



Nordregio



Nordic Welfare
Centre

Working paper

Towards digital inclusion in the Nordic-Baltic region

A synthesis working paper with key findings
and proposed solutions

Authors

Bengt Andersson, Nordic Welfare Centre

Persons with disabilities: Lars Lindberg & Gunnar Michelsen, Nordic Welfare Centre

Older adults: Louise Scheel Thomasen, Nordic Welfare Centre

Immigrants: Kaisa Kepsu, Nordic Welfare Centre

Children and young people: Clara Sommarin, Nordic Welfare Centre

Coordinating editors: Maja Brynteson & Leneisja Jungsberg, Nordregio

Table of Contents

Summary	3
1. Introduction	6
1.1 Background & Methods	6
2. Groups at risk of digital exclusion	10
2.1 Persons with disabilities.....	10
2.2 Older adults	13
2.3 Rural populations.....	16
2.4 Immigrants	19
2.5 Children and young people	21
3. Conclusions & Recommendations	25
References	27

Summary

This working paper focuses on digital inclusion and groups at risk of digital exclusion. Through publications, focus group interviews, surveys, workshops and meetings, the Nordic Welfare Centre has summarised findings, concentrating on the following groups at risk of digital exclusion: older adults, immigrants, rural populations and children and young people.

It provides an overview aimed at fostering an inclusive digital transition in Nordic societies and is connected to the [Digital Inclusion in Action](#) project, led by Nordregio and funded by the Nordic Council of Ministers. The project emphasises collaboration, dialogue and knowledge sharing between practitioners and policymakers to address digital exclusion amongst the aforementioned groups.

The importance of digital inclusion is emphasised in achieving the goals of the Nordic Council of Ministers' Cooperation Programme for Social and Health Policy and the Nordic-Baltic Cooperation Programme for Digitalisation 2025–2030. It highlights the need for accessible digital tools and services, digital literacy education and strategic policies to promote digital inclusion.

Key findings from workshops and meetings reveal significant challenges faced by groups at risk of digital exclusion. These challenges include lower ownership rates of digital tools, weaker digital skills and barriers to accessing digital services. This working paper stresses the importance of early user involvement in the innovation process, strategic collaboration and the sharing of best practices across the region.

For persons with disabilities, it is important to compile accessible digital solutions and standards, as well as to involve users in designing new digital tools and services. For older adults, the digital divide and the risk of isolation due to digitalisation are highlighted. For rural populations, the focus is on improving digital infrastructure and connectivity. For immigrants, the findings emphasise tailored approaches to digital inclusion, addressing language barriers, trust issues and systemic barriers. Lastly, child rights impact assessments should be carried out when developing digital media policies, services and tools. This is to determine how they may affect children and young people of different ages, genders and groups, for example in terms of inclusion and exclusion.

Overall, this working paper calls for comprehensive strategies to address digital exclusion and promote digital inclusion, ensuring that all citizens can benefit from the digital transition.

Key lessons learned:

Persons with disabilities:

- Different disability groups have varied needs and IT security often takes precedence over accessibility. Digital inclusion for persons with disabilities is complex due to the involvement of multiple actors, leading to fragmented and challenging processes.
- Developing standards and involving users early in the innovation process are crucial. Collaboration with IT companies and the business sector is essential for creating accessible digital solutions.

Older adults:

- There is a significant digital divide amongst older adults, particularly those aged 60 and above and those outside employment. This group has weaker digital skills compared to the rest of the population.
- Digitalisation poses challenges for older adults who are uncomfortable using digital tools, increasing the risk of isolation and loneliness. Accessible digital tools and services tailored to their needs are necessary.

Rural population:

- Many rural areas face significant challenges due to inadequate internet connectivity and limited access to digital devices, hindering the implementation of digital health and social care services.
- Improving digital infrastructure and access, along with tailored digital literacy programmes, is crucial to bridge the digital divide in rural communities.

Immigrants:

- Some groups of immigrants, such as immigrant women (particularly newcomers and those with limited language proficiency), face significant barriers to digital inclusion. Language difficulties and low trust in public sector systems hinder access to essential services.
- Tailored, holistic approaches to digital inclusion and employment support are necessary. Inclusion support should cover digital and societal aspects, such as digital skills courses, language education and information on the welfare model and the foundations and structure of Nordic societies. Cross-sectoral collaboration and the role of NGOs in bridging gaps are emphasised.

Children and young people:

- Digital media can offer important opportunities for inclusion for certain groups of children and youth, such as LGBTQI+, those with disabilities, or those from minority cultures or indigenous

backgrounds. At the same time, it can exclude these and other groups and expose them to disproportionate risks and negative consequences.

- Strategies to create a safer digital democracy for children and young people must take into account the needs and rights of children and young people of different ages, genders and groups and recognise that they are exposed to, use and are affected by digital media in different ways.
- When developing digital media policies, services and tools, child rights impact assessments must be carried out. This is to determine how they may affect children and young people of different ages, genders and groups, for example in terms of inclusion and exclusion.

1. Introduction

Digitalisation is transforming societies across the Nordic and Baltic countries, offering new opportunities for participation, access to services and social inclusion. However, this transformation also risks leaving behind individuals and communities who face structural, social or technical barriers to digital engagement (Chohan & Hu, 2022; Heponiemi et al., 2020; Park, 2022).

Hence, a paradox persists: whilst Nordic and Baltic countries are global leaders in digital innovation, digital inequalities remain rooted for certain groups. The consequences of this paradox are far-reaching: digital exclusion can deepen existing social inequalities, limit access to essential services and erode trust in public institutions. It can also hinder individuals' ability to participate fully in education, employment and civic life. This "Nordic-Baltic paradox" – high digital advancement coexisting with persistent digital exclusion – underscores the urgency of targeted, inclusive strategies (Nordic Council of Ministers, 2022; Wendt-Lucas et al., 2024)

This working paper, developed within the framework of Nordregio's project Digital Inclusion in Action, explores digital exclusion amongst groups identified as being at risk, including persons with disabilities, older adults, rural populations, immigrants and children and young people. The aim of this paper is to synthesise insights from a range of activities – publications, focus group interviews, surveys, workshops and meetings – conducted by the Nordic Welfare Centre (NWC) and Nordregio. These insights are intended to inform policy and practice by highlighting both the challenges and the promising strategies for fostering digital inclusion in Nordic-Baltic societies.

The central research questions guiding this paper are: How can digital inclusion be promoted among groups at risk of digital exclusion in the Nordic-Baltic region and what strategies exist to address their specific needs?

1.1 Background & Methods

Digital inclusion is embedded within a broader policy context. Both the Nordic Council of Ministers' Co-operation Programme for Social and Health Policy and the Nordic-Baltic Co-operation Programme for Digitalisation 2025–2030 highlight the importance of ensuring that digital transitions are inclusive.

Information box: The Nordic Council of Ministers Co-operation Programme for Social and Health Policy 2025-2030

In the Nordic Council of Ministers Co-operation Programme for Social and Health Policy 2025–2030, which aims to strengthen resilience and sustainability for secure welfare, digitalisation and innovative solutions form one of three intervention areas.

Three sub-goals in the programme focus on digitalisation:

- Sub-goal 1.2: The Nordic welfare systems should be sufficiently staffed and run by professionally competent social and health staff; Welfare technology and more Nordic knowledge cooperation can be part of the solution. At the same time, digital accessibility and other distance solutions with flexible offers can contribute to increasing high-quality offers to residents in sparsely populated areas and enable residents of the Nordic region to receive help across borders.

- Sub-goal 3.1: Everyone should have equal opportunities to live good, independent lives; Therefore, we must develop more easily accessible digital solutions that enable participation in, for example, education, work and communities despite geographical distance and/or physical and mental ability. Welfare technology solutions and strengthened digital health and social services are necessary to be able to provide early support and assistance and facilitate a more independent life.

- Sub-goal 3.2: All children and young people should have a place in the community and equal opportunities to grow up in security, stability and with good future prospects; A significant use of screens and digital media by children and young people risks not only being exposed to harmful content online but also crowding out important health-promoting activities. Knowledge about preventive measures to secure the well-being of children and young people, including in relation to the use of screens and digital media, should be shared among the Nordic countries and Nordic cooperation should be promoted.

(Nordic Council of Ministers, 2024b)

Information box: Nordic-Baltic Co-operation Programme for Digitalisation 2025–2030

The Nordic-Baltic Co-operation Programme for Digitalisation 2025-2030 sets out three recommendations to make the region the most digitally integrated in the world by 2030:

- Goal 1: The Nordic-Baltic region is a front runner in realising the digital and green transition.
- Goal 2: The Nordic-Baltic region is secure, connected and integrated.
- Goal 3: The Nordic-Baltic region is secure, inclusive and promotes a human-centric digital transformation to ensure resilient societies.

(Nordic Council of Ministers, 2024a)

Nordregio's project [Digital inclusion in action](#) contributes to an inclusive digital transition in Nordic-Baltic societies by promoting collaboration, dialogue and knowledge sharing between practitioners and policymakers in the Nordic and Baltic countries. The activities and project results are important contributions to achieving the goals and sub-goals in the Nordic Council of Ministers Cooperation Programme for Social and Health Policy (Nordic Council of Ministers, 2024b) and the Nordic-Baltic Co-operation Programme for Digitalisation 2025–2030 (Nordic Council of Ministers, 2024a).

Information box: Digital Inclusion in Action

The Nordregio project *Digital Inclusion in Action* seeks to develop a comprehensive understanding of the key dimensions of digital inclusion across the Nordic and Baltic region and to evaluate their impact on various societal groups. Running from October 2022 to October 2025, the project is funded by the Nordic Council of Ministers (MR-DIGITAL). It encompasses a range of activities and outreach initiatives.

(Nordregio, n.d.)

Over the course of three years (2022–2025), NWC, in collaboration with Nordregio, has leveraged established support networks to reach and engage with population groups at risk of digital exclusion. These include persons with disabilities, older adults, immigrants, residents in rural areas and children and young people. Input from these population groups was

gathered through a variety of channels, including NWC and Nordregio publications, focus group interviews, surveys, workshops and stakeholder meetings. The project capitalised on existing studies, initiatives and collaborations to ensure continuity and broad outreach. The lessons learned presented in the following sections are based on a multi-method approach which also enabled the collection of quantitative and qualitative insights, resulting in a nuanced synthesis of digital barriers and enablers.

2. Groups at risk of digital exclusion

To meet the objectives of the Nordic-Baltic Co-operation Programme for Digitalisation 2025–2030, it is crucial to address vulnerable groups in Nordic societies that risk digital exclusion. Demographic changes, a digital divide and gaps in connectivity and skills are among the policy priorities of the cooperation programme (Nordic Council of Ministers, 2024a).

The summarised findings for the groups identified as being at risk of digital exclusion – persons with disabilities, older adults, immigrants, rural populations and children and young people - are presented under the following main headings, based on information collected through publications, focus group interviews, surveys, workshops and meetings:

- Background
- Public sector accessibility
- Digital inclusion and skills
- Research and knowledge gaps

2.1 Persons with disabilities

Background

In March 2023, the Ministers of Health, Care and Social Issues of the Nordic countries published a [Declaration for a further strengthening of the Nordic welfare model](#), emphasising quality of life and inclusion for all citizens through digital solutions. The declaration also highlighted the importance of Nordic cooperation to share good practices for better access to the digital world for persons with disabilities. Digital inclusion measures are central to fulfilling the UN Convention on the Rights of Persons with Disabilities (Nordic Council of Ministers, 2023b).

In May 2025, the Nordic and Baltic ministers for digitalisation adopted a joint ministerial declaration aimed at [promoting the participation of persons with disabilities through inclusive, fair, and accessible artificial intelligence](#). In this declaration, the ministers pledge to advance the rights and participation of persons with disabilities in discussions and decision-making on artificial intelligence at national, Nordic and Baltic levels (Nordic Council of Ministers, 2025).

The main input for persons with disabilities is based on a workshop held in May 2024 in connection with the [Digital Inclusion in the Nordic-Baltic Region – The Conference](#) (Nordregio, 2024). Selected participants, including ten

experts, attended both the conference and the workshop. Prior to the workshop, all participants completed a survey, which was compiled in a preparatory memo. All participants were qualified experts representing authorities, organisations and academia.

The workshop was conducted under two themes: (1) Digital inclusion and (2) Digital services and universal design. Invited speakers presented current research and various perspectives on digital inclusion for persons with disabilities. This was followed by group discussions and a collective discussion.

Lectures and discussions highlighted the complex problems of digital inclusion for persons with disabilities. Barriers included the involvement of many different actors in creating and maintaining accessible services, resulting in fragmented and difficult processes. Different disability groups have different strengths and needs, meaning not all aspects are addressed. IT security requirements often take precedence over accessibility and usability, creating new barriers. There was a request for a compilation and library of accessible digital solutions to be shared across the Nordic countries. The need to collect good examples and best practices for policy development was discussed. Early user involvement and dialogue with the business sector and IT companies were emphasised as central to ongoing work.

Statistics and indicators:

Statistics reveal a consistent digital gap between persons with and without disabilities. According to the report *Comparability of statistical data on persons with disabilities across the EU*, there are notable disparities in the ownership of digital tools between persons with and without disabilities. In 2022, approximately 81.2% of persons with disabilities reported using the internet within the past 12 months, compared to 93.4% of persons without disabilities. When it comes to engaging with public authorities online, the gap remains evident: about 44.0% of persons with disabilities used the internet for this purpose, while the figure was higher - 51.9% - among those without disabilities (Grammenos, 2024).

European data from 2018 shows that 70.7% of persons with disabilities own a smartphone, compared to 75.5% of those without disabilities. The gap is more pronounced for computer ownership: 67.2% of persons with disabilities have access to a computer, in contrast to 86.9% among persons without disabilities. Furthermore, only 64.3% of persons with disabilities have an internet connection at home, whereas this figure rises to 87.9% for persons without disabilities (Grammenos, 2021). These figures highlight a persistent digital divide that may affect access to information, services and opportunities for individuals with disabilities.

Individuals with disabilities tend to have lower ownership rates of essential digital tools such as smartphones, computers and home internet connections. In addition to limited access to these technologies, persons with disabilities – particularly those aged 50 and above – also demonstrate lower levels of digital skills and lower levels of internet usage (Eurostat, 2025). This group is more likely to have never used a computer, highlighting a significant barrier to digital inclusion and participation in an increasingly digital society.

Summarised findings:

Structural challenges in digital accessibility

- **Lack of awareness among actors:** There is a significant need for increased knowledge and awareness among private actors and local authorities regarding digital accessibility for persons with disabilities.
- **Fragmented service development:** The involvement of many different actors in creating and maintaining accessible services leads to fragmented processes and inconsistent implementation.
- **Accessibility vs security:** IT security requirements are often prioritised over accessibility and usability, creating new barriers to inclusion.
- **Unclear legal mandates:** Opinions were divided on whether universal design should be mandated by law; however, there was consensus on the need for more guidance and knowledge sharing.
- **Need for shared resources:** There is a demand for a shared Nordic compilation or library of accessible digital solutions and best practices to support policy development and implementation.

Digital inclusion and skills

- **Lower digital access and skills:** Persons with disabilities generally have lower levels of digital skills and lower ownership rates of digital tools (e.g. smartphones, computers, internet access) compared to those without disabilities. The digital divide is particularly visible among persons with disabilities aged 50 and above, who report higher rates of never having used a computer.
- **Value of Nordic collaboration:** Nordic collaboration is seen as essential for exchanging information and best practices on digital skills development and inclusive digital service design.

- **Challenges with eID systems:** The implementation of eIDs presents challenges and there is ongoing debate about whether standards should be adjusted to improve accessibility.

Research and knowledge gaps

- **Need for early user involvement:** There is a clear need for early user involvement in the innovation and design process to ensure future digital solutions are accessible and inclusive.
- **Lack of strategic coordination:** Strategic collaboration across the Nordic-Baltic region is needed to share good examples and develop common standards for digital accessibility.
- **Limited understanding of diverse needs:** More research is needed on how different disability groups experience digital exclusion and what tailored solutions are most effective.
- **Insufficient long-term data:** There is a lack of comprehensive data on the long-term impact of digital exclusion on the social participation and well-being of persons with disabilities.

2.2 Older adults

Background

Between 2022–2025, digitalisation has been a key focus of NWC and Nordregio projects and activities. The findings presented below were gathered through meetings and workshops with representatives from national elder councils, ombudsmen and individuals involved in projects and publications.

Focus on digitalisation at the workshop with Nordic Elder Councils 2022

NWC has held several workshops and meetings with representatives from the elder councils of all Nordic countries. At the main event in October 2022, over 20 representatives from all Nordic countries participated and digitalisation was one of the main areas of discussion. The focus was on digital literacy, digital inclusion and exclusion and how the target group could stay updated on digital developments. There was a general observation of a significant digital divide among older adults, with those aged 60 and above, as well as those not in employment or education, having weaker digital skills compared to the rest of the population. This trend is also reflected in findings from Norway, as noted in the report "[Befolkningens digitale kompetanse og deltagelse](#)" (Bjønness et al., 2021)

A set of recommendations and proposals emerged from the workshop and meetings. There was a strong emphasis on the need for accessible digital tools and services that are specifically tailored to the needs of older adults. Equally important was the provision of education and training initiatives aimed at improving digital skills within this demographic. Participants also highlighted the necessity of developing strategic policies to combat digital exclusion and to promote digital inclusion, both at the national and Nordic levels.

Looking ahead, the focus will remain on addressing the digital divide to ensure that older adults are not left behind in the digital transition. This includes making digital services more accessible and user-friendly to better support their engagement and participation.

NJUST & Active and Healthy ageing - Representatives of older adults worry that digitalisation will lead to isolation and loneliness

Since 2022, NWC has held several meetings and workshops with representatives of older adults, including group interviews in the Nordregio project [Not Just a Green Transition \(NJUST\)](#) (Nordregio, 2021). The two reports focusing on [Active and healthy ageing: Heterogenous perspectives and Nordic indicators](#) and [Indicators for active and healthy ageing in the Nordic Region](#) also contribute to the summary below of digital challenges concerning the target group of older adults (Cuadrado et al., 2022; Huynh et al., 2022).

From surveys, workshops and group interviews, the NJUST-project concludes that in parallel to the green transition, a digital transition is taking place in the Nordic region where digital technology is increasingly integrated into all areas of our professional and social lives. This process is intertwined with the green transition. For example, to reduce the use of paper, more information is now only available online. Similarly, it is becoming increasingly common to hold meetings, appointments and medical consultations through digital meeting tools to save on travel time and costs. While these transformations have many good effects - allowing people to save time and resources - they are challenging for older adults who do not feel comfortable in using digital tools. Representatives of older adults' express concerns that these groups are at risk of being left behind, with less access to information and an increased risk of experiencing isolation and loneliness (Tapia et al., 2022).

The study *Active and healthy ageing: Heterogenous perspectives and Nordic indicators* examine various indicators of social activity, engagement and participation to explore digital literacy from multiple angles. It shows that, while the Nordic countries generally rank high in digital literacy among older adults, notable cross-country differences exist. Socio-economic status plays

an important role – older adults with higher education levels tend to use the internet more frequently than those with less formal education. Gender differences are also evident, with women typically being more active online than men across the five Nordic countries. The study further concludes that work on active and healthy ageing spans multiple sectors, with responsibilities shared across all levels of governance and a broad range of stakeholders in the Nordic countries. Regarding digitalisation, the focus is on increasing digital competences among older individuals and strengthening approaches to digital solutions within healthcare such as implementing innovative and inclusive welfare technologies (Huynh et al., 2022).

The report *Indicators for Active and Healthy Ageing in the Nordic Region: possibilities and challenges* shows that welfare technology in the healthcare sector is becoming increasingly used in Nordic countries. This includes, among other things, mobile safety alarms, distance monitoring, telemedicine opportunities, medicine dispensers and digital visits. Welfare technology should not be seen as a goal in itself, but rather something that can be used to strengthen citizens' independence, prolonging empowerment, making it easier for people to live in their own homes, enabling better quality of life and supplementing human-based efforts. However, challenges remain in implementing welfare technologies. Older adults may struggle with novel, unfamiliar digital devices and lower levels of internet and e-health use and familiarity. Furthermore, designing systems for those who may not remain the primary users long-term can add complexity (Cuadrado et al., 2022).

Summarised findings:

Structural challenges in digital accessibility

- **Socio-economic and gender differences:** Digital literacy among older adults varies significantly based on socio-economic status and gender. Older adults with higher educational levels and women are generally more frequent internet users than those with lower formal education and men.
- **Addressing the digital divide:** Emphasis should be on addressing the digital divide, ensuring digital services are accessible and user-friendly and developing policies to promote digital inclusion at both national and Nordic levels.

Digital inclusion and skills

- **Digital divide:** There is a significant digital divide among older adults, particularly those aged 60 and above and those not in employment or education. This group has weaker digital skills compared to the rest of the population.

- **Concerns of isolation:** Digitalisation, while beneficial in many ways, poses challenges for older adults who are uncomfortable using digital tools. There is a risk of increased isolation and loneliness as more services and interactions move online.

Research and knowledge gaps

- **Accessibility of digital tools:** There is a need for more accessible digital tools and services tailored to the needs of older adults. This gap indicates a lack of user-friendly designs that cater specifically to this demographic.
- **Impact of digitalisation on social interaction:** The shift towards digital services and interactions poses a risk of increased isolation and loneliness for older adults who are not comfortable using digital tools. This highlights a gap in understanding how to effectively integrate digital solutions without compromising social interactions.
- **Education and training programmes:** There is a gap in the availability and effectiveness of education and training programmes aimed at improving digital skills among older adults. This includes the need for targeted initiatives to bridge the digital divide.
- **Policy development and implementation:** There is a need for strategic policies at both national and Nordic levels to address digital exclusion and promote digital inclusion. The gap lies in the development and implementation of these policies to ensure they effectively reach and benefit older adults.

2.3 Rural populations

Background

Compared to other groups at risk of digital exclusion described in this working paper, rural areas encompass people of all ages and background, which presents a different perspective and a broader scope. Political visions and long-term goals for regional development in sparsely populated areas are important factors, particularly regarding digital connectivity (Wendt-Lucas et al., 2025a).

VOPD and iHAC

In 2018, NWC and the Swedish Centre for Rural Medicine in Västerbotten were assigned to carry out the project [Healthcare and Care through Distance-Spanning Solutions](#), VOPD, as a priority project of the Swedish Presidency Programme for the Nordic Council of Ministers 2018. The VOPD project was followed by the project [Integrated Healthcare and Care through Distance-](#)

[Spanning Solutions](#), iHAC, which was an activity in the action plan from the Nordic Council of Ministers' Vision 2030. Both projects have focused on sparsely populated regions, with all activities conducted in and for rural communities.

Both VOPD and iHAC have highlighted the positive effects of using digital solutions in rural areas, focusing on aspects such as user perspective, staff and competence provision, sustainability and regional development. In total, over 40 regions and their municipalities in all eight Nordic countries and the three Baltic countries participated in the projects. Through development projects, study visits and networking activities, VOPD/iHAC-management maintained continuous contact with all regions and municipalities. Challenges, success factors and positive developments have been shared in these environments.

The single largest challenge identified in the projects, as a prerequisite for distance-spanning solutions, is connectivity. Many rural regions lack high-speed connectivity, and the more sparsely populated the area, the greater the challenges in connecting to digital networks. The second largest challenge in sparsely populated areas is the demographic situation and development. In some sparsely populated rural municipalities, a large share of the population is older than 65 years, implying a demographic vulnerability (Andersson et al., 2019). As outlined in the earlier chapter of this document, *Older Adults*, this also forms part of the digital inclusion challenge in sparsely populated areas.

5G Connectivity

All Nordic countries have strategies for stable digital connectivity, both through fibre technology and mobile networks. The iHAC project presented five Nordic model regions for integrated healthcare and care in 2022. Four of these regions are in focus in the iHAC-financed discussion paper [Digital inclusion in distance spanning health solutions - Insights from four model regions](#). The report examines digital inclusion in distance-spanning health solutions across four Nordic model regions: Päijät-Häme (Finland), Fjallabyggð (Iceland), Agder (Norway) and Norrtälje (Sweden). It concludes that there is little insight into how e-health solutions currently affect digitally excluded groups and argues that tackling these inclusion gaps is vital to ensure digital health services are accessible, effective and responsive to the diverse needs of all population groups (Wendt-Lucas et al., 2025b). The [Nordic-Baltic 5G Monitoring Tool](#) has been used, and maps showing 5G connectivity in the four model regions are presented. A conclusion in the paper is that geographic connectivity discrepancies affect the uptake and inclusive use of digital health solutions (Wendt-Lucas et al., 2025b).

2G and 3G Connectivity

The two mobile networks, 2G and 3G, will be shut down by the end of 2025 in almost 30 European countries, including all Nordic countries. The consequences of this in sparsely populated areas are difficult to predict but will likely lead to lower connectivity, as these networks are the only ones in some of these areas. The Norwegian Directorate of Health concluded in February 2025 that there is no comprehensive overview of health equipment that communicates via 2G (Wegner, 2025).

Summarised findings:

Structural challenges in digital accessibility

- **Digital infrastructure:** Rural areas face significant challenges due to inadequate internet connectivity and limited access to digital devices, which hinder the implementation of digital health and social care services.
- **Inclusive design and literacy:** There is a need for targeted interventions to improve digital infrastructure and access, along with the inclusive design of digital services and tailored digital literacy programmes to meet the specific needs of rural residents.

Digital Inclusion and skills

- **Barriers to digital inclusion:** Rural residents face significant barriers such as lack of internet connectivity, digital devices and digital literacy. These barriers are compounded by demographic factors like age, disability and socio-economic status.
- **Recommendations for rural areas:** Targeted interventions are needed to improve digital infrastructure and access to digital devices in rural communities. Additionally, enhancing digital literacy programmes tailored for rural populations is crucial to bridge the digital divide.

Research and knowledge gaps

- **Connectivity and digital divides:** There are significant geographic connectivity discrepancies affecting the uptake and inclusive use of digital health solutions in rural areas. Research is needed to explore these connectivity issues and their impact on digital inclusion.
- **Age, loneliness and digital skills:** Lower digital skills among older adults and healthcare workers in rural communities, along with mixed results on the impact of digital tools on loneliness, highlight the need for further investigation into how digital solutions can effectively address these challenges.

2.4 Immigrants

Background

The share of the population with an immigrant background has grown significantly across the Nordic countries during the last twenty years. In 2023, the proportion of the population with an immigrant background ranged from 9% in Finland, 14% in Denmark, 17% in Norway, to 20% in Sweden and 22% in Iceland (Heleniak, 2024). As societies become more digitalised, ensuring digital inclusion for immigrants is essential for equitable access to services, education and civic participation. Supporting digital integration not only promotes social cohesion but also strengthens the inclusivity of Nordic welfare systems (Jessen et al., 2024).

Integration Norden

In 2016, the Nordic Welfare Centre was commissioned by the Nordic Council of Ministers to manage the project [Nordic Cooperation on Integration](#) in close collaboration with Nordregio. The responsible Nordic ministers aim to promote increased knowledge exchange between countries, focusing on measures that facilitate integration and how immigrants and refugees can contribute to the development of the Nordic countries.

The [Integration Norden](#) project is designed to support the Nordic countries' integration efforts by bolstering Nordic co-operation on the integration of refugees and immigrants through the sharing of experiences and development of new knowledge. The project includes an expert group with 2-3 participants from each country. The participants work with integration at the central or regional level in their respective countries. The expert group focuses on labour market initiatives. The project serves as a knowledge bank and a Nordic hub for the development and exchange of experiences in the field of integration. Through publications and other channels, it presents comparisons between countries, research on the effects of migration and examples of best practice.

The summarised findings, focusing on digital inclusion for immigrants, are based on two reports in the *Integration Norden* project: [What works and for whom? Toward a more inclusive labour market in the Nordics](#) and [Promoting Digital inclusion of immigrant women in the Nordic countries](#). The publications are based on data from interviews, workshops, meetings and the expert group assessed along results from other studies. Both reports highlight the importance of tailored, holistic approaches to digital inclusion and employment support for immigrants, emphasising the role of language training, digital literacy and cross-sectoral collaboration.

What works and for whom? Toward a more inclusive labour market in the Nordics

This report highlights that digital skills are essential for modern employment and that a lack of these skills can be a significant barrier. Public employment services play a crucial role in providing access to digital resources and training, helping to bridge the digital divide. The report also stresses the importance of cross-sectoral collaboration to create comprehensive support systems (Højbjerg et al., 2024).

Promoting digital inclusion of immigrant women in the Nordic countries

Despite the high level of digitalisation in the Nordic countries, immigrant women - particularly newcomers and those with limited language proficiency and lower socio-economic backgrounds - face significant barriers to digital inclusion. These barriers include language difficulties, varying levels of digital skills and trust issues, which hinder their access to essential services like healthcare and education. The publication highlights the role of NGOs in bridging the gap between immigrant women and digital services. The publication emphasises the importance of recognising the multifaceted nature of the barriers faced by immigrant women and the need for comprehensive strategies to promote their digital inclusion (Brynteson & Jessen, 2025).

Summarised findings:

Structural challenges in digital accessibility

- **Language barriers:** Limited local language proficiency and complex bureaucratic language hinder access to digital public services.
- **Trust issues:** Low trust in public sector systems and technology, often due to unfamiliarity or past negative experiences.
- **Policy initiatives:** Focus on user-friendly eIDs, investment in digital skills training and multilingual services to improve accessibility.

Digital inclusion and skills

- **Digital skills:** Some immigrant women lack basic digital literacy, such as using computers and navigating online services.
- **Systemic barriers:** Discriminatory practices and family responsibilities further complicate digital inclusion.
- **NGO support:** Tailored digital literacy programmes, supportive environments and mentorship to bridge gaps and enhance access.

Research and knowledge gaps

- **Limited focus:** Existing research and policies often address broader digital inclusion challenges for groups identified as digitally-at-risk. Regarding immigrants, broader challenges, such as local language proficiency and low digital skills, are often discussed.
- **Diverse needs:** There is a need for more research that recognises the diverse needs within immigrant groups.
- **Systemic barriers:** More studies are needed to understand the systemic barriers, such as discriminatory practices and family responsibilities, that impact digital inclusion.
- **Holistic approaches:** There is a lack of comprehensive studies on holistic approaches that address both digital and social barriers to inclusion.
- **Long-term impact:** More research is needed to evaluate the long-term impact of digital inclusion initiatives and policies on immigrants.

2.5 Children and young people

Background

Digital media¹ is an important part of everyday life for most Nordic children and young people. Most have access to the internet and use digital media on a daily basis.² This offers opportunities for their development, learning, leisure, communication and participation. At the same time, digital media use can pose challenges and affect children's and young people's physical and mental health and well-being, their schooling and their willingness to participate in public discourse online (Nordic Welfare Centre, 2024).

However, children and young people of different ages, genders and groups are exposed to, use and are affected by digital media in different ways.

While digital media can offer important opportunities for inclusion for certain groups, such as LGBTQI+ youth, children with disabilities or those from minority cultures or indigenous communities, it can also be

¹ Digital media includes anything that is conveyed over the internet or on computer networks. It includes games, messaging, social media and other digital communications platforms, applications or digital tools. It can be conveyed through different types of devices/screens, including TV screens, computers, tablets and mobile phones. Definition adapted from the report "Digitala medier och barns och ungas hälsa - en kunskaps-sammanställning" (Folkhälsomyndigheten & Mediemyndigheten, 2024).

² The term 'children and young people' and 'children and youth' are used interchangeably to refer to the age group 0-25 years old, in accordance with the Convention on the Rights of the Child defining a child as a person 0-18 years old (UNICEF, 1989) and the United Nations definition of young people or youth as persons 15-25 years of age (United Nations, n.d.).

exclusionary for these and other groups, exposing them to disproportionate risks and negative consequences (OECD, 2025).

Nordic co-operation on a safer digital democracy for children and youth

Over the past couple of years, the impact of digital media on children and young people has been debated in many Nordic countries. Some of the issues discussed are social media's negative effects, screen time and age limits for social media use. Governments in several countries have set up commissions and tasked authorities with examining the impact of digital media on the health, learning and well-being of children and young people and with developing strategies and recommendations to safeguard their well-being (Nordic Welfare Centre, n.d. -a).

Digital media's impact on society has also been discussed at the Nordic level. In 2023, the Nordic Think Tank for Tech and Democracy published the report [A Nordic approach to democratic debate in the age of Big Tech](#). It presents 11 recommendations on how the Nordic countries can protect and strengthen the democratic debate in an era dominated by Big Tech companies. The report further argues that while digital media offers benefits, it also poses risks to mental health, including unhealthy comparison culture, reduced face-to-face interaction, loneliness and sleep disruption. Young people also report avoiding online public debate due to the hostile tone. In addition, children and young people are more likely to experiment online, making them more vulnerable to harm, particularly when platforms lack proper age verification and parental controls. As such, the report recommends that the Nordic countries should take strong action to shield minors from harmful online environments. This includes applying a precautionary principle when introducing new features on digital platforms and that platforms should be required to assess, document and mitigate potential risks before launching new services (Nordic Council of Ministers, 2023a). Recommendation 2A focuses on children and young people: *Protect the well-being and safety of children and youth online and push for more general control for citizens* (Nordic Council of Ministers, 2023a, p. 6).

In follow-up to this recommendation, the Nordic Council of Ministers³ launched a three-year project on [Nordic co-operation on a safer digital democracy for children and youth 2024-2026](#), which is implemented by the Nordic Welfare Centre. The aim of the project is to promote Nordic co-operation and strategic knowledge exchange on how to ensure a safer digital democracy for children and young people. The project will produce the following reports and recommendations:

³ Represented by the Nordic Ministers for Culture (Mr-K), the Nordic Committee for Children and Young People (NORDBUK) and the Ministers for Social and Health Affairs (Mr-S).

- A Nordic analysis of research and knowledge on the positive and negative effects of digital media on children and young people and an overview of policies, programmes, initiatives and structures in the Nordic countries to empower and protect children and young people in relation to digital media, as well as key international standards, guidelines and initiatives.
- A report capturing the views and recommendations of Nordic children and young people, based on consultations with children and young people.
- Joint Nordic recommendations on how to ensure a safer digital democracy for children and young people.

The project is supported by a Nordic Steering Group consisting of one official from a government agency in each of the Nordic countries (Denmark, Finland, Faroe Islands, Greenland, Iceland, Norway, Sweden and Åland Islands) and three youth representatives. A Nordic Working Group of researchers and experts in the field of digital media and children and young people from the different countries has also been formed to support the project. The reports and recommendations will be published and presented to the Nordic Council of Ministers and other stakeholders autumn/winter 2026 (Nordic Welfare Centre, n.d.-b). Among other things, the research will look at how digital media affect different groups of children and young people.

Existing international research on digital media and children and young people already highlights the need to take into account that children and young people are a heterogeneous group. This is important to bear in mind when developing strategies to ensure children's and young people's access to digital media, digital inclusion and digital literacy. Moreover, a child rights impact assessment should always be carried out when developing digital media policies, services and tools to determine how they may affect children and young people of different ages, genders and groups of children and young people, for example in terms of inclusion and exclusion (Nordic Welfare Centre, n.d.-b).

Summarised findings:

Structural challenges in digital accessibility

- **Policy attention and national strategies:** Several Nordic governments have initiated commissions and strategies to address the impact of digital media on children and young people, focusing on health, learning and well-being.
- **Nordic-level collaboration:** The Nordic Council of Ministers has launched a joint project (2024-2026) to promote a safer digital

democracy for children and young people, supported by a steering groups and expert working group across all Nordic countries.

- **Need for inclusive digital environments:** Public digital services and platforms must account for the diverse needs of children and young people, including those from minority, LGBTQI+ and disability communities, to ensure equitable access and participation.
- **Child rights impact assessments:** Authorities are encouraged to systematically assess how digital policies, tools and services affect children and young people of different ages, genders and backgrounds.

Digital inclusion and skills

- **Widespread access, unequal outcomes:** While most children and young people in the Nordic region have daily access to digital media, their experiences and outcomes vary significantly based on age, gender and social group.
- **Opportunities and risks:** Digital media supports learning, communication and participation, but also presents risks to mental and physical health, schooling and civic engagement – especially for vulnerable groups.
- **Vulnerable or disadvantaged groups:** Groups such as LGBTQI+ youth, children with disabilities and those from minority or indigenous backgrounds may benefit from digital inclusion but are also disproportionately exposed to exclusion and harm online.
- **Need for differentiated strategies:** Digital literacy and inclusion efforts must be tailored to the specific needs and contexts of different groups of children and young people, rather than assuming a one-size-fits-all approach.

Research and knowledge gaps

- **Heterogeneity of young people:** There is a need for more nuanced research that recognises children and young people as a heterogeneous group with diverse digital experiences and needs.
- **Impact of digital media:** More evidence is needed on the long-term effects of digital media on children's and young people's well-being, learning and social participation.
- **Inclusive policy development:** Research should inform the development of inclusive digital policies that reflect the voices and experiences of children and young people, particularly those from marginalised groups.

3. Conclusions & Recommendations

This working paper explored the state of digital inclusion across the Nordic and Baltic region, focusing on groups identified as being at risk of digital exclusion: persons with disabilities, older adults, rural populations, immigrants and children and young people. Drawing on a range of sources – including publications, focus group interviews, surveys, workshops and meetings – the working paper synthesised key challenges and opportunities for fostering a more inclusive digital transition.

The findings reveal that while the Nordic-Baltic region is a global leader in digital innovation, significant disparities persist in access, skills and trust in digital systems. These disparities are shaped by intersecting factors such as age, geography, disability, socio-economic status and language. The paper highlights the importance of early user involvement, cross-sectoral collaboration and the development of accessible digital tools and services. It also underscores the need for targeted strategies that reflect the lived experiences of diverse groups and promote equity in the digital society. Addressing it requires more than technological fixes - it calls for a rethinking of how digital systems are designed, governed and implemented. It also requires listening to those most affected and ensuring their voices are part of shaping the digital future.

Recommendations

- **Promote early and continuous user involvement:** Ensure that people from at-risk groups are involved in the design, testing and evaluation of digital tools and services to improve accessibility and relevance.
- **Strengthen digital infrastructure in rural areas:** Invest in high-speed connectivity and digital infrastructure to close the geographic digital divide, particularly in sparsely populated rural regions.
- **Develop targeted digital literacy programmes:** Tailor education and training initiatives to the specific needs of older adults, immigrants and persons with disabilities, with attention to language, trust and usability.
- **Support cross-sectoral collaboration:** Encourage partnerships between public authorities, NGOs, academia and the private sector to share best practices and co-develop inclusive digital solutions.
- **Address systemic and intersectional barriers:** Recognise and respond to the overlapping challenges faced by individuals, such as

immigrant women or rural older adults, through holistic and inclusive policy approaches.

- **Ensure child rights impact assessments:** When developing digital media policies and tools, assess how they affect children and young people of different ages, genders and backgrounds and ensure their rights are upheld.
- **Create a Nordic repository of accessible digital solutions:** Establish a shared platform for collecting and disseminating examples of accessible design, universal standards and successful inclusion strategies across the region.

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