Introduction to Part IV

What Additional Challenges Do Vulnerable Groups Face in the Digital Realm?

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The fourth and final part of this book looks at vulnerable groups in the digital context. The digital revolution has reshaped societies, economies, and human interactions. However, its benefits have not been equitably distributed. Vulnerable groups – those marginalised owing to socio-economic status, age, gender, ethnicity, language, geographic location, or other circumstances – often find themselves on the periphery of these advancements.[1] In many cases, the rapid adoption of digital technologies has exacerbated pre-existing inequalities and created new barriers to the enjoyment of fundamental rights. The United Nations Secretary-General has drawn attention to the fact that 'technologies can be, and increasingly are, used to violate and erode human rights, deepen inequalities and exacerbate existing discrimination, especially of people who are already vulnerable or left behind'.[2] This part explores some of these human rights challenges for vulnerable groups, aiming to provide different perspectives in relation to the question: *What additional challenges do vulnerable groups face in the digital realm?* The focus areas – the digital divide, children's rights, linguistic inclusivity in education, and the realities of vulnerable workers in the context of digital transformation – were selected because they address very different but interconnected dimensions of vulnerability in the digital environment, and to illustrate the broad range of issues that can arise in relation vulnerable groups. Together, the chapters examine how digitalisation interacts with broader social, cultural, and economic systems, often reinforcing existing disparities, but at the same time, they also draw attention to the transformative potential of inclusive and rights-based digital policies and practices.

[1] For more detail on how to define 'vulnerable groups', see, e.g., A. Limantė and A. Tereškinas, 'Definition of vulnerable groups', in A. Limantė and D. Pūraitė-Andrikienė (eds.), *Legal Protection of Vulnerable Groups in Lithuania, Latvia, Estonia and Poland* (New York: Springer, 2022), 3–27, and F. Macioce, 'The vulnerable groups and their legal value', in F. Macioce, *The Politics of Vulnerable Groups. Implications for Philosophy, Law, and Political Theory* (London: Palgrave Macmillan, 2022), 31–60.

[2] UN Secretary-General, *Roadmap for Digital Cooperation* (New York: United Nations, 2020), para. 42.

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CHAPTER 17. THE DIGITAL DIVIDE: REINFORCING VULNERABILITIES

Chapter 17 explores the systemic inequalities exacerbated by unequal access to digital technologies, known as the digital divide. This divide disproportionately affects vulnerable populations such as women, older people, disabled people, rural communities, and low-income individuals, limiting their access to services, education, and other opportunities. The chapter looks at the root causes of the digital divide, including socio-economic disparities, geographic isolation, cultural and language barriers, technological gaps, and insufficient policy interventions. It emphasises the human rights implications of this divide, such as restricted access to education, healthcare, and democratic participation, and examines international and regional policy responses, noting their shortcomings in addressing the issue comprehensively.

In response to the core question of this part – *What additional challenges do vulnerable groups face in the digital realm?* – the chapter identifies several unique challenges faced by vulnerable groups in the digital realm: (a) greater difficulty in gaining access to digital devices, services and the internet; (b) limited digital skills preventing effective use of digital technologies (fewer educational and training opportunities tailored to these groups' needs); (c) amplification of the digital divide by existing inequalities, such as gender discrimination, generational isolation, and poverty, perpetuating cycles of disadvantage (e.g., women face online harassment and cultural restrictions, while older adults may be excluded from digital healthcare and public services); and (d) frequent overlooking of the needs of vulnerable groups by market-driven digital initiatives or inadequate regulatory frameworks.

CHAPTER 18. HOW THE EU SAFEGUARDS CHILDREN'S RIGHTS IN THE DIGITAL ENVIRONMENT: AN EXPLORATORY ANALYSIS OF THE EU DIGITAL SERVICES ACT AND THE ARTIFICIAL INTELLIGENCE ACT

Following the broad examination of the digital divide, Chapter 18 narrows the focus to a specific vulnerable group – children – and assesses whether and how legislative efforts seek to protect them in digital environments. Eva Lievens and Valerie Verdoodt scrutinise the EU's Digital Services Act (DSA) and Artificial Intelligence Act (AIA) from the perspective of children's rights in the digital environment. They explore the potential of these legislative frameworks to safeguard children from harm while enabling their safe engagement with digital platforms and artificial intelligence (AI) systems. The authors emphasise the unique vulnerabilities of children in the digital realm and assess how effectively the acts consider these vulnerabilities. They answer this part's core question by noting the following additional challenges faced by children in the digital realm: (a) exploitation of their vulnerability (AI and platform design utilise manipulative practices such as addictive design, autoplay features, and the promotion of harmful content); (b) difficulty in navigating platforms and AI systems safely (as usually there are

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no child-specific interfaces or adequate transparency about their operation); and (c) being less likely to benefit meaningfully from digital engagement (as there is an overemphasis on risk and a neglect of the positive potential).

CHAPTER 19. RIGHT TO EDUCATION IN REGIONAL OR MINORITY LANGUAGES: INVASIONS, COVID-19 PANDEMIC, AND OTHER DEVELOPMENTS

Chapter 19 explores the intersection of linguistic rights, digital access, and education during the COVID-19 pandemic. It focuses on how the rapid digitalisation of education disproportionately affected students from regional or minority language communities. Vesna Crnić-Grotić demonstrates how national and regional policies frequently failed to account for linguistic diversity when implementing emergency online education measures. This lack of linguistic inclusivity in digital education threatened the right to education for these communities as their academic progress was hindered. In relation to this part's overarching question, the chapter notes the following additional challenges that students from minority language communities face in the digital realm: (a) less access to the internet and the digital tools necessary for participating in online education; (b) linguistic marginalisation (the dominance of major languages in digital content and platforms excluding regional and minority language speakers, denying them equitable access to education and information online); and (c) systemic neglect of linguistic diversity (and thus the unique needs of minority language groups) in educational policy and planning.

CHAPTER 20. TECHNOLOGICAL ACCELERATION AND THE PRECARISATION OF WORK: REFLECTIONS ON SOCIAL JUSTICE, THE RIGHT TO LIFE, AND ENVIRONMENTAL EDUCATION

Chapter 20 examines how digital transformations have reshaped labour dynamics in Brazil, exacerbating inequalities for vulnerable workers. Raizza da Costa Lopes, Samuel Lopes Pinheiro, and Florent Pasquier show how the 'gig economy' and the 'uberisation' of work are driving a shift towards precarious working conditions, including financial instability, lack of legal protections, and opaque algorithmic control. Additionally, the chapter connects labour issues with environmental education, emphasising its role in addressing socio-economic and ecological inequalities. It advocates for integrating human rights principles, particularly the right to life and social justice, into labour and environmental policies. The chapter answers the core question of this part of the volume by drawing attention to the following additional challenges for vulnerable workers in the digital realm: (a) opaque algorithmic management, which controls their tasks and incomes while offering little transparency or recourse (leading to insecurity and potential exploitation); (b) unpredictable earnings owing to the gig economy model (often resulting in problems covering

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basic living expenses); (c) lack of labour protection (platform work may not have health insurance, pensions, or even adequate safety standards); and (d) stress owing to the demand for constant availability and productivity (which undermines their well-being and work–life balance).

SHARED THEMES AND INTERCONNECTIONS

The four chapters collectively highlight the complex challenges vulnerable groups face in the digital realm, with each chapter addressing a specific issue regarding inequality and vulnerability. Despite the different focus areas, there are commonalities in the problems faced by vulnerable groups in those specific contexts. The main parallels follow, framed around the overarching themes that connect the chapters.

A. STRUCTURAL INEQUALITIES IN DIGITAL ACCESS

Each chapter emphasises how structural inequalities in access and design deepen exclusion, reinforcing systemic barriers for vulnerable populations in different contexts.

- Chapter 17 on the digital divide explores how foundational barriers, such as a lack of internet connectivity, devices, and digital literacy, disproportionately exclude vulnerable groups.
- Chapter 18 on children's rights shows how children are uniquely affected by systemic inequalities, such as inadequate privacy safeguards, harmful content, and a lack of user-friendly design on digital platforms.
- Chapter 19 on minority language education demonstrates how digital education platforms (mostly designed for dominant languages) marginalise minority language speakers, especially during crises such as the COVID-19 pandemic.
- Chapter 20 on the precarisation of work shows how gig workers, particularly in the Global South, are excluded from equitable digital participation owing to platform-centric labour models that prioritise profits over worker well-being.

B. INSUFFICIENT POLICY AND GOVERNANCE FRAMEWORKS

The absence or inadequacy of regulatory frameworks is noted across all chapters. Gaps in regulation and policymaking can have the effect of perpetuating inequalities or leaving vulnerable groups at the mercy of exploitative systems (which is why the authors advocate for improved lawmaking and policymaking in the area).

- Chapter 17 critiques the lack of comprehensive policies regarding digital inclusion, leaving the needs of vulnerable populations insufficiently addressed.
- Chapter 18 notes how regulatory frameworks, such as the DSA and AIA, while promising, are often limited in scope and lack robust enforcement mechanisms for safeguarding children's rights.

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- Chapter 19 draws attention to how policy has failed to ensure linguistic inclusivity during the COVID-19 pandemic, pointing out the lack of foresight and planning for marginalised communities.
- Chapter 20 discusses resistance from digital platforms to regulatory efforts, illustrating how weak governance leaves gig workers without basic labour protections.

C. AMPLIFICATION OF VULNERABILITIES DURING CRISES

Most chapters in this part also look at the impact of the COVID-19 pandemic on vulnerable groups. The authors show how crises can act as accelerants, amplifying pre-existing vulnerabilities and exposing gaps in infrastructure, policy, and protection mechanisms across sectors.

- Chapter 17 notes how the pandemic deepened existing digital disparities, bringing the example of telemedicine during COVID-19 that excluded older people who lack digital skills.
- Chapter 19 focuses on the pandemic's impact on educational access, with minority language speakers disproportionately left behind owing to digital unpreparedness.
- Chapter 20 shows how global crises, such as COVID-19, exacerbate the precarisation of platform workers, particularly in the Global South.

And as the fourth common theme, the authors emphasise the transformative potential of inclusive rights-based interventions to counter digital exclusion and exploitation.

By progressing from structural issues to specific case studies and concluding with a global perspective, this part of the book seeks to respond to the question *What additional challenges do vulnerable groups face in the digital realm?* and to provide a nuanced understanding of how the digital domain interacts with the rights of vulnerable groups. Digitalisation, while offering opportunities, can disproportionately harm vulnerable groups by deepening systemic inequalities (or even exposing them to exploitation – see Chapter 21) and failing to adequately safeguard their rights. The authors draw attention to different aspects and contexts of this problem and emphasise the need for inclusive policies and practices that prioritise equity and human dignity in the digital age.

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