Bialystok Legal Studies
Białostockie Studia Prawnicze
2026 vol. 31 no. 1

sciendo

DOI: 10.15290/bsp.2026.31.01.03

Received: 06.08.2025
Accepted: 23.09.2025

Viktoria Mazur
Tallinn University of Technology, Estonia
viktoria.mazur@taltech.ee
ORCID ID: 0009–0003–2212–1057

David Ramiro Troitiño
Tallinn University of Technology, Estonia
david.troitino@taltech.ee
ORCID ID: 0000–0002–0542–5724

Unequal by Design? Reclaiming Digital Access as a Fundamental Right in the EU

Abstract: This article explores the EU's evolving approach to digital inclusion, focusing on how current policies and legal frameworks address the needs of vulnerable groups. Despite ambitious targets under the Digital Decade Policy Programme 2030, large disparities persist along lines of age, education, geography, and migration status. Drawing on recent Eurostat data, legal analysis, and case studies from Member States, the article identifies key structural and design-based barriers that prevent meaningful participation in the digital society. It argues that digital inclusion must go beyond infrastructure and skills training to become a guaranteed right, integrated into enforceable legal standards. The analysis highlights both progress and critical gaps in EU policy, such as a lack of binding subgroup targets and uneven accessibility provisions. The article concludes with concrete recommendations for turning digital inclusion from an aspirational value into a legal, operational, and measurable component of European citizenship.

Keywords: digital inclusion, EU policy, vulnerable groups, digital divide

Introduction

The digital transformation of European society is advancing rapidly, with growing reliance on online services, e-governance, and digital tools. Within this landscape, e-governance plays a crucial role: it not only improves administrative efficiency by re-

ducing bureaucracy, but it also fosters European integration, transparency, and trust (de la Guardia, 2005). However, it is vital to ensure that all citizens can access and benefit from these digital services.

Despite the EU's ambitious digital goals addressed in the Digital Decade Policy Programme 2030, significant differences remain in citizens' access to digital services and their ability to use them effectively – a phenomenon commonly referred to as the digital divide. The latest Eurostat data shows that this divide persists across geography, age, education, and socio-economic background within the European Union. As of 2024, 94% of EU households had access to the internet, but this figure hides important differences: while urban households such as cities are connected at fairly high levels, cities, suburbs, and rural areas still have lower rates of access, and in some countries internet access in rural areas falls dramatically compared to cities (e.g. Greece and Bulgaria have 15 percentage points' difference) (Eurostat, 2024a). Furthermore, although 85.9% of the EU population aged 16–74 reported daily internet use, this rate drops to just 80.3% in rural communities and to 59.2% for people aged 65–75 (Eurostat, 2023b). Alarmingly, 6% of Europeans in this age group had never used the internet at all in 2023, and in some regions, such as Greece, this figure exceeded 17%. Nevertheless, in 2024 this figure dropped to 14%, which shows a positive trend (Eurostat, 2024a). Digital skills remain another critical area of concern. While 56% of Europeans aged 16–74 have at least basic digital skills (Eurostat, 2024b), this statistic illustrates a huge gap among older adults: only around 29% of those aged 65–74 have such skills (Eurostat, 2023a). Educational attainment also plays a decisive role: 80% of people with tertiary and higher education have basic digital skills, compared to 34% of people with little or no formal education. Gender gaps persist as well, with men slightly ahead of women in digital competence across most age groups, although young women (16–24) currently outperform their male counterparts (72% v. 68%), while women aged 65–74 lag behind by more than 10% (23% v. 34%) (Eurostat, 2025).

These figures show that despite high levels of internet penetration and political commitments to creating a digitally inclusive Europe, substantial barriers remain for many citizens, particularly in rural areas and among older populations, women, and those with low levels of education, not to mention disabled people and migrants, who have additional obstacles in accessing digital services. Addressing these differences is not only a matter of social equity; it is also important for the broader project of European integration. According to the neo-functionalist approach, digital integration generates spillover effects that contribute to deeper integration (Kerikmäe et al., 2019; Troitiño, 2022). However, without targeted efforts to bridge the digital divide, these effects risk entrenching new inequalities within the European Union.

This article examines how current EU policies and initiatives respond to the needs of vulnerable groups in the context of digital transformation, and focuses on whether these efforts effectively promote equality and inclusion across demographic, geographic, and socio-economic divides. The analysis draws on official EU policy

documents, the latest European statistics, and relevant academic literature. The article is structured as follows: the first section provides an overview of the EU's strategic framework and key programmes aimed at promoting digital inclusion. The second section analyses how these initiatives address the specific needs of vulnerable groups, including older people, rural populations, migrants, and people with low levels of education or digital skills. The third section discusses the main challenges and barriers to implementation, such as uneven coordination between Member States and gaps in digital accessibility. Finally, the article highlights what current policies mean in practice and points to ways in which the EU could make digital inclusion more effective and more accessible to all.

1. Bridging the gap: The EU's response to the digital divide

The European Union has recognised the urgency of combating the digital divide and has addressed this challenge through a progressively structured legal and policy framework. Ensuring that all citizens, regardless of age, gender, or background, can meaningfully participate in the digital society is increasingly seen as a prerequisite for the success of Europe's digital transformation. Strengthening digital literacy, closing gender gaps in digital access, and supporting older adults and other at-risk groups are now essential components of inclusive policymaking. This understanding is reflected in several key EU initiatives that aim to promote digital inclusion and ensure that no one is left behind in Europe's digital transformation (Peeters et al., 2025). This journey began with the Digital Compass 2030, which defined four key dimensions of the digital transformation: digital skills, digital infrastructures, business digitalisation, and public services, thus laying the groundwork for a cohesive and inclusive digital Europe.

The Digital Compass sets what the EU aims to achieve by 2030. The Digital Decade Policy Programme 2030 states how it will be achieved by turning those goals into enforceable laws and structured governance – national plans, regular reporting, monitoring, stakeholder involvement, and shared projects – all anchored in EU-level accountability. The Digital Decade programme guides these goals into achievable targets and introduces concrete governance tools, which include an annual State of the Digital Decade report, national strategic roadmaps, and a 'traffic light' monitoring system to evaluate Member States' progress (European Parliament and Council, 2022, articles 5–6). One of the programme's core objectives is that at least 80% of those aged 16–74 have at least basic digital skills by 2030. The policy programme also underscores the importance of bridging the digital divide, with a special focus on older citizens, individuals with lower educational attainment, and residents of rural areas (Negreiro, 2015). If digital strategies are not carefully and thoughtfully designed, they can actually make existing inequalities worse rather than better (Djatmiko et al., 2025).

The Digital Compass sets out a vision for Europe's digital future. While it outlines broad ambitions, its language remains somewhat general when it comes to addressing the unique barriers faced by vulnerable groups. It has been pointed out that this lack of detailed mechanisms or dedicated funding streams limits the potential impact on digital inclusion (Ayata, 2024; Ferretti, 2022). To help operationalise these goals, the EU has launched the Digital Skills and Jobs Platform, which offers resources, training opportunities, and community networks to improve digital competences across Europe. Importantly, the platform includes targeted initiatives for groups with lower levels of digital skills, such as older adults and jobseekers (Rek, 2024; Rūse, 2014). However, participation rates among the most marginalised groups remain uneven, and further outreach efforts appear necessary (Costa, 2023; Djatmiko et al., 2025; Giovanola, 2023; Hamuľák, 2016). In addition to skills, two other factors, language and geographical access, have an impact on who can benefit from digital services.

The European Union first acknowledged this issue in the 2017 European Parliament report 'Linguistic Equality in the Digital Age', which warned that the dominance of English and a few mainstream languages in the digital sphere was exacerbating the exclusion of speakers of minority and regional languages with limited resources. The report laid the foundation for the Human Language Project and the European Language Equality (ELE) initiative. Developed as part of a large-scale EU research consortium (2021–2023), the ELE aims to achieve digital linguistic equality by 2030 by supporting automated translation, language technologies, and inclusive content design. Although the ELE is not legally binding, it has shaped research agendas and funding priorities at EU level, directly strengthening digital inclusion across language barriers – especially for communities historically underrepresented online.

In parallel, the EU Geo-Blocking Regulation (Regulation (EU) 2018/302) eliminates unjustified segmentation of the digital marketplace based on nationality, residence, or location. It prohibits practices that restrict access to websites, prices, or services based on where a person lives in the EU, a critical step towards a more cohesive digital single market. By allowing users from Member States to access the same content, e-commerce opportunities, and services regardless of location, the Regulation addresses territorial forms of digital exclusion. Together, these measures strengthen the EU's efforts to create an accessible and inclusive digital environment, not only through infrastructure or legal rights, but also through concrete mechanisms that remove hidden barriers.

Another important milestone is the European Declaration on Digital Rights and Principles for the Digital Decade (2022), which sets out values that should guide Europe's digital transition. The declaration highlights accessibility, inclusiveness, and citizen empowerment, reaffirming that digital services should be designed for all Europeans, regardless of age, gender, ability, or socio-economic background, and putting people at the centre of the digital transformation. While the declaration is not legally binding, it provides a normative reference point for Member States.

A legally binding step in this direction is the European Accessibility Act (EAA), Directive (EU) 2019/882, which was adopted in 2019 and fully applied in all EU Member States by 28 June 2025. The Act establishes harmonised accessibility requirements for a wide range of digital products and services, including ATMs, smartphones, e-books, banking services, and e-commerce platforms. Its core aim is to ensure that people with disabilities, as well as older adults and other users with functional limitations, can independently access and use essential digital tools. Ensuring compatibility with assistive technologies (such as screen readers, voice recognition, or switch controls), enforcing minimum usability standards based on POUR principles (perceivable, operable, understandable, and robust through WCAG/EN 301 549[1]), and requiring provision of accessible formats (e.g. alt-text, captions, large print, braille), the EAA addresses one of the key dimensions of the digital divide: interface exclusion. Unlike general policy declarations, this law imposes legal obligations on businesses and service providers across the single market, with enforcement mechanisms at the national level. Although primarily framed around disability rights, the EAA's provisions benefit a broader range of vulnerable users, helping to ensure that the transition to digital-first service delivery does not leave behind those with physical, sensory, or cognitive limitations.

The EU is also preparing to strengthen its legal tools with the upcoming Digital Fairness Act, expected by 2026. This proposed legislation will introduce clear rules to make digital spaces more transparent and accessible. For example, it will ban deceptive designs, known as 'dark patterns', that push people to click things they do not fully understand or agree with. These tricks can be especially confusing for older people, those with lower digital skills, or users who face language or cognitive barriers. The law will also require websites and platforms to present information in a clear and understandable way, so that everyone, regardless of age, education, or background, can use digital services more confidently and independently. This matters because even when people have internet access and devices, poor interface design can quietly shut them out. Many users struggle to complete tasks, feel frustrated, or give up entirely when faced with confusing layouts or overwhelming information (Eurostat, 2024; Zac et al., 2025, p. 5). Others may become dependent on family members or carers to help them navigate online services – which undermines their autonomy and privacy. These are not technical problems but design ones, yet they create real exclusion. Traditional policies aimed at expanding infrastructure or access do not fix this hidden UX barrier. By focusing on how digital tools are actually designed and experienced by users, the Digital Fairness Act will aim to remove everyday obstacles that quietly exclude the most vulnerable.

1 It is a European accessibility standard that outlines technical accessibility criteria for IT and ICT products and services. This standard provides detailed guidance for ensuring that various technologies are accessible to people with disabilities.

In addition to strategic frameworks, the European Union provides substantial financial support to drive digital transformation and inclusion. Several major funding programmes channel investments into projects aimed at reducing the digital divide and fostering equitable access to digital opportunities. The Digital Europe Programme (2021–2027), with a total budget of over EUR 8.1 billion, is one of the core instruments supporting Europe's digital objectives. In the period 2025–2027 alone, approximately EUR 1.3 billion is allocated to enhancing digital skills, promoting artificial intelligence, and strengthening cybersecurity capacities (European Commission, 2025a). Complementing this is Horizon Europe R&I funding – around EUR 1.4 billion in 2025 – which invests in deep-tech innovations and high-potential start-ups via the European Innovation Council (European Commission, 2024b; Reuters, 2024). Targeted support for social inclusion is provided through the European Social Fund Plus (ESF+), which invests in education, training, and digital skills development for vulnerable groups. Numerous projects funded under ESF+ focus on equipping vulnerable populations such as older adults, migrants, and low-income communities with essential digital competences (Maatsch, 2024; Mokrá, 2023). Moreover, Erasmus+ supports digital transformation in education. The European Student Card Initiative, for example, aims to achieve 95% digital learning agreements by 2025, facilitating greater accessibility and mobility for students across Europe (European Commission, 2025a).

Beyond these programmes are large-scale investment initiatives such as InvestAI, which aims to mobilise EUR 200 billion for AI development. If managed inclusively, this can enhance public services (e.g. in healthcare or education) and create more accessible, user-friendly digital tools, especially when paired with ethical AI and human-centred design. However, without safeguards, it could also widen gaps, hence the need to channel parts of this investment into inclusive AI solutions. The Global Gateway strategy allocates EUR 300 billion for infrastructure, including digital connectivity, which is critical for closing the connectivity gap, particularly in rural, remote, or underserved regions. Reliable infrastructure is the baseline requirement for digital access; without it, skills training or digital services are irrelevant (European Commission, 2025a).

The importance of combining legal frameworks with user-centred implementation is supported by recent empirical research. Morte-Nadal and Esteban-Navarro (2025) highlight that without enforceable design standards, mechanisms to gather user feedback, and legal accountability, e-government strategies often fall short, especially in providing tailored, accessible services to older adults, low-income individuals, and those with limited education. Their study recommends embedding binding co-creation processes, simplified hybrid (digital and in-person) service models, and transparency obligations, elements that the Digital Fairness Act aims to deliver. Together, these investments reflect a multi-layered approach to addressing Europe's digital divide: by improving infrastructure, fostering innovation, and supporting digital

skills development among vulnerable groups. Yet, as subsequent analysis will show, ensuring that these resources effectively reach those most at risk of exclusion remains an ongoing challenge.

2. Challenges in addressing the needs of vulnerable groups

2.1. Persistent inequalities in digital inclusion

Addressing the needs of vulnerable groups remains one of the most pressing challenges in the European Union's digital transformation (Gomes & Dias, 2025; Outeda, 2024). Despite ambitious policy frameworks and considerable investment, the reality on the ground continues to show deep inequalities in access to digital services and skills. The groups most affected include older adults, people with lower levels of education, women, residents of rural areas, migrants, and economically disadvantaged communities. These populations often face multiple and overlapping barriers to digital inclusion, ranging from lack of access to devices and internet infrastructure to low levels of digital literacy and systemic institutional obstacles. Statistical evidence highlights the persistence of these disparities. While younger, urban, and well-educated Europeans generally report high levels of internet use and digital competence, older adults and rural residents remain significantly underrepresented online. In Estonia, for example – often cited as a leader in e-governance – only around 70% of people aged 65–74 report daily internet use, compared to over 95% among people aged 16–64 (Statistics Estonia, 2024). Similar gaps persist across the Union, particularly in southern and eastern Member States.

2.2. Language, design, and other barriers to digital inclusion

EU-level initiatives such as the Digital Skills and Jobs Platform and projects funded by the European Commission seek to address these disparities by promoting digital skills development among disadvantaged groups. However, while these programmes provide valuable resources and training opportunities, their reach and impact remain uneven. Participation by the most marginalised populations often depends on the strength of local outreach, the availability of targeted support, and the adaptability of the training to the specific needs of different groups. In practice, many vulnerable citizens still have difficulty using digital services due to several barriers. Older people often lack confidence in using digital tools or fear making mistakes, leading to avoidance (Reid et al., 2024; Vaportzis et al., 2017). People with disabilities often encounter poorly designed websites or apps that are incompatible with assistive technologies such as screen readers or alternative input methods (Droutsas et al., 2024). The problem is not that making websites or apps accessible is impossible; it is that accessibility is often not considered during the design stage, or it is added too late, after everything is already built (Shah, 2023). This makes many digital services

hard or even impossible to use for people with disabilities, even if they have assistive tools like screen readers. Women, especially those from low-income or minority families, may face increased challenges due to unequal access to education, lower levels of exposure to digital technologies, and household responsibilities that limit time to develop skills (Perifanou & Economides, 2020). People with lower levels of formal education are more likely to have difficulty navigating complex interfaces or understanding the technical language used on digital platforms (Rivera Pastor et al., 2017). These challenges are often compounded by a lack of plain language instructions or multilingual content, further alienating users from different backgrounds.

In addition to skills and interface design, access to digital content can also be restricted by territorial and linguistic barriers. One example is the unintended effect of the EU Geo-Blocking Regulation, which was originally designed to ensure fair access to online goods and services within Member States. However, as recent analyses show, it does not protect access to audiovisual content, a category in which linguistic minorities often suffer the most. As a result, speakers of regional or minority languages may be disproportionately excluded from culturally significant content or unable to access services in their native language, especially across borders (Röggla, 2025). Such exclusions create a digital environment in which not all EU citizens can participate equally, despite formal principles of non-discrimination. Addressing this issue will require expanding existing legal protections or developing new ones that explicitly take linguistic diversity into account in the digital sphere.

In addition to the above-mentioned challenges, legal and administrative barriers continue to limit access to certain groups. New legislative proposals such as the Digital Identity Regulation and the European Health Data Space (EHDS) show how digital tools are becoming gateways to essential services. The Digital Identity Regulation will allow all EU residents to use a secure European Digital Identity Wallet to access services such as banking, e-signatures, e-government portals, and healthcare, using a single, interoperable digital ID. While the wallet is seen as a key tool for promoting digital inclusion, its implementation has raised some concerns about fairness for migrants and refugees, who may lack the necessary documentation or legal status to register (Cheesman, 2022; Dullaert et al., 2024; Tabassum et al., 2025). Without tailored measures, these groups risk losing access to these services – ironically, leaving those who would benefit most from digital inclusion on the margins. Currently, registration for the wallet is dependent on the provision of official proof of identity and citizenship-issued credentials, such as a passport, national identity card, driving licence, or proof of residence accepted by a Member State wallet provider (European Commission, 2025b). As several Member States still require full legal residence status, many migrants and refugees, especially those with pending documents or who have temporary protection status, are effectively excluded from the system. Although some pilot projects are testing alternative credentials or migrant-friendly pathways,

these have not yet been integrated into the mainstream framework, creating significant gaps in access and reinforcing existing inequalities.

Similarly, the EHDS interface aims to make personal health data more accessible and shareable across borders. For many patients, especially those with chronic conditions, disabilities, or cross-border mobility, this can provide greater care and empowerment. However, if digital health systems are not designed with accessibility in mind, they risk excluding people who lack digital skills, face cognitive barriers, or cannot afford private technologies. Older people, low-income patients, and people with disabilities are particularly at risk of being left behind in the transition to digital health. Without clear guarantees, what is meant as a right of access can become another form of exclusion. These cases highlight a broader point: laws that promote innovation and cross-border interoperability must be designed with accessibility and equity at their core.

2.3. National strategies and local best practices

Fortunately, certain Member States provide examples of effective approaches to address the digital divide. For instance, Estonia actively supports digital inclusion as part of its e-governance. The government provides free digital literacy courses for older people and access to public services on user-friendly platforms, including support through libraries and community centres (European Union Agency for Fundamental Rights (FRA), 2023). Additionally, as part of the national Digital Decade strategy, Estonia is developing the Digimentor system to train and support older users. These approaches demonstrate the effectiveness of individual support and blended learning (online and offline). Similarly, the Digital Inclusion project by Česko.Digital in the Czech Republic focuses on increasing digital literacy among social workers – and through them, among vulnerable groups: the elderly, the unemployed, and people with disabilities. According to the Digital Skills and Jobs Platform, the survey and interviews covered about 794 responses, and the project developed a training module aimed at more than 10,000 social workers, thereby training their clients. Elsewhere in the EU, Poland has launched the Erasmus+ pilot project Adult Social Inclusion in the Digital Environment (ASIDE), which equips social educators and volunteers with the skills needed to support older people, families with children, and disadvantaged communities. By facilitating collaboration between grassroots organisations, ASIDE offers a promising model for scaling up citizen-focused digital literacy initiatives (Sánchez-García et al., 2021). However, such best practices are far from universal across the EU. In many countries, public investment in digital inclusion remains fragmented, and national digital strategies do not always prioritise reaching the most excluded groups.

2.4. Institutional trust and media literacy

An additional layer of complexity arises from the different levels of public trust in digital governance. In highly digitalised countries such as Estonia and Denmark, e-government enjoys strong public support. According to the UN E-government Study 2024, both countries are among the world leaders in the scope and quality of their online government services. In parallel, a recent OECD trust survey (OECD, 2024) found that 44% of Danes report high or moderately high trust in their national government, compared to 38% of Estonians – a figure close to the OECD average. In contrast, Member States with lower levels of digital adoption often show greater scepticism about government-led digital initiatives. This gap reflects broader patterns of institutional trust rather than digital service quality per se, and highlights the importance of aligning technical progress with citizen engagement and transparency. Such caution typically stems from concerns about data privacy or surveillance, or worries that digital systems could exacerbate inequality. This discrepancy highlights why improving access alone is not enough; citizens must also have media and digital literacy, which enables them to navigate and critically evaluate digital tools and services. The Audiovisual Media Services Directive obliges Member States to integrate media literacy education into national curricula and report on progress every three years. However, implementation has been inconsistent, largely due to differences in political commitment across countries, resulting in uneven awareness-raising campaigns, educational programmes, and support infrastructures (Laaninen, 2025). Overall, while the EU has made significant progress in recognising and addressing the digital divide, many vulnerable groups still face persistent structural barriers to fully participating in Europe's digital society. These barriers are not simply technical or economic in nature; they increasingly intersect with issues of fundamental rights and legal powers.

2.5. Recognising the digital divide: A legal perspective

Recent cases concerning digital exclusion illustrate once again how access to digital technologies has become inseparable from the enjoyment of fundamental rights in various areas of life. Vulnerable groups are not simply asking for improved services or amenities; they are seeking recognition that full participation in modern European society increasingly depends on the ability to access and use digital tools. Digital inclusion is not only a matter of access to infrastructure, but of being institutionally included in the systems that shape access to rights, information, and opportunity (Stein et al., 2022, p. 2). Denying such access may amount to a violation of fundamental rights protected by European and international law.

Several recent judgments by the European Court of Human Rights (ECtHR) and national courts have made this point clear. In *Jankovskis v. Lithuania* (2017), the ECtHR found a violation of Article 10 of the European Convention on Human Rights after a prisoner was denied access to educational material online. The Court stressed that internet access is increasingly important for the enjoyment of rights such as edu-

cation and information, and that states must take measures to mitigate digital exclusion. Importantly, the Court clarified that the right to information in the digital age cannot be interpreted narrowly or arbitrarily restricted, especially when access to education is at stake. While the court's decision acknowledged that certain restrictions may be justified in closed institutions, it ruled that general bans without individual assessment or proportionate justification do not meet democratic standards. It sets an important precedent for digital rights within prisons and emphasises that contextual restrictions must meet genuine necessity and proportionality requirements, especially when education and reintegration are at stake (Judgment of the ECtHR, 2017, paragraphs 54, 59–62). The case marked a major turning point in the recognition of digital access as an integral part of the enjoyment of fundamental rights.

A recent legal case in Slovakia (Poradňa pre občianske a ľudské práva – Center for Civil and Human Rights, 2025) illustrates the complexities of addressing digital exclusion through anti-discrimination law. A Roma student brought a claim against the state, arguing that she had been denied access to digital learning during the COVID-19 pandemic due to a lack of internet and digital equipment. Although the District Court initially ruled in her favour, the decision was overturned by the Court of Appeal, and upon retrial, the case was dismissed in January 2025. While the final judgment did not establish digital exclusion as a form of discrimination, the case sparked public debate on the structural barriers faced by marginalised groups in accessing education, particularly in the context of digital transitions.

These cases show that vulnerable groups are making a clear and powerful statement: digital access has become fundamental to realising many of the rights and opportunities required for equal citizenship. Their demands go beyond technical fixes; they demand reliable and affordable access to infrastructure and devices, inclusive and accessible design of digital services, and legal recognition of digital access as an integral part of social and civil rights. Equally important, they seek meaningful participation in the design and governance of digital public services to ensure that their experiences and needs are not overlooked but actively shape the systems designed to serve them.

3. Policy implications and future directions

The evidence provided in this study confirms that European frameworks have created a common vocabulary for digital inclusion, but they have not yet produced significant common results. Measurable gaps persist based on geography, age, gender, education, disability, and migration status. Unless the next policy cycle moves from ambitious promises to achievable standards, today's inequalities risk becoming tomorrow's structural divisions.

Pan-European targets such as '80% of adults should have at least basic digital skills by 2030' are a helpful benchmark, but they miss out the fact that all Member

States have very different starting points. In 2023, less than 30% of Europeans aged 65–74 had basic skills, compared to 80% of persons with a higher education (Eurostat, 2024b). Therefore a young university graduate living in a city is not starting from the same place as an older woman in a rural village or a newly arrived migrant. While the EU's Digital Decade programme sets clear targets for the population as a whole, Member States are not required to break these down by group; there are no binding obligations, for example, to ensure that a certain percentage of older people or low-income migrants achieve digital literacy benchmarks by a certain year. National roadmaps exist but vary in scope and ambition, and many vulnerable groups are still left behind. If digital inclusion is really of the essence, EU policies need to become more specific. Member States should be asked to set clear national targets for the most at-risk groups and show how they plan to reach them. These targets should come with deadlines and funding, just like the EU's economic goals do.

Soft law instruments like the Declaration of Digital Rights help to set shared values and influence the direction of policy, but they lack legal force – they cannot force governments or companies to follow through. By contrast, the EAA is legally binding; it shows how hard law can close a critical gap when digital services and devices are designed in ways that exclude people with disabilities or older users. Starting from June 2025, products like ATMs, e-readers, e-commerce apps, and banking apps will not be allowed on the EU market unless they meet the EAA's accessibility requirements. The same approach – making accessibility mandatory – should be applied to other major digital laws that are currently under development or revision, including the upcoming Digital Identity Regulation, the European Health Data Space, and the Digital Fairness Act. If accessibility is built in as a default legal requirement across all these frameworks, it would ensure that digital tools are usable by everyone from the start, not just adapted afterwards.

Even when the infrastructure is in place, confusing interfaces, dark patterns, or English-only content silently exclude vulnerable users. If the forthcoming Digital Fairness Act is to truly promote inclusion, it must go beyond vague obligations and directly address the interface barriers that keep such users out. The Act should therefore:

- ban manipulative consent flows and other dark patterns that disproportionately confuse older adults and users with limited digital or linguistic skills;
- require public-sector websites and major platforms to comply with EU-wide usability standards, including the Web Content Accessibility Guidelines (WCAG 2.2) and plain-language norms;
- mandate regular usability testing with representative samples of vulnerable users, such as seniors, persons with disabilities, and minority-language speakers, to ensure that services are not only legally accessible but practically usable.

These provisions would help shift the EU's approach from symbolic inclusion to actual usability, ensuring that digital access is meaningful for all citizens, not just those already equipped to navigate it. But regulation alone is not enough. Member States should be encouraged, and where necessary obliged, to fund targeted digital inclusion programmes, especially those that have proven effective in reaching marginalised groups. For example, the Czech Digital Inclusion initiative, which trains social workers to transfer digital skills to vulnerable clients, shows how capacity building at the grassroots level can enhance the impact of EU-level goals. National strategies should actively support such community-led efforts, focusing not only on technical infrastructure, but also on support systems for people who enable digital participation in real life, prioritising people's needs, behaviours, and experiences.

Combining digital and media literacy has been shown to improve user engagement, critical thinking, and confidence, particularly among vulnerable groups (IDMO, 2023; IRIS CoE, 2024). A strategic target could be to allocate at least 25% of ESF+ funds to digital skills development in curricula that integrate both technical and critical literacy, in partnership with public service broadcasters and local media. While the Digital Europe and Horizon Europe programmes allocate significant resources to digital transformation, only a small proportion is allocated to accessible design or underserved regions. To reduce regional inequalities, at least 10% of the Digital Europe capacity-building budget could be allocated to projects targeting the lowest-performing Digital Economy and Society Index (DESI) quartile. The EU could use its multi-country project mechanism under the Digital Europe programme to jointly develop open-source tools, such as voice interfaces in minority languages, that could be reused in smaller Member States, thereby reducing duplication and increasing linguistic inclusiveness.

Finally, recent court cases also show that courts are prepared to regard digital exclusion as a form of discrimination. To build on this trend, the Commission should issue interpretative guidance, clarifying how digital contexts fall within the scope of the Race Equality and Goods and Services directives, and support strategic litigation to test these principles in practice. This means making clear that non-discrimination applies both online and offline: digital services should not be designed to systematically disadvantage people on the basis of language, ethnicity, gender, or other protected characteristics. Access to essential services such as e-government, healthcare, or banking should not depend on having the latest device, a fast connection, or knowledge of the dominant language. If a digital service effectively excludes certain groups, those affected should be able to complain and seek remedies, just as if they were denied a service in the physical world. Incorporating digital inclusion into the Charter will help transform fundamental rights into enforceable protections in the digital age.

Building trust is the final, overarching challenge. Surveys show that low trust in digital public services correlates with low usage, especially when users feel they do not control their data or understand how it is used. Transparent, accountable systems can

bridge this gap. Public dashboards should monitor service performance, security or privacy incidents, and results of accessibility audits, in real time. AI systems used in welfare, policing, or migration must be licensed with accessible summaries, including minority-language versions, and local 'digital ombudsmen' offices should mediate complaints, offer human support, and build confidence among marginalised users.

Together, these measures would transform the EU's current patchwork of pilots and strategies into a coherent, rights-based digital inclusion policy. They align infrastructure with human-centred design, turn soft commitments into enforceable law, and embed user feedback in governance. Digital inclusion should not remain a policy aspiration; it must be recognised and enforced as a fundamental right, embedded in the EU's legal and political framework alongside other core citizenship rights.

Conclusion

The digital divide is not a passing technical problem but a structural fault line that determines who can participate in modern European society. This article shows that while the EU has made significant progress in creating a common framework for digital inclusion, the lived experiences of many citizens, especially older people, migrants, rural residents, and those with low levels of education, still reflect deep and persistent inequalities. Closing these gaps will require more than just setting targets or funding pilot projects; it will require treating digital inclusion as a matter of justice and enforceable rights. This means embedding accessibility and usability into all digital laws and public services, funding programmes that create real support systems for vulnerable users, and holding national strategies accountable for reaching the most vulnerable. As digital access becomes a gateway to fundamental rights – from education and healthcare to legal protection and civic participation – the EU must move beyond symbolic inclusion to legal guarantees. If digital tools become the new infrastructure of citizenship, the right to access and use them must be protected with the same seriousness as other civil and social rights.

REFERENCES

Ayata, Z. (2024). European Union contracts in digital environments. In D. Ramiro Troitiño (Ed.), *E-governance in the European Union: Strategies, tools, and implementation* (pp. 173–185). Springer Nature Switzerland.

Cheesman, M. (2022). Digital wallets and migration policy: A critical intersection. *The Dialogue on Tech and Migration, DoT.Mig.* https://www.bosch-stiftung.de/sites/default/files/publications/pdf/2022–06/Digital%20Wallets%20and%20Migration%20Policy.pdf

Costa, M. I. (2023). The legal concept of discrimination by association: Where does it fit into the digital era? *UNIO–EU Law Journal*, *9*(1), 16–28.

de la Guardia, R. M. (2005). La política europea de España después de su integración en las Comunidades. *Cuadernos europeos de Deusto*, *32*, 61–84.

Djatmiko, G. H., Sinaga, O., & Pawirosumarto, S. (2025). Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance. *Sustainability*, *17*(7), 2908. https://doi.org/10.3390/su17072908

Droutsas, N., Spyridonis, F., Daylamani-Zad, D., & Ghinea, G. (2024). Web accessibility barriers and their cross-disability impact in esystems: A scoping review. *Computer Standards & Interfaces*, *92*, 103923. https://doi.org/10.1016/j.csi.2024.103923

Dullaert, I., Weitzberg, K., Schoemaker, E., & Martin, A. (2024). *The European Digital Identity Wallet: Why it matters and to whom*. Caribou Digital Publishing.

European Commission. (2021, 9 March). *2030 Digital Compass: The European way for the Digital Decade* (COM(2021) 118 final).

European Commission. (2024a). *Bridging the digital divide: 95% of learning agreements to be fully digital by 2025*. https://erasmus-plus.ec.europa.eu/news/bridging-the-digital-divide-95-of-learning-agreements-to-be-fully-digital-by-2025

European Commission. (2024b). *The second Horizon Europe strategic plan 2025–2027*. https://ec.europa.eu/commission/presscorner/detail/en/ip_25_2612

European Commission. (2025a). *2025 State of the Digital Decade package*. https://digital-strategy.ec.europa.eu

European Commission. (2025b). *European Commission adopts new round of EU Digital Identity Wallet implementing regulations*. https://ec.europa.eu/digital-building-blocks/sites/spaces/EUDIGITALIDENTITYWALLET/pages/909706465/New+round+of+EU+Digital+Identity+Wallet+implementing+regulations+adopted

European Parliament and Council. (2018, 28 February). Regulation (EU) 2018/302 on Addressing Unjustified Geo-Blocking and Other Forms of Discrimination Based on Customers' Nationality, Place of Residence or Place of Establishment within the Internal Market.

European Parliament and Council. (2019, 17 April). Directive (EU) 2019/882 on the Accessibility Requirements for Products and Services (European Accessibility Act).

European Parliament and Council. (2022, 14 December). Decision (EU) 2022/2481 on a Policy Programme 'Path to the Digital Decade' (O. J. L 323, 19.12.2022, pp. 4–26). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022D2481

European Union Agency for Fundamental Rights (FRA). (2023). *Fundamental rights of older people: Ensuring access to public services in digital societies*. https://fra.europa.eu/en/publication/2023/fundamental-rights-older-people-digital-societies

Eurostat. (2023a). *Digital skills in 2023: Impact of education and age*. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20240222–1#:~:text=In%202023%2C%2055%25%20of%20people,individuals'%20levels%20of%20digital%20skills.

Eurostat. (2023b). *Digital society statistics at regional level*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_society_statistics_at_regional_level

Eurostat. (2024a). *Digital economy and society statistics – households and individuals*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals

Eurostat. (2024b). *Skills for the digital age*. https://ec.europa.eu/eurostat/statistics-explained/index.php?oldid=627685

Eurostat. (2025). *Towards Digital Decade targets for Europe*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Towards_Digital_Decade_targets_for_Europe

Ferretti, F. (2022). A single European data space and data act for the digital single market: On datafication and the viability of a PSD2-like access regime for the platform economy. *European Journal of Legal Studies*, *14*, 173–218.

Giovanola, B. (2023). Justice, emotions, socially disruptive technologies. *Critical Review of International Social and Political Philosophy*, *26*(1), 104–119.

Gomes, A., & Dias, J. G. (2025). Digital divide in the European Union: A typology of EU citizens. *Social Indicators Research*, *176*, 149–172.

Hamuľák, O. (2016). *National sovereignty in the European Union: View from the Czech perspective*. Springer.

IDMO. (2023). *Digital Media Literacy Gaps and Needs*. Italian Digital Media Observatory. https://www.idmo.it/wp-content/uploads/2023/12/IDMO-Digital-Media-Literacy-Gaps-and-Needs_EN_final_compressed.pdf

IRIS CoE (Council of Europe). (2024). *Media literacy and the empowerment of users* (IRIS 2024–2). https://rm.coe.int/iris-2024–2-media-literacy/1680b06196

Judgment of the District Court of Prešov of 6 November 2023 on the case of *Rozsudok v. Mene Slovenskej Republiky*, no. 18C 96/2022–254.

Judgment of the European Court of Human Rights of 17 January 2017 on the case of *Jankovskis v. Lithuania*, application no. 21575/08.

Kerikmäe, T., Ramiro Troitiño, D., & Shumilo, O. (2019). An idol or an ideal? A case study of Estonian e-governance: Public perceptions, myths and misbeliefs. *Acta Baltica Historiae et Philosophiae Scientiarum*, *7*(1), 71–80.

Laaninen, T. (2025). Media literacy: Fostering a key civic skill in a digital information environment. *European Parliamentary Research Service*. https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2025)772886

Maatsch, A. (2024). Parliamentary adjustment during a crisis: Interplay of digitalization and domestic context factors. *Internet of Things*, *27*, 101316.

Mokrá, L. (2023). Digitally sovereign individuals: The right to disconnect as a new challenge for European legislation in the context of building the EU digital market. In D. Ramiro Troitiño, T. Kerikmäe, & O. Hamuľák (Eds.), *Digital development of the European Union: An interdisciplinary perspective* (pp. 189–197). Springer International Publishing.

Morte-Nadal, T., & Esteban-Navarro, M. A. (2025). Recommendations for digital inclusion in the use of European digital public services. *Humanities and Social Sciences Communications*, *12*(1), 1–15.

Negreiro, M. (2015). Bridging the digital divide in the EU. *European Parliamentary Research Service*. https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2015)573884

OECD. (2024). *OECD Survey on Drivers of Trust in Public Institutions – 2024 results: Country notes (Denmark and Estonia)*. https://www.oecd.org/governance/trust-in-government/

Outeda, C. C. (2024). The EU's AI Act: A framework for collaborative governance. *Internet of Things*, 27(3):101291.

Peeters, R., Miller, S. M., & Schuilenburg, M. (2025). Digital government inclusion: Exploring strategies for inclusive government automation. *Government Information Quarterly*, *42*(2), 1–11. https://doi.org/10.1016/j.giq.2025.102028

Perifanou, M. A., & Economides, A. A. (2020). Gender digital divide in Europe. *International Journal of Business, Humanities and Technology*, *10*(4), 7–14.

Poradňa pre občianske a ľudské práva – Center for Civil and Human Rights. (2025). *Prešov District Court ruling in digital divide and access to education case.* https://poradna-prava.sk/en/strategic-litigation/presov-district-court-ruling-in-digital-divide-and-access-to-education-case/

Reid, M., Aleti, T., Figueiredo, B., Sheahan, J., Hjorth, L., Martin, D. M., & Buschgens, M. (2024). Factors influencing seniors' anxiety in using ICT. *Social Sciences*, *13*(9):496. https://www.mdpi.com/2076–0760/13/9/496?utm_source=researchgate.net&utm_medium=article

Rek, M. (2024). E-democracy in the EU. In D. Ramiro Troitiño (Ed.), *E-governance in the European Union: Strategies, tools, and implementation* (pp. 103–115). Springer Nature Switzerland.

Reuters. (2024, 19 April). *EU to invest $1.5 billion in region's deep tech sector.* https://www.reuters.com/technology/eu-invest-15-billion-regions-deep-tech-sector-2024–10–29/

Rivera Pastor, R., Tarín Quirós, C., Villar García, J. P., Badia Cardús, T., & Melero Nogués, M. (2017). Language equality in the digital age: Towards a Human Language Project – now! *Scientific Foresight Unit (STOA)*. https://www.europarl.europa.eu/RegData/etudes/STUD/2017/598621/EPRS_STU(2017)598621_EN.pdf

Röggla, M. (2025). Addressing the discriminatory effects of the EU geo-blocking regulation on minority groups. *Eurac Research Science Blogs*. https://doi.org/10.57708/BH0ZZX9-YSS655UM0M110IW

Rūse, I. (2014). Nordic–Baltic interaction in European Union negotiations: Taking advantage of institutionalized cooperation. *Journal of Baltic Studies*, *45*(2), 229–246.

Sánchez-García, J., Ochoa Siguencia, L., Gródek-Szostak, Z., Ochoa-Daderska, R., Kopiec, A., Szeląg-Sikora, A., Velinov, E., Sikora, J., Niemiec, M., & Akarcay, Y. (2021). Adult social inclusion in a digital environment: Digital needs for social services. *ASIDE Report II*. https://zenodo.org/records/5516367

Shah, H. (2023). Advancing web accessibility: A guide to transitioning design systems from WCAG 2.0 to WCAG 2.1. *15th International Conference on Web Services & Semantic Technology*, *15*, 233–245.

Statistics Estonia. (2024). *Daily internet use by age groups*. https://stat.ee/en/news/929-estonian-households-use-internet-social-media-increasingly-popular

Stein, V., Pentzold, C., Peter, S., & Sterly, S. (2022). Digitalization and civic participation in rural areas: A systematic review of scientific journals, 2010–2020. *Raumforschung und Raumordnung / Spatial Research and Planning*, *80*(3), 251–265. https://doi.org/10.14512/rur.112

Tabassum, S., Mathew, N., & Faklaris, C. (2025). Privacy on the move: Understanding educational migrants' social media practices through the lens of communication privacy management theory. *COMPASS '25: Proceedings of the ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societie*. https://dl.acm.org/doi/10.1145/3715335.3735453

Troitiño, D. R. (2022). The European Union facing the 21st century: The digital revolution. *TalTech Journal of European Studies*. 12(1), 60–78.

Vaportzis, E., Giatsi Clausen, M., & Gow, A. J. (2017). Older adults' perceptions of technology and barriers to interacting with tablet computers: A focus group study. *Frontiers in Psychology*, *8*(1687). https://doi.org/10.3389/fpsyg.2017.01687

Zac, A., Huang, Y., Moltke, A., Decker, C., & Ezrachi, A. (2025). Dark patterns and consumer vulnerability. *Behavioural Public Policy*, 1, 1–50. https://ora.ox.ac.uk/objects/uuid:c4f6a1b3–838a-49e7-b0d6–2f9d6b05cdb7