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Older People and Digital Technologies: Regulatory, Social and Institutional Profiles*

LAS PERSONAS MAYORES Y LAS TECNOLOGÍAS DIGITALES: PERFILES REGULADORES, SOCIALES E INSTITUCIONALES

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ABSTRACT

This article aims to analyse the relationship between older people and digital technologies starting from a perspective that questions the Italian socio-legal context and arguing that systemic ageism produces a "grey digital divide" that is cultural and symbolic as well as technical. It surveys regulatory developments and shows a gap between legal accessibility norms and operational practice.

KEYWORDS

Grey digital divide
Ageism
Digital accessibility

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Firstly, it benefited from the activities promoted by CRID – Centro di Ricerca Interdipartimentale su Discriminazioni e vulnerabilità at the University of Modena and Reggio Emilia, and specifically by Officina DET – Diritto Etica Tecnologia, which operates within it, together with Auser – Association for Active Ageing ODV Modena and SPI-CGIL Modena, with reference to a Protocol signed between these entities in May 2025, concerning the conduct of research and dissemination activities on the needs of the elderly population in the province of Modena, in particular on "emerging" needs, one of the most pressing of which concerns the relationship with new digital technologies.

Secondly, especially with regard to the second part, it was able to draw on some key passages from a long interview with Thomas Casadei conducted on 28 May 2025 on the initiative of the Instituto Gregorio Peces-Barba, Carlos III University of Madrid, as part of a research project on digital rights, which includes a specific section dedicated to the digital divide, particularly in relation to people with disabilities, the elderly and vulnerable groups. In this regard, we would like to thank Claudia Aniballi, Francisco Javier Ansuátegui Roig, Maria Del Mar Rojas Buendia and Italo Giancarlo Alvarez Lozano.

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Social and infrastructural barriers – technostress, credential management, poor usability and territorial disparities – reduce older people's access to services. The authors advocate practices of co-design, intergenerational training, assisted digital access and the coexistence of analogue channels. Institutional reforms recommended include binding usability standards, monitoring and sanctions, public funding for lifelong digital literacy and local help desks. While AI offers inclusion opportunities (voice assistants, telemedicine), it may entrench bias if older people are underrepresented in datasets. The article calls for integrated legislative, educational and infrastructural policies to ensure an equitable, rights-based digital transition.

PALABRAS CLAVE

Brecha digital gris
Discriminación por edad
Accesibilidad digital

RESUMEN

Este artículo tiene como objetivo analizar la relación entre las personas mayores y las tecnologías digitales partiendo de una perspectiva que cuestiona el contexto sociojurídico italiano y argumentando que el edadismo sistémico produce una «brecha digital gris» que es tanto cultural y simbólica como técnica. Examina la evolución normativa y muestra una brecha entre las normas legales de accesibilidad y la práctica operativa. Las barreras sociales y de infraestructura —el estrés tecnológico, la gestión de credenciales, la escasa usabilidad y las disparidades territoriales— reducen el acceso de las personas mayores a los servicios. Los autores abogan por prácticas de codiseño, formación intergeneracional, acceso digital asistido y la coexistencia de canales analógicos. Entre las reformas institucionales recomendadas se incluyen normas vinculantes de usabilidad, supervisión y sanciones, financiación pública para la alfabetización digital permanente y servicios de asistencia locales. Si bien la inteligencia artificial ofrece oportunidades de inclusión (asistentes de voz, telemedicina), puede afianzar los prejuicios si las personas mayores están infrarrepresentadas en los conjuntos de datos. El artículo aboga por políticas legislativas, educativas y de infraestructura integradas para garantizar una transición digital equitativa y basada en los derechos.

1. Digitalisation and the Needs of Older People: Ageism and the *Grey Digital Divide*

This contribution aims to develop some considerations regarding the relationship between older people[1] and new digital technologies within the framework of a broader

1. The term "older people" refers – in line with established practice in national and international demographic analyses – to people aged 65 and over, with the understanding that the paths, experiences and characteristics that socially construct old age cannot be limited to personal data, but are established over time and are deeply influenced by personal and existential situations, health conditions, and social and economic characteristics. See on this point: Cascione (2024).

As has been observed: «Il dato aritmetico dell'età dopotutto dice poco della persona. Nonostante possa fare comodo al diritto, per la certezza che può conferire alle fattispecie, presenta tutti i limiti propri del ragionamento sul soggetto in astratto, fallendo nel rappresentare il singolo, che è un soggetto in concreto. La relazione fra individuo e corpo può connotarsi per il divario fra età anagrafica ed età biologica, costituendo un aspetto esistenziale della persona fisica. La mancanza della categoria della persona anziana non va comunque intesa come un vuoto normativo da colmare. Introdurre una generale nozione giuridica di anziano, da cui far dipendere l'acquisto di diritti o l'acquisizione

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reflection that questions the social sciences and institutional knowledge in the face of complex *digitalisation* scenarios that have affected (and are affecting) all aspects of existence (Pistor, 2020)[2].

More specifically, the examination focuses on all those services, tools and infrastructures which, although fundamental in everyone's life, are affected by designs that often do not take into account the specific needs and *requirements* of older people[3].

This issue cannot be addressed without adopting the approaches developed in various disciplines: social sciences, law, philosophy and computer science, in order to understand the regulations and practices that determine the so-called *grey digital divide* (Millward, 2003)[4].

The starting point for this approach will be the most recent studies and research in the fields of legal philosophy and sociology with reference to older people[5], and the increasingly frequent materials that look at the relationship between old age and new technologies (Peine *et al.*, 2021).

In order to pursue these objectives, the arguments contained in this work start from the social and legal framework of the Italian national context, simultaneously compared with other European countries and with the broader *Western world*.

More strictly philosophical and socio-anthropological reflections on the meaning of ageing have highlighted how this stage of life is culturally constructed, made by intertwining forms of biological decline, social representations of (im)productivity and attributions of value to one's social role (Llorca Albareda, 2024).

At the same time, medical, psychological and legal-philosophical literature has recognised a particular form of discrimination known as *ageism*[6], which transcends the individual sphere and constitutes a structural problem capable of compromising the quality of life of older people through (often invisible) prejudices, stereotypes and institutional barriers (Trabucchi, 2025).

This form of discrimination, which is therefore characterised by its systemic scope, is reflected in that particular form of digital divide known as the *grey digital divide*, which should be understood and interpreted – like other digital divides (e.g. the gender

di doveri, significherebbe tracciare una linea di confine teorica, un'area in cui includere o da cui escludere i singoli, con il rischio di discriminare» (Corso, 2024a: 1253-1254).

2. On this topic one cannot ignore the work of Kirchschläger (2021). For a specific and very accurate discussion regarding elderly people, see Corso (2024a). See also Aroldi (2018).

3. For an overview, see: Ciccone (2018); Perciballi (2020); Cappellato *et al.* (2021); Velo Dalbrenta (2022); Cascione (2022).

4. The expression, as is well known, is the result of a collective effort in the field of social sciences and public policies and was developed in the early 2000s to describe the specificities of the digital divide in the elderly population. Its initial conceptualisation is attributed to Millward (2003). See also Morente Parra (2024).

In broader terms, for an initial discussion on *digital divides*, see Sartori (2006). On the same topic, among others, Vantin (2024); Casadei (2024a); Peacock (2019). Van Dijk (2020).

On the various forms of discrimination in digital spaces, see Bello (2023).

5. On this subject, see the fundamental survey conducted in the aforementioned work by Velo Dalbrenta (2022). See also Bernardini (2023); Pariotti (2024).

On the relationship between older people and human rights, see also: Barranco Avilés (2020); Barranco Avilés & Vicente Echevarría (2022).

6. For a more strictly legal-philosophical perspective, see Bombelli (2022).

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divide[7]) – not only as a mere *lack of tools* (i.e. economic and social access to devices), but also as a *lack of skills in using and navigating the internet;* in other words, the latter is to be understood as the result of inequalities that are not only technical (related to the ability to use devices), but especially cultural, social and even symbolic (Sánchez Valle & Llorente Barroso, 2024).

It is this mechanism (hindering access to certain spaces or the enjoyment of certain rights) that requires – according to some scholars – digital infrastructures to be viewed not only as networks and technical environments, but as culturally connoted devices capable of shaping political agendas and institutional policies, as well as determining forms of exclusion for specific social groups[8].

Here, the focus of attention, to be observed and taken into particular consideration, is the elderly population. Phenomena such as *technostress* become a central issue: they derive from the speed of evolution and change in ICT (*Information and Communication Technologies*), the management of credentials and passwords, understanding interfaces and maintaining significant levels of cybersecurity[9], leading to a definition of how digital infrastructures can accentuate forms of exclusion from social life and from the enjoyment of rights and services that are essential for the individual (*primarily* social and health services), i.e. the access to information, or the management of one's own economic resources and administrative procedures (which are some of the main aspects that generates *technostress*, as recently theorised by Robinson *et al.*, 2020).

2. Regulatory Profiles: Towards a Positive Evolution?

This is where European and national regulations on digital accessibility come into play, starting with EU Directive 2016/2102[10] and the italian Digital Administration Code (Legislative Decree 82/2005)[11], which both represent essential starting points in the reconstruction of a legal framework where accessibility to services – as provided for in the regulations – may be effectively disregarded in the operational practices of public administrations, but also, as will be seen, by private actors such as banks and other providers of services that are indispensable in the lives of citizens (specifically, one can also think of private entities under public control such as the Italian Post Offices).

7. See, most recently, Casadei (2024b).
8. Exponents of this interpretation include, among others, Couldry & Hepp (2016).
9. About the notion of *cybersecurity*: Barker (2024); Brighi (2024a); Ead. (2024b); Brighi & Chiara (2021); Chiara & Brighi (2024); D'Angelo & Giacomello (2023); Chiara (2025); Pietropaoli (2025).
10. Directive 2016/2102 of the European Parliament and of the Council, adopted on 26 October 2016, regulates the accessibility of websites and mobile applications of public institutions, in order to ensure the digital inclusion of persons with disabilities. It establishes obligations for administrations regarding compliance with technical standards, the publication of an accessibility statement, the activation of feedback mechanisms and monitoring systems by Member States. It is part of the broader European strategy for the implementation of the 2006 UN Convention on the Rights of Persons with Disabilities.
11. Legislative Decree 82/2005 regulates the use of information and communication technologies in Italian public administrations, with the aim of ensuring effectiveness, transparency, participation and accessibility, recognising citizens' right to use digital technologies in their dealings with public administrations, promoting forms of inclusion deriving from access to services and documents in digital spaces.

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The services provided by these entities – from the accreditation of old-age pensions to access and renewal of documents, the management of domestic utilities, taxes and healthcare services – are now more difficult to access due to the progressive and increasingly pervasive digitalisation of the public sector (Perri, 2023), in which the catalytic role played by the Covid-19 pandemic cannot be understated[12].

According to a significant part of scientific literature, the role of policy makers and national and supranational legislation on digital accessibility should be considered decisive: the above-mentioned measures provided for in EU Directive 2016/2012 (and in the implementing legislative decree: 106/2018), and the provisions found in the Digital Administration Code (Legislative Decree 82/2005) represent an essential reference framework.

EU Directive 2016/2102 establishes common requirements for the accessibility of public sector bodies' websites and mobile applications, ensuring their use by people with disabilities (Article 1). The fact that this legislation refers, in effect, to persons with disabilities is a fundamental feature: it must always be borne in mind that longer life expectancy and the various forms of physical and cognitive decline that many people experience as they reach an advanced age are factors that make the living conditions of older persons and persons with disabilities contiguous, if not partially overlapping. The Directive, starting from a perspective that refers to the latter, therefore contains tools and guidelines that are, in fact, also applicable to many older people.

This same Directive requires the adoption of harmonised technical standards (Article 6), the publication of an accessibility statement (Article 7), and the implementation of user *feedback* mechanisms (Article 7.2). Member States are thus required to establish monitoring and sanctioning systems (Articles 8-9) and to report periodically to the Commission (Article 10). Legislative Decree 106/2018, transposing the Directive, entrusts AGID (the Agency for Digital Italy) with the aforementioned tasks of supervision, monitoring and technical support.

As is often the case with measures regulating technological infrastructure[13], these same duties have been reduced to *compliance* obligations that rarely aim to improve the usability of services (Westwood & Knauer, 2024). There is certainly a temptation, as some commentators point out (e.g. Borghi & Brownsword, 2023), to make extensive use of *nudging* mechanisms and other forms of legal paternalism which, by manipulating information, can undermine the decision-making autonomy of older people and, in the worst cases, violate their fundamental rights[14].

Furthermore, we cannot ignore those perspectives that explore the concrete application of the above-mentioned regulations in the various branches of public administration and services *tout court*. The AGID guidelines – although formally acts of

12. On this point: Llano Alonso (2020a); Id. (2020b); Lorubbio (2020). In broader terms, see Porro & Faloni (2021).

13. For a comprehensive discussion of the topic, which does not shy away from suggesting some viable solutions, see Oliveri (2025).

14. On the other hand, the need has been raised for a law tailored to the needs of elderly people who, precisely because of their age, find themselves in fragile conditions caused by illnesses, physical and cognitive declines, frequent loneliness and often uncertain economic situations. This evokes the image of a *gentle* law: Fusaro & Piccinni (2024).

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soft law – have established standards for cybersecurity and interoperability, and these have been implemented, among others, by the Italian platform PagoPA, which is now an indispensable (or, at the very least, extremely useful) tool for the payment of all services, including healthcare and tax services.

It is precisely in these areas that concrete forms of "technological" (or "digital") ageism are reported, detected in designs and interfaces that do not take into account the difficulties and frailties of older people (Neves & Vetere, 2019)[15]: the problem is exacerbated by the fact that many of the services now accessible only in digital form (booking, for example, an appointment at the Italian Post Office) are subject to the acquisition and subsequent use of a digital identity: the SPID (Public Digital Identity System), consisting of a *provider and* an authentication system[16].

The role of technology is, on the other hand, ambivalent: new risks to individuals and their rights are accompanied by new opportunities, thanks to which people can live longer, seeking solutions to the issues posed by ageing. As has been rightly pointed out, «[i]l ricorso alle nuove tecnologie è peraltro il frutto di una scelta che insieme persegue l'obiettivo della sostenibilità, nel vicendevole e virtuoso scambio fra transizione digitale e transizione ecologica. Dalle attività quotidiane, semplici o complesse, come la pianificazione patrimoniale o successoria, fino a quelle richieste per i bisogni più articolati legati alla salute, l'innovazione della tecnica può rispondere alle esigenze dell'età avanzata» (Corso, 2024a: 1524)[17].

A particularly critical vulnerability must be added to those already mentioned: older people represent a privileged target for online fraud, phishing, and other forms of digital deception.

In the Italian context, according to the data of the National Association of Artisans and Pensioners (ANAP), approximately one in four scams against older people (26% of the total) occurs through telephone and online services, while according to law enforcement statistics, the majority of identity thefts in the context of computer fraud occur through smishing techniques (64% of cases) and vishing (19%). In 2022, over 12.600 elderly people were victims of online fraud in Italy, representing 12.7% of total victims of cybercrimes, with a constantly growing trend that saw a 15% increase in

15. "Digital ageism" can be defined as a form of discrimination that operates in the world of information technology – including, *latu sensu*, artificial intelligence – excluding older people not only as users, but also in the design and representation of the technology itself.

16. This is clearly a complex system, and this aspect translates into a major critical issue given the ubiquity of the SPID system for frequent interactions with public administrations and other services: see Bischetti (2025). On the specific issue of SPID, see, for an initial overview, Amenta, Lazzorini, & Abba (2015).

17. A specific reference in this regard is Legislative Decree 29/2024, which gives special consideration to telemedicine as a resource for the elderly, mentioning it in the opening of Article 1 as one of the means for achieving the objectives of supporting the elderly population. The provisions laid down in this regard, in accordance with the principles and guidelines outlined in Law 33/2023, also relate to the provisions of the PNRR, with a view to promoting and developing digital healthcare. Telemedicine, which is an essential element of health technology, is part of the broader process of digitalisation, implying the digital literacy of the population and enhancing the potential of public administration, including for the proper management of data (Corso, 2024a: 1258).

On these aspects: Irti (2023); Corso (2024b). More specifically, on the subject of telemedicine, see Fioriglio (2020). Also, with regards to the topic of *informed consent*, see Scola (2022).

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online fraud in 2024 compared to the previous year, with stolen sums rising from 137 to 181 million euros.

The reasons for this increased vulnerability could be understood on two levels: on the one hand, older people tend to have less experience in navigating digital environments, while often having greater financial availability. On the other hand, age-related cognitive changes, particularly the decline in working memory and executive functions, can compromise the ability to recognize signs of deception and critically evaluate the legitimacy of digital communications (Pehlivanoglu *et al.*, 2024; James *et al.*, 2014).

Frequent scenarios of social isolation have increased dependence on online platforms and has made older people with lower digital literacy even more exposed to fraudulent emails, deceptive phone calls, and romance scams (Ebner & Pehlivanoglu, 2024; DeLiema, 2018).

From a regulatory perspective, Italy has transposed Directive 2000/31/EC through Legislative Decree No. 70/2003, which regulates the legal aspects of information society services, with particular attention to electronic commerce[18]. The European framework is further strengthened by the General Data Protection Regulation (GDPR, EU Regulation 2016/679), which requires companies to protect personal data and adopt adequate security measures to prevent data breaches[19], and by the NIS2 Directive (EU Directive 2022/2555), which establishes more stringent cybersecurity requirements for operators of essential services.

At the national level, the Italian Criminal Code sanctions online fraud conduct (Article 640-ter of the Criminal Code), unauthorized access to computer systems (Article 615-ter of the Criminal Code), and computer fraud (Article 640-ter of the Criminal Code)[20], while the Postal Police represents the specialized department in the prevention and fight against computer crimes.

Also significant is the recent Memorandum of Understanding between the Italian Data Protection Authority and the Italian Competition and Market Authority, signed in summer 2025[21], which provides for structured and systematic cooperation between the two authorities to combat online fraud and unfair commercial practices based on the abuse of personal data, with particular attention to psychological and algorithmic manipulation techniques.

However, despite this articulated regulatory framework, significant critical issues remain in the concrete application of their provisions. The difficulty in reporting fraud, often caused by a sense of humiliation, increases the risk of social exclusion and makes the phenomenon difficult to adequately measure.

18. Legislative Decree of 9 April 2003, No. 70, "Implementation of Directive 2000/31/EC relating to certain legal aspects of information society services in the internal market, with particular reference to electronic commerce".

19. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.

20. For a complete examination of the Italian criminal regulatory framework regarding computer crimes, see Pietropaoli (2025).

21. The Memorandum can be read in its entirety at the following link: https://privacygdpr.it/wp-content/uploads/Protocollo-dintesa-tra-GPDP-e-AGCM-luglio-2025.pdf.

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The risks associated with digital fraud are further compounded by the emergence of artificial intelligence-based deception techniques, particularly deepfakes and voice cloning, which can be used to impersonate trusted figures such as family members, doctors, or institutional representatives. In recognition of these evolving threats, Italy has recently introduced specific criminal provisions: Law No. 132 of 23 September 2025, Article 26, establishes a new specific offense for the non-consensual dissemination of content falsified through artificial intelligence[22].

The Italian legislative response can be considered as an ulterior step coherent with the broader European framework on AI: the so-called AI Act.

The Regulation on artificial intelligence, EU Reg. No. 1689/2024, known as the AI Act[23], focuses on the relation between AI, age, and forms of discrimination, in various articles and recitals: it seeks to «tracciare un insieme di norme che tiene conto della vulnerabilità di singoli e di gruppi di soggetti, per varie condizioni, incluse quelle legate all'età. Nel concepire la vulnerabilità come parte ideale della normativa, il legislatore interviene per garantire tutela alla persona. Tenendo conto che ciò avviene nella normazione del fenomeno tecnologico e con riguardo specifico anche all'età avanzata, si coglie l'importanza strategica del diritto, che nella tecnologia vede soluzioni per l'anziano e al contempo provvede alla difesa dell'anziano dalla tecnologia o meglio dai suoi rischi» (Corso, 2024a: 1255).

What seems to be developing is a positive evolution in terms of legislation, but – as will be seen below – there are still many issues to be resolved, both on a social and a purely institutional level.

3. Social Profiles: the Issue of Participation

While on the one hand there is a service sector that is increasingly linked to digital technologies, on the other hand we are faced with a situation – that of older people – characterised by various forms and situations of vulnerability (to the extent that advanced age can be considered, by a significant part of the literature, a specific form of *vulnerability*: Bernardini, 2023)[24], and, in particular, by a marked difficulty in learning how to use telematic and automated devices and procedures.

It is therefore highly appropriate to investigate and understand the reasons – social, cultural, technical, economic, psychological – underlying this problematic relationship with, if not outright rejection of the digital dimension[25].

One approach that can be shared in building responses to this digital divide is the idea of *co-designing* in the field of *socio-gerontechnology* (Peine *et al.*, 2021): this perspective argues that the effectiveness of digital solutions for older people

22. Law of 23 September 2025, n. 132, art. 26, "Provisions on the unlawful dissemination of content generated or manipulated using artificial intelligence".

23. In a rapidly expanding literature, we note the analysis offered in Presno Linera & Meuwese (2025). For an examination of the assumptions of the AI Act: Llano Alonso (2021); Simoncini (2021); Casonato & Olivato (2024). For a discussion from a legal-philosophical perspective: Llano Alonso (2024).

24. On the subject of advanced age as a *frequent* form of vulnerability, see Busatta *et al.* (2024, pp. 653-656).

25. For a sociological examination, see Neves & Mead (2021). See also Simone (2022).

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also depends, in a decisive way, on their active *participation* in the development of these measures, right from the initial design stages; without such involvement, the solutions would risk being inappropriate or even counterproductive. It is necessary that, *by design,* the inherent heterogeneity of a diverse and differentiated group[26] such as the elderly population be taken into account: age, gender, economic status, clinical condition, presence of close family members, possible migrant *background* (to mention just a few aspects) become determining factors in the construction of responses that are more or less capable of answering the challenges posed by the contemporary digitalised world.

Finally, the effect of territorial differences between urban and rural contexts cannot be underestimated (one may think, in this perspective, of the more or less widespread presence of digital infrastructure: cables, fibre optics, etc.): these are highly practical aspects that call for public and institutional policies and interventions that take into account the specificities of individual social contexts[27].

In exploring the correlation between the role of new technologies and the condition of older people, it is therefore desirable that research and reflection on these issues be translated into concrete tools – operational guidelines, learning modules, training courses – intended for both public administration staff and the older population.

In light of the research carried out and in line with current regulations, it appears to be a fundamental objective to reduce the digital divide affecting people *over* 65, allowing them to use services and enjoy the rights to which they are entitled, but also to overcome «spatial and social barriers, get in touch with their social network via email, online communities, social media and messaging, and access information on health, travel, entertainment and other activities» (Robinson *et al.*, 2020: 6).

With this in mind, such social issues have recently been incorporated into legislation: in the so-called «Decreto Legislativo Anziani (15 marzo 2024, n. 29. *Disposizioni in materia di politiche in favore delle persone anziane, in attuazione della delega di cui agli articoli 3, 4 e 5 della legge 23 marzo 2023*, n. 33 [24G00050])[28], Chapter V is dedicated to «Misure in materia di alfabetizzazione informatica e facilitazione digitale», providing that «al fine di promuovere l'alfabetizzazione informatica delle persone anziane nonché di garantire alle stesse la piena partecipazione civile e sociale anche attraverso l'utilizzo dei servizi digitali delle pubbliche amministrazioni» (…) « attività di formazione delle competenze digitali delle persone anziane e di supporto delle stesse nell'utilizzo dei servizi erogati in rete dalle pubbliche amministrazioni (Article 19), as well as the activation of «percorsi formativi che promuovano nelle persone anziane l'acquisizione di conoscenze e di abilità sull'utilizzo di strumenti digitali» (Article 20)[29].

As can be seen, these are clear guidelines which, on the one hand, call for action and intervention on the part of institutions and, on the other, also foreshadow an interesting and unprecedented *intergenerational approach* to technology that could be

26. For a general overview: Macioce (2021).

27. It is of particular interest this very recent research in the context of the Region of Sardinia: Diana *et al.* (2025). For an excellent overview of the issues at stake, see Marra (2005).

28. In GU Serie Generale n.65 of 18.03.2024.

29. For further information, see: Cascione (2024).

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implemented through cooperative exchanges between young people and older people in various areas of education, starting with schools[30].

4. Institutional Profiles: which Actions to Take?

In light of what has been discussed above, it is important to consider the main obstacles that older people encounter when trying to access and use digital technologies and what institutional measures could be taken to overcome or even prevent them. Older people are confronted daily with such situations, which make access and use of digital devices difficult tasks.

These include barriers related to *skills*, such as a *lack of digital literacy* – understood not only as the technical ability to use digital tools, but also as the awareness necessary to use them; *cognitive barriers,* linked to the fear of making mistakes or a lack of willingness to learn how to use these tools; *technical and infrastructural barriers,* such as poor internet coverage in rural areas or the absence of help desks, as well as the programming of digital tools that are not specifically designed for older people.

Digital devices and platforms are often created with young users in mind, who are fully autonomous in their use of technology and usually familiar with these tools, which implicitly exclude those who do not meet these characteristics.

In light of these observations, emotional factors undoubtedly play a decisive role: fear, frustration, feelings of inadequacy and lack of self-confidence greatly limit the willingness to learn.

For many older people, the technological experience has negative connotations: it represents uncertain territory, where mistakes can have dire consequences (for example, data loss or digital fraud, for which older people are the primary "target"[31]).

Older people who are economically disadvantaged, have disabilities or live in remote areas are the most vulnerable to digital exclusion.

Solutions, which are often standardised, do not meet the complex and varied needs of these subgroups, which have specific vulnerabilities.

Furthermore, the absence of diverse representations of older people in the design of technologies contributes to reinforcing this exclusion.

30. Such activities are promoted by a Protocol signed in May 2025 by CRID – Centro di Ricerca Interdipartimentale su Discriminazioni e vulnerabilità of the University of Modena and Reggio Emilia, together with Auser ODV Modena and SPI-CGIL Modena: an initial public discussion took place on Friday 26 September 2025 during the European Research Night, at the Department of Law, during a meeting entitled «Generazioni online. Una guida all'uso consapevole delle tecnologie in una prospettiva intergenerazionale». In addition to representatives of the signatory bodies, the meeting was also attended by the Regional Ombudsperson for the Rights of Children and Adolescents of Emilia-Romagna, Dr. Claudia Giudici, and numerous students and teachers.

31. A report prepared by SPI, the CGIL pensioners' union, and Federconsumatori Modena – which has been presented by CRID – Centro di Ricerca Interdipartimentale su Discriminazioni e vulnerabilità at the Department of Law of the University of Modena and Reggio Emilia on the occasion of the European Research Night on Friday 27 September 2024 – shows that around 80% of older people who do not use digital technologies are not interested in learning how to do so, partly due to discouraging experiences and a lack of adequate training courses.

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Although there are currently no systematic court rulings in Italy that explicitly recognise digital exclusion as a form of discrimination, the legal issue of digital access can be framed within the broader context of the right to substantive equality and non-discrimination.

This is, in fact, a legally unexplored area, but one that is becoming increasingly clear in European and international contexts. A prime example is the popular mobilisation in Spain against the forced digitisation of banking services: in 2022, a petition launched by a pensioner, Carlos San Juan, gathered hundreds of thousands of signatures under the slogan «*Soy mayor, no* idiota» *(I am* old, not stupid), calling for the preservation of traditional banking services for older people. This led to the introduction of regulations requiring banks to provide longer opening hours and dedicated telephone assistance for older people. Institutional intervention therefore proved decisive.

The systemic exclusion of older people from digital processes, as we have seen, can constitute a form of structural ageism, which is often invisible and therefore even more insidious.

The absence of legal disputes should not be interpreted as the absence of a problem, but rather as a sign of the need for greater legal and cultural recognition of the phenomenon.

What actions, then, should be taken to avoid a «forced digitalisation» and respect the right to continue using non-digital channels?

First of all, it is necessary to ensure the coexistence of digital and analogue tools, as people should be able to choose the channel of interaction that best suits their needs, at a time when digitalisation has accelerated rapidly but some people – such as the elderly – have not all had the opportunity to learn how to navigate this new «*onlife*» dimension.

Forcing the adoption of digital technology without adequate support not only seems ineffective, but also risks generating exclusion, frustration and isolation. In fact, the forced transition to digital – when not accompanied by structural guarantees of access, literacy and lifelong learning, as well as forms of support – risks constituting a violation of the principle of substantive equality (following this argument: Aba-Catoria, 2022).

In other words, if digitalisation is not guided by criteria of fairness and constant attention to the diverse and specific needs of individuals, it risks exacerbating existing inequalities and compromising the guarantee and effectiveness of fundamental rights.

Finally, within a view supporting the digital transition, it is necessary to develop continuous and personalised training courses – promoted by public institutions – as well as to make the presence of help desks and "digital facilitators" in public services and local contexts structural: only through *integrated action* – at the regulatory, educational and infrastructural levels – guided by institutions, can the *digital transition* be transformed into a truly inclusive process that respects the rights of all[32].

32. From this perspective, based on the assumption that technology and law are not necessarily opposed to each other, it is possible to affirm the propulsive and promotional function of law and, at the same time, its limiting function with regard to the possible excesses of «infotechnology». The various elaborations attributable to the so-called «digital humanism» move in this direction. See, for example, Punzi (2023).

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What kind of commitment could states therefore make in this scenario? How could a joint effort between public and private powers be ensured?

The state and businesses, but also regional, local and municipal institutions, should cooperate to make digital access an effective right (on this point: Casadei, 2022): businesses can invest in simplifying interfaces and training elderly customers, while continuing to guarantee, alongside digital services, an accessible physical assistance service with trained and available staff, particularly for the elderly population. This is particularly relevant for strategic sectors, such as banking, where digitisation has drastically reduced the availability of traditional branches and in-person operators.

Similarly, the state and other institutions should establish a clear regulatory framework that provides incentives and obligations in terms of accessibility.

Finally, an *intergenerational*, public-private *pact* could be envisaged, supported by adequate funding, primarily from the public sector: an approach that has recently matured in Italy with regard to literacy issues highlighted by the «Decreto Legislativo Anziani» (Legislative Decree on the Elderly) (15 March 2024, No. 29)[33].

At the operational level, there are already some interesting initiatives, such as "Nonni su Internet" (Grandparents on the Internet) by the Fondazione Mondo Digitale[34] (which is developed with the objective of promoting intergenerational dialogue), while trade unions can also play a central role[35].

Looking at the international context, Spain has certainly undertaken some significant initiatives in recent years to promote the digital inclusion of older people (Abad Alcalá, 2016), particularly in response to growing social protest against the "forced digitisation"

33. A good analysis of the relationship – in broader terms – between law and older age can be found in Tamponi (2022).

34. https://www.mondodigitale.org/progetti/nonni-su-internet.

35. Although limited at the level of the Emilia-Romagna Region, a significant example is represented by the SPI CGIL–Federconsumatori Report: this work, carried out in 2024, sought to identify the needs of elderly citizens, promoting support desks, digital literacy courses and accompanying activities aimed at the elderly population.

The report documents how these activities have a positive impact on the awareness and digital autonomy of the users involved, even if they remain too fragmented, uncoordinated at the national level, and often reliant on limited resources or temporary projects.

In this sense, the University can play a central role: the project that CRID – Centro di Ricerca Interdipartimentale su Discriminazioni e vulnerabilità, based on the aforementioned protocol, has launched in collaboration with SPI-CGIL, AUSER and Federconsumatori, titled *Le persone anziane e l'uso delle tecnologie: azioni per l'alfabetizzazione informatica e l'acquisizione di competenze digitali*, follows this direction.

The project, which is part of the University's "Third Mission" activities and of its social function, aims to respond to these issues, including the direct involvement of older people in the co-design phase of the training courses.

More specifically, the project involves conducting a survey (including questionnaires) in the province of Modena with the aim of setting up digital literacy workshops, accompanied by information and training sessions open to all citizens, focusing on the relationship between older people and digital technologies in terms of access to services.

The data collected through the questionnaires will be used to set up special literacy workshops held by experts in IT and legal IT for older people, who will thus be able to consolidate or acquire skills in the use of technological devices.

Following an interdisciplinary approach, lawyers and experts from the worlds of associations, trade unions and various educational institutions will also be directly involved.

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of essential services, a prime example of which is the mobilisation that began in 2022, as mentioned above. This has led to the adoption of specific measures, such as extending counter opening hours and creating dedicated telephone lines for older people.

This institutional response has certainly represented a crucial step towards compliance with international standards on digital rights; however, there remains a certain discrepancy between declarations of principle and the actual implementation of policies.

Spain's alignment with international standards, especially after the approval in 2021 of «La Carta de Derechos Digitales» (Cotino Hueso, 2022)[36], is ongoing, but further efforts are needed to ensure accessibility, continuous training and the co-design of services with the most vulnerable sections of the population, starting with the elderly[37].

These challenges affect all countries, including Italy.

5. The Italian Context

Currently, there is no structured and binding system of monitoring, evaluation and sanctions in Italy to ensure the digital inclusion of older people. The absence of specific national indicators makes it difficult to assess the effectiveness of the measures implemented and prevents concrete action from being taken to combat forms of systemic digital exclusion.

However, some innovative approaches are emerging.

For example, the Open.gov.it portal[38], part of the national strategy for *inclusive digital innovation*, promotes a participatory approach based on transparency and collaboration with communities, with the aim of making access to digital technology more equitable and universal.

This perspective includes the development of open guidelines, the promotion of good practices and the development of self-assessment tools for public administrations but does not yet include a structured sanctioning mechanism or performance obligations.

There is therefore an urgent need to call for action plans and interventions, and universities can play a decisive role in this context (Illanes Segura & Castillo Algarra, 2025).

Artificial intelligence offers multiple potential opportunities to improve the quality of life of older people: some examples include voice assistance, health monitoring and certain personalised services related to telemedicine, as already noted.

However, if not designed in an inclusive manner, AI risks exacerbating existing discrimination and creating new forms of vulnerability (including *digital* ones[39]): in fact, the algorithms that make up artificial intelligence systems can be a vehicle for prejudice, and those related to age are very common (Bourabaa Mohamed, 2025). They work – and

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36. The Charter recognises the right to social inclusion even for «partially capable» persons, providing a useful reference for public policies focused on active ageing and equity.

37. In what is now an extensive body of literature, see: Macías Marruecos (2025); In the same work, see Quesada Páez (2025).

38. https://open.gov.it/governo-aperto/innovazione-digitale-inclusiva (The digital divide in the elderly: a challenge for the future).

39. See Malgieri & Niklas (2020); Malgieri (2023); Dadà (2024); Abad Alcalá & Sánchez Valle (2024). More specifically, on algorithmic discrimination, see Barone (2024).

learn – based on the data available to them. As has been clearly explained «se la macchina apprende da un compendio di dati in cui uno o più gruppi di persone sono esclusi o sottorappresentati, le decisioni fondate sugli output così forniti possono essere pregiudizievoli per la persona appartenente a uno di quei gruppi» (Corso, 2024a: 1259). In this regard, the use of artificial intelligence in healthcare is paradigmatic «[s]e si impiega un dispositivo che si avvale dell'intelligenza artificiale per una diagnosi o una prognosi a un paziente anziano e l'insieme di dati non rappresenta l'individuo anziano o non lo rappresenta sufficientemente, tale diagnosi o prognosi può essere errata» (Corso, 2024a: 1259).

On this topic, the UNESCO Recommendation on the Ethics of Artificial Intelligence (2021) emphasises the importance of promoting social justice, equity and non-discrimination by adopting an inclusive approach to ensure that the benefits of AI are accessible to all[40].

In particular, the Recommendation highlights the need to protect human rights and dignity by ensuring that AI systems are transparent, accountable, and subject to human oversight.

With specific regard to the people at the centre of this reflection, in order to ensure that AI can truly become a tool for inclusion and not exclusion, it is essential, as already emphasised above, to actively involve older people in the design and development of these technologies, ensuring that their needs and preferences are adequately represented.

In order to improve the digital inclusion of older people, it is necessary to undertake a comprehensive set of measures that integrate legislative and other types of action.

From a regulatory point of view, it would be appropriate to explicitly recognise the *subjective right to assisted digital access*, guaranteeing older people stable and structured support for the use of technologies in essential public and private services. To this end, the *principle of the coexistence of digital and analogue channels* should be enshrined, especially in strategic sectors such as healthcare, social security, and banking.

Furthermore, on a social level, accessibility should become a binding criterion in the design of digital platforms, through specific verifiable standards and public compliance checks, inspired by a principle of intergenerational inclusiveness that translates into "good practices"[41].

40. Another significant event in terms of comparing international approaches to digital education and citizenship was promoted by CRID – Centro di Ricerca Interdipartimentale su Discriminazioni e vulnerabilità of the University of Modena and Reggio Emilia, as part of the Safely Project–Social Media Awareness For Education and Legal Youth (www.safely.unimore.it) and featured Dr. Giorgio Andrian, UNESCO Heritage Expert, as a speaker. Introduced by Dr. Claudia Severi, he took part in a dialogue by the title «Educazione digitale e uso consapevole delle tecnologie: ruolo, esperienze e progetti dell'UNESCO». The seminar took place on 1 April 2025 at the Department of Law of the University of Modena and Reggio Emilia and was attended by a large group of students and representatives of voluntary and social promotion associations, as well as by Prof. Gianfrancesco Zanetti, Prof. Claudia Canali, Dr. Michele Balbinot, Dr. Valeria Barone, Dr. Francesco Faenza, Dr. Michela Malpighi and Dr. Marco Mondello. It should be noted that the UNESCO Global Education Monitoring Report 2023 highlights the importance of a critical approach to technology in education, emphasising the need for strategies that focus on the protection of human rights in the digital environment.

41. Interesting insights in this regard can be found in Pinazo Hernandis (2022); Parra Rodríguez (2022).

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On a *broader* cultural level, it is essential to promote a permanent, public, and widespread training infrastructure that can support older people in acquiring and consolidating digital skills[42]. Added to this is the need to spread a culture of digital innovation geared towards social justice, overcoming the emergency logic and moving, on the contrary, towards a systemic vision based on transparency, participation and public responsibility, starting with that of all institutions and economic actors.

These are aspects that require strong and constant action on the part of institutions to promote not only literacy but also participation.

Real participation can only be achieved if older people are recognised as active individuals. As such, they should be involved in the co-design of services, listened to in public consultations, and represented at institutional tables. This implies a cultural and organisational change, as well as a participatory and open approach to listening. The evidence gathered from a number of innovative surveys is a valuable resource for guiding policies in a way that is more in line with the real needs of the population[43].

It is urgent to debunk the myth that digital illiteracy among older people will be resolved "naturally" with the generational transition[44]. Literacy in data and AI – as has been observed – «costituisce una condizione fondamentale per garantire un'effettiva e concreta partecipazione al processo decisionale democratico» (Paseri, 2025: 140).

Access to digital skills therefore becomes an essential prerequisite for informed access (with specific regard also to the field of medical and health care, including *e-care)*, and the "comprensione critica e l'interazione consapevole con le infrastrutture tecnologiche" che mediano la cosiddetta "*governance* dei dati" (Paseri, 2025: 141)[45] but also for effective communication with family members, social and healthcare workers, and fellow citizens.

Advanced age brings new vulnerabilities, even for those who have acquired a certain familiarity with digital technology, since the rapid pace of technological development we are witnessing has powerful implications on an epistemic level, as well as a social and economic one. Institutions therefore need, *first and foremost*, a structural, non-emergency policy that recognises the ever-changing nature of digital inequality and knows how to address it with effective tools and actions. Understanding the causes and combating the *grey digital divide* means promoting fair and informed access to the various dimensions of social life, including *e-care*.

42. In this sense, the project *Le persone anziane e l'uso delle tecnologie: azioni per l'alfabetizzazione informatica e l'acquisizione di competenze digitali* (CRID, SPI-CGIL, Auser and Federconsumatori) that was mentioned earlier is intended to be a small example of how training courses based on dialogue, co-design with local communities and the conscious use of technology can strengthen the autonomy of older people, transforming digital literacy into a tool for *empowerment*.

43. The reference is to the one conducted by Federconsumatori and SPI-CGIL mentioned in note no. 28.

44. On the issue of digital illiteracy as a crucial theme of our time, and on the role of institutions, particularly universities, in relation to this issue, see Zanetti (2025).

45. On these issues, see the considerations contained in Coeckelbergh (2024); Del Carmen Segura Cuenca & Conejero Paz (2022); Machado & Llorente Barroso (2024).

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Conclusions: Prospects for the Future

This article has examined the multifaceted relationship between older people and digital technologies, starting from the Italian socio-legal context, demonstrating that the so-called *grey digital divide* represents far more than a mere technical gap.

As our analysis has shown, this divide constitutes a complex phenomenon rooted in systemic ageism, manifesting through cultural stereotypes, inadequate design practices, and institutional barriers that collectively compromise older people's effective access to fundamental rights and essential services.

The examination of regulatory developments reveals a significant paradox at the heart of contemporary digital policy. While European and Italian legislation, particularly EU Directive 2016/2102 and the Italian Digital Administration Code, establish comprehensive frameworks for digital accessibility, authors have shown a persistent and troubling gap between these normative declarations and operational practice. The progressive digitalisation of public services, accelerated by the Covid-19 pandemic, has proceeded without adequate consideration of the specific needs and vulnerabilities of the elderly population. This has resulted in what can only be described as a form of structural discrimination, where mandatory digital access to essential services effectively excludes those who have not acquired or cannot maintain the necessary digital competencies.

The social dimension of this exclusion merits particular emphasis. The phenomenon of *technostress*, combined with the cognitive burden of credential management, poor interface usability, and territorial disparities in digital infrastructure, creates formidable barriers to meaningful participation in contemporary digital society. These barriers are not distributed equally across the elderly population but disproportionately affect those who are already *vulnerable* due to economic disadvantage, disability, geographical isolation, or migratory backgrounds. The heterogeneity of the elderly population demands recognition that standardised technological solutions inevitably fail to address,

Our findings underscore the critical importance of participatory approaches to technological development. The concept of co-design in socio-gerontechnology emerges as essential not merely as a methodological preference but as a fundamental requirement for creating effective and equitable digital solutions. Without the active involvement of older people in the design and development phases of digital services and platforms, technological innovation risks perpetuating and even exacerbating existing forms of exclusion.

The *intergenerational approach* advocated in recent Italian legislation, particularly in the Legislative Decree on the Elderly of 2024, represents a promising development that merits systematic implementation and adequate resourcing[46].

The institutional response to digital exclusion must be comprehensive and sustained rather than fragmentary. Current initiatives, while valuable, remain largely uncoordinated, under-resourced, and dependent on temporary projects or voluntary sector efforts. The absence of structured monitoring systems, binding performance standards, and effective sanctioning mechanisms allows digital exclusion to persist as

46. On this already mentioned Legislative Decree, see the works of Corso (2024a; 2024b) and Cascione (2024).

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an invisible yet pervasive form of discrimination. The establishment of such systems must become a priority for public policy, accompanied by clear indicators for assessing effectiveness and mechanisms for ensuring accountability.

The role of artificial intelligence in shaping the digital futures of older people presents both significant opportunities and considerable risks. Technologies such as voice assistants, health monitoring systems, and telemedicine platforms offer genuine possibilities for improving quality of life and maintaining independence. However, these same technologies can be used to hurt and exploit older people through various forms of fraud, and so they risk entrenching existing biases and creating new forms of vulnerability.

From a legislative perspective, it should be essential to explicitly recognise the *right to assisted digital access*, ensuring that older people have access to stable and structured support in using digital technologies for essential public and private services. This recognition must be accompanied by the enshrinement of the principle of coexistence between digital and analogue channels, particularly in strategic sectors such as healthcare, social security, and banking, thereby respecting the autonomy of individuals to choose the mode of interaction that best corresponds to their needs and capacities.

Accessibility must become a binding and verifiable criterion in the design of all digital platforms serving public functions, enforced through specific technical standards, regular compliance audits, and meaningful sanctions for non-compliance. These standards should be developed through participatory processes that include older people as active contributors rather than passive subjects of policy interventions. The current soft law approach, characterised by guidelines and recommendations lacking enforcement mechanisms, could be considered as insufficient to overcome the structural barriers that older people face in accessing digital services.

Educational and infrastructural policies require fundamental rethinking and substantial investment. The promotion of permanent and accessible training infrastructure should move beyond emergency responses and pilot projects to become a core component of social policy. Digital literacy programmes should be tailored to the diverse needs of older learners, recognising differences in prior experience, cognitive abilities, physical capacities, and cultural backgrounds. These programmes should be complemented by the systematic establishment of help desks and digital facilitators in public services and local community contexts, ensuring that support is readily available when and where it is needed. The intergenerational dimension of digital education, involving cooperative exchanges between younger and older generations, represents not only a pedagogically sound approach but also a means of strengthening social cohesion across age groups.

The territorial dimension of digital inequality demands specific attention in policy design and implementation. Rural areas and regions with inadequate digital infrastructure require targeted interventions to ensure that geographical location does not become an additional axis of exclusion. This aspect can become critical considering that small and underserved communities might be those where older people are more concentrated.

Private sector actors, particularly those providing essential services such as banking, utilities, and telecommunications, must be required to maintain accessible physical

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services alongside digital offerings, and to invest in training their customers and developing genuinely inclusive interfaces. A public-private partnership approach, followed within clear regulatory obligations and adequate public funding, may offer the most promising path toward systematic and sustainable progress in addressing the grey digital divide.

Cultural transformation constitutes an equally critical dimension of the response to digital exclusion. The myth that digital illiteracy among older people will resolve naturally through generational turnover should be rejected. As technology continues to evolve at a rapid pace, each generation entering older age will face new challenges in maintaining digital competence.

Forced digitalisation without adequate support, training, and alternative channels constitutes a violation that can lead to indirect discrimination that International, European and national regulations should address.

Universities and research institutions can play a vital, catalytic role in this transformation by conducting empirical research on the experiences and needs of older people, developing and evaluating intervention models, and contributing to public education and policy dialogue, interacting with other social actors, such as non-profit organizations, unions and other stakeholders.

Addressing the grey digital divide requires sustained political will, adequate resources, and comprehensive coordination across multiple sectors and levels of governance. The path forward demands nothing less than a systematic reimagining of how digital technologies are designed, deployed, and governed to serve the needs of all members of society, with particular attention to those who risk being left behind in the rush toward digitalisation. Only through such integrated and sustained effort can the promise of technology as a tool for human flourishing be realised for older people and for society as a whole.

Declaration of Authorship

The text is the result of joint work and collaboration. However, in order to attribute the paragraphs, the first, fourth and fifth can be attributed to Thomas Casadei, while the second, third and sixth to Marco Mondello.

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