

Article

Digital Ageism: Emerging Challenges and Best Practices of Age-Friendly Digital Urban Governance

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Abstract

The ageing of urban populations poses serious challenges for policymakers and urban planners alike. While the number of people over 65 is increasing in urban areas, the digital transition in cities raises concerns about the persisting digital divide facing older citizens, as well as the digital inequality and ageism inherent to most digital domains. As ageing in place and place attachment play a significant role in the social engagement and well-being of older people, the purpose of this research is to shed light on the novel approaches taken by local governments to foster active participation among senior residents in the digital public sphere. Using semi-structured interviews with public officials from three age-friendly cities in Spain, we have explored innovative urban projects for digital inclusion, active ageing, and autonomy for older people. The findings of the study reveal the importance of coordinated multi-stakeholder initiatives in promoting digital literacy and overcoming barriers rooted in ageism in the digital world. True representation of older people in local governments, the promotion of co-creation initiatives led by seniors, and the standardisation of universal design and accessibility are some of the key contributions made by Spanish cities in their transition toward places that are digitally inclusive and age-friendly.

Keywords

age-friendly cities; digital ageism; digital divide; digital inclusion; digital inequality; older people; Spain

Issue

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1. Introduction

The number of people over the age of 65 is expected to grow until the year 2050, reaching one in six on a global scale and one in four in the Organisation for Economic Co-operation and Development (OECD, 2015; United Nations, 2022). Consequently, the ageing population will have a major influence on urban areas. Over 43% of all people aged 65 and over now live in cities, and the urban population is expected to increase to 6,7 billion people by 2050 (OECD, 2015; United Nations, 2018).

The impact of this demographic shift on the ability of cities to become places that are age-friendly and inclusive in the face of economic globalisation, budget cuts in public spending, austerity policies,

and privatisation of public services, is increasingly under scrutiny (Buffel & Phillipson, 2016; Galcanova & Sykorova, 2015; Llorente-Barroso, Anzanello-Carrascoza, & Ferreira, 2023). According to Phillipson and Grenier (2021), an especially negative impact on the lives of people over 65 has resulted from the trend toward urbanisation from the beginning of the 21st century, due to the fact that the main resources and benefits of living in the city have become unaffordable and out of reach for seniors. Age segregation and gentrification in urban communities, the invisibility of older people in the urban economy and city planning, the privatisation of public spaces, and vulnerability to climate change are clear evidence of a series of crucial barriers facing senior residents in urban areas (Buffel et al., 2013; Scharf et al., 2005).

Equally important is the growing digitisation of urban management (Baykurt & Raetzsch, 2020; Kandt & Batty, 2021), as cities prioritise online administrative procedures and services (Abella et al., 2017; Kitchin, 2016, 2019), and encourage citizens to use digital communication channels (de Luna & Kolotouchkina, 2020). Notwithstanding the continuous growth of social media in recent decades, as well as the increased ownership of smartphones and tablets by people over 65 (Casado-Muñoz et al., 2015; Faverio, 2022), coping with digitised cities and emerging digital lifestyles (Hatuka et al., 2021) is a frustrating experience for a significant number of older people (Friemel, 2016; Li & Alencar, 2022; Xiang et al., 2020). The exclusion of citizens over 65 from the placemaking dynamics of technological innovation and digital progress, primarily aimed at global elites and generations who are considered highly skilled digital natives (Kolotouchkina & Seisdedos, 2018; Najafi et al., 2022), is a critical issue for urban planners and policymakers.

The growing inequality in digital societies has been pointed out by Warf (2001, p. 6), who argues that “social categories of wealth, power, and place are inevitably reinscribed in cyberspace.” Similarly, Graham (2002, p. 37) emphasises that “urban societies become separated into the ‘on-line’ and the ‘off-line’ in complex tapestries of inclusion and exclusion,” thereby widening the social and technological divide. Furthermore, van Deursen et al. (2017) stress the importance of the intersectional assessment of digital and offline exclusion, as the internet magnifies existing offline inequalities.

While the important role of ICT in enhancing active ageing and the social engagement of older people has been acknowledged by scholars and practitioners alike (Llorente-Barroso et al., 2021, 2022), practices aimed at providing genuine digital inclusion of older people in digitised urban areas are scarce. Moreover, even though digital ageism is now receiving increased attention from researchers and policymakers (Choi et al., 2020; Fernández-Ardèvol & Grenier, 2022; Friemel, 2016; Najafi et al., 2022; World Health Organization, 2021), there has been limited research focusing on programmes aimed at digital training and mentoring among senior peers, which could become an effective springboard for their digital inclusion. As people over 75 are generally invisible in prominent research databases and statistics regarding the digital divide and digital literacy skills (Fernández-Ardèvol & Grenier, 2022), gaining new insights and evidence about this age group is of utmost importance for policymakers and researchers.

The purpose of this study is to shed light on the innovative approaches of local governments aimed at fostering the active engagement of older people in the digital realm. The local perspective as a context for digital participation and innovation is an especially relevant factor in this research, as the experience of ageing in place and place attachment of older people have a strong influence on their self-perception, self-esteem, and social engagement (Lewis & Buffel, 2020; Sun et al., 2020).

In the present study, we have posed two research questions. The first aims to explore the main factors underlying digital ageism in the urban environment. The second focuses on understanding how the digital inclusion of older people is being addressed by local governments, based on the programmes that are considered essential in tackling the digital divide and digital ageism in the local context.

We begin with a review of recent studies on the digital divide and digital ageism among the senior population and the emergence of an age-friendly model of urban governance. Next, research methods and materials are described. Afterwards, the findings of our research will be used to outline a series of innovative practices implemented by three Spanish cities aimed at fostering the digital inclusion and digital autonomy of their older residents. The article concludes by discussing the main pillars and remaining challenges of age-friendly digital urban governance.

2. The Digital Divide and Digital Ageism

The digital divide is defined as the gap that exists “between individuals advantaged by the Internet, and those individuals relatively disadvantaged by the Internet” (Rogers, 2001, p. 96). The conceptual evolution of the digital divide construct is underpinned by the impact of critical disparities in access and use of the internet, and by vulnerable groups of citizens who are unable to take advantage of its benefits due to their age, ethnicity, income, gender, education, ability, or place of residence (Kolotouchkina et al., 2022; Mihelj et al., 2019; Sylvia & Szydlik, 2005; van Deursen et al., 2017).

The initial gap between the “haves” and “have-nots” concerning internet access (Mervyn et al., 2014) was identified as the first level digital divide. As further attention was paid to the importance of digital skills and digital literacy (Hargittai et al., 2019; van Deursen & van Dijk, 2019), the concept of a second-level digital divide was developed. The different levels of digital skill needed for a person to fully engage in a digital experience were set forth by van Deursen et al. (2017). Such skills range from the basic ability to use the internet for navigating and searching for information, to more advanced social and creative skills linked to interactive experiences and communication, content development, and sharing in the online environment. Similarly, Chetty et al. (2017) identified a multidisciplinary framework of skills that underpin the digital literacy construct, ranging from basic information like literacy to computer, media, communication, and technological know-how that enable a set of technical, cognitive, and ethical outcomes for internet users. Moreover, understanding the specific benefits, as well as the offline effects of using ICT, in addition to their impact on the strength of digital capital and digital citizenship, are the prevailing topics of current research on the digital divide (Ragnedda, 2018; Ragnedda et al., 2020; Ribble, 2021; van Deursen et al., 2017).

Research on the digital inclusion of seniors has identified a series of negative factors that could predict a low level of engagement in the digital environment as well as deep-rooted digital vulnerabilities, invisibility, and discrimination (see Figure 1). For instance, while the negative influence of age on internet access and use has been reported in various studies (Ragnedda et al., 2020), Friemel (2016) found that each additional year beyond 65 decreases the likelihood of access by 8%. Furthermore, the complexity of internet use, the perception of personal security risk, the lack of digital literacy, technophobia, the feeling that online use is a waste of time, and the associated cost of access to technology are some of the critical factors related to a lack of interest in digital technology and distancing by older people (Friemel, 2016; Llorente-Barroso, Sánchez-Valle, & Viñarás-Abad, 2023; McDonough, 2016; Viñarás-Abad et al., 2022).

At the same time, the increasing complexity of using digital devices, as well as the growing variety of applications with frequently overlapping services, have become additional barriers for older people and have hindered their digital inclusion (Hänninen et al., 2021). Research by Mihelj et al. (2019) on digital engagement with museums and art galleries shows that online access replicates existing inequalities in offline participation, widening the gap between the “haves” and “have-nots” for older people. Li and Alencar (2022) have documented how advanced digital infrastructures in one smart city in Hainan, China have increased the digital divide for seniors by preventing their access to banking and healthcare services. The authors report that the Covid-19 restrictions were especially challenging for seniors in China.

A disregard for the digital needs, abilities, and interests of older people fosters their digital invisibility

and gives clear evidence of a new type of digital social stigma and discrimination. The ageism phenomenon, originally conceived by Butler (1969, p. 243) as “a personal revulsion to and distaste for growing old, disease, disability, and fear of powerlessness, ‘uselessness,’ and death,” has evolved into a more complex construct currently defined by the World Health Organization (2021, p. 2) as “the stereotypes, prejudices, and discrimination directed toward others or oneself based on age.” With the exponential growth of the digital domain, ageism has clearly been revealed as a form of digital discrimination and exclusion of older people.

Choi et al. (2020) report the coexistence of two types of ageism. While self-directed ageism is experienced by older people who identify themselves as digitally incompetent and vulnerable based on the mere fact of being old, other-directed ageism reveals prevailing social discrimination based on a negative perception and representation of old age. In this regard, the presence of a higher level of self-directed ageism was found among women, which is a predictor of lower rates of internet use among this gender, while internet use by middle-aged men was negatively affected by other-directed ageism (Choi et al., 2020). Moreover, research by Rosales and Fernández-Ardèvol (2020, pp. 1074–1075) has identified a series of perilous ageist practices on digital platforms, which fail to consider specific age-related needs and health conditions, leading to discrimination of older users. Specifically, these authors raise concerns about the homophilic, or self-centred ideas of developers and design teams, which are usually composed of younger people influenced by their own views, interests, and practices. Another of their concerns is the prevalence of corporate ageist values behind the development of algorithms that tend to duplicate

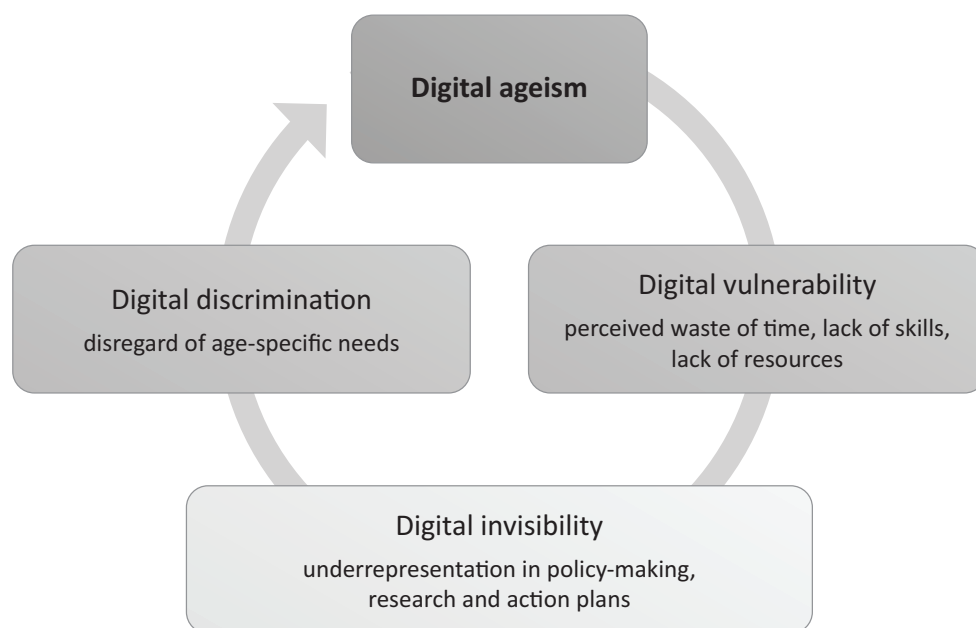


Figure 1. Digital ageism.

existing stereotypes within the content provided to their users. A review of the CAPTCHA security test highlights the neglect of physical, learning-focused, and cultural limitations that might be experienced by older people. Similarly, biometric security systems such as fingerprint or face recognition usually fail to consider physical limitations due to ageing or medical treatments (Rosales & Fernández-Ardèvol, 2020).

Older people are also underrepresented in research methods involving forecasts, analytics, and data gathering on digital platforms. While the prevailing assumption of the low importance of people over 75 for studies on digital access and use hinders their inclusion in research (Sourbati & Behrendt, 2021), in most studies, even the age of 65 was reported to be the age limit for inclusion in research samples (Viñarás-Abad et al., 2022). Fernández-Ardèvol and Grenier (2022) have pointed out the omission of people over 75 years of age from the most relevant EU datasets on digitisation.

On the other hand, among the factors that predict positive attitudes toward the internet and digital technology, thereby promoting the digital inclusion of older people, the personal and family network of seniors was found to be the most important (Friemel, 2016; Hänninen et al., 2021). In China, for example, research by Li and Alencar (2022) shows that adult children and grandchildren usually buy smartphones for senior family members, which enables their access to technology. Younger family members and peers are also more likely to help older people overcome increasing complexities and barriers to the digital world, providing support for buying, installing, and repairing devices, as well as downloading software and apps, managing security issues, and helping with the co-use of digital technology (Hänninen et al., 2021).

3. Age-Friendly Digital Cities

An increasing number of people in cities who are over the age of 65 need policymakers who can introduce efficient and sustainable adjustments, in order to overcome age-related barriers and to ensure the well-being of the ageing urban society. In 2010, the World Health Organization launched a Global Network for Age-friendly Cities and Communities intending to share, promote, and support the best practices of effective place management that focus on the ageing population. The network has over 1,440 cities and communities in 51 countries (World Health Organization, n.d.), which are committed to ensuring easy access to essential services for their older residents, such as healthcare, social services, public transport, and employment opportunities, as well as access to the physical environment, including affordable housing, outdoor spaces, etc., in addition to autonomous living and social engagement (OECD, 2015; World Health Organization, 2007). Among the key priorities in fostering age-friendly urban communities, Rémillard-Boilard et al. (2021) highlight the need to address ageism by chan-

ging the perceptions and attitudes of ageing to a more positive vision, encouraging engagement and collaboration with age-friendly initiatives from a wide range of partners, and taking into account the intergenerational diversity of older people as well.

Building age-friendly communities is an important yet difficult challenge for smart cities. Digital urban governance based on ICT platforms, the Internet of Things, as well as solutions involving the application of artificial intelligence for smart ambient systems and assisted-living environments, offers great potential for enhancing the quality of life of the ageing population and enabling them to carry out essential daily activities at home. Skouby et al. (2014) argue that social interaction, health and home care, personal safety, the provision of essential daily goods, and being able to complete household chores are the most important areas for which ICT can have an effective impact on the well-being, autonomous living, safety, and dignity of older people in smart cities. The use of portable devices, wearable smart clothes, home healthcare and accident sensors, emergency alarms, virtual personal assistants, home companion robots, as well as virtual rehabilitation and tele-care platforms are some of the latest personalised ICT solutions for addressing age-related conditions, while fostering independent living and reducing health-care costs (Skouby et al., 2014).

Moreover, the role of ICT in simplifying daily tasks and administrative procedures for older people (Viñarás-Abad et al., 2017), as well as the impact of ICT-mediated learning on reducing the unwanted loneliness and social isolation of seniors (Llorente-Barroso et al., 2021), are important factors to consider in digital urban environments. At the same time, the importance of actively engaging older people in the co-design of smart urban solutions in order to overcome ageist practices, and to foster agency as well, is being increasingly addressed by scholars (Ahmadpour et al., 2019; Borda & Pedell, 2021). Wolff et al. (2020) emphasise the impact of co-design and bottom-up approaches that consider citizens to be key stakeholders and active collaborators in the development of smart urban solutions and services.

Digital inclusion and accessibility are becoming increasingly important in smart city governance (Kolotouchkina et al., 2022). Micozzi and Yigitcanlar (2022) highlight the shifting focus of smart cities toward educating citizens in digital literacy, promoting their digital identity, and effectively integrating them into the decision-making process. Regular access to the internet, digital literacy, and social media skills are some of the critical factors that predict digital citizenship and full participation in society through online means (Mossberger et al., 2012). Therefore, digital and age-friendly urban governance can be defined as policymaking aimed at enabling active digital citizenship for older people, in order for their digital experience with the city and their local community to be accessible, inclusive, empowering, and positive.

In this regard, local governments still face many challenges in offering effective digital inclusion for their older residents. In addition to age-related conditions, such as limited hearing and sight, or memory loss, perceived learning difficulties and safety concerns are some of the main barriers hindering active engagement by seniors in the digital world. Furthermore, digital participation by this population in the public domain, as well as in decision-making, may be affected by a dual paradox: Since the elderly are generally excluded from the decision-making process due to their low level of technological skills, their own lack of self-confidence makes them even more reluctant and afraid to engage in active participation (Najafi et al., 2022).

While the experience of ageing in place and place attachment of older people have positive effects on their self-esteem, social engagement, and self-perception (Lewis & Buffel, 2020; Sun et al., 2020), identifying relevant initiatives of local governments aimed at the digital inclusion of senior residents is an important contribution to the development of cities that are age-friendly and digital.

4. Method

This exploratory and interpretive research is aimed at identifying emerging challenges and best practices of age-friendly and digital urban governance. In this article, we have used a case study and mixed qualitative methodology. The exploratory case study method is an empirical inquiry that focuses on the in-depth analysis of a contemporary phenomenon in a real-life context (Yin, 2009).

Spain is a country with one of the highest life expectancies in the world at more than 83 years, and nearly 20% of the population is 65 years old or older (Population Reference Bureau, n.d.; World Population Review, 2023). A total of 225 cities and towns in Spain are members of the Spanish Network of Age-Friendly Cities and Communities, whose aim is to foster active ageing and social engagement of its older people (IMSERSO, 2022). Furthermore, 93 Spanish cities with a population over 50,000, and 44 towns with a population under 50,000, are part of the Spanish Network of Smart Cities, which is committed to ICT-led urban innovation (RECI Smart Cities, n.d.). Spanish cities combine several important aspects in order to explore and assess how local governments pursue the digital inclusion and accessibility of seniors. For these reasons, three Spanish cities (Madrid, Toledo, and Bilbao) were included in our research sample in order to review and evaluate their experience as age-friendly cities committed to digital innovation.

Data was collected using a qualitative research methodology. The fieldwork was carried out from March to December 2022. Semi-structured interviews lasting an average of one hour were conducted online with public officials from the areas of digital accessibility, digital inclusion, and seniors, within the three city governments. Public officials were identified on the municipal web-

sites of the selected cities and contacted by email with a request for a personal online interview. The interviews were conducted and recorded in Spanish with the consent of the respondents. All interviews were then transcribed, checked for accuracy, and translated into English for analysis. Regarding research ethics, informed consent was given by the key interviewees (Miller & Boulton, 2007). Finally, a qualitative analysis was carried out in order to assess the key findings.

The personal interviews were conducted with the following people: the deputy director of seniors of the city of Madrid; the manager for citizen advice services, also of the city of Madrid; the director of seniors of the Castilla-La Mancha regional government; and the manager for quality and evaluation of the city of Bilbao. The main purpose of the interviews was to understand how the digital inclusion of older people is being addressed by local governments, as well as the areas considered crucial in tackling the digital divide and digital ageism in the local context. The interview included questions related to age-friendly policies implemented by each city, urban priorities in the field of digital inclusion and accessibility, the most noteworthy initiatives aimed at digital training of older people, and a review of the challenges that remain.

Furthermore, relevant data sources on innovative projects developed by the local governments were identified and analysed. The information on those sources was reported by informants, as well as gathered through desk research and academic literature.

For this study, we prioritised top-down projects envisioned and promoted by local governments, so that we could better understand the stance of policymakers in the context of age-friendly digital cities. Therefore, one of the limitations of our approach is that no older people were consulted for the data collection.

5. Age-Friendly Digital Urban Governance in Spain

5.1. Madrid

Madrid Action Plan 2021–2023, the goal of which is to become an age-friendly city, places special emphasis on the importance of bridging the digital divide and fostering the social inclusion of older people through better access to information and the use of ICT. The general directorate for seniors of the city of Madrid is pursuing a comprehensive policy of designing effective programmes, services, and tools aimed at promoting active ageing and supporting citizens over 65 years of age, in addition to fostering their social engagement (Madrid, n.d.).

Bridging the digital divide is the main purpose of a broad range of initiatives by the city of Madrid that focus on the promotion of digital literacy and the use of the internet as the foundation of autonomous and independent living, which include the following:

- Introduction of easy-to-use digital certificates for administrative procedures.
- Development of an app known as Madrid te acompaña (Madrid accompanies you) for Android and IOs in order to reduce the unwanted loneliness of older people.
- Creation of an online community for senior home care services users, as well as their families and caregivers.
- Improvement of advanced tele-care home services that emphasise the use of ICT for enhanced monitoring and emergency response.
- Pilot project for a telemedicine service aimed at assisting chronically ill seniors.
- Optimisation of the online platform known as Madrid te ayuda (Madrid helps you), which provides access to all relevant services and information for seniors.
- Guided online tours of museums in Madrid.

The city app known as Madrid te Acompaña has become an important tool for addressing the unwanted loneliness of older citizens. The purpose of the app is to connect citizen volunteers of the city of Madrid with older people who might need a person to accompany them in their daily chores, medical appointments, administrative formalities, or leisure activities. All citizen volunteers undergo specific training for accompanying older people. Of the 17,000 citizen volunteers in Madrid, over 400 have already finished their training (L. Adeva, interview, March 14, 2022).

A network of public libraries and 91 daycare centres for seniors in Madrid has also gained a prominent role within the age-friendly Madrid strategy as key promoters of ICT-mediated learning and access points for digital resources and tools. The 91 daycare centres have IT classrooms and facilities to teach digital literacy and internet skills. All courses are open to everyone and free of charge. As well as digital literacy training, the focus is on hands-on experience in gaining digital access and using tools that are increasingly necessary for online administrative procedures, such as digital IDs and digital certificates. Furthermore, in response to the growing complaints of older people about the closure of bank branches and the shift of banking transactions to the online world, courses in online banking and management of financial products have recently been introduced (L. Adeva, interview, March 14, 2022). The network of Citizen Service Offices of the city of Madrid is another important programme that enables seniors to participate in the digital realm, especially due to this office providing in-person and tailored advice and training for seniors in order to assist them in their digital administrative tasks (R. M. Rodríguez, interview, March 7, 2022).

The tele-care service in Madrid has over 115,000 users, while the home-care service has more than 30,000. Both services rely on digital tools to foster senior digital engagement and communication through

video calls, online group entertainment, and educational activities.

Taking a participatory approach, as well as bottom-up initiatives, are also emphasised in Madrid. The Board of Seniors is a forum for discussion and advice on all relevant issues related to older people. The Board represents all the main associations and institutions of seniors in Madrid. In fact, one of the workgroups most recently created by this Board is specifically aimed at addressing the digital divide of seniors (L. Adeva, interview, March 14, 2022).

5.2. Bilbao

The *Strategy for Universal Accessibility of Euskadi* sets out the governing principles for the effective access of all citizens to public services, information, and administrative procedures (ISEK, 2020). One of the main goals of this strategy is to bridge the digital divide of senior citizens, who represent 23% of the population. Universal access to public administration and public spaces is essential in order for seniors to enjoy active ageing and a good quality of life in the city (C. Martínez, interview, March 23, 2022). Furthermore, self-determination and autonomy, as well as engagement in the co-creation of policy-making and inclusive governance are among the fundamental principles of the *Basque Country Strategy for Seniors 2021–2024* (Del Barrio et al., 2023).

The main priorities of this initiative are the following:

- Free access to public wi-fi throughout the city, including in the main recreational facilities and the most popular public spaces, and in outlying neighbourhoods, which have the largest digital divide.
- Standardisation of e-government processes.
- Effective implementation of the Bilbao Smart City Strategy.

Both the design, as well as access to the digital content on the municipal online platform, comply with the Web Content Accessibility Guidelines 2.0, outlined by the World Wide Web Consortium (World Wide Web Consortium, n.d.). The digital platform known as Mayores de Bilbao (Bilbao seniors), launched by the city hall, offers information on local associations and work groups of older people in eight neighbourhoods of the city. It also provides information on leisure and entertainment activities, as well as relevant news about services and personal assistance in emergency situations (Mayores de Bilbao, n.d.).

The network of KZungea public training centres in Bilbao is the main facility for the implementation of digital literacy and digital accessibility courses for seniors. The courses range from the most basic digital skills to training in communication and management competence on social networks, as well as the use of apps and more advanced digital tools for self-employment, healthcare, personal security, leisure, and entertainment.

Courses are free of charge and available both in-person and online in order to enable universal access depending on the personal circumstances of each user.

The focus on active ageing has also become a reality through the most recent initiative, ALTXOR. The aim of this project is to create a new online service and pilot network of offices for information, training, and support for people over 65 who are interested in launching a new individual or shared start-up business or social initiative. Access and training in digital technology, as well as promoting technology for well-being and home care, are some of the key goals of ALTXOR (Del Barrio et al., 2023).

Mentoring service for basic and advanced skills in digital literacy is also offered to seniors through a platform that focuses on digital friendliness, launched by the regional government of Bilbao. The platform offers both in-person and online topic-based workshops on the use of smartphones, access to the internet, email, WhatsApp, using digital maps, online access to medical appointments, YouTube, and digital security, among other subjects (Amigabilidad Digital, n.d.).

Furthermore, the City of Bilbao is an active supporter of the SECOT Bizkaia (Seniors para la Cooperación Técnica) local association of retired business executives, which offers mentoring and training in entrepreneurship, business management, fundraising, and networking for local start-ups, small and medium enterprises, and NGOs (SECOT Bizkaia, n.d.). Active ageing is one of the key principles of SECOT. In addition to mentoring projects, the association has a social platform called Jubilación Activa (Active Ageing), which offers a wide range of activities for people over 60. The activities are grouped into three topic areas: time for you, time for your loved ones, and time for other people. Self-care, health, education, leisure, entertainment, social networking, hobbies, volunteering, and open talks with guest speakers are some of the high-profile activities for seniors. The YouTube channel of the platform features open discussions. One of the most recent workshops hosted by SECOT in partnership with a local bank addressed the topic of the digital divide among older people and offered practical sessions on the use of apps, digital healthcare, online banking, online security, and social networking (Jubilación Activa, n.d.).

5.3. Toledo

The principle of active ageing underpins key strategic initiatives and projects undertaken in the capital of the autonomous region of Castilla-La Mancha. Fostering digital literacy and promoting an inspirational digital experience for the independent and autonomous living of older people are the pillars of the local action plan. The network of local daycare centres for seniors and NGOs are the key players in the process of training, skills development, and social networking of older citizens in Toledo. Their role in enhancing the quality of life of people over 65 through promoting active and

independent living, as well as mitigating social exclusion and unwanted loneliness, is especially noteworthy (A. Rodríguez, interview, December 13, 2022).

Enabling digital literacy and fostering access to the internet and communication technology for seniors in Toledo is one of the main goals of the city. Los Mayores Forman la Red (Seniors comprise the web) is the title of the digital training initiative launched by daycare centres for seniors. Courses are taught both in-person and online and are free of charge. Topics include creating a Gmail account, making video calls with WhatsApp and Zoom, and information about essential resources for smartphones and electronic administration (Inciso, n.d.).

In a similar vein, since 2016 the regional government of Castilla-La Mancha has been conducting a training programme known as CapacitaTIC55, which specifically targets younger seniors who are 55 and over. Their main goals are bridging the digital divide and fostering inclusion through the promotion of digital literacy, the use of computers and smartphones, and digital networking and communication. Moreover, both the in-person and online courses are free of charge. In addition to training in the most basic digital skills, there are topic-based workshops related to digital ID, online banking, electronic administration, and advice on entrepreneurship and job counselling. Over 8,000 citizens have been trained since the launch of the programme (CapacitaTIC55, n.d.).

The use of digital platforms for social engagement and active participation of older citizens is another key initiative in Toledo. During the Covid-19 lockdown, daycare centres for seniors launched the Move at Home initiative for the purpose of engaging older people in activities involving sports and entertainment, such as yoga, fitness, reading clubs, English, music, dance, and arts and crafts through an extensive range of tutorials uploaded to the YouTube channel of each centre. Although in-person activities are preferred by this age group, the digital experience is becoming increasingly common.

In addition, tele-care is a free 24-hour service in Toledo for residents over the age of 70, aimed at providing personal assistance and emergency response through landline telephones, smartphones, and other digital devices. Social isolation, welfare checks, domestic accidents, and a lack of activity are monitored and addressed through the service. The push-button alarm attached to a necklace or wristband can be activated by users in any domestic emergency, or to request specific information or clarify any possible doubts.

6. Conclusions and Discussion

The ageing of urban populations poses serious challenges for policymakers and urban planners alike. While the number of people in cities over the age of 65 is increasing, the digital transition in urban areas is raising concerns about the persistent digital divide facing older citizens, as well as the digital inequality and ageism inherent to most digital experiences (Friemel, 2016; Li

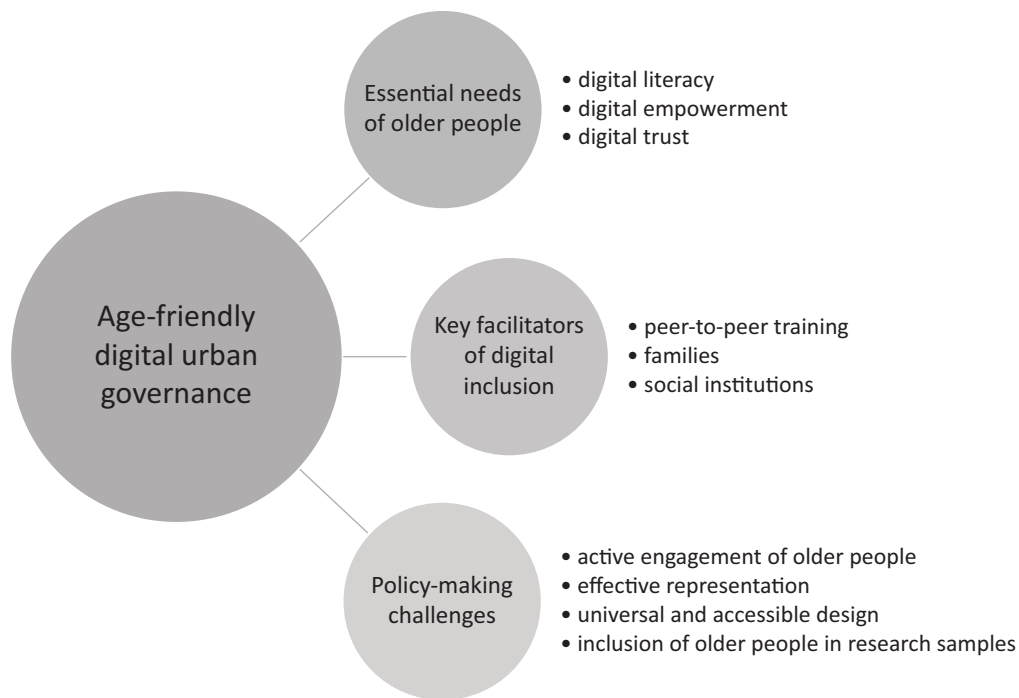


Figure 2. Age-friendly digital urban governance.

& Alencar, 2022; McDonough, 2016). Lack of access to the internet, low digital literacy, self-perceived incompetence, and the feeling that online use is a waste of time are factors that have led to digital vulnerability among older citizens. At the same time, the digital invisibility and exclusion of seniors are reinforced by the negative perception of old age, the omission of senior populations from research, and the disregard for specific age-related needs and health conditions that prevent full digital engagement (Choi et al., 2020; Rosales & Fernández-Ardèvol, 2020; Sourbati & Behrendt, 2021). Digital ageism is a new type of social exclusion of older people that is underpinned by their digital vulnerability, invisibility, and discrimination in the digital realm.

In the existing literature on the digital divide and digital ageism, local initiatives aimed at actively training seniors in digital skills and digital inclusion have received little attention. As the experience of ageing in place and place attachment have a positive impact on the personal well-being and self-perception of older people (Lewis & Buffel, 2020; Sun et al., 2020), the identification of innovative practices and initiatives implemented by age-friendly digital cities provides insight into the scope of effective tools and facilitators that promote the digital inclusion of seniors.

A review of the experience of three age-friendly cities in Spain, which have focused on digital innovation in urban governance, shows a commitment by public administration toward fostering digital literacy, creating a positive digital experience that is universal, and engendering trust in the internet by older citizens. This is in line with previous research on the priority of smart cities to enhance digital citizenship and foster active engage-

ment in the online society (Micozzi & Yigitcanlar, 2022; Mossberger et al., 2012). In terms of the format of local initiatives, in-person and online training courses that are free of charge and aimed at helping seniors develop practical digital skills were found to be the most popular in all three cities. The combination of training to carry out useful administrative tasks, access to cultural and entertainment activities, and the focus on an active lifestyle and social networking skills were identified as the key strengths of the initiatives reviewed.

Furthermore, the network of daycare centres for seniors, public libraries, and non-profit organisations led by older people was reported to be the main facilitators of digital empowerment, as well as knowledge spillover at the local level. Being physically close to such places, as well as the overall age-friendly approach of these institutions and facilities has played a major role in making them key players in the digital transition at the local level. This finding is consistent with research carried out by Hänninen et al. (2021) on the essential role of warm experts as mediators and enablers of a positive digital experience for older people.

Our analysis suggests that building digitally-inclusive and age-friendly cities requires a consistent commitment in order to ensure the digital inclusion and digital rights of older people in urban areas. A thorough understanding of the digital needs of older people, in addition to the barriers and discrimination they face in the digital realm, is the key to developing a comprehensive digital inclusion strategy. Moreover, to overcome barriers rooted in ageist practices in the digital world, a coordinated multi-stakeholder approach has proven effective in all the cities analysed (see Figure 2).

Finally, a sustained commitment by policymakers to raising awareness of the widening digital divide and discriminatory ageism is essential for ensuring that older citizens are not left behind in the new digital urban age. The true representation of older people in local governments through discussion and advisory councils, the promotion of co-creation and participatory initiatives led by older people, and the standardisation of universal design and accessibility, are some of the key contributions made by the Spanish cities in their transition to becoming places that are digitally inclusive and age-friendly.

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Conflict of Interests

The author declares no conflict of interests.

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