:10.1386/pjss.17.3.289_1.

Andersson, M., Larsson, J. P., & Wernberg, J. (2018). Urban preferences, amenities and age: Exploring the spatial distribution of age in Stockholm from 1991 to 2011. *Regional Science Policy & Practice,* 10(4), 367–381.

Annunziata, S., Lees, L., & Rivas Alonso, C. (2021). Segregation, social mix and gentrification. In A. Orum, S. Vicari, & J. Ruiz-Tagle (Eds.), *Companion to urban and regional studies 1st edition* (1st ed.). New York: Wiley-Blackwell.

Anselin, L., Syabri, I., & Kho, Y. (2010). GeoDa: an introduction to spatial data analysis. In *Handbook of applied spatial analysis* (pp. 73-89). Springer, Berlin, Heidelberg.

Anselin, L. (2003). *An introduction to spatial autocorrelation analysis with GeoDa.* Spatial Analysis Laboratory, University of Illinois, Champagne-Urbana, Illinois.

Baarck, J., Balahur-Dobrescu, A., Cassio, L.G., D'Hombres, B., Pasztor, Z. and Tintori, G., (2021) *Loneliness in the EU. Insights from surveys and online media data,* EUR 30765 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-40247-3, doi:10.2760/46553, JRC125873.

Bachtler J. and Downes R. (2019), *A time of policy change: reforming regional policy in Europe,* Annual review of regional policy EoRPA Report 19/1 to the 40th meeting of the EoRPA Regional Policy Research Consortium. Available at: *https://www.eprc-strath.eu/public/dam/jcr:369ae0a4-db9e-42e5-995e-21bbcc007995/EoRPA%20Paper_19_1.pdf*

Bachtrögler, J., & Oberhofer, H. (2018). Euroscepticism and EU Cohesion Policy: The impact of micro-level policy effectiveness on voting behavior.

Banister, D. (2008). The sustainable mobility paradigm. *Transport Policy,* 15(2), 73–80. *https://doi.org/10.1016/j.tranpol.2007.10.005*

Barakat, B. (2015). A 'Recipe for Depopulation'? School Closures and Local Population Decline in Saxony. *Population, Space and Place,* 21(8), 735–753. *https://doi.org/https://doi.org/10.1002/psp.1853*

Barberis E. and Pavolini E. (2015), Symposium / Rescaling Immigration Paths: Emerging Settlement Patterns beyond Gateway Cities, *Sociologica,* no. 2, pp.1-33.

Barca, F., (2009) *An Agenda for a reformed Cohesion Policy: a place-based approach to meeting European Union challenges and expectations,* Independent report, prepared at the request of the European Commissioner for Regional Policy, Danuta Hubner, European Commission, Brussels.

Barca, F., McCann, P., & Rodríguez-Pose, A. (2012). The case for regional development intervention: place-based versus place-neutral approaches. *Journal of regional science,* 52(1), 134-152.

Barca F., Casavola P. and Lucatelli S., (2014) Strategia nazionale per le Aree interne: definizione, obiettivi, strumenti e governance', in *Materiali Uval,* n. 31.

Barranco R., Proietti P., Batista e Silva F., Perpiña Castillo C. & Lavalle C. (2021). Tourism capacity, expenditure and seasonality in Europe per urban-rural typology and remoteness. *Policy Brief.* JRC124459.

Batista e Silva, F., Freire, S., Schiavina, M., Rosina, K., Marín-Herrera, M. A., Ziemba, L., Graglia, M., Koomen, E. and Lavalle, C. (2020). Uncovering temporal changes in Europe's population density patterns using a data fusion approach. *Nature Communications,* 11(1), 4631. *https://doi.org/10.1038/s41467-020-18344-5*

Bell, D. (1976). The coming of the post-industrial society. In *The Educational Forum* (Vol. 40, No. 4, pp. 574-579). Taylor & Francis Group.

Benbassa E., and Attias J.(eds.), (2017) *Nouvelles relegations territoriales,* CNRS Éditions.

Benczur, P., Joossens, E., Manca, A.R., Menyhert, B. and Zec, S., (2020) *How resilient are the European regions Evidence from the societal response to the 2008 financial crisis,* EUR 30352 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-21452-6, doi:10.2760/383460, JRC121554.

Besussi E., Cecchini A. and Rinaldi, E. (1998). The diffused city of the Italian North-East: identification of urban dynamics using cellular automata urban models, *Computers, Environment and Urban Systems,* 22(5), 497-523, ISSN 0198-9715, *https://doi.org/10.1016/S0198-9715(98)00022-2*

Birch, S. (2018) Democratic Norms, Empirical Realities and Approaches to Improving Voter Turnout. *Res Publica,* 24(1): 9–30.

Blais, A. (2006). What Affects Voter Turnout? *Annual Review of Political Science* 9(1): 111–25.

Blais, A., and Dobrzynska, A. (1998). Turnout in Electoral Democracies. *European Journal of Political Research,* 33(2): 239-61.

Blanchard, O., & Rodrik, D. (Eds.). (2021). *Combating Inequality: Rethinking Government's Role.* MIT Press.

Borin, A., Macchi, E. and Mancini, M. (2018). Eu transfers and euroscepticism: can't buy me love?. *Economic Policy* (2018).

Borys, S., & Perlman, D. (1985). Gender differences in loneliness. *Personality and Social Psychology Bulletin,* 11(1), 63-74.

Bosco, C., Loeschner, J., Natale, F., Ghio, D., & Minora, U. (2021). Population by age in EU Local Administrative Units (2011, 2019) (forthcoming). Luxembourg.

Breuer, I. M., Milbert, A., Foss, O., Humer, A., Palma, P., Rosik, P., Stepniak, M., Velasco, X. (2013). *European Atlas of Services of General Interest.* Bonn: Federal Office for Building and Regional Planning & ESPON.

Broadband coverage in Europe (2020). *Mapping progress towards the coverage objectives of the Digital Agenda.* A study prepared for the European Commission DG Communications Networks, Content & Technology by: IHS Markit, OMDIA and Point Topic. Contract number: LC-01252443. Luxembourg: Publications Office of the European Union. ISBN: 978-92-76-20128-1, doi: 10.2759/375483.

Brown, V., Diomedi, B. Z., Moodie, M., Veerman, J. L., & Carter, R. (2016). A systematic review of economic analyses of active transport interventions that include physical activity benefits. *Transport Policy,* 45, 190–208. *https://doi.org/10.1016/j.tranpol.2015.10.003*

Cabannes, M., (2018) *Les fractures territoriales: de la fragmentation au dualisme, Les Possibles,* N 16, Printemps. Available at: *https://france.attac.org/nos-publications/les-possibles/numero-16-printemps-2018/debats/article/les-fractures-territoriales-de-la-fragmentation-au-dualisme*

Calabrese F, Pereira FC, Di Lorenzo G, Liu L and Ratti C (2010) The geography of taste: analyzing cell-phone mobility and social events. In: *Pervasive computing.* Springer, pp. 22-37.

Cancela, J. and Geys, B (2016). 'Explaining Voter Turnout: A Meta-Analysis of National and Subnational Elections'. *Electoral Studies,* 42: 264-75.

Carvalho, P., (2018) Dynamics of rural low-density spaces in Portugal, *Méditerranée* [Online], Issue 130, 2018; available at: *https://doi.org/10.4000/mediterranee.10516*

Cassio, L.G., Blasko, Z. and Szczepanikova, A., (2021) *Poverty and mindsets,* EUR 30673 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-35967-8, doi:10.2760/453340, JRC124759.

Centeno, C., Karpinski, Z. and Urzi Brancati, M.C., (2022) *Supporting policies addressing the digital skills gap,* EUR 31045 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-51319-3, doi:10.2760/07196, JRC128561.

Comitato Tecnico Aree Interne, Dipartimento Politiche di Coesione (2019), *Relazione annuale sulla Strategia nazionale per le aree interne,* presentata al Cipe, annualità 2018.

Cour de comptes (2002). *Rapport au président de la république suivie des réponses des administrations et des organismes intéressés,* Cour de comptes, *https://www.vie-publique.fr/sites/default/files/rapport/pdf/024000096.pdf*

Cox, M. (2003). When Trust Matters: Explaining Differences in Voter Turnout. J*CMS: Journal of Common Market Studies* 41(4): 757–70.

Cox, N. (2016). ENTROPYETC: Stata module for entropy and related measures for categories, *Statistical Software Components* S458272, Boston College Department of Economics, revised 23 Nov 2018.

Cremaschi M., Busti M and Fenn R. (2021) Imagine your ITI, in *ESPON IMAGINE Developing a metropolitan-regional imaginary in the Milano-Bologna urban region,* Final Report, May.

Crescenzi, R., Di Cataldo, M., & Giua, M. (2020). It's not about the money. EU funds, local opportunities, and Euroscepticism. *Regional Science and Urban Economics,* 84, 103556.

Cześnik, M. (2006). Voter Turnout and Democratic Legitimacy in Central Eastern Europe. *Polish Sociological Review* (156): 449–70.

D'Hombres, B. and Neher, F. editor(s), Colagrossi, M., Cseres-Gergelyne Blasko, Z., Naszodi, A., Pontarollo, N., Schnepf, S., Agundez Garcia, A., Barrios, S., Bastianelli, E., Benczur, P., Cassio, L.G., Cseres-Gergely, Z., Cuccu, L., D'andria, D., De Palo, C., Dessart, F.J., Dewandre, N., Ftergioti, S., Harasztosi, P., Jara Tamayo, H.X., Karagiannis, S., Kvedaras, V., Langedijk, S., Maftei, A., Marandola, G., Martinez Turegano, D., Mondello, S., Picos Sanchez, F., Raab, R., Saisana, M., Serra, N., Teixeira Mendonca, F., Thiemann, A. and Tumino, A., (2020) *Beyond averages – Fairness in an economy that works for people,* EUR 29995 EN, Publications Office of the European Union, Luxembourg

Daams, M. N., Sijtsma, F. J., & Veneri, P. (2019). Mixed monetary and non-monetary valuation of attractive urban green space: A case study using Amsterdam house prices. *Ecological Economics,* 166, 106430.

De Dominicis, L., Dijkstra, L. and Pontarollo, N. (2020) *The Urban-Rural Divide in Anti-EU Vote. Social, Demographic and Economic Factors Affecting the Vote for Parties Opposed to European Integration.* Luxembourg: Publications Office of the European Union.

De Haan, M., Leuven, E., & Oosterbeek, H. (2016). School Consolidation and Student Achievement. *Journal of Law, Economics & Organization,* 32(4), 816–839. *https://doi.org/10.1093/jleo/eww006*

De Luca S. and Lanzani A. (eds.), (2020) *Liberiamo il potenziali di tutti i territori. Con una politica di sviluppo moderna e democratica,* Forum Disuguaglianze Diversità.

De Nadai M, Staiano J, Larcher R, Sebe N, Quercia D and Lepri B (2016) *The Death and Life of Great Italian Cities: A Mobile Phone Data Perspective.* arXiv:1603.04012 [physics] doi:10.1145/2872427.2883084.

Dellmuth, L. M., & Chalmers, A. W. (2018). All spending is not equal: European Union public spending, policy feedback and citizens' support for the EU. *European Journal of Political Research,* 57(1), 3-23.

DESI Project (2020). *Digitisation: Economic and Social Impacts in Rural Areas.* Accessible from: *https://desira2020.eu/the-project* and *https://desira2020.eu/wp-content/uploads/2021/02/DESIRA_LTVRA_General_fv.pdf*

Diamond, D. B., & Tolley, G. S. (Eds.). (2013). *The economics of urban amenities.* Elsevier.

Dijkstra, L. and Poelman, H. (2008). *Remote Rural Regions: How the proximity to a city influences the performances of rural regions.*

Dijkstra L., Poelman, H. and Veneri, P. (2019) The EU-OECD definition of a functional urban area. *OECD Regional Development Working Papers 11,* Paris: OECD Publishing.

Dijkstra, L., Poelman, H., & Rodríguez-Pose, A. (2020). The geography of EU discontent. *Regional Studies,* 54(6), 737-753.

Directorate General of Education and Science Statistics of Portugal (2021), *Statistics on pre-primary, primary and secondary schools, https://www.dgeec.mec.pt/np4/408* (accessed on March 2020).

Elldér, E., Haugen, K., & Vilhelmson, B. (2020). When local access matters: A detailed analysis of place, neighbourhood amenities and travel choice. *Urban Studies,* 0042098020951001.

Elshof, H., Haartsen, T., & Mulder, C. H. (2015). The Effect of Primary School Absence and Closure on Inward and Outward Flows of Families. *Tijdschrift Voor Economische En Sociale Geografie.*

Elshof, H., van Wissen, L., & Mulder, C. H. (2014). The self-reinforcing effects of population decline: An analysis of differences in moving behaviour between rural neighbourhoods with declining and stable populations. *Journal of Rural Studies,* 36, 285–299.

ENRD (European Network for Rural Development) (2021a). *French Strategies for digitizing rural areas.* Accessible from: *https://enrd.ec.europa.eu*

ENRD (European Network for Rural Development) (2021b). *Smart Villages.* Accessible from: *https://enrd.ec.europa.eu*

ERNACT (2019). *Digital transformation ecosystems in County Donegal* (Ireland). *https://enrd.ec.europa.eu/sites/default/files/tg8_smart-villages_digital-donegal_ie_sanemeterio.pdf*

ESPON (2017). *PROFECY – Processes, Features and Cycles of Inner Peripheries in Europe.* Final Report.

European Commission (2017a). *My Region, My Europe, Our Future. Seventh Report on Economic, Social and Territorial Cohesion.* Luxembourg: Publications Office of the European Union.

European Commission (2017b). *Modernising and simplifying the CAP. Background document. socioeconomic challenges facing EU agriculture and rural areas.* DG for agriculture and rural development, Brussels.

European Commission (2019). *The European Green Deal.* COM (2019) 640 final, Brussels.

European Commission (2020a). *The impact of demographic change.* Staff Working Document (2020) 109 final. Brussels.

European Commission (2020b). *A Union of Equality: Gender Equality Strategy 2020-2025.* COM (2020) 152 final, Brussels.

European Commission (2020c). *Evaluation support study on the impact of the CAP on territorial development of rural areas: socioeconomic aspects.* Final Report. Written by ÖIR GmbH, CCRI, and ADE S.A. DG for Agriculture and Rural Development. (Unit C.4).

European Commission (2020d). *White paper on artificial intelligence – A European approach to excellence and trust.* COM (2020) 65 Final.

European Commission (2020e). *A recommendation on the method to delineate cities, urban and rural areas for international statistical comparisons.* Discussion item.

European Commission (2020f). European Semester Country Report, Poland, available at: *https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0520&from=EN*

European Commission (2021a). *A long-term Vision for the EU's Rural Areas – Towards stronger, connected, resilient and prosperous rural areas by 2040.* Commission Staff Working Document. Accessible from: *https://ec.europa.eu/info/strategy/priorities-2019-2024/new-push-european-democracy/long-term-vision-rural-areas_en*

European Commission (2021b). *Shaping Europe's digital future.*

European Commission (2021c). *Cohesion Policy supporting rural areas and communities. European Structural and investment funds.* Accessible from: *https://cohesiondata.ec.europa.eu/stories/s/Cohesion-Policy-supporting-rural-areas-and-communi/uya9-5ucd*

European Commission (2021d). *Green paper on ageing,* COM (2021) 50 final.

European Commission (2022). *Cohesion in Europe towards 2050. Eight report on economic, social and territorial cohesion.* Luxemburg: Publication Office of the European Commission.

European Parliament (2018). *EU Agenda for Rural, Mountainous and Remote Areas.* European Parliament resolution of 3 October 2018 on addressing the specific needs of rural, mountainous and remote areas.

European Parliament (2021). T*ransport infrastructure in low-density and depopulating areas. Transport and tourism.* Policy Department for Structural and Cohesion Policies. Directorate-General for Internal Policies.

Eurostat (2018). *Methodological manual on territorial typologies: 2018 Edition,* Luxembourg: Publications Office of the European Union, 2019, *https://data.europa.eu/doi/10.2785/930137*

Eurostat (2020). *Eurostat regional yearbook 2020 edition.* Statistical books. ISBN: 978-92-76-20728-3.

Eurostat. (2021). *Total fertility rate.* Accessible from: *https://ec.europa.eu/eurostat/databrowser/view/tps00199/default/table?lang=en*

Ezrow, L., and Xezonakis, G. (2016). *Satisfaction with Democracy and Voter Turnout: A Temporal Perspective.* Party Politics 22(1): 3-14.

Farinha Rodrigues, C., (2019) *Inequality and Poverty in Portugal: does location matters?,* SOCIOLOGIA ON LINE, Revista da Associação Portuguesa de Sociologia (APS), N. 19; available at: *https://doi.org/10.30553/sociologiaonline.2019.19.1*

Feijóo, C., Ramos, S., Armuña, C., Arenal, A., & Gómez-Barroso, J.-L. (2018). A study on the deployment of high-speed broadband networks in NUTS3 regions within the framework of digital agenda for Europe. *Telecommunications Policy,* 42(9), 682-699.

Fernández-Carro, C. (2014). *'Ageing in Place' in Europe a multidimensional approach to independent living in later life.* Universitat Autònoma de Barcelona.

Ferreira, F.E.M, Catarino J.C., (2018) European territorial development and the place-based approach: the budgetary dimension of Portugal 2020, *Iberoamerican Journal of Development Studies,* 7(2):114-136; available at: 10.26754/ojs_ried/ijds.267

Fioretti C., Proietti P., and Tintori G. (eds), (2021) *A place-based approach to migrant integration. Sustainable urban development strategies and the integration of migrants in functional urban areas,* EUR 30926 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-45232-4, doi:10.2760/505944, JRC127151.

Fioretti, C. (ed.) (2016) Fragile inclusion. Migrations in small municipalities of Lazio. *I Quaderni – Urbanistica tre,* 11(4).

Fioretti, C., Pertoldi, M., Busti, M. and Van Heerden, S. (eds), (2020), *Handbook of Sustainable Urban Development Strategies,* EUR 29990 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-16425-8, doi:10.2760/020656, JRC118841.

Franklin, M. N. (2002). The Dynamics of Electoral Participation. In *Comparing Democracies 2: New Challenges in the Study of Elections and Voting,* eds. Lawrence LeDuc, Richard G. Niemi, and Pippa Norris. London; Thousand Oaks: Sage, 148-68.

Franklin, M. N. (2004). *Voter Turnout and the Dynamics of Electoral Competition in Established Democracies since 1945.* Cambridge; New York: Cambridge University Press.

Fusco C., Monaco F. and Xilo G. (eds.), (2019), *L'associazionismo intercomunale nelle Aree Interne,* FORMEZ PA.

Garcia, J., Vargas, N., Clark, J. L., Magaña Álvarez, M., Nelons, D. A., & Parker, R. G. (2020). Social isolation and connectedness as determinants of well-being: global evidence mapping focused on LGBTQ youth. *Global public health,* 15(4), 497-519.

Garcilazo, J. E., Martins, J. O., & Tompson, W. (2010). *Why policies may need to be place-based in order to be people-centred.* VoxEU. org, 20. Accessible here: *https://voxeu.org/article/why-policies-may-need-be-place-based-order-be-people-centred?quicktabs_tabbed_recent_articles_block=0*

Gehl J (2011). *Life Between Buildings: Using Public Space.* Island Press. ISBN 978-1-61091-023-1.

Programa Nacional da Política de Ordenamento do Território, (2020) *PNPOT 2019 ediçao DGT*

Geys, B. (2006). Explaining Voter Turnout: A Review of Aggregate-Level Research. *Electoral Studies* 25(4): 637–63.

Giua M. and Sonzogno G. V., (2019) Effetti della co-progettazione degli interventi della Strategia Nazionale Aree Interne, *Agriregionieuropa,* Vol. 15, No. 56, 2019.

Glaeser, E. (2021). *The 15-minute city is a dead end—cities must be places of opportunity for everyone.* LSE COVID-19 Blog. Accessible here: *http://eprints.lse.ac.uk/111277*

Glick Schiller N. and Çağlar A. (eds) 2011, *Locating Migration. Rescaling Cities and Migrants,* Cornell University Press, Ithaca.

Gløersen, E., & Lüer, C. (2013). *Population data collection for European local administrative units from 1960 onwards.* Heisdorf: Spatial Foresight.

Gløersen, E., Cohesion policy support to areas confronted to population decline in Europe. *Forthcoming.*

Gonzalez Vazquez, I., Milasi, S., Carretero, S., Napierała, J., Robledo Bottcher, N., Jonkers, K., ... & Vuorikari, R. (2019). The changing nature of work and skills in the digital age (No. JRC117505). Joint Research Centre (Seville site).

Goujon A., Jacobs-Crisioni C., Natale F., Lavalle C. (2021). *The demographic landscape of EU territories: challenges and opportunities in diversely ageing regions,* EUR 30498 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-27239-7, doi:10.2760/658945, JRC123046.

Grabaum, R., & Meyer, B. C. (1998). Multicriteria optimization of landscapes using GIS-based functional assessments. *Landscape and urban planning,* 43(1-3), 21-34.

Gray, M., and Caul, M. (2000). Declining Voter Turnout in Advanced Industrial Democracies, 1950 to 1997: The Effects of Declining Group Mobilization. *Comparative Political Studies,* 33(9): 1091–1122.

Gruber, H., Hätönen, J., & Koutroumpis, P. (2014). Broadband access in the EU: An assessment of future economic benefits. *Telecommunications Policy,* 38(11), 1046–1058.

Holt-Lunstad, J. (2017). The potential public health relevance of social isolation and loneliness: Prevalence, epidemiology, and risk factors. *Public Policy & Aging Report,* 27(4), 127-130.

Howie, P., Murphy, S. M., & Wicks, J. (2010). An application of a stated preference method to value urban amenities. *Urban Studies,* 47(2), 235-256.

Hwang, C.-L. and Yoon, K. (1981) Multiple Attribute Decision Making. Berlin, Heidelberg: Springer Berlin Heidelberg (Lecture Notes in Economics and Mathematical Systems). doi:10.1007/978-3-642-48318-9.

Indovina, F. (ed) (1990), *La città diffusa,* DAEST-IUAV, Venice.

Jacobs-Crisioni, C., Kucas, A., Lavalle, C., Lembcke, A., & Rudiger, A. (2020). *Ageing in regions and cities: high resolution projections for Europe in 2030. https://doi.org/10.2760/716609*

Jacobs-Crisioni, C., Rietveld, P., & Koomen, E. (2014). The impact of spatial aggregation on urban development analyses. *Applied Geography,* 47, 46–56. *https://doi.org/10.1016/j.apgeog.2013.11.014*

Jacobs, J. (1961). *The life and death of great American cities.* New York: Random House.

Jankowski, P. (1995) Integrating geographical information systems and multiple criteria decision-making methods. Int. *J. Geogr. Inf. Syst.* 9, 251–273, doi:10.1080/02693799508902036.

Kompil, M., Jacobs-Crisioni, C., Dijkstra, L., & Lavalle, C. (2019). Mapping accessibility to generic services in Europe: A market-potential based approach. *Sustainable Cities and Society,* 47. *https://doi.org/10.1016/j.scs.2018.11.047*

Kompil M., Jacobs-Crisioni C., Perpiña Castillo C. & Lavalle C. (2021). Accessibility to Services of General Interest in Europe: an evaluation for degree of urbanisation and remoteness. *Policy Brief.* JRC124457

Kreichauf R. (2015), Ghettos in Small Towns? The research on ethnic segregation and stigmatization processes in small town Germany, *Sociologica,* no. 2.

Kučas, A. (2010) Location prioritization by means of multicriteria spatial decision-support systems: A case study of forest fragmentation-based ranking of forest administrative areas, *Journal of Environmental Engineering and Landscape Management,* 18(4), pp. 312-320. doi:10.3846/jeelm.2010.36.

Lafleur, J-M and Stangherlin, G. (2016) Les Nouveaux Liégeois. Migrations et Transformations Urbaines. *Dérivations: pour le Débat Urbain,* No. 3 (septembre). *https://orbi.uliege.be/handle/2268/201948*

Lijphart, A. (2012). *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries.* 2nd ed. New Haven: Yale University Press.

Lyson, T. A. (2002). *What Does a School Mean to a Community? Assessing the Social and Economic Benefits of Schools to Rural Villages in New.*

Long, C. R., & Averill, J. R. (2003). Solitude: An exploration of benefits of being alone. *Journal for the Theory of Social Behaviour,* 33(1), 21-44.

López, R., and International Institute for Democracy and Electoral Assistance, eds. (2002). *Voter Turnout since 1945: A Global Report.* Stockholm: Internat. IDEA.

Lucatelli, S., & Monaco, F. (2018). *La voce dei Sindaci delle aree interne. Problemi e prospettiva della Strategia Nazionale.* Runnettino Editore, Soveria Mannelli.

Lucatelli S. and Storti D., (2019). La Strategia Nazionale Aree Interne e lo sviluppo rurale: scelte operate e criticità incontrate in vista del post 2020, *Agriregionieuropa,* Vol. 15, No. 56.

Magalhães Ferreira P., (2019). *Inequalities and Development in Portugal Portugal's contribution to implementing SDG 10,* available at: *https://www.sdgwatcheurope.org/wp-content/uploads/2019/06/12.3.a-report-PT.pdf*

Magnatti, P. (2020). *Facing the challenges of broadband deployment in rural and remote areas A handbook for projects promoters and policy makers.* In collaboration with the European Commission, DG for Regional and Urban Policy and DG for Agriculture and Rural Development. Accessible from: *https://digital-strategy.ec.europa.eu/en/library/broadband-handbook-facing-challenges-broadband-deployment-rural-and-remote-areas*

Martin, R., Gardiner, B., Pike, A., Sunley, P., & Tyler, P. (2021). *Levelling Up Left Behind Places: The Scale and Nature of the Economic and Policy Challenge.*

Martinez Juan, A. and McEldowney, J. (2021). *Smart villages: Concept, issues and prospects for EU rural areas.* European Parliamentary Research Service.

Martínez-Gómez, D., Ruiz, J. R., Gómez-Martínez, S., Chillón, P., Rey-López, J. P., Díaz, L. E., ... Marcos, A. (2011). Active commuting to school and cognitive performance in adolescents: the AVENA study. *Archives of Pediatrics & Adolescent Medicine,* 165(4), 300-305. *https://doi.org/10.1001/archpediatrics.2010.244*

Masoumi, H., Rooijen, M. van, & Sierpiński, G. (2020). Children's Independent Mobility to School in Seven European Countries: A Multinomial Logit Model. *International Journal of Environmental Research and Public Health,* 17(23), 9149. *https://doi.org/10.3390/ijerph17239149*

McCann, P. (2020). Perceptions of regional inequality and the geography of discontent: Insights from the UK. *Regional Studies,* 54(2), 256-267.

McCann, P., & Rodríguez-Pose, A. (2011). *Why and when development policy should be place-based.*

Medeiros, E., (2016) Territorial Cohesion: An EU concept, *European Journal of Spatial Development,* 60, 2016.

Mendez, C, Arno van der Zwet & Sylwia Borkowska-Waszak (2021) Rescaling urban development policy in the EU: the impact of integrated place-based approaches in Cohesion Policy, *Regional Studies,* 55:6, 1154-1165

Merrifield, J. (1993). The Institutional and Political Factors That Influence Voter Turnout. *Public Choice,* 77(3): 657–67.

Mihalopoulos, C., Le, L. K. D., Chatterton, M. L., Bucholc, J., Holt-Lunstad, J., Lim, M. H., & Engel, L. (2020). The economic costs of loneliness: a review of cost-of-illness and economic evaluation studies. *Social psychiatry and psychiatric epidemiology,* 55(7), 823-836.

Ministry of Investment and Economic Development, Poland, (2019). *Sustainable urban development in Poland: national urban policy in the context of the 2030 Agenda's Goal 11 and the New Urban Agenda,* available at: *https://www.funduszeeuropejskie.gov.pl/media/72570/raport_en_final.pdf*

Ministry of Territorial Cohesion Portugal (2021). *Relatório Balanço do Programa de Valorização do Interior.*

Monaco, F., (2020) La strategia delle aree Interne fra innovazione e ricostruzione post COVID-19, in Fenu N. (ed.), *Aree interne e covid,* LetteraVentidue edizioni – Sardarch, Siracusa.

Montalto V., Tacao Moura C. J., Alberti V., Panella F., Saisana M., (2019). *The Cultural and Creative Cities Monitor.* EUR 29797 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-08807-3, doi:10.2760/257371, JRC117336.

Monteiro, A., (2019) Territórios do interior, coesão territorial e modelos de governança: A propósito do Programa Nacional para a Coesão Territorial, *Revista da Associação Portuguesa de Sociologia* (APS), No. 19; available at: *https://doi.org/10.30553/sociologiaonline.2019.19.6*

Moran, P. A. (1948). The interpretation of statistical maps. *Journal of the Royal Statistical Society. Series B* (Methodological), 10(2), 243-251.

Morén-Alegret R. (2008). Ruralphilia and Urbophobia versus Urbophilia and Ruralphobia? Lessons from Immigrant Integration Processes in Small Towns and Rural Areas in Spain. *Population, Space and Place,* 14(6), 537-552.

Moreno, C.; Allam, Z.; Chabaud, D.; Gall, C.; Pratlong, F. (2021). Introducing the '15-Minute City': Sustainability, Resilience and Place Identity in Future Post-Pandemic Cities. *Smart Cities,* 4, 93-111.

Mulley, C., Tyson, R., McCue, P., Rissel, C., & Munro, C. (2013). Valuing active travel: Including the health benefits of sustainable transport in transportation appraisal frameworks. *Research in Transportation Business and Management,* 7, 27-34. *https://doi.org/10.1016/j.rtbm.2013.01.001*

Murie, A. and Musterd, S. (2004). Social Exclusion and Opportunity Structures in European Cities and Neighbourhoods. *Urban Studies,* 41 (8): 1441-1459.

Nathan, M., & Overman, H. (2020). Will coronavirus cause a big city exodus?. *Environment and Planning B: Urban Analytics and City Science,* 47(9), 1537-1542.

Nieuwenhuijsen, M. J., & Khreis, H. (2016). Car free cities: Pathway to healthy urban living. *Environment International,* 94, 251-262. *https://doi.org/10.1016/j.envint.2016.05.032*

North, D., Smallbone, D. (2020). The Innovativeness and Growth of Rural SMEs during the 1990s. *Regional Studies,* 34:2, 145-157.

OECD (2011). *Urban Policy Review Poland,* available at: *https://www.oecd.org/poland/oecdurbanpolicyreviewspoland.htm*

OECD (2015). *Ageing in Cities,* OECD Publishing, Paris, *https://doi.org/10.1787/9789264231160-en*

OECD (2018). *Working Together for Local Integration of Migrants and Refugees,* OECD Publishing, Paris. *http://dx.doi.org/10.1787/9789264085350-en*

OECD (2020a). *Rural Well-being: Geography of Opportunities.* OECD Rural Studies. OECD Publishing. *https://doi.org/10.1787/d25cef80-en*

OECD (2020b). *Decentralisation and Regionalisation in Portugal: What Reform Scenarios?,* OECD Multi-level Governance Studies, OECD Publishing, Paris; available at: *https://doi.org/10.1787/fea62108-en*

OECD. (2021). *Delivering quality education and health care to all: Preparing regions for demographic change.* *https://doi.org/10.1787/83025c02-en*

OECD/EC-JRC (2021). *Access and Cost of Education and Health Services: Preparing Regions for Demographic Change,* OECD Rural Studies, OECD Publishing, Paris, *https://doi.org/10.1787/4ab69cf3-en*

Openshaw, S. (1983). The modifiable area unit problem. *Concepts and Techniques in Modern Geography,* 38, 1-41.

Ovaska, U., Bergs, R., Goodwin-Hawkins, B., Heley, J., & Oedl-wieser, T. (2020). *CoP Public Infrastructure and Social Services: Multilocality.* *https://rural-urban.eu/sites/default/files/ROBUST_Short-report_Multilocality_120620_end.pdf*

Pigaiani, C and Batista e Silva, F. (2021). *The LUISA Base Map 2018 -A geospatial data fusion approach to increase the detail of European land use/land cover data,* EUR 30663 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-34207-6, doi:10.2760/503006, JRC124621.

Parvin, P. (2018) Democracy without Participation: A New Politics for a Disengaged Era. *Res Publica,* 24(1): 31-52.

Perpiña C., Martínez-Llario, J. C., & Pérez-Navarro, Á. (2013). Multicriteria assessment in GIS environments for siting biomass plants. *Land Use Policy,* 31, 326-335.

Perpiña C., Lavalle, C., Baranzelli, C., Mubareka, S. (2015). Modelling the spatial allocation of second-generation feedstock (lignocellulosic crops) in Europe. *International Journal of Geographical Information Science,* 29, pp. 1807-1825.

Perpiña C., Kavalov B., Ribeiro Barranco R., Diogo V., Jacobs-Crisioni C., Batista e Silva F., Baranzelli C., Lavalle C. (2018). *Territorial Facts and Trends in the EU Rural Areas within 2015-2030.* Publications Office of the European Union, Luxembourg, ISBN 978-92-79-98121-0, JRC114016.

Perpiña C., Auraumbout, J.P., Jacobs-Crisioni, C., Proietti P., Lavalle, C. (2021a). A demographic assessment on the EU remote areas. *European Commission,* JRC124458.

Perpiña C., Sulis P., Velasco Leon J.M. & Lavalle C. (2021b). Broadband accessibility and quality connection in Europe by urban-rural typology including remoteness, *European Commission,* JRC124456.

Perpiña Castillo, C., Vandecasteele, I., Aurambout, J.P., Van Heerden, S., Ribeiro Barranco, R., Bosco, C., Jacobs, C., Martínez-Ruiz, I., Esparcia, J., Pertoldi, M., Kompil, M., Fioretti, C., Ghio, D., Natale, F., Loeschner, J., Batista E Silva, F. and Lavalle, C., (2022) *Urban-rural interactions and their territorial disparities,* European Commission, JRC129206.

Picucci A., Rigoni L., and Xilo G. (eds.), (2020). *I processi di digitalizzazione nelle Aree Interne,* FORMEZ PA.

Price, M., Miller, D., McKeen, M., Slee, B., and Nijnik, M. (2017). *Categorisation of Marginalised Rural Areas. Social Innovation in Marginalised Rural Areas (SIMRA).* Deliverable 3.1. Report to the European Commission.

Rabl, A., & de Nazelle, A. (2012). Benefits of shift from car to active transport. *Transport Policy,* 19(1), 121–131.

Rauhut, D., Smith, C., Humer, A., Ludlow, D., & Borges, L. (2013). *Indicators and perspectives for Services of General Interest in Territorial Cohesion and Development (SeGI)* – Final Report | Version 25/05/2013.

Renaud, A. and Sémécurbe F., (2016) Les habitants des quartiers de la politique de la ville. La pauvreté côtoie d'autres fragilités, *Insee Première,* n. 1593, May 2016.

Rewilding Europe (2021). *Making Europe a wilder place.* Accessible From: *https://rewildingeurope.com*

Rifkin, J. (2000). *The age of access: how the shift from ownership to access is transforming modern life.* London: Penguin.

Rizzi, P., Graziano, P., Dallara, a. (2018). *A capacity approach to territorial resilience: the case of European regions. Annals of Regional Science 60,* pp 285-328. *https://doi.org/10.1007/s00168-017-0854-1*

Rodríguez-Pose, A. (2018). The revenge of the places that don't matter (and what to do about it). Cambridge journal of regions, *Economy and society,* 11(1), 189-209.

Rodríguez-Pose, A., & Dijkstra, L. (2021). Does cohesion policy reduce EU discontent and Euroscepticism?, *Regional Studies,* 55(2), 354-369.

Russell, D. (1982). The measurement of loneliness. *Loneliness: A sourcebook of current theory, research and therapy.*

Salant, P., & Waller, A. (1998). *What Difference Do Local Schools Make? A Literature Review and Bibliography.* Retrieved from: *http://files.eric.ed.gov/fulltext/ED437260.pdf*

Sandbu, M. (2020). *The economics of belonging: A radical plan to win back the left behind and achieve prosperity for all.* Princeton University Press.

Sandel, M. J. (2020). *The Tyranny of Merit: What's Become of the Common Good?.* London: Allen Lane.

Sanderson, W. C., & Scherbov, S. (2010). Remeasuring aging. *Science,* 329(5997), 1287-1288.

Saunders, B. (2012) The Democratic Turnout Problem. *Political Studies,* 60(2): 306-20.

Savikko, N., Routasalo, P., Tilvis, R. S., Strandberg, T. E., & Pitkälä, K. H. (2005). Predictors and subjective causes of loneliness in an aged population. *Archives of gerontology and geriatrics,* 41(3), 223-233.

Schläpfer, M., Dong, L., O'Keeffe, K. et al. (2021). The universal visitation law of human mobility. *Nature,* 593, 522-527.

Scipioni, M., Tintori, G., Alessandrini, A., Migali, S., & Natale, F. (2019). *Immigration and trust in the EU: A Territorial Analysis of Voting Behaviour and Attitudes.*

Scipioni, M. and Tintori, G, The European Parliament Elections dataset: Harmonising electoral data across Member States at LAU level, *JRC Technical Report, forthcoming.*

Shaw, B., Watson, B., Frauendienst, B., Redecker, A., Jones, T., & Hillman, M. (2013). C*hildren's independent mobility: a comparative study in England and Germany (1971-2010).* London.

Sherpa Project – Sustainable Hub to Engage into Rural Policies with Actors (2020). *Long-Term Vision for Rual areas. Contributing from science-society-policy platforms.* Discussion paper.

Siragusa A., Vizcaino P., Proietti P. and Lavalle C., (2020). *European Handbook for SDG Voluntary Local Reviews,* EUR 30067 EN, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-15403-7, doi:10.2760/670387, JRC 118682.

Skifter Andersen H. (2002). Excluded places: the interaction between segregation, urban decay and deprived neighbourhoods, *Housing Theory and Society,* 19: 153-169.

Soja, E., (2010). *Seeking Spatial Justice.* University of Minnesota Press

Sostero, M., Milasi, S., Hurley, J., Fernandez-Macias, E., & Bisello, M. (2020). Teleworkability and the COVID-19 crisis: a new digital divide? (No. 2020/05). *JRC working papers series on labour, education and technology.*

Southworth M (2005) Designing the walkable city. *Journal of Urban Planning and Development,* 131(4): 246-257.

Speedtest® by Ookla®(2020) Global Fixed and Mobile Network Performance Maps. Based on analysis by Ookla of Speedtest Intelligence® data for 2020. Provided by Ookla and accessed 25-10-2020. Ookla trademarks used under license and reprinted with permission.

Stiglitz, J. E. (2012). *The price of inequality: How today's divided society endangers our future.* WW Norton & Company.

Stiglitz, J. E., Sen, A., & Fitoussi, J. P. (2009). *Report by the commission on the measurement of economic performance and social progress.*

Sulis P., Manley E. (2019). Exploring the relationship between urban vitality and the distribution of amenity typologies. *Proceedings of the AESOP 2019,* Venice, IT.

Sulis P., Lavalle C. (2020). Analysing spatiotemporal patterns of urban amenities in European cities. *Proceedings of the GISRUK 2020,* London, UK.

Sung HG, Go DH and Choi CG (2013). Evidence of Jacobs's street life in the great Seoul city: Identifying the association of physical environment with walking activity on streets. *Cities,* 35: 164-173.

Yang, Y., & Diez-Roux, A. V. (2012). Walking distance by trip purpose and population subgroups. *American journal of preventive medicine,* 43(1), 11–19.

Talen, E. (2001). School, community, and spatial equity: An empirical investigation of access to elementary schools in West Virginia. *Annals of the Association of American Geographers. https://doi.org/10.1111/0004-5608.00254*

Thorsen, H. S. (2017). T*he effect of school consolidation on student achievement The effect of school consolidation on student achievement.* Retrieved from: *http://www.ssb.no/en/utdanning*

Tintori, G., Alessandrini, A., Natale, F. (2018). *Diversity, residential segregation, concentration of migrants: a comparison across EU cities. Findings from the Data Challenge on Integration of Migrants in Cities (D4I),* EUR 29611 EN, Publications Office of the European Union, Luxembourg, 2018.

Tissot, S., (2004) Identifier ou décrire les « quartiers sensibles »: Le recours aux indicateurs statistiques dans la politique de la ville, *Genèses,* Vol. 1, No 1, pp. 90-111. *https://doi.org/10.3917/gen.054.0090*

Townsend, L., Wallace, C., & Fairhurst, G. (2015). 'Stuck Out Here': The Critical Role of Broadband for Remote Rural Places. *Scottish Geographical Journal,* 131(3-4), 171-180.

Tranter, P., & Whitelegg, J. (1994). Children's travel behaviours in Canberra: car-dependent lifestyles in a low-density city. *Journal of Transport Geography,* 2(4), 265-273.

UK Department of Education (2021), *Find and compare schools in England, https://www.compare-school-performance. service.gov.uk/download-data* (accessed on February 2020).

Van Tilburg, T. G., & Fokkema, T. (2020). Stronger feelings of loneliness among Moroccan and Turkish older adults in the Netherlands: in search for an explanation. *European Journal of Ageing,* 1-12.

Voivontas, D., Assimacopoulos, D., Mourelatos, A., & Corominas, J. (1998). Evaluation of renewable energy potential using a GIS decision support system. *Renewable energy,* 13(3), 333-344.

Zavaleta, D., & Samuel, K. (2014). Social isolation: A conceptual and measurement proposal.

Zimmer, T., DeBoer, L., & Hirth, M. (2009). Examining Economies of Scale in School Consolidation: Assessment of Indiana School Districts. *Journal of Education Finance,* 35(2), 103–127.

Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications*

Wilson, W. J. (2012). *The truly disadvantaged: The inner city, the underclass, and public policy.* University of Chicago Press.

List of abbreviations

AMIF	Asylum Migration and Integration Fund
ANCT	Agence Nationale de la Cohésion des Territoires
ANRU	Agence Nationale pour la Rénovation Urbaine
ARDECO	Annual Regional Database of the European Commission's Directorate General for Regional and Urban Policy, maintained and updated by the Joint Research Centre
API	Application Programming Interface
BCO	Broadband Competence Offices
CAP	The Common Agricultural Policy
CGET	Commissariat Général à l'Égalité des Territoires
CLLD	Community locally-led development strategies
DG ECFIN	Directorate General for Economic and Financial Affairs
DG REGIO	Directorate General for Regional and Urban Policy
EC	European Commission
EEA	European Environmental Agency
EP	European Parliament
EPT	Etablissements Publics Territoriaux
ERDF	European Regional Development Fund
ESIF	European Structural and Investment Funds
ESF	European Social Fund
EU	European Union
EUR	Euro
FTTH	Fibre To The Home
FUA	Functional Urban Area
GDP	Gross Domestic Product
GVA	Gross Value Added
ICT	Information and communications technology
INSEE	Institut National de la Statistique et des Études Économiques
ITI	Integrated Territorial Investments
JRC	Joint Research Centre
LAU	Local Administrative Unit (statistical information)
LUISA	Land Use-based Integrated Sustainability Assessment
MS	Member State
NACE	Nomenclature statistique des Activités économiques dans la Communauté Européenne
NGA	Next generation broadband networks
NP	National Parliament
NSDC	National Spatial Development Concept
NSIA	National Strategy for Inner Areas

NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and Development
PDV	Politique De la Ville
PNPOT	Programa Nacional da Politica de Ordenamento do Território
POI	Point of Interest
R&I	Research and Innovation
SDG	Sustainable Development Goal
SME	Small and Medium Enterprise
SUD	Sustainable Urban Development

Member States and their abbreviations

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czechia
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LV	Latvia
LT	Lithuania
LU	Luxembourg
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia

List of figures

List of tables

The analysis in chapter 2 combines the geographical delineation of remote places, with demographic and socioeconomic indicators to provide regional and local profiles within and outside remote areas.

It distinguishes two geographical levels for statistical and mapping purposes:

1. **Municipalities (LAU2 level)** and their corresponding **degree of urbanisation** categories, namely municipalities are classified as: City; Town and Suburb, close to a city; Town and Suburb, remote; Rural area, close to a city; and Rural area, remote. Thus, remote areas are considered both as part of the Town and Suburb and Rural classes (Map 1, left side).

2. **Regions (NUTS 3 level)** and their corresponding Urban-Rural typologies, namely regions classified as: Predominantly urban; Intermediate, close to a city; Intermediate, remote; Predominantly rural, close to a city; and Predominantly rural, remote. Thus, remote regions are considered part of both Intermediate and rural classes (Map 2, right side).

Figure A1: Degree of urbanisation at municipality level (LAU2) (left side) and Urban-Rural NUTS 3 typologies (right side), both including remoteness.

LAU's: Degree of urbanisation
including remoteness (45 minutes)   500 km

- 🟥 City
- 🟨 Town & suburb, close to a city
- 🟫 Town & suburb, remote
- 🟩 Rural area, close to a city
- 🟩 Rural area, remote

Sources: LAU 2011, CGC 2012, population 2011, TomTom 2020
©EuroGeographics Association for the administrative boundaries

Urban-Rural NUTS 3 typology
including remoteness (45 minutes)   500 km

- 🟥 Predominantly urban regions
- 🟨 Intermediate regions, close to a city
- 🟫 Intermediate, remote regions
- 🟩 Predominantly rural regions, close to a city
- 🟩 Predominantly rura, remote regionsl

Sources: NUTS3 2016, CGC 2012, population 2011, TomTom 2020
©EuroGeographics Association for the administrative boundaries

Source: DG for Regional and Urban policy and Eurostat (European Commission, 2021a).

The methodology applied to the Urban-Rural including remoteness typology classifies all NUTS 3 regions according to criteria based on population density and population distribution (similarly for the degree of urbanisation, including remoteness)[107]. In particular, a predominantly rural or intermediate region is considered remote if less than half of its residents can drive to the centre of a city of at least 50 000 inhabitants within 45 minutes.

Remote regions and municipalities were characterised using the most recent and the highest spatial resolution data and statistical information available, namely:

- At the municipal level: the historical population data for 1961 to 2011, provided every 10 years at the level of municipalities (Gløersen and Lüer 2013). This dataset was complemented by adding population for the year 2018 (Pigaiani et al., 2021), aggregated from the 100m resolution 2018 JRC-GEOSTAT grid data. 2018 LAU2 version was used to define the municipal boundaries.
- At the regional level: Urban-Rural regional typologies (NUTS 3 2016 version), including remoteness, are used to analyse the regional economic performance and population patterns.

In both cases, time series data were integrated to identify the main regional trends. In particular:

- Economic performance was explored by using the ARDECO[108] database (JRC and DG REGIO), from which the following variables were extracted for the 2000 to 2018 period: sectoral employment, Gross Value Added (GVA), Gross Domestic Product (GDP) per capita. In particular, two periods were analysed: pre-financial crisis (2000-2007) and post crisis (2008-2018). Sectors from the Statistical Classification of Economic Activities in the European Community (NACE) classifications include several sectorial economic activities.

Income per capita is provided at regional level by DG EFCFIN as an economic indicator complementing the previous ones.

- Demographic structure across age groups and gender and its evolution through time for the period 2001-2021, was derived from the following sources:

  1. the 2001[109] and 2011 census[110] including total population, male and female and the seven broad age groups (population aged between 0-14, 15-29, 30-49, 50-64, 65-84 and over 85) at regional and municipality level, respectively. Data for Belgium, Germany, Croatia, Malta and Sweden were not available for 2001 census.
  2. Eurostat projections[111] which provided sex and age cohorts disaggregation levels, at regional (NUTS 3) level.

The above-mentioned economic and demographic indicators were aggregated at different levels of resolution (country, regional, level of remoteness, degree of urbanisation) in order to explore the patterns and trends. Change rates for different indicators were calculated using the compound annual growth rate. This rate is defined as the mean annual growth rate of a parameter (such as population) over a specified period of time, by using the following equation:

$$Compound\ Annual\ Growth\ Rate = \left(\frac{Var\ Y1}{Var\ Y0}\right)^{\frac{1}{Y1-Y0}} - 1$$

where Y1 is the start and Y0 the end year of the considered time periods; Var Y1 and Var Y0 corresponds to the variable value (i.e. total population) for the corresponding year. This equation has been also applied to the economic variables in particular to employment, GVA, and income.

Depopulating areas are deemed to be those experiencing a yearly population loss up to a certain threshold during a period of time, therefore, considering

107 Regional typologies overview: *https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Regional_typologies_overview&oldid=182468* and Eurostat, Methodological manual on territorial typologies: *https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-18-008.*

108 ARDECO is the Annual Regional Database of the European Commission's Directorate General for Regional and Urban Policy, maintained and updated by the Joint Research Centre. *https://knowledge4policy.ec.europa.eu/territorial/ardeco-online_en.*

109 Eurostat database: *https://ec.europa.eu/eurostat/web/population-demography/population-housing-censuses/database.* Regional Census 2001 (cens_01rstr)

110 European Statistical system. Census Hub: *https://ec.europa.eu/CensusHub2.*

111 Eurostat population projections (EUROPOP2019). *https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=proj_19rp3.*

only areas where the depopulation process was both steady and substantial over time (European Commission, 2021a). In this analysis, two thresholds were established: 1) at the municipality level, an average annual rate of − 1 % between 2001 and 2018; and 2) at the regional level, an average annual rate of − 0.5 %. This distinction relates to the observation that the smaller the unit of analysis the higher the relative variation.

For the case study in France, high resolution demographic[112] (age groups, marital status, family structure) and housing[113] data (housing type, ownership status, primary vs secondary dwellings) were used at the subcommunal level (IRIS layer) for the reference year 2011. This data was obtained from the *Institut national de la statistique et des études économiques* (INSEE).

Figure A2: Compound annual growth rate for population between 1961-2018 at country level in remote and non-remote areas.

Source: Own elaboration aggregated from municipality level.

Figure A3: Population pyramid in 2011 (left) by remote vs non-remote areas; population pyramid in 2011 (right) by urban-rural typologies.

Source: Own elaboration based on 2011 census (Eurostat).

112 *https://www.data.gouv.fr/en/datasets/demographie-recensement-de-la-population-par-iris*
113 *https://www.insee.fr/fr/statistiques/2028269*

Table A1: Demographic indicators: population and population density, comparing remote and non-remote areas.

Demographic indicators	2018					% change	
	Remote areas		Non-remote areas			Remote areas	
	Rural remote	Intermediate remote	Urban	Intermediate, close to a city	Rural, close to a city	Rural remote	Intermediate remote
Population	**22 317 554**	**8 861 556**	**133 303 288**	**119 897 209**	**53 823 712**	**-3.8%**	**-1.9%**
0-14	3 237 512	1 254 093	20 540 966	18 088 420	8 286 587	-12.7%	-9.1%
15-29	3 473 530	1 405 758	22 010 495	19 348 104	8 791 995	-16.5%	-16.0%
30-49	5 579 283	2 339 813	37 718 736	32 652 317	14 267 376	-7.2%	-1.5%
50-64	4 696 059	1 924 775	26 854 808	24 702 208	10 991 805	14.1%	11.2%
65-84	4 522 706	1 656 870	22 400 693	21 575 508	9 876 236	4.2%	5.5%
>85	808 464	280 247	3 777 590	3 530 652	1 609 713	33.3%	34.2%
P. density	**24.9**	**28.8**	**438.7**	**109.8**	**68.8**	**-1.0%**	**-0.5%**

Source: Own elaboration. **Note1:** Age group data refers to the 2001, 2011 census and 2021 Eurostat projections while total population and population density are derived from ARDECO. No available data from the 2001 census for Belgium, Germany, Croatia, Malta and Sweden. Version 2016 (Urban-Rural NUTS 3 typology). **Note 2:** Population is measured in million inhabitants. Population density is measured in inhabitants/km².

Table A2: Economic indicators: employment and GVA per sector, Income and GDP comparing remote and non-remote.

Economic indicators	2018					% change	
	Remote areas		Non-remote areas			2000-2007	
	Rural remote	Intermediate remote	Urban	Intermediate, close to a city	Rural, close to a city	Remote areas	Non-remote areas
Employment (thousands people)	**10 006 983**	**3 665 760**	**89 383 722**	**70 279 489**	**28 514 620**	**4%**	**7%**
A	1 333 120	324 710	1 116 692	3 606 031	3 343 000	4%	7%
B-E	1 700 220	609 400	10 799 890	13 763 400	6 036 740	-21%	-24%
F	719 880	244 880	4 805 130	4 709 920	2 133 170	-2%	-5%
G-J	2 470 432	1 014 590	26 923 110	18 486 359	6 626 610	24%	18%
K-N	892 621	353 750	18 631 440	9 424 399	2 799 240	13%	11%
O-U	2 890 710	1 118 430	27 107 460	20 289 380	7 575 860	23%	23%
Incomes/capita (euros)	**13 222**	**11 851**	**19 036**	**15 849**	**13 513**	**38%**	**37%**
GVA (millions)	**485 958**	**206 495**	**6 124 561**	**3 987 997**	**1 354 904**	**33%**	**35%**
A	26 411	9 232	41 614	94 482	50 828	-5%	1%
B-E	107 662	39 508	1 009 811	1 009 389	364 259	24%	27%
F	31 341	12 476	276 701	235 666	91 167	55%	47%
G-J	101 976	48 239	1 688 607	879 715	273 086	31%	34%
K-N	95 815	42 590	1 823 800	890 596	272 947	46%	43%
O-U	122 754	54 449	1 284 027	878 149	302 618	37%	34%
GDP/capita (euros)	**20 817**	**20 333**	**38 089**	**26 721**	**22 476**	**37%**	**33%**

Source: Own elaboration. **Note1:** Values are derived from ARDECO database. Version 2016 (Urban-Rural NUTS 3 typology). **Note 2:** No region is classified as remote in Cyprus, Czechia, Luxembourg, The Netherlands and Slovakia at NUTS 3 level. **Note 3:** NACE2 Sectors correspond to: A: Agriculture, Forestry and Fishing / B-E: Industry (excluding Construction) / F: Construction / G-J: Wholesale, Retail, Transport, Accommodation & Food Services, Information and Communication / K-N: Financial & Business Services / O-U: Non-market Services.

2001-2011			% change 2011-2021				
Non-remote areas			Remote areas		Non-remote areas		
Urban	Intermediate, close to a city	Rural, close to a city	Rural remote	Intermediate remote	Urban	Intermediate, close to a city	Rural, close to a city
11.3%	5.8%	2.2%	-3.4%	-2.2%	3.8%	0.6%	-1.0%
8.8%	-2.0%	-6.8%	-10.3%	-8.7%	1.3%	-3.1%	-6.1%
-5.9%	-9.5%	-10.2%	-12.4%	-12.6%	-5.9%	-10.9%	-12.5%
12.7%	5.5%	0.4%	-10.2%	-11.0%	-3.6%	-5.7%	-5.8%
22.7%	23.7%	23.4%	-0.9%	8.9%	10.2%	4.2%	0.9%
19.7%	12.9%	6.9%	13.4%	11.7%	20.0%	19.9%	19.0%
46.6%	43.1%	38.4%	38.7%	39.9%	43.4%	39.3%	40.1%
5.6%	2.6%	-0.7%	-2.1%	-1.8%	3.7%	1.3%	-0.7%

within periods		% change 2000-2018				
2008-2018		Remote areas		Non-remote areas		
Remote areas	Non-remote areas	Rural remote	Intermediate remote	Urban	Intermediate, close to a city	Rural, close to a city
-10%	1%	-6%	-11%	14%	7%	0%
-10%	1%	-40%	-36%	-23%	-39%	-45%
-22%	-19%	-5%	-24%	-10%	-7%	-4%
-16%	-8%	-6%	-20%	-7%	-2%	12%
-28%	-17%	12%	4%	18%	16%	19%
-3%	4%	32%	18%	45%	42%	38%
3%	13%	5%	-10%	21%	14%	13%
9%	13%	36%	34%	36%	37%	40%
12%	21%	50%	44%	66%	64%	64%
11%	11%	4%	8%	17%	11%	8%
11%	21%	42%	22%	40%	59%	70%
-11%	-2%	37%	28%	42%	54%	61%
12%	22%	47%	46%	68%	63%	61%
15%	23%	69%	66%	83%	74%	70%
17%	25%	64%	62%	72%	71%	71%
15%	20%	62%	55%	58%	64%	82%

Figure A4: Differences between non-remote versus remote areas, measured in percentage points, for employment, income, GVA and GDP/capita during the 2008–2018 period (post-financial crisis).

△ Employment — Income ◻ GVA ● GDP/capita

Source: Own elaboration. **Note:** The lowest the (negative) values, the better the economic performance in remote areas versus non-remote (urban or intermediate areas). Ireland had a difference in pp of 65 for the GDP/capita due to an almost null increase in remote areas during that period.

Appendix 2

The location-allocation procedure

The school allocation procedure used in chapter 3 is a refined version of the location-allocation solution developed by Kompil et al.(2019)[114], in which local communities compete for the allocation of a school. The modelling process is shown schematically in Figure A5, Appendix 2. This iterative location-allocation procedure, in every step, selects the highest utility location in a predefined region[115] as an additional discrete location for schools. There is no central optimisation process and the number of schools is not defined *a priori*. Instead, number and size of facilities are obtained endogenously from the allocation procedure. The location-allocation procedure is set to reproduce empirically observed school sizes and transport costs, which in turn are assumed to represent a societally accepted balance between school costs and benefits. The outcome of this procedure is an equilibrium that arises when, universally, demand is completely exhausted, or when no more potential locations meet the imposed bounding conditions.

The parameters with which the procedure was run were trained to reproduce primary school distributions across densely and sparsely populated areas of Portugal (Portugal Directorate General of Education and Science, 2021) and England (UK Department of Education, 2021). Data from these countries were used because those countries have very varied spatial contexts, with data that are among the most accurate and comprehensive data sources on primary school locations available in Europe. The study expects that school distributions in those countries represent a societally acceptable balance between travel costs and school efficiency. Additionally, the study assumes that school distribution in other EU countries is based on parameters that are similar to the ones used to reproduce primary school distributions in the training countries.

The discrete logit model

For descriptive purposes, the logit model helps in exploring which prior factors are associated with pupil population decrease. As explanatory variables, the logit model uses pupil population in 2011 and municipal population change between 1981 and 2011. Pupil population decrease is considered substantial when it implies at least a 19% decrease in size[116]. The explained variable is set to 1 if pupil population decreased with at least 19%. It is set to 0 if the pupil population increases or decreases less than 19%.

Such a model is helpful here to quantify the impacts of prior population changes on substantial decreases in access to simulated school locations. To verify the robustness of these results, a variety of model specifications have been tested, including versions with different distance increase cut-offs, additional variables, and country-specific dummies. All tested versions confirm the relevance of past pupil population and recent pupil population change for increases in distance to school.

---

114 Key additions of the adopted school allocation procedure *vis-à-vis* Kompil et al. (2019) are the inclusion of road-based distances and the training of input parameters through a grid search. For a full list of improvements we refer to OECD/EC-JRC (2021).

115 For primary schools, NUTS 3 regions are used as boundaries of independent placement zone.

116 Results are available upon request.

Table A3: Logit model results – decrease in number of students and increase in average distance.

Explanatory variables and statistical tests	Dependent variable	
	Model 1	Model 2
	Decrease in number of pupils (2011-2018)	Increase in average distance (2011-2018)
Ln number of pupils in 2011	-0.227*** (0.005)	-0.218*** (0.006)
Ln population in 2011 – Ln population in 1981	-0.503*** (0.021)	---
Ln # of pupils in 2018 – Ln # of pupils 2011	---	-0.526*** (0.015)
Constant	-0.042** (0.020)	-2.265*** (0.025)
Observations	94 394	94 394
Log Likelihood	-53 593.710	-17 121.020
Akaike Inf. Crit.	107 193.400	34 248.030

Source: Own elaboration. **Note:** To avoid issues with zero population, a value of 0.01 has been added to all variables of which logs are taken. Significance values are indicated as * $p<0.1$ ** $p<0.05$ *** $p<0.01$.

Figure A5: Schematic representation of the school allocation method.

	i) The method represents all communities as nodes (indicated as stars), and considers the maximum catchments od those communities (circles) in a region. The method defines catchments with a threshold maximum road distance (threshold 1).
	ii) Select nodes (grey circles) that are eligible for a school location. A node is eligible if, within its catchment area (threshold 1), there is a sufficiently large unsatisfied demand (threshhold 2).
	iii) Compute the utility of a node for a school location. The method computes utility as a potential accessibility measure, summing unsatisfied demand at nodes, divided by the distance to these nodes.
	iv) The method then selects the one node that meets the eligibility criteria (ii) and has the highest utility value (iii), as indicated here by a larger star.
	v) The method then establishes for which nodes the newly selected school location satisfies demand. This is done by expanding a search radius from the new school location (ellipses, selected nodes as larger stars), in the location's catchment are included.
	vi) The method subsequently removes the nodes where demand is met from the set of searchable nodes and from the pool of unsatisdied demand; and proceeds by selecting another school location (ii). This is repeated until all demand is met or all eligible nodes are depleted.

Source: OECD/EC-JRC. (2021). Access and cost of education and health services: Preparing regions for demographic change, page 47.

Appendix 3

Figure A6: Share of population with access to fixed (left) and mobile (right) broadband network per speed category at country level, EU-27.

Fixed connection / Mobile connection

population %

■ 0-30 Mbps   ■ 30-100 Mbps   ■ > 100 Mbps

Source: Own elaboration.

The spatial visualisation of the same data at the municipal level illustrated in Figure A7 reveals distinct spatial patterns of speed in remote areas. High shares of population living in remote areas experience low broadband quality (lower than 30 Mbps) in most of the countries, whereas some others (Northern countries, Lithuania, Luxembourg and Malta) go beyond 100 Mbps.

Denmark, Sweden and Finland show access to broadband speed higher than 30 Mbps almost everywhere. Access to the fastest broadband speed (over 100 Mbps) is also available for many remote areas in Romania, Spain and France, although the latter shows a diverse situation across the country. Austria and Italy show a mixed condition, with many municipalities in mountain areas with a good access (30 to 100 Mbps), whereas others can only rely on less than 30 Mbps speed. Greece and Croatia are the countries with the lowest speed in remote areas. It is important to notice how countries such as Spain, France and Italy have many municipalities classified as remote where a reliable broadband connection is yet be ensured, whereas in the Netherlands and Luxembourg only very few municipalities lack speedy connection.

Figure A7: Average speed for fixed broadband in remote areas, EU-27.

Source: Own elaboration.

Appendix 4

Figure A8: Turnout of EP elections in Romania and Eurostat territorial typology by municipality and region (National turnout 51.2%).

RO turnout LAU
- 0.09-0.4
- 0.4-0.46
- 0.46-0.52
- 0.52-0.59
- 0.59-0.99

RO turnout NUTS 3
- 0.35-0.44
- 0.44-0.48
- 0.48-0.5
- 0.5-0.52
- 0.52-0.64

RO degurba class LAU
- Cities
- Towns & suburbs
- Rural areas

RO urban-rural class NUTS 3
- Predominantly urban
- Intermediate
- Predominantly rural

Table A4: Regression table.

Country	Model 1	Model 2	Model 3
(Intercept)	0.546*** (0.002)	0.571*** (0.003)	0.535*** (0.002)
DE	0.018*** (0.002)	0.020*** (0.002)	0.017*** (0.002)
FI	-0.168*** (0.006)	-0.185*** (0.006)	-0.174*** (0.006)
FR	0.026*** (0.002)	0.021*** (0.002)	0.024*** (0.002)
HR	-0.255*** (0.005)	-0.258*** (0.004)	-0.256*** (0.005)
IT	0.041*** (0.002)	0.042*** (0.002)	0.039** (0.002)
LT	-0.034** (0.012)	-0.040** (0.012)	-0.034** (0.012)
LV	-0.236*** (0.009)	-0.244*** (0.009)	-0.235*** (0.009)
NL	-0.117*** (0.005)	-0.103*** (0.005)	-0.111*** (0.006)
PL	-0.141*** (0.003)	-0.139*** (0.003)	-0.139*** (0.003)
PT	-0.216*** (0.003)	-0.216*** (0.003)	-0.216*** (0.003)
RO	-0.042*** (0.003)	-0.044*** (0.003)	-0.042*** (0.003)
SE	-0.022*** (0.006)	-0.031*** (0.006)	-0.023*** (0.006)
SK	-0.314*** (0.003)	-0.315*** (0.003)	-0.313*** (0.003)
olddep1		0.020*** (0.002)	0.030*** (0.002)
pop_dens_log		-0.007*** (0.000)	
degurba-Cities			-0.014*** (0.003)
degurba-Rural areas			0.003*** (0.001)
Num. Obs.	68 965	68 893	68 893
R2	0.482	0.489	0.485
R2 Adj.	0.482	0.489	0.485
AIC	-129 506.0	-130 302.2	-129 753.8
BIC	-129 368.9	-130 146.8	-129 589.3
Log. Lik.	64 768.022	65 168.095	64 894.903
F	4 931.650	4 390.019	4 049.066

Source: Own elaboration. **Notes:** p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.
OLS regression, with turnout rate as dependent variable. Standard errors in parenthesis.

Appendix 5

Figure A9: Prague, places with a high variety of essential services (in yellow) versus places characterised by the predominance of one typology (in blue). Light grey are areas with no essential services, dark grey indicates different combinations of essential services.

- High variety
- Low variety
- Average variety
- None of the targeted amenities

Figure A10: Berlin, places with a high variety of shopping amenities (in yellow) versus places characterised by the predominance of one typology (in blue). Light grey are areas with no shopping amenities, dark grey indicates different combinations of shopping amenities.

High variety
Low variety
Average variety
None of the targeted amenities

Big food shop
Clothing shop
Convenience s.
Goods shop
Grocery
Liquor shop
Market
Personal care s.
Shopping centre
Speciality food s.

0   0.2   0.4   0.6   0.8   1   0   0.2   0.4   0.6   0.8   1

High variety   Low variety

Figure A11: Bivariate local Moran's I on the distribution of elderly and groceries (top) and parks (bottom).

Population over 65 – Groceries

Not significant		3 178
High —— high		113
Low —— low		93
Low —— high		167
High —— low		83

Population over 65 – Parks

Not significant		3 026
High —— high		157
Low —— low		20
Low —— high		206
High —— low		225

Appendix 6

Data and methods (additional information)

The first part of the analysis started by extracting the data on strategies located in FUAs from STRAT-Board. The data recorded at strategy level were then aggregated at FUA level. Thereafter, a new database was created containing information on:

- The number and characteristics of strategies for each FUA (territorial delivery mechanism, thematic objectives, territorial focus and defining keywords);
- Information on the share of EU and non-EU migrants in FUAs.

The aim of this part of the work was to have a first descriptive examination of the relationships between the incidence of strategies across FUAs, and the presence of migrants. For example, we observed whether FUAs with more strategies also have a higher presence of migrants (EU and non-EU); or we considered if strategies had a thematic focus on migration or not.

The criteria to select case studies:

- Presence of at least one Sustainable Urban Development strategy with a territorial focus classified as Functional Urban Area;
- A share of migrants (EU and non-EU) that was at least equal to the national average;
- A geographical distribution of the case studies covering different regions of Europe.

The case studies provided a higher granularity of population and socioeconomic data and information for each FUA, also including data at municipal, neighbourhood or census tract level. In some cases, experts working on the case studies were also able to gather information on temporary migrants, such as seasonal workers, asylum seekers, and irregular migrants. This type of detail was not possible only relying on data available at the European level. This was also true for the information on urban and territorial strategies and, in particular, their governance and implementation. Therefore, a wealth of additional data and in-depth information came from the experts' analysis of documents in the local language and from interviews with policymakers and beneficiaries.

Figure A12: Implementation mechanism of strategies in each Functional Urban Area (FUA).

Source: Own elaboration.

Figure A13: The five selected case studies.

Source: Own elaboration.

Figure A14: Share of EU, non-EU and total migrants in the five case studies related to the average in their own countries.

Source: Own elaboration. **Note:** data for Sweden are updated at 2017, Liège, Paris and Venice at 2016 and Athens at 2011.

Appendix 7

Table A5: **National policies and** *lonely places* **typologies.**

Country	Italy	France	Poland	Portugal
Remoteness	✓			✓
Access to collective services (e.g., education)	✓	✓	✓	✓
Digital connectivity	✓			✓
Access to amenities (within urban/metropolitan areas)		✓	✓	

Source: Own elaboration.

The issues of remoteness and digital connectivity, discussed in chapters 2 and 4 respectively, are central in the policy schemes for inner areas in Italy and Portugal. Access to collective services (chapter 3) represents an important dimension in all policy experiences explored in this chapter; while access to amenities is relevant in the policies targeting urban areas implemented in France and Poland.

The criteria to select case studies:
- Cases belong to different geographical regions;
- Each case refers to a national policy framework which makes a connection with other government levels through a place-based approach;
- The national policy uses different sources of funds, including European Structural and Investment Funds (ESIFs);
- Cases are among the first ten Member States in terms of resources allocated to territorial integrated strategies funded by EU Cohesion Policy[117]. The national policy focus on different typologies of places (middle-sized cities, neighbourhoods in large cities, small towns, low-density areas) presenting different types of vulnerability.

Table A6: **Resource allocation by policy area.**

Local development initiatives					Collective services		
Cultural and environmental resources 20%	Territorial production systems 9%	Territorial protection and risk prevention 5%	SMEs 5%		Mobility 16%	Education 12%	Health and social services 11%
			Employment and inclusion 2%				
	Energy efficiency 6%	Local production 4%	Technical assistance 2%				Digital services 8%

Source: NUVV, 2020.

117 In 2014-2020 Poland has devoted nearly EUR 4 billion to the implementation of the different integrated territorial and urban strategies, with most of the resources directed to ITIs for Sustainable Urban Development. Portugal and Italy also show high levels of funding for territorial and urban strategies. With nearly 250 strategies in existence, France is the country with the highest number of integrated territorial and urban strategies, followed by Portugal (209) and Italy (190).

Table A7: Main characteristics of the policy experiences.

	Italy	France	Poland	Portugal
Type of territory	Inner areas affected by demographic, economic and social decline or disadvantage.	Neighbourhoods of main urban areas affected by economic and social disadvantage.	Medium-sized cities affected by industrial decline, demographic and functional decline.	Inner areas affected by demographic, economic and social decline.
Use of data and indicators for selecting the areas	Definition of inner areas based on one main criterion: distance from a 'service provision centre', which is identified as a municipality or group of contiguous municipalities able to provide: a full range of secondary education; at least, one grade emergency care hospital; and, at least, one medium-performance railway station.	Definition of priority areas based on two criteria: minimum number of inhabitants (10 000) and level of income (below 60% of the median income).	Definition of medium-sized cities based on seven criteria: change in registered population, population forecast until 2035, change in the number of unemployed, change in municipal budget own resources/ revenue, change in number of nights spent in the area's accommodation, changes in the number of registered companies and changes in the representation of the largest companies in the Poland 2000 List.	Definition of the interior areas based on a mix of demographic, socioeconomic and territorial criteria like population density, productivity rate, income, and purchasing power, together with diversity of economic activities, unemployment rate, size of urban centres, availability of institutional entities, networking, and citizens' participation.
Multi-level governance	Government actors of different levels involved. The Framework Agreement signed for each local strategy establishes roles, responsibilities, and financial commitment of each (national, regional and local) actor.	Government actors of different levels involved. The City Partnership Agreement establishes roles, responsibilities, and financial commitment of each (national, regional and local) actor. Principle of co-construction to also involve citizens.	Central and regional governments as main actors. The ITI approach introduced partnership working method.	Efforts to promote multi-level governance but the current approach is still rather top-down. Transfer of power and responsibilities to local authorities is ongoing.
Funding and delivery mechanisms	Framework Agreement combining national and EU funding. National resources used for the improvement of collective services and EU funds for local development interventions. Extensive use of Integrated territorial Investments (ITIs) and Leader-CLLD.	National mainstream funding complemented with other specific and EU funding. Large number of Sustainable Urban Development strategies implemented as urban Priority Axis of regional operational programmes, or as Integrated Territorial Investments.	Support provided by ESIFs national and regional operational programmes and the EEA/Norwegian grants. National funding sources are also used. ESIF programmes 2021-2027 support will be through ITIs.	No dedicated budget until the 2020 revision. Presently, there are dedicated measures directed to the target area, and with *ad-hoc* criteria. EU funds are largely used, high number of SUD; ITI and CLLD strategies.
Areas of intervention	Collective services: health, mobility, and education. Local development initiatives (SMEs support, natural and cultural heritage, energy, etc.).	Urban renewal, social inclusion, collective services and economic activities.	Business and enterprise support, energy, public transport, training, digital services.	Economic development, complemented by a broad range of measures for education, collective services, environmental protection and valorisation, and social inclusion.
Capacity building	Need to build strategic and administrative capacity at local level. Analytical and methodological support provided by the Inner Areas Technical Committee acting as competence centre.	The National Agency for Territorial Cohesion provides support for capacity building on strategic planning and the use of EU funds.	Need to build strategic and administrative capacity at local level to develop and implement project proposals.	High need to build strategic and administrative capacity at local level.

Source: Own elaboration.

Appendix 8

Table A8: Input data and ranking results by EU-27 countries (average values). Green-red colour scale identifies cold-hot values as good-worse situations. Yellow-blue colour scale represents cold-hot values as low-high influence on lonely condition of places.

EU-27*	Criteria identification number (Table 4)								Ranking results			
									Scenario A		Scenario B	
	1	2	3	4	5	6	7	8	SAW	TOPSIS	SAW	TOPSIS
SK									0.0382	0.0488	0.0302	0.0809
AT									0.0166	0.0232	0.0210	0.0672
BG									0.0200	0.0266	0.0485	0.0721
CY									0.0273	0.0384	0.0249	0.0913
CZ									0.0622	0.1020	0.0388	0.1330
DE									0.0260	0.0345	0.0259	0.0750
EE									0.0144	0.0161	0.0207	0.0514
EL									0.0335	0.0464	0.0397	0.1278
ES									0.0476	0.0527	0.0417	0.1052
FI									0.0297	0.0283	0.0289	0.0738
FR									0.0420	0.0496	0.0333	0.0944
HR									0.0163	0.0266	0.0308	0.0971
HU									0.0348	0.0421	0.0280	0.0852
IT									0.0280	0.0386	0.0294	0.0964
LV									0.0147	0.0123	0.0329	0.0780
PL									0.0157	0.0315	0.0235	0.0703
PT									0.0186	0.0354	0.0260	0.0861
RO									0.0213	0.0339	0.0274	0.0750

Cold values — Hot values

Cold values — Hot values

Source: Own elaboration. **Note1:** *Among the 27 countries assessed, only 18 countries had *lonely places*. **Note2:** The criteria are the following ones: 1. Distance to schools, 2. Digital connectivity, 3. Depopulation, 4. GDP (index), 5. Income (index), 6. GVA (index), 7. Employment (index), 8. Population change (ratio).

Figure A15: Scenario B, ranking *lonely places* at municipality level (criteria: depopulation, broadband connection, distance to primary schools, economic variables).

Figure A15 shows the ranked *lonely places* following Scenario B (longest distances to the school, lowest broadband speed and highest depopulation, lowest GDP, GVA, income and employment and highest negative population change).

The Pearson correlation matrix for **Scenario A and B** (Table A9) shows strong positive relationships between GDP, income, and broadband speed. Whereas school distance increase, all the other criteria (except employment and population change) decrease.

Therefore, one can notice that the distance to schools appears to be one of the core drivers for the identification of *lonely places.* Ranking results also show that the decrease of broadband speed, population, GDP and income results into an increase of the territorial loneliness (e.g. increase of TOPSIS values).

Scenario B shows a strong pattern characterised by the increase of school distance and the decrease of broadband speed, population, GDP, income and GVA. This pattern appears to be strongly correlated with increase of territorial loneliness arcoss all EU-18 countries[118].

Table A9: Input data and ranking results (based on average values) robustness check results. Yellow-blue colour scale identifies cold-hot values by means of negative-positive correlation respectively.

Criteria identification number (Table 4)	1	2	3	4	5	6	7	8	Scenario A SAW	Scenario A TOPSIS	Scenario B SAW
2	-0.466										
3	-0.256	-0.015									
4	-0.255	0.549	0.074								
5	-0.171	0.454	0.094	0.957							
6	-0.113	0.386	-0.001	0.906	0.947						
7	0.417	-0.355	-0.172	-0.051	0.022	0.280					
8	0.440	-0.442	-0.185	-0.516	-0.344	-0.124	0.713				
Scenario A SAW	0.823	-0.539	-0.659	-0.325	-0.255	-0.173	0.378	0.447			
Scenario A TOPSIS	0.608	-0.511	-0.826	-0.304	-0.249	-0.138	0.378	0.429	0.918		
Scenario B SAW	0.325	-0.103	-0.411	-0.187	-0.192	-0.421	-0.421	-0.272	0.479	0.396	
Scenario B TOPSIS	0.439	-0.444	-0.675	-0.707	-0.732	-0.692	0.000	0.272	0.727	0.778	0.555

Cold values   Hot values

Source: Own elaboration. Column showing correlation between TOPSIS and TOPSIS will display null values, therefore it has been dropped as scientific norm. **Note:** The criteria are the following ones: 1. Distance to schools, 2. Digital connectivity, 3. Depopulation, 4. GDP (index), 5. Income (index), 6. GVA (index), 7. Employment (index), 8. Population change (ratio).

118 Ranking results have significant agreement (0.555 > r < 0.918) between both methods (SAW and TOPSIS) and scenarios (A and B), with the only exception of scenario B-SAW with scenario A. This can be expected, as different scenario lead to different ranking results. Thus, results are consistent across both approaches.

Pearson correlation matrix for **Scenario C, D, E** (Table A10) shows very weak or no correlation amongst the selected criteria (broadband speed, variety of amenities, senior population, migrant population). However, ranking results have negative correlation with average speed and amenity variety within all ranking scenarios. Figures 44 also shows that ranking results have different spatial patterns and thus are conflicting. These results seem to suggest that different mitigation measures for *lonely places* shall be selected to mitigate and alleviate different features influencing the territorial disparities in the city[119].

Table A10: Input data and ranking results (based on absolute values) robustness check results. Yellow-blue color scale identifies cold-hot values by means of negative-positive correlation respectively.

Criteria identification number (Table 5)		1	2	3	4	Scenario C		Scenario D		Scenario E
						SAW	TOPSIS	SAW	TOPSIS	SAW
(wifi)	2	-0.228								
(amenities)	3	0.060	-0.319							
(elderly)	4	0.087	-0.080	0.121						
Scenario C	SAW	-0.470	0.152	-0.155	-0.773					
Scenario C	TOPSIS	-0.900	0.231	-0.101	-0.509	0.730				
Scenario D	SAW	-0.335	-0.052	0.417	-0.675	0.829	0.573			
Scenario D	TOPSIS	-0.337	-0.195	0.851	-0.244	0.296	0.398	0.736		
Scenario E	SAW	-0.436	0.639	-0.290	-0.668	0.854	0.657	0.619	0.116	
Scenario E	TOPSIS	-0.481	0.924	-0.334	-0.323	0.444	0.554	0.201	-0.026	0.820

Cold values   Hot values

Source: Own elaboration. Column showing correlation between TOPSIS and TOPSIS will display null values, therefore it has been dropped as scientific norm. **Note:** The criteria are the following ones: 1. Amenities variety, 2. Digital connectivity, 3. Immigrants, 4. Elderly Population.

119 Ranking results appear robust because they show significant agreement (0.730 > r < 0.820) between both methods (SAW and TOPSIS) within different scenarios: Scenario C, r=0.73; Scenario D, r= 0.74; Scenario E, r=0.82. One can notice also few disagreement between ranking scenarios (e.g. Scenario E and D r=−0.026), however, this can be expected because different ranking scenarios lead to different ranking results.

The European Commission's science and knowledge service

Joint Research Centre

JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.

EU Science Hub
joint-research-centre.ec.europa.eu

@EU_ScienceHub

EU Science Hub – Joint Research Centre

EU Science, Research and Innovation

EU Science Hub

EU Science

Publications Office
of the European Union