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SOCIAL INCLUSION

Volume 14

2026

Digital Inclusion During and After Incarceration: A Global Perspective

Open Access Journal

ISSN: 2183-2803

Edited by Bianca C. Reisdorf and Victoria Knight

Social Inclusion, 2026, Volume 14
Digital Inclusion During and After Incarceration: A Global Perspective

Published by Cogitatio Press
Rua Fialho de Almeida 14, 2º Esq.,
1070–129 Lisbon
Portugal

Design by Typografia®
http://www.typografia.pt/en/

Cover image: © Ivan S

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Available online at: www.cogitatiopress.com/socialinclusion

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Social Inclusion
2026 • Volume 14 • Article 13602
https://doi.org/10.17645/si.13602

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EDITORIAL

Open Access Journal

Beyond Access: Digital Inclusion, Participation, and Social Continuity Under Conditions of Punishment

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Submitted: 2 November 2026 **Published:** 19 November 2026

Issue: This editorial is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Digital technologies increasingly mediate access to communication, education, employment, healthcare, welfare, and civic participation. For people during and after incarceration, digital inclusion has therefore become a central condition of social inclusion and social continuity. This editorial introduces our thematic issue, which examines the relationships between digital inclusion, punishment, and reintegration across diverse correctional and community settings in the United States, China, Sweden, Finland, Austria, Denmark, Italy, Lithuania, Türkiye, and the United Kingdom. The contributions demonstrate that digital inclusion is not merely a question of access, skills, or connectivity, but is fundamentally shaped by broader inequalities, institutional arrangements, and carceral logics. Collectively, the articles reveal how digital technologies can facilitate connection, learning, recovery, and participation while simultaneously reproducing exclusion, extending surveillance, and reinforcing control. They illuminate the emergence of a "punitive mesh" (Corda, 2026) that stretches across prison and community settings, as well as the "faceless harms" (Wood, 2026) produced through increasingly digital, automated, and bureaucratic forms of governance. We argue that digital inclusion should be understood as a contested process through which citizenship, belonging, and social continuity are negotiated within and beyond the carceral structures.

Keywords

digital inclusion; digital rehabilitation; faceless harms; participation; prisons; punitive mesh; reintegration; social continuity

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1. Digital Inclusion, Citizenship, and Social Continuity

Across the collection, digital inclusion emerges not simply as a matter of technological access, but as a mechanism through which individuals maintain continuity between life inside and outside correctional settings. Digital participation increasingly underpins access to family relationships, education, employment, welfare, healthcare, community support, and civic life. As digital technologies become more embedded in societies, exclusion deepens the social ruptures already associated with punishment and incarceration.

Social continuity provides a valuable lens to understand this significance. It refers to maintaining connections, identities, roles, relationships, and opportunities across imprisonment, supervision, and re-entry. From this perspective, digital technologies support continuity of citizenship, family life, education, recovery, and community participation. Where access is absent, restricted, or uneven, digital exclusion contributes to further social *dis*continuity. The challenge for correctional systems is ensuring continuity of connection, opportunity, and belonging in a digital world.

Digital inclusion during and after incarceration extends beyond technical access to fundamental questions of citizenship, participation, power, and belonging. Across diverse jurisdictions, incarcerated and formerly incarcerated people encounter digital exclusion within systems of punishment that regulate participation in digital societies. Studies from the United States, China, Sweden, Lithuania, Finland, Austria, Denmark, Italy, Türkiye, and the United Kingdom reveal how digital engagement is shaped by institutional, political, cultural, and social arrangements that determine who can participate and under what conditions.

Collectively, the articles demonstrate that digital technologies are neither inherently inclusive nor exclusionary. Rather, they serve as sites where contemporary forms of punishment, rehabilitation, care, surveillance, governance, and citizenship are negotiated. Across the collection, digital technologies support opportunities for learning, recovery, family connection, community participation, and reintegration. At the same time, they can reproduce existing inequalities through institutional restrictions, surveillance, bureaucratic processes, resource limitations, and differential capacities to engage with digital systems.

The collection brings together research on Black formerly incarcerated people, justice-involved women, incarcerated fathers, Roma communities, people in community-based rehabilitation, and prison residents accessing digital health interventions and also higher education. Broadening the field beyond dominant Western, educated, industrialized, rich, and democratic perspectives, it shows how digital participation is shaped by diverse welfare traditions, penal philosophies, governance arrangements, and lived experiences.

This thematic issue highlights how digital inclusion intersects with rights, health equity, dignity, participation, and social continuity within the “punitive mesh” (Corda, 2026), where security, surveillance, administration, and governance extend the reach of penal power. When viewed alongside contemporary discussions of faceless harms (Wood, 2026), these articles reveal how digital inequalities are (re-)produced through diffuse socio-technical systems that complicate traditional notions of accountability.

We use this collection to reflect on current knowledge regarding digital inclusion during and after incarceration across six interconnected themes: (a) digital exclusion as a collateral consequence of punishment and social marginalization; (b) tensions between inclusion and control; (c) social continuity, relationships, and human

connection; (d) staff, organizations, and institutional transformation; (e) health, recovery, and digital equity; and (f) the pluralization of knowledge within digital corrections research.

1.1. Digital Exclusion as a Collateral Consequence of Punishment and Social Marginalization

A central insight from this collection is that digital exclusion is not simply the product of inadequate access or individual skills. It is an enduring consequence of incarceration that intersects with pre-existing inequalities and continues to structure people's lives after release.

In "An Exploratory Quantitative Analysis of Black Formerly Incarcerated People's Digital Literacy," Sanders and Roddy (2026) identify digital literacy as a new "digital collateral consequence" of imprisonment among Black formerly incarcerated people in the United States. Their analysis shows that longer and more extensive incarceration histories are associated with poorer digital literacy outcomes, while age and disability affect specific dimensions of digital capability.

This argument is reinforced in "Navigating Digital Exclusion After Incarceration: The Role of Peer Support in Veteran Reentry." Venegas et al. (2026) show how digital exclusion affects formerly incarcerated veterans' ability to negotiate housing, employment, healthcare, and daily life. Importantly, their analysis identifies structural, temporal, and relational dimensions of digital exclusion, demonstrating that re-entry difficulties cannot be reduced to individual competence. Peer specialists can help veterans navigate these systems, but their support also reveals the complexity of institutional and digital barriers.

Tong et al.'s (2026) study "'We're Experiencing Digital Death': Chinese People Who Used Heroin in Community-Based Rehabilitation" demonstrates how surveillance, algorithmic categorization, institutional distrust, and systemic absence can undermine meaningful participation after incarceration. Kuran's (2026) study "'Not Charity, but a Right': Carceral Citizenship and Digital Reintegration of Roma in Türkiye" extends this critique by locating digital reintegration within the experiences of Roma people in Türkiye, for whom digital exclusion intersects with longer histories of marginalization, unequal citizenship, and institutional discrimination.

Vuilleumier and Khamsy's (2026) study "When the Carceral Web Slips: Digital Moral Labour Among Migrants in Legal Precarity" broadens this discussion by examining how individuals living with legal precarity navigate digital systems that are intended to govern, monitor, and regulate access to rights and services. Their concept of digital moral labour highlights the often-invisible work negotiating uncertainty, institutional scrutiny, and fragmented forms of inclusion. Digital participation is not always empowering; for some groups, it involves continuous efforts to navigate complex bureaucratic and socio-technical systems while managing vulnerability and insecurity.

Together, these studies position digital exclusion as both a collateral consequence of punishment and a mechanism through which wider inequalities are reproduced.

1.2. Between Inclusion and Control

Across this collection, digital technologies are introduced to support rehabilitation, education, communication, and reintegration, yet remain governed through systems organized around security, risk, and control. Digital inclusion is therefore regulated through decisions about who may access technologies, for what purposes, at what point during a sentence, and under whose supervision.

Hofinger and Pflegerl's (2026) study "Challenges and Paradoxes of Digital Rehabilitation in Prison: Lessons Learned From a Pilot Project in Austria" exposes the organizational paradox of pursuing digital rehabilitation within institutions structured around containment and security. "Digital Inclusion in Finnish Smart Prison: A Qualitative Analysis of Incarcerated Women's Experiences," by Järveläinen and Rantanen (2026), similarly shows that in-cell digital provision can improve access and interaction, while institutional restrictions and staff gatekeeping continue to define the boundaries of participation. In "Locked In, Logged Out: Digital Participation of Residents in Danish Carceral Facilities," Chatzipolakis and Boulus-Rødje (2026) highlight how digital access is organized as a gradual, ladder-like process across carceral settings, but it may arrive too late and too abruptly to prepare people meaningfully for life in a digital society.

Virgo's (2026) study "Living in Prison, Studying on Campus: Digital Challenges for Students in a UK Open Prison" adds an important educational example. Students from an open prison move between a restrictive prison information environment and a digitally intensive university campus. Intermittent access, smartphone prohibitions, time pressures, and restrictions on online participation complicate their ability to participate fully as university students. Even where physical access to education is enabled, restrictions sustain exclusion and social stigma.

1.3. Social Continuity, Relationships, and Human Connection

Digital inclusion also matters because it can help sustain continuity between life inside correctional institutions and the relationships, identities, and social roles located beyond them.

Zambon's (2026) Italian study "Between Walls and Screens: Fatherhood, Family Bonds, and Digital Inclusion in Prison" brings the relational significance of digital inclusion into focus. Video calls allow incarcerated fathers to enter family spaces, witness everyday routines, and preserve presence in their children's lives. Yet, connections remain fragile and conditional, shaped by institutional timetables, restricted resources, limited privacy, and the practical circumstances of families outside prison.

Social continuity is also visible in "From Welfare Values to Digital Governance: Developing an Inclusive Digital Strategy in Swedish Corrections" by Nordström and Knight (2026), where the "client path" and continuity across correctional and social systems become central to inclusive digital governance. This approach directs attention towards the full technology journey through custody, release, and social participation.

Venegas et al.'s veterans study adds a valuable relational dimension. Peer specialists do more than teach technical skills. They help formerly incarcerated veterans interpret systems, overcome mistrust, access services, and rebuild confidence. Peer support becomes relational digital infrastructure, connecting individuals to institutions that may otherwise remain difficult to navigate.

In addition, Virgo's study shows how students moving between prison and university must negotiate changing digital identities and information environments. Their educational participation illustrates both the possibilities and the difficulties of maintaining continuity across institutional boundaries.

1.4. Staff, Partnership, and Institutional Transformation

Digital inclusion is mediated by staff, peer specialists, educators, health practitioners, community organizations, and other professionals working across institutional boundaries.

Järveläinen and Rantanen's study positions correctional staff as both gatekeepers and facilitators of digital participation. Technology can reshape staff-resident relationships, but meaningful inclusion still requires human support and motivational interaction. Hofinger and Pflegerl's study similarly demonstrates how staff shortages, organizational culture, limited resources, and resistance can constrain even well-designed digital initiatives.

Venegal et al.'s exploration foregrounds the practical and relational work undertaken by peer specialists. Digital reintegration often depends upon trusted intermediaries who understand both the institutional landscape and the lived realities of re-entry; an important social work and implementation insight.

Seo's (2026) study "University–Community Partnerships for Advancing Digital Inclusion Among Justice-Involved Women in the US," involving justice-involved women, offers a complementary model. It demonstrates how universities, community organizations, peer mentors, and women with lived experience can collaborate to design and sustain relevant digital-skills provision. Like Virgo's education study, university staff and institutional stakeholders support students who must move between incompatible prison and university information environments.

Mažeikienė et al.'s (2026) study "Digital Advocacy Behind Bars: Social Workers' Perspective on Digital Inclusion and Reintegration in Lithuania" further provides insights into the role of social workers as advocates and intermediaries within processes of digital reintegration. Social workers actively support individuals in navigating digital systems, accessing services, and preparing for social participation beyond custody. The findings reinforce a broader theme running throughout this collection: digital inclusion is not delivered through technologies alone but through the relational and professional practices that enable people to engage with them.

1.5. Education, Health, Recovery, and Equitable Outcomes

"Digital Substance Use Therapy: Predicting Engagement and Outcomes to Enhance Health Equity in Prisons" by Elison-Davies et al. (2026) asks not only whether an intervention works, but for whom, under what delivery conditions, and with what level of practitioner support. Its UK and US comparison shows that people's psychosocial characteristics and mode of delivery shape engagement and outcomes. Equal availability of an intervention does not guarantee equitable benefit.

Virgo's study reaches a related conclusion in education. Being permitted to attend university does not itself create equal participation. Students must manage intermittent connectivity, changing digital identities, limited

time, prohibited technologies, and the sharp contrast between prison and university information environments. Education depends upon sustained digital access and institutional support, not simply permission to enroll or attend.

Venegas et al. highlight that digital exclusion affects access to healthcare as well as housing, employment, and other supports. The emphasis on peer navigation shows how health and social-service access depend on both digital capability and trusted human assistance.

Together, these articles demonstrate that digital equity must be assessed through substantive outcomes rather than formal access. The key question is whether people can derive meaningful educational, health, and rehabilitative benefits from digital provision.

1.6. Pluralizing Knowledge and Decentering Digital Corrections

The collection makes an important contribution through the diversity of its jurisdictions (United States, China, Lithuania, Finland, Austria, Sweden, the United Kingdom, Italy, Denmark, and Türkiye), populations (Black formerly incarcerated people, migrants, Roma communities, justice-involved women, incarcerated fathers, university students living in an open prison, people who have used heroin, formerly incarcerated veterans, and prison residents in digital therapy), settings ([open] prisons, universities, community rehabilitation, community organizations, health programs, welfare infrastructures, and post-release services), and methodologies.

The methodological range is exemplary of the breadth of work these scholars engage in. The issue includes quantitative analysis, qualitative interviews, ethnography, comparative analysis, participatory action research, institutional case studies, and community-engaged research. It pluralizes not only where digital corrections research is undertaken, but also whose experiences count and how knowledge is produced.

This diversity should not be reduced to a claim that digital inclusion varies by country. The significant point is that the meaning of digital inclusion is produced through particular penal traditions, welfare systems, institutional relationships, and research practices. The field must therefore resist universal models derived from a narrow group of jurisdictions or populations—what works in one context may not work in a different one.

Together, these contributions demonstrate how digital participation is negotiated within contemporary structures of punishment while simultaneously creating new opportunities for connection, rehabilitation, dignity, and inclusion.

2. What We Need to Think About Differently

Across jurisdictions, digital technologies create opportunities for rehabilitation, connection, learning, and recovery while introducing new forms of surveillance, classification, regulation, and control. Corda's (2026) concept of the "punitive mesh" illustrates how contemporary punishment extends beyond institutional walls through interconnected networks of supervision and administration, framing digital exclusion as part of a system that shapes opportunities for participation.

This perspective resonates across the collection. In the United States, incarceration histories continue to shape digital literacy and social participation post-release. In China, experiences of "digital death" reveal how algorithmic classification and institutional distrust can undermine digital citizenship. In Austria, Finland, and Denmark, efforts to expand digital access remain embedded within organizational cultures and security frameworks that simultaneously enable and constrain participation. The Turkish study further demonstrates how digital systems may reproduce wider forms of social inequality affecting Roma communities, highlighting the continuing importance of citizenship, rights, and recognition.

Taken together, these studies suggest that digital inclusion is not occurring outside contemporary penal power; it is being constructed within it. Across the collection, a persistent tension emerges between inclusion and control. Technologies introduced to facilitate rehabilitation and reintegration also generate new opportunities for monitoring, categorization, and behavioral regulation.

Wood's (2026) concept of "faceless harms" helps further understand these processes. Many of the barriers documented across this issue do not result from a single decision or identifiable actor. Vuilleumier and Khamsy's (2026) discussion of digital moral labour highlights the burdens associated with digital participation are often dispersed across administrative and regulatory frameworks, and digital infrastructures, requiring individuals to undertake significant work simply to maintain access, legitimacy, and participation. Instead, they emerge through the interaction of administrative procedures, algorithmic systems, institutional practices, security arrangements, and digital infrastructures. Individuals may experience exclusion from communication, employment, education, healthcare, rehabilitation, or public services not because of a single sanction, but because multiple systems intersect to constrain participation.

The collection therefore encourages a shift in thinking. Digital inclusion is not simply the opposite of digital exclusion, nor can it be reduced to the provision of technologies. Rather, it is a contested process through which citizenship, participation, relationships, recovery, and social continuity are negotiated within increasingly digital and interconnected systems of punishment and governance. Future scholarship must consider how digital reforms may simultaneously reduce some inequalities whilst reproducing or generating others.

3. What Next? Policy and Practice Implications

The contributions in this thematic issue demonstrate that meaningful inclusion requires attention to digital capability, organizational culture, staff capacity, governance arrangements, and opportunities for participation. The challenge is not simply how to introduce technology, but how to create digitally inclusive environments that support rehabilitation, citizenship, and social continuity.

3.1. Digital Inclusion as Reintegration

Across the collection, digital participation emerges as a prerequisite for accessing employment, education, housing, welfare services, healthcare, and social relationships. Digital inclusion should be recognized not as an optional enhancement, but as a core component of contemporary rehabilitation and resettlement policy.

3.2. Balancing Inclusion and Security

The studies from Austria, Finland, and Denmark highlight the enduring tension between inclusion and security. While concerns about risk and control remain legitimate, correctional systems must critically examine whether restrictive approaches to digital access undermine the rehabilitative goals they are intended to support. The question is not whether digital participation *should* occur, but *how* it can be facilitated safely and meaningfully.

3.3. Staff Matter

Digital transformation is often discussed in relation to incarcerated people, yet the studies demonstrate the central role of staff and partner agencies in shaping digital inclusion. Successful implementation requires investment in workforce development, training, participation, and wellbeing as seen in the Austrian and Swedish contexts. Staff should be viewed as active co-producers of digital inclusion and rehabilitation.

3.4. Co-Production and Participation

The community partnership work with justice-involved women in the USA and Sweden's digital strategy development highlights the value of co-design, lived experience expertise, and collaborative approaches. Policies and services are more likely to be effective when they are developed with justice-involved people, practitioners, and communities rather than solely for them. Participation should be considered a foundational principle of digital transformation.

4. Beyond Digital Inclusion?

Finally, the collection raises a broader question about the future direction of scholarship and policy. There is a growing need to examine power, surveillance, governance, citizenship, and the unequal distribution of digital opportunities and harms through concepts such as Corda's (2026) punitive mesh, Wood's (2026) faceless harms, social continuity, and digital citizenship.

Whether this is best described as digital justice or socially just digital inclusion remains open to debate. What is clear, however, is that digital technologies are neither neutral nor uniformly experienced. Their benefits and burdens are shaped by penal cultures, welfare traditions, governance arrangements, and lived experiences.

As digital technologies become embedded within correctional systems worldwide, policy and practice must move toward a commitment to social continuity, meaningful participation, and equitable digital futures for justice-involved people and those who work alongside them.

Acknowledgments

We are deeply grateful to the authors for their outstanding contributions and to the reviewers and editorial staff of Cogitatio Press for their fantastic feedback on the manuscripts in this thematic issue.

Conflict of Interests

The authors declare no conflict of interests.

LLMs Disclosure

Google Gemini was used in the editing process to help identify repetition in order to improve conciseness and clarity. All writing and edits were conducted by the authors themselves without the use of LLMs.

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Social Inclusion
2026 • Volume 14 • Article 12352
https://doi.org/10.17645/si.12352

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ARTICLE

Open Access Journal

"We're Experiencing Digital Death": Chinese People Who Used Heroin in Community-Based Rehabilitation

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Submitted: 9 March 2026 **Accepted:** 2 June 2026 **Published:** 24 June 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Digital inclusion is increasingly recognised as a critical dimension of social inclusion, particularly in contexts undergoing rapid technological transformation such as China. Despite the Chinese government's substantial investment in digital infrastructure, equitable access and meaningful participation remain elusive for many incarcerated lived experiencers. Drawing on narrative interviews with 18 people who used heroin and are navigating community-based rehabilitation after incarceration, this study investigates their everyday encounters with digital exclusion. Through a digital inclusion lens, we identify key barriers, including structural distrust, residual surveillance, and algorithmic classification, which collectively amount to a condition of "digital death." This form of exclusion is not merely rooted in personal incapacity or behavioural deviance, but rather emerges from institutional silences and systemic absences in both rehabilitation policy and digital governance. We argue that digital inclusion must be integrated into China's rehabilitation and *Huiguishehui* (returning to society) frameworks, repositioning it as an essential component of social reintegration and inclusive citizenship.

Keywords

community-based rehabilitation; digital inclusion; exclusion; narrative; people who used heroin

1. Introduction

In the context of accelerating digital transformation, digital inclusion has become a key dimension of social inclusion (Méndez-Domínguez et al., 2023; Mervyn et al., 2014). Commonly defined as the ability of all individuals and communities, especially the most vulnerable, to access and meaningfully use digital

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technologies (National Digital Inclusion Alliance, 2017), digital inclusion has attracted growing policy attention worldwide.

Social inclusion, as a foundational concept, is rooted in Western liberal traditions of civil society, where individuals are presumed to possess an inherent entitlement to inclusion by virtue of citizenship, human rights, and fundamental freedoms (Collins, 2003). Within this framework, inclusion is framed as a normative, rights-based principle anchored in legal status and oriented toward equal participation in social, economic, and political life. In China, by contrast, social inclusion operates less as a rights-based claim than as a concept subordinated to political rationality and governance objectives. Rather than articulated through the language of individual rights, inclusion is commonly condensed into the notion of *he* (和), signifying harmony, coordination, and the minimisation of conflict (Song, 2026). At its core, *he* prioritises accommodation and social stability, positioning inclusion as an instrumental means of governance rather than an end grounded in individual entitlement. Inclusion is therefore conditional, relational, and contingent upon conformity to broader governance goals.

Although China lacks a formal or unified definition of digital inclusion, its institutional development largely extends this governance-oriented logic of *he*. Digital inclusion is valued insofar as it contributes to stability maintenance, administrative efficiency, and orderly governance. As a result, digital inclusion in China exhibits three defining characteristics. First, it is state-led and top-down, embedded in national development strategies and policy-driven initiatives. Second, it operates through selective inclusion, privileging socially legitimised populations while systematically marginalising stigmatised groups, particularly those with histories of drug use, incarceration, or other forms of social deviance. Third, it produces internally fractured outcomes, whereby expanded digital access coexists with persistent exclusion from meaningful opportunities for skill acquisition, digital literacy, and social mobility among marginalised populations.

While international scholarship increasingly demonstrates how digital technologies reproduce existing power hierarchies (Kirkpatrick, 2017; Verstegen et al., 2019), relatively little research in China has examined digital inclusion among populations rendered marginal not only by poverty or rurality but by criminalisation and incarceration. This study addresses this gap by focusing on the digital inclusion of people who have used heroin. This group refers to men and women who initiated heroin use mainly between the late 1980s and mid-2000s, a period shaped by market reforms, internal migration, and the expansion of transnational drug routes (Song et al., 2025). Most were born in the 1960s–1970s and entered adulthood amid rapid social transformation and widening inequalities. Their life trajectories were marked by incomplete education, early entry into precarious labour markets, circular migration, unstable family relations, and repeated encounters with administrative detention (Li, 2024).

Therefore, people who have used heroin embody multiple, intersecting forms of marginalisation rather than constituting a single disadvantaged category; they represent a layered configuration of exclusion across age, health, class, incarceration, and governance encounters. Now ageing and multiply stigmatised, many continue to face residual surveillance and low digital literacy, rendering them particularly vulnerable to digital exclusion. Yet their lived experiences remain underexplored, especially amid recent policy shifts toward *Huiguishehui* (returning to society), which positions social reintegration as central to drug rehabilitation through community-based approaches.

Drawing on narrative interviews with 18 participants, this study examines how people who have used heroin experience digital exclusion in post-incarceration rehabilitation settings. Building on theories of digital inclusion, reentry, and rehabilitation, we explore how participants encounter, respond to, and narrate digital technologies, including experiences contributing to what we conceptualise as "digital death," which is not technological illiteracy, but a condition of algorithmically mediated social disappearance in which ageing, formerly incarcerated people who use drugs become structurally and symbolically erased from China's digital future, resembling a form of civil death. We argue that digital inclusion should be treated as a core component of inclusive recovery rather than a technological add-on. Digital governance initiatives must therefore be tailored to populations structurally unable to benefit from standardised models, highlighting the need to integrate digital inclusion into China's *Huiguishehui* framework and broader debates on digital justice.

2. Background and Literature Review

2.1. Governance and Rehabilitation of People Who Use Drugs

The governance of people who use drugs has long remained a central concern both in China and globally. Historically, drug use was primarily framed through criminal justice lenses and addressed through punitive interventions, including incarceration and compulsory rehabilitation (Tomaz et al., 2023). In China, such mechanisms continue to play a significant role within anti-drug governance (Wang et al., 2025). The enduring problematisation of people who use drugs is rooted in assumptions regarding the irreversible harms of drug use and its perceived social and economic burdens (Barrio et al., 2017). Consequently, punishment-oriented responses proliferated across many jurisdictions.

By the early twenty-first century, however, increasing recognition of the complexity of drug use prompted shifts in both scholarship and policy. Criminologists criticised punitive approaches for producing rights violations and failing to address structural vulnerabilities (Seddon, 2007). Drug policy scholars further questioned coercive rehabilitation models because of their limited effectiveness and incompatibility with sustainable recovery trajectories (Samouei et al., 2013). Consequently, many jurisdictions increasingly adopted penal-welfarist approaches that prioritised treatment, rehabilitation, and social reintegration over criminal sanctions (Khan et al., 2022).

Within this broader rehabilitation turn, drug governance in China gradually shifted from explicitly criminal processes toward administrative regulation (Lin et al., 2022). The 2008 Anti-Drug Law and the 2011 Regulation on Drug Rehabilitation institutionalised three rehabilitation pathways: compulsory isolation rehabilitation, community-based detoxification, and community-based rehabilitation (Yang & Giummarra, 2021). However, this transition has not represented a departure from carceral logic.

Unlike many other justice-involved populations, people who used heroin often encounter the state through compulsory isolation rehabilitation (*Qiangzhi geli jiedu*), a system formally framed as treatment but operationally resembling incarceration (Wang et al., 2025). These institutions are characterised by militarised routines, restricted communication, surveillance, and limited procedural safeguards. Although each placement lasts up to two years, repeated admissions across the life course frequently generate serial detention that disrupts employment, weakens family ties, accelerates ageing, and deepens material precarity.

Beyond behavioural modification, compulsory treatment also performs broader functions of governance stabilisation, risk management, and moral discipline.

Importantly, this system operates largely through administrative rather than judicial processes. Individuals experience forms of confinement without access to procedural protections commonly associated with criminal justice systems, including bail, trial, parole, or meaningful appeals (Pejic, 2005). Officially framed as patients but governed as detainees, people who use drugs occupy an ambiguous position where carceral control repeatedly occurs outside conventional criminal procedures. These dynamics position people who have used heroin as a multiply marginalised population shaped by late-stage prohibition, labour precarity, and cyclical confinement.

Following institutional rehabilitation, individuals typically enter community-based rehabilitation, which scholars have described as "surveillance without exit" (Lin et al., 2022). Although officially oriented toward reintegration, this stage continues to impose intensive monitoring requirements, including regular and random drug testing (Yang & Giummarra, 2021). In practice, surveillance often extends beyond formal regulations and remains heavily influenced by local enforcement discretion (Song & Jiang, 2025). Consequently, many participants actively avoid rehabilitation providers because they perceive engagement as prolonging surveillance and disrupting everyday life. Rather than fostering recovery, this model risks reproducing penal logics beneath administrative and therapeutic language.

Within this system, a distinctive cohort of post-incarceration people who use drugs has emerged, particularly those who began using heroin during the 1980s and 1990s (Li, 2024). Many entered heroin use during the early expansion of illicit drug markets and subsequently experienced decades of institutional marginalisation. Their life courses have been shaped by repeated cycles of detention, isolation, rehabilitation, relapse, and social exclusion. Today, many are aged over 55 and continue to experience the cumulative consequences of criminalisation and fragmented recovery trajectories.

Despite these intersecting vulnerabilities, limited scholarly attention has been given to how this ageing population survives within increasingly digital societies. Little is known about whether, and how, people who have used heroin navigate digital exclusion, engage with digital technologies during recovery, or respond to emerging digital inequalities. Questions, therefore, remain regarding how recovery needs are mediated through digital infrastructures and what forms of "digital rehabilitation" (Song & Tong, 2025) may mean for populations historically excluded from both technological advancement and mainstream welfare systems.

2.2. Rehabilitation and Digital Inclusion of Post-Incarcerated Populations

A growing body of research on the digital divide, exclusion, and inclusion from both theoretical frameworks and interventive strategies, offers a critical lens through which to examine the digital marginalisation of people who have used heroin, particularly at the intersection of drug use, ageing, and incarceration.

Early conceptualisations of the digital divide and digital inequality primarily focused on physical access to computers and the Internet (van Dijk, 2005). While connectivity concerns have diminished with the proliferation of broadband and wireless technologies, the lived experiences of formerly incarcerated individuals reveal a divergent reality. Post-release, many continue to experience unstable, insufficient, or tightly controlled access to digital technologies. In efforts to prevent re-engagement with criminal networks,

family members and rehabilitation programs often restrict individuals to basic mobile phones capable only of voice calls and SMS messaging (Reisdorf et al., 2022). Consequently, access to computers and laptops remains rare, and this population is largely absent from everyday forms of digital engagement.

Moreover, national rehabilitation approaches, such as mandatory drug testing, counselling appointments, and routine or unannounced home visits, undertaken ostensibly in the name of rehabilitation, often further restrict their mobility, time, and ability to access public ICT resources (Song et al., 2024). Reintegration into society, however, requires not only access to ICTs but also the long-term development of digital skills and literacies. The extended period of "digital deprivation" experienced during incarceration severely limits opportunities for digital education and skill-building, leaving many at a disadvantage in cultivating digital competency (Jimoyiannis & Gravani, 2010). Critically, most existing rehabilitation and reentry programs prioritise employment readiness and basic life skills, while offering limited support for digital literacy development. As a result, more than two-thirds of parolees are rearrested within three years of release (Durose et al., 2014). The lack of digital fluency not only weakens their competitiveness in an increasingly digitised labour market but also compounds existing structural biases. Many face bleak employment prospects, and the repeated experience of digital exclusion contributes to heightened psychological distress and a growing aversion to ICT use (van Deursen & Helsper, 2015).

A range of conceptual models has been proposed to better understand and address the digital exclusion experienced by formerly incarcerated individuals. Van Dijk's (2005) sequential model of the digital divide delineates four progressive dimensions of access—motivational, material, skills-based, and usage-oriented—underscoring that mere connectivity is insufficient for meaningful digital inclusion. Building on this foundation, Hargittai (2002) introduced the notion of the second-level digital divide, which highlights disparities in Internet skills among users. Van Deursen and Helsper (2015) subsequently advanced this framework by conceptualising a third-level divide, centred on unequal digital outcomes and benefits. Collectively, these models foreground the entanglement of digital inequality with broader axes of socio-economic marginalisation, particularly those structured along lines of race, class, and gender. In the context of carceral governance, Gurusami (2019) introduces the metaphor of the "carceral web" to illustrate how formerly incarcerated individuals remain ensnared within regimes of digital surveillance and algorithmic control. This framework is marked by two key features: "stickiness," referring to the enduring visibility of online criminal records, and "entanglement," denoting the interlocking state and corporate infrastructures that sustain digital vulnerability. Complementing this, Reisdorf and Rikard (2018) propose the concept of digital rehabilitation, which integrates classical reentry theory with Helsper's (2012) "corresponding fields" framework. Their approach advocates for a reconceptualisation of reentry that attends to both online and offline dimensions of reintegration.

These theoretical interventions redirect analytical attention from simplistic questions of access toward more complex considerations of agency, structural constraint, and digital justice. Our concern with people who have used heroin is situated within this evolving body of scholarship. By foregrounding the embodied experiences of digital exclusion among this ageing cohort, we seek to interrogate how the diachronic, spatial, and relational legacies of incarceration and drug use continue to shape, and at times undermine, equity-oriented models of digital inclusion.

Moreover, a range of emerging interventions has sought to support the digital inclusion of formerly incarcerated populations and offers potential foundations for a more comprehensive framework in this study. Reisdorf and Jewkes (2016) advocate for the expansion of IT education within carceral settings through the provision of restricted, education-led Internet access. This model, technologically feasible and pedagogically grounded, would enable incarcerated individuals to engage with digital tools in a structured and meaningful manner. Yet, such initiatives have faced widespread resistance from correctional staff and policymakers across jurisdictions, underpinned by longstanding concerns over institutional security, disciplinary authority, and the perceived legitimacy of digital empowerment behind bars.

The "digital rehabilitation" model recasts digital competencies as foundational not only for employability, but also for accessing public services, maintaining social relationships, and reconstituting a sense of civic identity. Reflecting this shift, innovative programs have begun to experiment with co-produced digital media, content collaboratively developed by incarcerated individuals, to foster desistance, build peer solidarity, and enhance digital fluency (Morris & Knight, 2018). In response to the enduring risks of the carceral web, other interventions foreground digital self-defence strategies, including privacy literacy, platform navigation training, and community-based education in digital resilience (Gurusami, 2019; Seo et al., 2022). These efforts aim to equip returning citizens with the critical tools needed to engage with digital infrastructures, mitigate exposure to algorithmic surveillance, and assert agency within an increasingly digitised public sphere.

Nevertheless, scholars caution that such interventions are unlikely to achieve substantive digital inclusion in the absence of broader structural reforms (Jamil, 2021). These include the equitable distribution of digital infrastructure, legal protections against algorithmic discrimination, and the dismantling of systems that perpetuate the online visibility of criminal records. In this context, theoretical insights into digital inequality extend beyond the domain of rehabilitative practice; they demand a fundamental reorientation of justice policy in the digital era. Positioned within this trajectory, our study continues the call for structural transformation but grounds its contribution in the lived experiences of those directly affected. By centring participants' voices and perspectives, we offer a bottom-up account of digital exclusion and inclusion, one that rethinks social reintegration not merely as economic participation, but as a process of digitally mediated belonging. In doing so, we underscore the importance of incorporating digital inclusion into broader frameworks of social return, with attention to both material access, moral recognition, and meanings establishment.

3. Method and Data Analysis

This study employed a qualitative research methodology to collect interview data between May and September 2024. It forms part of a broader project, approved by the UNSW Ethics Review Committee. While the overarching project focused on general recovery experiences, this study explicitly explores the narrative and embodied experiences of digital inclusion among people who use drugs with a history of incarceration.

The research was conducted in a coastal city that has long adopted dynamic strategies in response to drug-related issues and has actively participated in successive stages of China's drug policy reform. These efforts include the establishment of compulsory rehabilitation centres and the restructuring of these centres after the emphasis on social participation introduced by the 2008 Anti-Drug Law. Alongside these initiatives,

the city has consistently worked to improve its community correction system, establishing community-based detoxification and community-based rehabilitation services.

Having faced a major drug crisis since the early 1980s, the city's leadership has consistently sought to balance punitive measures with welfare-oriented approaches to promote citizen well-being and community development. Although compulsory isolation rehabilitation, akin to incarceration, remains under the control of public security and judicial authorities, the city has, in recent years, attempted to align with global trends in public health and harm reduction. In doing so, it has promoted a more compassionate model that encourages social organisations and social workers to engage with rehabilitation services, and requires traditionally enforcement-focused drug police also to assume supervisory and supportive roles (Song & Jiang, 2025). Within this context, the study observes and analyses the social inclusion of people who use drugs, focusing particularly on the generation that began using heroin in the 1980s. Their experiences of digital inclusion, a current neglected aspect, offer critical insights into how shifts in social inclusion and digital governance impact marginalised groups.

Recruitment was conducted through the corresponding author's pre-existing social and professional networks using a snowball sampling strategy. These networks were developed during long-term fieldwork and community engagement conducted between 2019 and 2022 across multiple rehabilitation settings in China. The corresponding author had previously established connections with community workers, rehabilitation practitioners, and people with histories of drug use through ethnographic fieldwork rather than formal treatment institutions or law enforcement agencies. Existing relationships facilitated initial access to participants who are often difficult to reach due to stigma, surveillance concerns, and the criminalised context surrounding drug use. The authors also recognise that these relationships shaped both access and the production of data. Familiarity and prior interactions may have facilitated rapport, enabling participants to discuss sensitive experiences relating to rehabilitation, surveillance, and digital exclusion more openly. At the same time, participants may also have selectively presented experiences or narratives due to existing relationships with the researcher. Throughout recruitment, interviewing, and analysis, the authors remained attentive to these dynamics through reflexive discussions and iterative comparison across interviews.

After two rounds of recruitment, 18 participants were interviewed. All participants had a history of heroin use and met the study's inclusion criteria: having experienced compulsory drug rehabilitation comparable to incarceration (at least once), currently being in the community rehabilitation stage, and self-reporting drug use within the past five years. Recruitment ceased after 18 interviews when thematic saturation was observed, indicating that no substantially new narrative patterns or challenges emerged in later interviews.

Interviews were conducted in public spaces, primarily teahouses, selected to minimise the risk of police investigation or disruption. Information sheets and consent forms were sent to participants via WeChat two days prior to interviews. To ensure participants fully understood the study purpose and their rights, the researchers verbally reiterated consent procedures immediately before interviews commenced. Interviews lasted between 35 and 70 minutes and explored participants' perspectives on rehabilitation and social integration, barriers to digital technology use, attitudes toward digital technology, experiences of digital exposure, abilities to interpret and utilise information, and perceptions of digital governance. All participants consented to audio recording. Interview data were transcribed and translated by the research team.

The sample of 18 participants had an average age of 61 years (range from 56 to 70), including 9 men and 9 women. Most primarily used heroin, though six also reported methamphetamine and cannabis use. Participants had experienced compulsory isolation rehabilitation an average of two times, with five detained more than three times. Educational attainment was low, with most completing only junior high school. At the time of interviews, three participants held formal employment, six relied on informal work such as street vending or casual labour, and the remainder were unemployed. To protect confidentiality, all personal and place names are English pseudonyms generated using AI.

Data analysis was conducted using reflexive thematic analysis (Braun & Clarke, 2006). Initially, two qualitative research scholars from the same institution were invited to conduct preliminary coding, generating 38 codes that captured a wide range of information. Subsequently, the two authors engaged in focused coding, each drawing upon their respective research backgrounds: The first author concentrated on conflict dynamics and digital relationships, the second author examined rehabilitation processes, social inclusion, and participant narratives. After several rounds of consultation and collaborative analysis, the study identified embodied narratives of digital exclusion as the overarching thematic framework. This was further elaborated through three supporting themes: barriers to digital skills, single-purpose entertainment use, and information discernment fallacies.

Finally, the study reflected on the perspectives of people who used heroin regarding digital exclusion, discussing the phenomenon of progressive "digital death" among vulnerable groups. This analysis echoes Reisdorf and Rhinesmith's (2020) critique of differential digital outcomes, revealing that what appears to be an individual lack of ability is, in fact, a structural outcome of entrenched social inequalities. Throughout the processes of data collection, analysis, and coding, the research team consistently advocated for a participant-centred perspective and engaged in multiple rounds of negotiation to minimise positionality bias. Nevertheless, the researchers' drug-free experiences and relatively privileged social positions inevitably influenced certain aspects of the analytical direction and thematic construction. While reflexivity measures were embedded throughout the study design, we acknowledge that the interpretation of participants' narratives may have been subtly shaped by these positional dynamics.

4. Findings

When discussing digital technology, participants commonly rationalised exclusion as "too troublesome and not suitable for me" (Bob, male, 58). Their narratives reveal embodied experiences of exclusion centred on technical barriers, disempowerment, information isolation, and the reproduction of stigma, which together progressively constitute a condition that participants described as "digital death" (James, male, 61).

4.1. "Using Some Apps Is More Troublesome": The Complicated Responses of Digital Technological Barriers

The avoidance of digital technologies by people who used heroin in China cannot be reduced to digital illiteracy alone but emerges from emotional dispositions, lived experiences, and structural constraints. Even when discussing basic digital functions such as food delivery or ride-hailing applications, many participants expressed deliberate resistance. This resistance reflected not only limited technical competence but also distrust toward digital systems, heightened sensitivity to economic costs, and internalised experiences of

social exclusion. A particularly salient concern involved surveillance: Participants feared that sharing personal information, including delivery addresses and phone numbers, could increase visibility under community rehabilitation conditions and heighten exposure to law enforcement scrutiny. For example, James (male, 61), when asked about his use of such apps, remarked:

> I'm supposed to live in Place A for rehab, but I stay in Place B most of the time. If I order food, I have to put in my phone number, address, maybe even link payment information. Once all that goes into the system, who knows who can see it? People say these platforms protect privacy, but I don't believe that. The platform's anonymity? That's fake. If they [cops] want to find you, they'll find you. Why take the risk just for ordering food? If I need something, I'd rather go out myself or ask someone I know.

James' narrative suggests that distrust toward digital technology extends beyond technological unfamiliarity and is deeply rooted in experiences of incarceration, surveillance, and policing mediated through technological systems. For participants who have lived under prolonged scrutiny, digital platforms requiring identity verification or data sharing are often perceived less as convenient tools than as extensions of surveillance.

Economic precarity further constrained engagement, as online payments, service fees, and minimum order requirements were often incompatible with participants' post-incarceration financial realities and limited employment opportunities. Helen (female, 59) reflected this sentiment:

> A dish already costs more than ten yuan, then there's the delivery fee and all those extra charges. Why would I spend that money? If I buy vegetables myself, five yuan is enough for one dish, and I can eat it for two meals. We have to calculate these things carefully. For people like us, every yuan matters. We are more difficult to find a job to earn money with compulsory experience.

Digital access alone did not translate into digital participation. For many participants, the platform-based digital lifestyle exceeded both their economic capacity and lived imagination. Most elderly participants survived on subsistence-level incomes, largely dependent on the national minimum living allowance (1000 yuan in this city). After paying subsidised housing costs, they were often left with only around 35 yuan per day for daily expenses. As Bob (male, 58) noted:

> We live by our fingers. Every day you calculate how much money you have left and what you can spend. Food delivery or ride-hailing apps aren't for people like us on minimum living benefits, and we worry our identity would be exposed to others. I want to live without more discrimination.

These perspectives suggest that, beyond issues of access and literacy, the limited relevance of certain digital services to participants' economic and social realities plays a decisive role in shaping their digital exclusion.

A more profound barrier lies in participants' diminished sense of self-efficacy that the belief in one's own capacity to learn and adapt to new technologies (Wyatt et al., 2005). For many people who used heroin, years of systemic stigma and exclusion have fostered a persistent internalised perception of inadequacy: The belief that "this technology is not for people like me." Dunn (male, 64) recalled:

> Some young people taught me how to order food. I thought I had learned it after watching, but when I tried, I couldn't remember anything. I always clicked the wrong place, especially when binding the bank card…not for me.

The failure here does not stem from the complexity of the technology itself, but from the cumulative psychological erosion shaped by repeated experiences of control, correction, and denial throughout incarceration-like rehabilitation (Song et al., 2024). Digital platforms come to represent not merely tools, but markers of an exclusive modernity—a world from which participants feel estranged (van Dijck, 2014). Despite having once been early adopters of emerging technologies in the 1980s and 1990s, they now distance themselves, as one participant noted:

> Radios, cassette players, TVs—we knew how they worked. They were simple and intuitive. But these digital things now…everything needs accounts, verification, updates, passwords. You are allowed to be visible online and across apps. I am uncomfortable…shifting from the traditional world to the new one after going back.

Importantly, this reluctance is often mischaracterised by external observers as "backwardness" or "laziness," thereby perpetuating deficit narratives. Yet, participants' stories reveal ambivalence rather than indifference. Lemire (female, 58) admitted:

> Sometimes when I see others ordering milk tea or cakes, I want to try too. But I worry about the trouble, about money. This feeling peaked when the lockdown ended, and it was hard to go out. But in the end, I gave up.

Her reflection encapsulates the contradictory emotional terrain of technological exclusion, specifically, a simultaneous longing for participation in digital society and an entrenched self-censorship shaped by caution, economic constraint, and feelings of unworthiness. This coexistence of *desire* and *disqualification* illustrates how technological non-use is not simply a matter of skills or motivation, but a reflection of deeper, structurally conditioned modes of self-perception.

Food delivery and ride-hailing applications, though typically classified as "mildly dependent" technologies, have become integral to everyday life in mainstream digital society. The digital literacy implicitly required by such daily convenience platforms, ranging from browsing, price comparison, and selection to payment and real-time delivery tracking, entails not only technical skills but also cognitive fluency and a sense of procedural familiarity. For older people who use drugs, many of whom have spent years under regimes of surveillance, institutional care, or disciplinary control, limited technological literacy and unfamiliarity with digital systems mean that they remain far from achieving a return into society (*Huiguishehui*) in any meaningful rehabilitative sense. Conditioned by systems of face-to-face management and analog interaction, Dunn (male, 64) said:

> I am often more comfortable with direct, in-person transactions than with abstract digital interfaces or virtual infrastructures. For example, standing at the intersection to hail a taxi.

As a result, even when they are aware of the existence and utility of such tools, the process of integrating them into everyday routines is marked by deferral and hesitancy. The adoption of digital technology, in this context, is not a linear process of access, but one of stalled domestication (e.g., Silverstone, 2003).

In summary, reluctance to engage with everyday applications reflects deeper structural forms of digital exclusion in elders who have used drugs (Reisdorf & Rhinesmith, 2020). Their disengagement extends beyond access or usage gaps, revealing multidimensional disconnection shaped by trust deficits, limited resources, and fragile self-conceptions. Addressing this exclusion requires moving beyond technological determinism and recognising how stigma, deprivation, and emotional experiences shape digital participation among marginalised populations.

4.2. "Mobile Phones Can Do This?": Single-Use Entertainment

People who have used heroin primarily engaged with digital technologies in entertainment-oriented and passive ways. Many participants mainly used phones to watch videos or livestreams on platforms such as Douyin (Chinese TikTok) and Kuaishou. While entertainment consumption constitutes their main avenue of digital interaction, it simultaneously reinforces their disconnection from more "functional" and potentially "empowering" uses of digital tools. Participant Peng (male, 62) stated:

> I use Kuaishou every day. When I wake up, I open it. When I have nothing to do, I watch it again. There are funny videos, people chatting, people selling things, people showing their lives—you can see a lot. Sometimes you watch for ten minutes and suddenly several hours are gone. It's mainly for killing time because otherwise there's not much else to do.

Yet, when asked whether he had used mobile navigation, online medical registration, job search platforms, or government service mini programs, he hesitated and responded with surprise:

> Mobile phones can do *this*? I thought they were just for making calls and watching short videos. Nobody told me you could use them for all that. Even if they can, I am not interested in finding those things.

His response exemplifies a broader digital cognitive gap among this population. While they are familiar with mobile technologies as tools for passive consumption ("watching"), their interaction rarely extends to functional engagement, productive participation, or civic involvement through digital means.

This entertainment-oriented usage pattern reflects broader structural concerns. Society often assumes users can equally explore digital technologies, yet participants with histories of rehabilitation, exclusion, and stigma frequently internalize technology as leisure rather than empowerment. Passive entertainment thus became not only convenient but also a low-risk digital practice that minimized exposure to shame, failure, and judgment. For example, Rain (female, 60) recounted an attempt to use an app:

> I kept pressing the wrong things and couldn't figure out where to enter the destination. Then the map changed, and I got even more confused. I tried several times and eventually gave up. I feel embarrassed because everyone else seems to know how to do these things. It's easier to just scroll through Douyin because there's nothing to get wrong there. Sometimes I feel like…maybe I'm still not recovered.

What may appear as avoidance is better understood as a protective response against shame and perceived failure associated with digital incompetence, shaped by repeated experiences of classification, surveillance, and correction within drug control systems.

Meanwhile, platforms such as Kuaishou and Douyin reinforce passive consumption rather than active participation. Participants mainly remained content consumers, as silence and invisibility online functioned as learned strategies of self-protection against exposure, judgment, and renewed social rejection. Many reported fluencies in scrolling and liking content; yet they "seldom engage in practices such as commenting or uploading videos" (Lemire, female, 58). This silent viewer mode may provide transient entertainment, but it does little to enhance users' informational agency, expand life opportunities, or facilitate social reintegration. As Jaxon (male, 60) put it:

> Watching videos can indeed relieve boredom, but afterwards, I still feel the same. At my age, my abilities have declined, and society has moved on without me. This is no longer the era I once belonged to. I can't fully utilise or sustain their use, so they don't really help my life.

Participants' recreational engagement with digital technologies masks a deeper form of digital exclusion. Although they appear digitally connected through routine platform use, their engagement remains largely passive and algorithmically driven, producing a cycle of consumption without agency. Participants generally lacked digital competencies such as information evaluation, platform negotiation, and rights advocacy, alongside limited awareness of algorithmic systems. Rather than promoting empowerment, digital technologies often reinforced disengagement from wider social structures and deepened feelings of stagnation. The experience of Zoe, a female participant in her late fifties, exemplifies:

> I just love to watch short videos and their live broadcasts. I don't have many friends in real life. In some smaller livestream rooms, the hosts chat with me. I've come to rely on this way of pleasing myself. No one knows me or cares whether I'm old or a drug-using person. At least I feel…happy.

In this context, short video consumption among people who have used heroin in China does not necessarily constitute meaningful digital participation but instead reflects passive cultural consumption and, potentially, a new form of technological discipline. The issue is not simply that participants watch short videos—a practice common among many older adults—but that these platforms become substitutes for social recognition, refuges from stigma, and compensatory responses to exclusion from employment, public services, and social relationships. This suggests that conventional indicators of digital engagement, such as usage frequency, require critical reconsideration (Reisdorf & Rhinesmith, 2020). Technology only becomes emancipatory when integrated into broader life strategies, functioning as a resource for improving everyday conditions rather than merely filling time. Realising this potential requires socially embedded digital translation mechanisms that provide accessible and contextually meaningful support systems capable of connecting digital infrastructure with marginalised groups' lived realities.

4.3. "Understanding the World From TikTok": Nationalist Affect, Class Antagonism, and Platform Misinformation

For many people who have used heroin in China, digital media have become a primary means of engaging with the broader social world, shaped less by preference than by disrupted employment, weakened social networks, institutional confinement, and continuing exclusion. Participants frequently described consuming videos and news emphasizing generational conflict, abuse of power, economic inequality, and rural hardship, reflecting the narrow informational environments through which many experienced contemporary social life.

For instance, Shong (male, 60) remarked:

> I watch short videos every day, and there are all kinds. After watching them, I realised how unfair this society is. The rich are bad, the poor suffer, and the police are unreasonable.

Similarly, Baillie (female, 57) commented:

> I get really angry when I see someone buying a watch worth a million RMB. I could never make that much in my lifetime.

These reactions reflect genuine emotions but also illustrate how algorithms reinforce particular narratives and ideological positions. Continuous exposure to similar content creates algorithmically driven information cocoons, intensified by participants' histories of drug use, incarceration, and marginalisation. Many lacked trusted information sources beyond digital platforms, making algorithmically curated content a key lens for interpreting social reality. Consequently, this information ecology often deepened alienation and reinforced worldviews shaped by grievance, exclusion, and despair. As Diego (male, 62) noted:

> I gradually feel uncomfortable. Sometimes I really feel that society is unfair. People like us are old, can't find work, and still have a history of drug use. Who would care about us? Douyin keeps showing me the same kind of videos. It's like I don't belong to that happy, glamorous world. It makes me angry.

The algorithmic logic of short-video platforms continuously recommends similar content based on engagement patterns, reinforcing existing cognitive and emotional orientations. For participants with limited information sources, this creates an illusion of agency while choices remain shaped by platform systems. As Reisdorf and Rhinesmith (2020) argue, digital technologies often reproduce existing inequalities rather than reduce them. This dynamic is particularly pronounced among elderly people who use drugs, many of whom, shaped by incarceration and long-term exclusion, increasingly rely on digital spaces as an "alternative public space," only to encounter new forms of discipline, manipulation, and misrecognition. A case in point is presented by Michele (male, 63), who said:

> I repeatedly forwarded a short video [about] retirees eligible for special subsidies…[I] later learned from family members that it was a scam. I really believed it. I thought the government still cared for people like us.

His reaction reveals not only a sincere hope for inclusion but also a vulnerability that is systematically exploited in digital environments. Such deceptive content manipulates users' desire for recognition and their residual trust in state support, highlighting the precariousness of digital engagement among structurally marginalised populations.

Some participants expressed difficulty in assessing the veracity of online information. This stems in part from limited digital literacy. Few use search engines or conduct cross-platform comparisons, and most lack access to offline networks that could assist with verifying information. Participant Kelly (female, 59) echoed:

> Indeed, many times, information is obtained in a relatively simple way, such as through TikTok and WeChat videos, and it is obtained in a two [to] three-minute quick read and fast-food style. Then, many times, we tend to believe it, mainly because it is our only source of information.

Unlike many older adults whose reliance on short-video platforms may reflect age-related skill gaps, participants faced additional informational disadvantages rooted in drug use and incarceration histories. Experiences of institutional control, stigma, and exclusion reduced both access to diverse information sources and confidence in navigating unfamiliar environments. Their dependence on platform-mediated information should therefore be understood as socially produced rather than simply an individual choice. Echoing Stuart Hall's discussion of encoding/decoding and oppositional readings (Hall, 1980), digital exclusion here limits not only informational access but also the capacity to critically interpret, negotiate, or resist dominant narratives embedded in digital culture and media consumption.

Several participants strongly identified with narratives of national unity, collective belonging, and social solidarity. For individuals shaped by prolonged stigma and exclusion, these narratives offered symbolic inclusion within a broader national community. Digital platforms reinforced themes of nationalism and collective identity while constructing emotionally resonant communities framed around "We Chinese." For older people who use drugs, this form of digital nationalism provided psychological reassurance and an imagined sense of reintegration into the national collective. As participant Lee (male, 59) noted:

> I think those videos are right. "We Chinese" should unite; otherwise, foreigners will bully us. I watch videos about the country becoming stronger, military things, people talking about national pride. Although I used to take drugs, I am patriotic. People may look down on me outside, but when I watch those videos, I still feel like I'm part of something.

The informational world of people who have used heroin is not merely shaped but heavily structured by algorithmic filtering. Although participants appeared to learn about society through digital engagement, their interpretations were formed within informational environments constrained by platform logics and social exclusion. The issue is therefore less about misinformation than unequal access to diverse information and critical engagement. This exposes how digital infrastructures neglect vulnerable populations and suggests that, without addressing structural biases, digital access itself may become another form of exclusion.

5. Discussion and Conclusion

This study contributes to a growing body of critical scholarship that interrogates how digital infrastructures intersect with state-led rehabilitation, disciplinary power, and everyday marginality. Building on the lived experiences of people who used heroin in China, we develop the notion of "digital death," as participants termed it, which referred to a condition of algorithmically mediated social disappearance.

While dominant policy frameworks in China continue to celebrate the nation's "digital leap" and near-universal connectivity, such techno-optimist narratives overlook the enduring power relations that determine who gets to participate, and on what terms. Participants in our study are not digitally absent in the binary sense; most possess smartphones and basic internet access. Yet their interactions with digital platforms are characterised by structural distrust, fear of surveillance, algorithmic misrecognition, and epistemic entrapment. These are

not isolated individual anxieties but culturally and politically embedded reactions to systems that encode their social deviance into algorithmic routines.

Indeed, digital death is not the negation of digital engagement, but its governed deformation. The state's community-based rehabilitation apparatus, far from enabling reintegration, continues to reproduce logics of surveillance, datafication, and control (Lin et al., 2022). Drug use history becomes an enduring digital mark, visible in the requirements of ID verification, registration procedures, and behavioural monitoring systems that persist long after incarceration. Rather than facilitating recovery or belonging, digital platforms, operated through state-public security integration or private-sector profiling, amplify the very forms of marginalisation that rehabilitation programs claim to be redressed.

This form of digital exclusion is entangled in what scholars term the "carceral web" (Gurusami, 2019) or "punitive mesh" (Corda, 2026), where platforms become extensions of carceral rationalities. Algorithmic classification systems funnel these users toward content saturated with anti-police sentiment, nationalist fervour, scams, and class ressentiment. Participants are repeatedly fed content that reproduces a sense of social decay, grievance, and loss. Far from being neutral tools, platforms like Douyin and Kuaishou act as affective infrastructures that produce and manage emotion within circumscribed discursive fields. People who have used heroin are thus not only excluded from digital participation but also interpolated into a discursive marginality that limits their capacity to imagine alternative futures.

Crucially, this study reveals that access to digital technology is insufficient when underlying governance structures reproduce stigma. In the case of people who used heroin in China, "digital death" is both a symptom and effect of broader state strategies: a convergence of punitive rehabilitation, ageism, and a digital governance model that privileges discipline over inclusion. While global policy discourse increasingly frames digital inclusion as a pathway to empowerment (Reisdorf et al., 2022), we caution against this instrumentalist logic. The assumption that digital access automatically yields agency or citizenship fails to account for how digital systems reflect, and often intensify, pre-existing social hierarchies.

Through a narrative-centred, bottom-up lens, our findings call attention to the politics of digital disappearance. The fact that eleven participants were once digitally literate, early adopters of *Xiaolingtong* phones or web users in the 1990s, yet now retreat from digital life due to fear, distrust, and algorithmic violence, signals a kind of reverse inclusion: They are connected, yet unrecognised; visible, yet unseen. In this light, digital death emerges not from technological obsolescence but from the slow violence of institutional silence, where neither the rehabilitation system after incarceration nor digital governance makes meaningful space for re-entry, recognition, or belonging.

Therefore, we argue that digital inclusion must be re-conceptualised as a right of return, not only to society but to mediated visibility, communicative agency, and affective participation. This requires moving beyond infrastructural provision and digital literacy training to fundamentally reimagining the ethical, political, and relational architectures of digital citizenship. For people who have used heroin and similarly multiply marginalised groups, digital transformation must not be a vehicle of further abandonment. Rather, it must begin by confronting the histories of exclusion it too often reproduces.

5.1. Implications for Policy and Practice

Addressing the structural exclusions embedded within China's digital inclusion agenda requires interventions at both governance and community levels. Digital governance should normalise people who have used heroin by reducing the stigma generated through long-standing institutional exceptionalism. Although special management regimes have been justified through risk prevention and social stability, the continued classification of people with drug-use histories as "special subjects" often intensifies surveillance, discipline, and symbolic incarceration. Rather than facilitating *Huiguishehui*, such governance reproduces marginality within digital systems. A shift is therefore needed from risk-based control toward citizenship-oriented inclusion, reframing people with drug-use histories as ordinary participants in digital life rather than perpetual objects of governance.

Policy responses should also address what participants described as "digital death," specifically, sustained exclusion from meaningful digital participation despite formal access. Overcoming digital death requires more than improving access; it requires cultivating digital agency—the capacity to interpret, evaluate, and strategically use digital resources in everyday life. Community rehabilitation programs should therefore recognise digital needs as part of social reintegration. Social workers and service providers should be supported to deliver tailored digital literacy initiatives and assist with everyday digital practices, helping rebuild confidence and autonomy. This reorients digital inclusion from surveillance toward substantive social integration and citizenship.

5.2. Limitations

While this study offers a rare bottom-up account of digital disengagement among post-incarceration populations, several limitations remain. The sample is confined to one coastal city and may not reflect experiences in other regions or among younger cohorts. Reliance on self-reported narratives may also be shaped by memory, stigma, or strategic silence. Incorporating perspectives from policymakers, platform designers, and rehabilitation officials is necessary but challenging to examine how exclusion is produced across institutional layers. Digital governance must address exclusion beyond access by rethinking visibility, participation, and care.

Acknowledgments

The authors thank all participants who were engaged in this project.

Funding

Publication of this article in open access was made possible through the institutional membership agreement between the University of New South Wales and Cogitatio Press.

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

Due to institutional and project data management requirements, the data supporting this study are not publicly available.

LLMs Disclosure

We declare that LLMs were used to support English Editing.

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Social Inclusion
2026 • Volume 14 • Article 12426
https://doi.org/10.17645/si.12426

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ARTICLE

Open Access Journal

Digital Substance Use Therapy: Predicting Engagement and Outcomes to Enhance Health Equity in Prisons

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Submitted: 24 March 2026 **Accepted:** 30 July 2026 **Published:** 10 September 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Substance use disorders (SUD) present a public health challenge and are prevalent amongst the prison population due to associations between substance use and offending. Engagement with, and outcomes from, SUD interventions vary based on sociodemographic and clinical characteristics, resulting in social inequities in therapeutic benefits. A study was recently published using a digital therapy program for SUD recovery—Breaking Free—to understand how different delivery models might influence engagement and outcomes for prison residents in the UK (practitioner-facilitated) and the US (self-directed). This study revealed baseline psychosocial differences between UK and US prison residents that may influence engagement and outcomes for this digital SUD program. Therefore, the present study reports further analyses to understand how these psychosocial differences may interact with delivery models to influence engagement and outcomes. Findings suggest men, younger prison residents, those with alcohol use issues, and those with greater levels of clinical complexity, may benefit from practitioner support to optimise engagement and outcomes. Recommendations are provided to inform delivery of this program, including identifying where resources could be allocated to enhance equity of benefits, e.g., providing practitioner support to residents, funding for practitioner training, integration with other programs, etc.

Keywords

digital therapy; health equity; prison residents; recovery; substance use disorders

1. Introduction

Different sociodemographic and clinical groups engage with healthcare interventions in different ways, meaning some may derive greater benefits than others. Research conducted with Breaking Free, a digital

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program for substance use disorder (SUD) recovery, has revealed associations between approaches to delivery, and program engagement and clinical outcomes (Elison-Davies et al., 2024). This study extends these findings by exploring how prison residents' psychosocial characteristics may interact with practitioner support to influence engagement and outcomes.

1.1. "Health Equity" and Factors That Influence Access to, and Benefits From, Digital Health Interventions

The World Health Organization (WHO) defines "health equity" as "the absence of avoidable or remediable differences among groups of people" in health outcomes (WHO, 2025). The concept recognises that different people may need different resources to achieve optimal health (Lewis et al., 2023) and is distinct from health "equality" in acknowledging that providing equal access to health resources for *everyone*—regardless of individual circumstances—does not necessarily lead to equal health outcomes. Equity aims to adjust access to resources for disadvantaged groups and remove sources of health disparities (Martin et al., 2024).

Digital technologies can increase equity of access to interventions (Kepper et al., 2024) by overcoming barriers including stigma, rurality, waiting lists, distance from services, demands on time such as work and caregiving, etc. This potential requires understanding digital health equity as arising from interactions across multiple technological, individual, organizational, and systemic factors (Kim & Backonja, 2025). Technological factors include access to digital devices, internet connectivity, and digital literacy (Borges do Nascimento et al., 2023)—these are linked to contextual health and social factors that can both be impacted by digital health inequities and impact the ability to engage with digital technologies. These include mental (Lipschitz et al., 2023) and physical health conditions (Zangger et al., 2023), cognitive capacity (Lipschitz et al., 2023), socioeconomic status (Estrela et al., 2023), and cultural attitudes towards technology (Whitehead et al., 2023). Ability to engage with digital health technologies may also be influenced by organisational and systemic factors such as poor integration of digital interventions within existing healthcare systems (Berardi et al., 2024) and insufficient health practitioner support (Borges do Nascimento et al., 2023). This framework illustrates that digital health equity is unlikely to be achieved by addressing isolated factors—instead, intervening across these multiple interconnected domains is necessary to enhance digital health equity.

1.2. Health, Social and Technological Inequities, and Injustices Experienced by People Involved in Correctional Systems

Inequities experienced by people in correctional systems demonstrate how the factors described above converge to create barriers to digital health equity in this population. They face technological inequities (Morgan et al., 2025), including lack of access to technology, which may impede development of digital skills (Fasching-Varner et al., 2014). These technological inequities can lead to prison residents struggling to adapt to technologies upon release to the community, putting them at a disadvantage in terms of job seeking, education, training, and social integration (Morgan et al., 2025).

These technological inequities are linked to the health and social disparities incarcerated people experience—impaired health and social functioning can impede the ability to engage with digital health resources, and lack of access to digital health resources can in turn negatively impact health and social

outcomes. Organisational and systemic factors within prison settings—e.g., lack of access to digital devices/internet, staff resourcing/training to support incarcerated individuals—can also exacerbate digital health inequities. Indeed, the carceral environment acts as a fundamental driver of health inequities more generally, particularly in communities of colour and among socioeconomically vulnerable populations (Kapadia, 2024). Poor living conditions in jails and prisons (Sawyer & Wagner, 2025), limited access to quality healthcare services, higher rates of chronic diseases, mental health disorders and infectious diseases, and inadequate nutrition and physical activity, can all lead to significantly poorer health outcomes in comparison to the general population (Kapadia, 2024). This, coupled with technological, health, and social barriers, means incarcerated individuals may be multiply disadvantaged with regard to digital health equity.

1.3. Predictors of Equity of Engagement and Clinical Benefits From a Digital Substance Use Program

Breaking Free is a digital program for SUD, which incorporates multiple therapeutic approaches including cognitive–behavioural therapy (Beck et al., 2011), relapse prevention (Marlatt & Donovan, 2005), mindfulness (Marlatt et al., 2010), and motivational enhancement (Miller & Rose, 2015). Table 1 describes the clinical content of Breaking Free.

Table 1. Description of the clinical content in Breaking Free.

Content in Breaking Free Online	Description of strategy
Baseline and progress check assessments	Monitor behaviour and provide feedback about progress towards goals Encourage new behaviours via positive feedback
Lifestyle balance model (LBM)	Personalised case formulation—understand links between situations, thoughts, emotions, physical sensations, behaviours, and lifestyle
Difficult situations domain of LBM	Psychoeducation on impact of problematic situations Recognise–avoid–cope Relapse prevention for situational and emotional triggers Create action plans to avoid or cope in high-risk situations Assertiveness and refusal skills training
Negative thoughts domain of LBM	Psychoeducation on impact of negative thoughts Cognitive restructuring; challenge unhelpful thoughts
Emotion impact domain of LBM	Psychoeducation on impact of emotions Attention narrowing and switching Recognise, understand, normalise, and regulate emotions
Physical sensations domain of LBM	Psychoeducation on impact of physical sensations Understanding cravings and urges Body scanning Urge surfing Relapse prevention
Unhelpful behaviours domain of LBM	Psychoeducation on impact of unhelpful behaviours Activity scheduling Behavioural activation Encourage new behaviours via purposeful activities Increase activity to increase self-esteem and avoid boredom

Table 1. (Cont.) Description of the clinical content in Breaking Free.

Content in Breaking Free Online	Description of strategy
Lifestyle domain of LBM	Psychoeducation on impact of lifestyle
	Systematic goal setting
	Implementation intentions for goal attainment
	Increase readiness to change behaviour
	Positive reinforcement

Since the development of Breaking Free in the early 2010s, understanding predictors of engagement with, and clinical outcomes from the program, has been a central focus. Findings have been obtained from the delivery of the program in UK *community settings*, including sociodemographic and clinical characteristics that may influence engagement and outcomes (e.g., Elison, Jones, et al., 2017; Elison-Davies, Hayhurst, et al., 2021; Elison-Davies, Märtens, et al., 2021; Günther et al., 2023). A "dosage effect" has also been identified—the number of behavioural change techniques (BCTs) in the program completed is positively associated with outcomes (substance use and dependence, mental health, biopsychosocial functioning, quality of life; see Elison, Jones, et al., 2017; Elison-Davies, Hayhurst, et al., 2021; Elison-Davies, Wardell, et al., 2021). Delivery model—i.e., whether the program is facilitated by practitioners or delivered as a self-directed program without practitioner support—has also been found to be associated with clinical outcomes (Günther et al., 2023).

Some studies have been completed in *correctional settings*. Criminogenic risk factors—specifically interpersonal conflict and poor mental health—have been associated with less positive outcomes, and a dose–response has also been identified in prison settings (Elison-Davies et al., 2022). The most recent corrections study indicated that different delivery models employed in UK (practitioner-facilitated) and US (self-directed with no practitioner support) prisons may influence engagement and outcomes (Elison-Davies et al., 2024). Practitioner-supported UK prison residents demonstrated greater engagement than US prison residents who were not supported, and UK prison residents experienced superior clinical outcomes. However, the number of prison residents accessing the program in the US was substantially greater due to the delivery model, i.e., the program was made available to the entire prison population, not just those engaging with prison substance misuse services (SMS) as it is in the UK.

In Elison-Davies et al. (2024), UK and US prison residents were compared at baseline. Sociodemographic differences between the groups were identified that may have interacted with the delivery model employed to influence engagement and outcomes—the UK cohort was older, whereas the US cohort was made up of a greater proportion of women and was more ethnically diverse. There were also clinical differences, with the UK cohort demonstrating greater levels of severity of alcohol/drug dependence and mental health difficulties (depression and anxiety), and lower quality of life and biopsychosocial functioning than the US cohort. Greater clinical complexity in the UK cohort was perhaps reflective of the fact that these individuals were engaging with prison SMS as they had been identified as requiring treatment for SUD. There were also criminogenic risk differences, with the US cohort reporting higher rates of interpersonal conflict, and the UK cohort reporting higher rates of unstable accommodation, work/education difficulties, health problems and risk-taking behaviours.

1.4. Aims

This study explores how psychosocial differences identified between UK and US prison residents in Elison-Davies et al. (2024) might interact with the delivery model to influence engagement with, and outcomes from, Breaking Free. Findings may provide insights into where additional resources/support might be allocated to maximise equity of benefits for prison residents.

2. Methods

2.1. Design

Quantitative study incorporating regression analyses of psychosocial characteristics, engagement and outcomes data collected from the delivery of Breaking Free in prisons in the UK (England) and the US (state of Ohio).

2.2. Participants

20,136 prison residents in England and Wales (UK: $N = 1299$) and the state of Ohio (US: $N = 18{,}837$) who engaged with the Breaking Free program between June 2017 and January 2023. UK prisons represented high security, open, remand, training, and resettlement, resulting in a broad representation of the incarcerated population. This mirrors Ohio, where the program was delivered across all 31 facilities representing every category from minimum to maximum security. Although the program is delivered across multiple US states, data from Ohio residents were included as this was the only state for which ethical approval had been granted for data to be used for research. For all residents, participation in Breaking Free was voluntary.

2.3. Procedure

In the UK delivery model, residents were referred to Breaking Free by SMS providers. The program was delivered as a manualised, group program with SMS practitioners supporting engagement (group discussion, module completion, skills practice). Sessions were either weekly two-hour sessions held over four weeks, or weekly one-hour sessions held over eight weeks, dependent on staffing, regimes, etc.

In the US delivery model, residents accessed Breaking Free via personal secure tablets that were available to all prison residents, not only those receiving substance use treatment, 24 hours a day, seven days a week. Residents accessed the program in a self-directed manner with no practitioner support and did not require referral to the program via SMS.

Upon Breaking Free account activation, all participants consented to their data being used for research, and consented to a privacy policy and end-user license agreement, before completing a baseline assessment:

1. Severity of Dependence Scale (SDS: Gossop et al., 1995): 5-item scale measuring severity of substance dependence (e.g., cravings and substance-related cognitions). Total scale score range 0–15. Internal reliability: $\alpha = .81–.90$; test–retest reliability ICC = .89.

2. Patient Health Questionnaire-4 (PHQ-4: Kroenke et al., 2009): 4-item scale that measures severity of depression and anxiety. Total scale score range is 0–12. Threshold scores on the PHQ are 0–3 (no depression/anxiety), 3–5 (mild), 6–8 (moderate), and 9–12 (severe). Internal reliability, $\alpha = .81$.
3. Five items (1, 2, 17, 18, 20) from the WHO Quality of Life measure (WHOQoL-BREF: Skevington et al., 2004). Total scale score range is 5–25. Items selected were generic enough to measure general quality of life as opposed to specific aspects of quality of life. Internal reliability of these five items was $\alpha = .84$.
4. Recovery Progression Measure (Elison et al., 2016; Elison, Dugdale, et al., 2017): 36-item scale measuring levels of impairment in six domains of biopsychosocial functioning (emotions, thoughts, behaviours, physical sensations, difficult situations, lifestyle). Within each of the six RPM domains, there are five dichotomous "yes/no" items measuring presence or absence of specific biopsychosocial difficulties (including a range of criminogenic risk factors) within that domain, and a 0–10 Likert "impact scale" assessing level of severity of impairment in that domain. Total of six Likert scale scores, range 0–60. Internal consistency, $\alpha = .89$; test–retest reliability, ICC = .73.
5. In addition to the standardised measures, the baseline assessment also contained the following:
    - Demographic items: age, gender, and ethnicity.
    - Questions about what substances each participant was experiencing difficulties with.

After baseline assessment completion, participants accessed the clinical content within Breaking Free and were required to complete fortnightly "progress check" assessments containing the psychometric measures described above. Data from progress checks allowed participants to monitor their progress whilst engaging with Breaking Free via a personalised dashboard accessed in their account. The program's backend research database automatically captured participants' baseline and progress check data, and program engagement measures (which of the 12 BCTs were completed; how many progress checks were completed).

Approval to use data from UK participants for research purposes was provided by the London South-East Research Ethics Committee on 1st March 2023. Approval was granted by the ODRC Human Subjects Research Review Committee on 3rd May 2021 to use data provided by participants in Ohio.

2.4. Data Analysis

Variables approximated a non-normal distribution (skewness < 1, kurtosis < 2, Shapiro-Wilks $< .05$). Controlling for confounding effects of baseline scores, multiple regressions were conducted to examine associations between psychosocial characteristics, delivery model, engagement measures (proportion of the 12 BCTs in the program completed and number of progress checks completed), and most recent progress check outcome measure scores. Mann-Whitney tests were used to examine associations between delivery model and engagement measures. Chi-Square tests were used in post hoc analyses exploring associations between psychosocial characteristics and engagement measures. Analyses of covariance (ANCOVA) were used in post hoc analyses exploring associations between psychosocial characteristics and outcome measure scores. Due to the number of comparisons, a more conservative significance level of $p = .01$ was adopted.

3. Results

3.1. Demographic Data Summary

Table 2 provides demographic data. The largest UK age group (35–44 years; *n* = 491, 37.9%) was older than the largest US age group (25–34 years; *n* = 7283, 38.7%). Women were more highly represented in the US group (women: *n* = 4107, 21.8%; men: *n* = 14098, 74.8%) in comparison to the UK group (women: *n* = 56, 4.3%; men: *n* = 1237, 95.5%). Three UK participants (.2%) and 261 (1.4%) US participants reported non-binary gender identities. None of the UK participants declined to disclose their gender, whereas 370 (2%) US participants did decline to disclose their gender. The UK sample was almost all White British (*n* = 1247, 96.4%), whereas the US group was more ethnically diverse, with White participants making up just over half the group (*n* = 10167, 54%), and Black African American participants making up over a quarter (*n* = 5217, 27.6%). Alcohol was the most prevalent primary problem substance in both the UK (*n* = 902, 45.4%) and US groups (*n* = 16938, 56.1%).

Table 2. Demographic data for UK and US prison residents engaging with Breaking Free.

		UK		US	
		n	%	*n*	%
Age group*	18–24 years	121	9.4	2224	11.8
	25–34 years	422	32.6	7283	38.7
	35–44 years	491	37.9	5605	29.8
	45–54 years	217	16.8	2414	12.8
	55–64 years	41	3.2	739	3.9
	>65 years	2	.1	200	1
	Did not disclose	0	0	372	2
Gender†	Women	56	4.3	4107	21.8
	Men	1237	95.5	14,098	74.8
	Non-binary gender identity	3	.2	261	1.4
	Declined to disclose	0	0	370	2
Ethnicity§	American/Alaskan Native	0	0	236	1.3
	Asian	11	.9	79	.4
	Black	12	.9	5217	27.6
	Hispanic/Latino	0	0	639	3.4
	Mixed ethnicity	22	1.6	1687	9
	Native Hawaiian/Pacific Islander	0	0	52	.3
	White	1247	96.4	10,167	54
	Other ethnicity	2	.2	0	0
	Did not disclose	0	0	760	4
Program pathway◊	Alcohol	186	14.3	2560	13.6
	Drugs	635	48.9	7172	38.1
	Alcohol and drugs	478	36.8	9105	48.3

Notes: * UK *N* = 1294, US *N* = 18,837, all *N* = 20,131; † UK *N* = 1296, US *N* = 18,837, all *N* = 20,133; § UK *N* = 1294, US *N* = 18,837, all *N* = 20,131; ◊ UK *N* = 1299, US *N* = 18,837, all *N* = 20,136.

The second most prevalent primary problem substance in the UK group was heroin ($n = 374$, 18.8%), compared to methamphetamine in the US group ($n = 2606$, 8.6%). The third most prevalent primary problem substance in the US group was crack ($n = 285$, 14.4%), compared to marijuana in the US group ($n = 2472$, 8.2%).

3.2. Associations Between Psychosocial Characteristics and Delivery Model, With Program Engagement

Multiple regressions were run to explore associations between psychosocial characteristics and delivery model, with program engagement measures (see Table 3).

Regression models significantly predicted engagement with Breaking Free, including BCT completions ($F(16,5852) = 124.463$, $p < .001$, $R^2 = .252$), and progress check completions ($F(16,5852) = 113.639$, $p < .001$, $R^2 = .235$).

When associations between individual psychosocial characteristics, delivery model, and program engagement measures were examined, proportion of BCTs completed was significantly associated with delivery model ($t = -9.111$, $p < .001$), gender ($t = -5.956$, $p < .001$), ethnicity ($t = 4.987$, $p < .001$), primary problem substance ($t = 2.643$, $p = .008$) and number of progress checks completed ($t = 41.596$, $p < .001$). Standardised beta coefficients indicated small effect sizes for these statistically significant findings (<.30).

Post hoc analyses revealed that UK participants completed significantly more BCTs than US participants (UK *mean* 3.168, *SD* 4.179; US *mean* 1.461, *SD* 3.369; $p < .001$). Post hoc analyses were conducted to explore the significant associations between psychosocial variables and program engagement, to understand whether they were associated with engagement outside of the influence of country-specific delivery model.

Significant differences in the proportion of BCTs completed were identified between gender groups ($X^2 = 312.977$, $p < .001$). Women completed a significantly higher proportion of the BCTs than the other gender groups—see Figure 1 (women: *mean* 2.03, *SD* 5.137; men: *mean* 1.81, *SD* 8.369; non-binary: *mean* 1.52, *SD* 4.411, declined to disclose gender: *mean* .96, *SD* 2.615).

Table 3. Associations between psychosocial characteristics and delivery model, with program engagement.

Program engagement measure	Independent variables UK and US prison resident psychosocial differences identified in 2024 study	*β*	*t*	Sig	95% confidence interval		Overall regression model			
					lower	upper	R^2	*F*	*df*	*p*
Proportion of 12 BCTs completed	Delivery model	−.113	−9.111	< .001	−2.469	−1.594				
	Age group	−.041	−3.471	< .001	−.228	−.063				
	Gender	−.069	−5.956	< .001	−.508	−.256				
	Ethnicity	.061	4.987	< .001	.049	.113				
	Primary problem substance	.031	2.643	.008	.011	.076				
	Baseline SDS Alcohol	.001	.068	.946	−.026	.028				
	Baseline SDS Drugs	−.025	−1.858	.063	−.045	.001				
	Baseline PHQ-4	.008	.498	.619	−.027	.046	.252	124.463	16, 5852	< .001
	Baseline WHOQoL-BREF	.017	1.174	.241	−.014	.056				
	Baseline RPM	.016	.976	.329	−.005	.015				
	Interpersonal conflict	−.006	−.445	.656	−.260	.164				
	Unstable accommodation	.032	2.447	.014	.054	.493				
	Work/education difficulties	−.010	−.772	.440	−.319	.139				
	Health problems	−.007	−.564	.573	−.296	.164				
	Risk-taking behaviours	−.013	−1.019	.308	−.343	.108				
	Progress checks completed	.472	41.596	< .001	.301	.330				

Table 3. (Cont.) Associations between psychosocial characteristics and delivery model, with program engagement.

Program engagement measure	Independent variables UK and US prison resident psychosocial differences identified in 2024 study	*β*	*t*	Sig	95% confidence interval		Overall regression model			
					lower	upper	R^2	*F*	*df*	*p*
Number of progress checks completed	Delivery model	.051	4.059	< .001	.712	2.043				
	Age group	.085	7.141	< .001	.328	.577				
	Gender	.032	2.706	.007	.073	.454				
	Ethnicity	.007	.586	.558	−.034	.063				
	Primary problem substance	−.023	−1.973	.049	−.099	.000				
	Baseline SDS Alcohol	−.005	−.380	.704	−.049	.033				
	Baseline SDS Drugs	.007	.497	.619	−.026	.044				
	Baseline PHQ-4	−.024	−1.442	.149	−.097	.015	.235	113.639	16, 5852	< .001
	Baseline WHOQoL-BREF	.016	1.129	.259	−.022	.083				
	Baseline RPM	.010	.573	.567	−.011	.020				
	Interpersonal conflict	.012	.946	.344	−.166	.476				
	Unstable accommodation	−.006	−.430	.667	−.405	.259				
	Work/education difficulties	.007	.519	.604	−.255	.439				
	Health problems	.027	2.031	.042	.013	.707				
	Risk-taking behaviours	.003	.207	.836	−.305	.377				
	Proportion of BCTs completed	.010	.573	.567	−.011	.020				

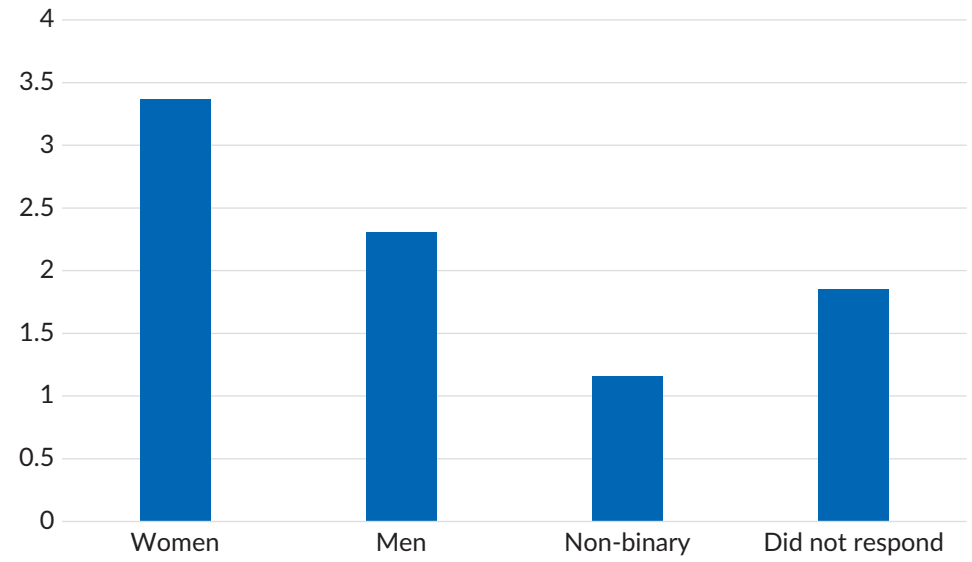


Figure 1. Proportion of BCTs completed by gender group.

Significant differences in proportion of BCTs completed were identified between ethnicity groups (X^2 = 1464.163, p < .001). Asian British participants completed the highest proportion of BCTs (*mean* 7.55, *SD* 5.50), with White British participants completing the second highest proportion of BCTs (*mean* 4.82, *SD* 4.30). The lowest proportions of BCT completions were from Black American participants (*mean* 1.65, *SD* 3.38) and those participants who did not disclose their ethnicity (*mean* 1.68, *SD* 3.55)—see Figure 2.

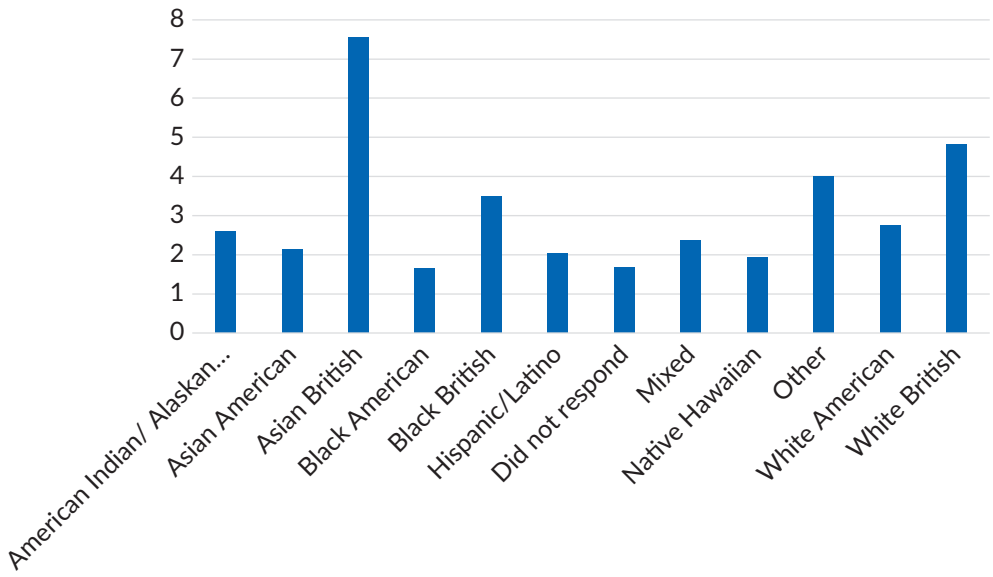


Figure 2. Proportion of BCTs completed by ethnicity.

There were also significant differences in the proportion of BCTs completed amongst primary problem substance groups (X^2 = 128.487, p < .001), with participants reporting alcohol as their primary problem substance completing the lowest proportion of BCTs (*mean* .37, *SD* 1.78) and participants reporting anticonvulsants (i.e., pregabalin, gabapentin) as their primary problem substance completing the highest proportion of BCTs (*mean* 4.72, *SD* 5.07)—see Figure 3.

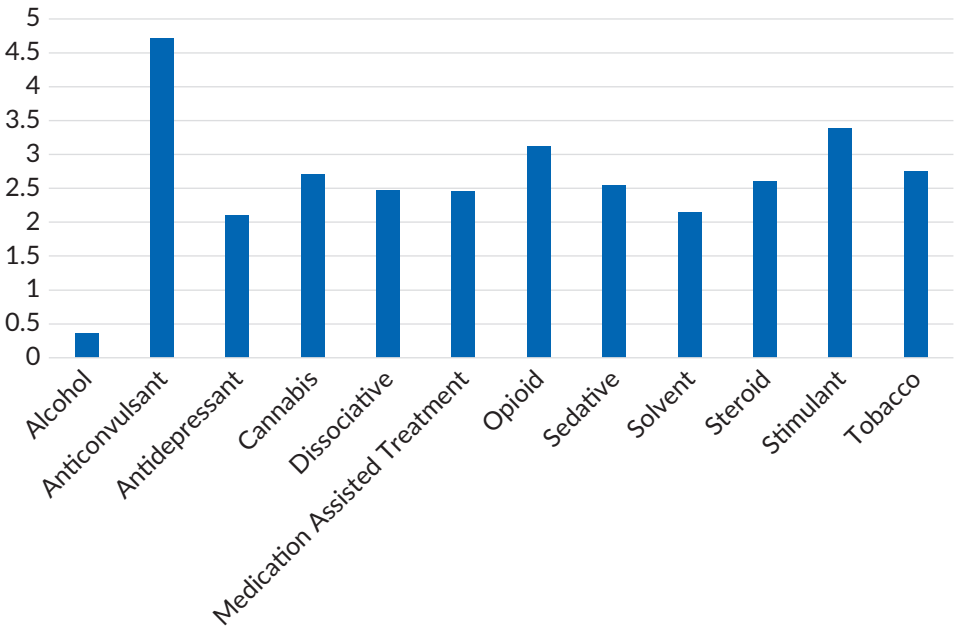


Figure 3. Proportion of BCTs completed by primary problem substance group.

The number of progress check assessments completed was significantly associated with delivery model ($t = 4.059$, $p < .001$), age group ($t = 7.141$, $p < .001$), and gender ($t = 2.706$, $p = .007$). Post hoc analyses revealed that UK participants completed significantly more progress check assessments than US participants (UK *mean* 1.99, *SD* 5.519; US *mean* 1.10, *SD* 6.192; $p < .001$). Significant differences in the number of progress checks completed were also identified between age groups ($X^2 = 1101.351$, $p < .001$). Number of progress check completions increased with age, with the 55–64 years age group completing the highest number—see Figure 4 (18–24 years: *mean* 1.03, *SD* 3.200; 25–43 years: *mean* 1.37, *SD* 4.193; 35–44 years: *mean* 2.07, *SD* 5.299; 45–54 years: *mean* 3.02, *SD* 17.114; 55–64 years: *mean* 3.15, *SD* 8.599; 65+ years: *mean* 2.76, *SD* 9.964; declined to disclose age: *mean* 1.22, *SD* 4.091).

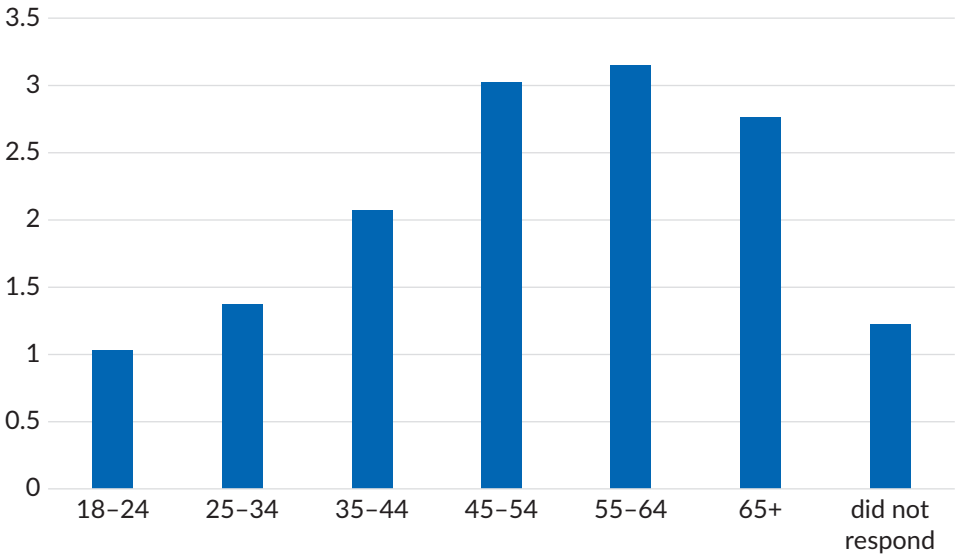


Figure 4. Number of progress checks completed by age group.

Psychosocial characteristics and delivery model were significantly associated with BCT and progress check completions. Beta coefficients (β) were ranked to understand which psychosocial differences were most significantly associated with program engagement measures (see Table 4). Beta coefficients for group differences in program engagement are also reported (proportion of BCTs completed, number of progress checks completed). Age and gender were both significantly associated with the two engagement measures.

Table 4. Ranked beta coefficients demonstrating strongest to weakest associations between psychosocial characteristics and delivery model, with program engagement.

Independent variables: UK and US prison resident psychosocial differences identified in 2024 study	Engagement measure	Ranked β
Progress check completions	BCT completions	0.472
Delivery model	BCT completions	−0.113
Age group	Progress check completions	0.085
Gender	BCT completions	−0.069
Ethnicity	BCT completions	0.061
Delivery model	Progress check completions	0.051
Age group	BCT completions	−0.041
Gender	Progress check completions	0.032
Primary problem substance	BCT completions	0.031

3.3. Associations Between Psychosocial Characteristics, Program Engagement Measures and Delivery Model, With Progress Check Scores

Multiple regressions were run for each progress check outcome measure to explore associations between psychosocial characteristics, program engagement measures and delivery model, with progress check scores, whilst controlling for baseline scores on each outcome measure (see Table 5).

Regression models significantly predicted scores at progress check on each of the five outcome measures: alcohol dependence (SDS–Alcohol: $F(17,2883) = 35.419$, $p < .001$, $R^2 = .168$), drug dependence (SDS–Drugs: $F(17,2886) = 34.367$, $p < .001$, $R^2 = .163$), depression/anxiety (PHQ-4: $F(17,2889) = 50.057$, $p < .001$, $R^2 = .223$), quality of life (WHOQoL-BREF: $F(17,2885) = 58.038$, $p < .001$, $R^2 = .250$) and biopsychosocial functioning (RPM: $F(17,2885) = 51.750$, $p < .001$, $R^2 = .229$).

When associations between individual psychosocial characteristics and program engagement measures with progress check scores were examined, several relationships were identified. The proportion of the 12 BCTs completed was associated with progress check scores: alcohol dependence (SDS–Alcohol: $t = -4.711$, $p < .001$), drug dependence (SDS–Drugs: $t = -6.025$, $p < .001$), depression/anxiety (PHQ-4: $t = -10.942$, $p < .001$), quality of life (WHOQoL-BREF: $t = 12.386$, $p < .001$) and biopsychological functioning ($t = -15.603$, $p < .001$). Number of progress checks completed was also associated with progress check scores: drug dependence (SDS–Drugs: $t = -3.607$, $p < .001$), depression/anxiety (PHQ-4: $t = -3.417$, $p < .001$), quality of life (WHOQoL-BREF: $t = 4.858$, $p < .001$) and biopsychological functioning ($t = -4.521$, $p < .001$). Higher numbers of progress check completions were associated with less severe drug dependence, depression/anxiety, and better quality of life and biopsychosocial functioning. Standardised beta coefficients indicated small effect sizes for these statistically significant findings (< .30).

Table 5. Associations between psychosocial characteristics, program engagement measures and delivery model, with progress check scores.

Outcome measure	Independent variables: UK and US prison resident psychosocial differences identified in 2024 study	*β*	*t*	Sig	95% confidence interval		Overall regression model			
					lower	upper	R^2	*F*	*df*	*p*
SDS—Alcohol	Delivery model	−.024	−1.249	.212	−.959	.213				
	Age group	.026	1.446	.148	−.032	.215				
	Gender	.008	.437	.662	−.143	.225				
	Ethnicity	−.043	−2.398	.017	−.061	−.006				
	Primary problem substance	.014	.770	.441	−.029	.067				
	Baseline SDS Alcohol	.349	17.245	< .001	.318	.400				
	Baseline SDS Drugs	.051	2.504	.012	.010	.079				
	Baseline PHQ-4	.051	2.147	.032	.005	.112				
	Baseline WHOQoL-BREF	.002	.110	.913	−.049	.055	.168	35.419	17,2883	< .001
	Baseline RPM	−.017	−.670	.503	−.020	.010				
	Interpersonal conflict	.045	2.371	.018	.066	.698				
	Unstable accommodation	.006	.311	.756	−.273	.375				
	Work/education difficulties	.011	.566	.572	−.235	.426				
	Health problems	−.005	−.242	.809	−.379	.296				
	Risk-taking behaviours	−.017	−.873	.383	−.484	.186				
	Proportion of BCTs completed	−.088	−4.711	< .001	−.110	−.045				
	Progress checks completed	−.031	−1.665	.096	−.033	.003				

Table 5. (Cont.) Associations between psychosocial characteristics, program engagement measures and delivery model, with progress check scores.

Outcome measure	Independent variables: UK and US prison resident psychosocial differences identified in 2024 study	*β*	*t*	Sig	95% confidence interval		Overall regression model			
					lower	upper	R^2	*F*	*df*	*p*
SDS—Drugs	Delivery model	.010	.527	.598	−.494	.857				
	Age group	.005	.260	.795	−.124	.162				
	Gender	−.010	−.590	.555	−.278	.149				
	Ethnicity	−.013	−.703	.482	−.043	.020				
	Primary problem substance	.034	1.897	.058	−.002	.110				
	Baseline SDS Alcohol	.027	1.351	.177	−.015	.080				
	Baseline SDS Drugs	.325	15.966	< .001	.289	.369				
	Baseline PHQ-4	.058	2.437	.015	.015	.140				
	Baseline WHOQoL-BREF	−.026	−1.224	.221	−.097	.023	.163	34.367	17,2886	< .001
	Baseline RPM	−.003	−.131	.896	−.019	.016				
	Interpersonal conflict	.019	.992	.321	−.181	.552				
	Unstable accommodation	.014	.707	.479	−.240	.511				
	Work/education difficulties	−.020	−1.071	.284	−.592	.174				
	Health problems	−.002	−.084	.933	−.408	.375				
	Risk-taking behaviours	.009	.467	.640	−.296	.482				
	Proportion of BCTs completed	−.113	−6.025	< .001	−.153	−.078				
	Progress checks completed	−.067	−3.607	< .001	−.059	−.017				

Table 5. (Cont.) Associations between psychosocial characteristics, program engagement measures and delivery model, with progress check scores.

Outcome measure	Independent variables: UK and US prison resident psychosocial differences identified in 2024 study	*β*	*t*	Sig	95% confidence interval		Overall regression model			
					lower	upper	R^2	*F*	*df*	*p*
PHQ-4	Delivery model	.065	3.567	< .001	.441	1.518				
	Age group	−.031	−1.793	.073	−.219	.010				
	Gender	.063	3.729	< .001	.153	.493				
	Ethnicity	.050	2.847	.004	.011	.062				
	Primary problem drug	.014	.832	.406	−.026	.063				
	Baseline SDS Alcohol	.020	1.018	.309	−.018	.057				
	Baseline SDS Drugs	.033	1.699	.089	−.004	.060				
	Baseline PHQ-4	.287	12.491	< .001	.266	.365				
	Baseline WHOQoL-BREF	−.055	−2.668	.008	−.113	−.017	.223	50.057	17,2889	< .001
	Baseline RPM	.049	2.037	.042	.001	.028				
	Interpersonal conflict	.026	1.423	.155	−.080	.503				
	Unstable accommodation	−.002	−.107	.915	−.316	.283				
	Work/education difficulties	.020	1.092	.275	−.135	.475				
	Health problems	−.004	−.185	.853	−.341	.282				
	Risk-taking behaviours	.031	1.628	.104	−.053	.567				
	Proportion of BCTs completed	−.198	−10.942	< .001	−.197	−.137				
	Progress checks completed	−.061	−3.417	< .001	−.045	−.012				

Table 5. (Cont.) Associations between psychosocial characteristics, program engagement measures and delivery model, with progress check scores.

Outcome measure	Independent variables: UK and US prison resident psychosocial differences identified in 2024 study	β	t	Sig	95% confidence interval		Overall regression model			
					lower	upper	R^2	F	df	p
WHOQoL-BREF	Delivery model	−.061	−3.419	< .001	−1.547	−.419				
	Age group	−.024	−1.398	.162	−.204	.034				
	Gender	−.078	−4.688	< .001	−.600	−.246				
	Ethnicity	−.057	−3.344	< .001	−.071	−.019				
	Primary problem drug	.001	.070	.944	−.045	.048				
	Baseline SDS Alcohol	.006	.327	.743	−.033	.046				
	Baseline SDS Drugs	.029	1.499	.134	−.008	.059				
	Baseline PHQ-4	−.086	−3.789	< .001	−.151	−.048				
	Baseline WHOQoL-BREF	.282	13.855	< .001	.302	.401	.250	58.038	17,2885	< .001
	Baseline RPM	−.032	−1.340	.180	−.024	.005				
	Interpersonal conflict	−.037	−2.051	.040	−.622	−.014				
	Unstable accommodation	−.028	−1.544	.123	−.557	.066				
	Work/education difficulties	−.038	−2.117	.034	−.662	−.025				
	Health problems	−.028	−1.470	.142	−.569	.081				
	Risk-taking behaviours	−.020	−1.068	.285	−.498	.147				
	Proportion of BCTs completed	.220	12.386	< .001	.166	.228				
	Progress checks completed	.085	4.858	< .001	.025	.060				

Table 5. (Cont.) Associations between psychosocial characteristics, program engagement measures and delivery model, with progress check scores.

Outcome measure	Independent variables: UK and US prison resident psychosocial differences identified in 2024 study	β	t	Sig	95% confidence interval		Overall regression model			
					lower	upper	R^2	F	df	p
RPM	Delivery model	.045	2.454	.014	.597	5.348				
	Age group	.019	1.077	.281	−.226	.777				
	Gender	.059	3.463	< .001	.571	2.061				
	Ethnicity	.000	.009	.993	−.110	.111				
	Primary problem drug	−.009	−.507	.613	−.245	.145				
	Baseline SDS Alcohol	.034	1.765	.078	−.017	.314				
	Baseline SDS Drugs	.004	.227	.820	−.125	.158				
	Baseline PHQ-4	.051	2.241	.025	.031	.466				
	Baseline WHOQoL-BREF	−.043	−2.089	.037	−.433	−.014	.229	51.750	17,2885	< .001
	Baseline RPM	.235	9.816	< .001	.243	.365				
	Interpersonal conflict	.028	1.516	.130	−.290	2.270				
	Unstable accommodation	−.010	−.521	.602	−1.663	.965				
	Work/education difficulties	.022	1.227	.220	−.501	2.179				
	Health problems	−.013	−.676	.499	−1.842	.898				
	Risk-taking behaviours	.046	2.405	.016	.308	3.026				
	Proportion of BCTs completed	−.281	−15.603	< .001	−1.176	−.914				
	Progress checks completed	−.081	−4.521	< .001	−.240	−.095				

Other individual independent variables included in the multiple regressions were associated with progress check scores. Delivery model (UK: practitioner-facilitated, US: self-directed) was associated with depression/anxiety (PHQ-4: $t = 3.567$, $p < .001$) and quality of life (WHOQoL-BREF: $t = -3.419$, $p < .001$). Ethnicity was also associated with depression/anxiety (PHQ-4: $t = 2.847$, $p = .004$) and quality of life (WHOQoL-BREF: $t = -3.344$, $p < .001$). Gender was associated with depression/anxiety (PHQ-4: $t = 3.729$, $p = .004$) and biopsychosocial functioning (RPM: $t = 3.463$, $p < .001$). Baseline depression/anxiety was associated with quality of life (PHQ-4: $t = -3.789$, $p < .001$), and baseline quality of life was associated with depression/anxiety (PHQ-4: $t = -2.668$, $p = .008$). Standardised beta coefficients indicated small effect sizes for these statistically significant findings (< .30).

Post hoc analyses revealed that gender was significantly associated with depression/anxiety ($F(3, 8207) = 34.204$, $p < .001$) and biopsychosocial functioning ($F(3, 8186) = 42.216$, $p < .001$), with estimated marginal means (*EMM*) demonstrating women had less severe depression/anxiety (women *EMM* = 3.707; men = *EMM* 4.643; non-binary = *EMM* 5.015; did not disclose gender = *EMM* 4.961) and better biopsychosocial functioning (women *EMM* = 22.358; men *EMM* = 27.225; non-binary *EMM* = 28.101; did not disclose gender *EMM* = 27.195) at most recent progress check compared to other gender groups.

Table 6. Ranked beta coefficients demonstrating strongest to weakest associations between psychosocial characteristics and progress check measures.

Independent variables: UK and US prison resident psychosocial differences identified in 2024 study	Progress check outcome measures	Ranked *β*
BCTs	RPM	−0.281
BCTs	WHOQoL-BREF	0.22
BCTs	PHQ-4	−0.198
BCTs	SDS Drug	−0.113
BCTs	SDS Alc	−0.088
PHQ-4	WHOQoL-BREF	−0.086
Progress checks	WHOQoL-BREF	0.085
Progress checks	RPM	−0.081
Gender	WHOQoL-BREF	−0.078
Progress checks	SDS Drug	−0.067
Delivery model	PHQ-4	0.065
Gender	PHQ-4	0.063
Progress checks	PHQ-4	−0.061
Delivery model	WHOQoL-BREF	−0.061
Gender	RPM	0.059
Ethnicity	WHOQoL-BREF	−0.057
WHOQoL-BREF	PHQ-4	−0.055
Ethnicity	PHQ-4	0.05

4. Discussion

This study builds on findings from a recently published study (Elison-Davies et al., 2024) exploring engagement and outcomes for prison residents in the UK and US who used a digital program for SUD recovery—Breaking Free. This 2024 study identified baseline psychosocial differences between UK and US prison residents, and differences between these groups in engagement with the program and clinical outcomes, which could partially be accounted for by the different delivery models employed (UK: practitioner-facilitated; US: self-directed with no practitioner support). These two delivery models exemplify the difference between "equality"—where in the US, access to the program is provided to all prison residents, and "equity"—where in the UK, prison residents with identified, clinically relevant SUD can access the additional support they need when engaging with this digital SUD program.

This new study extends Elison-Davies et al.'s (2024) study by exploring the extent to which psychosocial characteristics may interact with the delivery model to influence equity of engagement and outcomes for prison residents using Breaking Free. Findings may provide insights into how resources should be allocated when delivering this digital SUD program to optimise engagement, outcomes and equity of clinical benefits.

4.1. Summary of Findings

Factors associated with greater engagement with Breaking Free—proportion of BCTs and number of progress checks completed—were the UK practitioner-facilitated delivery model, being a woman, being of middle and older age, and being of Asian British ethnicity. Being a woman was also associated with greater improvements in mental health and biopsychosocial functioning, which may be associated with the fact that women exhibited the greatest levels of engagement with the program. There were also differences in levels of engagement based on primary problem substance, with participants reporting alcohol as their primary problem substance exhibiting lowest levels of engagement, and those reporting anticonvulsants (i.e., pregabalin, gabapentin) as their primary problem substance exhibiting highest levels of engagement.

When examining how engagement with this digital SUD program might be associated with outcomes on progress check measures, greater engagement with the program was associated with greater improvements on all outcome measures (substance dependence, mental health, quality of life, biopsychosocial functioning). Delivery model appeared to be associated with outcomes—i.e., the UK model was associated with better depression/anxiety and quality of life outcomes. However, only tentative conclusions around the impact of delivery model on outcomes can be made as delivery models cannot be separated from unmeasured contextual/structural influences from the different correctional systems in the UK and US (e.g., referral processes, cultures, available treatment services, etc.). Gender was also associated with depression/anxiety outcomes, with women experiencing the best outcomes, perhaps because women exhibited the highest levels of engagement with Breaking Free. Although the statistically significant findings described above were obtained, they should be interpreted cautiously as standardised beta coefficients were less than .30, indicating small effect sizes. However, the literature demonstrates that standardised beta coefficients should also be interpreted with caution, especially when analyses include multiple predictor variables that may demonstrate multicollinearity (Yeatts et al., 2017).

4.2. Relation of Findings to the Published Literature

Findings concur with published Breaking Free studies reporting that implementation with practitioner support is associated with higher levels of engagement and better clinical outcomes compared to self-directed engagement (Elison-Davies et al., 2024; Günther et al., 2023). Studies of other digital interventions similarly demonstrate better engagement and outcomes when people are supported to work through these programs by practitioners, rather than in a self–directed manner (e.g., Borghouts et al., 2021; Lipschitz et al., 2023).

The SUD literature also demonstrates that women engage with treatment more consistently than men (Urbanoski et al., 2018), even when women may present to services with greater clinical complexity (Polak et al., 2015). The literature also shows how age may be associated with engagement and outcomes from digital SUD (Kline-Simon et al., 2019) and mental health interventions (Boucher & Raiker, 2024)—adults between the ages of 30—50 exhibit greater levels of engagement than younger and older groups. The literature around associations between ethnicity and initiation of SUD treatment is mixed, although studies demonstrate that when people do engage, ethnicity does not appear to be significantly related to engagement (Acevedo et al., 2012). However, more research needs to be conducted to better understand how treatment can be more accessible and culturally sensitive for different ethnic groups (Johnson et al., 2025).

The present study also demonstrated variation in engagement based on primary problem substance. The literature demonstrates that the kinds of substances people use can be associated with how they might engage with SUD treatment (López et al., 2021). Though again, more research needs to be conducted to fully understand this association for users of Breaking Free.

4.3. Implications of Findings for Practice

Findings extend those from the Elison-Davies et al.'s (2024) study by further exploring how psychosocial factors may interact with the delivery model employed. Findings indicate where resources may be targeted to support specific groups to engage effectively—at least in prison settings—to enhance engagement and maximise equity of clinical benefits. In this study, being of younger age, being a man, and using Breaking Free for alcohol use may reduce engagement and clinical benefits—such individuals therefore may need additional support to engage with the program.

Although not directly explored in this study, prison contextual/structural dynamics outside of practitioner support may also have influenced engagement, i.e., challenges moving prison residents to group IT rooms, regime changes such as prison recategorization, resource limitations including understaffing, etc. In US prisons where the program is delivered via in–cell technologies, some of these additional barriers may have been alleviated. There may also have been differences in voluntariness to participate, as UK residents were a treatment–seeking population whereas in the US they were the general prison population, which complicates comparisons of the two groups. There may also be complexities around the degree to which participation is truly "voluntary" in prison settings due to implicit pressure/coercion and perceived benefits and privileges around participation (e.g., in supporting favourable reviews, etc.).

Despite potential confounding factors, findings suggest that deploying a hybrid of the US and UK delivery models might be beneficial. A US self-directed model facilitates a population-wide approach that can broaden access for residents who may not otherwise access SMS treatment. Barriers to treatment might include perceptions that SMS are only appropriate for some kinds of substances (are "opioid-centric"), staff caseload capacity, waiting lists, and concerns of reprisal for admitting substance use. Conversely, a UK model that is practitioner-supported can offer targeted support for residents identified as requiring a more structured, intensive approach to intervention delivery (i.e., greater clinical complexity, alcohol users, younger prison residents, men, etc.).

Qualitative research has examined additional potential benefits of Breaking Free. Prison residents and staff reported that engaging with the program supported development of prison residents' digital skills (Davies et al., 2017; Pittard et al., 2023). Future research could explore how delivery of the program might reduce social barriers post-release that may be related to lack of digital literacy (i.e., financial support, access to education/training and employment opportunities, etc.). Additionally, exploration of how Breaking Free might be best delivered as a complementary program alongside other prison behavioural programs should also be a priority (Morris & Graham, 2019).

4.4. Study Limitations

There were numerous limitations including engagement with Breaking Free being voluntary, so data reported came from prison residents who were self-selecting. Therefore, only tentative claims about the clinical impact of the program—and delivery models—can be made due to potential treatment selection bias and the influence of unmeasured factors, including participant motivation and treatment readiness. Unmeasured influences from the different correctional systems (e.g., referral processes, cultures, available treatment services, etc.) also mean only tentative conclusions can be drawn. Other limitations that reduce certainty around the impact of the program and delivery models include that this was an observational non-randomised study—large amounts of data were also missing due to incomplete progress check assessments. Additionally, as beta coefficients demonstrated effects sizes to be small, the clinical significance of findings could be questioned.

5. Conclusions

This study identified several participant psychosocial characteristics that could influence equity of engagement with, and clinical benefits from, a digital program for SUD—Breaking Free—when delivered in secure correctional settings. Communicating these characteristics to organisations implementing digital programs may support decisions around which individuals might benefit from additional support when engaging with such programs. This is important given the health, social and technological injustices faced by people involved in correctional systems.

Acknowledgments

We would like to thank all the service users and staff who have supported the development and evaluation of Breaking Free.

Conflict of Interests

All authors are employed by TELUS Health (UK), where the Breaking Free program is developed.

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Social Inclusion
2026 • Volume 14 • Article 12440
https://doi.org/10.17645/si.12440

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ARTICLE

Open Access Journal

From Welfare Values to Digital Governance: Developing an Inclusive Digital Strategy in Swedish Corrections

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Submitted: 26 March 2026 **Accepted:** 23 June 2026 **Published:** 29 July 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Digital transformation is reshaping correctional systems worldwide, yet limited knowledge exists about how inclusive digital strategies are developed in practice within correctional contexts. This article examines the development of a national digital strategy in Swedish correctional agencies, an initiative explicitly grounded in Nordic welfare-state principles such as normality, proportionality, rehabilitation, and social inclusion. Drawing on multi-grounded action research (MGAR), the study combines two modes of inquiry. Process A followed the practical development of the strategy during 2018–2019, generating empirical material through stakeholder engagement, co-design activities, and the development of strategic representations. Process B involved a subsequent dialectical inquiry in which the strategy development process was reinterpreted through theoretical and analytical lenses to address broader research questions concerning digital governance and correctional transformation. The dialectical inquiry identified five interconnected dimensions of strategy development: welfare values as a normative anchor, the client path as an integrative anchor, "Charlie" as an illustrative anchor, social continuity as a guiding principle for digital inclusion, and legitimacy-building through participation and transparency. Together, these dimensions demonstrate how welfare-oriented values were translated into digital governance arrangements and socio-technical design choices. Rather than offering a model for replication, the Swedish case provides analytically transferable insights into how correctional digital transformation can be aligned with rehabilitation, participation, dignity, and public value within welfare-oriented governance contexts.

Keywords

digital transformation; correctional systems; multi-grounded action research; social inclusion; welfare state

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1. Introduction

Digital transformation has become a cornerstone of public-sector modernisation across policy domains, including correctional services. Digital resources now permeate everyday life and increasingly mediate social, economic, and civic interactions. In Sweden, the Swedish Correctional Agency (SCA) pioneered the development of a national digital strategy explicitly rooted in welfare-state principles (Esping-Andersen, 1990; Rothstein & Uslaner, 2006). The ambition was to mirror the widespread societal reach of digital resources and ensure that justice-involved individuals are not excluded from forms of digital participation that are taken for granted in contemporary society.

This article demonstrates how the Swedish correctional strategy emphasises rehabilitation, reintegration, and respect for human dignity as its core pillars. Central to this orientation is the principle of normality: The idea that life in prison should resemble life in the community as closely as possible, with deprivation limited to the loss of liberty itself (Swedish Prison Act, 2010, henceforth identified as SFS 2010:610; see also Järveläinen, 2024). This approach not only promotes humane conditions of confinement but also supports the development of skills, social relationships, and personal capacities necessary for successful reintegration (Järveläinen & Rantanen, 2021; Reisdorf & Rikard, 2018). Nordic countries like Sweden are often presented as an alternative correctional model in which rehabilitation is framed as both a social good and a condition for public safety. However, some scholars caution against idealising their penal systems and highlight continuing tensions between welfare and control (Barker, 2013; Scharff Smith & Ugelvik, 2017). Recent comparative research suggests that Nordic prison systems continue to differ in important ways from more punitive systems, while also highlighting variation and ongoing challenges within these contexts (Crewe et al., 2023). Consistent with this perspective, the present study does not assume that welfare-oriented principles are always realised in practice. Instead, it examines how such principles informed the development of a digital strategy within the SCA.

Demographic and social changes in Sweden, including an ageing population, immigration, and increasing prison overcrowding, have intensified the need for digital transformation. At the same time, digital exclusion remains a growing concern, particularly for already marginalised groups. In response, the Swedish government has identified digital services as essential to sustaining the welfare-state model, including within correctional services (Government Offices of Sweden, 2025). This makes the Swedish correctional strategy a particularly relevant case for examining how welfare-state values are translated into digital governance. The Nordic welfare state has long relied on high levels of institutional trust, which also shapes the legitimacy of digital transformation initiatives (Rothstein & Uslaner, 2006).

This article contributes empirical insights into how welfare-state values are translated into digital governance through the development of a correctional digital strategy. Drawing on a multi-grounded action research (MGAR) approach, it demonstrates how participatory and iterative research approaches can support strategy development in complex public-sector settings. In doing so, the article advances a theoretical link between techno-social justice and correctional governance, highlighting how digital strategies can help prepare the groundwork for rehabilitation, participation, and inclusion.

Despite growing interest in digital transformation within corrections, we still know relatively little about how such strategies are developed in practice, what institutional tensions they entail, and how welfare-oriented

principles are translated into digital governance arrangements. This raises important questions about policy design, organisational change, and the conditions under which digital transformation can support rather than undermine social inclusion within coercive institutions.

This article therefore asks:

1. How was the Swedish correctional digital strategy developed, and how were welfare-state values translated into design choices?
2. What transferable insights does the Swedish case offer to other correctional systems seeking to pursue inclusive digital transformation?

By analysing the strategy development process through the MGAR approach, the article contributes to debates on digital governance, techno-social justice, and social inclusion in correctional contexts.

2. Knowledge Base: Digital Transformation in Corrections

This article uses the term "correctional system" to emphasise the rehabilitative and reintegrative dimensions of state responses to crime, encompassing both custodial and community-based sanctions. The term also reflects the official English designation of the Swedish Prison and Probation Service. Swedish organisations, legislation, and policy documents are cited in their original language, with English translations provided in brackets where appropriate. The Nordic welfare model refers to the universalistic and rights-based social-policy framework characteristic of Nordic countries (Rothstein & Uslaner, 2006). Together, these concepts provide a foundation for understanding digital transformation as a reconfiguration of institutional practices and state–citizen relations rather than simply the introduction of new technologies.

Recent international guidance emphasises the need to balance innovation, rehabilitation, security, and human rights when introducing digital technologies in correctional settings (Council of Europe, 2024; United Nations Interregional Crime and Justice Research Institute [UNICRI], 2024; United Nations Office on Drugs and Crime, 2026). Scholarship on digital prisons highlights how technologies are increasingly reshaping correctional environments through digital communication systems, virtual visitation, educational platforms, algorithmic decision-support tools, and surveillance infrastructures (Kaun & Stiernstedt, 2020; McKay & Macintosh, 2022). While these developments may support rehabilitation and social inclusion, researchers also caution that digital technologies can extend institutional control, generate new forms of exclusion, and reproduce existing inequalities. Consequently, digital transformation in correctional settings should be understood as a socio-technical and political process rather than a purely technological one.

Drawing on socio-technical traditions within information systems research (Boström & Heinen, 1977; Iivari & Lyytinen, 1999), the article adopts the umbrella term digital resources to encompass the diverse technologies, services, and infrastructures involved in correctional digital transformation. This terminology supports an analysis of how digital technologies are embedded in organisational practice and shape opportunities for participation and inclusion (Goldkuhl & Röstlinger, 2018).

2.1. Scandinavian Exceptionalism and Nordic Welfare Model

The notion of the welfare-state prison is a historical and political construct rather than a fixed reality (Pratt, 2007). Its implementation has always been contested, uneven across regions, and subject to shifting political priorities. Scharff Smith and Ugelvik (2017) caution against idealising Scandinavian correctional systems in both domestic and international discourse, noting that welfare institutions can mask coercion behind a façade of care. Barker (2013) similarly warns of soft power dynamics, where control becomes subtle, bureaucratised, and normalised through the language of welfare and progress.

At the same time, Nordic correctional systems are widely associated with welfare-oriented principles that emphasise rehabilitation, reintegration, and humane treatment (Pratt & Eriksson, 2011). Nordic prison systems continue to differ in important ways from more punitive jurisdictions, while also highlighting challenges within these Nordic contexts (Crewe et al., 2023). Rather than treating the cases of exceptionalism as an uncontested reality, this article views it as an analytical lens through which to examine how welfare-oriented values are mobilised within correctional digital governance.

Central to this framework is the principle of normality, supporting that incarcerated individuals retain access to the same rights and opportunities as other citizens, including privacy, family contact, and education (Järveläinen & Rantanen, 2021; SFS 2010:610). Proportionality constitutes another key principle, requiring that sanctions be commensurate with the offence while maintaining a rehabilitative orientation. Comparative observations by Hyatt et al. (2021) demonstrate how Nordic prisons operationalise these principles in practice. Their study of staff exchanges between Norway, Sweden, and the United States revealed striking differences in prison cultures, highlighting how Nordic systems offer stronger safeguards against rights erosion, administrative overload, and the dilution of rehabilitative goals.

These welfare-oriented principles have also shaped Sweden's broader digital policy landscape, including longstanding commitments to digital equality and universal access to public services. Yet correctional services have lagged behind other public sectors in digital development, reflecting continuing tensions between security, control, and rehabilitation (Knight & Ross, 2026).

This aligns with public-sector digital maturity frameworks that conceptualise digital transformation as a staged process of organisational capability-building, governance alignment, and cultural change rather than the linear adoption of new technologies (Meijer, 2015; OECD, 2019). While Scandinavian exceptionalism offers a powerful analytical lens, this article adopts an open stance that recognises the importance of contextual adaptation. Sweden's digital correctional strategy can thus be interpreted as a contemporary extension of the Scandinavian correctional welfare model, in which correctional institutions are understood not merely as sites of punishment but as welfare institutions tasked with normalisation and reintegration (Scharff Smith & Ugelvik, 2017).

Recent scholarship on correctional–welfare hybridisation highlights the ambivalence of reform trajectories. Welfare-oriented narratives simultaneously extend support and intensify governance (Halushka & Miller, 2026). Comparative studies further demonstrate that strong welfare-state orientations do not necessarily reduce punitiveness but can coexist with coercive interventions (Nguyen & Starke, 2025). These insights sharpen the analytical lens of this study by foregrounding how digital transformation may reshape power, legitimacy, and responsibility alongside its welfare ambitions (Powell et al., 2018).

2.2. Digital Justice and Correctional Governance

The Swedish correctional strategy provides a useful case through which to examine the concept of techno-social justice in practice. Techno-social justice directs attention to how digital technologies shape opportunities for participation, inclusion, and agency, particularly within institutions that exercise significant power over individuals. In correctional settings, this raises important questions about whether digital technologies support rehabilitation and social inclusion or reinforce exclusion, surveillance, and control (Knight & Ross, 2026; Zuboff, 2019).

In Sweden, welfare-oriented penal principles such as normality, proportionality, and rehabilitation have provided an important normative foundation for debates about digital transformation in corrections. Whether or not such principles are consistently realised in practice, they remain visible within correctional legislation, policy discourse, and strategy development. Recent comparative research highlights both the continuing influence of welfare-oriented penal values and the tensions and variations that exist within Nordic correctional systems (Crewe et al., 2023). Accordingly, this study treats welfare principles as an analytical lens rather than an empirical assumption, examining how they were mobilised during the development of a digital strategy within SCA.

The strategy emerged in response to a growing recognition that correctional services had lagged behind other areas of public-sector digital development. In a society where digital participation is increasingly central to citizenship and access to public services, this raised concerns about digital exclusion among justice-involved individuals. The development of a national digital strategy therefore created an opportunity to examine how welfare-state values were translated into digital governance through processes of organisational change, stakeholder engagement, and socio-technical design.

2.3. Digital Strategies in Public-Sector Organisations

In increasingly digital societies, organisations rely on digital strategies to guide and coordinate digital transformation. Such strategies are commonly understood as mechanisms for aligning technological capabilities with organisational goals and institutional priorities (Henderson & Venkatraman, 1993). In the public sector, digital strategies involve additional considerations related to governance, accountability, and public value creation. They must balance efficiency objectives with broader democratic and citizen-centred goals (Meijer, 2015). Research on digital government highlights the importance of aligning digital initiatives with institutional missions, organisational structures, legacy systems, and stakeholder relationships (OECD, 2019).

Despite growing interest in public-sector digital transformation, relatively little research has examined how digital strategies are developed within correctional organisations. This gap is significant because correctional settings involve distinctive tensions between rehabilitation, security, inclusion, and control. Understanding how such tensions are negotiated during strategy development is therefore critical to explaining how welfare-oriented principles become embedded in digital governance arrangements. Similarly, digital maturity frameworks emphasise that successful transformation depends on organisational capabilities, governance arrangements, leadership commitment, and cultural change rather than the implementation of technology alone (Stuart et al., 2025).

3. Research Design: Two Modes of Inquiry—Practical and Dialectical

The development of the digital strategy was informed by a rigorous research process rooted in pragmatism (Dewey, 1938) and action research (Susman & Evered, 1978), operationalised through the MGAR methodology (Goldkuhl et al., 2020). This approach is consistent with the Scandinavian socio-technical tradition in systems development, which emphasises practice-based inquiry, participatory exploration of organisational change, and the integration of multiple perspectives in the analysis of digital transformation processes. MGAR was particularly well suited to this project, as it combines theoretical rigour with operational relevance in practice-based research settings.

The study adopts a research design that combines practical inquiry with dialectical inquiry to generate analytically grounded insights from the development of a digital strategy in the SCA. Practical inquiry focuses on intervening in real-world organisational settings while simultaneously generating an empirical basis for subsequent knowledge development.

Dialectical inquiry examines how organisational processes unfold through interactions between different perspectives and organisational change processes (Van de Ven & Poole, 1995), while attending to the tensions and contradictions that shape these dynamics (Benson, 1977). In this study, such tensions were explored through dialogue among actors with different professional and disciplinary backgrounds. This dialectical dialogue also functioned as a form of analytical triangulation, strengthening the credibility of the interpretations by systematically confronting and integrating multiple perspectives.

3.1. Overview of the Research Design

The research design consisted of two interconnected processes. Process A concerned the development of the digital strategy through practical inquiry. Process B involved a research-oriented analysis of the strategy development process to derive insights about organising digital transformation in a complex public-sector context. Together, these two processes enabled an empirically grounded analysis of how digital transformation can be organised within the institutional context of a Nordic welfare-state correctional system. The relationship between these processes and their respective outcomes is summarised in Table 1.

Table 1. Research design: From practical inquiry to insights in strategy development.

Process	Inquiry mode	Timeline	Driver	Role in the study	Research outcome
A	Practical inquiry	2018–2019	The need for a new digital strategy	Development of the digital strategy	Empirical corpus and analytical representations generated through the inquiry
B	Dialectical inquiry	2023–2026	Research questions	Development of research knowledge through MGAR from the strategy development process	Answers to the research questions

Together, these two processes reflect the MGAR principle of combining practical intervention with systematic knowledge generation.

3.2. Process A: Strategy Development as Practical Inquiry

The development of the digital strategy followed a practical inquiry approach consistent with the MGAR framework, consisting of the phase's diagnosis, plan and design, test and intervention, and evaluation. The initiative originated from a formal mandate by the Director General to the Chief Information Officer to develop a strategy guiding the organisation's digital transformation.

The Chief Information Officer appointed a design team consisting of one of the authors, the enterprise architect of the SCA, and a former correctional officer. This composition created a socio-technical perspective combining research-informed analysis, technological architecture expertise, and operational knowledge of correctional practice. The author's background in the Scandinavian tradition of socio-technical systems design further informed the inquiry by emphasising dialogue, organisational modelling, and participatory exploration of digital transformation processes (Bødker et al., 2004). During this period, the design team worked closely with organisational actors and structures within the agency, including a project group and a steering committee that had previously collected substantial material related to digital transformation initiatives.

3.2.1. Diagnosis

During the diagnosis phase, the design team recognised that earlier attempts to formulate a digital strategy had struggled because the organisation lacked a shared organising principle capable of linking digital transformation to the core practices of correctional work, including the experience and needs of its people. Identifying such an anchor therefore became a central objective of the inquiry process.

3.2.2. Design

In the design phase, the design team developed the client path through the correctional system as an analytical anchor. Developing the client path was not a straightforward mapping exercise. Rather, it required iterative abstraction from multiple data sources to construct a system-level representation that could capture the core practices shared across diverse correctional paths. The process drew on five institutional visits, twenty expert interviews, ten management dialogues, five steering-group meetings, and analyses of fifty policy, regulatory, research, and media documents. Through iterative discussion and comparison of these sources, the design team progressively abstracted from local observations to a system-level representation of correctional practices. This analytical process ultimately resulted in the visual client path, which became a central analytical and communicative anchor in the strategy development process.

To strengthen the robustness of the design process, the design team employed methodological triangulation (Denzin, 1978), combining insights from interviews, dialogues, and document analysis. Throughout the inquiry, insights from the different perspectives represented in the design team were continuously discussed and integrated. To avoid becoming locked into purely technical solutions, the design team used storytelling as a reflective and generative method (Kendall & Kendall, 2012; Trauth, 2023). Narrative scenarios were developed to illustrate the transformative potential of digital resources in correctional practice, enabling participants to explore future possibilities in a concrete and value-oriented way. One outcome of this process was the development of "Charlie," a fictional client synthesised from the core correctional practices identified through

the inquiry. Charlie served as an analytical and illustrative anchor for exploring how digital resources could support continuity across different stages of the correctional process. These stories functioned as boundary objects that facilitated dialogue between practitioners, strategists, and IT specialists.

3.2.3. Test and Intervention

The inquiry was conducted through sustained engagement with the organisation over eleven months. All members of the design team were employed by the SCA and carried out other assignments within the organisation alongside the strategy work. This embedded position enabled close engagement with organisational practices and provided a unique opportunity to capture how digital transformation was understood and enacted within the organisational culture. It also enabled the continuous testing and refinement of the emerging client path through ongoing dialogue with correctional officers, administrators, policymakers, and justice-involved individuals. These structured consultations generated insights into everyday constraints and opportunities associated with digital implementation.

3.2.4. Evaluation

The strategy evolved through four iterative cycles focusing on the client path, the language of the strategy, future scenarios, and the formulation of strategic goals. Continuous dialogue with the project group and steering committee enabled feedback and refinement throughout the process. After approximately eleven months of iterative development, the evidence-based digital strategy was formally adopted by the Director General.

3.3. Process B: Dialectical Inquiry

While Process A focused on the development of the digital strategy through practical inquiry, Process B focused on generating research knowledge from this intervention. The empirical corpus generated through Process A provided the basis for analysis, while dialectical inquiry and multi-grounding guided the interpretation of how different perspectives, institutional conditions, and organisational practices shaped the organisation of digital transformation. Multi-grounding was achieved through the iterative integration of empirical material, analytical dialogue, and relevant theoretical perspectives. The analysis was conducted in relation to the research questions and aimed to identify patterns and mechanisms that could inform broader insights about organising digital transformation in correctional systems.

3.3.1. Positionality and Reflexivity

At the time of strategy development, one of the authors was employed by the SCA as an innovation expert while also holding an adjunct lecturer position at a university. The subsequent analysis was conducted four years after the strategy had been formally adopted (Table 1), providing temporal distance from the intervention and opportunities for critical reflection. The analysis was undertaken through a dialectical collaboration between the insider researcher and a second researcher with expertise in correctional sociology. This position enabled a pracademic role, combining practical engagement in organisational development with research-oriented analysis (Posner, 2009; Van de Ven, 2007). While the insider perspective provided detailed knowledge of organisational processes and decision-making, the external

researcher contributed analytical distance and critical challenge. The resulting dialogue enabled interpretations to be continuously questioned, refined, and re-examined throughout the analytical process. This collaboration created a dialogue between an insider perspective rooted in the practical inquiry and an external perspective grounded in correctional sociology, providing opportunities for critical reflection and analytical challenge.

This collaboration also served a reflexive function. The insider perspective provided detailed knowledge of the strategy development process, while the external perspective challenged taken-for-granted assumptions and introduced alternative interpretations. Through iterative dialogue, interpretations were continuously questioned, refined, and re-examined throughout the analytical process. In addition, the temporal distance between the strategy development process and the subsequent analysis created opportunities to revisit earlier assumptions and reinterpret empirical material, considering later reflections and theoretical developments.

3.3.2. Interpretive Frameworks

The analysis was informed by the theoretical perspectives and prior research presented in Section 2. In particular, the Nordic welfare model, international corrections research, and public-sector digital transformation literature provided interpretive lenses for understanding the institutional context of the SCA and the organisation of digital transformation within correctional systems. One important outcome of the analytical process was the introduction of the Nordic welfare model as a framework for interpreting the empirical material and situating the Swedish correctional context within a broader institutional setting (Esping-Andersen, 1990).

3.3.3. Perspective Analysis

The analysis was conducted as a dialectical inquiry, focusing on how the strategy development process unfolded through interactions between different perspectives and institutional conditions (Benson, 1977; Van de Ven & Poole, 1995). This collaboration created a productive dialogue between an insider perspective rooted in the practical inquiry and an external research perspective grounded in corrections sociology. Through iterative discussions and reinterpretations of the empirical material, patterns and mechanisms shaping the organisation of digital transformation were identified.

3.3.4. Analytical Process

The analytical process involved iterative examination of the empirical corpus generated through Process A (Table 1). An initial step focused on unpacking the methods, analytical anchors, and representations used during the strategy development process, including the client path, narrative scenarios, and other artefacts that had shaped the inquiry.

Through this process, the analysis progressively identified a series of interconnected anchors. Welfare-state values were interpreted as a normative anchor providing direction for digital transformation. The client path emerged as an integrative anchor capable of integrating correctional practices across the system. Building on this foundation, Charlie was interpreted as an illustrative anchor that linked welfare values, correctional practices, and digital resources. These analytical interpretations subsequently informed the insights presented in the discussion section.

Subsequent analysis focused on identifying patterns, mechanisms, and organising principles that could explain how the strategy emerged and gained legitimacy within the organisational context. Through iterative dialogue, empirical observations were continuously compared with relevant theoretical perspectives, enabling theoretical matching and the refinement of emerging interpretations.

Attention was given to how different analytical representations, such as the client path and Charlie, functioned as analytical anchors. These linked operational practices, digital resources, and strategic objectives. Through successive reinterpretations of the empirical material, the analysis moved from descriptions of the strategy development process towards broader insights concerning the organisation of digital transformation in correctional systems.

4. Empirical Findings: Developing a Welfare-Oriented Digital Strategy

The findings suggest progression from values to action through a series of interconnected anchors. These anchors were not predefined in the strategy development process but emerged through the subsequent dialectical analysis conducted in Process B. Welfare-state values functioned as a normative anchor, providing direction and legitimacy for digital transformation. The client path emerged as an integrative anchor, enabling the abstraction and integration of core correctional practices across the system. Building on this foundation, Charlie functioned as an illustrative anchor, making the strategy concrete and communicable by linking welfare values, correctional practices, and digital resources. Together, these anchors enabled digital transformation to be understood as a means of sustaining social continuity and supporting rehabilitation. The strategy ultimately gained legitimacy through participation, dialogue, and multi-grounding across organisational perspectives.

4.1. Welfare Values as a Normative Anchor

Our analysis confirms that welfarism constituted the normative backbone of the strategy. The principles of proportionality and normality—associated with Scandinavian exceptionalism—formed the normative foundation of Sweden's correctional digital strategy. Together, these principles emphasise humane treatment and position incarceration as a rehabilitative rather than purely punitive intervention.

By integrating these principles into its digital strategy, the SCA sought to uphold the rights of justice-involved individuals while actively supporting their reintegration into society. A concrete expression of this orientation is found in the SCA's long-standing "Better Out" vision (Swedish Prison and Probation Service, 2007), which encapsulates the ambition that individuals should leave the correctional system better equipped for social participation than when they entered. The strategy was further anchored in Sweden's legal and welfare frameworks. The Swedish Prison Act (SFS 2010:610) provided a robust juridical foundation for integrating digital resources into correctional practice, ensuring alignment with broader welfare-state commitments to equality, dignity, and proportionality. This legal anchoring reinforced the strategy's rehabilitative orientation and highlighted the importance of maintaining humane correctional practices in an increasingly digital society.

4.2. The Client Path as an Integrative Anchor

A central finding concerns the development of the client path as an integrative framework for digital transformation. During the inquiry, the design team recognised that earlier attempts to develop a digital strategy had struggled because SCA lacked a shared framework capable of linking digital transformation to the core practices of correctional work. While formal goals and organisational structures provided important points of reference, they did not adequately capture how correctional work unfolded across different settings and stages of the correctional process.

The analysis revealed that correctional work was enacted through interconnected practices spanning custody, rehabilitation, and reintegration. Consequently, developing the client path became a key analytical task. This was not a straightforward mapping exercise but an iterative process of abstraction and synthesis across multiple data sources and stakeholder perspectives.

Empirical material from institutional visits, interviews, management dialogues, steering-group discussions, and documentary sources was continuously interpreted and compared. Through successive iterations, the design team moved from fragmented observations and local perspectives towards a shared system-level representation of correctional practices. The resulting client path provided a shared representation of the correctional process, linking welfare values, correctional practices, and digital transformation initiatives. As an integrative anchor, it enabled strategic alignment across organisational boundaries and guided the subsequent strategy development.

4.3. Charlie as an Illustrative Anchor

A third finding concerns the role of Charlie, the fictional client developed as a narrative representation of the correctional process. While the client path provided an integrative anchor for understanding correctional practices at the organisational level across the correctional system, Charlie functioned as an illustrative anchor that made these practices tangible from the perspective of an individual moving through the system. Charlie was developed to explore how digital resources could support individuals throughout the client path. Charlie was not intended to represent a specific individual. Rather, he was synthesised from the core correctional practices identified through the inquiry and served as a narrative scenario through which future possibilities could be explored. By following Charlie through different stages of the correctional process, the design team was able to examine how digital resources might support education, therapeutic interventions, family contact, and preparation for reintegration into society. In summary, this approach was driven by Charlie's needs and his experiences of the justice system.

Once the core correctional practices had been identified and synthesised, the design team explored how these practices might be supported through digital resources. This work resulted in a series of narrative scenarios depicting both justice-involved individuals and correctional staff in different situations, such as education, treatment, healthcare, transportation planning, and needs and risk assessment work.

Importantly, Charlie functioned as an illustrative anchor linking welfare values, correctional practices, and digital resources. Through this representation, abstract principles such as normality, proportionality, and rehabilitation could be translated into digital possibilities. Charlie therefore enabled participants to move

beyond discussions of technology itself and instead focus on how digital resources could contribute to correctional goals and individual outcomes. These scenarios enabled DT to explore how digital resources could support correctional practices across organisational boundaries and throughout the correctional process, while also examining the strategic implications of a needs-based digitally enabled correctional system. The narrative also served an important communicative function. Charlie facilitated dialogue across professional and organisational boundaries by providing a shared reference point for practitioners, managers, strategists, and technical specialists. In this way, Charlie functioned both as an analytical anchor and as a communicative resource that supported collective sensemaking throughout the strategy development process.

4.4. Digital Transformation as Social Continuity

The strategy reflected an explicitly human-centred approach to digital transformation. Rather than prioritising surveillance, control, or administrative efficiency, the SCA focused on digital resources that could support rehabilitation, inclusion, and reintegration.

A central empirical finding concerns how digital transformation was framed as a means of sustaining social continuity between correctional settings and everyday life and avoiding fragmentation through imprisonment. In a society where digital participation is increasingly essential for full citizenship, the SCA recognised that exclusion from digital environments risks compounding existing marginalisation. The strategy, therefore, aimed to equip justice-involved individuals with the digital competencies required for everyday life beyond prison.

Importantly, digital transformation also targeted correctional staff. Training programmes were developed to ensure competence in new digital systems, fostering a shared digital culture across organisational roles. This dual focus on clients and staff contributed to organisational cohesion and mutual understanding, and the development of a shared digital culture across the correctional system. In the Swedish context—where digital access is widely regarded as a civic right—the inclusion of incarcerated individuals in digital transformation was framed as a moral and political responsibility. Preparing individuals for participation in a digitised society was thus positioned as a form of public value creation.

A major challenge for the design team was addressing siloed legacy systems that hindered coordination and reinforced fragmented client management. These systems constrained both operational effectiveness and holistic care. The DT therefore pursued integrated digital resources that enabled information sharing across organisational boundaries and professional roles, supporting continuity in rehabilitation processes.

4.5. Building Legitimacy Through Participation and Multi-Grounding

A final finding concerns how legitimacy was built throughout the strategy development process. Rather than relying solely on formal authority, the design team continuously engaged organisational actors through dialogue, participation, and iterative feedback. This enabled the strategy to be progressively refined while fostering shared ownership across different parts of the organisation.

A transparent and participatory process characterised strategy development. Communication specialists supported the production of accessible strategy documents, helping to demystify technical content and

make the strategy understandable to diverse stakeholder groups. Iterative feedback loops involving the project group, steering committee, and operational representatives reinforced trust in both the process and the emerging strategy.

Legitimacy was further strengthened through multi-grounding, where empirical observations, organisational perspectives, and relevant knowledge sources were continuously integrated throughout the inquiry. This evidence-based approach enabled the strategy to gain credibility across professional and organisational boundaries and contributed to its eventual adoption by the Director General.

The findings suggest that digital transformation became actionable through a series of increasingly concrete representations. Welfare-state values functioned as a normative anchor, the client path as an integrative anchor, and Charlie as an illustrative anchor. Together, these representations enabled participants to move from abstract principles to coordinated action and concrete digital possibilities. Table 2 summarises the analytical functions of these representations. These representations emerged during the inquiry but were identified through the subsequent dialectical analysis conducted in Process B.

Table 2. Analytical anchors identified through the inquiry.

Anchor type	Representation	Function in the inquiry	Contribution to strategy development
Normative anchor	Welfare-state values	Provided direction, legitimacy, and evaluative criteria for digital transformation	Anchored the strategy in rehabilitation, proportionality, and normality
Integrative anchor	Client path	Integrated correctional practices, stakeholder perspectives, and digital possibilities into a shared representation	Enabled strategic alignment across organisational boundaries
Illustrative anchor	Charlie	Made abstract principles tangible through narrative scenarios and future-oriented exploration	Facilitated communication, collective sensemaking, and exploration of digital possibilities

5. Discussion: Translating Welfare Values Into Digital Governance

This study examined how welfare-state values were translated into the development of a national digital strategy within the SCA. Rather than evaluating implementation outcomes, the analysis focused on the strategy development process and the negotiation of competing priorities concerning rehabilitation, security, participation, and organisational change. Through the combination of practical inquiry and dialectical interpretation, the study provides insight into how welfare-oriented principles became embedded within emerging forms of digital governance.

The findings illuminate how welfare-oriented values were translated into strategic and organisational choices through an iterative process involving researchers, practitioners, and organisational stakeholders, consistent with practice-based and engaged approaches to organisational research (Goldkuhl et al., 2020; Van de Ven, 2007).

By positioning rehabilitation within a broader social contract, consistent with Nordic welfare philosophies (Esping-Andersen, 1990; Rothstein & Uslaner, 2006; Scharff Smith & Ugelvik, 2017), the Swedish strategy illustrates how correctional digital transformation can contribute to collective wellbeing as well as individual reintegration. More broadly, the findings suggest that digital transformation in corrections is best understood as a process of institutional redesign rather than technological modernisation alone. The strategy reflects welfare traditions associated with proportionality, normality, and trust-based governance while revealing enduring tensions between rehabilitation and control, and innovation and risk management (Kaun & Stiernstedt, 2020; Pratt, 2007). Through dialectical interpretation, these tensions can be understood as ongoing negotiations through which governance values are translated, contested, and stabilised during organisational change (Benson, 1977; Van de Ven & Poole, 1995), reinforcing broader arguments that digital transformation is fundamentally socio-institutional in nature (Bannister & Connolly, 2011).

5.1. Techno-Social Justice and the Swedish Strategy

The Swedish case illustrates how techno-social justice can be translated into correctional digital strategy. Rather than treating digital transformation primarily as a matter of efficiency, the strategy framed digital resources as mechanisms for supporting education, therapeutic engagement, social participation, and reintegration. In this way, inclusion, dignity, and participation became embedded in the design of digital governance arrangements. At the same time, the findings highlight that welfare-oriented ambitions do not eliminate tensions between support and control, a theme that becomes particularly visible when digital infrastructures are introduced into correctional settings (Halushka & Miller, 2026; Nguyen & Starke, 2025).

5.2. Resisting Surveillance Logics

The Swedish approach also illustrates how correctional digital strategies can resist the risks identified by Zuboff in her critique of surveillance capitalism. She warns of "instrumentarian power" (Zuboff, 2019, p. 19), whereby digital resources predict and modify behaviour, potentially eroding autonomy and democratic accountability. In contrast, the Swedish strategy was guided by welfare-oriented principles intended to support rehabilitation, participation, and reintegration. Rather than treating individuals primarily as risks to be managed, the strategy sought to position them as participants in social and civic life whose rehabilitation carries broader social value. This reflects broader concerns about how digital governance can reconfigure relations between government, power, and citizenship (Henman, 2010).

At the same time, welfare-oriented intentions do not eliminate the possibility of unintended consequences. Digital infrastructures designed to support rehabilitation may also expand opportunities for monitoring, categorisation, and behavioural management. As critiques of welfare governance have long argued, support and control frequently coexist within the same institutional arrangements (Barker, 2013; Halushka & Miller, 2026). The significance of the Swedish case therefore lies not in demonstrating a complete escape from these tensions, but in making them visible within the strategy development process itself.

From a public value perspective, the strategy illustrates how digital transformation can be oriented towards inclusion, participation, accountability, and long-term social outcomes rather than short-term efficiency gains (Meijer, 2015). However, the analysis also highlights the need for continued scrutiny of how digital infrastructures reshape power relations, institutional oversight, and opportunities for participation.

The Swedish case therefore illustrates an ongoing negotiation between welfare ambitions and governance imperatives rather than a definitive resolution of these tensions.

5.3. Insights: Implications and Recommendations

Building on the empirical analysis, the study generates a set of analytically derived insights for correctional digital transformation. These insights emerged through the dialectical interpretation of the strategy development process and highlight recurring governance tensions that are likely to arise when digital transformation is pursued within correctional systems. Rather than offering prescriptive solutions, they identify considerations that may support more inclusive and welfare-oriented approaches to digital transformation.

First, digital transformation must avoid becoming symbolic participation, where consultation creates an appearance of involvement without materially influencing decisions or resource allocation. Meaningful participation requires stakeholder contributions to shape both strategic priorities and implementation choices. Without sustained institutional commitment, participatory initiatives risk remaining rhetorical, generating disillusionment and weakening trust (Bjørkquist & Hansen, 2022). Unresolved tensions between managerial control and professional judgment may further undermine implementation (Hofinger & Pflegerl, 2024).

Second, digital transformation should be understood as a shift in governance logic rather than a technical upgrade. Digital systems reshape agency, accountability, and legitimacy (Powell et al., 2018). From a socio-technical perspective, digital resources are embedded in organisational practices and social relations rather than functioning as isolated technical tools (Boström & Heinen, 1977; Iivari & Lyytinen, 1999). This perspective shifts attention from specific technologies to the ways digital resources are enacted in practice (Goldkuhl & Röstlinger, 2018) and highlights the importance of embedding techno-social justice through human-centred design (Bødker et al., 2004).

Third, the Swedish case highlights the importance of contextual adaptation. Welfare-state structures, trust relations, and legal frameworks vary across jurisdictions (Esping-Andersen, 1990; Rothstein & Uslaner, 2006), and digital ambitions must align with organisational capacity and governance conditions (UNICRI, 2024). Digital transformation is therefore institutionally contingent rather than universally transferable, consistent with research emphasising the importance of organisational capabilities, governance capacity, and institutional readiness (OECD, 2019; Stuart et al., 2025).

Fourth, collaborative and participatory design emerged as an important source of legitimacy. Involving policymakers, practitioners, and affected individuals strengthened the perceived relevance of the strategy and reflected welfare traditions of shared responsibility (Bødker et al., 2004; Järveläinen & Rantanen, 2021). However, participation alone does not guarantee meaningful influence or successful implementation.

Fifth, ethical digital transformation requires prioritising human-centred outcomes over efficiency. Digital resources were valued not because they were innovative, but because they supported education, therapeutic engagement, family relationships, and participation in everyday social life, consistent with principles of normality and proportionality (Pratt, 2007). Future strategies should therefore begin with questions of human need and institutional purpose rather than technological capability alone, an orientation reflected in emerging frameworks for ethical digital governance (Council of Europe, 2024; UNICRI, 2024).

Sixth, digital inclusion depends on sustained investments in digital literacy. Unequal access and competencies risk reproducing new forms of marginalisation (Reisdorf & Rikard, 2018). Training and support are therefore essential to enable meaningful participation and uphold welfare-state commitments to equality (Järveläinen, 2024).

Finally, digital resources may help address structural constraints such as overcrowding through virtual visits and remote rehabilitation. However, such solutions must be designed to support social continuity without reinforcing distance or control (Aebi et al., 2020).

Taken together, these insights suggest that while the Swedish case offers analytically transferable knowledge, its application depends on contextual conditions. The approach is grounded in a high-trust welfare-state setting characterised by strong legal protections, mature digital infrastructures, and sustained political commitment to rehabilitation. Where such conditions are weaker, similar initiatives may produce different outcomes or generate unintended consequences. More broadly, digital transformation carries inherent risks. It may expand monitoring and administrative control, while uneven digital competencies can reproduce new forms of exclusion. These dynamics reinforce the need to approach digital transformation as an ongoing, context-sensitive process of negotiation rather than a model to be adopted wholesale.

6. Conclusion

The Swedish digital correctional strategy represents an important attempt to align welfare-oriented correctional principles with digital transformation. Rather than presenting a model for replication, the case provides an opportunity to examine how rehabilitation, normality, and inclusion can be translated into digital governance within a particular institutional and political context. This article has explored the implications of this process for other jurisdictions pursuing digital transformation in correctional systems.

The findings show that the strategy emerged through an iterative, participatory, and normatively guided process informed by MGAR. Welfare-oriented principles, particularly normality, proportionality, and rehabilitation, were not treated as abstract ideals but translated into concrete socio-technical design choices through cycles of stakeholder engagement, deliberation, testing, and refinement. In this sense, digital transformation was framed not primarily as technological modernisation but as a means of supporting social continuity, participation, and reintegration within an increasingly digital society.

The relevance of these insights extends beyond the Swedish context, although their transferability should not be overstated. Consistent with recent empirical work on Nordic correctional systems (Crewe et al., 2023), the findings point to the continuing influence of welfare-oriented principles while recognising substantial variation across institutional and national contexts. The value of the Swedish case therefore lies less in offering a model for replication than in providing an analytically rich example of how digital transformation can be aligned with rehabilitation, participation, and dignity within a particular welfare-state setting. Applicability remains shaped by contextual factors, including legal protections, institutional trust, organisational maturity, and political commitment to rehabilitation.

Our contribution lies in showing how welfare-oriented principles were negotiated, interpreted, and embedded within digital governance arrangements, rather than demonstrating the effectiveness of those

arrangements in practice. The findings further suggest that digital transformation in corrections remains characterised by enduring tensions between inclusion and control, rehabilitation and risk management, and innovation and accountability. Welfare-oriented intentions do not eliminate the possibility that digital infrastructures may generate new forms of monitoring, exclusion, or administrative control. Consequently, the challenge for correctional systems is not merely to digitise existing practices but to continuously evaluate how digital transformation reshapes participation, accountability, and institutional power.

Rather than presenting Sweden as a model to be adopted wholesale, this article offers an analytically informed account of how welfare-oriented values can shape digital governance within a particular institutional context. The broader significance of the study lies in highlighting that the legitimacy of digital transformation in corrections depends not only on technological innovation but on the continual negotiation of dignity, participation, and justice in increasingly digital forms of governance. As correctional systems become increasingly digitalised, the central challenge is not simply the adoption of digital technologies but the continued negotiation of dignity, participation, and justice within evolving forms of digital governance. In this sense, the Swedish experience should be understood less as a finished model and more as an ongoing provocation—a call to ensure that future digital transformation in corrections serves as a tool for empowerment rather than an instrument of soft control. As Scharff Smith and Ugelvik (2017) remind us, the legitimacy of the welfare prison is never given; it must be continuously earned, enacted, and defended—especially in its digital form.

Acknowledgments

The authors would like to thank Håkan Klarin, former Chief Information Officer of the Swedish Prison and Probation Service, whose trust-based governance enabled the design team's exploratory approach. Extended thanks to the anonymous reviewers for their helpful guidance.

Funding

The Swedish Prison and Probation Service funded this research.

Conflict of Interests

The first author's dual role is addressed in Section 3.3.1. The author declares no conflict of interests. In this article, editorial decisions were undertaken by Ulf R. Hedetoft (University of Copenhagen).

Data Availability

The empirical corpus generated during the strategy development process is not publicly available due to confidentiality and organisational sensitivity.

LLMs Disclosure

LLM tools, including ChatGPT (OpenAI) and AI Companion, were used to support language editing, improve readability and consistency, and assist with reference checking and APA formatting. All substantive content, methodological decisions, analysis, interpretation, and conclusions are the sole responsibility of the authors.

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Social Inclusion
2026 • Volume 14 • Article 12443
https://doi.org/10.17645/si.12443

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Open Access Journal

An Exploratory Quantitative Analysis of Black Formerly Incarcerated People's Digital Literacy

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Submitted: 26 March 2026 **Accepted:** 29 April 2026 **Published:** 13 May 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

The reentry challenges that formerly incarcerated people (FIPs) face are well-documented in prior research. However, the digital inequality this population faces has received less consideration in reentry research. In particular, there has been little research conducted to quantitatively assess FIPs' digital literacy skills and their relationship with demographic and incarceration-related variables. The current study is exploratory and addresses this limitation by using quantitative data from 73 Black FIPs in Michigan to examine relationships between their digital literacy, demographics, and incarceration-related variables. The analyses conducted included bivariate correlations, ordinary least squares (OLS) regressions, and post hoc power analyses. The findings reveal that FIPs with more extensive incarceration histories fare worse in terms of the composite digital literacy scale and multiple digital literacy subscales. Age and disability status were also associated with specific digital literacy skill subtypes. These findings suggest that digital literacy skills are shaped by FIPs' backgrounds, especially their incarceration histories. Thus, FIPs are experiencing a new "digital collateral consequence" of incarceration, resulting in structural barriers to reentry that must be addressed through policy and programming. However, because the posthoc power analysis found that the regression models were underpowered, the need for additional research replicating this study with larger and broader samples cannot be understated.

Keywords

digital literacy; incarceration; race; reentry; technology

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1. Introduction

The United States criminal legal system holds almost two million people in carceral settings (Sawyer & Wagner, 2025). Among those two million, Black and Native American individuals are overrepresented. For example, Black people make up 14% of the US population but 41% of the correctional population (Sawyer & Wagner, 2025). Similar disparities are found when focusing on community supervision, a period of supervised release in the community in lieu of incarceration or following a term in prison. Recent data shows that Black people makeup 23% of the US community supervision population and 35% of the parole population (Kaeble, 2024). The racial disparities that minoritized system-involved people face are exacerbated upon exiting prison. Most formerly incarcerated people (FIPs) will encounter collateral consequences of incarceration (e.g., felony discrimination in the labor market) during reentry, but existing research demonstrates that Black and other minoritized FIPs are the most impacted (Hoskins & Sanders, 2019). This is because of their intersectional identities (i.e., being Black and having a criminal record), which place them at the margins of the societal hierarchy and manifest as worse post-release outcomes (Crenshaw, 1991; Smiley, 2023). For example, Black FIPs experience high levels of economic marginalization, often due to more difficulty finding employment or being underemployed (Couloute & Kopf, 2018; Williams et al., 2019). They also have higher rates of housing instability (Couloute, 2018b).

Incarcerated people, and FIPs, are also vulnerable to experiencing digital inequality, or challenges accessing technology and developing digital skills (Reisdorf & Rikard, 2018). This is because they experience limited access to technology, the Internet, and digital literacy programming while in prison and are unable to improve their digital skills upon release due to continued digital deprivation (Reisdorf et al., 2021; Sanders, 2025). For Black FIPs, it is plausible that digital inequality was a challenge they experienced prior to incarceration, as Black people disproportionately encounter digital inequality (Digital Equity Act of 2021, 2021; Mossberger et al., 2006). Thus, their incarceration may have worsened pre-incarceration digital inequality issues Black FIPs faced.

Additionally, many FIPs are a part of other vulnerable populations who disproportionately experience digital inequality. For example, FIPs disproportionately experience poverty and have lower education and literacy levels (Couloute, 2018a; Michon, 2016; Sawyer & Wagner, 2025). However, despite their multiply marginalized status, existing digital inequality and reentry research have yet to focus intentionally on Black FIPs or use quantitative methods in this research area. In fact, the authors are unaware of any quantitative studies assessing what factors are related to FIPs' digital literacy skills. As a result, researchers and practitioners' ability to identify FIPs who are the most vulnerable to digital inequality is limited.

The current study intends to address these limitations by building on prior research and the first author's pilot study (see Sanders, 2025). The pilot study included interview data from 28 FIPs. In their interviews, FIPs qualitatively explained how their age and length of incarceration impacted their experiences with digital inequality, but no quantitative analyses were conducted. The study was not intersectional or focused on multiply marginalized FIPs (i.e., Black FIPs) but included FIPs of all racial/ethnic backgrounds, and the Internet Skills Scale (ISS; van Deursen et al., 2014, 2016) was not used to measure FIPs' digital literacy. Building on this, the current study uses quantitative data from 73 Black FIPs to examine the relationship between their digital literacy skills, which are measured using the ISS (van Deursen et al., 2014, 2016), and several demographic characteristics (i.e., age, disability, employment, household income, education level, and

length of lifetime incarceration). The study's overarching goal is to assess what factors are related to Black FIPs' digital literacy and use the findings to inform practical implications aimed at reducing Black FIPs' digital exclusion. The research serves as a first step to ensuring that Black FIPs are included in the digital world and eliminating structural and material barriers to online access.

2. Literature Review

2.1. Race and Reentry

The overrepresentation of Black people in the criminal legal system is a consequence of the United States' racial history and association of Black people with criminality and violence (Hinton & Cook, 2021; Hinton et al., 2018), and as Black people are funneled through the criminal legal system, the racial discrimination they face worsens. Currently, Black people are three times as likely as their White counterparts to be on community supervision and make up over a quarter (35%) of the parole population (Kaeble, 2024). Black FIPs also encounter more difficulty being awarded parole due to repeat parole denials and having more pre-release conditions to satisfy (Moyd, 2022; Nembhard & Robin, 2021). Once they are released, Black FIPs are more likely to receive supervision violations, including those at the lowest supervision level (Saunders & Midgette, 2023). Consequently, scholars argue that Black FIPs face a "racialized reentry" process (Western & Sirois, 2019).

After leaving prison, FIPs are tasked with meeting various supervision conditions, such as finding employment and regularly meeting with their supervising agent (Jones, 2018). However, the collateral consequences of incarceration and other reentry barriers negatively impact FIPs' ability to meet their supervision conditions (J. M. Ortiz & Wrigley, 2022). This is especially true for Black FIPs, as they also encounter racial inequality and discrimination in addition to the stigma of having a criminal record (Hoskins & Sanders, 2019). For example, unemployment data shows that Black male FIPs have an unemployment rate of 35.2%, but for White male FIPs, the unemployment rate falls to just 18.4% (Couloute & Kopf, 2018). These employment disparities are likely a consequence of racial discrimination in the labor market, with research showing that Black people with *and* without criminal records are less likely to receive job callbacks than White people with criminal records (Decker et al., 2015; N. R. Ortiz, 2014; Pager, 2003). Black FIPs also have higher lifetime earning losses ($358,900) than their White counterparts ($267,000) and earn about $561 less monthly when they are employed (Craigie et al., 2020; Western & Sirois, 2019). These disparities may be due in part to the communities Black FIPs reenter, as they are characterized by structural barriers like low job prospects, economic disadvantage, and low social capital (Cobbina, 2009; Roddy, 2024; Roddy et al., 2022). In turn, reentry becomes more difficult for Black FIPs, and returning to a technology-dependent society adds to these barriers.

2.2. Digital Inequality

The world has become increasingly reliant on technology since the 1970s, and rapid technological advancements continue to increase in the wake of the Covid-19 pandemic (De' et al., 2020). Still, many Americans are digitally excluded and lack access to the Internet, technology devices, and digital literacy skills, and marginalized groups are most impacted (Gonzales, 2016; Vogels, 2021). The Digital Equity Act (2021) identified eight covered populations who disproportionately experience digital inequality in the US:

low-income households, aging populations, incarcerated individuals (including FIPs), veterans, people with disabilities, people with language barriers, racially and ethnically minoritized people, and people living in rural areas. Many individuals may fall into multiple covered population groups, exacerbating risk factors for digital exclusion. For example, someone could be an older individual who lives in a rural area (Mubarak & Suomi, 2022; Warren, 2007), or an older individual may have a disability and struggle to access technology (Perrin & Atske, 2021).

The impacts of digital inequality on people's day-to-day lives cannot be understated. For example, people who experience digital inequality are more likely to be mobile phone dependent, meaning they rely solely on their mobile phones to access the Internet (Reisdorf & DeCook, 2022; Vogels, 2021). This leads to less diverse technology use, lower digital literacy skills, and challenges completing online tasks (Anderson & Horrigan, 2016; Correa et al., 2020; Pew Research Center, 2021). For instance, the online job search is now the most popular job search method (Faberman & Kudlyak, 2016), and applications typically require the completion of online forms and uploading materials, which is difficult for people with less digital literacy. This is especially so for people who have lower education levels, are currently unemployed, older, or mobile phone dependent (Anderson & Horrigan, 2016; Grosholz et al., 2024; Smith, 2015), and it leads to higher rates of unemployment, underemployment, and job search burnout (Bejaković & Mrnjavac, 2020; Bergeson-Shilcock et al., 2023; De Marco et al., 2023).

2.3. Digital Inequality and Reentry

Incarcerated people and FIPs are one of the eight covered populations disproportionately impacted by digital inequality (Digital Equity Act of 2021, 2021). The digital inequality FIPs experience occurs as a consequence of the digital deprivation in prisons (Reisdorf et al., 2021), with older FIPs and those serving longer sentences being the most vulnerable (Grosholz et al., 2024; Hwang et al., 2023; Reisdorf & DeCook, 2022; Reisdorf et al., 2021). However, even short stints of technological disruption are detrimental to digital skill development (Gonzales, 2016); therefore, FIPs who spent short or multiple amounts of time incarcerated may encounter digital inequality as well (Sanders, 2025).

Adding to this, many FIPs fall into multiple covered populations, making them multiply marginalized. For instance, incarcerated people typically come from low-income, racially/ethnically minoritized backgrounds, and Black people are also one of the most digitally disadvantaged groups, making Black FIPs members of two covered populations (Digital Equity Act of 2021, 2021; Sawyer & Wagner, 2025). This makes it unsurprising that many of the causes of Black FIPs' disproportionate system involvement overlap with those causing digital inequality. Case in point, both digital and carceral inequality are products of concentrated poverty, lower levels of educational attainment, and racial segregation (Chetty et al., 2020; Mossberger et al., 2006). For example, Black people living in historically redlined areas face digital redlining (i.e., the discriminatory disinvestment in broadband infrastructure by service providers), resulting in higher payments for lower-quality broadband service and diminished access to employment, social services, education, and healthcare opportunities (M. L. Wang et al., 2024).

Additionally, many incarcerated people also have multiple and complex needs and physical, mental, or learning disabilities (Bunn, 2019). And older FIPs have numerous reentry concerns, such as digital literacy issues and age-based discrimination in the workforce (Grosholz et al., 2024). More generally, FIPs have lower education

and literacy levels (Couloute, 2018a; Michon, 2016), which are factors linked to lower digital literacy skills (van Dijk, 2020), but limited programming options and scheduling conflicts make improving one's education difficult before and after release (Couloute, 2018a; Jones, 2018; Ogbonnaya-Ogburu et al., 2019; L. Wang, 2023). This then furthers FIPs' vulnerability to digital inequality (Sanders, 2025).

2.4. The Current Study

Existing research provides a foundation for the current study and informs the study's hypotheses, but it still suffers from limitations. Specifically, there are few studies using quantitative approaches (e.g., McDougall & Pearson, 2020; McDougall et al., 2017), and the authors are unaware of any existing studies assessing what factors are related to FIPs' digital literacy skills and focusing on multiply marginalized FIPs. Instead, most of the research conducted is qualitative and focused on all FIPs. These research areas are important and provide rich information on all FIPs' digital inequality experiences, but the dearth of intersectional quantitative studies limits our understanding of which FIPs are most vulnerable to digital literacy skill deficits. Accordingly, the current study addresses these limitations by using linear regression to assess relationships between digital literacy skills, demographic characteristics, and incarceration-related variables for 73 Black FIPs. The central research question is: Are age, disability status, current employment status, education level, income, and length of lifetime incarceration related to formerly incarcerated people's digital literacy skills?

Based on the prior research, we expect:

H1: Older age is associated with lower digital literacy skills among FIPs.

H2: Having a disability is associated with lower digital literacy skills among FIPs.

H3: Being unemployed is associated with lower digital literacy skills among FIPs.

H4: Lower educational attainment is associated with lower digital literacy skills among FIPs.

H5: Greater socioeconomic deprivation is associated with lower digital literacy skills among FIPs.

H6: Longer cumulative time incarcerated is associated with lower digital literacy skills among FIPs.

3. Methods

3.1. Recruitment and Sampling

Participants in the current study were recruited through purposive and snowball sampling methods. First, 39 state and local organizations working with FIPs were contacted and asked to share the study's information with their clients. Fourteen of the organizations agreed, including eight that allowed the first author to host in-person recruitment sessions. The study's flyers were also sent to libraries and community centers, as FIPs may frequent these organizations. The majority of participants (74%; $n = 54$) were recruited from the local organizations, followed by snowball sampling (20.5%; $n = 15$). The remaining participants were individuals who participated in the pilot study (Sanders, 2025) and met the current study's eligibility criteria (5.5%; $n = 4$). To be

eligible for the study, participants must have been: (a) over 18 years old, (b) currently on parole supervision for a felony offense or have not completed supervision within the last five years (i.e., no later than 2019), (c) on supervision for at least three months to ensure they have some experiences on parole, (d) identify as Black, and (e) under supervision in Genesee County, Macomb County, Oakland County, or Wayne County, Michigan (MI). Those counties were chosen because they have high Black populations and include major cities like Detroit and Flint (US Census Bureau, 2021). The final sample included 73 Black FIPs.

3.2. Data Collection

The current study's data come from a mixed-method study that primarily used a narrative qualitative approach. The quantitative data was collected during the beginning and end of the interview and included questions about demographics, technology access, and digital skills. All quantitative and qualitative questions were pilot tested twice with two Black FIPs who also work in the reentry space. IRB approval was obtained in 2023, and data collection occurred from May 2024 to October 2024. Prior to their interview, participants completed an eligibility screening, informed consent, and contact information survey. They were then assigned a "Case ID" number that was kept with their data, and received information explaining the interview's focus and how their data would be used. Participants also chose their own pseudonyms.

Data was collected over the phone, in private areas, with the calls lasting between one and two hours. All participants consented to audio recording, which was conducted through Otter.ai. After the interview, participants received a $60 USPS Money Order or Visa gift card and resource lists. To assist with data collection and transcription, the first author hired a team of graduate and undergraduate students and provided interview sensitivity and transcription training. The first author and the graduate students conducted all interviews, with the first author conducting the majority (69.9%, n = 51) of the interviews. The undergraduate students focused on cleaning and quality checking the Otter.ai transcriptions and removed all personally identifying information from the transcripts. The first author cleaned the quantitative data.

3.3. Measures and Analytic Strategy

To examine associations among digital literacy skills, demographic characteristics, and incarceration-related variables, we conducted a series of descriptive and bivariate correlation analyses in STATA 17 and used the ISS as the digital literacy measure (van Deursen et al., 2014, 2016). The analysis proceeded in several steps. First, we computed descriptive statistics (mean, standard deviation, range, and frequency distributions where appropriate) for all study variables. These included the ISS's six continuous indicators of types of digital literacy skills: operational, information navigation, social, creative, mobile, and a composite digital literacy average. van Deursen et al. (2016) found that these indicators, excluding the composite score, explained 64% of the variance in their initial sample (N = 630) and had high levels of internal consistency (α = 0.86–0.94). The full test results (N = 1,107) demonstrated the scale's reliability and consistency across socio-demographic groups. The measures had appropriate levels of convergent and discriminant validity (AVE = 0.50–0.84, MSV = 0.08–0.45, ASV = 0.04–0.31), and composite reliability scores were high (α = 0.82–0.94; van Deursen et al., 2016).

The five skill areas were operationalized using statements, which were directly adapted for the current study (see the Supplementary Material for the full list of items). Operational skills refer to one's ability to operate digital

media (e.g., "I know how to complete online forms"). Information navigation skills refer to one's ability to search for, select, and evaluate online information (e.g., "I find the way in which many websites are designed confusing"), and social skills concern one's ability to safely use digital media as a communication tool (e.g., "I know when I should and shouldn't share information online"). Lastly, creative skills concern one's ability to use digital media to create new digital media (e.g., "I know how to design a website"), and mobile skills refer to one's ability to use a mobile phone device (e.g., "I know how to install apps on a mobile device"; see van Deursen et al., 2014, 2016). The scales' scores ranged from one to five, with scores of one to two indicating low skills, three indicating moderate skills, and four and five indicating high skills (van Deursen et al., 2014, 2016). Descriptives were also calculated for demographic and background variables, including age, education, household income, years incarcerated over the life course, current employment status, and disability status. Binary variables (e.g., current employment, any disability) were summarized using proportions.

Second, we conducted pairwise Pearson correlation analyses to assess the strength and direction of linear associations among all continuous and binary study variables. Pairwise correlations were selected over listwise deletion to maximize the use of available data, given minor differences in sample sizes across variables. The statistical significance of each correlation coefficient was evaluated at the $p < .05$ level. All variables were checked for distributional assumptions prior to analysis. No evidence of extreme skew or outlier influence was found in the continuous variables. Correlation matrices were supplemented with descriptive statistics in tabular form.

Finally, we conducted six separate multiple linear regression analyses. Each model used a different digital literacy outcome as the dependent variable: the composite digital literacy scale (Model 1) and five domain-specific subscales—operational skills (Model 2), information navigation (Model 3), social digital skills (Model 4), creative digital skills (Model 5), and mobile skills (Model 6). These outcomes were treated as continuous variables, consistent with prior uses of similarly constructed scales.

In each model, the same set of independent variables was included to examine their relative predictive power: years incarcerated, age, completed education, current employment (binary), and disability status (binary). These predictors were selected based on theoretical relevance to digital literacy disparities (Digital Equity Act of 2021, 2021; Grosholz et al., 2024; Reisdorf et al., 2021; Sanders, 2025; Vogels, 2021). All variables were entered simultaneously (standard OLS estimation) in each model. Continuous predictors (e.g., years incarcerated, age, education) were unstandardized to retain interpretability. Binary predictors (employment and disability status) were dummy-coded (0 = no, 1 = yes). Standard errors were robust to heteroskedasticity, and multicollinearity diagnostics were checked and found acceptable (VIFs < 2.0).

3.4. Power Analysis

A post hoc power analysis was conducted to assess whether the current regression model was adequately powered to detect the observed effects. Using a sample size of $N = 72$, an R^2 of 0.55, and five predictors, the estimated statistical power was approximately 0.43, which is notably below the conventional threshold of 0.80. This indicates that the model is underpowered and subject to an elevated risk of Type II error (i.e., failing to detect true effects). Accordingly, the results should be interpreted with considerable caution, as non-significant findings may reflect insufficient power rather than the absence of meaningful associations, and statistically significant effects may be unstable or sample-specific. Consistent with the exploratory

nature of the study, these analyses are best understood as identifying preliminary patterns and potential relationships rather than providing definitive tests of the proposed hypotheses. While limited in inferential strength, the findings offer a useful foundation for future research employing larger samples and more robust designs to validate and extend these results.

4. Results

4.1. Sample Demographics

Participants' average age was 43.9, and the majority of participants (80.8%; $n = 59$) were male. All participants were Black, but two identified as multiracial. Most participants (53.4%; $n = 39$) had at least a high school diploma or GED and were employed (61.6%; $n = 45$). Still, most participants' (64.4%; $n = 47$) annual household income was below the federal poverty guidelines, as they had an annual income between $0 and $30,000. On average, participants had spent 12 years incarcerated most recently and 15.2 years incarcerated over their lifetime. In terms of their technology access, 90.4% ($n = 66$) had access to Wi-Fi, and all but one participant (98.6%; $n = 72$) had access to a phone. Comparatively, just over half of participants (54.8%, $n = 40$) had access to a computer. Participants' digital literacy was measured using the ISS (van Deursen et al., 2014, 2016), with scores ranging from one to five. On average, participants scored 3.7 on the scale, indicating moderate digital literacy skills. On the subscales, participants' average scores were strongest for social (4.2), mobile (4.1), and operational (3.9) skills and weakest for information navigation (3.1) and creative (3.1).

4.2. Bivariate Analyses

Descriptive statistics and bivariate correlations among all study variables are presented in Table 1. As expected, the six digital literacy indicators—including the composite score and five subscales—were all strongly and positively correlated with one another (rs ranging from 0.61 to 0.98, $p < .05$), suggesting that these dimensions represent overlapping, but distinct, aspects of digital competence. The composite digital literacy scale showed especially high correlations with operational skills ($r = 0.98$, $p < .05$) and creative digital skills ($r = 0.93$, $p < .05$), supporting its role as a broad summary measure.

Several variables were correlated with digital literacy indicators. The key variable of interest, years incarcerated over an individual's life course, was negatively correlated with all six digital literacy outcomes (e.g., $r = -0.64$ with the composite scale, $p < .05$), indicating that more extensive incarceration histories are associated with lower digital skills. Age was also negatively correlated with digital literacy measures, with the strongest correlation observed for operational skills ($r = -0.64$, $p < .05$). In contrast, disability status was positively correlated with all digital literacy outcomes (e.g., $r = 0.32$ with the composite scale, $p < .05$), a pattern that was further explored in multivariate models.

Other demographic variables showed more modest or inconsistent relationships. Education was positively but weakly correlated with information navigation skills ($r = 0.25$, $p < .05$), while current employment was negatively associated with operational skills ($r = -0.23$, $p < .05$). Household income and education were moderately correlated with each other ($r = 0.61$, $p < .05$), but neither showed strong zero-order associations with the digital literacy outcomes. These correlations provided initial support for the hypothesized relationships and informed the selection of predictors included in the regression models that follow.

Table 1. Correlations and summary statistics of relevant variables.

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Digital literacy (composite)	—										
2. Operational skills	0.98 *	—									
3. Information navigation	0.74 *	0.74 *	—								
4. Social digital skills	0.82 *	0.76 *	0.54 *	—							
5. Creative digital skills	0.93 *	0.88 *	0.67 *	0.71 *	—						
6. Mobile skills	0.83 *	0.82 *	0.61 *	0.71 *	0.69 *	—					
7. Years incarcerated	–0.64 *	–0.66 *	–0.47 *	–0.40 *	–0.60 *	–0.54 *	—				
8. Age	–0.60 *	–0.64 *	–0.50 *	–0.31 *	–0.54 *	–0.49 *	0.72 *	—			
9. Education (years completed)	0.18	0.15	0.25 *	0.22	0.18	0.03	–0.08	–0.05	—		
10. Current employment	–0.21	–0.23 *	–0.23	–0.11	–0.18	–0.19	0.10	0.09	–0.19	—	
11. Any disability	0.32 *	0.32 *	0.30 *	0.34 *	0.24 *	0.27 *	–0.06	–0.24 *	0.19	–0.21	—
N	72	72	72	72	72	72	73	73	73	73	73
M/%	3.71	3.86	3.1	4.22	3.06	4.09	15.22	43.97	3.67	38.36%	49.32%
SD	1.09	1.25	1.16	1.02	1.28	1.12	12.01	12.33	3.12	—	—
Range	1–5	1–5	1–5	1–5	1–5	1–5	1–47	24.4–71.1	1–10	0,1	0,1

Notes: ** $p < .01$, * $p < .05$.

4.3. Multivariate Analyses

Our first regression model examined the association between individual characteristics and the composite digital literacy score. The model accounted for a substantial proportion of variance ($R^2 = 0.51$). Years incarcerated were a significant negative predictor ($\beta = -0.04$, $p < .01$), indicating that longer incarceration histories were associated with lower overall digital literacy (see Table 2). Disability status was positively associated with digital literacy ($\beta = 0.44$, $p < .05$), suggesting that individuals with disabilities reported higher digital literacy. Other predictors, including age ($\beta = -0.02$, $p > .05$), education ($\beta = 0.02$, $p > .05$), and current employment ($\beta = -0.20$, $p > .05$), were not significantly associated with the composite outcome.

Table 2. Regression results of relevant variables on digital literacy scales and subscales.

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	Digital literacy (composite)	Operational skills	Information navigation	Social digital skills	Creative skills	Mobile skills
Years incarcerated	−0.04**	−0.05**	−0.02	−0.04**	−0.05**	−0.04**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age	−0.02	−0.02	−0.03	0.01	−0.02	−0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Education	0.02	0.02	0.06	0.04	0.04	−0.03
	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
Current employment	−0.20	−0.29	−0.27	0.04	−0.17	−0.25
	(0.20)	(0.22)	(0.24)	(0.23)	(0.25)	(0.23)
Any disability	0.44*	0.49*	0.37	0.62**	0.34	0.44†
	(0.20)	(0.22)	(0.25)	(0.23)	(0.26)	(0.24)
Constant	4.86**	5.47**	4.24**	4.04**	4.31**	5.15**
	(0.46)	(0.51)	(0.56)	(0.52)	(0.59)	(0.54)
Observations	72	72	72	72	72	72
R-squared	0.51	0.55	0.36	0.28	0.42	0.36

Notes: Standard errors in parentheses; ** $p < 0.01$, * $p < 0.05$.

The second model regressed operational digital skills on the same set of predictors and showed the highest explanatory power of the six models ($R^2 = 0.55$). As in the previous model, years incarcerated were significantly and negatively associated with operational skills ($\beta = -0.05$, $p < .01$). Age was not a significant predictor at the .05 level, but illustrated a trend towards statistical significance ($\beta = -0.02$, $p < .10$), suggesting a potential decline in operational skill levels with increasing age. Disability status again emerged as a significant positive predictor ($\beta = 0.49$, $p < .05$). Neither education ($\beta = 0.02$, $p > .05$) nor employment ($\beta = -0.29$, $p > .05$) significantly predicted operational skills.

The third model focused on information navigation skills and explained 36% of the variance ($R^2 = 0.36$). Unlike the other models, years incarcerated was not a statistically significant predictor ($\beta = -0.02$, $p > .05$). Age was not a significant predictor at the .05 level, but illustrated a trend towards statistical significance ($\beta = -0.03$, $p < .10$), while disability status showed a positive but non-significant relationship ($\beta = 0.37$, $p > .05$). Neither education ($\beta = 0.06$, $p > .05$) nor employment ($\beta = -0.27$, $p > .05$) was significantly related to information navigation.

The fourth model accounted for 28% of the variance in social digital skills ($R^2 = 0.28$), the lowest among the six models. Years incarcerated remained a significant negative predictor ($\beta = -0.04$, $p < .01$). In contrast to other models, age had a small and non-significant positive association ($\beta = 0.01$, $p > .05$). Disability status was a strong positive predictor ($\beta = 0.62$, $p < .01$), indicating that participants with disabilities reported higher social digital competencies. Neither education ($\beta = 0.04$, $p > .05$) nor employment ($\beta = 0.04$, $p > .05$) significantly predicted social digital skills.

The fifth model, predicting creative digital skills, explained 42% of the variance ($R^2 = 0.42$). Years incarcerated continued to negatively predict skill levels ($\beta = -0.05$, $p < .01$). However, all other predictors—including age ($\beta = -0.02$, $p > .05$), education ($\beta = 0.04$, $p > .05$), employment ($\beta = -0.17$, $p > .05$), and disability ($\beta = 0.34$, $p > .05$)—were not statistically significant in this model.

The final model examined mobile digital skills, accounting for 36% of the variance ($R^2 = 0.36$). Years incarcerated was again negatively associated with mobile skills ($\beta = -0.04$, $p < .01$). Disability status was not a significant predictor at the .05 level, but illustrated a trend towards statistical significance ($\beta = 0.44$, $p < .10$). Other variables including age ($\beta = -0.01$, $p > .05$), education ($\beta = -0.03$, $p > .05$), and employment ($\beta = -0.25$, $p > .05$) were not significantly associated with mobile digital skills.

The results provide mixed support for the hypothesized associations. H1, which posited a negative association between age and digital literacy, received only weak support: Age was not statistically significant at the .05 level in any model, though marginal trends toward a negative association emerged for operational and information navigation skills. H2 was not supported in the expected direction; contrary to expectations, disability status was positively associated with digital literacy and reached statistical significance in several models, including composite, operational, and social skills. H3 found no support, as employment status was not significantly associated with digital literacy in any model. Similarly, H4 was not supported, with educational attainment showing no significant relationship across outcomes. H5 also lacked support, as socioeconomic deprivation was not a significant predictor in the analyses. However, H6 was consistently supported: Longer cumulative time incarcerated emerged as a significant negative correlate across most models, indicating an association with lower digital literacy.

5. Discussion

5.1. Review of the Results

The current study investigated whether age, disability status, current employment status, education level, income, and length of lifetime incarceration were related to digital literacy skills and had several hypotheses. Two of the six hypotheses were marginally supported by the multivariate findings. The results showed that both age (H1) and years incarcerated (H6) were negatively associated with participants' digital skills, including particular types of digital skills (e.g., information navigation skills). These findings align with what is expected based on the extant research showing that older individuals have more difficulty using technology (Grosholz et al., 2024; Hwang et al., 2023; Mubarak & Suomi, 2022). Additionally, many of the qualitative studies on digital inequality and reentry find that FIPs who have spent longer or more frequent amounts of time incarcerated more often mention experiencing digital literacy deficiencies (Reisdorf et al., 2021;

Sanders, 2025). The current study, however, is the first to demonstrate that there is a statistically significant relationship between the length of lifetime incarceration and digital literacy skills.

These findings can be further contextualized by considering the experiences of Black FIPs, who are disproportionately affected by structural inequalities in the criminal justice system. Prior research suggests that Black individuals often face longer periods of incarceration and may reenter the community at older ages compared to less-minoritized groups (Pettit & Gutierrez, 2018); they also return to areas that have reduced resources related to reentry that hold potential in decreasing deficits in digital literacy (Roddy & Durante, 2026). Given that both age and cumulative time incarcerated were associated with digital literacy in this study, such disparities may contribute to widening digital skill gaps. This suggests that observed differences in digital literacy are not only individual-level phenomena but may also reflect broader systemic inequities that shape access to, and opportunities for, digital skill development.

Comparatively, the disability results showed inverse findings from the expected hypothesis (H2), as it was positively related to participants' digital skills. This finding is unexpected because prior research shows that individuals with disabilities disproportionately experience digital inequality (Digital Equity Act of 2021, 2021; Perrin & Atske, 2021). However, it is possible that FIPs with disabilities in this sample may have had more access to resources and support, allowing them to improve their digital skills. Furthermore, disability was measured as a binary "yes/no" variable, meaning it accounted for physical, mental, and learning disabilities. If this category were parsed out into more specific categories, the findings may change. Thus, more research is needed to support or refute this finding.

5.2. Theoretical and Practical Implications

This study is the first of its kind to quantitatively explore how demographic characteristics are related to Black FIPs' digital literacy skills, adding to the intersectional reentry scholarship (Crenshaw, 1991). The findings demonstrate that age and time spent incarcerated over the life course were the two most important factors negatively impacting participants' skills, which is in line with prior research (Grosholz et al., 2024; Sanders, 2025; van Deursen et al., 2016). Given that Black FIPs face longer periods of incarceration and reenter society at older ages, it is plausible that they will be more vulnerable to digital literacy deficiencies as well (Pettit & Gutierrez, 2018). This may further exacerbate Black FIPs' employment, housing, and other reentry outcomes (Couloute, 2018b; Couloute & Kopf, 2018; Reisdorf et al., 2021).

There are several steps practitioners can take to lessen digital literacy skill gaps. First, practitioners should pay special attention to FIPs who are older, have spent longer periods of time incarcerated, and are a part of multiple Digital Equity Act (2021) covered populations (e.g., Black FIPs), as they are the most vulnerable to digital literacy deficiencies. One way to do so is by assessing incarcerated people's digital literacy skills upon entry into prison and considering digital literacy a responsivity factor, or a unique characteristic to consider when matching FIPs to interventions and services (Bonta & Andrews, 2016). Practitioners may find utility in adding the ISS or specific sub-scale questions to their existing risk-needs-responsivity assessments (van Deursen et al., 2014, 2016). Doing so would illuminate which FIPs should be recommended to in-prison digital literacy programming or connected with resources (e.g., libraries) post-release. For example, if an older individual is paroling out of prison, practitioners may point the individual to local resources offering digital literacy courses or tech support. Similarly, research suggests that there are benefits to increasing

access to technology and digital literacy programming in prisons, especially those that use a peer mentoring model (Burley, 2023; Castek et al., 2015; Mufarreh et al., 2021). Thus, practitioners may find utility in reviewing existing prison digital literacy programs and implementing more opportunities for technical upskilling throughout the duration of a prison sentence. These changes may prove fruitful not only for FIPs' digital skill development but also for the broader prison environment (Mufarreh et al., 2021).

5.3. Limitations

This study offers valuable insights into the digital literacy of Black FIPs, but several limitations must be acknowledged. First, the relatively small sample size ($N = 72$) constrained the statistical power of the analyses, increasing the risk of Type II error and limiting the ability to detect smaller, yet potentially meaningful, associations. Additionally, the sample was drawn exclusively from four counties in Michigan with large Black populations. While this focus allowed for an in-depth analysis of a multiply marginalized group, it limits the generalizability of the findings to other geographic regions, racial or ethnic groups, or FIPs who differ in reentry experiences or levels of digital access.

The study's cross-sectional design prevents any causal inferences regarding the relationships between demographic characteristics, incarceration histories, and digital literacy outcomes. While a negative association between years incarcerated and digital skills was observed, it remains unclear whether extended incarceration directly impairs digital skills, or whether pre-existing inequalities contribute both to lower digital literacy and greater exposure to the criminal legal system. As such, future longitudinal research is needed to disentangle these relationships.

There were also some measurement limitations, which warrant consideration. Digital literacy was assessed using a validated self-report scale (van Deursen et al., 2014, 2016), which captures perceived rather than actual skills. Self-reported measures are subject to recall error and social desirability bias, particularly in skill-based domains where overestimation may occur. The scale also does not assess task-based digital performance, which could provide more objective evidence of skill proficiency. Moreover, the scale was designed over a decade ago, and although most of the items remain relevant, there are new additions that could be made. For example, adding a statement about one's comfort level with AI tools would be a strong addition to the measure, and updating the examples of social media sites listed in the social sub-area from "Twitter and Tumblr" to "Instagram and TikTok" may be more familiar to some participants. Researchers conducting studies with system-involved populations may also find utility in adapting the measures to reentry-specific areas, such as employment.

Additionally, the positive association between disability status and digital literacy was an unexpected finding and may reflect unmeasured heterogeneity within the sample or uncontrolled confounding. The study did not disaggregate types of disabilities, which could mask meaningful variation in how different physical, cognitive, or learning impairments relate to technology use and skills. The finding may also be due to people with disabilities' increasing use of digital assistive technologies (i.e., assistive technology, such as screen-readers, used to independently engage in life activities) because using digital assistive technologies increases their familiarity with technology more broadly (The Royal Society, 2025).

The sampling strategy introduces additional limitations. Participants were primarily recruited through reentry service providers and community organizations, which may have introduced selection bias. Those who are more socially connected or who have accessed reentry services may be more likely to participate in research and may also have higher levels of digital engagement than FIPs who are more isolated or disconnected from institutional support. This could lead to an upward bias in estimates of digital literacy across the sample. Moreover, the study focused on a limited set of predictors, including age, disability, employment, education, income, and years incarcerated. While theoretically relevant, these variables do not capture the full range of influences on digital literacy, such as access to digital devices during incarceration, participation in digital skills programs, housing stability, or mental health status—all of which could significantly impact skill acquisition and use.

5.4. Future Research

These limitations point to several directions for future research. Larger and more demographically diverse samples are needed to capture the heterogeneity of the FIP population and allow for intersectional analyses across race, gender, disability status, and geographic location. Longitudinal studies would be especially valuable for tracking changes in digital skills over time and establishing causal pathways between incarceration experiences, reentry conditions, and digital outcomes. Integrating performance-based assessments of digital skills alongside self-reported measures would also strengthen the validity of future findings.

Future research should also examine institutional and environmental factors that may shape digital inclusion, such as prison technology policies, access to digital literacy programming, and the digital infrastructure of reentry communities. The unexpected relationship between disability and higher digital literacy underscores the need to disaggregate disability types and incorporate more nuanced measures of health, functional status, and health literacy. In addition, there is a clear need for evaluations of digital reentry interventions (i.e., literacy bootcamps or job application training programs) using experimental or quasi-experimental methods to assess their impact on skill development and economic outcomes.

Finally, work in the area of digital literacy for reentrants would benefit from the development of a theory-driven framework that accounts for both structural and individual-level barriers to digital inclusion among FIPs, especially multiply marginalized FIPs. Such a framework could help explain how incarceration intersects with other forms of marginalization to affect digital skill acquisition and could guide the design of targeted interventions. Overall, while the present study provides an important quantitative foundation, addressing these limitations through more rigorous and expansive research will be critical to advancing digital equity for formerly incarcerated populations.

6. Conclusion

The current study quantitatively assessed the relationship between Black FIPs' digital literacy skills and demographic and incarceration-related variables. This study is the first to quantitatively explore these relationships, and some of the findings supported existing findings in the qualitative digital inequality and reentry literature. Most notably, the results demonstrated that FIPs with more extensive incarceration histories fare worse in terms of their overall digital literacy skills and specific subtypes of digital literacy skills. Older FIPs also fared worse in terms of specific subtypes of digital literacy skills. Therefore, the results

indicate that digital literacy skills are shaped and influenced by FIPs' backgrounds, especially their incarceration history, and these digital skills deficiencies can result in more digital collateral consequences during reentry. Thus, correctional facilities and reentry organizations should consider how they can better equip this population with digital literacy skills to ensure they are able to meet key reentry needs and overcome digital collateral consequences.

Acknowledgments

The authors would like to acknowledge the research participants who took part in this research study. Without them, the work would not be possible. The authors would also like to acknowledge project team members who helped collect the data.

Funding

The authors disclose receipt of the following financial support for the research, authorship, and/or publication of this article: Data used for this article were collected with the support of the Michigan State University College of Social Science, Michigan State University Alliance for Graduate Education and the Professoriate, Michigan State University Dr. Edward Bouchet Graduate Honor Society, American Society of Criminology Ruth D. Peterson Fellowship Program, Association of Doctoral Programs in Criminology and Criminal Justice, and the Kapor Foundation.

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

Due to the sensitive nature of the data, it is not publicly available.

LLMs Disclosure

No LLMs were used in the preparation of this manuscript.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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Social Inclusion
2026 • Volume 14 • Article 12452
https://doi.org/10.17645/si.12452

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Open Access Journal

Challenges and Paradoxes of Digital Rehabilitation in Prison: Lessons Learned From a Pilot Project in Austria

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Submitted: 26 March 2026 **Accepted:** 25 June 2026 **Published:** 23 July 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Prisons serve contradictory objectives: While incarceration aims to secure and isolate individuals from society, it also seeks to rehabilitate offenders and prepare them for reintegration. The digitalisation of prisons and the implementation of digital rehabilitation take place within this fundamental tension, which is further exacerbated by systemic challenges such as limited financial resources, overcrowded facilities, and persistent staff shortages. Drawing on a study of digital rehabilitation in Austria, this article combines qualitative interviews with incarcerated people, a survey of prison staff, and the observation of a pilot project introducing digital technologies in prison. The findings reveal significant structural barriers, ranging from institutional culture and staff resistance to limited resources and an absence of strategic commitment, and highlight the paradoxes that arise when digital technologies intended to support rehabilitation are implemented within institutions primarily organised around security and control. Addressing those barriers requires a clear institutional mandate that prioritises social inclusion and treats rehabilitation not as subordinate to security, but as an equally central objective of the prison system.

Keywords

digital rehabilitation; digitalisation of prisons; ICT in prison; institutional culture; structural barriers

1. Introduction

Penal policymakers and prison administrations hold high expectations for digital rehabilitation and "smart prisons" (Knight & Van De Steene, 2017; Reisdorf & Rikard, 2018). These prisons are expected to benefit authorities and heighten security by technological means as well as improve the lives of incarcerated people by providing them with opportunities to maintain family relationships and engage in programmes aimed at

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their rehabilitation (McKay, 2022). Smart prisons—i.e., prisons that integrate digital technology into prison management, security and service delivery in order to enhance efficiency, safety, rehabilitation, and social reintegration (UNODC, 2026)—promise both more rehabilitation and a reduction in the human resources required in a secure environment. As modernisation in prisons is urgently needed to avoid fostering a generation of "cavemen in an era of speed-of-light technology" (Jewkes & Johnston, 2009) and to prevent digital illiteracy among (formerly) incarcerated people, many countries have introduced prison media systems in the last decade.

In what follows, we focus on digital rehabilitation as defined by United Nations bodies (UNICRI, 2024; UNODC, 2026) as the use of digital technologies that support rehabilitative processes and the preparation of incarcerated people for successful reintegration into an increasingly digital society. The positive effects of digital rehabilitation on re-entry and reoffending have been demonstrated (McDougall & Pearson, 2020; Zivanai & Mahlangu, 2022). Prison media systems can support successful rehabilitation by strengthening relationships with relatives (Reisdorf & Rikard, 2018), improving self-confidence, fostering autonomy and reducing prisoners' dependence on prison staff (Beyens & Geerts, 2026; McDougall et al., 2017). Prison media systems offer access to educational programmes (Hopkins & Farley, 2015; Monteiro et al., 2015) and contribute to preparation for release and reintegration (Järveläinen & Rantanen, 2026; Knight & Van De Steene, 2017; Reisdorf & Rikard, 2018).

Nevertheless, scholars have also pointed to the possible negative effects, including new forms of isolation (Robberechts & Beyens, 2020), responsibilisation and pseudo-autonomy (Crewe, 2011; Hofinger & Pflegerl, 2024a; Jewkes & Reisdorf, 2016), as well as the creation of a new digital divide and digital vulnerability within prison walls (McKay & Macintosh, 2024). It has therefore been argued that digitisation strategies in prisons should not exacerbate inequalities, but rather be rehabilitation-oriented and needs-based (Van De Steene & Knight, 2017), ideally co-produced, involving end users from the outset and throughout all stages of technological development (Morris & Johns, 2024). Moreover, there is also a risk that in the context of imprisonment, security concerns regularly take precedence over the goal of rehabilitation. In times of austerity, the selective digital transformation of prisons can function as a "Potemkin façade," enabling prisons to present themselves as modern without structurally improving the conditions of the majority of the prison population (Hofinger & Pflegerl, 2024a).

In this article, we investigate these risks, tensions and sometimes paradoxical aspects of digital rehabilitation using the example of Austria. It is based on a two-year research project that accompanied the implementation of a prison media system. We examine the efforts, but also the barriers and resistance towards digitalisation. By doing so, we have encountered paradoxes and contradictions in the process that go beyond the specific use case of Austria. We demonstrate that, despite great efforts by the project team, only a few digital services were actually provided to a small number of incarcerated people. The main achievement was making the *elis* e-learning platform—used in German and Austrian prisons—available inside prison cells at any time. Via *elis*, educational, vocational, life-skills, media, social-competence, leisure, release-preparation and distance-learning resources in various formats (von der Mehden & Killinger, 2024) were made available to incarcerated people. Still, we show that in the overall project and in prison digitalisation more broadly, tools and services that promote security and reduce the workload of staff are more likely to be implemented than measures that support rehabilitation, especially if they involve communication and a perceived risk of misuse.

1.1. General Situation of the Austrian Prison System and its Status of Digitalisation

The Austrian prison system is under considerable strain. The system suffers from severe overcrowding with an occupancy level of 117% (World Prison Brief, n.d.). While some buildings are modern, many prisons are outdated and in need of renovation. Due to overcrowding, prison cells are equipped with bunk beds, so incarcerated people are often housed in cells accommodating five or more people (Hofinger & Fritsche, 2021). Compared to its neighbouring countries, Austria has a relatively high rate of imprisonment of 104 prisoners per 100,000 inhabitants, compared to 71 in Germany and 77 in Switzerland (Aebi & Cocco, 2025). The staff–prisoner ratio is relatively low, with 2.1 prisoners per staff member, in comparison to Germany and Switzerland with one staff member per 1.3–1.4 prisoners (Aebi & Cocco, 2025). Furthermore, Austrian prisons have a high proportion of foreign nationals, namely 52% (World Prison Brief, n.d.). The detention of mentally ill offenders in forensic institutions has also increased substantially over the last two decades (Lengauer et al., 2022). In addition, a severe shortage of staff—of correctional officers as well as of other professionals in health and social care—is exacerbating the situation. All too often, incarcerated people are left to fend for themselves: Lock-up times are long and can be up to 23 hours per day for those who do not work (Hofinger & Fritsche, 2021). At the same time, the state is highly indebted and therefore pursuing austerity policies, which hinder costly reforms and transformations.

Despite these challenges, rehabilitation and reintegration remain important guiding principles in Austrian penal policy; the prison system is intended to provide incarcerated people with structured daily routines involving work, education, therapy or physical activity outside their cells (Ministry of Justice, 2020). In practice, however, the conditions described above leave only limited scope for such activities.

In this context, the level of digital rehabilitation in Austrian prisons remains remarkably limited. Apart from the pilot project presented in this article, incarcerated people do not have access to digital devices or services in their cells. In most prisons, digital technologies are restricted to "computer rooms," which are only accessible to certain individuals at specific times. While the Covid-19 pandemic accelerated digital innovation in many countries, the transformation in Austrian prisons has remained modest, apart from a limited extension of video calls.

To advance innovation and digital rehabilitation in Austria, a pilot project was launched in July 2024, providing about 70 men in three different units with access to various types of digital devices and services through the Belgian PrisonCloud system. The pilot project aimed to introduce PrisonCloud on a limited scale for a specific period of time. The project was not planned as a preliminary stage for the immediate nationwide introduction of digital services in prisons, but rather as a test environment for learning opportunities, to gather feedback from incarcerated people and staff. Nevertheless, there were expectations that the project would provide the impetus for more digital rehabilitation in Austria. Ten in-cell devices and 30 laptops for use in prison cells, as well as a kiosk located in a prison corridor were deployed. The prison in question was selected due to the recent establishment of a vocational training unit with the necessary IT infrastructure. In addition, the prison governor and his staff were supportive and showed a high level of willingness to cooperate.

2. Methods and Empirical Basis

The article is based on a two-year study on digital rehabilitation in Austria. We examined the specific needs of incarcerated people through qualitative interviews and analysed the attitudes of prison staff through a

survey. These data were collected to prepare and implement the pilot project. The pilot project was subsequently monitored from a social science perspective through participant observation and interviews with incarcerated people. The findings were presented to the general directorate of the prison administration, to prison governors and personnel responsible for education and training. Their feedback also informs this article.

2.1. The Needs Assessment

A total of 35 qualitative interviews with incarcerated people were conducted across three Austrian correctional institutions, along with four interviews with formerly incarcerated people who served long sentences. The study employed the problem-centred interview method (Witzel, 2000), which follows an inductive–deductive approach that integrates pre-existing knowledge while remaining open to new aspects that the interviewees bring up. The objective of the interviews was to gain insight into their experiences and needs regarding the use of ICT in prison and after release.

While the core thematic areas were comparable across both groups, slightly adapted interview guides were used. Interviews with currently incarcerated participants focused on their present situation in prison and prospective needs, whereas interviews with formerly incarcerated people were designed retrospectively and focused specifically on their experiences after release, particularly with regard to digital literacy and the challenges of navigating an increasingly digital society. Participants in this group were explicitly asked how they experienced the transition to a digital society, whether they felt prepared during incarceration, and to what extent expanded digital access in prison might have facilitated their reintegration.

The interviews with incarcerated participants addressed two main topics. Firstly, they were asked about their current situation in prison, the possibility of legally accessing digital services, and their evaluation of limited access to ICT. Secondly, interviewees were encouraged to develop a vision of a needs-based digital transformation that would help them spend their time in prison more meaningfully and prepare for life after release. In this context, interviewees were specifically asked about features and applications offered by major providers of prison technology. This approach allowed for broader visions to be considered, while simultaneously relating them to existing institutional constraints, as participants were explicitly prompted to formulate their needs in relation to existing technical possibilities (e.g., currently available applications), thereby grounding their responses in practical feasibility. The digital applications discussed in the interviews were related to communication with the outside world, administration and self-management, information and education, preparation for release, and entertainment.

The needs assessment involved both male (n = 25) and female (n = 10) participants between the ages of 15 and 80, with sentences of varying lengths. Participation was voluntary, with recruitment either through self-enrolment or by invitation from the prison administration. The formerly incarcerated people were recruited with the help of the probation service. Before each interview, participants received an information sheet outlining the project's goals. They were also verbally informed about the study, the voluntary nature of participation, and their right to withdraw at any time. To ensure anonymity, consent was given only verbally, and the participants were not required to sign any forms. The interviews lasted between 20 and 40 minutes and were conducted in the absence of correctional or probation officers.

The interviews were recorded and transcribed for analysis. The transcribed data were systematically coded and analysed using the qualitative analysis software MAXQDA. The data from both groups were analysed using the same coding framework, with the interviews from formerly incarcerated individuals serving as a complementary perspective to contextualise and validate the anticipatory needs articulated by currently incarcerated participants. The content analysis process (Kuckartz & Rädiker, 2022) began with deductively derived categories, which were expanded through open coding into inductively generated subcategories.

The deductive categories were primarily derived from the interview guide and reflected the main thematic areas addressed in the interviews, such as communication, education, etc. In addition, overarching analytical dimensions included the current situation in prison, future-oriented perspectives, and the anticipated effects of digitalisation. Within these deductive categories, inductive subcategories were developed through a systematic coding process. These subcategories captured the specific positions, expectations and concerns expressed by the participants. For example, within the category "education and information," inductive subcategories were self-directed learning, improved educational opportunities, or the meaningful use of time. At the same time, the analysis followed a cross-cutting matrix that differentiated between perceived opportunities and risks, allowing both positive expectations and critical perspectives (e.g., concerns about misuse, inequality of access or increased control) to be systematically incorporated into the analysis. The iterative inductive analysis involved continuous comparison across cases and categories, enabling the progressive refinement of the coding system and ensuring the consistent integration of emerging themes into the overall analytical framework.

2.2. Staff Survey

An online survey assessed prison staff attitudes towards digitalisation in prisons. It weighed perceived benefits against potential risks and identified which domains staff favoured or resisted. The questionnaire also explored the potential of digital tools in communication, administration, education, preparation for release, and entertainment. Open-ended items invited respondents to raise additional, potentially less familiar considerations.

The invitation to participate in the online survey was distributed via prison governors. The initial invitation was sent by the Federal Ministry of Justice, followed by a second reminder from the research team two weeks later. In total, approximately 600 prison staff completed the survey. Respondents comprised around 75% prison officers, 20% specialist service staff (psychologists, medical professionals, and social workers), and about 5% administrative staff. Although only around 15% of staff in Austrian prisons completed the survey, the analysis shows that both supporters and opponents of digital rehabilitation took part. We do not claim, however, that the data are representative of the total population of prison personnel in Austria.

Accordingly, data analyses were mainly descriptive. To inform the design of the pilot project, we calculated frequencies and visualised distributions, conducted group comparisons, and explored relationships in the data using SPSS statistics. Specifically, we contrasted the assessments of prison officers with those of specialist services. We further tested associations with contextual variables (such as facility type or key demographics) and evaluated their statistical significance. Open-ended responses were grouped thematically to contextualise and enrich the quantitative patterns. The analyses revealed pronounced differences between the two occupational groups and helped identify domains seen as offering the greatest potential as well as those that elicited the strongest resistance.

2.3. Expert Interviews

Furthermore, 15 national and international experts were interviewed. The experts interviewed represented various fields, including prison administration, prison management, IT services, specialist social services, education, digital learning, and legal expertise on data protection. Interview guidelines were adapted to each expert's area of focus while collectively addressing opportunities, risks, and practical recommendations for needs-based digitalisation. These interviews aimed to complement a more comprehensive understanding of digital rehabilitation from different perspectives, thereby informing the planning and implementation of the pilot project.

The expert interviews were transcribed or documented through detailed interview protocols and analysed using thematic content analysis. Similar to the analysis of the interviews with (formerly) incarcerated people, a combination of deductive and inductive coding was applied. Deductive categories were derived from the overarching analytical framework of the study (e.g., opportunities, risks and implementation requirements), while inductive codes captured more specific expert assessments and field-specific considerations. The analysis resulted in thematic clusters relating to, for example, resocialisation potentials, organisational and infrastructural requirements, security concerns, resource implications, and practical implementation strategies. These themes were used to contextualise and complement the needs articulated by the interviewed incarcerated people.

2.4. Research Accompanying the Pilot Project

The research described so far was conducted to prepare the pilot project. When the pilot project started in July 2024, the research team closely followed its implementation and the first six months of operation. We visited the prison, located in rural Upper Austria, ten times before and during the pilot phase. In total, we conducted 24 interviews, four of them group discussions, with incarcerated people during our visits. Before the launch of the pilot project, we asked the participants about their needs and expectations for the digital services to be implemented in their prison unit. When the project started, we investigated incarcerated people's actual experiences with the laptops, in-cell devices, and the kiosk, as well as the services provided. We examined which features they used, how the services changed their daily routines, how they used their time in prison, and how satisfied they were with the implementation of PrisonCloud. We also explored their assessment of different areas, such as education and information, administration, communication, and preparation for release, in order to understand how digital tools could support daily life in prison and their prospects after release.

Furthermore, we interviewed the staff working in the unit, social services staff, the person in charge of IT, and staff responsible for education. We also conducted observations in the pilot units and held informal discussions with individuals involved in the project.

Another important source of information was the presentation and discussion of our research findings with the general directorate of the Austrian prison administration, prison governors and other decision-makers at the end of the project. In a "World Café" workshop, we discussed their attitudes towards providing digital tools and services for incarcerated people, and their vision of a digital prison and digital rehabilitation. During these discussions, we gained valuable insights that will be presented and put in perspective in the next chapter.

The accompanying research was not analysed as a separate dataset using formalised coding. Instead, materials were documented as field notes, interview summaries, observation protocols, and workshop outputs, and were iteratively synthesised to identify recurring themes. Following an integrative, practice-oriented approach, insights from interviews with incarcerated people and staff, observations, and the World Café were combined to identify key factors, opportunities, risks, and organisational requirements. The synthesis informed a structured project report and implementation guidelines; in this article, it is used to contextualise and triangulate the interview findings, particularly regarding implementation opportunities and constraints.

3. Research Findings in the Light of a Contradictory Prison Context

In this section, we present selected findings from the empirical fieldwork. The results are structured around the key domains of communication, administration, education, preparation for release, and entertainment. Our analysis highlights the contradictions and paradoxes inherent in digital rehabilitation in prisons, along with the practical barriers that impede its implementation.

3.1. Communication With the Outside World

The expansion of digital communication tools emerged as a key issue in the interviews with incarcerated people. The interviewees, especially those with children and partners, emphasised the need for more communication and better contact with family members and friends. In their view, the use of personal digital devices for this purpose would greatly improve their situation. Participants described the current situation as problematic because of high phone costs, limited access and lack of privacy. One interviewee complained of "basically spending most of my money" on phone calls; others reported that, for financial reasons, calling relatives abroad was difficult. Another interviewee criticised the limited access, as phones are installed in the hallways and cells are closed for most of the time: "You end up fighting over whose turn it is and how long you get to stay on the phone—it's the Stone Age." The interviewees expressed willingness to follow security rules and would prefer controlled digital options to illegal phones. They would appreciate video calls, phone calls, messaging or email—in fact, any opportunity to communicate more frequently, at lower cost, and with greater privacy.

At first glance, the attitudes of staff that emerged in the online survey, especially those of the uniformed prison guards, seemed hesitant and highly risk-aware. However, the majority did not oppose the safe implementation of digital services for incarcerated people: 70% of the prison officers and 95% of specialist services saw digital communication with family and friends as an opportunity. The experts interviewed also highlighted the potential of digital devices to improve communication with relatives and foster meaningful relationships. While some of them remained sceptical and emphasised the need for monitoring and the resulting personnel costs, others considered expanding communication via digital devices to be a worthwhile and manageable risk. Moreover, the prison governors with whom we discussed the project findings were notably progressive in their advocacy of digital rehabilitation and in favour of permitting certain forms of digital communication, such as video calls for incarcerated people in their cells. They also expressed the hope that the widespread use of illegal smartphones could be reduced if more legal communication options were available.

However, the prison administration and the prison that hosted the pilot project were very reluctant to grant incarcerated people any new opportunities to communicate with the outside world. To date, no services that allow communication have been implemented in the pilot project. There is still a possibility that email (in the form of *elis* mail) could be established in the course of the pilot project, but it has yet to be implemented. *Elis* mail would enable incarcerated people to communicate with selected recipients, such as family members or the probation service. Ongoing discussions revolve around how this communication should be monitored. Until now, communication with the outside world has not been expanded. On the contrary, access to the website of a distance-learning university that had previously been available was blocked because of a newly detected minor risk of illegal communication via the website. Likewise, all access to websites that feature chatbots was blocked, because this was seen as "communication." While other countries or cities, such as Berlin in Germany, allow incarcerated people to make video calls from their cells to preselected numbers without any surveillance (Flaig, 2024), no such possibilities currently exist in Austria. Nor can incarcerated people in Austria make regular phone calls via PrisonCloud, unlike in Belgium. Aside from security concerns, this is due to the fact that the prison administration has a contract with a telecommunications provider that does not permit cooperation with other providers.

Although digital communication is theoretically recognised as an important opportunity for improving the conditions of incarcerated people, implementing such tools in practice remains extremely difficult. The fear that incarcerated people might misuse the technology is considerable. While the widespread use of illegal phones is a matter of public knowledge, the prison system appears to only partially acknowledge its responsibility for illegal communication—even when it results in serious incidents. Media reports have documented the widespread use of illegal smartphones in prisons in general, and in high-risk cases in particular (Marchart, 2024). Nevertheless, the administration appears to tacitly tolerate illicit mobile phone use, defusing responsibility for it, even though authorising regulated communication would effectively establish accountability in the event of misuse (UNODC, 2026). Consequently, a regime that provides broad legal access while rigorously suppressing and controlling illegal phones is not being implemented. Neither insights from rehabilitation research highlighting the importance of social bonds and relationships in the process of desistance (Folk et al., 2019; Laub & Sampson, 2003), nor the significance of this issue for incarcerated people themselves within a "needs-based" digitalisation framework, have led to the introduction of in-cell video calls, not even within the controlled setting of the pilot project. By contrast, prison administrations and political decision-makers in Belgium and Berlin have consciously made the strategic decision to permit communication with the outside world and to take full responsibility for it (Flaig, 2024; Robberechts & Beyens, 2020).

3.2. Administration and Self-Management

The current system of forms and requests is fully paper-based. Incarcerated people submit their requests using a special form (called the *Elferzettel*). Other types of requests, such as for appointments with doctors or psychologists, are submitted on other forms in different colours, depending on the intended recipient. During our observation of participants, we saw piles of papers on the prison officers' desks waiting to be processed. This analogue system contributes to slow bureaucratic procedures and places an additional burden on prison staff, who have to manage a high volume of paper-based requests alongside their everyday duties. The benefits of digitising administrative processes would be significant for staff and incarcerated people alike, because digital self-service and electronic records reduce paperwork and manual data entry

that burden daily operations while supporting normalisation and greater autonomy for people in custody (McDougall et al., 2017; UNODC, 2026).

Most of the incarcerated people we interviewed were in favour of the digitisation of these paper-based forms, as the current system was described as a "paper mess" (*Zettelwirtschaft*). If requests could be submitted digitally, "you wouldn't need to bother the officers anymore," as one interviewee put it. Respondents also hoped that digitisation would make the process more transparent, as it would then be possible to see whether a request was already being processed, had been approved or rejected, or had simply been lost (for similar findings see Järveläinen & Rantanen, 2024). In addition, interviewees expected digitalisation to provide greater data protection. Currently, the only "protection" consists of folding the request form in half. In this way, those who are not the intended recipients may nevertheless access private information contained in the request, as several interviewees pointed out. In their view, digitisation could help ensure that sensitive information—for example, the reasons why someone wants to see a doctor or psychologist—is only shared with those specifically responsible for processing the request.

While the experts we interviewed advocated digitising requests and complaints to cut bureaucracy, the prison guards who responded to our survey were sceptical about digitising the system. This is surprising since the current paper-based administration generates a lot of work: The request forms must be constantly issued, collected, sorted, deciphered, translated, typed, or forwarded, all of which takes up time and resources. One reason for their scepticism was the fear that digitisation would overload the system, i.e., that the sheer volume of requests or complaints would flood the system. As incarcerated people have a legal right to submit such requests, the process cannot be formally restricted; in practice, however, it is often delayed or informally curtailed. For example, in one facility we visited, interviewees were only given two forms per week and only permitted to submit them on a designated weekday, as several respondents credibly reported. This procedure, but also the handling of requests on paper in general, thus reduces and slows down the incoming demands which, given the scarce institutional resources (e.g., appointments with doctors), can be useful from the organisation's perspective (Hofinger & Pflegerl, 2024b).

The key point in this regard is that digitising the application and complaint system would also mean that all communication, processes and decisions would potentially be transparent and traceable, thereby affecting the current working practices of prison staff. While this may be in the interests of incarcerated people and aligns with the expectations they associate with digitisation, full transparency and formalisation appear less desirable from the perspective of the prison administration. In their view, digitisation makes it easier to detect informality (Büchner, 2018) and therefore threatens informal but functionally beneficial practices such as distributing only two request forms per week. Both the functional role of the current paperwork process and concerns about an overloaded system explain the prison officers' reservations regarding digitising the application and complaint process, thereby curbing organisational efficiency's role as a driver of prison digitalisation.

During the pilot project, the participating incarcerated people submitted requests via PrisonCloud. Those who received a prompt response were positive about it and said they intended to use it in the future. However, others either did not get a timely response or received no reply at all, leading them to revert to paper-based forms. When introducing such a system, it is therefore crucial to insist on a clearly defined start date and ensure that it is operational from that point onwards. Otherwise, users may try its features, find

them unreliable and abandon the service altogether. Research consistently shows that trust is pivotal to the adoption of new technologies, whereas distrust hampers uptake and leads to non-use (see, e.g., Lee & See, 2004). This illustrates how important responsiveness and efficiency are for the successful implementation of digital systems, as they also shape the emergence of a digital usage culture—an aspect often overlooked in discussions of digitisation and technology adoption.

That said, some developments have already taken place. Prison administration entails communication with people from many different countries, as more than half of the Austrian prison population are foreign nationals. In the survey among prison staff, the respondents saw the greatest potential for digital tools and services in translation software and communication with non-German speakers. During the pilot project, a feature that translates requests for staff has already been implemented. In a subsequent step, this feature should also be introduced for incarcerated people. At this point, it is very important to point out that innovation and technical support should not only be accessible for incarcerated people, but also for staff working in prison (see, e.g., UNICRI, 2024). If prison staff do not have modern and up-to-date technical equipment and software, they will not support digital rehabilitation. Their commitment is, however, a precondition for the digital transformation process, as they act as gatekeepers in the prison system (Mufarreh et al., 2022).

Evidence from other countries provides insight into how such changes can affect prison governance and everyday practices. Experiences from Belgium show that when the features of PrisonCloud are fully implemented, staff–prisoner interactions are reshaped (Beyens & Geerts, 2026). Incarcerated people leave their cells less frequently and gain greater autonomy, which may reduce their dependence on staff. At the same time, however, this shift can lead to less interaction between officers and incarcerated people. Over time, reduced communication may weaken dynamic security and diminish officers' discretionary power and authority (Beyens & Geerts, 2026; Robberechts & Beyens, 2020). In this sense, digital technologies simultaneously create new opportunities for autonomy and rehabilitation while also generating new risks for prison governance and everyday security practices. Interestingly, research from Finland did not identify increased isolation or reduced social interaction associated with the use of ICTs (Järveläinen & Rantanen, 2024). These contrasting findings illustrate that the effects of prison digitalisation are highly context-dependent and may produce both rehabilitative benefits and unintended negative consequences.

3.3. Information and Education, Preparation for Release

In the interviews with incarcerated people conducted as part of the initial needs assessment, the topic of education and information proved more important than we had originally expected. Interviewees reported that educational opportunities were scarce and that there was a general shortage of courses. We spoke with young incarcerated people who sought education to prepare for future careers, as well as older participants who expressed the need to keep mentally active as they felt they were beginning to forget names and facts, and missed the possibility to stay informed and look up things they could not remember, creating a feeling of being "cut off from the whole world." Those interviewees who expressed the wish to independently research spontaneous inquiries acknowledged the security issues arising from unrestricted access to search engines such as Google. However, they expressed a need for access to offline versions of platforms such as Wikipedia (Hofinger & Pflegerl, 2024a).

Interviewees also wished to have access to legal information, including digital legal resources and official information from institutions such as the public employment service or the probation service. General educational information on topics such as health, nutrition, and sports was also mentioned. Overall, respondents expressed a strong desire to stay informed and use their time in prison in meaningful ways rather than losing touch with society. Furthermore, the interviewees emphasised the importance of digital tools in preparing for release, particularly for accessing relevant information and establishing contact with service providers and authorities.

In particular, those interviewees who had been released after long prison sentences expressed concerns about their digital literacy. They described how they struggled to enter an increasingly digital society, a challenge also described in other studies (e.g., Sanders, 2025). One younger interviewee, for example, spoke of how she had difficulty using basic applications and programmes after being imprisoned for several years. Some individuals expressed concern that they lacked the necessary digital skills, especially for the labour market—once again, the comparison with the Stone Age is drawn: "I'm as clueless as someone from the Stone Age, as I have absolutely no idea." One of the interviewees who had been incarcerated for decades told us that, right after his release, he was unable to answer a call on a smartphone: "I didn't even know how to answer the phone, so it was really bad."

Like education, preparing for release was one of the areas in which the prison employees surveyed saw great potential in the use of digital services and ICT. Only about one-fifth of the respondents did not see any advantages in using digital services for preparing for release, learning digital skills, or accessing educational resources. This led us to the conclusion that the pilot project should start with areas that were the least contested, but which are nevertheless of great importance to incarcerated people.

During the pilot project, educational resources and information were provided via the *elis* platform as well as through an intranet containing house rules, legal information, and information on the probation service and on other relevant topics concerning life in prison and after release. These resources were accessible through in-cell devices and laptops. Most interviewees who had access to these services reported a high degree of satisfaction with these new opportunities. They particularly valued the continuous availability of the *elis* content, which included a broad range of materials, from study resources for exam preparation, dictionaries and language courses, to streaming content from the Austrian public broadcaster ORF, as well as health and fitness programmes and courses for learning to play musical instruments.

This achievement represents a major milestone of the pilot project, one that was not easily accomplished. While the *elis* content is very well curated, the platform is governed by a large monitoring committee that convenes twice a year and makes decisions collectively. As a result, implementing even small modifications within this system requires considerable effort. In contrast, the PrisonCloud platform offers more individualised forms of content provision, including tailored learning materials and targeted information for incarcerated people. Yet this flexibility introduces a distinct set of accountability and liability concerns: Who is mandated to provide such individualised content, and who is responsible if it is misused? The delivery of tailored materials would also impose additional demands on staff, who already report high workloads. In an institutional setting marked by risk aversion and an emphasis on clearly defined responsibilities, staff are consequently reluctant to assume responsibility for digital content provision.

During a workshop with staff responsible for training and education in prisons, participants emphasised both the vast potential of digitally supported learning and the equally vital need for genuine social interaction and human exchange in education (for the importance of "humane encounters" see also Järveläinen & Rantanen, 2026). Introducing digital services and using AI in prison education not only offers great opportunities for rehabilitation but also runs the risk of reducing the provision of costly but valuable in-person courses.

3.4. Entertainment and Shopping

Our needs assessment revealed that the issue of entertainment was considered less important than expected. Educational opportunities, communication with family and friends, as well as preparation for release from prison were prioritised over entertainment. However, respondents would welcome expanded access to a wider range of entertainment content via digital devices, given the long confinement periods and monotonous television programmes on offer. Despite the numerous television channels available, many were dissatisfied with the programme being "the same thing every day" and cellmates often dominating the choice of television programmes. The desire to be able to listen to one's own music for psychological relief was expressed particularly often. The need for privacy in shared rooms and the desire for peace and quiet were motives for advocating personal devices with headphones. Access to streaming platforms such as Netflix for films, series, and documentaries would be highly welcomed but considered unrealistic. While many respondents expressed the willingness to pay a monthly fee for streaming services, concerns were raised about affordability and unequal treatment based on the individual financial status of incarcerated people—underlining the concern that selective digitalisation can create regimes of digital inequality within prisons (Hofinger & Pflegerl, 2024a; Reisdorf & Jewkes, 2016). This issue extends beyond entertainment: Incarcerated people are pointing to a core ethical principle for digital prisons, namely equality and fairness (Knight & Van De Steene, 2020; UNICRI, 2024). Unequal access to technology widens digital competence gaps and hampers reintegration.

As noted above, there is a high level of risk awareness among prison staff, despite their approval of the expansion of digitalisation for incarcerated people in certain areas. Concerns were principally expressed in the areas of entertainment (gaming, streaming) and online shopping. The high costs for the prison system that such an expansion would entail were seen as problematic, and a move in this direction was therefore considered unrealistic.

One area where staff supported digitalisation more strongly than incarcerated people was that of purchasing everyday items in the small internal prison shops. Most incarcerated people did not wish to replace their weekly in-person shopping with a digital ordering system. One interviewee explained that he looks forward to the shopping day all week long because "it's a bit like being outside." Another interviewee said he would feel "completely isolated" and "like a robot" if he could not do his shopping on site. In contrast, over half of the staff surveyed favoured the introduction of digital shopping within the institution, a position also endorsed by experts for reasons of efficiency.

In the pilot project, shopping was not replaced with a digital ordering system. However, presenting the interview findings to the prison administration prompted discussions on introducing internal digital shopping in the future, given the effort and cost of the current system. It is evident that efficiency and reducing the effort involved in organising prisoners' purchases are key factors that are driving digitalisation in this area.

Once again, it would not be the goal of rehabilitation but rather the imperatives of an iinstitution, facing staff shortages that influence the decision-making process.

4. Discussion and Conclusion

In this article, we have presented the results of a research project on digital rehabilitation in Austria and reported the challenges that emerged during the pilot project on the introduction of digital tools and services for incarcerated people. Based on the empirical fieldwork, this article highlights the immense barriers to digital innovation in prison. Despite considerable efforts, only a small number of services were finally implemented during the pilot phase and only very few incarcerated people genuinely benefited from them. The pilot project was a valuable learning opportunity for the project team and the IT specialists within the prison administration. However, it remains unclear if and how the Austrian prison population will gain broader access to digital services in the near future. Although a catalogue of measures and a roadmap to digitalisation were drawn up as part of the project, substantial progress towards digitalisation in Austrian prisons remains limited.

While in some jurisdictions new technologies are increasingly central to rehabilitation strategies, the described challenges, barriers, and pitfalls, as manifestations of the contradictions and paradoxes, are inherent in many prison systems and go beyond the situation in Austria. Thus, our research addresses the need identified by Reisdorf and Jewkes (2016) to further investigate the challenge of balancing security concerns with the need to equip incarcerated people with the skills necessary for successful reintegration into a technologically advanced society. In contrast to Järveläinen and Rantanen (2024), we consider the obstacles to digital rehabilitation we observed in Austria not merely as "teething problems" that will resolve themselves over time. We acknowledge that some innovations just need time to become established and be embraced. However, it is the prison's fundamental tension between security and rehabilitation as well as deep inequalities and power imbalances that will continue to shape and often hinder the effective implementation of rehabilitative technology in prisons.

Our findings also suggest that digital transformation in prison tends to advance most readily in areas where it promises organisational efficiency rather than rehabilitative benefits. Across the domains we examined—administrative procedures, internal shopping systems, and selected communication infrastructures—digital innovations were primarily considered where they could reduce workloads, streamline bureaucratic routines, or compensate for staff shortages. Conversely, some services appear to face resistance precisely because their efficiency gains were seen as likely to intensify the pressure of work or expose organisational practices to greater scrutiny and accountability. Education was a notable exception: Here, there was broad agreement that expanding digital provision is both positive and necessary. By contrast, digital services aimed at facilitating communication were explicitly ruled out.

In many countries, digital transformation in prisons takes place in an environment characterised by scarce resources, overcrowding and staff shortages. Prison sentences are often served in old buildings without adequate infrastructure. Prisons tend to be highly stagnant institutions: Beyond material constraints, the institutional culture of correctional staff tends to slow down or impede digital transformation (Ross et al., 2024), even in more progressive and technologically advanced prisons, such as those of Finland (Järveläinen & Rantanen, 2024). Resistance from staff arises especially when there are concerns that digital transformation could disrupt established roles (Knight et al., 2024). This disruptive potential has been

observed in a Belgian prison where all cells are equipped with PrisonCloud devices: Ethnographic research revealed changing power relations between incarcerated people and correctional staff, resulting in a decrease of authority and discretionary power for the new "screen-level bureaucrats" (Beyens & Geerts, 2026; Robberechts & Beyens, 2020). Thus, the implementation of ICT creates further paradoxes, as the tools intended to modernise and humanise the carceral environment eventually increase isolation and undermine the "relational texture" and "dynamic security" that are essential for a truly humane prison (Pardon & Beyens, 2026).

Digital technologies therefore do not simply challenge the logic of the total institution but may simultaneously reinforce it. While ICT can expand access to information, education, and communication, it may also restructure everyday interactions in ways that reduce face-to-face contact between incarcerated people and staff. In this sense, digitalisation may both soften and intensify the institutional characteristics of prisons, altering the balance between autonomy, control, and relational governance within carceral settings.

The importance of correctional staff in the change process cannot be overstated—their collaboration and commitment are a prerequisite for successful digital transformation (Mufarreh et al., 2022). Even though digitalisation may, once successfully implemented, reduce the workload for employees, it is very challenging to gain their support for the change process. While other observational studies and pilot projects flourish in light of the Hawthorne effect, i.e., the phenomenon in which people change or improve their behaviour simply because they know they are being studied (Roethlisberger et al., 1939/1976), we observed considerable passive resistance by correctional staff and other factors slowing down the process. In spite of a motivated team, an available budget and the willingness to implement the PrisonCloud in the pilot project, why were only a few services ultimately implemented in Austria?

Beyond acute staff shortages, overcrowding and the institutional culture described above, the main obstacle to the introduction of any communication tools was the absence of a strategic commitment from the prison administration and political decision-makers. It is not sufficient for prison governors to express support for more ICT in prison during a group discussion. Rather, a clear strategic and political mandate is required to advance the digital modernisation of prisons, together with a strong commitment and the willingness to assume responsibility, particularly in the face of powerful trade unions and a public that is sceptical about spending money on people in custody (Ross et al., 2024).

Therefore, digital transformation in prisons cannot be understood as a purely technical process but must also be seen as political and normative decisions about the purpose of punishment. Decisions on which digital tools should be introduced inevitably reflect broader priorities within penal policy: whether prisons primarily aim to ensure security and control or whether they also seek to actively promote rehabilitation and social reintegration (Fedorczyk, 2024). In times of tight budgets and austerity, justifying investment in the prison system becomes even more difficult. In contexts where, as in Austria, there is no clear commitment to digital rehabilitation, security concerns, institutional inertia and the prevailing staff culture tend to obstruct reforms. Digital rehabilitation will only become established in practice if it is recognised as an integral part of rehabilitation and preparation for release, and valued at least as highly as safety, order, and control.

Even when a clear political commitment to digital rehabilitation allows for broader innovations, such as in Belgium, Finland, or Berlin, the introduction of digital tools and services in prison is in itself insufficient to

strengthen rehabilitation and social inclusion. On the contrary, research has shown that digitalisation in prison does not automatically reduce inequalities and barriers (Beyens & Geerts, 2026; McKay & Macintosh, 2024). Digital illiteracy is not spontaneously "cured" by introducing technology but may even impede incarcerated people from using the digital platform at all. Moreover, digitalisation itself may produce new forms of inequality within prisons. Access to devices, digital skills and financial resources varies considerably among incarcerated people, meaning that the benefits of digital services may not be distributed evenly. As a result, digitalisation may unintentionally create new forms of digital stratification within prison populations, reinforcing existing social inequalities rather than reducing them.

Finally, we should not succumb to technological solutionism and the belief that social problems can easily be resolved by using technology (Knight et al., 2024). A prison system that is generally not rehabilitation-oriented will not become so through technology. Instead of relying on technology alone, we should focus on creating the conditions for rehabilitation and inclusion. This aim should then be supported by all possible means, including technological measures. In this sense, digital technologies should be understood not as a substitute for rehabilitation-oriented prison policies but as one possible tool within a broader institutional framework that prioritises social inclusion, education, and meaningful preparation for release. Without such structural commitments, digital innovation risks becoming another layer of technological modernisation that leaves the underlying dynamics of the prison system largely unchanged.

Funding

This project was funded by the Austrian security research programme KIRAS of the Federal Ministry of Finance (BMF). Publication of this article in open access was made possible through the institutional membership agreement between the University of Innsbruck and Cogitatio Press.

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The data that support the findings of this study are not publicly available due to their sensitive nature and because data sharing was not covered by the informed consent obtained from participants.

LLMs Disclosure

Generative AI tools provided by the University of Innsbruck were used selectively for language editing and translation, as the authors are non-native English speakers. These tools were implemented as a secure on-premise solution, ensuring that no data were transmitted to external providers. All substantive content, analyses, and interpretations were developed by the authors, who take full responsibility for the manuscript.

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Social Inclusion
2026 • Volume 14 • Article 12633
https://doi.org/10.17645/si.12633

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Open Access Journal

Digital Inclusion in Finnish Smart Prison: A Qualitative Analysis of Incarcerated Women's Experiences

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Submitted: 25 April 2026 **Accepted:** 29 June 2026 **Published:** 22 July 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Digitalization offers significant opportunities to support the rehabilitation and reintegration of incarcerated individuals, yet the limited digital access in prisons underscores the need to modernize prison environments. This study explores the digitalization of Finnish prisons from the perspective of incarcerated women, focusing on the concepts of digital inclusion and the "smart prison." The study asks: How do incarcerated women perceive the significance of the smart prison? What are the main prerequisites for and challenges to digital inclusion within Finnish smart prisons? What specific characteristics are associated with the Finnish smart prison concept? The study follows a qualitative approach, with data collected through interviews with 12 incarcerated women. The findings reveal both positive and negative experiences regarding digital technologies and the smart prison environment. The study identifies that digital skills and motivation are essential to achieve digital inclusion, yet some women lack these. Restricted access to online services presents barriers, positioning staff as gatekeepers. However, the introduction of in-cell laptops has significantly reshaped prison culture, enhancing interaction between prison staff and incarcerated individuals, which emphasizes the role of staff in facilitating access and supporting the use of digital services through motivational interaction. The research indicates that the Finnish smart prison combines ICT infrastructure with rehabilitative and face-to-face interaction, aiming to align prison conditions with those of society outside, in accordance with the principle of normality. However, full adherence to this principle remains challenging due to factors such as security concerns.

Keywords

digital inclusion; incarcerated women; qualitative research; re-entry; smart prison

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1. Introduction

In recent decades, digitalization in the penal landscape has increased significantly (Knight et al., 2023; Knight & Van De Steene, 2017). Increasing numbers of prisons are utilizing advanced technologies to enhance security, streamline administrative processes, and improve incarcerated people's rehabilitation. The enabling of internet and digital services for incarcerated people can support their education and rehabilitation during their imprisonment as well as facilitate housing, employment, and social benefits-related matters upon release, thus also facilitating their return to society (Barreiro-Gen & Novo-Corti, 2015; Passey et al., 2018; Reisdorf & Rikard, 2018) and helping to prevent recidivism (McDougall et al., 2017).

However, implementing digital technology in prisons involves several challenges related to high financial costs, ineffective designs, organizational unreadiness, infrastructural limitations, environmental factors, and low digital literacy among both staff and incarcerated people (see Imandeka et al., 2024a, 2024b; Knight et al., 2023). Ethical concerns related to privacy, bias, and dehumanization stress the importance of implementing technology in ways that uphold justice, human rights, and rehabilitation (Imandeka et al., 2024b). In addition, security-focused prison policies can hinder the adoption of internet and digital services for incarcerated individuals, complicating their preparation for release and re-entry (Jewkes & Reisdorf, 2016). Lack of access to digital services can marginalize a person from wider society, causing a digital divide (Reisdorf & DeCook, 2022; Reisdorf & Rikard, 2018). Prisons have not been digitized at the same pace as the society outside their walls, resulting in challenges related to the digital inclusion of incarcerated and recently released individuals (see Jewkes & Reisdorf, 2016; Knight et al., 2024). As such, Knight et al. (2024) contend that responsible digitization in the criminal justice system must recognize the crucial role of technologies and individuals' digital skills in supporting desistance, reintegration, and access to education and employment in an increasingly digital society.

In this study, we examine the digitalization of prisons and its perceived meanings using the concept of smart prison. This is a new prison concept that focuses on supporting the rehabilitation, education, and social integration of incarcerated people using digital services (Imandeka et al., 2024a). The concept also refers to an integrated system for management and data analysis, providing real-time insights and operational awareness (Imandeka et al., 2024b).

This research focuses on the Finnish context. Finland is a digitally advanced country, with high levels of digital development and digital skills among citizens even by European standards (e.g., European Commission, 2022) and mature prison technology (Knight et al., 2023). We explore the views of incarcerated women on the significance of the smart technology in use to support digital inclusion and reintegration into society. In 2023, women constituted about 8% of the Finnish prison population (N = 256; average age 39.8 years), mainly (39%) convicted of violent offences and with a recidivism rate of 45% (Prison and Probation Service of Finland [PPSF], 2023b). Incarcerated women face numerous social and health-related challenges as well as complex support needs. Accordingly, examining their digital inclusion is pertinent.

1.1. Finnish Smart Prison as a Research Subject

In smart prison development, two main trends can be distinguished (McKay, 2022): One emphasizes security, while the other highlights the benefits of digitalization for incarcerated people. In addition,

Imandeka et al. (2024b) distinguished several approaches in smart prison discourse, such as rehabilitation, security, streamlining administrative processes, and the smart prison as an entity. The rehabilitation approach emphasizes education, reintegration, and maintaining social ties (Järveläinen & Rantanen, 2024; Reisdorf & Rikard, 2018). In contrast, the security approach focuses on surveillance technologies, while the administrative view emphasizes operational efficiency (e.g., Järveläinen & Rantanen, 2024, 2026; Knight et al., 2023). Finnish smart prison development prioritizes incarcerated people's rehabilitation and inclusion, while also integrating advanced security technologies and modern prison design. The model integrates these approaches into a unified system promoting safety, rehabilitation, and streamlined processes.

One of the stated objectives of the Finnish smart prison model is the principle of normality, which emphasizes that incarcerated individuals should have access to the same services as people outside prison (Puolakka, 2021). This premise aligns with the Nordic discourse on the digitalization of prisons (Smith, 2013; Toreld et al., 2018). Underpinning this approach is the Nordic tradition of moderate criminal policy, which reflects the values of equality and universality characteristic of the Nordic welfare state model (see, e.g., Lappi-Seppälä, 2012). The idea is that incarcerated people retain all the same rights as individuals outside prison, with the sole exception of their liberty (e.g., Engbo, 2017; see also the critical ethnographic analysis of the Nordic ideal of normality in practice in Shammas, 2014).

The development of smart prisons often aims to increase efficiency, which can reduce human interaction, leading to the risk that automation increases isolation (e.g., McKay, 2022). Finland, however, has taken the opposite approach by emphasizing human-centered work in prisons, where advanced smart technology and face-to-face work are interconnected. The PPSF strategy emphasizes an interactive, coaching-based professional approach to supporting the rehabilitation and reintegration of incarcerated individuals (PPSF, 2024). Staff play a central role in motivating incarcerated people to live crime-free lives through everyday interaction and support (Ylisassi et al., 2016), which also facilitates digital inclusion and societal re-entry (Järveläinen & Rantanen, 2024, 2026). The strategic orientations adopted in Finland are also consistent with previous prison research that has highlighted the central importance of the staff–prisoner relationship to prisons' organizational culture (Knight et al., 2023; see also Crewe et al., 2023; Liebling et al., 2011), as well as the influence of digitalization on interactions between incarcerated individuals and prison staff (Järveläinen & Rantanen, 2021; Knight & Van De Steene, 2017), and on the overall prison atmosphere (Knight, 2015).

The Finnish smart prison is a socio-technical system which involves more than the mere introduction of ICT into the prison environment. It was developed through the *Älykäs vankila* (smart prison) project (2018–2022) which aimed to create rehabilitative and educational prison environments that support crime-free lives. Finland's smart prison initiative began with a women's prison in 2021 and expanded to two male prisons by 2023 (PPSF, 2023a; Puolakka, 2021), but growth has since stalled due to economic constraints. In practice, smart prison uses advanced technology in several daily operations, including surveillance, communication, and rehabilitation. In the Finnish smart prison under study (a high-security closed prison for women), each cell is equipped with a personal laptop, granting incarcerated women controlled access to digital services, educational materials, and self-help programs. In other Finnish high-security closed prisons (n = 14, men), laptops are shared devices whose use is permission-based and closely supervised. In contrast, low-security open prisons (n = 1, women; n = 11, men) allow incarcerated individuals to use their personal computers and smartphones more freely, for example for educational purposes. Alongside prison modernization, the PPSF updated its client system, Roti.

1.2. Incarcerated People's Digital Inclusion

We examine the use of the internet and digital services by incarcerated people through the lens of digital inclusion. This concept emphasizes the social nature of digital technology use and encompasses the digital divide (van Dijk, 2020) and social inclusion (Helsper, 2012, 2021). Digital inclusion refers to various activities that are needed to ensure all people have access to and can use ICTs, including the most disadvantaged (see Reisdorf & Rhinesmith, 2020), and it can be approached from the perspective of the resources available to the individual (e.g., Helsper, 2008, 2012). Helsper's (2008, 2012, 2021) corresponding fields model situates digital inclusion within the context of economic, social, cultural, and personal inequalities, showing how differences in access, skills, attitudes, and engagement both reflect and reproduce offline disadvantages, particularly among multiply disadvantaged groups such as incarcerated individuals (see Reisdorf & Rikard, 2018), while highlighting the role of unequal resources and usage opportunities in shaping participation and outcomes. Complementing this, van Dijk's (2020) cumulative model describes digital inequality as a process in which disparities in access, motivation, skills, and use reinforce one another over time, especially in contexts such as incarceration, where digital trajectories are disrupted. In particular, various vulnerable groups such as incarcerated people (Reisdorf et al., 2022; Reisdorf & Rikard, 2018) face digital inclusion challenges.

The digital inclusion of incarcerated people has been studied from the perspectives of rehabilitation and successful re-entry (Reisdorf et al., 2022; Reisdorf & Rikard, 2018) and e-learning (Barreiro-Gen & Novo-Corti, 2015). These studies have identified similar categories of digital resources as studies on digital inequality among other population groups, in particular highlighting the importance of digital skills, related training, and internet access (Reisdorf & DeCook, 2022). Prison studies have also found challenges to privacy (Robberechts, 2020; Seo et al., 2022) and a lack of trust (Järveläinen & Rantanen, 2021).

Incarcerated women are a particularly marginalized group with various risk factors for digital exclusion. For example, many incarcerated women have complex trauma histories and multiple mental health diagnoses linked to early-life adversity, power abuse, and victimization (e.g., Crewe et al., 2023; Jewkes et al., 2019). Trauma has also been identified as a contributing factor to recidivism among incarcerated women (Lehrer, 2021). Consequently, incarcerated women have diverse needs in terms of accessing various digital social and healthcare services (Järveläinen & Rantanen, 2024). However, they are a heterogeneous group with contrasting attitudes towards ICT (Seo et al., 2022), which poses challenges with regard to engagement with digital services. Digital inclusion in prisons is not gender-neutral, as women's experiences are shaped by intersecting inequalities, such as gender, social class, and ethnicity (Hopkins, 2022). In addition, among incarcerated women, deficits in digital skills and the digital divide appear particularly deep, increasing their risk of social exclusion and limiting their access to the labor market (Cuevas-Cerveró & Agúndez Soriano, 2019; see also Seo et al., 2022).

The relationship between digital and social inclusion in prison is more complex than in wider society because prison rehabilitation is linked to two very different social contexts. The digital rehabilitation and reentry model proposed by Reisdorf and Rikard (2018) examines digital inclusion in relation to both the prison realm and the reentry realm. According to this model, the significance of digital skills for an incarcerated person is twofold: They are a prerequisite to use digital services and maintain online communication with loved ones during imprisonment, and also an essential civic skill in a digital society. Adequate digital skills promote employment and indirectly also reduce the risk of recidivism (Zivanai & Mahlangu, 2022).

Restrictions on internet access in prisons are a key barrier to internet use by incarcerated people, and thus to their learning of digital skills essential for the digital era during their imprisonment (Jewkes & Reisdorf, 2016; Knight, 2015; Reisdorf & DeCook, 2022). Digital skills refer to the operational, informational, communicative, and strategic abilities needed to use digital technologies effectively and are central to digital inclusion, which involves both access to technology and the capacity to use it meaningfully (van Deursen et al., 2012). Such restrictions are primarily driven by a security-oriented mindset that sees internet use as a potential risk rather than an opportunity for rehabilitation and successful reintegration into society (Jewkes & Reisdorf, 2016). They are also partly due to the resistance to change inherent in prison culture (Knight et al., 2023). As such, we assume that examining the digital inclusion of incarcerated people and its significance for rehabilitation and re-entry requires consideration of the social context of prisons. In this study, we examine the digital inclusion of incarcerated women in the context of a Finnish smart prison.

2. Method

2.1. Research Questions

In this study, we examine the Finnish smart prison from the perspectives of incarcerated women. We ask:

1. How do incarcerated women perceive the significance of the smart prison?
2. What are the main prerequisites for and challenges to digital inclusion within the Finnish smart prison?
3. What specific characteristics are associated with the Finnish smart prison concept?

2.2. Data Collection Method and Instruments

The two-year fieldwork included data collection using elements characteristic of ethnographic approaches (see, e.g., Crewe, 2018; Ugelvik, 2014) and qualitative attitude approaches (Peltola & Vesala, 2013; Vesala & Rantanen, 2007). The qualitative attitude approach is a discourse-oriented research approach that, in addition to a general perspective on the argumentative nature of everyday speech, also includes clear methodological procedures. The approach is based on Billig's (1987) rhetorical psychology, which explores how people use argumentative talk to construct social realities. Such speech can be prompted in interview situations using pre-formulated statement-type questions. Interviewees are asked to take a stance on the presented statements and justify their positions, as well as to provide practical examples to support their justifications. The study was conducted during the Covid-19 pandemic, which, along with security restrictions, limited access to the prison. Nevertheless, an ethnographic approach that is uncommon in Finland was adopted, combined with a two-year follow-up design. On-site observation days were carried out by one researcher, which included informal interactions with staff and incarcerated women, as well as scheduled interviews. The observations focused on the implementation of in-cell laptops, the interaction between prison staff and incarcerated women, and how these factors influenced practices and the atmosphere.

The formulation of the interview statements and themes was based on the concept of the smart prison as a socio-technical system, as well as on the assumption that digital inclusion during imprisonment is linked to social inclusion and re-entry. The interviews explored themes such as the introduction of in-cell laptops, the impact of digitalization on prison practices and relationships, and its potential to promote reintegration and crime-free lives. They included several open-ended questions about incarcerated women's digital skills,

use of society's digital services and prison in-cell laptops, as well as their needs for digital support, and three statements. In this article, we focus on these three statements:

> Statement 1: The prison's digitalization has significantly changed the prison's operating methods and the client–staff relationship.
>
> Statement 2: The digitalization of the prison significantly eases re-entry into society and desistance from crime.
>
> Statement 3: The smart prison serves as a learning environment where a person can learn the skills needed for a crime-free life during imprisonment.

The statements are expected to provide insights into how incarcerated women perceive the significance of the smart prison, as well as the key prerequisites, challenges, and defining characteristics associated with digital inclusion in the Finnish smart prison. Comparative results (including employee data) on these statements are reported in other articles (Järveläinen & Rantanen, 2024, 2026).

2.3. Participants

This article focuses on interviews conducted with 12 incarcerated women. The researchers aimed to find interviewees of various ages who had used the in-cell laptop, even minimally, for internal prison communication and to maintain contact with external parties during their incarceration. Their ages ranged from 25 to 54 (average 35.7), and they had been in prison between one and seven times (of whom six were serving their first sentence). The educational backgrounds of the interviewees varied from basic education to vocational training, with some having completed higher education.

2.4. Procedure

After obtaining the necessary research permission and approvals, the practical arrangements for the study were agreed with the prison director. To minimize selection bias (see, e.g., Jewkes, 2014), the director was asked to appoint an employee who had in-depth knowledge of the incarcerated women but limited authority over them. An appointed employee from the prison's social work and rehabilitation services disseminated an open call across all prison wards to eligible individuals from diverse backgrounds, and all volunteers recruited through this staff-mediated process were included in the interviews. The female researcher from the research team conducted the fieldwork.

Observation days were also separately agreed upon with the prison director, and the prison staff on duty were informed of the researcher's presence in the facilities. The researcher was granted permission to move around the facilities at agreed times to familiarize themselves with the premises and engage in informal discussions with prison staff. In addition to formal interviews, the researcher held informal meetings with various staff members to understand their perspectives on the impact of in-cell laptops over a two-year period. All meetings were organized in a way that did not disrupt the prison's basic operations or burden staff. Visits to the wards and informal conversations with incarcerated women were always separately agreed upon with the staff working in the wards.

The study (2021–2023) consisted of 10 observation days and a total of 37 interviews with 12 prison staff members and 12 incarcerated women, whom we interviewed one or two times each in a follow-up design. In this article, we focus on the interviews with incarcerated women, of whom three were interviewed twice, and nine only once (for a total of 15 interviews). The duration of the interviews ranged from 26 to 66 minutes (average 44 minutes). Fourteen of the interviews were conducted in the prison during observation days in a private meeting room, with only the interviewer and interviewee present. One interview was conducted via video call.

2.5. Analysis

Prior to analysis, the data were transcribed and pseudonymized using fictitious names, and selected quotations were translated by the researchers, with efforts to preserve the interviewees' original expressions and meanings. The analysis and writing phases were conducted as a reflexive process by the research pair. The analysis of the material was carried out in accordance with qualitative attitude research (Peltola & Vesala, 2013; Vesala & Rantanen, 2007), which is conducted in two phases: classification and interpretative analysis. In the first classification phase, we paid attention to whether the interviewees agreed or disagreed with the statement or took a reserved stance. Additionally, we analyzed their justifications for their positions and how these justifications were distributed among the different stances.

Regarding Statement 1 ("the prison's digitalization has significantly changed the prison's operating methods and the client–staff relationship"), positive stances (n = 10) were justified by emphasizing that electronic transactions have accelerated communication within the prison and the handling of personal matters, as well as facilitated contact with family and other authorities. Interviewees who took a reserved stance (n = 5) supported their positions by emphasizing that the change was not considered significant, as paper forms were still used. Regardless of the stance taken, client–staff relationships with prison personnel were perceived positively by all interviewees.

Statement 2 ("the digitalization of the prison significantly eases re-entry into society and desistance from crime") divided the interviewees' opinions. Justifications for an opposing stance (n = 7) stressed that digitalization had no impact on desistance from crime and access to digital services was limited. Interviewees who took a reserved stance (n = 6) highlighted that increased access to and independent use of digital services during imprisonment could aid re-entry to society. Justifications for a positive stance (n = 2) emphasized that learning digital skills and use of digital services in prison would enable smoother re-entry into society.

Statement 3 ("the smart prison serves as a learning environment where a person can learn the skills needed for a crime-free life during imprisonment") also divided interviewees' opinions. Justifications for a reserved stance (n = 7) highlighted that digitalization supports rehabilitation, work, training, and communication with staff. Justifications for a positive stance (n = 7) emphasized that learning digital skills and maintaining digital agency were essential for reintegration into a digital society and a crime-free life. One opposing stance (n = 1) was justified with arguments concerning restricted access to education, the lack of gradual release mechanisms, and the stereotyping of incarcerated women, all of which hinder societal integration and individual transformation.

Interpretive analysis drew on the entire dataset (addressing the three statements) and followed an abductive approach, which integrates inductive reasoning with deductive logic (see Timmermans & Tavory, 2012). Data, initially structured through statement-based classification, were examined through a theory-driven lens informed by Helsper's (2008, 2012) model of digital inclusion, which highlights the central roles of access, digital skills, and motivation and attitudes. Subsequently, data were analyzed inductively, leading to the identification of additional factors that both enable (e.g., interaction) and constrain (e.g., security restrictions) digital inclusion. Next, the classification was further refined and consolidated, resulting in a final analytical framework comprising the following thematic categories: Incarcerated women's digital skills as a basis for digital inclusion; restrictions on access to the internet and digital services challenge incarcerated women's digital inclusion; and the combination of digitalization and interactive organizational culture supports rehabilitation and re-entry. In the results section, we present the findings by integrating fieldwork observations and the thematic categories derived from the interview data into a coherent whole.

2.6. Ethical Questions

The study followed Finnish National Board on Research Integrity (2019) guidelines. Ethical approval was obtained from the university's ethics committee, and research permission was granted by the PPSF. Throughout all phases of the research process, special attention was paid to the autonomy, anonymity, and voluntary participation of the interviewed incarcerated women. The interviewees showed great interest in our research topic, and all those who were willing were offered the opportunity to participate in our follow-up study. Only the researcher and interviewee were present during interviews. As researchers, we acknowledge the key challenges posed by prison ethnography, including the importance of positionality, gender, and ethics, as well as the need for sensitivity when studying incarcerated women (Jewkes, 2014; Ugelvik, 2014). The female researcher who conducted the fieldwork earned the interviewees' trust through respectful interactions, while also recognizing constraints in terms of anonymity and shifting roles, which required ongoing negotiation within the prison's power relations (Ugelvik, 2014).

3. Results

3.1. Digital Interaction as Part of Daily Life in the Smart Prison

The smart prison under study opened in the fall of 2020, and in-cell laptops were introduced in early 2021. In the initial phase of the fieldwork, we observed the prison's architecture and geographical location, as well as the calm and positive atmosphere. The facility is located near a forest area, with cell windows providing a view of the yard. All prison windows were barless. The prison has eight wards (with 12 one-person cells per ward) with their own dining areas and outdoor spaces. All individual cells are equipped with a built-in laptop, television, bed, sofa, shower, storage space, and coffee machine. Common areas in the prison include a chapel, library, salon, sewing room, gym, family rooms, and an outdoor area for supervised exercise. The prison uses advanced technology for monitoring and to lock the doors of the wards and cells, in addition to the in-cell laptops.

During the early stages of the fieldwork, the introduction of the in-cell laptops faced various operational challenges, which were gradually overcome by the end of the follow-up phase. In-cell laptops enabled daily communication between incarcerated women and prison staff, submission of electronic forms, calendar use,

canteen orders, bank account checks, and access to news, music, and audiobooks. In-cell laptops had restricted access to permitted websites. Through the Portti portal, incarcerated women could explore rehabilitative services for use during and after incarceration. It also allowed users to view documents stored on the server related to education, training, leisure activities, and prison bulletins. Digital interaction added versatility to communication and improved work efficiency, allowing quick handling of practical matters. The chat function facilitated daily communication, replacing many ward visits and freeing up staff time for more personalized meetings. The in-cell laptops were available during the day and in the evening and were turned off at night.

It was also possible to connect via video call with prison staff (e.g., social worker, psychologist, pastor, or nurse) and, under supervision, with various external authorities. These contacts aimed to promote the handling of personal matters by incarcerated women, supporting their re-entry into society. Every Saturday, video calls with family members and friends were allowed. These video calls were subject to permission and supervision. The interviewees felt that meetings with relatives through the in-cell laptop without the presence of other incarcerated people were meaningful. Video calls played a particularly crucial role during the Covid-19 pandemic when prison operations were in lockdown.

Most interviewees felt that digitalization has significantly changed the prison's operating methods and the client-staff relationship, diversifying communication methods and enabling better contact with both relatives and other authorities. However, some felt that the change has not been significant, as paper forms were still used alongside digital ones, and encounters with staff were generally considered functional. Overall, the interviewees emphasized that digital tools have facilitated daily communication. They particularly noted that contact with prison staff faced significantly lower barriers, bringing them closer. Additionally, electronic forms were seen as more reliably reaching their recipients than paper forms. This was seen as a factor contributing to a serene prison atmosphere.

3.2. Incarcerated Women's Digital Skills as a Basis for Digital Inclusion

Based on our fieldwork and interviews, digital skills appear to be a key factor in the digital inclusion of incarcerated women. Interviewees highlighted that digitalization in general and especially the use of in-cell laptops enabled the learning of digital skills in prison. Also, the use of digital services facilitated reintegration into society, provided that their use was comprehensive and independent. In addition, they argued that learning digital skills and maintaining digital agency facilitates living a crime-free life and re-entry into a digital society.

Younger interviewed women (aged 20–40) generally described having good digital skills and actively using online services before imprisonment, such as booking appointments or shopping. Older interviewed women (50+) often described lacking digital skills and confidence, preferring face-to-face interactions, and avoiding digital tools. They relied heavily on family members to manage digital transactions, and this was emphasized during imprisonment.

Incarcerated women valued guidance that enabled independent action, noting that staff doing tasks for them created uncertainty and reduced confidence. Many interviewees stressed the importance of maintaining and developing digital skills during imprisonment to navigate and survive in digital society. Given their fears and reluctance to use digital tools, support from prison staff was key in overcoming barriers:

> Of course it's difficult, the banking systems and all that, you know, because you still have to do it through the social worker….It's good that the social workers are here helping as well, so that if you don't know everything on the computer, they can help with how to do those things from your in-cell laptop. (Siiri, 38 years)

The interviewees highlighted that it was crucial to learn to use digital devices independently to maintain a crime-free life in the future. This would enable them to secure housing, employment, or education, or to apply for social assistance to ensure their livelihood in society:

> Here, for people who have been without any contact with information technology for years, the world has changed. On our ward, there's someone who has been incarcerated since 2009, and the world has significantly shifted towards digitalization, where everything is handled electronically. Here, when you get the foundation and learn to handle things electronically, it's easier when you're free. And when you already know how to apply for support, school, or work, it certainly helps in disengaging from criminal behavior. You won't commit crimes for money or…like that. At least that's how I see it. (Oona, 27 years)

All in all, interviewees' digital skills and attitudes towards digital services appeared to significantly affect digital inclusion and the reintegration of incarcerated women into a digital society. The lack of digital skills highlighted the need for digital support. On the other hand, the data strongly indicated a desire to act independently in managing personal affairs, which supports thriving in a crime-free life within a digitalized society.

3.3. Restrictions on Access to the Internet and Digital Services as Challenges to Incarcerated Women's Digital Inclusion

Interviewees who expressed critical opinions emphasized that digitalization had no impact on desistance from crime because access to digital services during imprisonment was restricted. They also pointed out that incarcerated women were often associated with incorrect stereotypes, which in turn was seen as preventing the possibility of life change.

Firstly, the interviewees highlighted challenges related to studying during incarceration. Only basic or high school education was possible, as this took place in a closed internal online prison learning environment with other incarcerated individuals. Although the learning environment enabled interaction with other students, such forms of study were prohibited for security reasons.

Furthermore, interviewees raised challenges related to strong identification requirements to use digital services outside prison. Because the electronic IDs of incarcerated individuals were held by prison staff, the possibility of independent digital interaction was necessarily limited, which forced them to rely on others to access services.

> It would significantly help….Well, we don't have bank IDs or any login credentials for anything, so we can't do anything without social workers. Basically, when everything requires logging in, even just looking for housing….There are those housing sites where you can browse and blah blah blah, and it's a huge hassle for us. We have to add phone numbers to the system and remove old ones, and we can't send any instant messages to anyone outside. I argue that this computer doesn't help with that

> because we can't manage our own affairs. We can't handle any of our own matters. We can call home to mom and hope she takes care of things for us. Like that. If we had bank credentials in our own hands, then we could possibly handle something ourselves. (Lilja, 38 years)

Additionally, the in-cell laptop only permitted information searching on a limited selection of white-listed websites, and interaction with these sites was disabled. The limited features of the in-cell laptop caused frustration among the incarcerated women:

> Well, I don't understand how such a digital system, basically designed for children, would help when you go out there where normal internet connections and regular things are in use. Like here, most people, like applying for housing, many start looking for apartments five years in advance, for example. And then all those things like Kela [the Social Insurance Institution of Finland] and such, I don't know how they work, because they probably require some kind of identification….Yes, so that wouldn't work, as those things are still done somewhere with the help of an official and probably even on paper. There aren't….There aren't any identifiers available for personal use. (Alma, 54 years)

Overall, according to interviewees, access to external services, such as remote rehabilitation or education, was highly restricted in prison. This, in turn, was seen as limiting their ability to succeed in a future digital society.

3.4. Digitalization and an Interactive Organizational Culture as Support for Rehabilitation and Re-Entry

Interviewees emphasized that prison activities, such as education, work, and rehabilitation programs, were vital for learning life skills and preparing for a crime-free future. Digital tools were seen as complementary to established offline activities, especially during the Covid-19 pandemic, when the external services of various NGOs were delivered via in-cell laptops. These digital services helped maintain continuity in rehabilitation and build bridges for reintegration into society.

The fieldwork revealed the importance of social interactions between incarcerated women and prison employees in daily life and rehabilitation efforts in the studied smart prison. Encounters were immediate and mostly respectful, and conversations were colored by humor, which also helped build mutual trust. One incarcerated woman emphasized the importance of these encounters as follows:

> For me, those [encounters with employees] are important. I visit the psychologist, and then there are these [employees responsible for social work and rehabilitation], rehabilitative courses and such. I've talked to many prison officers, because I have nothing to hide; I've openly shared everything—why I'm here, how I've been exploited, manipulated, threatened. All these things. Many prison officers have said that if you have something, they are there to support you, that you can come and talk to them about these things, and they will listen. And it's really important to me to have that support around me here, because without it, I don't know how well I would manage. (Siiri, 38 years)

Instead of reducing human contact, the introduction of ICT actually enhanced face-to-face interactions. According to our findings, this combination of ICT use and face-to-face social interaction is one of the key features of the studied Finnish smart prison, alongside a focus on rehabilitation and preparation for release.

Over the years, Finnish prisons have gradually shifted to a more rehabilitative and interactive approach, and new facilities and rehabilitative activities have accelerated this development. One incarcerated woman with a long prison history described prisons' cultural shift as follows:

> As I mentioned before, the previous prison culture had a huge wall with staff on one side and prisoners on the other. If you started talking to a prison officer [PO] back then, there was immediately an angry ward behind you, waiting to see what you were explaining. There was no small talk with the staff….It usually meant that someone was snitching or complaining about someone or trying to cause problems for someone….There couldn't be any casual talk about everyday world politics. No one talked about that. It was like that until a few years ago. Still is in most prisons. But when they [the Training Institute for the PPSF] started this interactive PO training program, at first people wondered why someone would sit for an hour with a PO in a room. But as it happened more often, people realized that this was part of the POs' training program. The situation started to change. And now, at least here in this prison, at least in our ward, it's completely logical, normal, and acceptable that you can talk about everyday world politics with a PO. No one has to wonder what you're talking about. (Alma, 54 years)

The above excerpt describes a shift in Finnish prison culture toward a more rehabilitative atmosphere. A key driver of this change is the updated training for Finnish prison officers, which now emphasizes interactive engagement. Incarcerated women noted they can now talk casually with prison staff without fear of being labeled as a 'snitch.' Interviewees also highlighted how the new modern smart prison environment, compared to older facilities, supports this more positive and respectful interaction culture.

The material revealed that not all employees had yet adopted the new interaction culture, with "some still clearly wanting to show their own power position, that they are prison officers, and we are prisoners" (Anni, 34). Incarcerated women stressed that prison staff behavior directly affects their rehabilitation, with respectful and supportive interactions playing a key role. The rehabilitative and coaching-based approach taken by the employees helps them reassess their values and desist from crime:

> It all depends on how it's implemented; it's up to the employees. If the employees are ready to meet us as humans and not act like a punishment institution, that we're not in a punishment institution but are rehabilitating, then both the smart prison and the regular prison function as learning environments. If we start going down the path of being punished here, that the loss of freedom is the punishment, and if we start getting extra punishment, then we quickly take steps backward. A person starts to defend themselves, and then comes the counter-reaction. If I'm treated like a criminal, I'll start behaving like a criminal. But if I'm encouraged to learn other survival skills, it supports the possibility that there won't be a second time. (Anni, 34 years)

Overall, the study concluded that a prison that combines advanced technology with a rehabilitative and interactive approach can serve as a learning environment for a crime-free life. The Finnish smart prison aims to combine these elements, but progress is gradual.

4. Discussion

4.1. Main Findings

The present study highlights the main prerequisites for and challenges of digital inclusion for incarcerated women, but also some special features of the Finnish smart prison concept. Firstly, the study indicates that the digital transformation and, in particular, the introduction of in-cell laptops significantly transformed the operating culture of the prison under study, streamlining both internal and external communication processes and also strengthening the interaction between incarcerated women and prison staff. Secondly, the digital skills of incarcerated women and their willingness to use digital services are fundamental for the achievement of digital inclusion. Thirdly, restrictions on access to the internet and digital services pose challenges to the digital inclusion of incarcerated women, highlighting the role of prison staff as enablers and gatekeepers. Fourthly, the study reveals a key characteristic of the Finnish smart prison: That the rehabilitative approach combines with ICT and interactive and humane practices by staff to support the development of prison conditions.

4.2. Experiences of Incarcerated Women in a Smart Prison

In the Finnish smart prison system, several technological advancements have been implemented to support incarcerated women's digital activities and rehabilitation. In-cell laptops provide access to internal prison services and, to a limited extent, external public services and the internet. These devices also enable video calls, although such interactions are subject to prior authorization. The present study revealed both the positive and negative experiences of incarcerated women regarding the smart prison and the usability and usefulness of digital technology. Consistent with previous studies, the research highlighted that the possibility of using digital services and engaging in digital interaction can streamline internal processes within the prison and support the rehabilitation and re-entry of incarcerated individuals into society (Imandeka et al., 2024a; 2024b; Knight et al., 2023; Knight & Van De Steene, 2017). The digitalization of prison services can also contribute to a more constructive and supportive institutional atmosphere (see, e.g., Crewe et al., 2023). In interviews, however, some incarcerated women expressed frustration over the limitations imposed on digital access, indicating that restrictive policies can significantly reduce the benefits of technological development. This finding is in line with previous studies (e.g., Barreiro-Gen & Novo-Corti, 2015; Jewkes & Reisdorf, 2016; Knight et al., 2023).

4.3. Barriers to Digital Inclusion

The prerequisites for and challenges of digital engagement identified in the study are largely consistent with Helsper's (2008, 2021) model and previous research on the digital inclusion of incarcerated individuals (Reisdorf et al., 2022; Seo et al., 2022). A significant barrier is the limited digital literacy of some incarcerated individuals, which restricts their ability to effectively utilize available technologies. Additionally, negative attitudes and apprehensions toward digital services persist among certain incarcerated women, further complicating efforts to promote digital engagement. These challenges are further embedded in broader socio-cultural dynamics, as women's digital inclusion in re-entry is shaped by gender, age, and identity factors which influence their ability to adapt to and engage with digital society (Reisdorf & Rikard, 2018; see also Helsper, 2012).

Access remains a critical issue, as internet connectivity is tightly controlled and services requiring strong electronic identification are often inaccessible to incarcerated women. Digital skills and positive attitudes toward technology are essential for the digital inclusion and successful re-entry of incarcerated women. Overcoming these challenges to the digital inclusion of incarcerated women is important because digital interaction offers opportunities to manage housing, employment, education, and rehabilitation (see, e.g., Barreiro-Gen & Novo-Corti, 2015; Passey et al., 2018; Reisdorf & Rikard, 2018), potentially reducing recidivism (McDougall et al., 2017). In line with these challenges, our study indicates that, despite the provision of in-cell laptops, access to digital services remained highly restricted and institutionally mediated, thereby challenging the realization of digital inclusion.

Previous studies emphasize the importance of support and digital skills training (Reisdorf et al., 2022). Our findings show that access to external services, remote rehabilitation, and higher education are significantly limited due to security concerns. These services are accessed under staff supervision, highlighting their role as both gatekeepers and enablers (Jewkes & Reisdorf, 2016; Robberechts, 2020; Seo et al., 2022). However, many interviewees expressed a strong desire for independence in managing personal affairs, which fosters self-efficacy and supports a crime-free life in a digital society. Accordingly, greater emphasis should be placed on enabling independent digital engagement and providing adequate digital support to strengthen digital competencies and facilitate successful re-entry (Järveläinen & Rantanen, 2024, 2026; Reisdorf & Rikard, 2018; van Deursen et al., 2012).

4.4. The Finnish Smart Prison Model Promotes Rehabilitation and Re-Entry

The study identified several characteristics of the Finnish smart prison model that distinguish it from traditional correctional facilities and many other smart prisons. From an international perspective, the Finnish smart prison clearly represents a trend that focuses on rehabilitation, social inclusion, and the benefits received by incarcerated individuals (Fedorczyk, 2024; McKay, 2022). However, the Finnish model does not emphasize the adoption of isolated digital solutions in the prison environment as much as it does the comprehensive development of the smart prison, which also includes security technology and the prison as a social environment.

Although many processes have been streamlined and new surveillance technology has been introduced as part of the development of smart prisons, the goal of their development is not to completely optimize processes or create the "carceral automaton" described by McKay (2022, p. 101). On the contrary, the Finnish model emphasizes the importance of interactive work, with digital tools used in conjunction with face-to-face interactions to foster humane and meaningful social interaction between staff and incarcerated women. In line with previous prison studies (Crewe et al., 2023; Ylisassi et al., 2016), this study found that interactive encounters can promote rehabilitation and security. In Finland, the PPSF's strategy emphasizes coaching approaches to guide incarcerated individuals towards a crime-free life (Ylisassi et al., 2016). The prison under study demonstrates the cultural shift occurring in Finnish prisons, emphasizing humane interaction between incarcerated women and prison staff.

The development of the Finnish smart prison is grounded in the principle of normality (Puolakka, 2021), which emphasizes that prison conditions should correspond as much as possible to conditions outside prison (Engbo, 2017; Smith, 2013; Toreld et al., 2018). This includes equal access for incarcerated individuals to the internet

and digital services, unless specific restrictions are justified (Smith, 2013; Toreld et al., 2018). However, the findings show that this principle is only partially implemented in the prison studied due to ongoing limitations on internet use and digital services. Despite these restrictions, the design and development of smart prison facilities clearly aim to create an environment that aligns with everyday societal conditions.

Although the Finnish smart prison model has many strengths in terms of supporting the rehabilitation of incarcerated individuals and facilitating their return to society, its development and expansion have been hindered by the same challenges identified in previous studies. In particular, technological challenges in the early stages, gaps in digital skills and training, and emphasis on a security-oriented mindset (see, e.g., Jewkes & Reisdorf, 2016) have emerged as factors slowing down development (see Imandeka et al., 2024a, 2024b). In recent years, challenges related to costs (see Imandeka et al., 2024a) in particular have hindered the introduction of new smart prisons in Finland. Due to financial constraints, the number of in-cell laptops has been reduced, and a system of shared use across all three prisons has been implemented. In the future, it will be important to study the impact of smart prisons on recidivism rates, as well as to compare prisons with different technological solutions (smart prisons versus prisons with shared computer terminals).

4.5. Limitations

This study examined a single Finnish prison during the early stages of advanced technology implementation, coinciding with the Covid-19 pandemic and the opening of a new facility, which posed challenges to the research and technology deployment. As digitalization in prisons is a long-term process, the findings are specific to the initial phase. The prison served as a digitalization pilot, with interviewees generally positive about digitalization despite some criticism regarding technology malfunctions and learning new systems. Furthermore, the Covid-19 pandemic may have influenced the findings by increasing reliance on digital tools, potentially limiting generalizability. The study is further constrained by the small sample size, a single-site design, and a possible selection bias stemming from recruitment through a prison-appointed contact person. However, the triangulation approach provided a deeper understanding of the data and phenomenon. The analysis, based on interviews and field observations, reflects the real situation regarding technology use and its challenges in the prison.

5. Conclusion

This study underscores the transformative potential of digital technologies in correctional settings, particularly within the Finnish smart prison model. The integration of in-cell laptops and other ICT tools has significantly reshaped the operational culture of the prison under investigation, enhancing both internal communication and the rehabilitative interaction between incarcerated women and prison staff. These developments reflect a broader shift toward a more inclusive and humane correctional environment, aligned with the principle of normality. However, the findings also reveal barriers to full digital inclusion. Limited internet access, insufficient digital literacy, and restrictive security policies continue to constrain the benefits of technological advancement. While incarcerated women generally expressed a willingness to engage with digital services, their ability to do so independently remains limited. This highlights the dual role of prison staff as both enablers and gatekeepers of digital engagement. At a general level, the findings suggest potential benefits of the smart prison concept; however, as they are based on a single case study, they should be interpreted with caution and require further research across diverse contexts. Digital inclusion

during imprisonment facilitates smoother reintegration into an increasingly digitalized society. The digital skills acquired and maintained during incarceration may contribute to enhanced digital and social inclusion following release.

Funding

Research was conducted as part of the project "Towards Socially Inclusive Digital Society: Transforming Service Culture" (DigiIN), grant numbers 327169/327145 and 352506/352501, and it was funded by the Strategic Research Council at the Academy of Finland.

Conflict of Interests

The authors declare no conflict of interest.

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Social Inclusion
2026 • Volume 14 • Article 12678
https://doi.org/10.17645/si.12678

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Open Access Journal

Living in Prison, Studying on Campus: Digital Challenges for Students in a UK Open Prison

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Submitted: 29 April 2026 **Accepted:** 13 July 2026 **Published:** 13 August 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

This article examines the information behaviour of a group of students housed in an "open" prison in southern England and enabled to attend university during weekdays. This group faces unique challenges, unexplored in existing studies on incarcerated distance learners, as they experience intermittent online access alongside specific restrictions. The study aims to explore their information behaviours, including how digital literacies develop over time, and evaluate the support provided by university staff to generate recommendations for similar prison–university partnerships. Data from weekly reflective progress logs and follow-up interviews with incarcerated students (n = 8) are supplemented with interviews with relevant university staff (n = 5). Theories of digital exclusion, transitional information behaviour, and digital identities inform the analysis. Preliminary findings suggest challenges emerge from the contrast between the restrictive prison information landscape and the digitally intensive university environment, combined with time pressure related to intermittent digital access. Students must continually adapt to new technologies while already immersed in a transition. Prohibitions on smartphones and online networking can lead to social stigma and hinder full participation in the student community. Nonetheless, participants showed strong determination to succeed, which could be supported through targeted support from institutional stakeholders.

Keywords

digital exclusion; England; higher education; information behaviour; prison education; transitions; United Kingdom; university

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1. Introduction

In England and Wales, Category D or "open" prisons are designed to transition individuals towards resettlement in society, usually following a period of incarceration in higher security establishments. These institutions offer opportunities to work or study off-site, alongside regular home visits.

This article arises from a doctoral thesis focusing on a group of men incarcerated in a Category D prison, who are released on temporary licence (ROTL) to attend a local university campus and complete credit-bearing modules. This partnership is primarily funded by the university and coordinated by a steering group involving representatives from both institutions. While permitted greater freedom than those in higher security establishments, the students face strict regulations, including curfews and digital disconnection during prison hours. Relatively minor rule breaches can lead to significant penalties, potentially disrupting their studies.

Rich qualitative data was gathered to explore the experiences of this distinctive group of students, and particularly how incarceration affected their information behaviour. Following Given et al. (2023), "information behaviour" is defined broadly, encompassing academic information-seeking but also informal information-sharing and avoidance behaviours. Further objectives were to understand any changes in students' information-related skills and confidence over a semester, and to evaluate the university's support systems.

Pastore (2018, p. 1274) observed that "in the collective imagination, prison and university appear as worlds apart, distinct universes: common sense has it that criminals belong to the former and respectable persons to the latter." There is a wide gulf in norms between these institutions, sometimes portrayed as a dichotomy between (penal) restriction and (academic) freedom. Scott (2018, p. 13) contrasted the humanising aims of education with penal "campuses of dehumanization." Whilst all students are also impacted by *university* regulations, there is some truth in the contrast.

A key facet of this contrast is digital. Despite ongoing policy emphasis on digital transformation, UK prisons remain reliant on paper-based systems. Administrative processes are only gradually shifting to digital formats, while digital infrastructure is geographically inconsistent and fragmented (Prison Reform Trust, 2025). The slow pace of change is as much cultural as technical. Security concerns predominate, prompting significant risk aversion around new technologies. Prison authorities are also highly conscious of UK public opinion, often held to value punishment over rehabilitation; innovations may be withheld until they can be expected to pass the "Daily Mail test" (referencing a British tabloid newspaper that frequently expresses punitive viewpoints; Jewkes & Reisdorf, 2016). Farley and Hopkins (2017) noted that incarcerated learners can feel disconnected from online sources of support. While initiatives like Virtual Campus (a restricted virtual learning environment for incarcerated distance learners) have expanded possibilities for learning in prison, these heavily censored and monitored environments are inadequate preparation for a digital world.

Transitioning from full-time incarceration to ROTL can be an abrupt and unsettling experience, even while representing a positive moment in an individual's journey towards full societal reintegration. The contrast between the restrictive, largely paper-based, and risk-averse prison estate and the open, technology-enabled, and collaborative experience of a modern university campus is stark. Stepping outside

the "small world" (Chatman, 1999) of the prison, the students must rapidly accustom themselves to new norms. Most are expected to submit their first assignment within weeks of campus arrival, having gained sufficient familiarity not only with course content but also new procedures, ways of learning, and educational technologies. As Lloyd et al. (2013) observed, while analysing the information behaviour of another marginalised group in transition (refugees), those who do not adapt their practices to a new landscape can face exclusion and isolation.

The following literature review covers theories of digital exclusion and their application to prison and higher education contexts; information behaviour in transition; and risks for (formerly) incarcerated people in the digital sphere.

2. Literature Review

2.1. Digital Exclusion: Theory and Applications to Resettlement

The concept of a "digital divide" based on access to internet-enabled devices has gained nuance as digital technologies have become increasingly embedded into the everyday lives of much of the world's population. Prisons are, theoretically at least, among the last remaining environments in high-income countries where inhabitants lack this basic access; even accounting for illicit possession of smartphones (HM Prison & Probation Service, 2018), the ubiquity of devices in the wider world is not reflected inside.

Additional layers of digital exclusion also disproportionately affect those impacted by incarceration. Hargittai's (2002) "second-level digital divide" revolved around the skills necessary to successfully navigate online information environments and avoid frustration, confusion, and task abandonment. Frequent and long-term internet users were notably more efficient and successful searchers, suggesting barriers for those lacking experience with technologies or whose access is withdrawn for significant periods. Increasing digital interactivity prompted distinctions between medium-related operational competencies and content-related skills for finding, using, sharing and creating information (van Deursen et al., 2011). As the binary "digital divide" conceptually shifted towards a continuum of usage and capabilities, incarcerated people were increasingly left behind.

The foundations of Helsper's (2012) "corresponding fields" model of social and digital exclusion are a person's online and offline economic, cultural, social and personal resources, underscoring the relationship between digital inclusion and social structures. The applicability of this model to those incarcerated in closed conditions can be questioned, since they lack the power to significantly alter their material circumstances. However, partnership students are emerging into a digital world, reintroducing some agency. Reisdorf and Rikard (2018) synthesised Helsper's (2012) model with rehabilitation theory, inserting a set of resources related to re-entry and identifying specific factors of particular relevance to partnership students, such as sentence length and digital self-presentation. Highly structured and resource-based approaches to digital exclusion have attracted critiques from scholars who view these as too rigid. Advantage and disadvantage are precarious states (Asmar et al., 2022), and this precarity may particularly affect information practices, which are contextual, embodied and influenced by power relations (Hicks, 2022; Lloyd et al., 2013). Helsper's (2012) and Reisdorf and Rikard's (2018) models are perhaps best seen as tools to illuminate multiple barriers to digital integration faced by those disadvantaged by incarceration.

Echoing a remark by Pike and Adams's (2012, p. 372) participant that non-networked virtual learning environments (VLEs) are limited, while "the internet really means unlimited," Hopkins (2022) advocated shifting prison-based digital education in Australia towards "network literacy" skills necessary for participation in digital communities, for example evaluating online information and influencing discourse as information creators. Incarcerated distance learners now perceive that exclusion from social media-based learning communities reinforces their disconnection (Mdlungu & Hlatshwayo, 2024). Those nearing release are concerned about re-entering a changed world, confused about terminology, and anxious about asking family for technological assistance (Reisdorf & Jewkes, 2016). Allowing basic phones in low-security categories was seen as "too little, too late" by participants in Jewkes and Reisdorf's (2016) study who were keen to acclimatise to technologies they would encounter on release. With digital education within prisons often limited by out-of-date tools and viewed as a privilege rather than an essential element of preparation for resettlement (Reisdorf & Jewkes, 2016), formerly incarcerated people are likely to struggle to adapt to a rapidly changing information environment once released.

The development of digital literacy skills for higher learning can represent a steep learning curve for incarcerated students. The literature suggests that these students may require more time and support to familiarise themselves with educational software, and could perceive that other students have greater digital fluency to learn, connect, and interact in ways that are not accessible to them.

2.2. Information Behaviour in Transition

This research is a study of information behaviour in transition, indebted to empirical work illuminating the challenges faced by individuals adapting to new information landscapes, including migrants (Bronstein, 2018; Kennan et al., 2011; Lloyd et al., 2013), students participating in transfer/exchange programmes between universities (Hicks, 2022; Ivins et al., 2016), and those navigating health transitions (Meleis et al., 2000). The research has also benefited from overarching theoretical efforts to model transitional commonalities (e.g., Ruthven, 2022).

Ivins et al. (2016, p. 245) defined a transition as "a period in-between moments of stability, initiated by the move between two socio-cultural systems." Using the concept of information landscapes, which represent the collectively established and recognised information practices and norms shared by actors in an information space, Kennan et al. (2011) and Lloyd et al. (2013) considered how recent arrivals acclimatise to a new country through a cyclical and iterative process of transitioning, settling in, and becoming settled. Settlers became more proactive in seeking out information as they adjusted, diversifying sources and building networks through information-sharing, information-mapping, and observation. Transitions could require information-seeking, use of role models, and modifying existing activities and practices (Meleis et al., 2000). However, while many frameworks recognise that transition is not a linear process, fewer examine the implications of undergoing a transition between states of identity whilst repeatedly crossing boundaries between divergent information landscapes, such as prisons and universities. Existing models may fail to fully account for this back-and-forth due to lack of available data.

Experiencing a significant transition can fundamentally impact a person's self-identity, since transitions are "psychologically and emotionally disruptive to the way we experience life" (Ruthven, 2022, p. 580). Meleis et al. (2000) highlighted perceptions of difference; for transitioners, this could involve a divergence between

expectations and reality or seeing the world or themselves differently. Some previously perceived differences may be blurred, but not necessarily erased, as Bronstein's (2018) work also highlighted. Even when migrants had acclimatised to a new homeland, they could still perceive themselves as existing in a liminal state where they did not fully belong to either place. Transitions can be planned or unplanned, voluntary or involuntary, anticipated or unexpected (Ivins et al., 2016). Incarcerated people may have very little time to prepare themselves for moving into higher education, including any impact on their self-identity. Self-perception and the perceptions of others can significantly affect the success of a transition, particularly where stigma is a factor (Bronstein, 2018) and where marginalisation and ingrained cultural attitudes could inhibit access to community support (Meleis et al., 2000).

Entering new information landscapes requires learning multiple new norms and practices, often rapidly and simultaneously. Transitions are often associated with information overload (Ruthven, 2022) and culture shock (Ivins et al., 2016), which can impact an individual's performance within, and adjustment to, a new environment. Ivins et al. (2016) argued that culture shock could be mitigated if those experiencing it understand that it's a time-limited phenomenon, while all students can benefit from learning to adapt to change.

The research covered above has focused on specific contexts and is vulnerable to Ruthven's (2022, p. 579) critique that these studies "rarely reach the level of theory." He also argued that the portrayal of transitions as moments between stable states (as in Meleis et al., 2000) misses an opportunity to understand transition as a process. Ruthven (2022) proposed a model that synthesised transition-focused literature across disciplines, with an individual moving from "life before" to "life after" through a series of stages (understanding, negotiating, resolving) and processes (engaging, enacting, establishing) that are always subject to re-evaluation. Ruthven's (2022) stages are notably consistent with the three stages of desistance recognised by HM Inspectorate of Probation (2020): cessation of offending; adoption of a non-offending identity; and recognition of this change by others, alongside a sense of belonging.

2.3. Adverse Digital Incorporation and the Punitive Mesh

"Carceral citizens" with experience of criminal justice systems face relationships with authorities characterised by negative biases, limited access to "stabilizing institutions," and subjection to (post)carceral supervision and discipline (Miller & Stuart, 2017). Gurusami (2019) presented these citizens as caught in a digitally enabled "carceral web," where "stickiness" prevents them from escaping their online histories and "entanglements" tie them to a hostile justice system, while Corda emphasised the scope of a "punitive mesh" which extends far beyond formally sanctioned punishments due to the incentives driving state and corporate actors to gather and distribute personal data.

As noted above, identity reformulation is considered a crucial component of successful transitions. This reflects that successful post-incarceration resettlement requires nurturing a new identity that is also recognised by others (HM Inspectorate of Probation, 2020) and the development of new "life projects" (López-Armijos & Ponce de León Romero, 2025). However, the necessary privacy to adopt a new identity can be hard to find. Incarcerated people are subject to a form of "adverse digital incorporation" (Heeks, 2022) in which they are included in digital systems without their consent. Stigma is amplified by the internet because it permeates geographical boundaries, meaning that an individual incarcerated in one locality cannot expect a "clean slate" even if they subsequently relocate (Lageson & Maruna, 2018). Information

sources on an individual's past are enmeshed in a self-sustaining series of "nodes and links, of endless connection" (Corda, 2026, p. 4).

The ease of finding information about a person's prior convictions online can undermine a carefully constructed new identity, and living with an awareness of this risk is a negative drag on confidence. However, studies have also revealed the potential for formerly incarcerated people's visible participation in digital realms to create solidarity, challenge stigma and motivate others (Gurusami, 2019), suggesting that the confidence and skills required to build alternative networks may help to mitigate the effects of the punitive mesh.

3. Methods, Participants, and Timelines

3.1. Research Objectives

Research objectives for this study were to:

1. critically explore partnership students' experiences in terms of their information behaviours;
2. understand the development of individuals' information and digital literacy skills as they progress through a semester;
3. evaluate the support provided by university staff working directly with this group and provide practical recommendations.

The study was designed to gather rich, qualitative data to inform the development of themes connecting diverse individual experiences, which could be translated into recommendations for universities conducting or considering prison partnerships. The designation "partnership students" aims to avoid stigmatising language around imprisonment.

3.2. Data Collection Methods

Participants were first asked to complete weekly semi-structured "progress logs," an adaptation of the solicited diary method (Bartlett & Milligan, 2015). Across a 12-week semester (10 logs with two break weeks), participants received three to five questions on a defined topic (e.g., interactions with other students or future career plans) designed to illuminate instances of information seeking, use, evaluation and sharing. Semi-structured follow-up interviews lasting 60–150 minutes provided insight into why participants had highlighted specific issues. The combination of progress logs and interviews was an iterative process (see Section 3.4) and significantly deepened the analysis by enabling detailed exploration of whole experiences alongside providing more structured records of progression. Tonal differences between data sources were noted, with participants more formal in writing and more confidential in person.

3.3. Sample

The sample was small, comprising a total of eight male students (Table 1) and five staff (Table 2). Four students participated in 2024–2025 and four in early 2026. Due to volatility within the prison system (e.g., participants being released or recalled to closed conditions), not all participants completed every stage

of the study; however, a further phase of interviews was conducted with three previous participants post-release to see how this had impacted their studies. Significant changes occurred between cohorts, notably more widespread adoption of generative AI and a relaxation of the prohibition on smartphones.

All participants would be classed as mature students in the UK, and many were significantly older than the average undergraduate. Participants came from a range of ethnic backgrounds, in line with the broader student population at the university. Specific demographic information is not included here to protect identities within this small sample. Pseudonyms are used throughout. The two institutions are identified simply as the university and the prison.

Table 1. Student participants ($n = 8$).

Cohort	Pseudonym	Progress logs completed	Interview 1	Interview 2
1	Terry	10 weeks	May 2024	May 2025
1	Dylan	9 weeks	May 2024	May 2025
1	Malik	N/A (recruited at interview stage)	May 2024	April 2025
1	Leon	4 weeks	Withdrew	n/a
2	Alan	9 weeks	May 2026	n/a
2	Rohan	10 weeks	May 2026	n/a
2	Viktor	3 weeks	Withdrew	n/a
2	Connor	2 weeks	Withdrew	n/a

University staff participants comprised three student support staff, one lecturer, and one study skills tutor, all experienced educational professionals selected for their close engagement with partnership students over timeframes ranging from just under two years to over a decade. Although analysis of their relatively recent contributions is at a preliminary stage, some quotations are included to offer a broader range of perspectives.

Table 2. Staff participants.

Pseudonym	Interviews
Sophia	Single interviews February—March 2026
Richard	
Elena	
Kieran	
Jemma	

3.4. Data Analysis

Progress logs were coded first, in consecutive sets by cohort. Since the questions were pre-determined, coding was used to shape the student follow-up interviews rather than to suggest themes. Initially, many codes had queries attached. For example, in response to the prompt "Have you encountered any difficulties due to lack of access to particular technologies or devices either on or off campus?", Terry commented:

> There is help on the campus for everything the difficult[y] is not having enough time with the studies and preparation.

This was initially coded as "lack of time" but appended with "(To seek support? Related to intermittent access to devices?)." Combined with further mentions of limited time across Terry's log, this suggested that the issue of time would be worth exploring in the interview, where it emerged that Terry had missed some early digital workshops because he didn't have a functioning laptop, but also that intermittent access to devices made him feel pressured to use every on-campus hour productively.

The interviews were individually subjected to reflexive thematic analysis (Braun & Clarke, 2022), where further codes were applied and themes were constructed, informed by my deepening understanding of the literature and the context. Audio recordings were transcribed and imported into Quirkos, a qualitative data analysis tool which supports clustering codes into visual thematic bubbles.

3.5. Ethics

This study gained ethics approval from Robert Gordon University and the HMPPS National Research Committee (NRC), which must approve all research with incarcerated individuals in England and Wales. Written consent from participants was gained following distribution of the Participant Information Sheet, which provided details of their rights, confidentiality, and anticipated risks and benefits of voluntary participation.

Building rapport and trust was crucial. For Patenaude (2004, p. 79), gaining participants' trust "requires assurances that what they reveal is important, that it will be reported in an accurate albeit anonymous manner, and that it will not harm them or their respective positions in any manner." It was particularly crucial to reassure student participants that their decision on whether to participate in the study and any contributions they chose to make would not affect their university progression or their status within the prison. While audio-recorded with participants' consent, interviews were deliberately designed to resemble an informal conversation as opposed to an interrogation that may remind participants of negative experiences within the justice system.

Participants were assured that their privacy would be protected as far as possible with the use of pseudonyms and the removal of identifying details from published extracts, but also alerted that the small size of the cohort could pose the risk of "jigsaw identification" by those familiar with the programme and so complete anonymity could not be guaranteed. All participants agreed to these terms. Participants had an opportunity to review transcripts and note anything they would like to change or omit from published extracts. Only one participant, a staff member, requested the removal of an anecdote that they felt could identify a non-participant student and this request was honoured.

4. Data and Analysis

The following analysis addresses technology-related challenges faced by partnership students as they transition into higher education. The four indicative themes span the research project, encompassing more than the digital aspects highlighted in the present article but selected for their relevance to that topic. Some quotations are lightly edited for clarity.

Despite the challenges outlined, students enthusiastically welcomed the opportunity to experience higher education. Rohan had always aspired to attend university but missed out due to a volatile home life, followed

by incarceration, and was excited "to fulfil the ambition to go to university which I am fully embracing." Terry reflected that "these two past semesters have not only taught me that I have the ability to learn, they have also given me a chance to integrate back into society gently. If I had not have come to [this prison,] I would have never got to university….I would have not reintegrate[d] back into society so positively."

The motivation and commitment displayed by university staff should also be acknowledged. As Jemma (staff) noted, every time she visits the prison for "open days" to recruit prospective students, she feels a sense of "brokenness" in the room, prompted by incarceration, and then "I'm even more motivated to be involved, which is why I keep going. I want to come and do a teaching session. Let me come and show them that they can be in a university-level educational space and perform." As the analysis demonstrates, staff are creative and adaptive in their approaches to guiding these students through transition.

However, digital integration presents significant challenges from the moment that students arrive on campus. The following analysis will cover their initial experiences upon arrival; the challenge of completing assignments on time with intermittent access to digital devices; ongoing technological change occurring in parallel to their transition; and the effect of digital technologies on students' formation of new identities.

4.1. Arrivals and Information Overload

Terry illustrates a significant challenge of emerging into wider society following long custodial sentences:

> Before I came away, I never used a cash point, I hadn't used click and collect, bike lanes and scooter lanes are extremely dangerous for me as I continuously forget as I walk down the path.

The scale of the challenge is dependent on incarceration length, echoing Gurusami's (2019) findings and illustrated by Malik, who served a shorter sentence:

> There was only like what, a year and a half, when I wasn't using any technology and stuff at that time. Nothing had changed drastically over that time, so I was quite lucky in that sense.

While Malik had some prior experience of university before his sentence, Dylan was encountering educational technologies for the first time:

> I've always been able to use computers…but I haven't used a computer academically in so long.

Staff delivering inductions had to adopt creative approaches to enable digital enrolment:

> Our first hurdle, and this is where we lose loads of time, is that students don't know what is the personal e-mail…the prison registered for them….We discovered this year that sometimes we have to ignore what the prison has done. We started to create Outlook accounts there and then, and they created their password. (Elena, staff)

Induction staff took digital photos of the students for enrolment, but students struggled with the subsequent procedures:

> Even downloading a photo from an e-mail, saving it and uploading it to the enrolment form, for some people that was quite a challenge to do at the very first point because they're not used to handling digital images. And it's all the things that they're not allowed to do in prison. (Sophia, staff)

Kennan et al. (2011) found that those who have already adjusted to a new information landscape have a "complex internal map" which they can communicate to others. Chatman's (1999) work suggested that inhabitants of a "small world" like a prison are more likely to trust information originating from fellow inhabitants. One progress log asked whether participants had sought guidance from other partnership students. Some exchanged tips on educational technologies like email, chat, and the VLE, while one student reported that the cohort agreed to avoid disclosing their circumstances to avoid unwanted attention towards the group.

Partnership students had few unstructured opportunities to imagine and explore their "possible futures" (Hicks, 2022) in the university environment or prepare for the transition. Pre-enrolment information is limited to an "open day" at the prison (university staff visits to introduce the programme to prospective students), a printed prospectus, and interviews with admissions staff. Students must undertake an accelerated process of constructing knowledge and new identities when they arrive on campus.

Information overload during transition could mean that participants miss key details. Relevant knowledge may be gained later, through experience and observation, following cues provided by staff and other students (Kennan et al., 2011; Lloyd et al., 2013). Terry explained:

> It actually took me about the fourth week before I found out about the reading materials….And [the lecturer] said: "Read this one." Week 4! I wish I'd known that!

He missed specific learning opportunities, including digital skills training, because he felt overwhelmed and his laptop was malfunctioning.

Meanwhile, Dylan learned by observing other students that viewing presentation slides side-by-side with notes during lectures helped him to follow the content: "It's just such a simple fix…and I just overlooked it."

As the partnership between the university and the prison has developed, staff have evolved their approaches to introducing the students to new technologies:

> One of the hidden curriculum skills issues is *definitely* IT. When you haven't got access to IT at other times, you know, where maybe you haven't used IT much at all in years…the starting point for that is just *way* back, you know? And trying to teach, I realized I needed to break that down much more and have it filtered all the way through…it needs lots of training, but the training has to be drip-fed, not thrown in all at once, otherwise it becomes overwhelming. (Richard, staff)

A strong support network of engaged and motivated staff and more established partnership students helps to mitigate the challenges but does not entirely eradicate them. This reinforces the idea of transition as an ongoing process, with students persistently re-evaluating their activities as they work through understanding, negotiating and resolving their new identities (Ruthven, 2022).

4.2. "Doing Time"

Almost all participants mentioned the lack of access to devices, software, and the internet during evenings and weekends as a significant barrier to effective learning, yet students had varying opinions on whether internet access should be enabled in the prison. Malik was in favour:

> If I'm sat in jail all weekend, I should be able to go to the library in the prison and crack on with some uni work. I should be able to have access to [the VLE] from the prison.

Dylan feared that if prison authorities permitted devices in prison there would be a corresponding reduction in the time that students were licenced to be on campus. This chimes with Hofinger and Pflegerl's (2024) argument that digitalisation of prisons under institutional constraints could negatively impact incarcerated people's rights.

For Alan, lacking evening and weekend access to his laptop and the internet "means that I have to plan work well, rather than leave deadlines until the last weekend." Other participants acknowledged that they initially struggled to manage their time. At one point, Malik felt he might not be able to continue with his studies, but recognised that:

> It was just me not knowing how to manage my work…when you come in and you have a laid back approach, all the work builds up…you're gonna be overwhelmed.

Malik felt that he had gained time management skills as he progressed with his studies through re-evaluating his approach. However, this was challenged by new distractions when he was released:

> Even something small like a mobile phone, where I wasn't used to having one for years, and now all I wanna do is just look at it, go on Instagram looking at reels for an hour.

Dylan was granted an extension for one assignment, but that impacted his schedule for completing other modules:

> That knock-on effect is *massive*. Because we only get the time that we have. And it had a domino effect on the rest of my assignments after that point, which meant that I was really *rushing*…the pressure was on.

As Terry noted, while another student might be able to:

> Pick his computer up at night or on a Saturday, when he's got an assignment, we can't do that. We're back with our prison faces, hard as nails…and then at the weekends, now we're starting to get to see our families, we have to adapt to being this loving, caring husband, who actually can't remember if he's a bad prisoner, or if he's a student.

As the participants moved between the university and the prison, as well as home leave and eventual release for some, they traversed multiple information landscapes. In contrast to individuals making permanent

moves (Bronstein, 2018; Kennan et al., 2011; Lloyd et al., 2013), these students must reconcile the different expectations placed on them at different times, placing them under significant pressure to adapt, achieve, and conform.

4.3. New Technologies, New Challenges

Participants in the first cohort were strictly prohibited from using smartphones, and some had strong views on this:

> These are things that we should be allowed to have because you want us to integrate, reintegrate into society. And that's on a smartphone these days. (Terry)

This chimes with Hopkins's (2022) comments on the necessity of developing network literacy, and Jewkes and Reisdorf's (2016) finding that basic phones in open prisons could be "too little, too late."

The second cohort were the first to be permitted smartphones, but they had to purchase these personally. This created a new inequality *within* the cohort, illustrated by Alan and Victor's very different experiences of navigating the university environment:

> I have an iPhone and laptop now, which have eradicated the initial challenges. Without the smartphone I couldn't register for lectures or open links in a lecture. Now, even on the bus or train, I can check my emails and [the VLE]. (Alan)

> I do not have access to a smartphone and this also causes me issues on a daily basis, such as registering my attendance and getting information from relevant apps for my course. (Viktor)

The overall perception from both staff and students was that smartphones were necessary for effective resettlement in a digital society, particularly due to the ubiquity of QR codes as a primary route to access information. Sophia (staff) welcomed the prison's policy change, noting that it may enable students to participate in more extracurricular activities:

> I think the smartphones will kind of empower them to feel a little bit more confident in those interactions, that it's one less barrier to them being able to fit in and blend in as a student.

Even as both institutions evolve their practices and students develop coping mechanisms, the information landscape is being constantly reshaped by technological advances:

> The pace that technology and things like AI and everything is developing…smartphones, laptops, all the different devices, Chromebooks, all the learning tools and the methods that we use for learning now…and digital submission of assignments. It's not just a case of writing an assignment now, it's like, is it in the right digital format? (Sophia, staff)

The widespread adoption of AI was a significant development during the study. Jemma (staff) was uncertain about the partnership students' ability to adapt to authorised use of AI in assignments:

> We're starting to integrate AI into our coursework….I would imagine that those skills would be lacking in the students as they turn up.

Some students saw potential in the new tools, but there was notable apprehension. Viktor and Terry embraced opportunities to learn to use AI effectively for their studies, even as Terry described this experience as "akin to learning to fly a Boeing 747 with a manual in Russian which is upside down." After some initial experimentation, Malik decided to avoid AI tools where possible because he felt that they could negatively impact his learning:

> I've tried to stay away from [AI]. Because when I originally first started I was hanging around with [another partnership student] and I was…I wouldn't say I was relying on AI, but I was using it at certain times and I was like, "why aren't you using it?" He said, "I'd rather spend the time doing it properly, I learn more from it," and I thought, "you know, that's actually the best way to do it." So even if I struggle with it and it doesn't come out in the most academic way, at least I can just try and improve on it from there.

A further significant change preceding this study was the transformation of staff working patterns in the wake of the Covid-19 pandemic. With the students' academic advisors primarily based off-campus, video conferencing interactions required another new skillset:

> Being able to use headsets to log on to calls for people, to do Zoom meetings…going and seeing someone doesn't necessarily mean walking to a room and knocking on a door, it's finding a quiet computer, knowing how to log on, knowing how to connect digitally with people. (Sophia, staff)

Terry found groupwork challenging, but he did report a positive experience of using cloud-hosted software to work on a group presentation: "We're all in different locations, I was on home leave. And this is the first time that I've really seen technology work." Group members were able to edit and comment on the draft in "real time" and overcame distance barriers to deliver a successful presentation.

New technologies presented both opportunities and challenges for all partnership stakeholders. A notable finding is that students are experiencing change *within* change, as they transition to university and encounter digital technologies which are simultaneously evolving very rapidly. To Meleis et al.'s (2000, p. 19) notion that "transitions are both the result *of change* and result *in change*" could be added the idea that transitions can also occur *in the context* of change.

4.4. Stigma and (Digital) Identities

All students in this study expressed the desire to "blend in" as much as possible with the university population. Partnership students can choose whether to disclose their status to other students, but none of the participants had, due to concern about negative reactions:

> I have not revealed any information about serving a prison sentence. I feel it would be received as such a shock that it may overcast their perception of me. I just want to be seen as just another student, which is already slightly difficult given that I am also a mature student. (Dylan)

Malik was sensitive to the fact that other students might have been victims of crime and formed opinions on that basis, while also feeling that:

> It leaves you vulnerable as well, because if [a] person doesn't like you for any reason, then they know a way that they can get rid of you, essentially.

This feeling of precarity was widely shared. As they remained entangled in the "carceral web" (Gurusami, 2019), students feared having university privileges withdrawn if a rule was breached or relations with prison authorities soured:

> You are always living on the edge being from prison, you can never truly relax, as ultimately you do not really have control of your life. We are extremely privileged to have this opportunity. However, if you make the wrong move or upset someone in the prison, you could have all of this taken away. (Terry)

Digital restrictions placed on partnership students by the prison presented significant obstacles to blending in. The first cohort were prohibited from owning smartphones and instead issued with basic phones. Elena (staff) recognised that this could force students to disclose their status or seek special treatment, for example when registering attendance in lectures or accessing the Sports Centre (both activities usually require QR codes and workarounds involved explanations to staff).

Partnership students are subject to unannounced prison "spot checks" when they are expected to respond to a phone call and briefly meet with an officer to confirm their presence on campus. These calls had the potential to draw unwanted attention, exemplified by an incident when partnership students were studying together in the library:

> One of my classmates…she came and sat with me because she wanted me to help her out with some work. And a couple of the lads [partnership students] are sitting nearby, and my phone goes off, his phone goes off, then *his* phone goes off, and she's thinking "well what are you up to? You're up to no good." I'm not gonna tell her that I'm a prisoner. (Malik)

These basic phones could also be mistaken for "burner" phones, commonly used by drug dealers because they are less traceable and easily discarded, as Terry observed:

> So let's say I'm one of the students, yeah? I see a guy with a phone like that [indicates phone]. That's a burner phone. They search [my name], it comes up. Then they go and tell their parents, "that guy working there, he was in, he done all this." And the next thing, it could be blown out of proportion. All because of these phones, yeah? All because of them.

Terry's comment alludes to a form of "adverse incorporation" (Heeks, 2022), since records of the students' convictions are often available online, and partnership students are sensitive to the risk that other students could find them. As Terry noted, "all they got to do is Google you." He reported avoiding forming friendships so that other students would not attempt to connect with him online:

> So you've got to keep that distance so you're not even that kind of friendly, you know, so they wouldn't ask for your, you know, "what's your socials?"

Digital self-presentation was an element of Reisdorf and Rikard's (2018) adaptation of Helsper's (2012) model for successful rehabilitation, but without access to social media, these students have little control over their online profiles.

Participants invented reasons to explain why they didn't have a smartphone. Terry used his mature student status, telling other students that he didn't have one because "I'm an old man! I don't know how to use these smartphones." Malik varied his excuses, saying that his smartphone was broken or that he was a "conspiracy theorist," adding that fellow students didn't always believe him: "They think I'm talking rubbish!"

University staff, however, were frequently perceived to be supportive. When Malik was struggling with an assignment, he spoke to the lecturer and felt comfortable enough to explain the challenges he faced:

> He went through it all and said, "look, you can't be doing this, you need to be doing that. I want you to do well because you come to every class." So I told him my situation and he said, "if there's anything you need, just let me know," and he was quite supportive.

However, Richard (staff) recognised that not all partnership students would feel comfortable asking for help:

> I think there are massive barriers…which are about holding back part of yourself, not necessarily wanting to belong entirely, having a deficit sense of yourself, which actually might make you *not* want to engage with skills development activities because it's embarrassing.

Terry had confidence in his ability to succeed in his studies, provided that suitable support was in place:

> If I'm given the right help, the right assistance, the right guidance, I always believe that then I can achieve anything, and I *know* I can achieve anything…you need to have that belief, but you need to have the assistance as well.

Meleis et al. (2000) observed that personal, community and societal conditions can facilitate or hinder transitions, while stigma is a clear factor in preventing people from accessing resources that might help. The findings from my study support these conclusions, as well as highlighting some of the ways in which specific restrictions such as social media bans can impact those undergoing resettlement. Fears of being "outed" as incarcerated individuals cast a significant shadow over the students' experience, and these findings suggest that this is one of the most significant barriers to integration in the university environment.

5. Conclusion

Based on a study exploring the experiences of students released on licence to attend university, this article addressed digital aspects of their transition. Drawing on extant literature on digital inclusion and exclusion of incarcerated people, information behaviour during transitions, and risks for incarcerated people when participating in digital realms, this article makes a particular contribution to understanding experiences of those reintegrating into society while still housed in a carceral institution. Particularly notable findings concern experiences of "transition within transition," prompted by rapid technological change occurring in parallel to an ongoing change in an individual's circumstances and students' experiences of daily movement

between information landscapes. This adds a new dimension to models of information behaviour in transition such as Ruthven's (2022) framework.

5.1. Key Contributions

The findings show that students who are unfamiliar with digital educational technologies face a steep learning curve as they transition to a digitally-enabled environment, particularly if they have endured long incarceration. The university represents a new information landscape (Lloyd et al., 2013), yet these students are perpetually moving backwards and forwards *between* landscapes with differing expectations and adapting their practices accordingly. Since students have limited opportunities to prepare (practically and psychologically) for this transition, staff should introduce new information gradually. This is particularly evident in the realm of digital skills.

Intermittent access to devices places time constraints on students. While some developed effective coping strategies to address this, others initially struggled to manage their workload in the time available. Students' re-evaluation of their strategies over time reinforces that transition is a process, rather than a moment (Ruthven, 2022). Meanwhile, the rapid evolution of new technologies forces students to navigate further change while already undergoing a process of transition. Students must rapidly develop information literacy and communications skills to make effective use of emerging technologies such as generative AI and video conferencing. This notion of "transition within transition" is posited as a key contribution of the current research to existing literature.

The findings also revealed the affective labour involved in managing identity across institutional boundaries, especially since students lacked control over how they were represented online. Partnership students are attempting to build new, pro-social identities with the ever-present fear that disclosing their circumstances would stigmatise them and impact their relationships with other students or the progression of their university studies. This extends existing literature (e.g., Gurusami, 2019) to currently incarcerated individuals.

5.2. Limitations and Future Directions

This is a small, highly context-specific study. While the sample size and data collection methods enabled deep exploration of these students' experiences, the findings are not generalisable to other situations. Incarcerated students undertaking distance learning within closed conditions, for example, face significantly different challenges. The restrictions and opportunities experienced by these students are unique to this local context.

The findings may, however, help to inform the development of similar partnerships between universities and "open" prisons, across England and Wales and similar regimes. More quantitative research examining, for example, student achievement and retention rates or impact on re-offending could strengthen the case for investment in partnerships.

5.3. Recommendations

There is a good case for university staff engagement with prospective students within the prison, at earlier stages and more regular intervals. Jemma's proposal to run lecture-style sessions inside could allow incarcerated individuals to imagine "possible futures" (Hicks, 2022) involving university, enabling a realistic assessment of the potential benefits and challenges while mitigating the risk of information overload during induction for those who choose this path.

The recent revision of the prohibition on smartphones presents opportunities for students with financial means to navigate the university environment more smoothly, but also introduces a new economic inequality. Recognising both the benefits and challenges of this new situation, the partnership steering group could seek more sustainable and equitable arrangements to fund the provision of these devices to promote broader digital inclusion. The prison could also consider whether arrangements already in place for distance learners to access study materials off-campus could be expanded to these students, and whether training could be offered to introduce inhabitants to emerging technologies in a secure way.

Finally, students may benefit from more guidance on how to address their apparent differences in interactions with other students while maintaining their privacy, and how to respond if the new identities they are building for themselves are ever compromised by digitally available information about their past.

5.4. Final Remarks

Despite substantial challenges, the findings strongly support that university study represents a positive opportunity which builds confidence and can assist with the reconstruction of identities. A final comment from Terry is indicative of the positive benefits of this partnership arrangement:

> What university gave me was giving me that little bit longer to adapt. Had I stayed in the prison environment and come straight out….I wouldn't have had time to adapt, and university gave me that. It gave me an insight into the better side of life.

Acknowledgments

I am very grateful for the consistent and excellent support of my research supervisors at Robert Gordon University, Professor Rita Marcella and Dr Konstantina Martzoukou, and Annie Taylor of the HMPPS National Research Committee, who kindly agreed to be an external advisor on my project.

Funding

This article is an output of a self-funded PhD and there are no external funders.

Conflict of Interests

The author declares no conflict of interests.

Data Availability

To protect participants' privacy, the full data from this study is not available.

LLMs Disclosure

This article does not include any LLM-generated writing, and no AI tools were used in data analysis. AI-powered literature search tools (Keenious and Elicit) were used to locate some of the relevant literature.

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Social Inclusion
2026 • Volume 14 • Article 12680
https://doi.org/10.17645/si.12680

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Between Walls and Screens: Fatherhood, Family Bonds, and Digital Inclusion in Prison

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Submitted: 30 April 2026 **Accepted:** 23 July 2026 **Published:** 3 September 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Digital inclusion in prison remains a contested terrain, where access to technologies is tightly regulated and unevenly distributed. During the Covid-19 pandemic, Italian prisons introduced video calls to compensate for restrictions on in-person visits. Initially conceived as an emergency measure, this practice has now become a permanent option in many institutions. Drawing on qualitative research conducted in a high-security prison in Tuscany between 2023 and 2024, this article examines how video calls reshape family relationships and everyday carceral life. The study is based on ten in-depth interviews with incarcerated fathers who highlighted the significance of video calls in maintaining family bonds. Participants described how digital contact partially mitigates the physical and social distance of imprisonment by allowing them to share domestic spaces, witness daily routines, and sustain a sense of presence in their children's lives. At the same time, they pointed to persistent barriers to digital inclusion, such as institutional constraints, limited resources, lack of privacy, and difficulties in coordinating schedules with relatives. These findings suggest that video calls contribute to making the prison a more "porous institution" by creating a fragile bridge between the inside and outside. The article situates these experiences within broader debates on digital inequalities, equity, and human rights, showing how access to digital communication can simultaneously alleviate and reproduce forms of exclusion.

Keywords

digital inclusion; digital inequalities; family relationships; incarcerated fatherhood; video calls

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1. Introduction

In a digitalised and interconnected world, prisons remain closed institutions shaped by security concerns and resistant to outside influences. Access to communication technologies is limited and tightly regulated. In this context, the relationship between incarceration and family life becomes especially significant.

The number of people in Italian prisons has grown steadily since the start of the century, with a growing number of children and families affected. In 2025, the penitentiary system held around 63,800 people, 95% of whom were male (Antigone, 2025). While the exact number of incarcerated fathers and their children in Italy remains unclear, available European estimates suggest that around 75,429 children in Italy are separated from an imprisoned father, based on a rate of 1.3 children per male incarcerated person (Children of Prisoners Europe, 2026).

Research has shown that incarceration has negative effects on family relationships and on children's well-being, particularly in terms of parent–child dynamics (Arditti, 2016; Dennison et al., 2017). However, existing studies have paid more attention to mothers (Booth, 2020), while fathers remain less explored in both their experiences of incarceration and their ability to enact their parental role. More specifically, research on fathers' experiences of video visitation is still limited and mostly focused on the US and Australia (Flynn et al., 2021; Hanley et al., 2024; Taylor et al., 2023), whereas the European context, and especially Italy, remains largely underexplored.

Drawing on interviews with incarcerated fathers conducted in a high-security prison in Tuscany between 2023 and 2024, this article explores how video calls have contributed to redefining relationships between fathers and their loved ones, particularly their children. By analysing their narratives on the introduction of video visitation, as well as its benefits and limitations, the article highlights the ambivalent role of digital technologies in processes of rehabilitation and social inclusion during incarceration.

2. Theoretical Framework: Incarcerated Fatherhood, Family Relationships, and Digital Inclusion

2.1. Incarceration, Family Relationships, and Children

Incarceration is known to have disruptive consequences for both the affected individual and their loved ones (Arditti, 2016; Dennison et al., 2017). The displacement of the incarcerated individual from their habitual environments can interrupt the ties with family and friends, leading to social isolation and difficulties in maintaining fulfilling relationships (Hanley & Flynn, 2023).

Families where one of the members is incarcerated can experience adverse outcomes as well; children of incarcerated parents are particularly affected by the absence of such an important figure, such as their mother or their father (Comfort, 2008; Day et al., 2005; Dennison & Besemer, 2018). Studies have shown that the incarceration of a parent can predict negative outcomes for children both in the short term and in the long term: struggles with physical and mental health problems, below-average school achievements, behavioural difficulties (Day et al., 2005; Murray et al., 2012), and a higher possibility of being exposed to adverse situations such as poverty or substance abuse. Early exposure to the carceral environment can

create secondary prisonization in children, who are believed to be particularly negatively affected by the interaction with correctional settings (Comfort, 2008).

Research has also focused on the relationships between children and their incarcerated parents. Although maintaining a relationship with a parent in jail has not always been considered beneficial for children, most research suggests that it is fundamental for both children and parents to cultivate their bond during incarceration. Most attention has been given to mother-child relationships, while incarcerated fathers have received far less consideration. However, studies have pointed out the importance for fathers to maintain relationships with their children during incarceration, highlighting how beneficial family relationships are in reducing the risk of reoffending and contributing to positive re-entry outcomes (Dennison et al., 2017; Kjellstrand et al., 2022; Visher, 2013).

2.2. Incarcerated Fatherhood and the Challenges of Parenting

Maintaining a relationship with their children is particularly challenging for incarcerated fathers (Clarke et al., 2005; Dennison et al., 2017; Fowler et al., 2017). The typical ways incarcerated people can communicate with family members are in-person visits, phone calls, letters, and, in some cases, emails. In-person visits have been shown to be particularly beneficial for both fathers and children, as they offer the highest form of intimacy possible in a carceral context (e.g., children can hug and touch their father; Flynn et al., 2026; Hutton, 2016; Oldrup, 2019).

However, visits pose several challenges, related primarily to the inadequacy of prison visitation areas themselves, lack of privacy, and excessively harsh behaviours from prison staff (Arditti, 2003; Flynn et al., 2026; Moran et al., 2017). A substantial number of studies have found that in-person visits can result in mixed experiences for children and cause distress and negative feelings (Arditti, 2003, 2012; Pleggenkuhle et al., 2018). Visitation rooms are, in many cases, an unsuitable environment for children, because of the presence of other incarcerated people and prison staff, the absence of a child-friendly setting, and a mixture of other unsettling elements such as noise, dirt, and crowds. This is particularly true for young children, who can experience acute distress when forced to sit quietly in very crowded, noisy environments (Arditti, 2003; Hutton, 2016; Moran et al., 2017). Children's caretakers can, in some cases, consider it better for the child not to interact with the prison environment, due to inappropriate behaviours of other incarcerated people during in-person visits, mistreatment by prison staff, or excessively strict controls, such as body searches (Christian, 2005; Hutton, 2016; Tasca, 2016).

In addition, visitation can be costly and time-consuming (Arditti, 2003; Christian, 2005), especially when the incarcerated person is located far away from the family. This can constitute a serious obstacle, resulting in the limitation of the number of in-person visits.

Phone calls can avoid the traumatic experience of confronting the carceral setting for children, but it can be difficult, especially for young children still developing language skills, to remain engaged for long periods via phone (Singer & Brodzinsky, 2020; Skora Horgan & Poehlmann-Tynan, 2020). Letters and emails pose similar challenges because they require writing and reading skills that can be challenging for adults, let alone children. Mediated forms of contact that rely less on visual and interactional cues may be less accessible for younger children and often require adult mediation (Singer & Brodzinsky, 2020).

2.3. Digital Communication, Video Visitations, and Inequality

The introduction of video visitations in carceral settings expanded globally during the Covid-19 pandemic, due to the sanitary restrictions that suspended in-person visits in most prisons and jails (Antojado & Ryan, 2024; Flynn et al., 2021; Hanley & Flynn, 2023; Skora Horgan & Poehlmann-Tynan, 2020); however, they are not an absolute novelty, especially for the US, where they had already been implemented in many jurisdictions (Murdoch & King, 2019), although their employment was not without criticism (Hanley & Flynn, 2023). Similarly, video visitations were also employed in Australia before the pandemic (Hanley & Flynn, 2023), but their large-scale expansion is clearly linked to the pandemic emergency (Fulcher, 2014; Hanley et al., 2024; Murdoch & King, 2019). Research on its implementation and its perceived utility from the perspectives of both incarcerated individuals and their families shows mixed results, highlighting both advantages and limitations (Duursma et al., 2024; Hanley et al., 2024; Hanley & Flynn, 2023; Taylor et al., 2023).

Video visitation appears to be a flexible tool for maintaining relationships with individuals outside the prison: It allows incarcerated people to virtually connect with family and friends without requiring them to travel to the facility, which may be located far away (Flynn et al., 2021; Murdoch & King, 2019); it also enables interaction with individuals who would otherwise be unable to visit due to health conditions, disabilities, or limited financial resources.

Video visitations have also been perceived as safer for children because they guarantee contact with the incarcerated parent without exposing the child to the prison environment, which can be a stressful and unpleasant experience (Flynn et al., 2021; Hanley & Flynn, 2023). Video visitations allow children to interact with the incarcerated parent from the comfort of their homes, and they enable forms of non-verbal communication: Children, especially young ones, who are not proficient speakers, can communicate through pointing, eye contact, and body language (Singer & Brodzinsky, 2020; Skora Horgan & Poehlmann-Tynan, 2020), and better engage with their parent on screen.

However, video visitations are not without limits, which need to be considered. Studies have shown that, especially in the US, video visitation is increasingly used as a complete replacement for in-person visits (Murdoch & King, 2019). Although video calls are useful for connecting with family and friends and are a convenient solution, replacing in-person visits entirely seems problematic for several reasons. Firstly, video visitations are a relatively new tool and pose limitations to users who are not familiar with them or do not have the necessary technology to use them (Skora Horgan & Poehlmann-Tynan, 2020). Not having the needed devices or access to a stable internet connection can create an additional barrier to maintaining a connection with the incarcerated person (Reisdorf & Jewkes, 2016). Even if it is true that, after the global pandemic, there has been an increase in the use of information and communication technology (Hanley & Flynn, 2023), it is important to consider how the implementation of digital tools can still become a potential barrier to communicating with the incarcerated family member.

Moreover, in many contexts, video visits are not free because they are provided by for-profit companies (Murdoch & King, 2019; Skora Horgan & Poehlmann-Tynan, 2020). This can clearly create a disparity between those who can afford to use the service and those who cannot and can generate isolation and exclusion from family contacts.

Privacy is also not guaranteed: Video visitations can take place in a communal area where other incarcerated people and prison staff are present, and conversations can be overheard (Murdoch & King, 2019; Wells, 2019). Additionally, in many US contexts, video visits are recorded and can be used against the incarcerated individual in civil or criminal proceedings (Wells, 2019), leading to self-censorship.

This ambivalence provides the conceptual framework through which this article examines the role of video visitation in reshaping father–child relationships during incarceration.

3. Research Context: Italian Prison System During and After the Covid-19 Pandemic

The Italian prison system holds people serving a definitive sentence or awaiting trial. In 2025, the prison population reached more than 62,400 people, despite a maximum regulatory capacity of 51,280 places, resulting in a high rate of overcrowding, estimated at around 121.8% (Antigone, 2025). The vast majority are men. Only about 2,700, representing around 4.3% of the overall population, are women.

Incarcerated individuals are held in different facilities based on their age and assigned security level. Minors and young adults are incarcerated in juvenile penal institutions, regardless of the length of their sentences. Adults are assigned to different security regimes: A high-security regime is applied to incarcerated individuals with particular security needs, typically reserved for those serving sentences for organised crime, terrorism, and international drug dealing; medium security applies to the general prison population. Lower-intensity forms of custody may operate within specific units, often through open-custody arrangements, but they do not constitute a uniform nationwide minimum-security regime comparable to those in some other jurisdictions. Additionally, a special maximum-security regime (41-bis) applies to individuals considered particularly dangerous, imposing supplementary restrictions.

Based on different security regimes, incarcerated individuals have different possibilities of interacting with family and friends. As stated in Law No. 354 of 26 July 1975 on the Prison System and subsequently in Presidential Decree No. 230/2000, prisons allow contact through in-person visitation, phone calls, and letters. The medium-security regime allows six in-person visits per month, while the high-security regime is limited to four, which can be increased for parents with children under 12 years old. Normally, all incarcerated people are allowed one phone call per week, with a maximum duration of 10 minutes; additional calls may be granted for special circumstances, such as returning from leave, urgent or relevant family reasons, or transfer (Italian Ministry of Justice, 2018).

Due to the health crisis generated by the Covid-19 virus, the Italian penitentiary system was forced to adapt to protect the health of incarcerated people and prison staff. With the introduction of Law-Decree 11/2020, facilities were closed to external contact to reduce the risk of infection (Ravagnani et al., 2020). In-person visits gradually resumed from mid-May 2020, subject to strict health precautions, including partition screens and limits on the number of visitors (Antigone, 2021). Video visits and phone calls were intended as replacements for in-person visits, but their implementation nationwide was uneven due to a lack of appropriate spaces and adequate technology. Once these limitations were overcome, most facilities allowed video visits as a replacement for in-person visits, and services like Skype and WhatsApp were implemented to provide them. In contrast to phone calls, which are charged, video visits are provided for free. This innovation was initially believed to be temporary, linked to the Covid-19 pandemic restrictions. However,

Circular No. 3696/6146, issued in 2022 by the Department of Penitentiary Administration, established video visitation as a permanent tool to guarantee incarcerated people's constitutional right to maintain contact with loved ones (Antigone, 2025).

Within this context, video visitations emerge as an innovative tool for maintaining relationships with the outside world. Overcoming the restrictions dictated by the pandemic, video visitations open a new horizon for communication within the prison system. The latter demonstrates "an uncharacteristic organisational agility" (Hanley & Flynn, 2023, p. 417), proving its capacity to adapt in critical situations and integrate new tools into its mechanisms. Against this background, it became important to see how video visitations have been used beyond the pandemic and how they have shaped the experiences of those directly involved. For this reason, the study explores the narratives of incarcerated fathers to better understand how video visitations impacted their ability to maintain meaningful relationships with their loved ones.

4. Methodology and Methods

This article draws on data collected during field research conducted in a high-security prison in Tuscany between October 2023 and March 2024. An ethnographic design was adopted, aiming to understand not only participants' accounts of video visitation but also how digital contact was embedded in everyday prison routines, spatial arrangements, and institutional constraints. Data were collected through close field observation, informal conversations with prison staff, and in-depth interviews with incarcerated individuals.

4.1. Research Setting

Research was conducted in a high-security prison in Tuscany. The facility was situated in an isolated area, around 10 kilometres from the nearest town. The prison operates under a closed custody regime, where incarcerated people are confined to their cells for most of the day; however, a dedicated unit operates in an open custody regime and accommodates 50 incarcerated people, all of whom must be enrolled in a university program. All but one of the interviewees were assigned to this unit, where single cells are provided and the overall perceived environment is more positive.

4.2. Participants, Recruitment, and Ethics

A total of 10 incarcerated fathers participated in the research. Participation was voluntary, and information about the study was circulated informally by the researcher with logistical support from prison staff. Each participant completed three audio-recorded, hour-long, in-depth interviews.

Given the structural power imbalance inherent in custodial settings, recruitment and consent procedures were designed to minimise any perceived pressure to participate. Prison staff were involved only in circulating general information and facilitating interview logistics. The researcher provided prospective participants with information about the study and obtained their informed consent directly. Staff were not present during interviews and had no access to recordings, transcripts, or individual accounts. No financial or in-kind compensation, penitentiary benefit, or institutional advantage was offered. This was communicated to participants before consent was obtained.

The prison administration reviewed the research protocol, issued a favourable opinion, and obtained the required authorisation from the competent authority. Under the applicable Italian institutional framework, separate ethics approval from a higher education institution was not required for this type of research. The research followed the principles of the CNR Charter of Principles for Research in the Social Sciences and Humanities (Consiglio Nazionale delle Ricerche, 2017). Personal data and research materials were processed in accordance with Regulation (EU) 2016/679, the Italian Data Protection Code, and the applicable deontological rules for scientific research.

All participants were Italian and aged between 30 and 55 years, with a mean age of 44.3 years. All were originally from Southern Italy: five from Campania, three from Sicily, and two from Calabria. They were serving sentences ranging from 11 to 30 years, with a mean length of 18 years. Four were incarcerated for the first time, while six had previous prison experience.

Seven participants were married, two were in a committed relationship, and one was divorced. All had between one and three children, for a total of 20: One was under eight, seven were aged between eight and 15, eight between 16 and 24, and four were aged 25 or older. Before incarceration, nine participants had lived with the mother of their children and seven with their children.

4.3. Data Collection and Analysis

Data were collected through a combination of close field observation, informal conversations with prison staff, and in-depth interviews. Fieldwork involved regular access to the prison environment, allowing observation of interactions among incarcerated people and between incarcerated people and prison staff, as well as exploration of key spaces such as visitation rooms and video visitation areas. Observation provided context for interviews by highlighting the material and institutional conditions of family contact. Informal staff conversations, though not recorded, clarified the rules and constraints of in-person and video visits.

Interviews were conducted in a private setting, without the presence of prison staff, to ensure confidentiality. The themes explored during interviews included previous detention experiences, current experiences of incarceration, aspects of everyday prison life, relationships with children prior to incarceration, current relationships with them, relationships with children's caregivers, and difficulties in maintaining the relationship due to institutional constraints. Additional topics included the adequacy of spaces and opportunities for interactions, the use of in-person visitations, video visits and other forms of communication, as well as expectations for re-entry into the family context.

All interviews were recorded and transcribed. Male pseudonyms were assigned to protect participants' identities, and sensitive information was omitted. Interview transcripts were thematically analysed through repeated readings, initial coding, and comparison across participants' accounts. Codes were then progressively grouped into broader themes, focusing on recurring patterns and differences. Results were grouped into four areas: access and affordability; mediated presence; embodiment and physical presence; ambivalence and inequality.

5. Findings: Reconfiguring Fatherhood Through Digital Contact

Findings suggest that video visitations were perceived positively by participants overall. Video visitations were introduced in their penitentiary institution during Covid-19 and have been used ever since. This tool was utilised not only for family contacts but also to interact with various other figures, such as attorneys and legal consultants, but participants recognised that being able to keep in touch with family members was the main advantage. However, not everyone was enthusiastic about video visitations, and some concerns emerged. Drawing on data collected through interviews, the following main areas emerged: two related to the positive innovations brought about by video visitation, and two to the main areas of concern.

5.1. Overcoming Distance: Access and Affordability

One of the main themes linked to the advantages of integrating video visitations was their capability to overcome a variety of issues that affect in-person visits. Especially for incarcerated people whose family members reside far from the prison, the possibility of substituting, partially or completely, in-person visits with video visits has had numerous advantages. Particularly relevant for fathers was the possibility of sparing families unnecessary travel, which is expensive in terms of both money and time. For many family members, attending in-person visits required taking time off work, booking a train or a plane, or driving for many hours. In most cases, staying overnight was also necessary, resulting in additional costs. One father highlighted the cumulative nature of these expenses:

> Having the opportunity to do the video call, rather than making her [my wife] spend…because it's not so much the trip itself, she still has to leave work for two/three days, at least, then she has to…the return ticket doesn't cost little, then when she comes, what does she do, doesn't she bring you the package? It's a series of things…then she has to sleep two nights here, but even one, she has to leave with at least 600–700 euros. (Fabio, November 2023)

Having to face expensive travel to see an incarcerated family member is not an unusual experience (Arditti, 2003; Comfort, 2008). This can result in difficulties in finding the necessary financial resources to do so, not to mention time and energy. For many incarcerated fathers, knowing that their partners and their children must make such efforts to see them is particularly frustrating. Not being able to help financially has emerged as one of the major issues for incarcerated fathers, who are deprived of the traditional male role of breadwinner (Bartlett & Eriksson, 2019; Ugelvik, 2014) and are forced to rely on their partner or other family members to provide for their children. Being unable to perform traditional traits of masculinity makes some feel useless and a burden to their loved ones, as emerges from the following extract:

> Just the other day I was talking with my wife on a video call and I said these exact words: "Look, I feel so bad knowing that in my day the most demanding thing I have to do is go paint, or go play football, while you instead have to get up in the morning and see what you have to do," because she has to send money to the boy who is studying….On top of that, she works at a school and, in the evening, at the bar….She does two jobs to make up for the economic situation, right? (Fabio, November 2023)

Knowing that your partner is struggling economically and needs to keep up with many responsibilities leads incarcerated fathers to reduce or give up in-person visitations, in order to help reduce the economic pressure

on their families. The introduction of video visitation has allowed many incarcerated individuals to maintain contact with their families on a weekly basis without spending any money, since the service is provided for free by the prison. However, the economic and logistical advantages are not the only benefits that emerge from the fathers' perspectives.

5.2. Mediated Presence and Everyday Family Life

Video visitations also enable a form of "mediated presence" in everyday family life. Incarcerated fathers can virtually enter the domestic sphere and interact with family, especially children, in a more intimate way. If in-person visitations are usually held in a specific location in the facility, where other incarcerated people are present, together with the prison staff, and privacy is not guaranteed, video visitations take place in the same location but in private rooms, with only visual surveillance. Additionally, only a limited number of people per incarcerated person are allowed during in-person visits due to security concerns and limited space. This limit is overcome by video visits, where there is no such limit, even though the participants need to be identified. As stated by one of the fathers, video visitations allow the whole family to be together, maintaining a stronger tie with loved ones:

> The activation of video calls was like a gift from the Lord…it may seem like nothing maybe for those who are outside, but for us it was a big thing, because I can have the [in-person] visits, and additionally I can only hear my wife on the phone, once a week, for 10 minutes…in 10 minutes I greet my wife, my son, the other son, I couldn't manage to complete the round…instead with the video call they are all there, present at home…and I talk with everyone, for three quarters of an hour, for 50 minutes….It was good, both for me who does not have visits but also for everyone else….I am watching my grandchildren grow up on the video call. (Diego, December 2023)

As Diego stated, video visitations also enable one to watch children (and grandchildren) grow up. Being able to see their children at least weekly has been identified as one of the most significant advantages, because it allows fathers to be present, even virtually, in their children's lives. In high-security prisons, incarcerated people are guaranteed four in-person visitations per month, which can be increased up to six or more if children under 12 are involved (Antigone, 2025). However, as noted before, travelling to the facilities can be unsustainable in the long run, and many participants stated they received only one in-person visit per month, but some received none at all. Replacing in-person visits with video calls permits the reduction of the gap between incarcerated fathers and their families and allows them to be present at special occasions and important life events. For example, Enrico talks about how he witnessed many significant moments in his daughter's growth. Since she was born after he was arrested, every moment with her was mediated by the prison environment, but without video visitations, he would have probably missed many milestones and would have had a much weaker bond with her:

> Her first steps, her first little tooth, I saw everything…fortunately, in the misfortune of Covid, there were video calls, and they were a very effective tool, especially for those who cannot have visits frequently, because they are far from home. And the video call helped me a lot to see my daughter grow; otherwise I would not have been able to see how she walked for the first time, her first little word, her first letter, her first writing, I would not have been able to see it. (Enrico, November 2023)

Watching their children grow and being involved in their lives was reported to be a great advantage for both fathers and their children. Fathers feel more connected with their children and think they could have a more active role in their education. Children interact more freely and tend to focus more on their everyday lives, which they share with their fathers. As stated by Enrico, interacting frequently means being able to return to the same topic more often and monitor the achievement of results, as in the case of school results:

> With my children….I always insist on this…also because [my oldest son] has started middle school, and I told him that, as time goes by…it won't be like in primary school….And he has realised it, because he is telling me: "Dad, I have to do my homework." And I tell him: "You have to do your homework for two hours a day." (Enrico, November 2023)

Active participation in children's lives is therefore perceived as possible through video visits. Involvement in everyday issues, such as school performance, can give incarcerated fathers a renewed sense of self, as it allows them to reinforce their identity as caring and present fathers and to put aside, at least temporarily, the absent one produced by their detention status.

Video visitations allow fathers not only to set aside their incarcerated identity temporarily but also to transcend the prison environment itself; participants underlined how beneficial it has been to see their homes again, to recognise familiar spaces once shared with their children. Being virtually present in their own home allows for the restoration of a sense of intimacy and proximity that is not achievable during in-person visitation (Singer & Brodzinsky, 2020). Additionally, being in their own familiar environment can encourage children to express themselves more freely and share through the camera objects in their own room; they can also express themselves physically in a non-restricted way and take breaks from the conversation when needed (Singer & Brodzinsky, 2020). Video visitations, therefore, seem to create a form of mediated presence in which fathers not only keep in touch with their children but also serve as a stable figure for them. Fathers are thus able to fulfil their parental role, even if in a mediated way. Although every participant stressed the centrality of video visitation for maintaining meaningful relationships with their loved ones, several limitations emerged.

5.3. The Limits of Digital Interactions: Embodiment and Physical Presence

Even with the numerous advantages of video visits, participants agree that in-person visits cannot be replaced by online interaction. It has been pointed out that visits have a positive impact on both incarcerated fathers and children because they allow a type of connection that is not easily achievable through mediated contacts. As stated by Taylor et al. (2023, p. 430), "visits serve the important function of connecting the father with the outside world, and with their identity outside of prison," allowing a deeper connection to their pre-prison sense of self and a better understanding of their role as fathers. Participants seem to confirm that visits make them feel more present for their children and allow more direct interactions. For instance, Lorenzo discusses the importance of spending time with his daughter, who was born after he was incarcerated. He specifically refers to a designated area outside the facility but within the prison's perimeter, where visits can be conducted during spring and summer. This zone, called "the green area," differs greatly from the indoor visiting room and allows for a more relaxed, natural interaction with children, who can run and play without many restrictions. In this regard, Lorenzo says:

> And seven months before I was arrested, the last one was born….I did not have the time to raise her, to…and this thing at the beginning destabilised me a bit….Here I saw her walk, because I had more space, because being in prison, coming to the visits, I had never seen my daughter walk, I do not know how she runs, if she knows how to run….Here I had the possibility, with the green area, they give you the possibility. (Lorenzo, December 2023)

Being able to see his daughter and interact physically with her is considered particularly relevant by this participant. Physical presence, especially if experienced outside the traditional prison environment, is considered fundamental to creating a bond with children. Children themselves were reported to be happier and more willing to visit their fathers when they knew the visit would take place in the green area.

At the facility under consideration, special events are also usually organised for families, where they can spend a significant part of the day together and share lunch. If the weather permits, these events are held outside. All participants stressed how beneficial it is to spend time with family in this context, where time and space are not limited, and family members can enjoy each other's company. As one father explained, his regret at not knowing basic information about his children, because he had not had the opportunity to get to know them before his arrest, was partially offset by the experience of sharing lunch with them during one of the events organised by the prison:

> I do not know what my children like; I do not know the colours they prefer; I do not know, in terms of food, what they eat…the everyday life. As I repeat to you, when I did the "event," when I ate at the table with my children…that is, a thing, a trivial thing…but that thing that you are at the table, with a plate, that thing gave me….I felt satisfied. (Lorenzo, January 2024)

Sharing experiences in person is, therefore, a valuable element for incarcerated fathers. Even trivial experiences, such as playing outside or sharing a meal, can acquire a special meaning in the context of incarceration, because they allow fathers to regain a sense of self as parents that is inevitably missing in everyday prison life. Although video visits help maintain relationships between fathers and children, in-person visits, especially when conducted in appropriate settings and with adequate time, allow the creation of core shared memories that strengthen the father-child bond. Mediated presence cannot substitute for physical presence because it lacks key elements that contribute to the richness of in-person meetings, such as the possibility of physical contact. Thus, video calls should be understood as a supplement to, not a replacement for, in-person visits: They sustain continuity but cannot reproduce embodied intimacy.

5.4. Ambivalence and Inequality in Digital Inclusion

Another key issue concerns the inherently ambivalent nature of digital technologies in correctional settings. While the benefits of maintaining remote contact with family members have already been highlighted, the mediation of interactions through technological tools also raises important questions regarding privacy and confidentiality. Surveillance and control are key elements of prison environments, where security concerns justify the panoptic gaze of the institutions into every element of incarcerated people's lives. As pointed out by Wells (2019), "video visitation…enables correctional facilities to extend the role of 'watcher' and expand the panoptic gaze" (p. 77), extending the control behind its usual perimeter and allowing its entrance into external spaces, such as incarcerated people's homes.

It is important to note that mediated contact with family can amplify incarcerated people's already clear perceptions of being constantly controlled, thereby reducing their appreciation for video visitations. In some cases, as Wells (2019) notes with reference to US prison contexts, video visits can be recorded. This is clearly an invasion of people's privacy, which can be extremely detrimental to the quality of interactions, especially when sensitive issues are involved. This is not the case in Italy, where video visitations are not recorded, and only visual supervision is allowed; conversations cannot (or at least should not) be heard by prison staff. However, participants noted mistrust and doubts about the confidentiality of conversations. For example, Claudio explained the usual interaction with his wife, which was clearly limited by the possibility of being overheard by prison staff:

> My wife has a character that…even if things are not going well, we talk on the phone or do a video call, and she always tells me that everything is fine…"no, don't worry, everything is fine, everything is okay," so….I understand her because I met her when she was 16, now she is 47, so I understand her. But on the phone, on video call, we never manage to talk, because possibly there is someone who listens to us…and I honestly cannot let the guards know my things. (Claudio, December 2023)

As the participant explained, when they suspect that others are listening, the content and manner of conversations change. Incarcerated people expressed their anxiety about the possibility of being listened to when talking to their loved ones, especially on family matters. Sensitive topics are avoided, and the conversation tends to be more superficial, less personal, so that even if someone else is listening, nothing sensitive can be overheard. However, self-censorship can undermine the potential benefits of video visitations, weakening their ability to create and maintain connections. From this perspective, video visitations can quickly lose their value and become an empty tool that gives the illusion of connecting family members when they are just a façade hiding another mechanism of surveillance that involves not only the incarcerated individual but also their loved ones. Although video visits are not recorded in Italy, suspecting that they are being overheard can create the same effect as certainty, and generate the same results: empty conversations, self-censorship, feelings of discomfort and anxiety.

This element, together with the many limitations related to implementing new technology in an environment that is normally resistant to change (e.g., inadequate spaces, insufficient or untrained staff, weak Wi-Fi connections, obsolete tools, etc.), can lead to adverse outcomes. New tools such as video visitation can be easily described as an entirely positive solution to overcome isolation and sustain relationships between incarcerated people and their loved ones, but they can just as easily become another barrier that divides incarcerated people from the outside.

6. Discussion

The integration of video visits in the Italian penitentiary system offers a valuable opportunity for both incarcerated fathers and their children to maintain and strengthen their relationships. As noted by Duursma et al. (2024), the Covid-19 pandemic has forced the prison system to rethink its practices, leading to a significant redefinition of prison visitation policies. Findings suggest that, consistent with other studies (Duursma et al., 2024; Hanley et al., 2024; Taylor et al., 2023), video visitations have affected how relationships are constructed and maintained in carceral spaces, especially for incarcerated fathers and their children. Video visits appear to be a fundamental tool for overcoming practical obstacles, such as distance

and economic costs, that can actively prevent family members from meeting in person. Children can experience their father's presence from the comfort of their home, avoiding adverse experiences related to the prison environment, which is usually not child-friendly (Hanley et al., 2024). Additionally, they can share domestic spaces and personal objects with their fathers through video, which would be impossible during in-person visits. Being part of their children's everyday lives proved relevant for fathers, who can be more responsive to their children's needs and offer support when needed. Fathers reported being more involved in their children's lives and family dynamics, contributing to strengthening their parental role and reinforcing their identity as fathers, simultaneously weakening the degrading identity imposed by incarceration. These findings also challenge gendered assumptions that position fathers as secondary caregivers, especially in male and high-security prisons where family-oriented practices may remain marginal (Bartlett & Eriksson, 2019; Ugelvik, 2014).

Video visitations create a third, new space (Duursma et al., 2024, p. 3424) where fathers and children can meet, neither completely inside prison nor completely outside. It is a virtual space that allows incarcerated individuals to connect with external spaces and interact with family outside prison, while at the same time allowing family members to enter the prison environment without being physically exposed to it. Implementing technological tools in prison spaces, enabling more flexible, immediate communication with the outside, contributes to opening carceral spaces to the external world and cracking the walls that separate those inside from those outside (McKay et al., 2019). Technology can thus help make prison less of a total institution (Goffman, 1961) and more of a porous institution (Ellis, 2021), where being deprived of personal freedom does not mean being isolated from the world.

Despite the relevance of implementing video visitations in carceral spaces, caution is needed. As noted by Wells (2019), technology can be introduced with the explicit intent of helping reduce barriers to communicating with the outside world but can also hide the intent of implementing surveillance and extending control not only to the incarcerated individuals but to their families too. Digital advancement can be beneficial for the penitentiary system when its purpose is to reduce inequalities and ensure more equal treatment while incarcerated. In this sense, digital tools may support rehabilitation and family and community connections only when implemented through ethical, inclusive, and human rights-compliant strategies (Knight & Ross, 2024). However, when the "rhetoric of technology" (Wells, 2019, p. 77) is used to endorse surveillance and control, the potential benefits of tools such as video visits are undermined.

Moreover, the advantages are significantly reduced when the implementation of technology fails to account for additional barriers that may be created, such as unequal access to knowledge or tools necessary for its effective use. This is why digital inclusion should mean more than formal access to devices and the internet. In the case of video visitation, it also requires digital literacy among incarcerated people and relatives. When family members lack confidence in using smartphones, managing internet connections, or navigating scheduling procedures, video calls can reproduce exclusion rather than reduce it. Staff support and reliable infrastructure are thus part of effective digital inclusion.

While these findings highlight the ambivalent nature of video visitation in carceral settings, the present study also has limitations. The research was conducted at a single high-security prison, and 10 fathers were interviewed. Long sentences, the high-security setting, and the relatively privileged open-custody university unit in which nine participants lived may have shaped participants' positive perceptions of video visitation, as prolonged separation can make digital contact especially meaningful.

The perspectives of children's caretakers and the voices of children themselves were not included due to limitations in prison policy. Although many aspects of the father-child relationship emerge through the narratives of the fathers themselves, future research should consider the experiences of children and their caretakers, along with the opinions of prison staff. Given the specificity of each prison, future work should also include a larger number of penitentiaries, including high-, medium-, and minimum-security prisons. Different security regimes imply different types of interactions between fathers and children, both in terms of quantity and quality. Although the study was conducted on a small sample, results suggest that the overall perception of video visitation as a complementary tool to maintain and strengthen the relationship between father and child during incarceration is positive and encouraging. However, more research is needed, especially in the Italian prison context, to understand how this new tool can be used more effectively to sustain the personal relationships of incarcerated fathers, and to protect the right of both fathers and children to cultivate their bonds, despite incarceration.

7. Conclusion

This study contributes to existing literature on how incarceration impacts family bonds, focusing on incarcerated fathers and their children. Drawing from the perspective of incarcerated fathers, it argues that the introduction and implementation of video visitations in carceral settings have proved to be beneficial for several reasons. Video visitation allows fathers to maintain and strengthen relationships with their children through a more flexible communication tool. This flexibility helps address the diverse needs of families. Additionally, video visitation provides a "third location" (Duursma et al., 2024, p. 3424) where fathers and children can meet. This space distances their relationship from the carceral setting and lets children share a domestic environment with their fathers, creating a stronger feeling of proximity. Video visitation also enables fathers to participate in meaningful moments and milestones with their children. This can help children feel seen, reduce the distance imposed by detention, and sustain fathers' well-being, helping them feel included in family life.

However, video visitations cannot replace in-person visits, which remain essential, as also suggested by various studies (Digard, 2018; Duursma et al., 2024; Hanley et al., 2024; Murdoch & King, 2019; Skora Horgan & Poehlmann-Tynan, 2020). Instead, video visits should be an accessible way for incarcerated fathers and their families to strengthen bonds and overcome the distance imposed by incarceration. Video visitations should be free and flexible, and carceral facilities should prioritise providing a good-quality service through private, well-equipped rooms, reliable connections, clear scheduling, and staff support for family relationships and children's needs; otherwise, these tools may become another barrier that incarcerated individuals and their families must face. Ensuring equal access to video visitation is necessary to protect the rights of incarcerated people and their families, especially children, to maintain adequate contact during incarceration. From a rights-based perspective, video visitation can support children's right to maintain meaningful contact with an imprisoned parent, but only if it expands available forms of contact without replacing embodied, face-to-face encounters. This article, therefore, contributes to ongoing debates on digital inclusion in prisons by showing that video visitation, while expanding opportunities for connection, must be carefully implemented to avoid reproducing existing forms of exclusion and control.

Acknowledgments

The author wishes to express her sincere gratitude to the incarcerated individuals who generously shared their time and experiences by participating in the interviews. She is also deeply grateful to her supervisor, Gerardo Pastore, for his guidance and continued support throughout the preparation of this article, and to Peter Vintner for his careful language revision and the valuable time he devoted to the manuscript.

Conflict of Interests

The author declares no conflict of interests.

Data Availability

The data supporting the findings of this study are not publicly available owing to their sensitive and confidential nature.

LLMs Disclosure

Generative AI tools made available by the University of Pisa were used solely to assist with language editing and translation, as the author is a non-native English speaker.

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Social Inclusion
2026 • Volume 14 • Article 12683
https://doi.org/10.17645/si.12683

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Open Access Journal

University–Community Partnerships for Advancing Digital Inclusion Among Justice-Involved Women in the US

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Submitted: 29 April 2026 **Accepted:** 29 June 2026 **Published:** 13 July 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

This article examines a university–community collaboration model designed to address persistent digital skills gaps among formerly and currently incarcerated women in the United States. Justice-involved women, marginalized at the intersections of race, gender, and socioeconomic status, often lack access to reentry programs that provide relevant technological competencies. Grounded in a community-engaged scholarship framework and using a qualitative case study approach, this research examines the structural and social factors that sustain these inequities and analyzes an interdisciplinary partnership that designed and implemented an evidence-based digital skills program tailored to justice-involved women's interests and career aspirations. The partnership brought together a university research team, community organizations, and formerly incarcerated women in the United States. Central to the analysis is how the program was iteratively refined through research and practice and sustained through community partnerships. Findings show that co-design principles, relational instruction by peer mentors with lived experience of incarceration, and evidence-based programming played important roles in building and sustaining the initiative. Overall, this study underscores the importance of engaging justice-involved women as active partners in developing educational programs that advance digital inclusion and support long-term reentry outcomes.

Keywords

community partnerships; digital skills; justice-involved women; reentry program; United States

1. Introduction

Community-engaged scholarship (CES) has gained increasing prominence as a framework for aligning academic research with public needs through collaborative, reciprocal partnerships between universities and

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communities. Rather than positioning communities as passive subjects—recipients of interventions, sources of data to be extracted, or objects to be studied rather than partners to be engaged—CES emphasizes co-creation of knowledge, shared decision-making, and the production of research that is both socially relevant and actionable (Hubbard et al., 2025; Wallerstein et al., 2020). This shift is grounded in a continuing reassessment of traditional academic models, which have long been criticized for prioritizing disciplinary expertise and detached knowledge production, often at the expense of real-world impact (Boyer, 1990, 1996; Hubbard et al., 2025). Within communication and social science research, CES offers a particularly valuable lens for examining how knowledge, trust, and participation are negotiated across institutional and community contexts.

One area where CES holds significant promise is in addressing digital inequality among justice-involved populations—individuals with current or prior contact with the criminal legal system, including arrest, incarceration, probation, parole, or other forms of community supervision (Mishori & Kane, 2023). The transition from incarceration to community life is marked by numerous challenges, including securing employment, accessing services, and rebuilding social networks (Seo et al., 2022). These challenges are increasingly mediated by digital technologies, making digital literacy a foundational requirement for successful reentry. In this study, reentry is defined as the transition from incarceration to community living and the ongoing process of reintegration into society following release from jail or prison. However, formerly incarcerated individuals often face substantial digital skill gaps due to restricted access to technology during incarceration and the rapid pace of technological change (Badejo et al., 2024; Sanders, 2025; Seo et al., 2022). Research shows that the digital divide has evolved beyond issues of access to encompass disparities in skills, confidence, and meaningful engagement, all of which are critical for navigating contemporary social and economic life (Hartnett, 2019; Robinson, 2024).

These challenges are particularly pronounced for justice-involved women, whose experiences are shaped by intersecting structural inequalities. Rising incarceration rates among women, coupled with short-term jail stays and intensive community supervision, create fragmented opportunities for skill development (Council on Criminal Justice, 2025; Kajstura & Sawyer, 2024). Additionally, justice-involved women often face compounding barriers, including histories of trauma, mental health challenges, caregiving responsibilities, and housing instability, all of which limit their capacity to engage in digital learning (Kennedy et al., 2016; Skogseth et al., 2025). As prior research demonstrates, these overlapping constraints not only exacerbate digital exclusion but also hinder broader processes of social and economic reintegration (Blomberg et al., 2021; Reisdorf & Jewkes, 2016).

Despite these barriers, emerging scholarship highlights the potential of digital inclusion initiatives to support reentry outcomes. Digital skills training has been linked to improved employment prospects, increased confidence, and enhanced access to essential services (Reisdorf & DeCook, 2022; Sanders, 2025). Moreover, digital competencies enable individuals to maintain and rebuild social connections, which are critical for long-term reintegration and desistance (Järveläinen & Rantanen, 2020). However, existing research also suggests that effective digital inclusion efforts must go beyond technical training to address relational, structural, and contextual factors that shape engagement, particularly for marginalized populations.

Guided by a CES framework, the present study examines a university–community partnership designed to promote digital inclusion among justice-involved women in the US Midwest. Using a qualitative case study

approach, the study investigates how collaborations among researchers, community organizations, and participants shaped the design and implementation of digital skills training, as well as the processes that influence participant engagement and learning outcomes. By centering the perspectives of justice-involved women and integrating insights from multiple stakeholders, this study contributes to ongoing efforts to develop equitable, community-responsive approaches to digital inclusion. In doing so, it advances both theoretical and practical understandings of how CES can address complex social challenges at the intersection of technology, inequality, and reentry.

2. Literature Review

2.1. CES

CES is broadly defined as a collaborative approach to knowledge production in which researchers, students, practitioners, and community members work together to identify problems, shape research questions, interpret findings, and apply results to public life (Boyer, 1990; Wade & Demb, 2009; Wallerstein et al., 2020). Rather than treating communities as sites of data extraction, this work frames them as co-creators of knowledge and action. Across fields, scholars consistently emphasize reciprocity, relevance, and shared decision-making as defining features of engaged work (Pruitt et al., 2019; Hubbard et al., 2025). In this sense, CES is not only a method but also a normative orientation toward research: It seeks to align academic inquiry with community-defined needs, public accountability, and social change.

CES emerged in part as a response to conventional academic research models that prioritize expert authority, disciplinary silos, and outputs often disconnected from everyday life (Boyer, 1990, 1996; Hubbard et al., 2025). CES frameworks instead position engagement as a legitimate and rigorous form of scholarship, integrating teaching, research, and service in ways that address public problems (Hubbard et al., 2025; Wade & Demb, 2009). Within this broader orientation, approaches such as community-engaged research, community-based participatory research, action research, and service learning represent related traditions that challenge top-down knowledge production by emphasizing collaboration, co-learning, and public relevance (Elliott, 2017; Power & Sistare, 2019; Wallerstein et al., 2020). Although terminology varies across disciplines, the literature converges around the idea that scholarly value should be measured not only by academic publication but also by the quality of partnerships, usefulness of findings, and potential for long-term social benefit.

The evolution of CES is also marked by increasing conceptual refinement. Earlier work largely established engagement as an extension of the public mission of higher education, while more recent scholarship offers clearer frameworks for how engaged work should be designed and assessed. Pruitt et al. (2019) propose the "Four Rs" of relevance, reciprocity, research, and resilience as core dimensions of effective CES, highlighting the need for projects that address community priorities, generate evidence, sustain partnerships, and distribute benefits fairly. Similarly, Wade and Demb (2009) identify institutional, professional, and personal factors that shape faculty participation in engaged work, suggesting that CES depends not only on individual commitment but also on supportive organizational structures. These frameworks show that CES has matured from a broad ideal into a more systematic scholarly approach with identifiable principles, practices, and evaluative criteria.

Trust emerges as one of the most important mechanisms through which CES operates. Drawing on three university–community case studies, Hubbard et al. (2025) show that durable partnerships depend on reliability, transparent communication, mutual respect, and shared purpose. Trust is not treated as a byproduct but as infrastructure for collaboration, especially when projects involve long timelines, uneven resources, or histories of institutional exclusion. This concern also appears in Showstack et al.'s work (2021), where coalition-building with Spanish-speaking Kansans enabled community members to define healthcare barriers and push for language-access reforms. When co-producing technology to support desistance, Morris and Johns (2024) highlighted trust and respect as critical to working effectively with justice-involved populations. In particular, respecting and harnessing the voices and perspectives of "experts-by-experience"—those with lived experiences with justice settings—is essential in developing technology programs to support those transitioning from incarceration (Johns et al., 2022; Morris & Haider, 2022). Taken together, these studies indicate that CES is sustained not by goodwill alone, but by repeated communicative practices that center trust, respect, and the perspectives of those with lived experiences.

The literature further shows that CES is closely tied to questions of equity, representation, and social justice. Many authors argue that engaged work is especially valuable when traditional institutions have ignored, marginalized, or misrepresented particular communities. Showstack et al. (2021) demonstrate how a community-engaged approach can elevate the testimonies of Spanish-speaking patients and translate those voices into concrete policy attention. Bosman et al. (2023) extend this equity-centered perspective into pedagogy, showing how community-engaged scholarship and online international learning can support cultural preservation, decolonial learning, and reciprocal exchange. Across these cases, CES is defined not simply by collaboration, but by whose knowledge counts and whether engagement redistributes communicative power.

Recent scholarship suggests that CES is continuing to adapt to new technological and methodological contexts. For example, Bosman et al. (2023) demonstrate how online international collaboration can extend community-engaged learning across geographic boundaries while maintaining commitments to reciprocity and local knowledge. Building on this shift, El-Bassel et al. (2025) propose the PRISM-capabilities model to guide the ethical integration of artificial intelligence (AI) in community-engaged implementation research, emphasizing that digital tools should augment, rather than replace, human judgment and community voice. This topic is particularly timely, as the growing adoption of AI risks reinforcing or exacerbating structural inequalities, particularly the marginalization of people of color, through biased algorithms and unrepresentative training data (Benjamin, 2019; Buolamwini & Gebru, 2018). These contributions underscore that CES is not static but evolving alongside changing media systems, digital infrastructures, and complex public problems.

Overall, the literature positions CES as an increasingly sophisticated, equity-oriented, and technologically responsive approach to research. It is characterized by reciprocal partnerships, co-produced knowledge, and a sustained commitment to public relevance. Over time, CES has developed from a broad civic ideal into a set of theoretically grounded frameworks and practices attentive to power, trust, sustainability, and impact (Pruitt et al., 2019; Wallerstein et al., 2020). As such, CES provides a strong foundation for research that is not only about communities but also accountable to them. The present study adopts a CES framework to guide its collaboration with justice-involved women, particularly in supporting their digital skills development for successful reentry.

2.2. Digital Skills Among Justice-Involved Populations

The reentry process of transitioning from incarceration back into the community is marked by significant structural and social challenges, including securing housing, obtaining employment, accessing social services, and rebuilding social networks (Baines et al., 2026; Seo et al., 2022). Increasingly, these challenges are compounded by digital exclusion. Since most correctional facilities restrict access to the internet and contemporary technologies, many incarcerated individuals have limited opportunities to develop digital competencies, returning to a society where everyday life is deeply mediated by digital systems (Badejo et al., 2024; Sanders, 2025). As digital literacy has become a foundational life skill shaping access to economic, social, and civic participation, gaps in digital skills represent a critical but often underexamined barrier to successful reentry (Robinson, 2024; Seo, 2026).

The "digital divide" has evolved from a focus on unequal access to technology to a more nuanced understanding of disparities in digital skills, usage, and meaningful engagement (Hartnett, 2019; Robinson, 2024). This progression—from access divide to usage and skills divides—highlights that mere availability of technology does not ensure effective participation (Blomberg et al., 2021; Sanders, 2025). For justice-involved populations, this divide is particularly acute. Individuals often enter prison with limited digital experience and are released into rapidly changing technological environments characterized by smartphones, online platforms, and digitized services (Hwang et al., 2024). Even relatively short periods of incarceration can result in substantial digital skill loss due to the pace of technological change (Seo, 2026).

As a result, many formerly incarcerated persons (FIPs) have limited experience with contemporary digital technologies and must develop foundational skills after release rather than building on prior familiarity (Blomberg et al., 2021). This gap has tangible consequences: Without basic digital competencies, individuals face difficulties performing routine tasks such as job searching, accessing healthcare, or maintaining social connections (Hwang et al., 2024). In labor markets where approximately 92% of jobs require moderate to high digital skills (Sanders, 2025), digital exclusion significantly constrains economic opportunities. International research—from Australia, Finland, the United Kingdom, and Indonesia—consistently identifies justice-involved populations as among the most digitally marginalized groups (Hopkins, 2022; Hwang et al., 2024; Robinson, 2024).

Employment is a central determinant of successful reentry and reduced recidivism, and digital literacy is now integral to labor market participation (Badejo et al., 2024). Core employment activities, including job searches, resume preparation, applications, and workplace communication, are predominantly conducted online (Seo et al., 2026). FIPs frequently encounter barriers navigating these processes, including difficulty completing online forms, interpreting digital interfaces, and managing disclosure of criminal records in digital contexts (Sanders, 2025). The increasing digitization of public and private services further underscores the importance of digital skills for reentry.

The digital divide among justice-involved populations is shaped by intersecting factors, including age, sentence length, socioeconomic background, and institutional policies (Järveläinen & Rantanen, 2020; Sanders, 2025). For example, older individuals face particularly acute barriers due to lower baseline digital familiarity (Hwang et al., 2024). National contexts further influence how digital inequalities are addressed. In the United States, digital exclusion intersects with broader structural inequalities, including racial disparities and concerns about

surveillance, which shape how FIPs engage with technology (Sanders, 2025). In contrast, Nordic countries such as Finland adopt a "principle of normality," integrating controlled digital access within prisons to better prepare individuals for release (Järveläinen & Rantanen, 2020). While promising, these approaches may still reproduce gendered limitations on digital autonomy.

Across contexts, previous studies identify digital inequality as a significant and persistent barrier to successful reentry. This inequality extends beyond access to encompass disparities in skills, confidence, and the ability to derive meaningful benefits from technology (Järveläinen & Rantanen, 2020; Sanders, 2025). For justice-involved populations, these gaps compound existing structural disadvantages, limiting opportunities for employment, social connection, and access to essential services. As such, digital skills training is not ancillary but central to contemporary reentry support, requiring integrated, context-sensitive approaches that address both technical competencies and broader forms of digital inclusion.

2.3. Gendered Dimensions of the Digital Divide Among Justice-Involved Women

Justice-involved women in the United States encounter a distinct and widening digital divide shaped by structural, institutional, and social inequalities (Seo et al., 2022). Although limited access to technology affects many incarcerated individuals, women are disproportionately impacted due to rapidly rising incarceration and arrest rates, which have nearly doubled in recent years (Council on Criminal Justice, 2025; Sawyer, 2018). Their experiences are further shaped by the prevalence of short-term stays in local jails, where frequent turnover and pretrial detention interrupt employment, caregiving, and housing stability more abruptly than longer prison sentences (Kajstura & Sawyer, 2024). Additionally, a large proportion of justice-involved women are placed under community supervision following release, with probation serving as a dominant form of correctional control (Budd et al., 2025). These conditions impose strict schedules, financial burdens, and heightened surveillance, all of which constrain opportunities to access and develop digital competencies (Belisle et al., 2023; Crawford et al., 2024).

Beyond institutional barriers, justice-involved women face intersecting personal and social challenges that further hinder digital skill acquisition. Histories of trauma and victimization are widespread among this population, with high proportions reporting exposure to violence, abuse, and life-threatening experiences (Kennedy et al., 2016; Seo, 2026; Tripodi et al., 2022). These experiences are closely associated with elevated rates of mental health disorders, including anxiety, depression, and post-traumatic stress disorder, which occur at significantly higher rates among incarcerated women than men (Council on Criminal Justice, 2025; Seo et al., 2022). Substance use disorders are also highly prevalent and frequently co-occur with mental health conditions, compounding cognitive, emotional, and financial barriers to engaging with digital learning (Skogseth et al., 2025). Together, these overlapping challenges reduce both the capacity and readiness of justice-involved women to adopt and sustain new technological skills.

Gendered employment disparity, caregiving responsibilities, and housing instability further intensify the digital divide experienced by justice-involved women. Women with criminal justice histories encounter greater employment barriers than men with similar backgrounds, creating a cycle of disadvantage in which limited access to the Internet and digital technologies constrains opportunities to improve their economic circumstances and social mobility (Seo et al., 2022). In addition, a majority of incarcerated women are mothers, and many served as primary caregivers prior to incarceration, often within single-parent

households (Skogseth et al., 2025). Disruptions to family structures during incarceration create ongoing responsibilities upon reentry, limiting time and resources available for education and skill-building. At the same time, formerly incarcerated women face a heightened risk of homelessness, with rates far exceeding those of the general population (Couloute, 2018). The absence of stable housing restricts access to essential digital infrastructure, including reliable internet connections, safe device storage, and consistent contact information (Sawyer et al., 2025). These conditions collectively undermine the ability to participate in digital environments that are increasingly necessary for everyday functioning.

The broader concept of the digital divide helps contextualize these disparities. While information and communication technologies have become deeply embedded in economic, social, and civic life, access and effective use remain unevenly distributed (Carlson & Isaacs, 2018). Structural inequalities related to income, education, race, and gender continue to shape who benefits from digital advancements (Goedhart et al., 2019). For justice-involved women, these inequalities are magnified by incarceration-related exclusion from technology and limited opportunities to build digital skills (Reisdorf & Jewkes, 2016). In addition, racial and socioeconomic inequities permeate all stages of the US criminal justice system, including arrest, trial, sentencing, and reentry (Budd et al., 2025; Seo et al., 2022). Individuals who are incarcerated are disproportionately poor and Black; in 2023, Black women experienced an imprisonment rate that was 1.7 times higher than that of White women (Budd et al., 2025).

Despite these barriers, digital literacy remains a critical pathway for successful reentry and social reintegration. Limited exposure to technology during incarceration contributes to difficulties in securing employment, accessing education, and navigating essential online services upon release (Craigie & Grawert, 2021). This digital disconnect can deepen social isolation and hinder economic stability (Baines et al., 2026). However, research indicates that targeted digital skills training can significantly improve reentry outcomes by increasing confidence, employability, and access to resources (Reisdorf & DeCook, 2022). For justice-involved women, addressing the digital divide is not only a matter of technological access but also a necessary component of broader efforts to support recovery, family reunification, and long-term stability.

2.4. Research Questions

As discussed above, digital skills training can mitigate reentry barriers. However, digital reintegration is uneven and shaped by institutional and social constraints. In particular, justice-involved women face multidimensional barriers to digital access and skill development. Examining this topic through the lens of CES provides an important opportunity to better understand how these barriers may be addressed through participatory approaches that center and respect justice-involved women's lived experiences. The following research questions guide the current study:

> RQ1: How do collaborations between a university research team, community organizations, and justice-involved women shape the design and implementation of digital skills training programs?
>
> RQ2: What processes and mechanisms influence participant engagement and learning outcomes within digital skills training for currently and formerly incarcerated women?

3. Method

3.1. Overview of Case Study Research

This study uses a qualitative case study design to examine a university–community partnership that sought to promote digital inclusion among justice-involved populations in the US Midwest. Case studies are commonly employed in social science research to examine complex, contemporary issues in their real-life settings, especially when context and phenomenon are closely intertwined (Baxter & Jack, 2008; Bunkar et al., 2024; Yin, 2018). Rather than isolating variables, this approach prioritizes depth and contextual understanding, making it well suited for studying digital inclusion initiatives shaped by institutional, technological, and community factors.

The use of case study research offers several advantages for social science inquiry. It enables in-depth analysis of complex and context-dependent phenomena, generating rich, detailed insights that are often inaccessible through large-scale quantitative methods (Bunkar et al., 2024; Flyvbjerg, 2006). Specifically, case study research typically draws on multiple forms of evidence, such as interviews, observations, documents, and digital materials, which are triangulated to strengthen credibility (Baxter & Jack, 2008; Bunkar et al., 2024; Yin, 2018). This allows for a comprehensive view of social processes, incorporating diverse perspectives and tracking developments over time. Though case studies have limited generalizability and may be subject to researcher bias, scholars emphasize their strength in analytical generalization, providing transferable insights into broader processes rather than aiming for statistical representation (Flyvbjerg, 2006; Yin, 2018).

The flexibility of the case study method allows for the integration of diverse data sources and iterative data collection (Yin, 2018), making it particularly useful for examining dynamic and evolving practices such as digital inclusion initiatives. Case study approaches also align with community-engaged research, which prioritizes collaboration, local knowledge, and multiple stakeholder perspectives—an alignment that is critical in digital inclusion work for centering marginalized experiences and understanding how access, skills, and participation are negotiated in practice.

3.2. Data Collection and Analysis

In this study, the case consists of a university–community partnership situated within a defined institutional and community context. The research employs an explanatory design to identify the underlying processes and mechanisms that shape observed outcomes. Specifically, this study adopts a case study research approach to examine how a university-based research team collaborated with community organizations and justice-involved women to design and deliver digital skills training for currently and formerly incarcerated women in the US Midwest. It analyzes how collaborations among a university research team, community organizations, and justice-involved women shaped the design and implementation of digital skills training programs, as well as the processes and mechanisms that influence participant engagement and learning outcomes for currently and formerly incarcerated women.

Data were collected through (a) semi-structured interviews with project team members, community partners, and program participants; (b) analysis of project documents and digital artifacts; and (c) observation of

project-related activities. Triangulation across these sources provides a comprehensive account, contributing to communication scholarship by detailing how community-engaged digital inclusion initiatives are developed and implemented (Bunkar et al., 2024; Yin, 2018). Specifically, interview data were compared across stakeholder groups to identify convergent and divergent perspectives, while documentary materials and digital artifacts were used to verify and contextualize participants' accounts of program development and implementation. Observational data further provided insight into how program activities unfolded in practice, enabling the researchers to compare reported experiences with observed behaviors and interactions.

All 75 interviews for this study were conducted between Fall 2025 and Spring 2026. This included interviews with 10 project team members: six digital navigators (former program participants who now serve as peer mentors), three university students, and one staff member. In addition, the study draws on 50 interviews with program participants and 15 interviews with representatives from community partner organizations that have collaborated with the university research team. Program participants and representatives from community organizations were recruited via email invitations that described an overview of the study, including its purpose and process. Table 1 summarizes the demographic characteristics of the interviewees.

All interviews were audio-recorded, transcribed, and systematically coded using a multi-stage thematic analysis approach informed by grounded theory principles (Strauss & Corbin, 1994). The analysis began with open coding to identify recurring concepts and patterns across stakeholder groups, followed by axial coding to group related codes into broader categories reflecting key processes, mechanisms, and experiences. Finally, selective coding was used to refine and integrate themes in relation to the study's research questions. Particular attention was paid to similarities and differences across participant groups, allowing for a comparative understanding of how collaboration, engagement, and learning outcomes were experienced and interpreted.

Table 1. Summary of the demographic characteristics of interviewees.

Variable	Value	Count	Percent
Age	18–25	5	6.7%
	25–34	19	25.3%
	35–44	16	21.3%
	45–54	15	20.0%
	55–64	11	14.7%
	65 or older	9	12.0%
	Total	75	100%
Race/ethnicity	White/Caucasian	48	64.0%
	Black	12	16.0%
	Hispanic/Latino	7	9.3%
	American Indian or Alaska Native	3	4.0%
	Asian	2	2.7%
	Native Hawaiian or other Pacific Islander	1	1.3%
	Other	2	2.7%
	Total	75	100%

Table 1. (Cont.) Summary of the demographic characteristics of interviewees.

Variable	Value	Count	Percent
Education	Nursery school to 8th grade	1	1.3%
	Some high school	9	12.0%
	High school completed	19	25.3%
	Some college	13	17.3%
	Vocational training	9	12.0%
	Associate degree	5	6.7%
	Bachelor's degree	12	16.0%
	Master's degree	4	5.3%
	Doctoral degree	3	4.0%
	Total	75	100%

Document analysis (Yin, 2018) focused on project-related materials, including curriculum content, training materials, meeting notes, program reports, and digital learning artifacts. These documents were identified through project records maintained by the research team and were created throughout the program's implementation to support curriculum development, participant learning, partnership coordination, and ongoing evaluation activities. These materials were analyzed to understand the evolution of the program, the structure of partnerships, and the alignment between program design and participant needs. Documents were coded using the same thematic framework developed from interview analysis, enabling integration across data sources. This process helped trace how co-design decisions were made, how feedback was incorporated over time, and how evidence-informed practices shaped program development.

Observational data were collected between Fall 2025 and Spring 2026 from in-person instructional sessions at four correctional facilities serving currently incarcerated participants, as well as from online learning activities involving formerly incarcerated individuals. Field notes were recorded during and immediately after observations, capturing instructional practices, participant interactions, and the overall learning environment. These notes were coded thematically, with attention to relational dynamics, instructional strategies, and patterns of engagement. Observations provided critical contextual insight into how program components operated in practice, complementing self-reported data from interviews.

4. Results

4.1. Digital Inclusion Program Context and Rationale

A project team at a US public research university initiated partnerships with community organizations in 2021 to address a widening gap in digital access and skills among women transitioning from incarceration across two bordering states in the US Midwest. At that time, many correctional education programs had been paused or discontinued in the wake of Covid-19, leaving women reentering society without the technological competencies necessary for employment, communication, and daily life. Recognizing that the period immediately before and after release is especially critical for successful reintegration, the project focuses on delivering timely, relevant technology education during this transition. Its overarching goal is to equip currently and formerly incarcerated women with practical digital skills while reducing barriers to employment

and lowering the likelihood of recidivism. As of spring 2026, the project offers in-person technology sessions for women currently incarcerated in four correctional facilities, as well as hybrid sessions for women who have been released. Approximately 100 justice-involved women participate in the program each month.

4.2. Co-Designing Digital Skills Training: The Role of Academic-Community Partnerships and Justice-Involved Women (RQ1)

Drawing on document analysis, program observations, and interviews, three interrelated components emerged as central to the success of the university–community partnership: (a) trust-centered partnerships; (b) participatory co-design; and (c) a relational and respectful instructional model. Each theme is discussed in detail below, with supporting evidence from interviews and documents to demonstrate its significance within the study context.

4.2.1. Trust-Centered University--Community Partnerships

A defining feature of the project is its emphasis on trust-centered partnerships as the foundation for program design and implementation. The university research team collaborates closely with formerly incarcerated women, public libraries, workforce centers, nonprofit organizations, and departments of corrections to ensure the program reflects community-identified needs. These partnerships extend beyond symbolic engagement, involving shared responsibility, joint planning, and collective decision-making.

By integrating academic expertise with the lived experience of program participants and practical knowledge of community partners, the project produces programming that is both evidence-based and contextually grounded. This collaborative approach also strengthens local capacity, positioning community organizations to sustain and expand technology education initiatives over time. Project team members noted that their meetings with community organizations include informal discussions during lunchtime to strengthen personal connections, enhance networking opportunities, and discuss ideas in a more relaxed and informal environment. Emphasizing the importance of relationship-building, one project team member noted: "We have learned over time that building trust through regular meetings and informal conversations is the key to our program's success."

Specifically, the project is organized around three interconnected components: a technology education program, a Train-the-Trainer initiative, and a comprehensive research agenda. The education program develops digital literacy and computational thinking skills relevant to employment and everyday life. The Train-the-Trainer initiative prepares peer mentors—women with lived experience of incarceration who have completed advanced training—to deliver instruction and support participants. The research component evaluates program effectiveness, partnership dynamics, and long-term outcomes such as employment, self-efficacy, and recidivism. Together, these elements form a feedback loop in which research informs practice and practice refines research.

4.2.2. Participatory Co-Design and Responsive Program Delivery

A second key component is the project's participatory co-design approach, which actively engages participants in shaping both curriculum and program structure. This goal is to develop a shared vision for the

technology education program and enhance mutual understanding and respect among all parties involved. Participants' interests and digital learning needs are continuously assessed through interviews and surveys and integrated into the curriculum through co-design sessions, along with iterative formative and evaluative research processes. During the co-design sessions, justice-involved women contributed to the curriculum development by identifying priority topics, providing feedback on proposed activities and materials, and recommending strategies to enhance the program's relevance, feasibility, and acceptability. The co-design workshops also enable public library and workforce center partners and other community organizations to identify potential challenges and opportunities they see in being part of the program.

Through early-stage workshops, formerly incarcerated women collaborate with researchers and community partners to identify priority topics, learning preferences, and potential barriers. This process ensures alignment with participants' goals—particularly their interest in employment-related skills—while fostering ownership and sustained engagement. Reflecting on the participatory nature of the program, one participant stated: "The project team is intentional about including our voices. They always emphasize that we build the program together, and I appreciate that they value our experiences, ideas, and suggestions."

Program implementation spans both correctional facilities and community settings, creating a continuum of support across the reentry process. Engagement begins up to six months prior to release, with educational sessions delivered within correctional facilities using project-provided technology. Following release, participants transition to a hybrid learning model that combines online modules with in-person sessions at public libraries.

This flexible structure accommodates the complexities of reentry, including housing instability and parole requirements, while ensuring continued access to devices, internet connectivity, and instructional support. Public libraries serve as critical community hubs, offering accessible, trusted, and resource-rich environments for ongoing learning.

4.2.3. Relational Instruction and Community Capacity Building

Instruction is delivered through collaborative teams composed of university researchers and peer mentors. The inclusion of peer mentors is central to fostering trust, relatability, and participant motivation. Underscoring the value of peer mentorship, one participant explained: "Seeing a successful woman who has had experiences similar to mine is inspiring and reminds me that I, too, can achieve similar success."

These instructional teams are supported through the Train-the-Trainer program, which integrates technical content with pedagogical preparation and emphasizes inclusive, learner-centered practices. By cultivating both instructional and technical expertise within the community, the project establishes a sustainable model in which knowledge, leadership, and capacity are continuously developed and shared.

Project team members emphasized that demonstrating respect for both community organizations and program participants is fundamental to building and sustaining trust. All core team members are required to complete training on engaging with community partners, which includes components on active listening, empathy, compassion, and patience.

4.2.4. Evidence-Based Approach and Pathways to Sustainability

The project places strong emphasis on ongoing research, evaluation, and sustainability. Data are collected across all stages of implementation to assess learning outcomes, instructional effectiveness, and the impact of partnership structures. For example, the project team conducts interviews and surveys with participants before, during, and after their participation in the program to gather additional feedback on the program and continue to improve the program. As part of our bi-annual meetings with community organizations, they conduct focus groups and surveys to collect their input in a systematic manner. These findings are used to iteratively refine the program while also contributing to broader knowledge about effective informal technology education for underserved populations.

Sustainability is achieved through intentional capacity building: Trained practitioners and peer mentors continue program delivery, community organizations expand their offerings, and resources are disseminated widely. Emphasizing the importance of community awareness, one project team member stated, "We believe that when the broader community is better informed about the challenges and opportunities facing justice-involved populations, digital inclusion efforts can have a more lasting and meaningful impact." In this way, the project advances a scalable, community-driven model for technology education that extends beyond its initial implementation and supports long-term impact.

4.3. Processes and Mechanisms Influencing Participant Learning Outcomes (RQ2)

Analysis of interviews with program participants and digital navigators identified four interrelated themes that explain the processes and mechanisms influencing engagement and learning outcomes in digital skills training for currently and formerly incarcerated women: (a) supportive, humanizing learning environments; (b) access to technology as a condition of participation; (c) development of digital confidence and independence; and (d) digital literacy as a pathway to opportunity and reintegration. Collectively, these themes illustrate how engagement is shaped by the interaction of relational, structural, and instructional factors, which in turn produce meaningful learning and reentry outcomes.

4.3.1. Supportive, Humanizing Learning Environments as a Driver of Engagement

A central mechanism influencing engagement was the presence of supportive, nonjudgmental relationships with instructors and digital navigators. Participants consistently described project team members as approachable and genuinely caring, which fostered trust and sustained participation. For example, a program participant noted: "They're really supportive and helpful—just genuinely caring. It's actually something I look forward to."

This relational approach was especially impactful in light of participants' prior experiences of stigma and marginalization. Being treated with dignity challenged internalized labels associated with incarceration and strengthened motivation to persist. As another program participant explained: "Once you've been incarcerated, it feels like you're stuck with that label and there's no way out. But this program changes that—it gives you hope and shows you that people actually care."

Participants emphasized that the program's flexible, adult-centered approach further supported engagement by reducing pressure and judgment: "When you've got a lot going on as an adult, it's really nice to do something like this without feeling judged or talked down to." Support also extended to peer relationships, with participants describing collaborative learning environments: "People start helping each other out, and it really builds strong relationships and a sense of community in the class."

These findings suggest that trust-based, humanizing pedagogy is a key mechanism sustaining engagement, shifting the learning environment from one centered on evaluation to one grounded in belonging.

4.3.2. Access to Technology and Navigation Support as Structural Mechanisms

Material access to devices and internet connectivity emerged as a foundational condition for participation. Limited or unreliable access, particularly reliance on smartphones, created barriers to engagement, while access to laptops and stable internet enabled consistent participation. One participant noted: "Having access to technology isn't just a nice extra—it's essential for getting back on your feet." Participants also emphasized the broader value of device access beyond coursework: "I've been able to help others apply for things online, like Social Security and rental assistance, so it's been really useful."

The project team initially provided refurbished computers through grant funding. After those funds were exhausted, they connected participants with organizations offering free computers to eligible individuals and shared information about computer loan programs available through public libraries and nonprofit organizations.

In addition to access, participants' ability to navigate digital platforms shaped their engagement. Early confusion with the learning management system used in the program created barriers to participation. One participant said: "At one point I thought I was messaging the instructor, but it turned out I was just leaving notes for myself." Participants noted that instructor guidance and troubleshooting support were essential for overcoming these barriers.

Moreover, participants reinforced that access alone is insufficient without support. For example, one participant said: "It's not just about having a device; you also need to know how to use it. Those digital skills are what let you apply for jobs, find housing, access services, and stay connected." She added: "Without both the tools and the know-how, it's really hard to move forward."

These results highlight that engagement depends on both material access and guided navigation, positioning infrastructure and support as key enabling mechanisms.

4.3.3. Development of Digital Confidence and Independence

A core learning process shaping outcomes was the development of digital confidence alongside technical skills. Many participants entered the program with anxiety and low self-efficacy. One participant said: "My biggest issue is my confidence with computers. I feel embarrassed asking for help." Through incremental skill-building and supportive instruction, participants reported increased confidence and autonomy. One participant shared: "I became more comfortable using computers…and troubleshooting basic issues on

my own." Another expressed a similar shift, noting: "I do not avoid tasks anymore just because they are online...I feel more capable of working through them on my own."

Participants described digital literacy as essential for navigating everyday life. One participant said: "I would rate how important tech skills are as a 10 out of 10. Everything I need is online now." Another participant noted: "Even going to the doctor, you end up doing everything on an iPad these days."

This shift reflects not only skill acquisition but a transformation in self-perception, where participants moved from avoidance to active engagement. These findings suggest that confidence-building is a key mechanism linking participation to sustained learning outcomes.

4.3.4. Digital Literacy as a Pathway to Opportunity, Relationships, and Reintegration

Participants consistently described digital skills as enabling access to employment, education, and broader reentry opportunities. Digital literacy was widely viewed as a baseline requirement for the modern workforce. A participant said: "Every job I've had expects you to know your way around technology. It's just a basic requirement now." She added: "Whether it's applying online, using email, or handling systems at work, you really need those digital skills to even get your foot in the door, let alone move up."

Participants described increased job readiness and new career aspirations, explaining that the skills they gained helped them feel more prepared to handle workplace tasks that rely on technology. Some also began to envision different types of employment, including remote work, with one participant noting an interest in pursuing opportunities "working from home…doing data or coding."

Beyond employment, digital literacy also supported social reintegration by strengthening family and community relationships. Participants described using their skills to stay connected and support others, including keeping up with their children's needs and experiences such as "trying to catch up with the new generation…especially with my kids." Others highlighted how these changes reshaped important relationships, sharing that being able to support a child "has really strengthened our bond…and made her proud."

These outcomes suggest that digital skills extend well beyond technical competence. They enable participants to access and sustain employment, rebuild and strengthen personal relationships, and reimagine their roles within their families and communities. In this way, digital literacy operates not only as a workforce skill but also as a catalyst for confidence, connection, and a renewed sense of identity and possibility during reentry.

Across themes, these findings demonstrate that participant engagement and learning outcomes are shaped by the interplay of relational, structural, and instructional mechanisms. Supportive, humanizing relationships foster trust and belonging, while access to devices and guided navigation enable consistent participation and skill development. These conditions facilitate the growth of digital confidence and independence, allowing participants to move from avoidance to active engagement with technology. Ultimately, digital literacy emerges not only as a technical competency but as a critical pathway to employment, strengthened relationships, and a renewed sense of agency during reentry.

5. Discussion

This study contributes to the growing body of research on CES by demonstrating how CES principles can be operationalized in the design and implementation of digital inclusion initiatives for justice-involved women. Consistent with prior literature, the findings highlight the centrality of trust, reciprocity, and shared decision-making in sustaining effective partnerships (Hubbard et al., 2025; Pruitt et al., 2019). The emphasis on trust-centered collaboration observed in this case aligns with earlier studies showing that durable university–community partnerships depend on ongoing communication, mutual respect, and the recognition of community expertise (Showstack et al., 2021; Wallerstein et al., 2020). Importantly, this study extends existing research by illustrating how trust functions not only as a relational outcome but also as a structural condition shaping program design, participation, and long-term sustainability.

The findings also reinforce and deepen existing understandings of participatory co-design within CES. Prior research emphasizes the importance of involving community members in shaping research agendas and interventions (Elliott, 2017; Power & Sistare, 2019). This study provides empirical evidence of how such involvement translates into more relevant and responsive programming, particularly in the context of digital skills training. By incorporating participants' lived experiences and evolving needs into curriculum development, the program achieved alignment with employment goals and reentry challenges. This supports the argument that CES enhances not only the ethical dimensions of research but also its practical effectiveness by producing interventions that are contextually grounded and user-informed.

In relation to digital inequality, the study's findings are consistent with prior work demonstrating that access alone is insufficient to address the digital divide (Robinson, 2024; Sanders, 2025). Participants' experiences underscore the importance of combining material access with guided support and skill development. The challenges associated with navigating digital platforms and learning management systems echo previous research highlighting the complexity of digital engagement for justice-involved populations (Hwang et al., 2024). By identifying access and navigation support as interconnected mechanisms, this study contributes to a more nuanced understanding of digital inclusion as a multi-layered process involving infrastructure, instruction, and ongoing assistance.

A key contribution of this study lies in its identification of supportive, humanizing learning environments as a central mechanism driving engagement. While prior research has acknowledged the role of social support in reentry (Pettus-Davis, 2021), this study demonstrates how relational pedagogy directly influences digital learning outcomes. The emphasis on dignity, nonjudgment, and peer support reflects broader CES commitments to equity and respect (Bosman et al., 2023). These findings suggest that digital inclusion initiatives must attend not only to technical skills but also to the emotional and social dimensions of learning, particularly for populations with histories of marginalization and stigma.

The development of digital confidence and independence observed among participants further supports existing research linking digital literacy to self-efficacy and empowerment (Reisdorf & DeCook, 2022). Participants' transition from avoidance to active engagement with technology highlights the transformative potential of skill-building programs when delivered in supportive contexts. This aligns with broader theories of digital inclusion that emphasize meaningful engagement and capability development rather than mere access (Hartnett, 2019). The study extends this literature by showing how confidence-building operates as a mediating mechanism connecting instructional practices to broader reentry outcomes.

From a scholarly perspective, this study advances communication research by integrating CES with digital inequality and reentry scholarship. It demonstrates how communication processes—such as trust-building, collaborative design, and instructional interaction—shape both program implementation and participant outcomes. By adopting a case study approach (Yin, 2018), the research offers analytical insights that can inform future studies of community-engaged digital inclusion initiatives. Additionally, the findings contribute to ongoing discussions about the role of communication in addressing structural inequalities, highlighting the importance of participatory and relational approaches in marginalized contexts.

From a practical and policy perspective, the findings have several important implications. First, digital inclusion programs for justice-involved populations should adopt holistic models that integrate access, skills training, and relational support. Policies that focus solely on providing devices or internet access are unlikely to achieve meaningful outcomes without accompanying instructional and social support structures. Second, the success of peer mentor models suggests that programs should invest in training individuals with lived experience to serve as instructors and navigators, thereby enhancing trust and sustainability. Third, partnerships with community institutions such as public libraries and workforce centers are critical for providing accessible and continuous support across the reentry process. Finally, policymakers should consider expanding digital access within correctional settings, drawing on international models that integrate technology into rehabilitation while addressing concerns about security and equity (Järveläinen & Rantanen, 2020).

Since this research is limited to a single case study, readers should be mindful of the context-specific nature of the findings and avoid assuming that they are directly transferable to other digital inclusion initiatives, populations, or geographic settings. In addition, the experiences and perspectives documented in this study reflect the specific organizational partnerships, program design, and participant characteristics of the case examined and may not fully represent the diversity of justice-involved women's experiences in other contexts.

6. Conclusion

This study demonstrates that community-engaged approaches to digital inclusion can play a transformative role in supporting justice-involved women during reentry. By centering collaboration, trust, and participant voice, the program not only facilitated skill development but also fostered confidence, connection, and new possibilities for participants' futures. These findings underscore the importance of viewing digital literacy as both a technical and social process, embedded within broader systems of inequality and opportunity. As digital technologies increasingly shape access to resources and participation in society, university–community partnerships grounded in the CES framework offer a powerful approach for designing inclusive, equitable interventions that respond to the needs of marginalized communities.

Funding

This project was generously supported by the Ewing Marion Kauffman Foundation.

Conflict of Interests

The author declares no conflict of interest.

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Social Inclusion
2026 • Volume 14 • Article 12690
https://doi.org/10.17645/si.12690

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"Not Charity, but a Right": Carceral Citizenship and Digital Reintegration of Roma in Türkiye

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Submitted: 30 April 2026 **Accepted:** 19 August 2026 **Published:** 9 September 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

The integration of digital technologies into public services has made "e-government" a mandatory digital threshold in modern welfare states—one that risks producing new forms of exclusion for historically marginalized groups. This article examines the digital re-entry of Roma formerly incarcerated people in Türkiye and the structural barriers they face after release. Drawing on Crenshaw's intersectionality and Ragnedda's digital capital, it analyzes how ethnic identity and a criminal record turn digital exclusion into a "double stigmatization." The study draws on in-depth, semi-structured interviews with 15 formerly incarcerated Roma individuals across five Turkish cities, analyzed through reflexive thematic analysis. Technological isolation during incarceration produces a disruptive "digital shock" and a difficult-to-recover "digital lag"; e-government systems function as "virtual walls" that obstruct access to rights; and participants resort to "tactical bypasses" based on neighborhood social capital and "warm experts" (Bakardjieva, 2005) to circumvent what they experience as algorithmic gatekeeping. Arguing that digital inclusion is a matter of rights and social justice rather than charity, the study extends the model of "digital rehabilitation" to an intersectional Roma and carceral case and proposes context-specific policy for the Turkish penal and re-entry system.

Keywords

carceral citizenship; digital exclusion; digital re-entry; digital rehabilitation; intersectionality; returning citizens; Roma

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1. Introduction

In welfare states with high levels of digitalization, service providers meeting basic needs such as health, finance, housing, and social security are undergoing a distinct shift from physical services to online platforms (Schou & Pors, 2019). The widespread adoption of e-government systems has transformed public administration by enhancing efficiency, transparency, accessibility, and citizen participation (Polat, 2005). However, particularly in contexts where digital penetration rates are low and regulatory measures are weak, e-government applications often exacerbate digital inequalities rather than mitigating them. Without robust regulatory frameworks, excessive reliance on digital infrastructure can lead to digital exclusion and bureaucratic inefficiencies (Eubanks, 2018).

Empirical and theoretical studies in the literature demonstrate a strong relationship between socioeconomic resources and digital exclusion (DiMaggio et al., 2001; Helsper, 2012; Ragnedda, 2018; Robinson et al., 2015; van Dijk, 2005). Among the disadvantaged groups most deprived of internet resources are older adults, women, people with little formal education, ethnic minorities, rural residents, and low-income groups (van Dijk, 2005). The digital divide is now widely theorized across three levels: access, skills, and the outcomes of use (see Section 2.1; see also DiMaggio et al., 2001; Ragnedda, 2018). The relationship between socioeconomic status and digital inclusion is far from one-to-one; the continued decisive role of income and education level demonstrates that the digital divide is shaped by intersectional inequalities and social mechanisms (Salemink, 2016).

Among the groups most affected by digital exclusion are people entering and leaving prison. For security reasons, prisons strictly limit access to technology (Reisdorf & Jewkes, 2016), so even short sentences leave people behind—what Reisdorf and DeCook (2022) call being "locked up and left out." On release, individuals struggle to find work, housing, and banking, since online application has become a prerequisite for employment (Järveläinen & Rantanen, 2021; Ogbonnaya-Ogburu et al., 2019). This is part of what has been termed "carceral citizenship," a diminished citizenship based on the presumption of guilt (Miller & Alexander, 2016; Miller & Stuart, 2017), and a lack of digital skills directly raises the risk of recidivism (Bennett, 2017).

These barriers are far more pronounced among minorities facing intersectional vulnerabilities. The marginalization of Roma communities in Türkiye reflects not merely low income but generations of institutionalized discrimination in education, employment, and justice (Uzpeder et al., 2008), and Roma or Traveller communities are disproportionately represented in prisons (The Traveller Movement, 2021). Crenshaw's (1989, 1991) theory of intersectionality provides the framework for understanding how categories such as ethnicity, gender, and class interact to limit access to resources (Powell, 2016). For these communities, the exclusion and spatial stigmatization that begin in the classroom are reproduced in the digital age as "e-government labyrinths" and "algorithmic barriers" (Akkan et al., 2011): Despite the apparent neutrality of state digital services, physical-world prejudice is replicated in digital form.

Türkiye has seen rapid growth in internet adoption and digital government, driven by a young population and growing economy. Yet moving services such as healthcare, taxation, and social assistance online increasingly disadvantages those left behind (Polat, 2005). Older adults, people with disabilities, women, and rural residents are less likely to be online, and when the urban–rural gap combines with ethnic background, it produces far deeper exclusion (Zheng & Walsham, 2008)—depriving people not only of services but of the ability to exercise civic rights.

The literature on e-government adoption has largely focused on technological efficiency and quantitative methodologies; it has frequently overlooked the experiences of marginalized communities in using digital public services and the barriers to accessibility. Furthermore, research aimed at supporting the digital literacy of returning citizens remains limited. Therefore, Reisdorf and Rikard's (2018) theoretical perspective on "digital rehabilitation" is essential: the model argues that comprehensive digital literacy education provided during and after incarceration is indispensable for economic, social, and personal integration. The present study aims to fill this gap in the literature by thoroughly examining the digital barriers faced by Roma returning citizens and the nature of this intersectional exclusion within the context of Türkiye, where e-government initiatives are rapidly expanding.

2. Conceptual Framework and Literature

This study is anchored primarily in Crenshaw's (1989, 1991) theory of intersectionality, which provides the central analytic lens: Digital exclusion is not the sum of separate disadvantages but the product of the interaction between ethnic identity, carceral status, gender, and class. The other frameworks play a supporting role in dialogue with this core. Ragnedda's (2018) digital capital specifies the resource through which intersectional disadvantage takes shape online; Wacquant's (2007) territorial stigmatization and the carceral-citizenship literature (Gurusami, 2019; Miller & Stuart, 2017) explain how the spatial and penal axes gain their force; and de Certeau's (1984) tactics account for the agency participants exercise within these constraints.

2.1. Digital Capital and Social Exclusion

Digital inequality goes beyond a simple issue of device access; it represents a complex interplay of access, skills, and the tangible benefits derived from this process (van Dijk, 2005). Drawing inspiration from Bourdieu's theory of capital, Ragnedda (2018) defines digital capital as "internalized abilities" (digital competencies) and "externalized resources" (technological hardware). This form of capital acts as a "bridge" between online and offline life opportunities, enabling individuals to transform their performance in the digital sphere into economic, social, cultural, and political capital. However, this accumulation is not distributed equally; the strong link between socioeconomic resources and digital inclusion traps low-income and educationally disadvantaged groups in a cycle of systematic exclusion (Helsper, 2012).

The literature on the digital divide analyzes the gap at three levels: technical access (first level), usage skills (second level), and the concrete outcomes of usage (third level; Ragnedda, 2018). Given the impact of social structures on technological adoption, practices of digital exclusion cannot be considered independently of individuals' offline disadvantages. In particular, when combined with poverty and minority status, deficiencies in experience—such as internet literacy and frequency of use—deepen digital exclusion; this situation transforms into a structural barrier that restricts the civic rights and life opportunities of vulnerable groups (Salemink, 2016).

The post-incarceration reintegration process into society is described in the literature as "locked up and left out" (Reisdorf & DeCook, 2022). The digital rehabilitation model developed by Reisdorf and Rikard (2018) argues that digital isolation during incarceration creates cumulative deprivation in economic, social, personal, and health domains following release. Individuals deprived of ICT skills in prison are unable to demonstrate

the "digital citizenship" performance necessary for survival after release; this situation structurally increases the risk of recidivism (Järveläinen & Rantanen, 2021). Crucially, these disadvantages are rarely acquired at the prison gate: characteristics such as age, gender, race or ethnicity, income, and education shape who is digitally excluded long before any contact with the criminal legal system, and they continue to structure that exclusion after release. The next section turns to intersectionality to specify how these axes combine.

2.2. Intersectionality

Intersectionality, as theorized by Kimberlé Crenshaw, emphasizes that categories such as race, gender, and class create an interconnected system of disadvantage (Crenshaw, 1989, 1991). In the case of Roma returning citizens, this structure produces a "multiple exclusion" where ethnic identity, criminal records, and spatial stigmatization intersect. At this point, the concept of "territorial stigmatization" conceptualized by Loïc Wacquant (2007, 2008) provides a critical framework for understanding how Romani neighborhoods are coded as "risky and marginal areas" in digital systems. In the Turkish context, for a Romani individual, release is merely a transition from one enclosed space (prison) to another stigmatized space (ghetto) where, in Wacquant's words, "urban outcasts" reside.

This stigmatization manifests not only in everyday social relations but also as an automated exclusion mechanism through e-government and algorithmic decision-making systems (Eubanks, 2018). The experiences of these formerly incarcerated Romani people illustrate Crenshaw's account of "structural intersectionality" in concrete terms. Inadequate housing, the tradition of informal labor, and the "communicational deprivation" in prison highlighted by Knight (2016) deplete the individual's technological capital. In this process, Romani identity, criminal record, and the neighborhood of residence become algorithmic factors of suspicion that prevent the individual from accessing rights in the digital environment; the individual is "locked out" of the system (Reisdorf & DeCook, 2022).

A conceptual clarification is needed regarding Crenshaw's framework here. Crenshaw (1989, 1991) developed intersectionality at the intersection of race and gender, grounded in the experience of Black women whose disadvantage could not be captured by race or gender alone—a Black feminist insight that disadvantage is produced where axes of oppression meet rather than add up. Two adaptations require justification here. First, regarding gender: I retain it as a constitutive axis rather than setting it aside—the gendered patterning analyzed in Section 4.1.4 and in the gender discussion in Section 5 is itself an intersectional finding. Second, regarding race: I deliberately speak of ethnic identity rather than race. In the Turkish socio-legal setting, race is neither an official category nor a salient idiom of discrimination in the Anglo-American sense, whereas Roma ethnic identity is the primary axis along which structural and spatial marginalization is organized. Mindful that this risks decontextualizing a framework rooted in Black feminist thought, I treat ethnicity not as a softer synonym for race but as the category through which racialized, systemic exclusion is enacted here.

2.3. Tactical Participation and "Bypass"

Confronted with exclusionary, gatekeeping systems, marginalized groups exercise agency through "bottom-up" micro-level strategies, what de Certeau (1984) calls the everyday "tactics" by which people work around rigid institutional rules. In Roma communities, this takes the form of neighborhood-based solidarity that routes around official digital channels: Individuals lacking digital capital delegate transactions

to younger relatives, literate neighbors, or shopkeepers acting as "warm experts" (Bakardjieva, 2005), drawing on what Putnam (2000) terms "bonding social capital" to substitute for the digital capital their ethnic identity or record places out of reach. Such networks are fragile, however, under deep poverty, precarious work, and the spatial displacement produced by urban-renewal projects targeting Romani neighborhoods (Akkan et al., 2011).

These workarounds nonetheless have a cost: they position individuals as "secondary subjects" who access digital systems only through others, rather than as full digital citizens. Informal fixes—using a grocer's IBAN, or transacting through a line registered in someone else's name—offer temporary relief but carry no legal protection. As a result, these neighborhood-based bypass mechanisms cannot permanently dissolve the structural boundaries of the "carceral web" (Gurusami, 2019) that continues to keep returning citizens at the edge of formal employment and official social rights.

2.4. Türkiye's e-Government Momentum and Why the Roma?

Roma people are a paradigmatic example of structural exclusion as society transitions from an industrial to a post-industrial era (Granados Romero, 2008). International data show that Romani communities are represented in prison populations at a much higher rate than the general population, and that this situation necessitates targeted policy interventions (The Traveller Movement, 2021). In the Turkish context, Roma face the greatest obstacles to digital capital accumulation due to deep poverty, spatial segregation, and discrimination in education (Akkan et al., 2011; Gökçe, 2018; Uzpeder et al., 2008).

In this regard, Türkiye's e-government transformation process provides a unique sociological context that underscores the importance of this study. Ranked 80th in the index in 2012, Türkiye has shown a steady rise, reaching 27th place by 2024 and becoming one of the world's fastest-developing countries in digital governance (United Nations e-Government Knowledgebase, 2024). However, this extraordinary technological speed and success at the macro level acts as what might be termed a "disadvantage amplifier" for groups with intersectional vulnerabilities, such as formerly incarcerated Roma. Because the neighborhoods where they live in the physical world are stigmatized in the media and by law enforcement as "illegal ghettos" or "crime hotspots" (Romani Godi, 2024), this spatial labeling directly translates into online exclusion.

This transformation has turned access to health, employment, and justice into a mandatory "digital threshold." Where infrastructure is this advanced, a lack of internet literacy is no longer a simple deficiency but a form of "algorithmic gatekeeping" that strips individuals of civic rights. Roma returning citizens are excluded from this new performance of citizenship by both their ethnic identity and their criminal-record status, making Türkiye a distinctive and analytically significant case for studying carceral citizenship and digital exclusion together.

3. Methodology

3.1. Research Design and Data Collection

This study is based on semi-structured interviews conducted with 15 formerly incarcerated Roma individuals (P1–P15) living in five major Turkish cities (Ankara, Istanbul, Izmir, Bursa, and Kocaeli) who had served prison terms of varying lengths (1–15 years). In selecting participants, a purposive sampling strategy was adopted

to ensure diversity in terms of age, gender, occupational background, and length of incarceration, thereby reflecting the experience of re-entering the digital world from a range of standpoints. To reach this closed and "hard-to-reach" population, snowball sampling was used; in this process, local Roma associations played a critical role as "gatekeepers" who facilitated safe access to the field. The implications of this gatekeeping for the composition of the sample are addressed in Sections 3.2 and 5.1.

Interviews were conducted face-to-face in Turkish, in settings chosen by participants (homes, association premises, or coffeehouses), and lasted roughly 40–90 minutes. With informed consent, they were audio-recorded, transcribed verbatim, and imported into qualitative data-analysis software. A semi-structured guide covered six domains: (a) pre- and post-incarceration relationship with technology and the "digital shock" of release; (b) use of and exclusion from e-government and public e-services (the e-Devlet portal; MHRS, the central medical-appointment system; İŞKUR, the employment agency); (c) device ownership, connectivity, and neighborhood infrastructure; (d) sources of digital support and intermediaries; (e) ethnic and carceral stigma, surveillance, and self-expression online; and (f) expectations of authorities and the framing of digital inclusion as charity versus right. The full guide is in the Supplementary File; it served as a flexible prompt, allowing participants to lead.

Data were analyzed using Braun and Clarke's (2006, 2021) reflexive thematic analysis, treating the researcher as an active, situated interpreter rather than a neutral coder. The analysis followed the six phases of the approach:

1. Familiarization through repeated reading;
2. Generation of semantic and latent codes;
3. Construction of candidate themes;
4. Reviewing themes against the coded extracts and full data set;
5. Defining and naming themes;
6. Producing the analytic narrative.

Consistent with reflexive thematic analysis, I did not pursue inter-coder reliability; rigor rested instead on reflexive memoing (Section 3.3), an audit trail from codes to themes, and sustained attention to disconfirming evidence (Section 5.1).

Because the interviews and all quoted material were originally in Turkish, the extracts presented in this article were translated into English by the researcher and subsequently checked by a second bilingual researcher, with selected passages back-translated to verify fidelity. Formal member checking—returning transcripts or interpretations to participants for validation—was not undertaken. Given the vulnerability and mobility of this population and the sensitivity of data concerning ethnic identity and criminal records, re-contacting participants would have posed disclosure and safeguarding risks that I judged to outweigh the methodological benefit. Instead, interpretive rigor was supported by reflexive memos written after each interview, which were used to surface and document the researcher's assumptions and to keep them under scrutiny throughout coding.

3.2. Sampling, Saturation, and Transferability

Sampling continued until the analysis reached thematic saturation in the interpretive sense appropriate to reflexive thematic analysis. I distinguish this from the notion of data saturation as exhaustive informational coverage: Following Braun and Clarke (2021), saturation here denotes the point at which additional data deepened and consolidated the existing analytic account rather than generating new themes. In practice, from about the twelfth interview onward no substantively new codes emerged; later participants reiterated patterns already established in earlier accounts, and the final interviews served chiefly to add nuance to existing themes. I therefore treat the sample as adequate for the exploratory aims of the study rather than as a claim to have captured every possible experience.

Two features of the sampling strategy bound the transferability of these findings. First, the sample is small (n = 15) and concentrated in five urban centers, so the findings are situationally bounded—best read as an analytically generative account of a specific intersectional position rather than as generalizable to rural Roma communities, Roma elsewhere, or non-Roma returning citizens. Second, participants were reached through local Roma associations acting as gatekeepers; while necessary for trust and safe access, this introduces a selection effect whose implications for the composition of the sample are discussed in Section 5.1.

Given the sensitive nature of the research and the vulnerability of the study group, international research-ethics standards were strictly followed throughout data collection and analysis. Ethical approval was granted by the Ethics Committee of the Faculty of Social and Humanities Sciences at Çanakkale Onsekiz Mart University (decision dated 13 February 2026, No. 58/117; Document No. E-80110942–050.99–2600040069). All participants gave informed consent after being briefed on the study's purpose and the use of their data, and, to protect sensitive information such as prior convictions and ethnic identity, all identifying details were anonymized and coded as P1–P15.

3.3. Researcher Positionality and Reflexivity

Because reflexive thematic analysis treats the researcher as an active instrument of interpretation rather than a neutral conduit (Braun & Clarke, 2021), a statement of positionality is essential, particularly given the vulnerability of the study group and the sensitivity of data concerning ethnic identity and criminal records. The research was conducted by a non-Roma academic researcher located outside the community under study. This insider/outsider position carried both limitations and a degree of analytic distance (Dwyer & Buckle, 2009). On the one hand, the researcher did not share participants' lived experience of ethnic marginalization or incarceration and could not draw on insider cultural knowledge; on the other, the absence of community membership made the mediating role of the Roma associations indispensable for establishing legitimacy and trust.

Trust and access were negotiated over time rather than assumed. Initial contact came through association representatives who vouched for the researcher; interviews took place in settings chosen by participants, in everyday language, after the voluntary nature of participation had been explained. The researcher remained attentive to the asymmetries of the encounter—ethnicity, institutional affiliation, social position—and to social-desirability effects, whereby participants might understate non-compliant tactics or amplify grievances before a perceived institutional interlocutor. These were mitigated by anonymity and coding

(P1–P15), emphasis that the research was independent of any state or correctional body, and an interview style inviting concrete episodes. Reflexive memos written after each interview were used to keep the researcher's assumptions visible during coding (Finlay, 2002).

3.4. Participant Profile and Demographic Characteristics

The study sample consists of 15 formerly incarcerated Romani people who exhibit diversity in terms of age, gender, occupational background, and length of incarceration. Participants' technological proficiency and attitudes toward the digital world were identified as key factors directly shaping their experiences of social exclusion and digital reintegration. Anonymized demographic information for the participants is presented in Table 1.

Table 1. Participant profile and demographic characteristics.

Participant No.	Gender	Age	Occupation	Length of Incarceration
P1	Male	24	Musician	2 years
P2	Female	45	Housewife	5 years
P3	Male	55	Musician	8 years
P4	Female	30	Unemployed	3 years
P5	Male	38	Scrap dealer	4 years
P6	Male	21	Day laborer	1 year
P7	Female	50	Housewife	6 years
P8	Male	42	Unemployed	10 years
P9	Male	35	Street Vendor	3 years
P10	Female	28	Housewife	2 years
P11	Female	40	Housewife	2 years
P12	Male	52	Self-Employed	13 years
P13	Male	20	Unemployed	2 years
P14	Female	22	Unemployed	2 years
P15	Male	36	Unemployed	15 years

4. Findings

4.1. Findings From the Field

The interview data were analyzed through reflexive thematic analysis, interpreted in dialogue with the study's theoretical framework (intersectionality and digital capital). The analysis produced six interrelated themes, together with a cross-cutting analysis of gender (Section 4.1.4), summarized in the code tree below (Table 2).

4.1.1. Theme 1: Digital Shock and Spatial Marginalization—Infrastructure and Device Barriers

Field data indicate that the absolute isolation experienced during incarceration produces a jarring "digital shock" upon release. P3's description of the feeling of being cast into a void—"When I went in, there were push-button phones; when I came out, everyone had these glass-like things in their hands….It felt like I'd

Table 2. Code tree and thematic framework.

Theme (overarching)	Sub-codes (field data-based)	Illustrative data segment
1. Digital shock & spatial marginalization	Digital shock, lack of devices, weak neighbourhood infrastructure	"…like a frozen human being" (P8)
2. e-services as new "walls"	e-Government/İŞKUR/MHRS barriers, loss of rights, algorithmic gatekeeping	"e-Government…is like a maze" (P10)
3. Intersectionality: Double stigmatization	Ethnic identity + criminal record, address-based profiling	"…when the two combine, the system deletes you" (P1)
4. Fear of surveillance & digital insecurity	Carceral web, self-exclusion, concealment	"…a bomb with its pin pulled…" (P7)
5. Tactical participation & bypass	Warm experts, proxy use, identity substitution	"My…bank are that grocer…because he too is Roma" (P3)
6. Expectations for rights-based policy	Digital education as a right, not charity	"This is not charity, it is a right!" (P11)

landed in space," is a concrete manifestation of the state of being "locked up and left out," as conceptualized by Reisdorf and DeCook (2022).

Spatial and socioeconomic marginalization deepens infrastructural inequality. P8's account—"I went to get water; there was a machine. It said, 'Swipe your card,' but I didn't have a card.…The world has changed, but we've been left behind"—shows how even brief disconnections sever an individual from basic functionality, a reality directly linked to absolute poverty and missing infrastructure in Roma neighborhoods (Akkan et al., 2011). For people returning to households lacking heating, water, or electricity, "digital infrastructure" is an unattainable luxury, as P5's outburst makes plain: "The internet is for the well-fed. I'm hungry; I'm thinking about what I'll eat tomorrow."

The depth of this rupture is captured in participants' imagery. P8, released after ten years, described not mere disorientation but a kind of suspended animation: "I felt not like a fish out of water but literally like a frozen human being. People don't even look at the road; everyone's head is inside a piece of glass." For others the rupture recurred with every disconnection: P4 likened the day her internet was cut off for lack of money to being returned to prison, "the walls closing in."

4.1.2. Theme 2: E-Services as New "Walls" and Loss of Rights

The shift of public administration onto platforms such as e-Government, MHRS, and İŞKUR has erected new "virtual walls" for Roma returning citizens. Historically pushed into informal sectors such as scrap dealing and street vending (Akkan et al., 2011) and alienated from legal language (Romani Godi, 2024), a community already unable to draft a petition in the physical world is structurally shut out of complex digital bureaucracy. P10 summarizes it—"I log into e-Government, and it's like a maze. I can't find what I'm looking for"—and the barriers P1 met in the İŞKUR system illustrate the same gatekeeping:

> I went to İŞKUR, and they said, "Get an e-Government password, log in from there"…"Click this tab, upload your criminal record," and so on. How am I supposed to know which tab? When I log into the system, a huge "Convicted" label pops up. It's as if the system is mocking me.

This exclusion aligns with the concept of "carceral citizenship," which describes being pushed outside the system under the presumption of guilt (Miller & Stuart, 2017). These "virtual walls" not only highlight individuals' lack of technical knowledge but also suggest that digital systems are designed as if these groups were "invisible." In the private sector as well, P8's statement—"I need to open a bank account….My face looks tired, my phone is old. The app didn't recognize my face….My system has already crashed"—demonstrates that standardized algorithms cannot account for the worn-out realities of disadvantaged groups.

For the most impoverished participants, the mandatory digital threshold registered less as a skills gap than as a class barrier that precedes the question of access altogether. P5, a scrap collector with no smartphone, rejected the premise of the digital demand outright: "Brother, my gas cylinder is empty, my fridge is empty, and you tell me to "'og into e-Government.' The internet is the business of a man whose stomach is full." His account shows the e-government "wall" operating not through bureaucratic complexity but through a material destitution that makes the digital threshold experientially irrelevant yet administratively unavoidable.

4.1.3. Theme 3: Intersectionality—Double Stigmatization in the Virtual World

The experiences of Roma participants resonate strongly with Crenshaw's (1989) account of structural intersectionality: the intersection of ethnic identity and criminal-record status produces a compounded, structural double stigmatization in which neither axis can be understood in isolation. P13's statement—"I'm both Roma and a former convict; my place is already clear. This system isn't for us"—illustrates how this intersectional exclusion is internalized as a settled fact about one's position rather than experienced as a contingent obstacle.

The digitization of job applications has not eliminated spatial bias against Romani neighborhoods; by delivering address and record data to employers in seconds, it can intensify what participants experienced as address—and record-based "racial profiling" (Romani Godi, 2024; Uzpeder et al., 2008), now operating at the speed of an automated query. As P7 put it, the automatic surfacing of a criminal record makes the digital environment one that constantly reproduces a marginalized identity: "They already view me as a 'criminal,' and when I can't do anything online, I feel even more excluded."

Participants articulated this compounded exclusion with precision. P1's account is, in effect, a lay theory of intersectionality—neither axis alone is decisive, but their conjunction triggers rejection: "If I were only Roma he might say 'maybe'; if I were only an ex-convict he might say 'maybe.' But when the two combine, the system deletes you automatically." P4, caught between two excluding collectives, put it: "Because I am Roma the ex-convicts exclude me; because I am an ex-convict everyone excludes me." P9 went further still, calling the comment sections that adjudicate Roma returning citizens "a place of extrajudicial execution."

P1's image of being "deleted automatically" repays closer reading, but it should be read for what it reveals about experience rather than as a description of any algorithm: what participants encountered were interfaces and outcomes—instant rejection once an address or record became visible—not the decision rules behind them.

Read this way, it still does real theoretical work, showing Crenshaw's two axes as fused rather than additive, since it is the simultaneous legibility of a stigmatized neighborhood and a criminal record, in a single query, that produces exclusion. Digitalization does not invent this discrimination but changes its tempo and felt character—prejudice once requiring a face-to-face encounter is now immediate, impersonal, and seemingly built into the system, driving the withdrawal (Theme 4) and workarounds (Theme 5) below.

4.1.4. The Gender Axis: Differentiated but Intersecting Patterns of Exclusion

Because the study mobilizes an intersectional framework, the gender dimension is examined explicitly rather than absorbed into an undifferentiated category. The sample comprised six women and nine men of comparable ages and incarceration lengths. A foundational layer of experience was shared across gender: Both women and men described the post-release "digital shock," the experience of e-government as a "virtual wall," and recourse to proxy use. Beneath this shared layer, however, the accounts diverged in patterned ways along three axes—the orientation of digital need, the channel of proxy support, and the form taken by stigma and surveillance—each of which is intelligible only intersectionally.

For the women, digital life was organized around motherhood and the household: Their most urgent encounters with digital systems ran through children's schooling (the EBA e-learning platform, parent WhatsApp groups) and their proxy support through their own children. P2 located her entire digital capacity in her daughter—"…my daughter does all of it. When she is not home, I am nothing." Their maternal position also exposed them to a gendered double stigma; P4 was branded not only as a formerly incarcerated Roma woman but through a feminized vocabulary of contempt ("shrews, thieves, filthy"), and a recurring response (e.g., P14) was concealment online "behind a mask." This shaded into a gendered fear of surveillance: women such as P2 policed their own and their children's online conduct to avoid being "found," a dimension developed further in Theme 4.

For the men, digital need was oriented toward employment and the formal economy—İŞKUR postings, courier-platform registration, banking, and the record check that gates them—and their workarounds were more technical and identity-substituting. P6, blocked by the record check, described operating under a relative's identity: "I open an account in the name of my cousin who has no record….It looks as if he is riding the motorbike, but I am the one delivering the parcels." Others (e.g., P1) had a neighborhood-revealing residence PDF edited to show a different address. Where women routed support through kin at home, men more often used a paid or reciprocal neighborhood broker. The underlying barrier was shared; its gendered expression—maternal and concealing for women, employment-centerd and identity-substituting for men—was consistent.

These differences should not be overstated into separate worlds: the women's and men's accounts rhyme at the level of structural cause and diverge at the level of lived expression. This is what an intersectional reading predicts—gender does not act as an independent variable layered onto ethnicity and carceral status but is refracted through them, shaping who one turns to (a daughter versus a coffeehouse broker), which institutions one collides with (the school portal versus employment and banking), and the idiom in which one is shamed. Given the small number of women ($n = 6$), these are offered as contextually grounded observations rather than statistical claims, yet they are consistent enough to make gender analytically indispensable to this account.

4.1.5. Theme 4: Fear of Surveillance and Digital Insecurity

For formerly incarcerated people, the internet serves as a tool of state surveillance that triggers fears of being profiled (Gurusami, 2019). Even after being released from prison, individuals continue to feel the virtual shackles of the "Carceral Web." P12 describes this situation as follows: "It's as if an invisible eye is constantly following me….I feel as if 'convicted' is written on my forehead, and it's the same when I go online."

This surveillance anxiety drives individuals toward a conscious "self-exclusion." P6 states: "It's as if I'm outside but still being watched. That's why I don't want to use my phone"; P14 justifies her hesitation on social media by saying: "I use WhatsApp but don't share photos with anyone—you never know what might happen."

This surveillance anxiety was acute and, again, gendered in texture. Women such as P2 experienced the very act of touching a screen as quasi-criminal and policed their children's online conduct accordingly ("don't comment underneath; they'll find us online and once again we'll be the guilty ones"). P7, newly literate, rendered the smartphone itself as a live threat to a household that survives by remaining invisible: "That device in my grandchildren's hands feels to me like a bomb with its pin pulled….For us, to be invisible is to survive. The internet makes you visible, and that is our greatest fear." Here surveillance does not merely accompany exclusion; following Gurusami's (2019) "carceral web," it actively produces a self-imposed withdrawal from the very participation that reintegration now demands.

4.1.6. Theme 5: Tactical Participation and Bypassing the System

In the face of exclusionary formal systems, Roma individuals develop "bypass" tactics by leveraging neighborhood-based social capital: Rather than performing digital transactions themselves, they rely on "proxy use" through "warm experts"—younger family members or literate neighbors—as conceptualized by Bakardjieva (2005). Statements such as P2's "I give the phone to my nephew," P10's "I give it to my children," and P12's "The neighbor's daughter always handles my affairs" show that digital participation is facilitated through a collective network rather than as an individual act.

Even more striking are the institutional workarounds developed to overcome bureaucratic obstacles. P3's strategy—"I couldn't open a bank account, so I'm giving the grocer's IBAN….The grocer gives me cash"—or P7's approach—"I got a phone line in someone else's name, I'm using someone else's account"—are tactical survival reflexes developed to circumvent exclusionary algorithmic systems.

The substitutive logic of these tactics is vivid. P3, who refuses banks, relocates formal finance into a co-ethnic neighbor: "I give them the IBAN of the grocer on the corner….My e-Government and my bank are that grocer…because he too is Roma." P6, conversely, becomes the neighborhood's informal digital infrastructure, performing for others the state functions they cannot access. As P3's phrase makes clear, this solidarity rests on shared ethnic precarity, which both enables the bypass and confines it within a community that is itself materially fragile.

4.1.7. Theme 6: Expectations for Rights-Based Policy

Nearly all 15 participants demanded digital education from public authorities not as philanthropy or NGO assistance but as a "social right," viewing the infrastructure and training the state must provide as a legal obligation—an orientation aligned with the "digital rehabilitation" model (Reisdorf & Rikard, 2018) and with work on the "digital maturity" of prison systems (Knight et al., 2023).

This rights-based consciousness was articulated with striking clarity. P11 rejected the framing of digital education as benevolence—"This is not charity, it is a right! We want Roma to be citizens who claim their rights, not people who are always asking for something"—an insistence on entitlement over charity that recurred across participants (P12, P13, P14) and echoes the demand for "social rights" in the classical citizenship literature (Marshall & Bottomore, 1992). P1 located the failure earlier, in the prison itself ("If they had taught us how to use computers in prison, I wouldn't be struggling so much now"), consistent with Reisdorf and Rikard's (2018) argument that digital literacy is a prerequisite for successful re-entry and must begin during incarceration.

5. Discussion

The codes derived from the interview data reveal how a gap identified in the global literature—the near-absence of work situating digital re-entry at the intersection of ethnic identity and a criminal record—plays out in the lived experience of Roma returning citizens in Türkiye. The following sections read these findings against the study's theoretical framework and against comparable research from other contexts. The discussion covers five themes: the temporal rupture of re-entry, the intersectional and algorithmic character of the exclusion, the tactical resistance it provokes, the surveillance that accompanies it, and how gender cuts across all four.

The "digital shock" in the findings shows the prison functioning as a "time capsule" that severs the individual from the technological temporality of the outside world. The resulting disconnection is, as Reisdorf and DeCook (2022) emphasize, not merely a skills deficit but a modern form of penal suffering—being "locked up and left out."

Beyond this temporal rupture, the exclusion is fundamentally intersectional in Crenshaw's sense: It is produced where axes of disadvantage meet rather than add up. Ethnic identity and a criminal record converge to produce a double stigmatization. In line with Helsper's (2012) corresponding-fields model, the poverty, spatial segregation, and institutional discrimination individuals face offline directly fuel their online disadvantage. The barriers they meet in İŞKUR and e-Government enact an alternative "carceral citizenship" rooted in a presumption of Roma criminality: a community already deemed suspect in the physical justice system (Uzpeder et al., 2008) meets the "convicted" label again in e-Government after release. This excludes them from core welfare outputs—employment, banking, housing—deepening economic insecurity.

If the exclusion is intersectional, the responses to it are tactical. Practices such as using a grocer's IBAN or registering a line under another's name are tactical resistance to structural deprivation: lacking digital capital, participants substitute neighborhood-based social capital (Ragnedda, 2018). Yet these solidarity networks are fragile where the neighborhood fabric is fragmented by urban renewal and spatial dispersion (Akkan et al.,

2011). Family and neighborhood ties shield against stigma and secure survival after release (Powell, 2016), but such individual bypasses cannot transform the structural carceral web.

These tactics, however, unfold under a persistent sense of being watched. Participants' reserve toward digital platforms stems from perceiving the internet as a "tool of state surveillance" more than a means of inclusion (Gurusami, 2019). The reflex of concealing ethnic identity to avoid discrimination in prison (Romani Godi, 2024) carries over after release: an individual already coded as a "potential criminal" offline (Uzpeder et al., 2008) reads digital platforms as a space of profiling rather than freedom, and this sense of constant observation drives self-exclusion (Seo et al., 2022). Digitalization thus offers Roma returning citizens not an expanded sphere of rights but a new, invisible sphere of oppression in which surveillance has gone digital.

This surveillance dimension merits emphasis because it is where the carceral past is most clearly carried into digital life. Following Gurusami's (2019) account of the "carceral web," participants' wariness is not free-floating anxiety but a learned reading of digital systems as extensions of state monitoring. The consequence is a paradoxical, self-imposed withdrawal—minimizing an online footprint—in which individuals manage perceived risk by forgoing precisely the digital participation that reintegration now requires.

Read against the existing literature, the Turkish case offers a distinctive configuration rather than a confirmation. Studies from Finland (Järveläinen & Rantanen, 2021), the UK (Reisdorf & Jewkes, 2016), and the US (Ogbonnaya-Ogburu et al., 2019; Reisdorf & Rikard, 2018) largely theorize digital re-entry as a consequence of the prison's internal restriction of technology, against welfare states with mature digital infrastructures. The Turkish trajectory inverts part of this: A rapid, near-mandatory e-government expansion has raised the digital threshold of citizenship at speed, so the gap facing returning citizens is widened not only by what prison withholds but by how fast the outside world digitalizes during even a short sentence. Layered onto this is an axis largely absent from the Northern literature—entrenched, spatially marked Roma stigmatization—so systems presented as neutral efficiency gains operate here as accelerated mechanisms of address—and record-based exclusion—an instrument of "participatory punishment" (cf. Corda, 2026).

Cutting across all of these dynamics is gender. The gendered patterning of the findings strengthens rather than complicates the intersectional argument. Crenshaw treats gender, ethnicity, and carceral status as mutually constitutive rather than additive, and that is what the data show: one structural cause—the conjunction of Roma identity and a carceral record—produces systematically different trajectories for women and men. Women's exclusion is lived through motherhood and the household and policed through a feminized vocabulary of disrepute; men's through the labor market and identity-substituting tactics. This gendered division of digital labor is thus an effect of the intersection, not incidental to it. In this respect, the analysis returns to Crenshaw's (1989, 1991) founding insight: the salience of any single axis is context-dependent, and it is precisely the intersection of ethnicity, carceral status, and gender—not any alone—that shapes how digital exclusion is lived. Given the modest number of women, I offer this as a contextually bounded interpretation inviting further gender-stratified research.

5.1. Limitations

Several limitations qualify this study. As noted in Section 3.2, the sample is small (n = 15), urban, and reached through Roma associations acting as gatekeepers; the findings are therefore exploratory and situationally bounded, and the gatekeeping introduces a selection effect that may understate exclusion at the community's margins. As a qualitative study relying on self-report about sensitive matters, the data are subject to social-desirability effects, mitigated but not eliminated by the procedures in Section 3.3; and the small number of women (n = 6) limits conclusions about gender. Finally, the study is cross-sectional: A longitudinal design could trace how digital re-entry unfolds over time and when its most critical thresholds occur—dynamics single-moment data cannot capture.

A further limitation concerns the convergence of the accounts: The narratives point with striking consistency in one direction, and no strong disconfirming case emerged—even the most digitally skilled younger men framed their competence as repeatedly defeated by the record check rather than as a route out. I read this as meaningful but treat it cautiously, since the homogeneity may partly be an artefact of recruitment through associations and snowball sampling. The absence of counter-cases is thus both a finding about the depth of exclusion and a possible effect of who was reachable.

6. Conclusion and Policy Recommendations

This study examined the structural digital barriers Roma returning citizens face during reintegration in the context of Türkiye's rapid digitalization, and the tactical resistance they develop, within an intersectional frame. The findings show the digital divide to be not a mere "lack of devices" but a systematic mechanism of exclusion, deepened by the convergence of ethnic identity, poverty, and a criminal record—turning formerly incarcerated people into "the poorest groups of the digital age" and excluding them from employment, banking, and healthcare while heightening economic insecurity and the risk of reoffending.

Ensuring digital inclusion is not charity but a dimension of social and economic rights—reflected in the Sustainable Development Goals' commitments to reduced inequality (SDG 10) and inclusive institutions (SDG 16), to which equitable access to digital public services is now integral. The following interventions are recommended:

1. Digital rehabilitation and timing as a rights-based approach: The correctional system should move from a restriction-focused structure to one that prepares incarcerated people for digital society (Reisdorf & Rikard, 2018). To minimize the "digital shock," intensive hands-on training—real-life simulations of e-Government, İŞKUR, MHRS, and online banking—should run during the 3–6 months before release, so that individuals achieve working competency before leaving the prison gates. This timing-sensitive, rights-based approach aligns with international policy guidance: the UNICRI (2024) report on digital rehabilitation in prisons likewise frames digital skills as central to reintegration and to the Nelson Mandela Rules' commitment to preparing incarcerated people for life after release, while insisting that digital provision be balanced with human-rights and ethical safeguards.
2. Probation and critical digital literacy: Support for returning citizens should go beyond technical skills to target "critical digital literacy." Drawing on Ogbonnaya-Ogburu et al. (2019), digital support offices should be established within probation services, so that individuals—through tools developed with civil

society organizations—can use digital platforms not as instruments of surveillance but for advocating their rights.
3. Low-threshold infrastructure and self-sufficiency centers: In Romani neighborhoods, low-threshold digital infrastructure centers providing free internet and hardware access should be established under the leadership of local governments. The training offered at these centers should be designed using a peer mentorship approach that enhances participants' self-reliance, thereby breaking the perception of being "seen as in need of a handout" as expressed by participants in interviews.
4. Measurability and cost-benefit analyses: Quantitative measurement tools should be adapted to the Turkish context so that policymakers can anchor digital inclusion to a national minimum standard, supported by economic analyzes showing how investment in the digital skills of formerly incarcerated people reduces long-term public costs by preventing recidivism.

These recommendations are framed for the Turkish institutional setting and speak directly to the bodies that govern digital re-entry, i.e: the Ministry of Justice's Directorate General of Prisons and Detention Houses and the probation directorates (denetimli serbestlik); İŞKUR, whose employment services are now largely mediated through the e-Devlet portal; and municipalities, positioned under their social-service mandate to host neighborhood-level provision. Anchoring digital inclusion in these existing structures—rather than as a discretionary add-on—would give the proposals a concrete institutional home within Türkiye's own digital-transformation agenda.

Where the state accelerates digitalization without matching socio-economic support and digital guidance, e-government risks becoming a new e-enforcement mechanism that restricts the rights of disadvantaged groups. Future research should examine the implicit biases of algorithmic systems toward such groups and the tactical resistance they develop.

Acknowledgments

The author thanks the fifteen participants who shared their time and experiences, and the local Roma associations that acted as trusted gatekeepers to the community.

Funding

This research received no external funding.

Conflict of Interests

The author declares no conflict of interests.

Data Availability

Due to the sensitive nature of the interviews and to protect participant confidentiality, the qualitative data generated in this study are not publicly available. The interview guide is provided as supplementary material.

LLMs Disclosure

The author used a large language model to assist with language editing and formatting. All analytical work, interpretation, and final content are the author's own.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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Social Inclusion
2026 • Volume 14 • Article 12694
https://doi.org/10.17645/si.12694

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Open Access Journal

Locked In, Logged Out: Digital Participation of Residents in Danish Carceral Facilities

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Submitted: 30 April 2026 **Accepted:** 15 July 2026 **Published:** 3 September 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Digital tools are no longer supplementary features of modern life but constitutive to it, and exclusion from digital participation increasingly means exclusion from public services, employment, and social life. For incarcerated residents, this exclusion compounds existing disadvantages and undermines the reintegration process that penitentiary institutions are expected to facilitate. This is particularly consequential in Denmark, one of the most digitalized societies in the world, where all civic services are accessible only through digital infrastructures and the Danish Prison and Probation Service formally commits to digital inclusion as part of its rehabilitative mission. Drawing on semi-structured interviews with current and former residents, prison staff, and NGO representatives across different types of Danish carceral facilities, this article examines how digital participation is organized and governed through the analytical lens of positive (enabling) and negative (restrictive) security. The findings reveal a graduated, ladder-like approach in which digital provision increases across facility types but arrives too late and too abruptly to constitute meaningful rehabilitation preparation. By conceptualizing digital participation as a security practice rather than a purely technological matter, the article argues that a more balanced integration of positive and negative security logics throughout the sentence (rather than their sequential alternation) is necessary for digital inclusion to meaningfully support rehabilitation and resettlement.

Keywords

digital inclusion; empirical research; incarceration; Nordic prison systems; positive and negative security

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1. Introduction

We open with a quote from our research participants:

> I believe the real prison is when you're handed a bag of money which only lasts for 1 week of the month and then the rest, people go out and try to make money in other ways…then they take your time which is the most valuable to you, if they can convert this time to something constructive it'd be a win-win situation….We're not only inmates; we are also residents of society, so it'd be great if we started to rebuild our relationship with society from here.

The digital permeation of Western societies has transformed the use of digital tools from a common condition into a *necessary* one. Access to these tools and the competencies to use them are no longer supplementary features of modern life but constitutive to it, as public and private services, employment, and interpersonal communication are progressively accessible only through digital interfaces (Reisdorf & DeCook, 2022). Consequently, exclusion from digital participation means, across a significant range of domains, exclusion from participation in those domains entirely. This is often attributed to the digital divide, i.e., the inequality in accessing and beneficially using digital technologies, which is understood not as a secondary concern but as a primary vector of social exclusion (van Dijk, 2020). For incarcerated people (henceforth residents), digital exclusion compounds the stigma of a criminal record (Jewkes & Reisdorf, 2016) and results in severe shortcomings in economic, social, personal, cultural, and health dimensions undermining the reintegration process that penitentiary institutions should facilitate (Reisdorf & Rikard, 2018). These shortcomings are added to the disadvantaged conditions many residents faced before custody (Western & Pettit, 2010). While serving their sentences, these vulnerabilities are intensified, adding specific carceral deprivations (loss of autonomy, attenuated social ties, unemployment, digital exclusion) to the conditions that may have made incarceration statistically likely in the first place (Reisdorf & DeCook, 2022). Often, the outcome is a population that is released from custody more vulnerable than it entered and less ready for the societal participation that it is expected to sufficiently undertake.

Denmark, the country where this study is carried out, is among the most digitalized countries in the world, consistently ranked at the top of the EU Digital Economy and Society Index for public service digitalization, broadband penetration, and the number of citizens who regularly interact with government services digitally (European Commission, 2026). Digital access is essentially a prerequisite, since all civic services—social benefits, housing applications, bank accounts, tax services, health appointments—are accessible through online portals utilizing an official digital identity infrastructure. Moreover, Denmark's Agency for Digital Government follows an ongoing strategy of societal digitization that "focuses on creating more coherent and user-friendly solutions that are tailored to the different life situations of citizens" (Danish Agency for Digital Government, 2026).

Denmark is also frequently cited for its exceptionally humane prison conditions in comparison to other penal systems (Smith, 2011). Nordic prison systems (Denmark, Norway, Sweden, and Finland) have been characterized by lower incarceration rates, shorter sentences, more focus on the reformative rather than the punitive aspects of imprisonment, and greater emphasis on reintegration than the Anglo-American models (Pratt, 2007; Rentzmann, 1996). Nevertheless, this model of normalization, the idea that life in prison should resemble life outside insofar as it does not pose serious security threats, shapes Nordic penal systems' focus

on providing adequate education, helping them foster responsibility through autonomy that allows them to carry out a significant part of their everyday prison routines, while allowing them to have ample space and minimize the feeling of institutionalization (Rentzmann, 1996). Since digital tool use is a necessary condition for today's Danish society, normalization of digital access during custody is also an important aspect of rehabilitation. The Danish Prison and Probation Service (KF) has reflected these priorities across successive institutional reports (Kriminalforsorgen, 1998, 2023). Their 1998 report outlined a principle-program that encompassed all the ideas of normalization, education, responsibility, openness, and security, aligning with the Nordic reformative model. Their 2023 strategy report commits to improved educational conditions and use of digital affordances—by which we mean the action possibilities enabled by digital technologies and infrastructures available to residents—both to provide digital literacy and to strengthen the organization's own digital infrastructure. The report also describes the need for individual behavior assessment rather than categorical measures, and the provision of self-service digital solutions, positioning digital inclusion as integral to rehabilitation.

While previous studies have documented digital exclusion in carceral settings and the barriers to prison digitalization, less attention has been paid to how digital participation itself becomes governed through competing security logics. This article therefore asks how digital participation is organized across different Danish carceral facilities and how these arrangements can be understood through the lens of positive and negative security (Hoogensen Gjørv, 2012). Drawing on semi-structured interviews with current and former incarcerated people, prison staff, and NGO representatives, the findings suggest that the prison services follow a graduated, ladder-like approach to digital provision that increases across facility types but arrives too late and too abruptly to constitute meaningful rehabilitation preparation. The article thereby contributes to debates on prison digitalization by conceptualizing digital participation not merely as a technological issue but as a security practice that shapes opportunities for rehabilitation and reintegration. Finally, the article argues for neither technological solutionism nor determinism, but it attends to the competing concerns and tensions that must be acknowledged and navigated when discussing digital participation in carceral contexts.

2. Related Work

2.1. Digital Inclusion and Incarceration

The literature on digital inclusion for incarcerated individuals highlights both the problematic nature of prisons' digital infrastructures and the potential societal and individual benefits of increased digital participation. According to Jewkes and Reisdorf (2016), incarcerated individuals are amongst the most digitally impoverished groups affected by the digital divide: Not only is there an absence of commonly used digital infrastructures, but residents serving long sentences have grown averse to technologies otherwise integral to societal life. These conditions reflect restrictive policies that frame prison digitalization as a luxury rather than a necessity (Jewkes & Reisdorf, 2016). Similar narratives emerge in Taugerbeck et al.'s (2019) public discourse analysis of German prison ICTs and Smith's (2013) analysis of digital access in Denmark as a human right: Although digitalization is occasionally framed as a vector for resocialization, dominant narratives overemphasize security due to fears of breaches, limited understanding of technologies' capabilities, and the view of carceral digitalization as a luxury. A similar pattern emerges in Hadlington and Knight's (2022) survey of UK public attitudes toward prison digitalization. Although 80% of respondents

feared internet access would enable residents to contact victims and 86% believed it would facilitate criminal activities, many also acknowledged its rehabilitative value, recognizing that digital access could make prison time more productive and improve digital skills and employability. The contrast between emotional and deliberate responses captures the political context within which prison digital inclusion is developed, i.e., fearmongering narratives that perpetuate a vicious cycle of fear-based public opinions which in turn make evidence-based policies difficult to enact.

These tensions are reflected in the limited deployment of digital tools across Western prisons. Hofinger and Pflegerl (2024), in their study of Austrian prisons, show that the overwhelming majority of residents have no access to digital tools. Where access exists, it takes the form of study rooms with offline computers unlocked on a case-by-case basis, or the exceptional provision of offline laptops treated as a major concession. Järveläinen and Rantanen (2021) identified three main barriers regarding ICT use in Finnish carceral settings: digital access, digital skills, and interpersonal skills, the latter referring to the relationships among residents and between residents and staff. This indicates that digital participation depends not only on institutional rules but on interpersonal relationships. Their findings reveal that limited digital skills remain a problem, but also that prison digitalization can raise concerns about the reduction of human contact upon which carceral social life depends. This tension highlights the importance of implementing ICTs within a reformative logic rather than as a purely infrastructural solution. Similarly, Barreiro-Gen and Novo-Corti (2015) report limited offline-only ICT access in Spanish prisons, with digital literacy linked to social and collaborative skills. In Denmark, Chatzipolakis and Yasuoka Jensen (2025) describe how, despite the prisons' intranet platform being normally available for education up to a BSc level in closed facilities, and despite physical infrastructure that is ostensibly oriented towards reformative ideals, both digital and physical infrastructure remain limited by insufficient resources, low processing power of the platform, inadequate computer hours, and poor population sectioning, which constrain meaningful digital engagement.

In contrast, Becker-Pestka (2022) identifies considerable cross-national variations in prison ICT provision. Sweden operates a central ICT network with learning centers in each penitentiary unit, where teachers deliver educational opportunities regardless of security level. However, recent changes in Swedish prison policy (i.e., notably the controversial 2026 law permitting the imprisonment of children as young as 13) complicate both narratives of Nordic exceptionalism and the future trajectory of ICT provision. Norway's Internet-For-Residents network, introduced in 2009, provides supervised internet access for education in classrooms across all prisons, treating digital technologies as a routine part of course delivery. Germany's intranet portal (operational since 2007) provides e-learning through both distance and in-person teaching, while Poland offers e-learning solutions but remains constrained by limited human and infrastructural resources. Collectively, these approaches position digital inclusion as a prerequisite for education. The most robust quantitative evidence for digital inclusion as a driver of rehabilitation comes from McDougall et al.'s (2017) seven-year study across 13 UK prisons, which found a 5.36% reduction in reoffending within a year of release, suggesting that digital inclusion can have meaningful reformative effects.

In the USA and Australia, ICT deployment primarily takes the form of e-learning systems, prison kiosks, and in-cell tablets. Kerr and Willis (2018), in an audit of prison ICTs in Australia, conclude that correctional departments lack the evidence base to determine best practice, and the digital divide will widen unless jurisdictions make deliberate commitments to technology investment. In the USA, prison kiosks have been deployed mainly for purposes such as account balance checking, visit scheduling, and communication with

case managers, alongside minimal educational content. However, access is shaped by institutional hierarchies: Equipment is shared under restricted hours, and competition for kiosk use is intense (Bardelli et al., 2022). A significant development has been the introduction of in-cell tablets since 2017, now adopted in 25 states. Although distributed at no cost, these tablets charge premium fees for functions such as music, games, e-books, and emails. Bardelli et al. (2022) characterize this as predatory, finding not only an inordinate financial burden on residents and their families, but also that behavioral, communication, and consumption data are made available to providers and law enforcement, effectively making users finance their own monitoring. This illustrates how digital inclusion can simultaneously expand access and reproduce new forms of inequality.

The consequences of digital exclusion extend beyond custody. Reisdorf and Rikard (2018) argue that digital exclusion during incarceration hampers rehabilitation by undermining the digital dimensions of five domains necessary for reintegration: economic, social, personal, cultural, and health. Consideration of digital inclusion during incarceration should accommodate the residents' familiarity with these domains through technology. The negligence of this is also reflected in Reisdorf and DeCook (2022), where formerly incarcerated people describe themselves as "digital immigrants," positioned as outsiders in a society structured around digital fluency. At the same time, Knight et al. (2024) caution against both technological and social determinism, warning against the assumption that digital implementations will automatically produce rehabilitative outcomes. Digitalization adopted as an immediate solution can rapidly transform fundamental practices and introduce more complexities than anticipated.

Taken together, this literature shows that prison digitalization exists at the intersection of competing concerns. Digital technologies can support education, family contact, employability, and reintegration, while simultaneously enabling surveillance, commercialization, exploitation, or criminal communication. Legal and policy debates increasingly frame digital devices as distinct security concerns—different from other forms of material access—because of their communicative reach, information storage capacity, and networked nature (Smith, 2013; Taugerbeck et al., 2019). Understanding how prison systems navigate these tensions is therefore central to contemporary debates on digital participation and rehabilitation. The present study engages with these debates by combining existing insights with data from Danish prisons and the framework of positive and negative security elaborated below.

2.2. Positive and Negative Security Framework

The distinction between positive (enabling) and negative (restrictive) security derives from a broader debate in security studies regarding the moral values of security as a concept (Nyman, 2016). Traditional security studies situate security as an institutional or governmental force whose primary goal is to prevent or counter threats—what has come to be called *negative* security: the prevention of threats, protection against danger, and removal or suppression of what is harmful. When enacted, however, this type of security can compete with social goods that are sacrificed in anticipation of impending dangers, setting aside conditions that could lead to human flourishing. Hoogensen Gjørv (2012) articulates *negative* security as "security from" (prevention or removal of danger even through violence, i.e., grounded in fear) and positive security as "security to" (ability for individuals and communities to pursue connection and flourishing conditions, i.e., grounded in trust). Importantly, these two types of security are not independent dimensions but coexist and interact. The important question is not whether to have negative security (as prevention of danger is a prerequisite in total institutions such as

prisons), but whether negative security exhausts the possibilities for enabling conditions in the context it is enacted in.

Schuilenburg and van Steden (2014) integrate these concepts into institutional criminology, and find that criminology in practice is dominated by *negative* security—with an emphasis on control and punishment inherently connected with policies around digital inclusion of residents—producing strictly restrictive conditions with little to no leeway for enablement. As a response, their *positive* security framework is predicated on three aspects: a socio-biological discourse invoking the need for human connection and empathy; an anarchic discourse, premised on the possibility of self-governance as a source for internal security; and a solidarity discourse in which a sense of belonging becomes a source of enabling security that cannot be achieved in solely threat-removing practices. These aspects bring together a conception of *positive* security as a safety mechanism constructed through relationships and participation, leading to conditions of agency and connection that preclude the possibility of harm.

Nyman (2016) notes that these terms are used inconsistently across authors, sometimes analytically (to describe the two types of security in practical applications), and sometimes normatively (to evaluate a configuration of security as good or bad), and proposes that their use be clearly delineated within the context of application. She argues that the analysis of a security configuration should be carried out pragmatically: identifying the contextual significance of security elements, evaluating their importance within that context, while showcasing the restrictive and enabling elements that are present or overlooked. This article applies this theoretical lens to digital inclusion in Danish prisons.

3. Methodology

3.1. Research Context and Access

The empirical data were collected in two closed state facilities in Denmark: Prison A (located on an island in south-eastern Denmark) and Prison B (located in central Denmark). Fieldwork was conducted over two periods in the summers of 2022 and 2023, consisting of two visits in each facility lasting 4–7 hours each. Initial access was granted after email correspondence with a senior developer of the Danish prisons' platform, who pointed us towards two teachers working in Prison A. Prison A was selected due to its status as a model institution for humane treatment and the high participation of its residents in the SKnet digital platform. The teachers relayed the information about our work to residents and got us in touch with residents who wished to talk about the platform. Overall, six interviews were conducted with a teacher present and five without (no guard or teacher present). It is important to consider that residents might have participated to stay in teachers' good graces. However, this concern was dispelled by their expressed problems and hopes to improve both the platform and their daily lives through raising awareness of their situations, and by their desire for their perspectives to be conveyed to decision-makers. Prison B access followed from an invitation extended through the network established in Prison A, alongside contacts established at a conference convened by KF where preliminary findings from this research were presented. The process was not without complications. During the final phase of data collection, a senior KF representative emailed the authors and the dean of our university, requesting that informal contact with prison staff cease and a debrief on informants' details and interview responses. This request was declined as it would constitute a breach of confidentiality. The representative subsequently informed us that all research must follow a top-down

approval, and that future proposals would be considered only if oriented towards implementation of novel technologies in open prisons instead of investigating current technologies across facilities. This instance occurred simultaneously with continuous expressions of willingness to participate by prison staff members, but contact was terminated in anticipation of potential predicaments for the employees. This encounter is reported not as a grievance but as contextually relevant, as institutional resistance to independent research access is itself data about the conditions under which digital inclusion is negotiated. Given this encounter and the general sensitivity of conducting research in carceral environments, particular attention was paid to ethical considerations throughout the study. Participation was voluntary and participants were informed that they could withdraw at any time. Identifying information was removed from transcripts and pseudonyms were used throughout the analysis. These measures were particularly important given the unequal power relations inherent in prison settings and the potential risks associated with participation.

3.2. Participants, Methods, and Data Processing

The dataset comprises semi-structured interviews with nine residents, two formerly incarcerated individuals, four prison teachers, two prison guards, one senior developer of each prison's digital platform, three workmasters (i.e., welders, carpenters, painters, chefs), and one board member of an NGO supporting reintegration and a formerly incarcerated individual himself—totaling 22 interviews, spanning 30 min. to one hour each. Additionally, fieldnotes from approximately 25 hours of on-site observations and notes from an unrecorded interview with an informant (who did not wish to be recorded) from an NGO that supports families of residents. All participants provided informed consent and are anonymized as follows: residents 1–9 as R1-R9; formerly incarcerated individuals as FR1 and FR2; prison teachers as PT1–PT4; guards as G1 and G2; platform developer as D; workmasters as WM1–WM3; and the two NGO members as NGO1 and NGO2. All informants were males except for two teachers, one NGO representative, and one prison guard. Upon consulting the teachers and guards, we were allowed to use a Dictaphone for recording the participants, who were all informed about the recording and consented beforehand. All interviews were conducted in English and fully transcribed. The residents' level of English ranged from advanced to fluent; therefore, no misconceptions occurred. The research follows the guidelines of RUC's Research Ethics Committee and is part of a broader PhD project approved by Roskilde University. The analysis was conducted collaboratively, where the two authors coded the transcripts independently and thematically categorized the data, after cross-verifying them with the audio interview files. Finally, the authors jointly agreed on the three themes analyzed in the following section concerning digital inclusion and the overall conditions of imprisonment across three facility types: remand (pre-trial), closed, and open.

4. Findings

4.1. Remand Facilities: Digital Desert and Negative Security Dominance

Interviews with current and former residents alike have made clear how strenuous everyday life feels in a remand facility. Digital access is not just restricted; it is absent. Certain residents have access to an in-cell TV (a "privilege" that could be revoked in case of misbehaving), sometimes shared with another cellmate, the only available digital affordance—referring to the action possibilities enabled by digital technologies and infrastructures available to residents. Regarding communicative infrastructure, participants described it as a regression to a pre-digital era:

> The way they make you speak with people there is in letters. We're talking high-end technology, better than smoke signals [laughs]. (FR1)

The absence of digital tools in pre-trial facilities serves the purpose of preventing the residents from communicating with parties that could affect the outcome of their case. Letters undergo scrutiny before sending and, for months, the only in-person communication allowed is supervised 1-hour visits twice a month with family members or with an attorney (FR1, FR2). However, this ostensibly justified condition seems more punitive than precautionary when put into perspective with the overall remand prison context. Residents in pre-trial facilities are allowed one hour of yard time per day, have scarce working opportunities, and most facilities have no in-cell toilet—instead, they must complete their personal hygienic routines by 5 pm, while both FR1 and FR2 mentioned that a one-size-fits-all diet of 1,500 calories per day is standardized.

The SKnet intranet platform existed in remand facilities in 2014 (PT4), where residents could access educational material but also world news added by prison teachers. It is now implemented only in closed state prisons with far fewer features available (PT1, PT3, D). Conditions in remand prisons were described as extremely tough (R1 and R2; FR1 and FR2), while FR1 even characterized them as "some of the worst in the West." The time one serves there is also considerably long, with one participant waiting for two years for trial (R7), and another staying in remand for seven months despite turning himself in and agreeing to plead guilty (R1).

The negative security logic is explicit and unmediated in pre-trial facilities. Because danger prevention is organized categorically rather than individually, digital deprivation is not assessed based on the actual risk of each detainee. Residents with minor charges and those whose digital access genuinely poses an evidentiary threat are all governed by the same collective digital exclusion, leaving no leeway for positive security through reward-based trust. Traces of ostensibly positive security configuration could be identified in certain permissions granted for toilet use after 5 pm or preferences towards residents for work opportunities, both contingent on the residents' behavior (FR1, FR2, R1)—but these are concessions based on acquiescence, not privileges based on trust. When residents wish to make a request or ask for help, they often need to press a button that notifies the guards who eventually decide whether to grant the request based on the urgency of the need, the frequency of the button use, or previous interactions with the residents (FR1, FR2):

> In ten months, only two times have I rung the bell after five. And you have to THINK. You have to think about what you're going to say….As soon as they open the door, you be like: "Sir, I'm sorry, I ate something expired, and it's bothering me." You have to say something like that, man. (FR1)

> Either you want to go to the bathroom, take a shower, ask for some help, whatever occurs…sometimes you have to wait for a long time, which is very humiliating. (FR2)

Outside the element of trust (which is hardly evident in these examples), positive security is co-constructed through participation and agency, aspects entirely absent from remand conventions, where residents are stripped of their autonomy over elementary everyday life. The strong reliance on negative security changes drastically after transferring to a closed state prison.

4.2. Closed Prisons: Limited and Outdated Digital Environments

The transition from a remand facility to a closed prison represents the first movement up the carceral digital ladder. Here, the facilities are equipped with computers providing access to the SKnet intranet platform, mainly for educational purposes—an acknowledgment that digital inclusion is a legitimate component of sentence management. However, this implementation was driven not by deliberate digital participation policy but by necessity to comply with European standards. In 2018, all digital access in closed and remand facilities was terminated after a security breach incident where a resident in the closed Prison B uploaded radical content via a PlayStation console (D, PT1). The SKnet was restored in 2021 following pressure from the European Committee for Prevention of Torture and Degrading Treatment (European Committee, 2020).

The platform provides access to selected offline resources: legal information, news on prison rules, a library of study material, and courses up to BSc education level. Realistically, however, the level of education one can receive while in prison is up to high school level, akin to the one achievable without digital tools. Residents pursuing university-level courses must remotely submit homework to professors who do not know that the student is incarcerated (R2). The combination of insufficient study material (R2, PT1), slow platform performance (R2, PT1), limited computer time, difficulty ensuring furlough for classes requiring mandatory attendance (R4), and the fact that professors assess residents' assignments strictly as non-incarcerated students makes pursuing higher education during custody extremely difficult.

Despite the SKnet including features for remote courses, these—alongside the news feature—are non-functional without internet connection. The positive/negative security tension takes a more complex form in this context, precisely because the institution formally acknowledges both imperatives. The SKnet exists because prison services recognize that digital provision is part of the rehabilitation process and a means to acquire digital literacy. With the platform as a tool implemented to satisfy these needs, a clash of positive and negative security values occurs. The security breach of 2018 led to a 3-year shutdown and reinstatement with nominal educational value, illustrating the hierarchy when positive and negative security imperatives conflict directly: a nearly absolute turn to negative security that collectively affects the residents, eliminating both potential danger and potential flourishing. In the closed prisons, however, there is leeway for positive security through institutional factors.

One such factor is the role of prison teachers, who actively build trust relationships with residents and have shown perseverance in their efforts by undertaking substantially more tasks than they officially have to. In practice, this is shown by providing additional educational material for the students' BSc assignments, converting digital material from the universities to SKnet-compatible formats (a process taking 2–3 hours), and offering encouragement and visible progress plans:

> Something like NemID, e-Boks [digital citizen information portals in Denmark]; why should we set them outside when the whole purpose of what we do here is to make it possible for them to get out and be functional? That's not what prisons are doing, and that's what we should be doing….You get a lot more people wanting to go to school, because they see possibilities [if online access was granted]…this way they can see the progress in their lives. That, in my opinion, works. (PT1)

However, this attitude is not the same towards everyone. The teachers acknowledge the dangers of open online access (PT1) and selectively strive to help students who have earned their trust, but stick to strictly formal interactions with students who try to abuse it, while also explaining that disciplinary action will be taken in cases of misconduct (PT1, PT3). This approach hinges on decisions based on internal knowledge of the context, and stems from personal understandings that result in more balanced practices of negative and positive security with far fewer compromising factors since it combines trust and/or force where appropriate.

Another factor that illustrates positive security values in practice comes from the compartmentalization of sections in Prison A, which comprises wings of maximum security, general population, rehabilitation, and separate sections for specific gang members to prevent gangs from fighting each other (R1, R2, PT1, NGO1). In the rehabilitation wing—where residents are treated for substance abuse—positive security finds its fullest application. To our surprise, we saw the guards very close to the shared kitchen used by residents that was fully equipped with kitchenware and knives, a space where they sometimes have dinner with the residents (G1, G2). When asked whether she was concerned about working in close proximity with them and about the knives in the common kitchen unit, the guard replied:

> I have a "dynamics safety"—if there's a new inmate here, I'm 100% sure that those residents will have my back if he tries to do anything to me. (G1).

The guards further explained that they always receive new residents with both a smile and a warning against misbehavior, explaining the duality of their role:

> One is controlling and the other is supportive and resocialization, and they know it. (G2)

This example reveals the willingness to develop a protective community through relational investment. The safety of the guards is premised here on trust that is produced, not by instruments of force, but by reciprocal respect, while, simultaneously, force is resorted to when necessary.

In Prison B, the idea of security through trust is visible in the school section—a dedicated space for residents who have shown genuine desire to learn a craft or complete their education, handpicked and taught by teachers and workmasters (PT4). There, students take courses in welding, carpentry, painting, gardening, cooking, or completing their high school education and, in rare cases, continue pursuing higher education (R7–R9, PT4). The painting instructor explained that there is a maximum of three students per lecture for both safety reasons (no cameras in the school section making it difficult to anticipate and suppress violent incidents) and pedagogical reasons:

> You need to have a form of respect in human…you need to find out what kind of person you have in front of you, and how the person learns…in the learning process it is very important to have a close connection between the teacher and the learner….I have lots of time to sit and talk to them. (WM1)

The comments of the residents have also revealed the reciprocal nature of their interactions with teachers and other students, remarking that it is a privilege for them to be in the school section (R7–R9) and that their greatest fear when they are released is the condition of being completely, overwhelmingly free again (R9). These instances reflect Schuilenburg and van Steden's (2014) discourse of security by virtue of human

connection. The school section represents a community of like-minded students who support and encourage each other in struggles and successes that they can all relate to (R9). They also reported that being removed from the general population section allows them to create more meaningful relationships with the prison staff, without this appearing suspicious to other residents (R7–R9). In this context, not only is security established through trust relationships, but it also guarantees its preservation collectively. Naturally, boredom, lack of motivation, and repetitive routines inevitably cause restlessness at times (WM2, WM3), but combining negative security, that takes the form of dividing students per class in small numbers and of disinterest to misbehave due to unwillingness to return to the general population, and of positive security, that takes the form of solidarity and trust, neutralizes any substantial harm towards staff or fellow residents.

However, even though closed prisons seem to display a better balance between positive and negative security practices than pre-trial facilities, digital inclusion is still significantly absent from the everyday life of residents until they transfer to an open facility, where they get unlimited access to digital affordances.

4.3. Open Facilities: Opening the Digital Gate

The open facilities represent the furthest point of the digital carceral ladder, and the institutional milieu where positive security is fully realized. Residents serve the last 3 to 9 months of their sentences in open facilities with fewer guards, more lenient furlough, reduced containment architecture, and digital access equivalent to that of free citizens. This way, residents have ample opportunities to utilize digital affordances for more contact with their families and educational/working environments attendance (R1, R3–R5, R9, PT1).

Across interviews, all participants who had served time in open prisons highlighted the ease of pursuing education, as they had full internet access through communal computer rooms and, in some cases, even PCs in their own cells, allowing them to complete BSc-level courses in natural sciences (R4), finance (R2), electrician apprenticeships (R3), and even medicine (R9). Additionally, the relationships with the guards appeared to be more collegial, and sometimes even friendly, even though there are no specific sections. Specifically, FR2 recounts an example in which he was caught smoking inside the facility that illustrates the nature of his relationship with the guards:

> They would take the cigarette and toss it in the sink and be like: "Come on, you're putting me in a very stupid situation." I really respected that, you know, because instead of charging people for smoking or whatever, he was like: "Come on, I'm on duty today. Let's make it work." (FR2)

This example captures how positive security operates in open prison relationships. Instead of taking immediate disciplinary action for a minor misdemeanor, the guard appealed to the resident's moral sense of responsibility, treating him as an equal. This attitude stems from a mutual understanding that rehabilitation is their common goal, leading the guard to overlook an incident that could otherwise cause a significant setback for the resident, trusting that he would not repeat it. These relationships facilitate reintegration practices by emphasizing trust and autonomy, allowing residents to network outside the facility during working or school hours (FR2, R4), form friendships with like-minded residents (FR2), and maintain easier contact with family and friends through their personal smartphone (R3, R4, R9, FR2).

However, the reduction of negative security in open facilities does not remove all constraints. In comparison to the highly monitored environment of closed facilities, open prisons can create more visible and consequential power dynamics due to hierarchies among imprisoned individuals (R3, R5, R6, R9, FR2, NGO1). NGO1, formerly incarcerated and now the director of an NGO that helps incarcerated individuals with reintegration, describes "strong" residents in open prisons as "kings [who] decide who does what…they are violent, threatening inmates, forcing others to smuggle drugs." Other residents (R3, R4) also mentioned that they were sent back to closed facilities when they were caught with substances that were "planted" among their belongings. FR2 described the power dynamics in closed prisons as more diffuse and attenuated because each unit contains only seven to 12 residents. In the open facility where he served his sentence, he described instances in which both he and other residents were provoked or hazed until they became part of a larger group of residents (FR2). The implication of substantially loosening negative security from one step of the carceral ladder to the next appears to be the enabling of coercive behaviors that carry over to the open prisons from the hierarchical structures molded in the closed prisons.

Another interesting finding comes from social workers at NGO2 who help incarcerated individuals stay in touch with their families. The restoration of full digital access in the open prisons has sometimes resulted in tensions within families (NGO2). After a long period of rationed contact with their loved ones (R1, R3–R7, R9), fathers and husbands in the open prisons are suddenly able to communicate without time restrictions. Structured contact that had become part of a family's everyday rhythm over months or years can be disrupted by constant video calls that feel overwhelming for some recipients (NGO2). Residents repeatedly described their families (R1, R3–R7, R9) as the cornerstone of their motivation for rehabilitation, yet this sudden increase in communication sometimes created pressure when family members began to feel overwhelmed. The prevalence of positive security—based on autonomy, trust, and suddenly unlimited digital access—after years of living in carceral environments dominated by negative security, arguably leads residents to compensate for the time lost during remand and imprisonment in closed facilities. Despite both the figurative and literal openness of open prisons, challenges persist because of the institutional imbalance between positive and negative security practices and the unequal permissions governing digital access across different prison types.

5. Discussion and Conclusion

The three stages of the Danish carceral ladder reveal an institutional approach with a coherent internal logic, but also a temporal structure that provides intermittent digital solutions to problems that are constant across residents' sentences. The ladder-like approach increases digital provision as a resident moves from one facility to another, but what the findings show is that this progression arrives too late and is mostly inadequate as it is compressed into the final months of residents' sentences after years of digital exclusion. What Reisdorf and Rikard (2018) describe as economic, social, and personal dimensions in their model of digital inclusion are severely impacted by the lack of digital life in the first two stages of the Danish carceral ladder, where contact with families is scarce but vital, and where their education and skill acquisition are postponed, sometimes for years. This also affects their ability to make a living upon release, since former residents in Denmark need to pay for the expenses of all the trials that determined their sentence (NGO1).

Initially, digital inclusion appears to be lacking proper implementation due to the lack of a framework that would allow the values of positive and negative security to be examined analytically against current

practices within the institutional context of the KF. But the KF has already acknowledged and implemented the importance of such a framework within the organization, the so-called *dynamic* (positive) and *static* (negative) security. This pair of concepts is not identical to positive and negative security, since they lack the conceptual underpinnings that would make them analytically useful, but they are structurally analogous. Static security operates within the same categorical, threat-suppressing logic that characterizes negative security, "security from" (Hoogensen Gjørv, 2012), based on fear; dynamic security operates within the enabling logic of positive security, "security to" (Hoogensen Gjørv, 2012), based on trust. These values are visible in the mission statements of the KF where normalization (i.e., that prison conditions should resemble the conditions present in free society as much as possible) is emphasized to the point that it does not pose a threat to society, prison workers, and residents themselves (Kriminalforsorgen, 1998), and digitization of carceral facilities is expressed as a necessary step (Kriminalforsorgen, 2023). However, the biggest part of one's sentence relates to a substantial absence of digital inclusion, dictated by the categorical, threat-suppressing logic of negative security. Put differently, *the* SKnet represents a static security solution to a fundamentally positive security problem: an offline, dated platform, sporadically accessed but designed to reflect the acknowledgment that digital inclusion matters. In practice, it materializes the fact that digital inclusion matters only if even the slightest potential of positive security is eliminated. Not only is this evident in the content of the platform, but also in the institutional context in which it was established. The 3-year shutdown after the security incident of 2018, and its reluctant reinstatement in 2021, exemplify how negative/static security asserts its position when in direct conflict with positive security. Therefore, it is not the acknowledgement of a positive and negative security framework that is mainly missing from institutional policies, but rather the decontextualization of the decision-making process.

The experiences of residents across facilities showcase a gradual increase in positive security approaches, but not in institutional practices around digital inclusion. Digital inclusion in remand facilities is essentially absent, while the ostensibly gradual progression of digital inclusion in closed facilities through the SKnet is admittedly trivial. The prison teachers have mentioned that the digitization of closed and remand facilities has been part of their agenda for a long time (PT1, PT3), but despite the requests made in periodic KF conferences across Denmark, substantial changes have not yet materialized (PT1, PT3). Conversely, the open facilities feature an abrupt shift towards unlimited technological access that can become overwhelming (NGO2). Findings from our interviews show that the regulatory body within KF that is responsible for critical decisions consists of representatives who are not regularly present in the everyday application of the current institutional practices within carceral facilities (R3–R5, R9, PT1, NGO1). Arguably, this leads to a decision-making process from a largely decontextualized standpoint that, in turn, entails a technological determinism that policymakers are advised to avoid (Knight et al., 2024). In the context of closed facilities, the mere existence of a digital platform does not constitute the achievement of digital inclusion, while in the context of open prisons, abrupt and unlimited digital access does not result in seamless digital integration.

The findings of the present endeavor and of current literature suggest a need for contextually driven policies that balance positive and negative security practices throughout the carceral life of sentenced individuals. This does not constitute a call to eliminate security measures; it calls for policies that allow digital provision through both dimensions at every carceral stage instead of overemphasizing one of the two types of security in every step of the digital carceral ladder, as real-life examples have highlighted the importance and feasibility of such policies (Becker-Pestka, 2022; McDougall et al., 2017). In practice, this requires an institutional digital strategy that differentiates individual risk from collective punishment, something that static security is structurally

incapable of producing. Moreover, dynamic security is a concept that could be applicable not only in facilities, where relationships between staff and residents can enable security through trust, but also within the ranks of KF themselves, where trust in the judgement of the staff who experience the prison environment regularly can lead to more context-based decisions, promoting both positive and negative security practices. Despite the findings of this study suggesting various shortcomings in the current state of residents' digital inclusion and security configuration of the Danish prison system, the KF already possesses the institutional and conceptual tools to achieve a more moderate balance between security and reformation; a balance that matters inside KF's prison walls as much as it matters inside KF's conference halls.

This is particularly relevant given contemporary concerns surrounding social media, algorithmic amplification, online exploitation, and digital addiction, where exclusion from some forms of digital participation may be protective. Our argument is neither for unrestricted digital access, nor is it techno-optimist. Rather, it is for graduated, supported digital participation, premised on the recognition that exclusion produces passivity while inclusion, when scaffolded appropriately, can produce critical digital agency. In sum, we argue for context-sensitive forms of digital participation that support rehabilitation while recognizing that different digital environments carry different risks.

While dominant framings of prison digitalization tend to position security and digital access as inherently in tension, the findings of this study problematize that assumption. Across all three facility types, security was not only achieved through restriction. Rather, it was actively produced through trust, in the relationships between teachers and residents in the school sections, in the relational dynamics of the rehabilitation wing, and in the collegial interactions between guards and residents in the open prisons. These instances suggest that trust is not simply a byproduct of positive security conditions but a mechanism through which security is constructed and sustained. For criminology, this has a broader implication. Namely, the fear/trust dichotomy that underpins the positive/negative security framework is not merely descriptive of two institutional orientations, but evaluative, as it asks whether the security arrangements in place are oriented towards the suppression of danger or towards the conditions under which people do not become dangerous. Digital participation, understood through this lens, is not a concession made despite security concerns, but a domain in which security can be actively produced through graduated responsibility, relational investment, and trust.

Digital participation should therefore be understood as a central component of contemporary resettlement. In a society as thoroughly digitized as Denmark, release without adequate digital preparation is not a neutral condition but a structural disadvantage compounded onto the existing vulnerabilities that many residents carried before incarceration. The ladder-like approach currently in place delays digital preparation to the final months of a sentence, by which point the cumulative deficit in digital skills and social connectivity is substantial. Effective resettlement therefore requires that digital participation be treated not as a reward for progression through the carceral system, but as a consistent feature of it.

Despite the fruitful insights provided by our informants (to whom we are *very* grateful), certain limitations need to be acknowledged. Much of the empirical work was conducted in two closed facilities, and while interviews provide information about open and remand prisons from people who have experienced their realities, the sample is not representative of the full range of Danish carceral institutions. Additionally, the participants were predominantly adult males, leaving the experiences of women, delinquents, and residents with psychiatric

diagnoses unaddressed. Moreover, the study does not include perspectives from family members of residents, whose experience may vary significantly. Finally, the imposition of access constraints by the KF barred the possibility of interviewing management-level staff of the Directorate, meaning that the reasoning behind the decision-making of security policies is not fully illuminated.

Nonetheless, the Danish case illustrates broader challenges for prison systems internationally. These tensions reflect broader transformations across criminal justice systems, where digital technologies simultaneously create new opportunities for rehabilitation, new mechanisms of surveillance, and new forms of inequality. Rather than framing digital access as a binary choice between security and inclusion, prison authorities may benefit from designing graduated forms of digital participation that combine risk management with opportunities for learning, communication, and preparation for release. Such an approach would not simply modernize prison infrastructures but strengthen the continuity between imprisonment and life after release, positioning digital participation as an integral component of contemporary resettlement rather than a privilege reserved for the final stages of incarceration.

Conflict of Interests

The author declares no conflict of interests.

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Social Inclusion
2026 • Volume 14 • Article 12700
https://doi.org/10.17645/si.12700

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Open Access Journal

When the Carceral Web Slips: Digital Moral Labour Among Migrants in Legal Precarity

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Submitted: 30 April 2026 **Accepted:** 14 September 2026 **Published:** 15 October 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

Across Europe, migrants in legal precarity experience forms of carcerality that extend beyond prison walls. This carceral continuum operates through migration controls, policing, bureaucratic scrutiny, stigma, and, increasingly, digital infrastructures. Drawing on two multi-sited fieldworks and digital ethnographies in Europe, this article explores how two formerly incarcerated migrant men navigate this continuum through digital practices. Bridging migration studies, border criminology, and digital anthropology, we extend Gurusami's (2019) concept of the carceral web by introducing carceral slippages to capture a form of control that is pervasive without being seamless: Articulations across penal, migration, administrative, and digital systems remain partial, opaque, and difficult to anticipate. These slippages generate uncertainty while leaving limited room for manoeuvre. We then show how migrants negotiate this condition through digital moral labour: selectively disclosing or concealing incarceration, managing stigma, and sustaining obligations of care across geographically dispersed relationships. Rather than treating digital technologies primarily as deterministic instruments of state surveillance or merely emancipation, we explore how they also become infrastructures through which migrants negotiate personhood, care, and obligation under conditions of legal precarity. By foregrounding migrants' retrospective experiences and (digital) practices, we show how carceral slippages shape both the uncertainty individuals endure and the limited possibilities through which they negotiate who they are and who they can become. This article complicates accounts of carcerality as seamless or totalising, showing how the carceral web can remain pervasive precisely through its fragmented and uncertain articulation.

Keywords

carceral web; incarceration; digital inclusion; migration; uncertainty

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1. Introduction

"I felt free." Uba said this without irony when recalling his last period of incarceration in Switzerland. After years of sleeping rough, living at the fringe of society, navigating opaque administrative requirements, and moving across European borders under constant threat of arrest due to his precarious legal status, three weeks in this prison felt, to him, more stable and bearable than life outside. Ali, who held a precarious temporary permit in Switzerland, also felt that the rhythm of prison provided a degree of stability otherwise lacking in his everyday life. However, his short incarceration carried an additional cost, since it could endanger his prospects of obtaining a more stable residence permit. Yet, for both, the consequences of incarceration also extended into their close and more distant relationships after release.

These two life-snippets resonate with what Foucault (1979, pp. 297–98) described as a carceral continuum: "a subtle, graduated carceral net, with compact institutions, but also separate and diffused methods." For precarious and deportable migrants, confinement may thus extend from prisons and detention centres to asylum reception facilities, border controls, welfare systems, policing practices, and migration bureaucracies: a broader landscape of legal liminality, deprivation, and uncertainty (Motta, 2026). These dispersed forms of control are increasingly mediated by digital infrastructures. We build on and expand Gurusami's (2019, pp. 2, 15) notion of the carceral web, defined as "the spatial intersection between carceral institutions and digital technologies" that "functions as a racialized tool of social control that extra-legally constrains the lives of Black people and the opportunities in their communities." Its "stickiness" captures how institutional and digital traces continue to constrain life after release. Uba and Ali's prison records, administrative requirements, and migration files follow them beyond incarceration and across borders, while their consequences remain difficult to anticipate—both for them and for us as ethnographers.

Drawing on two multi-sited fieldworks and digital ethnographies in Europe, this article explores how two formerly incarcerated migrant men navigate this carceral web through digital practices. We introduce "carceral slippages": not an escape from the carceral web, but the gaps, discontinuities, and ambiguities through which it is navigated. Carceral slippages thus capture how the web remains pervasive without being seamless, while its fragmented articulation produces uncertainty about where, when, and with what consequences carceral traces may materialise.

Bridging migration studies, border criminology, and digital anthropology, we examine how our interlocutors negotiate these uncertain conditions through what we call "digital moral labour": the digitally mediated work of selectively disclosing or concealing incarceration, managing stigma, and sustaining obligations of care across geographically dispersed relationships. Rather than approaching digital technologies primarily from the perspective of state control, we examine digital inclusion from actors' own vantage points and how they use them to negotiate stigma, care, and masculinity across different relationships and audiences under conditions of continuing legal precarity. The two concepts capture different but connected dimensions of these trajectories: Carceral slippages identify the uncertain institutional conditions within which consequences materialise, disappear, or remain pending, while digital moral labour captures the relational work through which migrants live with these conditions. It is at the intersection of these two dynamics—continuing carceral constraints and enduring relational obligations—that digital practices are particularly significant for understanding the post-release experiences of migrants in legal precarity.

After situating these concepts within scholarship on carcerality, migration, and digital infrastructures, we present our ethnographic approach before tracing how uncertainty unfolds across Ali and Uba's trajectories, how carceral slippages emerge through interconnected but fragmented governance, and how digital practices become forms of moral labour through which they manage visibility and stigma, fashion viable moral selves, and sustain care across distance.

1.1. From a Sticky Web to Carceral Slippages

Imprisonment represents a reproduction of inequalities (Wacquant, 2009), while racialised carcerality operates through overlapping systems of surveillance, discipline, and disposability (Gilmore, 2007), increasingly mediated by electronic monitoring, data sharing, and bureaucratic scrutiny (Brayne, 2021; Gurusami, 2019; Lyon, 2008). Gurusami's (2019) work on the carceral web shows how carcerality and digital technologies are woven together in ways that extend punishment beyond prisons into welfare systems, housing and labour markets, producing subjects vulnerable to further hidden sentences. Its "stickiness" is characterised "as the Internet's ability to make carceral histories inescapable across time and physical space, making it impossible for formerly incarcerated people to shed their criminal histories" (Gurusami, 2019, p. 435). For deportable migrants in the European context, however, this web stretches across borders, connecting penal and migration institutions. These connections also create fragmentation, nuancing the carceral web's inescapability.

Ali and Uba's experiences reflect the intertwining of penal and migration controls around deportable "crimmigrant others" (Aas, 2011), for whom uncertainty becomes a structuring condition rather than an episodic experience (Bosworth, 2014; Wyss, 2022). Blurring the boundaries between crime and migration, European states increasingly rely on biometric databases, transnational information pooling, and algorithmic risk assessment, connecting policing and migration control across jurisdictions (Khamsy, in press), extending control beyond territorial borders and embedding surveillance into migrants' everyday lives (Vuilleumier, 2025). These developments might foster a deceptive image of technological inescapable state control, yet what information circulates, connects, or becomes consequential remains uncertain—including to migrants themselves. Carceral slippages capture these uncertain passages across partially connected penal, migration, administrative, and digital systems as experienced by people themselves. Rather than opposing the carceral web, this concept captures how the web can remain pervasive without necessarily being seamless: Its connections remain discontinuous and difficult to anticipate.

1.2. The Stigma of Racialised and Gendered Threat

Uncertainties and constraints produced through the uneven carceral web are not distributed equally. For racialised non-citizens, carceral traces also carry stigma, intersecting with gendered constructions of threat and deservingness. Wyss (2022) shows how European migration regimes construct particular forms of migrant masculinity as threatening, increasingly associating migrant men—particularly those perceived as Muslim, North African, or Black—with criminality, sexual danger, and an inability to conform to European gender norms. The figure of the "criminal migrant" is therefore not only racialised but profoundly gendered.

In Switzerland, this racialised and gendered construction of criminality has been reinforced by law surrounding the figure of the "foreign criminal." The 2008 popular initiative on the "removal of foreign

criminals," most significantly, contributed to framing non-citizens as a distinctive category of criminal threat and ultimately expanded judicial expulsion, as penal conviction can carry consequences for freedom of movement and the right to remain (Gnaedinger, 2024). The figure of the "foreign criminal" thus connects the stigma of racialised masculine threat to concrete forms of differential punishment. This illustrates the punitive turn in the governance of populations deemed "undesirable," whereby migration control and penal logics extend beyond the formal boundaries of imprisonment (Motta, 2026).

The expansion of the Swiss carceral system has accompanied this punitive turn, producing significant, though rarely publicly discussed, patterns of migrant incarceration that scholars have termed a "silent demographic revolution" (de Dardel & Blanc, 2023, p. 104). In 2024, approximately 72% of incarcerated people in Switzerland were foreign nationals, placing Switzerland among the most extreme cases in Europe (Gnaedinger, 2024). Yet this figure conceals an even sharper disparity: Migrants without residence permits, estimated at around 2% of the population, account for nearly half of those incarcerated, while foreign nationals are disproportionately subjected to pre-trial detention and imprisonment even for minor offences (Fink, 2017). Prison, in this context, is not merely a response to criminalised conduct but a site of racialised and gendered constructions of non-citizenship with consequences that extend long after release.

1.3. Release, Rehabilitation Void, and Digital Infrastructures

Despite the significance of the Swiss case in Europe, research has paid limited attention to the post-release trajectories of formerly incarcerated people, focusing instead mainly on recidivism (Capela & Lambelet, 2016). Existing studies show that most people released from Swiss prisons are young men facing precarity (Lambelet, 2025). Release is often marked by unemployment, accumulated debt, housing instability, and social isolation (O'Mara, 2026), while Swiss rehabilitation programs frequently fail to provide sustained orientation for reconfiguring life trajectories or for projecting viable futures (Lambelet, 2025).

Migrants in legal precarity face rehabilitation challenges amid a striking institutional void: For people like Ali and Uba, rehabilitation programmes are simply absent. The work of rebuilding a viable life (Warr, 2020) is therefore demanded under continuing legal precarity. Penal punishment, migration-related sanctions, and social isolation accumulate, while release often returns individuals to homelessness, administrative uncertainty, restricted employment, and police scrutiny, conditions against which prison may have appeared comparatively predictable (Carceral & Flaherty, 2022; Halsey, 2007).

Digital infrastructures are increasingly central to the post-release landscape. Research on formerly incarcerated people has documented significant forms of digital exclusion, including limited access to devices, connectivity, and digital literacy, which can compound marginalisation (Reisdorf & Rikard, 2018). For migrants in legal precarity, however, the problem extends beyond digital exclusion. Digital access may itself be conditional, mediated, or risky: Digital infrastructures can simultaneously enable transnational connection and expose users to new forms of identification, traceability, and scrutiny (Khamsy, in press; Nagy, 2024). While scholarship on digital carcerality has largely foregrounded state surveillance and control, less attention has been paid to the relational work performed through digital practices under carceral conditions. For migrants, this relational work is distinctly transnational, as obligations and expectations persist across borders despite incarceration and legal precarity.

1.4. Transnational Obligations and Digital Moral Labour

Transnational care is embedded in moral economies of obligation, sacrifice, and reciprocity, binding distant individuals through gendered and generational power dynamics (Čiubrinskas & Glick-Schiller, 2025). For migrant men, these obligations intersect with gendered expectations of self-reliance and provision (Griffiths, 2015), while legal precarity simultaneously shapes which performances of masculinity become perceived as deserving or threatening (Wyss, 2022). Remittances crystallise these tensions: Sending money is not merely an economic transaction but a relational performance of care and responsibility, while the inability to provide can expose the gap between expected masculine roles and the material capacity to inhabit them (Vuilleumier, 2021). Messaging, video calls, social media, and remittances therefore operate not merely as communication technologies but as infrastructures through which care, obligation, and presence are sustained across distance.

Neither incarceration nor release suspends these expectations. Rehabilitation entails material and social reintegration but also the work of becoming—and being recognised as—a different person (Warr, 2020). Yet for migrants in legal precarity, producing a credible redemption script does not necessarily enable social reintegration, as their legal and material conditions may prevent that "redeemed" person from being recognised or enacted in practice (Maruna, 2025). Warr (2020) describes narrative labour as the work prisoners undertake to produce institutionally legible accounts of change, while Laursen and Mjåland's (2025) notion of moral labour captures the more ambiguous ethical self-reflection through which prisoners grapple with wrongdoing, guilt, shame, and who they are or want to become, often with little institutional assistance. We extend this argument beyond institutional recognition: For migrants in legal precarity, moral labour unfolds in a post-release context where institutional reintegration is largely foreclosed while (transnational) interpersonal expectations persist. Personhood must then be negotiated before dispersed audiences: Family members, friends, partners, and other transnational ties before whom incarceration, hardship, provision, and respectability acquire different meanings.

We conceptualise these practices as digital moral labour: the digitally mediated work of sustaining, repairing, and negotiating personhood across relational audiences under conditions of continuing carcerality. If carceral slippages describe the uncertain articulations across partially connected carceral systems, digital moral labour captures the relational work through which individuals negotiate personhood under carceral opaque consequences.

2. Ethnographies Between the Digital and the Carceral Web

Our fieldworks were conducted in Switzerland and across other European contexts. We were both embedded in grassroots solidarity networks, enabling us to conduct immersive ethnographies and socialise with our interlocutors outside formal institutional settings, which often generate mistrust and suspicion among migrants in legal precarity.

I (Louis) conducted ethnographic fieldwork between 2018 and 2023 with Sub-Saharan male migrants experiencing housing precarity and negotiating everyday illegalisation. I relied on my personal network in Switzerland to access my interlocutors, notably a squatting collective that occupied vacant infrastructures to house precarious migrants. I met Uba in this squat, which included around 50 men aged 18 to 55 with

diverse legal statuses, including pending asylum seekers, rejected applicants, and individuals with residence permits. Several experienced recurrent periods of incarceration, homelessness, or informal housing. Later, I followed some of them across Europe (France, Italy, and Malta) through short visits and sustained online communication, adopting a longitudinal and multi-sited perspective. I maintained irregular contact with Uba through WhatsApp calls and messaging.

I (Nina) conducted fieldwork among interlocutors hailing from West Asia, mainly young Persian-speaking people on the move in southeastern Europe and in Switzerland. I drew on my command of Persian and prolonged online communications to sustain my discussion with my interlocutors. I began my fieldwork in Switzerland before moving to southeastern Europe. I met Ali among the men in reception centres or private housing in a French-speaking city in Switzerland. Ali stood out as particularly resourceful in navigating these constraints, notably securing shared accommodation quicker than many of my other interlocutors. I remained in contact with Ali through WhatsApp and exchanges of music video links on YouTube while I was outside of Switzerland. At the same time, his temporary permit restricted his mobility beyond Switzerland, making digital communication particularly important for sustaining relationships across borders.

As ethnographers, while we both hold Swiss citizenship, our positionalities differed and shaped exchanges and observations. I (Nina) identify and was identified as a woman and drew on my shared West Asian origins and linguistic knowledge to conduct my fieldwork in Persian. I (Louis) identify and was identified as a white man, conducting my fieldwork mainly in English and French. As a white European citizen, supporter, and researcher, I was often the recipient of narratives of endurance, dignity, and deservingness that inform part of the analyses developed in this article. Gender dynamics also shaped our (online) interactions with participants and are discussed in the analysis when relevant.

Our in-depth comparative analysis of two cases enables us to contrast Uba's trajectory and digital practices with those of Ali. We selected these two cases not because they are representative or statistically generalisable, but because they are theoretically productive. Their contrasting trajectories and (digital) practices allow us to identify recurring processes across otherwise different experiences, making carceral slippages and digital moral labour visible. While neither project was originally centred on incarceration, the relationship between incarceration, legal precarity, and digital practices emerged inductively from everyday interactions. Nina explicitly foregrounded digital media use in her ethnography, whereas Louis did not initially. Bringing these differently oriented materials into dialogue revealed shared dynamics across contrasting (digital) practices and experiences of the carceral web.

Our interlocutors' precarious legal status and the sensitivity of carceral and digital traces required particular attention to iterative consent, identifiability, and sensitive information circulation, which shaped our research practices. Nina respected Ali's wish not to have his interview recorded and took notes during the interview instead, while Uba consented to recording his interview. Furthermore, we removed details that could both further stigmatise our interlocutors and facilitate their identification, such as their nationality.

These precautions extended to digital materials, whose circulation and interpretation raised particular ethical concerns throughout the research. Drawing on digital reflexivity (Khamsy, 2025), we treated online materials as situated within the relationships through which they were produced and interpreted. Because accounts of incarceration were primarily retrospective rather than based on direct observation, we paid

particular attention to what was disclosed, minimised, or omitted. We both kept detailed fieldnotes documenting everyday interactions across sites, capturing (digital) practices unfolding before, during, and after incarceration, even though prisons themselves were not directly observed. Online and offline interactions were not separate but mutually constitutive (Hine, 2015). Facebook and WhatsApp constituted the primary communication infrastructures. We exchanged voice notes, calls, images, and updates with our interlocutors on a more or less regular basis.

For this article, our semi-structured interviews with Uba and Ali focused on their carceral experiences and digital practices in relation to our online and offline field observations. These interviews allowed interlocutors to reflect on digital practices we had previously observed, particularly regarding social media use. We referred to images encountered online during fieldwork to initiate conversations, rather than interpreting them independently of their contexts. These exchanges, rather than the online content alone, constituted the empirical material from which our analysis emerged.

Field notes and (informal) interviews were transcribed and analysed inductively, drawing on constructivist grounded theory. Analytical categories were generated through iterative comparison across our respective field sites, enabling triangulation between observations, narratives, and contexts.

3. Living Carceral Slippages

The trajectories of Uba and Ali through and within Europe reveal how carcerality unfolds beyond formal incarceration through legal uncertainty, fragmented governance, and uneven access to resources. We first trace how these conditions produce carceral slippages. We then analyse three forms of digital moral labour through which dignity, obligation, and personhood are negotiated across transnational relationships.

3.1. Trajectories of Uncertainty and Suspended Futures

After arriving in Italy in 2017, Uba spent a year in an asylum reception centre, where he finally received a temporary resident permit. His compliance with and dependency on the reception centre were perceived by Uba as existentially suffocating. “Just pray, behave well and hope to have good news,” he commented, adding: “You have to endure until your documents come. Then you can liberate yourself.” Increasingly frustrated by this dependency, Uba decided to “find [his] own way.”

Uba’s decision to leave Italy, first for France and later for Switzerland, must be understood against this backdrop of constrained choices. Although formally allowed to travel within Europe for three months as a tourist, Uba remained excluded from formal employment and encountered similar patterns of material precarity: lack of language proficiency, absence of stable work, and reliance on emergency shelters and later on squats. Sleeping in shelters and queuing for informal construction jobs, Uba described feeling trapped in a cycle of repeated failure. It was in this context of prolonged precarity that he eventually turned to street-level cocaine distribution, framed both as deviance and as a reluctant practice of survival in the absence of viable alternatives (Vuilleumier, 2023). Physical mobility thus coexisted with biographical stagnation: Moving elsewhere did not necessarily restore his capacity to move forward.

Following a fight with a client and subsequent police intervention, Uba was arrested and transferred to police custody, where he spent two weeks in conditions he described as "hell." Detained underground, without any furniture, privacy, or meaningful activity, he spent his days lying on the floor, watched constantly, allowed outside only 10 minutes per day, with a provided Bible as his only solace to maintain hope. He commented: "If you stay up to two weeks there and after that you continue with crime, honestly you don't like yourself [laugh]." What he emphasised most, however, was forced idleness and disorientation. According to him, he was not clearly informed of the reasons for his incarceration, the length of his sentence, or the procedures governing his case. "They never explained anything," he said, "they just said I had to go."

His transfer to prison did little to resolve uncertainty over the duration and justification of his sentence (see also Bosworth, 2014), an indeterminate suspension that ultimately lasted three months. Confinement was therefore not only spatial: Institutional time displaced his capacity to know and organise what came next (Carceral & Flaherty, 2022). Yet his later incarceration produced an almost inverted temporal experience.

After a subsequent arrest in 2022, for an "illegal stay" following a territorial ban related to his prior conviction, Uba spent three weeks in a German-speaking Swiss prison, an experience he recalled with surprising ambivalence, and even appreciation. In this facility, he had a room of his own, regular meals, paid work, recreational activities, meaningful relationships with fellow incarcerated people, and a predictable routine. When I (Louis) saw him shortly after his release, in the squat where Uba was staying, I remarked that Uba looked rested. Years later, during an online interview, Uba returned to this observation: "I know it's still prison—you don't have full freedom—but I was more comfortable," he explained, "I wanted to stay more. People laughed at me. Normally, people are happy to leave prison. But I wasn't." He added: "I felt safe….I didn't mind being locked up; I was not even feeling it. We played snooker, tennis, football. It felt almost like home—like we were in [home country]. I was busy. When you are busy, you don't really feel bad." Confinement therefore restricted Uba spatially while temporarily relieving some of the uncertainty structuring life outside.

Uba's experience is striking but not unprecedented. The routines, basic provisions, and relative stability of prison can make confinement a paradoxical sanctuary from precarious life outside (Halsey, 2007), particularly when deprivation stretches across cycles of incarceration and release (O'Mara, 2026). For Uba, this paradox takes a specifically migratory form: What does "freedom" mean when release represents returning to an illegalised existence?

While marked by comparable uncertainty, Ali's trajectory highlights a distinct articulation of carcerality and legal precarity. Ali's journey began in West Asia, in his hometown, where he belonged to an ethno-linguistic group subjected to longstanding discrimination. Having left his country as a teenager after completing two years of schooling, he made his way to Europe at a moment he described as one when "the road was open" (*râh bâz bud*)—when Europe's migration routes were relatively tolerated for those seeking international protection. Ali arrived in Switzerland in 2015, aged 16, alone.

Ali's experience of the arbitrariness of the asylum system shaped his sense of incomprehension: He could not understand why individuals with similar "stories" were granted asylum while others were rejected. During this period, Ali lived in a crowded reception centre for minors and went to the French language learning school. I (Nina) first met him in a French-speaking Swiss city in the early 2020s, through a mutual acquaintance.

Holding an F permit (a temporary permit awarded after a rejected asylum application; see Khamsy, 2025), Ali encountered significant difficulties securing an internship that could eventually lead to an apprenticeship. Nonetheless, he accumulated experience through a series of placements lasting between three and six months in various manual labour sectors, including construction and agriculture. Getting into an apprenticeship training with a temporary residence permit proved challenging, particularly because many employers in Switzerland are unfamiliar with such permits and often prefer hiring candidates with more stable statuses to avoid the potential additional administrative tasks required. Despite this, Ali managed to maintain good relationships with the employers who agreed to undertake the administrative procedures to hire him. He also developed friendships, one of whom I (Nina) met and who spoke highly of him. In this sense, Ali succeeded in building meaningful social networks in the city where he lived, that he could rely on when needed. During this period, however, he entered a phase of frequent nightlife, heavy drinking, and conflicts with other groups of young people. Through a local association, he met a family who became his "godmother" and "godfather" family. They met for regular dinners and outings. When he turned 18, he could move into a flat share and become friends with some of his flatmates.

I remained in contact with Ali over the following years, exchanging messages and links to music videos, even while conducting fieldwork in the Balkans. During one return visit to Switzerland, as we arranged to meet, Ali mentioned that he had moved from his flat share to a "quieter place." The meeting took place at this new location, and only upon arrival did he disclose that he was, in fact, living in a carceral facility. He explained that he had been involved in a fight that had escalated and resulted in his placement there for six months. Ali described his incarceration as "fair," but insisted that migration status made the sanction carry a heavier toll: "If a Swiss citizen and a migrant committed the same crime, the migrant would invariably pay a harsher price." Yet Ali spoke positively about the prison: He was permitted to leave during the day for work (in contrast with those who had no work and had to stay in), and the evening curfew meant he spent most of his nights at the gym. When we discussed this period again in 2026, he described it as a time he had ultimately come to appreciate, a kind of "cleansing."

At release, his relationship with the state remained marked by mistrust. Ali was deeply worried about the impact his prison sentence might have both on his employment and on his residency prospects in Switzerland. He noted that, after several years, the sentence could be removed from his record, yet the uncertainty surrounding its consequences fuelled his anxiety about the future. The sentence itself was known; its administrative afterlife was not.

Across these trajectories, incarceration paradoxically restricted movement while providing routines, material necessities, and temporal predictability often lacking outside, offering an ambiguous respite: a "peculiar kind of sanctuary" (Halsey, 2007, p. 343). Uba's "I felt safe" and Ali's "cleansing" thus point, however distastefully, less to prison itself than to the prolonged uncertainty against which imprisonment was experienced.

Release restored mobility but not control over the future. As Wyss observes of migration governance, opacity can work precisely by keeping people confused and "in a state of ignorance" (2022, p. 106), while uncertainty surrounding detention and administrative decisions makes their timing and consequences difficult to anticipate (Bosworth, 2014), compelling forms of caution and compliance. Uncertainty hence also lay in the connections themselves: whether, when, and with what consequences different institutions and jurisdictions would intersect. It is in these discontinuities of governance that carceral slippages become visible.

3.2. Carceral Slippages and Fragmented Control

During his 2022 arrest, Uba recalled the officers calling a colleague to "check [him] and see the system." The check revealed that he still "owed prison time"—a consequence Uba himself did not understand. He later understood, more or less accurately, that the detention concerned the violation of a five-year territorial ban linked to his previous conviction, which he admitted he had "not read properly." Past sanctions can lie dormant before being abruptly reactivated through routine policing (Brayne, 2021) and, for Uba, the carceral web materialised when an opaque institutional connection suddenly turned his past into renewed incarceration.

After leaving Switzerland for Italy following his second incarceration, Uba remained unemployed for eight months before securing a factory job through a placement agency, despite his expired residence permit. The tax records generated through this employment subsequently contributed to his obtaining a ten-year humanitarian protection permit in October 2024. His two Swiss convictions had therefore not prevented him from securing employment and subsequently regularising his status in Italy.

While Gurusami emphasises the administrative stickiness of the carceral web—particularly the "ubiquitous reliance on background checks as a complication of reentry" (2019, p. 8)—Uba's trajectory reveals how such stickiness may become less predictable across jurisdictions. Swiss and Italian authorities appeared to him to operate in parallel without full alignment, producing uncertainty over whether—and when—his convictions might become consequential. He speculated: "They might know, but they might wait….But if you behave well in Italy, I believe they might put it pending." The apparently tentacular "system" Uba described was thus experienced as pervasive without being totalising. Its connections remained partial, opaque, and difficult to anticipate. Whereas a past sanction had suddenly resurfaced through a police check in Switzerland, the circulation of its traces and its consequences in Italy remained uncertain.

Ali's trajectory reveals another configuration of this uncertainty. Unlike Uba, whose movement across jurisdictions exposed tangible discontinuities, Ali remained in Switzerland but was unaware of whether his completed prison sentence would have further consequences on his temporary status. After release, he worried that his conviction might affect his employment, residence permit, or ultimately his right to remain in Switzerland, reflecting the intertwining of crime and migration control around deportable "crimmigrant others" (Aas, 2011), for whom release from incarceration does not necessarily bring respite from the threat of further sanction (Bosworth, 2014; Wyss, 2022). In this sense, carceral webs could stick, but neither Ali nor Uba could know where, when, or with what effects.

These inconsistencies do not signal the absence of control but its uneven implementation. Carceral slippages did not eliminate risk; they displaced it across institutions, jurisdictions, and time, making its consequences difficult to anticipate. As Uba commented: "There's nothing you can do. You just have to endure until your freedom comes." Such endurance shapes the prolonged uncertainty in which people must orient their lives toward opaque consequences whose timing and outcomes remain beyond one's control (Vuilleumier, 2025).

Carceral slippage is therefore double-edged. Gaps, delays, and partial connections may leave room for manoeuvre; yet precisely because these openings remain contingent, they also sustain anticipation, caution and therefore docility. The cracks in "the system" can be navigated but never controlled. In this sense,

carceral slippages complement rather than oppose Gurusami's carceral web: They foreground the discontinuities through which its "stickiness" is unevenly experienced.

Yet the consequences of this uncertainty are not only institutional. Incarceration and legal precarity also raise relational questions: Who should know, what should remain hidden, and how can one remain recognisable as a respectable son, partner, worker, or future husband when carceral experiences threaten how one is perceived by others? These questions become particularly visible in Ali's and Uba's digital practices.

3.3. Digital Moral Labour: Managing Visibility

Digital platforms such as WhatsApp and Facebook become crucial arenas through which Ali and Uba negotiated the visibility and framing of carceral experiences. Both faced markedly different conditions of digital access during incarceration. Ali, who was able to leave the prison during the day for work, retained access to his smartphone both outside and inside the facility, except during designated "recreation" periods in the courtyard. As a result, his access to digital communication was not markedly restrained, and his face-to-face and digital interactions remained largely uninterrupted. In terms of his digital presence, he did not make any significant changes to his posts.

Yet continued connectivity did not entail disclosure. Ali framed his incarceration through a register of shame, closely tied to his position as a national from West Asia, identified as a Muslim, and to broader discourses surrounding "foreign criminals" in Switzerland. Against this backdrop, Ali distanced himself from those who embraced or displayed their prison experience—"These are the petty thugs." Beyond the legal risk of deportation, what was at stake for him was avoiding the stigma of migrant criminality. He repeatedly emphasised that such an event should not define him, in the eyes of the state and general population, but more particularly for those closest to him.

As we were talking, I (Nina) noticed a scar but did not dare mention it. Later in the conversation, he explained its origins: After injuring himself in a fall on the pavement, he chose not to inform his relatives in his home country, or even his Swiss godparents. "I don't want to make them worry; I think it's best not to tell them," he explained. This logic extended to his incarceration. In his communication with family in his hometown, he routinely withheld information about hardship and everyday difficulties, and even more so about imprisonment, which he considered shameful. In contrast to accounts of communication as emancipatory for incarcerated people (Hartnett et al., 2011), Ali's concealment enacted a form of moral labour through silence and omission.

While the carceral web emphasises the persistence of stigma despite mobility, Ali's case shows how non-disclosure and distance can interrupt its circulation. Self-censorship and digital infrastructures' avoidance might help precarious migrants to evade state surveillance (Nagy, 2024), where disconnectivity can both harm and support (Khamsy, in press). Ali remained digitally connected while practicing selective concealment. Silence was not an absence of relational work: Withholding incarceration allowed him simultaneously to distance himself from the figure of the "foreign criminal," preserve respectability before his family, and shield relatives from concern.

Such silence was impossible for Uba. During his two imprisonments, he did not have access to his phone or social media. Unlike Ali, whose phone access was almost unaltered, Uba's sudden interruption of digital presence and daily posts required him to inform his next of kin in his home country about his incarceration, as he put it: "I told them but carefully." He explained to his mother: "Prison here is normal. In Europe anybody can go to prison. In [home country], if you go to prison, you are a bad person." He added: "I was protecting them." Unable to control whether incarceration became known, Uba instead sought to control what it meant. Presenting imprisonment in Europe as ordinary, relatively comfortable, temporary, and fundamentally different from incarceration "back home," combined with his physical distance, enabled him to normalise incarceration for his relatives, communicate reassurance, mitigate the risk of stigma, and protect both himself and his relatives from shame.

Ali and Uba thus faced opposite conditions of digital connectivity but engaged in comparable digital moral labour. Ali could conceal incarceration and regulate who knew; Uba's enforced disconnection made disclosure difficult to avoid, so he regulated how incarceration was understood and sought to normalise it. In both cases, these different attempts to attenuate the stigma of incarceration (Lambelet, 2025) aim at the calibration of what could be disclosed, to whom, and in what form.

3.4. Digital Moral Labour: Becoming a Better Self

Beyond managing the visibility and stigma of incarceration, digital moral labour also involved rendering a viable moral self visible to others. Posting pictures and short reflections several times daily, Uba described his posts as "a preach": "For example, a friend of mine is married with children and he's cheating. I might post something indirectly to correct behaviour. I am sending a message across, so people can learn and behave." Uba thus described posting as both moral commentary and exemplary practice: "You lead by example." His posts addressed others indirectly, but they simultaneously positioned Uba as someone entitled to speak about proper conduct. Digital moral labour therefore involved not only managing stigma, but making moral personhood visible through the evaluation—and embodiment—of appropriate behaviour.

A few days after he obtained a factory job in Italy, I (Louis) recorded a post in which Uba was wearing his work uniform, lifting heavy materials near a dustbin, accompanied by the caption "working hard." During our interview, I asked him to reflect on this post. He explained: "Sometimes I write messages to show that money is not flowing and life here is hard…people will know life is not easy for Uba, he has a lot of challenges, he is surviving." Elsewhere, he described posting photographs of himself "lifting cartons [cardboard boxes], doing hard work, wearing dirty clothes, close to dustbin" so that distant relatives could "see how [he] struggle[s] here." What seems to matter was not simply communicating hardship but producing evidence of effort. His work uniform, dirty clothes, and physical labour made visible the exertion otherwise concealed by geographical distance. Rather than presenting himself simply as successful or unsuccessful, Uba presented himself as *trying*: working, enduring, and continuing despite limited results. One of Uba's WhatsApp posts featured a grey background with the message: "There is no shortcut to success; it pays to be focused, hardworking, and patient." His posts implicitly instruct others (family members, peers, prospective migrants) about the conditions of life in Europe: Even modest success requires patience. These posts therefore do more than communicate the hardships of migration; they allow effort itself to become visible before distant audiences who cannot observe his everyday circumstances directly.

If Uba made effort and endurance conspicuously visible, Ali's digital practices reveal a different form of moral labour. During his early years in Switzerland, Ali, then still a teenager, regularly engaged in heavy drinking and partying, often broadcasting these moments live on Facebook. I (Nina) occasionally saw his livestreams when he was out. On one occasion, an acquaintance from Ali's home country called him and said "bro, stop," describing this behaviour (filming himself being drunk) as disrespectful. Digital moral labour is therefore not simply a matter of self-fashioning but is negotiated through expectations, judgements, and responses of others. Ali regularly expressed a desire to "go clean," stop drinking and smoking, and pursue a "stable life." Years later, he retrospectively described his incarceration as "cleansing," a period of transformation that resonated with his earlier desire to "go clean." Such reframing is a form of moral labour, through which past conduct is reinterpreted and oriented towards a morally viable future (Laursen & Mjåland, 2025; Warr, 2020), resonating with the rehabilitative ambition of modern punishment to transform the conduct and, ultimately, the "soul" (Foucault, 1979). Yet the paradox is stark: Prison could provide Ali with everyday stability and a narrative of transformation while further destabilising the future into which this transformed self was supposed to emerge. With a temporary permit, the opaque migration consequences of his conviction meant that 'cleansing' could transform the self without dispelling the continuing threat of illegalisation.

3.5. Digital Moral Labour: Caring Across Distance

Personhood was also negotiated through obligations to others across distance. As I (Nina) strolled in the city with Ali during his apprenticeship, he occasionally received calls from relatives. However, his limited income prevented him from sending regular remittances, he explained. He feared disappointing them, as he put it: "A man should care for [*movâzebat*] his family…if he doesn't care he's not a man." Then, perhaps anticipating my reaction as a woman, he quickly added: "And here I mean a woman as well." Yet, his desire to have a "stable life" was inseparable from his ambition to provide for his relatives financially. While his material circumstances constrained his capacity to do so, he attempted to care for them through other means, such as continual communication and shielding them from worry.

Uba confronted similar expectations of provision and commented: "When I send them 10 CHF instead of 50, I want them to understand how hard I work to earn it. I will post pictures of myself doing hard work, wearing dirty clothes so they can see how I struggle here. That way, they appreciate whatever I send them." Making hardship digitally visible allowed Uba to account for what he could—and could not—provide. The dirty clothes, factory work, and physical exhaustion became evidence of care precisely because they demonstrated effort where economic provision remained limited.

Ali and Uba thus negotiated similar transnational obligations through contrasting regimes of visibility. Beyond economic exchanges, remittances and their anticipation are framed as evidence of commitment and care, even when limited or irregular (Vuilleumier, 2021). Furthermore, for young migrants pressured to be "good men" for their family who provided the funds for their journey (Scalettaris et al., 2021), using different channels and accounts enables them to regain control over which audience can see which posts (Khamsy, 2025). With silence, care is enacted through emotional protection: not burdening others, not exposing vulnerability, not transmitting uncertainty.

Uba often posted images of home-made meals, but one caught my (Louis's) attention: a large bowl of richly coloured rice with red oil, topped with assorted meats and fish, with the bold caption "I CAN'T KILL MYSELF."

When asked about this post, Uba described how his digital practices often subtly address his promised future wife as love letters. Using dark humour, this post communicates both the material realities of survival (food as fuel for labour) and the daring of pleasure (the right to enjoy a modest reward after effort), while also signalling readiness for future marital commitments. Uba added: "I posted it to let her know that if she doesn't have the strength to cook, I can also cook. Being a man means responsibility—providing, going outside hustling, paying bills, taking care of your family, behaving maturely." This post expanded Uba's performance of masculinity beyond provision, projecting domestic foresight: To be a future husband was also to care.

Such projections towards marriage and family gave moral direction to uncertain futures. Like Ali's desire for "a stable life" and to "help [his] family," Uba's imagined future as a husband made present hardship part of a journey towards a viable life. Yet these projected futures remained difficult to realise under conditions of legal and material precarity. Digital practices therefore did more than represent who Ali and Uba already were: They helped articulate and sustain who they were trying to become.

Digital moral labour extends beyond self-presentation: It is the digitally mediated work of sustaining and negotiating personhood under continuing carceral and migratory constraints. Carceral slippages produce uncertainties that Ali and Uba cannot control; digital moral labour provides limited means to negotiate how those uncertainties enter their relationships.

4. Conclusion: Carcerality Without Coherence

Ali and Uba's trajectories show that the carceral web is pervasive precisely without being totalising, contributing to a better understanding of prison beyond the most visible and spectacular form of confinement (Foucault, 1979; Gilmore, 2007). As formal sentences extend through a classed, gendered, and racialised carceral web into everyday life, including its digital contexts, our interlocutors' experiences show how hidden sentences of incarceration can also endanger their relationships (Brayne, 2021; Gurusami, 2019; Lyon, 2008). Our (digital) ethnographies of the Swiss carceral context present how Ali's and Uba's digital practices render these relational consequences particularly visible. Their trajectories show that carceral power operates through opacity itself and precarious migrants learn to endure, adapt, and navigate confusing systems, internalising uncertainty as a condition of everyday life.

These observations complicate deterministic readings of the carceral web as an ever-expanding and seamlessly connected apparatus of control. Carceral slippage instead captures the uncertain passages across partially connected penal, migration, administrative, and digital systems. It thus designates neither escape from carceral governance nor its failure, but the uncertainty produced through its fragmented and uneven articulation. Carceral slippages are therefore double-edged: Fragmentation may open room for manoeuvre while its unpredictability sustains caution, compliance and docility.

If carceral slippages identify the uncertainty Ali and Uba could not control, digital moral labour captures the relational work through which they lived with it. Their digital moral labour involves calibrating visibility across different audiences, producing evidence of effort, reframing stigma, and negotiating obligations of care, while working towards viable versions of themselves as sons, partners, workers, and providers. Our analysis focuses on experiences of mobility and performances of masculinity; how carceral slippages and digital moral labour may take different forms in relation to femininity remains an important avenue for comparative research.

From a policy perspective, the central implication is straightforward: Rehabilitation cannot even be imagined while its material conditions are simultaneously withheld. For migrants in legal precarity, release may mean returning to homelessness, restricted employment, administrative opacity, deportability, and fragmented support—the very conditions that undermine the stability rehabilitation presupposes (Lambelet, 2025). Post-release support must therefore address legal and material precarity alongside access to housing, employment, and legal assistance, while recognising digital connectivity as an infrastructure through which geographically dispersed relations of care are sustained.

Carcerality, then, cannot be reduced to incarceration or even to the extension of confinement beyond prison walls. It emerges relationally and unevenly across penal sanctions, migration governance, digital infrastructures, and transnational obligations. Ali and Uba's trajectories reveal a carceral world that is powerful precisely without being coherent: one in which freedom and confinement, visibility and concealment, connection and abandonment continually slip into one another.

Acknowledgments

We thank Marco Motta, Bianca C. Reisdorf, Victoria Knight, and the three anonymous reviewers for their challenging and invaluable comments on earlier versions of this article.

Funding

This work was supported by the Swiss National Science Foundation, grant numbers P0FRP1_188025, P0GEP1_199880, and TMSGI1_226110. Publication of this article in open access was made possible through the institutional membership agreement between the University of Lausanne and Cogitatio Press.

Conflict of Interests

The authors declare no conflicts of interest.

Data Availability

Due to the sensitive nature of the co-produced ethnographic data, they are not publicly available.

LLMs Disclosure

Copilot (Microsoft), ChatGPT (OpenAI), and Claude (Anthropic) were used exclusively for sentence reformulation, clarity, and proofreading.

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Social Inclusion
2026 • Volume 14 • Article 12704
https://doi.org/10.17645/si.12704

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ARTICLE

Open Access Journal

Navigating Digital Exclusion After Incarceration: The Role of Peer Support in Veteran Reentry

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Submitted: 30 April 2026 **Accepted:** 30 July 2026 **Published:** 16 September 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

The reintegration of formerly incarcerated veterans poses significant challenges, including housing instability, employment barriers, health concerns, and systemic stigma. Digital tools can support an individual in overcoming these challenges; however, lack of digital skills may exacerbate barriers and hinder their participation in daily life. This secondary qualitative study examined how digital technologies shape community reintegration among formerly incarcerated veterans participating in the US Department of Veterans Affairs Post-Incarceration Engagement (PIE) initiative. Data included semi-structured interviews with veterans and peer specialists, together with previously coded qualitative interviews, analytic memos, and implementation materials collected during development of the PIE initiative. Analysis identified six interrelated themes that reflected three broader dimensions of digital exclusion: structural, temporal, and relational. Peer specialists functioned as trusted relational digital navigators, helping veterans bridge technology-related barriers while simultaneously navigating housing, healthcare, benefits, and other reintegration challenges. This study adds a Veteran-specific perspective to global conversations on digital inclusion after incarceration. It underscores the value of investing in peer specialists who can tailor the intensity of support, based on a veteran's needs, to obtain access to technology and build digital literacy skills important to community integration.

Keywords

digital exclusion; incarceration; peer support; reentry; telehealth; veterans

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1. Introduction

The transition from incarceration to community life is a critical and often unstable period, marked by challenges related to housing, employment, healthcare access, and social reintegration. Unlike many returning citizens, formerly incarcerated veterans often navigate multiple institutional transitions simultaneously, including reconnecting with the US Department of Veterans Affairs (VA), accessing disability benefits, managing military-related physical and mental health conditions, and reestablishing civilian roles. These intersecting demands make successful community reintegration particularly complex and increase reliance on both formal and informal support systems. Successful reentry depends not only on access to services but also on the ability to navigate increasingly complex and digitized systems that mediate access to resources, communication, and support among vulnerable veterans (Denney et al., 2014; Finlay et al., 2019; Hyde et al., 2022a; Montgomery et al., 2023). While reentry has traditionally been conceptualized in terms of structural and social barriers, an increasingly important yet underexamined dimension is the role of digital technologies in shaping access to resources and participation in everyday life.

Digital technologies have become central to service delivery across healthcare, employment, housing, and social services. Online platforms are now routinely used to schedule appointments, apply for benefits, communicate with providers, and access critical information. While these technologies offer opportunities to improve efficiency and expand access, they also risk deepening existing inequalities for individuals who lack access to devices, connectivity, or the skills required to engage with digital systems. This has led to growing attention to digital exclusion, defined not only as lack of access to technology but also as disparities in skills, usage, and the ability to translate digital engagement into meaningful outcomes (Helsper, 2021; van Dijk, 2020). Within the VA, efforts to address digital inequities have primarily focused on improving access to technology among socially vulnerable Veteran populations. For example, the VA Digital Divide Consult and national tablet distribution initiatives have expanded access to video telehealth by providing internet-enabled devices to veterans experiencing homelessness and other barriers to care (Garvin et al., 2021a, 2021b). Other work has explored peer-led approaches to supporting veterans experiencing homelessness and substance use disorder in adopting telehealth technologies (Garvin et al., 2023). While these interventions demonstrate the promise of technology-enabled solutions, they often assume a baseline level of access, familiarity, and support that may not reflect the realities of individuals leaving incarceration.

Unlike many other populations experiencing digital inequities, formerly incarcerated individuals frequently return to communities after years or decades during which digital technologies, online communication, healthcare systems, financial institutions, and government services have fundamentally changed (Hwang et al., 2024; Reisdorf & DeCook, 2022; Reisdorf & Rikard, 2018). Successful reintegration therefore requires more than device ownership; it requires rebuilding digital confidence, learning unfamiliar technologies, and navigating increasingly digital institutions and the role of support systems in facilitating meaningful engagement (Helsper, 2021). Emerging work on administrative burden suggests that digital systems may introduce additional layers of complexity, requiring individuals to manage accounts, documentation, and communication across fragmented platforms (Herd & Moynihan, 2018). For individuals already navigating the structural and emotional demands of reentry, these digital requirements may exacerbate rather than alleviate barriers.

At the same time, a growing body of research highlights the importance of social support and structured assistance in facilitating successful reentry. Peer support has been identified as a critical component of reentry programs, offering trust-based, experiential guidance that complements formal services (Denney et al., 2014). Within veteran populations, peer-based interventions have demonstrated effectiveness in improving engagement, including with technology such as mobile apps for health (Blonigen et al., 2023), promoting community integration, and addressing barriers related to trust and stigma (Hyde et al., 2022a; Richardson et al., 2025). Additionally, research on transitional anxiety among formerly incarcerated veterans underscores the importance of supportive relationships in navigating uncertainty and adapting to post-release environments (Hyde et al., 2022b). Despite this growing recognition of the role of peers in reentry, their role in addressing digital exclusion remains underexplored.

This study addresses this gap by examining digital exclusion in the context of veteran reentry through the lens of the Post-Incarceration Engagement (PIE) initiative, a VA program that integrates peer specialists into reentry services. PIE enhances the support provided by Veterans Justice Program (VJP) social workers by incorporating peer specialists with lived experience who provide intensive, individualized support to veterans following incarceration. In practice, peer specialists often assist veterans in accessing and using technology, including mobile phones, telehealth platforms, and online systems for employment, benefits, and communication. They also model how to use ATMs, kiosks, and self-checkout aisles.

Drawing on literature from digital inclusion, incarceration, and peer support, we conceptualize digital exclusion as extending beyond unequal access to technology. Specifically, we examine digital exclusion as encompassing three interconnected dimensions: structural barriers (access to devices and digital systems), temporal disruption (technology changing during incarceration), and relational dimensions (dependence on others to navigate increasingly digital institutions). Using qualitative data collected during implementation of the VA PIE initiative, this study examines how these dimensions shape veterans' reentry experiences and how peer specialists facilitate digital inclusion as part of a broader community reintegration.

2. Methods

2.1. Study Design and Setting

The PIE initiative is a peer support intervention developed to improve community reintegration among veterans returning from incarceration. Building upon services provided through the VJP, the initiative integrates peer specialists with lived experience of incarceration into reentry planning and post-release support. Peer specialists provide individualized, recovery-oriented assistance by helping veterans reconnect with healthcare, housing, employment, benefits, and community resources while drawing upon their lived experience to foster engagement, trust, and hope (Fortuna et al., 2018). The present study draws on qualitative data collected during implementation and evaluation of the PIE initiative across multiple VA sites and focuses specifically on the role of digital technologies during community reintegration.

2.2. Data Sources

Data were derived from semi-structured interviews with veterans and peer specialists, as well as program-generated qualitative data including coded excerpts and analytic memos. The analysis draws on

two complementary sources of qualitative data. The first source consists of semi-structured interviews conducted during site visits with veterans and VJP peer specialists participating in the PIE initiative in 2023 during the PIE implementation at several sites across the US. The semi-structured interviews were conducted with veterans who had recently reentered the community and who were receiving assistance from a peer specialist implementing the PIE model and with peer specialists involved in PIE (see Table 1). Interview guides explored experiences with reentry, access to and use of technology, engagement with services, and perceptions of peer support. The interview guide was also designed to examine potential racial disparities in reentry experiences, including differences in access to resources, services, and support systems. The interviews were audio-recorded with the participant's permission, and the interviewers took notes as well. The majority of interviews were conducted and recorded using Microsoft Teams, which generated automated transcripts. Interviews ranged from 30 to 75 minutes, depending on the participants' availability and the depth of discussion. Veterans and peer specialists participated in a single semi-structured interview. As a token of appreciation for their time, veteran participants were compensated with a $30 gift card. The interview transcripts were subsequently reviewed and manually corrected by members of the study team to ensure accuracy and completeness. The verified transcripts were then used for coding and thematic analysis.

The second source is a purposive subset of coded excerpts from prior qualitative interviews and informal conversations collected during the PIE formative evaluation phase in 2018.

Table 1. Characteristics of veteran participants.

Characteristic	Formative veteran sample (n = 16)	2023 Veteran interview sample (n = 12)
Male	16 (100%)	12 (100%)
Mean age, years (range)	53 (28–74)	67 (35–84)*
Race/Ethnicity		
White/Caucasian	9 (53%)	2 (17%)
Black/African American	5 (33%)	9 (75%)
Hispanic/Latino	—	1 (8%)
Unknown	2 (14%)	—
Military branch		
Army	11 (74%)	3
Navy	4 (20%)	1
Marine Corps	1 (6%)	3
Air Force	—	2
Army and Navy	—	1
Unknown/Not available	—	2
Honorable discharge	14 (88%)	Not consistently available
Multiple incarcerations	11 (73%)	Not consistently available

Notes: The 2023 qualitative dataset also included interviews with four VJP peer specialists, one from each participating site; peer specialists are not included in the Veteran demographic statistics presented above; age was available for six of the 12 veteran interview participants; the reported mean and range were calculated using participants with available age data.

The formative implementation data were originally coded by members of the PIE evaluation team using a structured qualitative codebook developed to evaluate veterans' reentry experiences and implementation of the PIE initiative. The codebook combined descriptive and interpretive codes organized across multiple domains, including reentry experiences, housing, health, social support, transportation and navigation, personal documents, life skills, peer support, facilitators, challenges, and transitional experiences. Notably, the life skills domain explicitly included technology-related skills (e.g., use of new technologies, accessing services, and independent community living), providing an important foundation for the present secondary analysis.

Together, both sources of data provide contemporaneous and longitudinal perspectives on digital access, technology use, and peer support.

2.3. Data Analysis

Interviews were conducted by trained qualitative researchers (MDV, BAP, JKH), audio-recorded, and transcribed verbatim. All qualitative data were managed using NVivo 12 software (Lumivero, 2017). Initial coding was conducted by members of the research team based on interview guide domains and emergent topics, both informed by the study's focus on re-entry experiences and domains related to transitional challenges, peer support, health, and life skills. Longitudinal coded excerpts were then used to deepen and contextualize emerging themes. These data were not analyzed as a separate dataset but were integrated to assess consistency, variation, and persistence of themes across time and settings. Particular attention was given to identifying how digital exclusion was experienced in practice and how peer specialists intervened to mitigate these challenges.

For the present study, the first author (MDV) conducted a secondary analysis of coded data and memos to examine experiences related to digital technologies and digital exclusion. Previously coded excerpts and analytic memos were reviewed to identify passages related to technology use, digital skills, communication, navigation of digitally mediated systems, and peer support. These materials were then analyzed alongside newly collected veteran and peer specialist interviews to identify patterns that persisted across implementation phases and data sources. The analytical memos were used to contextualize coded excerpts and to preserve interpretative insights generated during earlier stages of analysis. The first author engaged in thematic synthesis across data sources, comparing veteran and peer accounts to identify patterns. Regular discussions with co-authors (JKH and SMB) supported analytic rigor and helped refine thematic interpretations and resolve discrepancies. This study was conducted as part of VA program evaluation activities. All data were de-identified prior to analysis.

2.4. Trustworthiness

Findings were triangulated across data sources and discussed among the research team to enhance analytic rigor. Trustworthiness was enhanced through triangulation across multiple qualitative data sources, including veteran interviews, peer specialist interviews, coded implementation data, and analytic memos. Findings were discussed among members of the multidisciplinary research team throughout the analytic process to refine thematic interpretations and ensure consistency with participants' experiences.

2.5. Ethical Considerations

This study was conducted as part of VA program evaluation activities. All data were de-identified prior to analysis.

3. Results

Themes presented below draw primarily from recent interviews with veterans and VJP peer specialists and are further supported by longitudinal qualitative data collected during PIE implementation. Together, these data illuminate how digital exclusion shapes reentry experiences and how peer specialists mitigate these barriers in practice.

3.1. Digital Disconnection as a Structural Barrier to Reentry

Digital barriers rarely occurred in isolation; rather, they emerged alongside other structural challenges associated with reentry, including obtaining identification documents, securing housing, reconnecting with healthcare, and accessing benefits. Lack of reliable communication disrupted coordination with healthcare providers, parole officers, and support services, particularly during the critical early stages of reintegration. In some cases, transitional housing environments attempted to mitigate these challenges by providing shared access to communication devices, such as communal phones, highlighting institutional recognition of the barriers posed by limited personal device access. These challenges were consistently echoed by peer specialists across longitudinal PIE data. One peer explained that "older gentlemen who don't have cellphones…it's hard to maintain contact," highlighting how lack of access immediately limits engagement.

Even when veterans had phones, instability remained a persistent issue. As another peer described, "the numbers change, the cards come and go," making it difficult to sustain communication over time. In response, peers described developing adaptive, often improvised strategies to maintain contact. One peer noted, "you just get creative…if they don't have a cellphone, somebody they know does," explaining how they would reach veterans through family members, acquaintances, or community contacts. Limited access to communication technologies at the point of release may also constrain veterans' ability to initiate contact with support systems, including VA reentry services, particularly when coordination is not already in place.

Participants described digital exclusion as part of a broader web of structural barriers, where issues obtaining identification, stable housing and transportation, and communication technologies often compounded each other: "I don't even have a phone because I ain't got an ID, so I'm missing my appointments. But I can use this [phone], you know. And then I can also use the phone at halfway house."

These findings suggest that digital exclusion operates at a fundamental level of device access and communication stability, requiring ongoing relational effort to compensate for systemic gaps.

3.2. Digital Confusion After Release

Many veterans described difficulty navigating contemporary technologies after release, particularly those who had experienced long periods of incarceration. Smartphones, online systems, and digital service platforms

were frequently perceived as unfamiliar, confusing, or overwhelming. One veteran described the difficulty of adjusting to unfamiliar technologies after release, noting:

> I still can't understand these phones, but I'm working on it. But it's a slow process because I've been…limited education and I went as far as the sixth grade. I'm self-educated. I got, I got educated in the chapel reading the Bible and going to services and, and that's how I, I educated myself to read and all that stuff and work in the chapel for 20 years. So, that's how, that's how I tried to, yeah. That's how, how it went.

Peer specialists vividly described this phenomenon as a form of technological shock. One peer explained that veterans reenter a world where "computers and the internet and cell phones…it's like Star Trek is here," underscoring the magnitude of technological change experienced during incarceration. Veterans themselves echoed this sense of disorientation, often describing reliance on others to complete basic digital tasks. For example, reflecting dependence on informal support networks, one veteran shared: "My nephew helped me with the websites, cause I don't know how to do it."

In some cases, veterans adapted by limiting their engagement with technology altogether. One Veteran described abandoning smartphones in favor of simpler devices: "I ended up going to a Jitterbug flip phone because I couldn't handle nothing else." Others expressed frustration and diminished confidence, noting that navigating digital systems could make them feel incapable or left behind.

3.3. Digital Systems as Overwhelming and Burdensome

Reentry required navigating multiple complex systems simultaneously, like housing, employment, healthcare, and benefits, many of which rely heavily on digital platforms. Participants described how digital systems created barriers to accessing services that required prior familiarity with technology. One veteran recounted attempting to access services shortly after release:

> "Did you make an appointment?" I said, "How was I supposed to do that?" They said, "With your phone." And I said, "Lady, I just did 20 years in prison. I barely even know how to answer this thing."

For individuals already managing the emotional and logistical challenges of reentry, these digital requirements compounded stress and confusion, highlighting the difficulties of navigating systems that assume prior familiarity with digital processes. These findings suggest that digital technologies can function as administrative burdens, increasing cognitive load and reinforcing barriers to engagement rather than alleviating them.

3.4. Peer Specialists as Digital Navigators

Across both recent and longitudinal data, peer specialists emerged as central actors in mitigating digital exclusion. Veterans consistently described peer specialists as essential sources of support for accessing technology, learning digital skills, and navigating digital systems. Peer specialists provided hands-on assistance with tasks such as setting up phones, accessing telehealth platforms, completing online applications, and communicating with providers. Veterans emphasized the importance of peer support in navigating unfamiliar technologies. As one participant shared:

> I didn't know nothing about this new technology out here and—actually, I never expected to get out of prison and he just was there with any questions I asked, him and [a peer specialist]. Anything I needed to know, they were there for me.

Veterans frequently emphasized that digital assistance was effective because it occurred within trusted relationships. Besides technology coaching, peer specialists remained available over time, answering questions and normalizing frustrations associated with learning unfamiliar technologies after years of incarceration: "He helped me adjusting…he gave me work….I did not know nothing about this new technology out here."

Peer specialists described engaging in ongoing, adaptive problem-solving to maintain connection and support engagement. For example, when veterans lacked phones or stable communication channels, peer specialists described reaching out through alternative means. Illustrating the extent of relational work required to sustain engagement, one explained: "I'll call your son…or your neighbor…or I'll stop by."

Another emphasized their constant availability, noting: "My phone is always on…it's hard to turn your phone off when you know there are people who might call."

These findings suggest that peers function not only as support providers but as "digital navigators" embedded within relational networks, actively bridging gaps in access, literacy, and trust. Their work represents a form of relational infrastructure, enabling veterans to engage with systems that would otherwise remain inaccessible. Peer specialists did not function solely as technology instructors. Rather, digital assistance emerged as one component of broader relational support through which peer specialists simultaneously helped veterans navigate housing, healthcare, transportation, benefits, and other challenges of reintegration. In this way, they functioned as relational digital navigators, helping veterans build confidence while simultaneously navigating unfamiliar digital systems embedded within reentry experiences.

3.5. Peer Networks as Informal Digital Learning Systems

Participants did not describe learning digital skills through formal instruction. Instead, digital learning occurred informally through repeated interactions with peer specialists during routine reentry activities. Veterans learned how to navigate smartphones, complete online applications, access appointments, communicate electronically, and solve unexpected technological problems while working alongside peers.

Many of these interactions occurred through participation in the PIE initiative, where veterans regularly engaged with peer specialists and other veterans receiving reentry support. These encounters created opportunities for informal learning, allowing participants to exchange practical advice and observe how others navigated unfamiliar technologies and digital systems.

One veteran noted that "the other veterans are helping the other veterans…they'd rather hear it from them," highlighting the importance of trust and relatability in information exchange. Another described how a peer specialist helped navigate the bureaucratic world:

> She [peer] was always good with that, if I needed to go to the post office or if I needed to go to the registration office, DMV, or social security office, she was right there. She's like, "Alright, we get the keys and we'll go"…She never blinked an eye telling me she was too busy or she couldn't do it…she took me to the registration office so I could register as a sex offender. She took me to the parole office to meet my parole officer.

As peer specialists accompanied veterans to appointments, helped them obtain identification documents or contacted community agencies, veterans developed skills and confidence which became essential for navigating modern society. While these activities were not inherently "digital," participants described them as interconnected with navigating institutions where documentation, scheduling, communication, and service access are becoming more digital.

3.6. Limits of Digital Solutions and Persistent Preference for Human Connection

Despite the benefits of digital technologies, participants consistently cautioned against viewing technology as a substitute for human support. Many described ongoing emotional uncertainty, unstable housing, health concerns, limited financial resources, difficulties in finding employment, the need to adhere to legal stipulations, and competing reintegration demands that could not be resolved through digital tools alone. Technology often facilitated access to services, but meaningful engagement depended on trusted interpersonal relationships.

Some veterans expressed resistance or discomfort with digital technologies altogether. One participant stated: "I hate these iPhones. I don't like this new technology stuff." Another veteran described limited engagement with digital communication, noting: "I don't do email. No, I don't do none of that stuff. I'm not into the computer age. I like the old time way of doing stuff, writing things out."

Peer specialists observed this variability in engagement. One noted *that* "some of the veterans actually like video conferences…others just aren't into it," reflecting differing levels of comfort and readiness. Another described limitations related to device access, stating: "We have one guy who still uses a flip-phone….I can't imagine everyone being able to use the virtual setting."

Participants emphasized that possessing a smartphone or internet connection did not necessarily translate into confidence navigating digital systems. Instead, technology became useful when veterans had someone they trusted to answer questions, troubleshoot problems, and encourage continued engagement during moments of frustration: "When he said, I'll be there, and he [peer specialist] showed up, that was the greatest moment of my life because I was lost."

Collectively, these findings suggest that digital exclusion among formerly incarcerated veterans cannot be understood solely as a lack of devices, internet access, or technical skills. Digital participation emerged as a social process shaped by structural barriers, the length of incarceration and evolving technologies, and the presence of trusted relationships that enabled veterans to confidently navigate an increasingly digital world and community systems.

4. Discussion

Our findings suggest that digital exclusion during community reintegration extends beyond unequal access to technology. Consistent with emerging scholarship describing digital exclusion as a multidimensional social process (Brottveit & Fransson, 2024; Eubanks, 2018), veterans experienced barriers that were simultaneously structural, temporal, and relational. At the same time, this work extends prior research by illustrating how digital exclusion is experienced in practice and how it is negotiated through interpersonal support. While previous studies have emphasized institutional access to technology or structured digital interventions (McDougall et al., 2017; Zivanai & Mahlangu, 2022), our findings highlight the importance of relational, trust-based support in enabling meaningful engagement with digital systems. Peer specialists played a critical role as intermediaries between veterans and digital environments, functioning as relational digital navigators who provided hands-on, individualized support. Through ongoing interactions, peer specialists helped veterans build foundational skills, reduce anxiety, and develop confidence in using digital technologies. Interactions with their fellow reentry veterans also helped to build skills, share information, and alleviate anxiety. Importantly, this support extended beyond technical instruction to include emotional reassurance and trust-building, particularly for veterans who were hesitant or distrustful of institutional systems.

Our findings suggest that successful reintegration post-incarceration requires not only access to digital tools but also the development of competencies and confidence to use them effectively (Reisdorf & Rikard, 2018). These findings complement ongoing VA initiatives designed to reduce digital inequities among vulnerable veteran populations. Programs such as the VA Digital Divide Consult, for example, have demonstrated that improving access to internet-enabled devices can increase health care engagement among veterans experiencing homelessness (Garvin et al., 2021a, 2021b). Similarly, peer-led telehealth interventions have sought to increase technology adoption among veterans with substance use disorders (Garvin et al., 2023). Our findings extend this work by suggesting that access to technology represents only one component of digital inclusion for formerly incarcerated veterans. Veterans in this study frequently described digital systems as barriers to accessing healthcare, employment, and benefits, reinforcing the idea that digital exclusion is a central dimension of reentry rather than a peripheral concern.

Rather than functioning as technology navigators alone, peer specialists acted as relational digital navigators who integrated technology support into broader reentry assistance. Assistance with smartphones, email, telehealth, patient portals, online applications, and digital communications occurred alongside support with housing, transportation, healthcare appointments, benefits, and emotional adjustment. This integration suggests that digital inclusion interventions for justice-involved populations may be most effective when embedded within trusted peer relationships rather than delivered as stand-alone digital literacy programs. Rather than framing digital inclusion solely as a matter of access or training, interventions should consider the importance of sustained, individualized support that acknowledges the broader social context of reentry.

4.1. Limitations

This study has several limitations. First, participants were recruited through the PIE initiative using purposive sampling, and the findings may not reflect the experiences of all formerly incarcerated veterans or those who do not engage with peer specialists providing VA reentry services. Second, the interview sample

consisted primarily of men, limiting our ability to explore potential gender differences in experiences of digital exclusion following incarceration. Third, this study employed a secondary qualitative analysis that integrated newly collected interviews with previously coded implementation data. Although this approach provided rich longitudinal insight across multiple sites and implementation phases, the original qualitative data were collected to evaluate the broader PIE intervention rather than digital exclusion specifically. Finally, because participants were interviewed after release, findings rely on retrospective accounts that may be influenced by recall bias. Despite these limitations, triangulation across multiple qualitative data sources, including Veteran interviews, peer specialist interviews, coded implementation data, and analytic memos strengthened the credibility and consistency of the findings across settings and time.

5. Conclusion

As healthcare systems, social services, and government agencies continue to expand digital service delivery, digital inclusion has become an increasingly important determinant of successful community reintegration. Among formerly incarcerated veterans, technology-related challenges intersect with aging, bureaucratic institutions, and supervision policies that shape reintegration experiences. Rebuilding digital capacity involves more than acquiring a device or internet connection; it requires relational support to regain confidence and to navigate unfamiliar technologies during a period of profound transition. Peer specialists are uniquely positioned to bridge the gap because they integrate digital navigation within broader recovery-oriented support grounded in shared lived experience. The PIE initiative demonstrates how peer specialists can function as digital navigators, enabling veterans to access devices, navigate bureaucratic systems, and build confidence in a digitally mediated society. Investment in peer-based navigation models may represent a scalable and human-centered approach to reducing digital inequities among justice-involved populations. Although this study focused on veterans, these findings may also inform digital inclusion efforts among other justice-involved populations and socially marginalized groups facing similar challenges to digital participation.

Acknowledgments

This work was supported by the Veterans Health Administration Quality Enhancement Research Initiative (QUERI) through the Bridging the Care Continuum program (QUE 20–017). The authors sincerely thank the veterans, peer specialists, and VJP staff who generously shared their time, experiences, and perspectives, making this research possible. The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the US Department of Veterans Affairs or the United States Government.

Funding

Veterans Health Administration Quality Enhancement Research Initiative (QUERI) through the Bridging the Care Continuum program (QUE 20–017).

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The qualitative data generated and analyzed during this study are not publicly available because they contain potentially identifiable information from participants and are subject to ethical and institutional restrictions established by the US Department of Veterans Affairs. De-identified data may be available from the corresponding author upon reasonable request and with appropriate institutional approvals, where permitted by applicable regulations and data use agreements.

LLMs Disclosure

The first author used VA ChatGPT (an internal cloud-based LLM tool within the Veterans Affairs Firewall) to draft and condense the first iterations of the abstract.

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Social Inclusion
2026 • Volume 14 • Article 12818
https://doi.org/10.17645/si.12818

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Open Access Journal

Digital Advocacy Behind Bars: Social Workers' Perspective on Digital Inclusion and Reintegration in Lithuania

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Submitted: 15 May 2026 **Accepted:** 14 September 2026 **Published:** 8 October 2026

Issue: This article is part of the issue "Digital Inclusion During and After Incarceration: A Global Perspective" edited by Bianca C. Reisdorf (University of North Carolina at Charlotte) and Victoria Knight (De Montfort University), fully open access at https://doi.org/10.17645/si.i517

Abstract

This article examines social workers' experiences, perceptions, and understanding of the role of digital advocacy in the rehabilitation and reintegration process of incarcerated people. The current study, located in Lithuania, is based on three focus group discussions with 15 social workers working at local prisons and NGOs. The research reveals that people in prison experience limited access to digital technologies, including the internet, mobile phones, and even TV, due to strict institutional regulations. Social workers reflect on the needs of people in prison for digital literacy, self-efficacy, and advocacy to counteract stigma and to promote a more nuanced understanding of incarceration. Public prejudices and media stigmatisation reinforce social exclusion, while proactive digital advocacy could contribute to the humanization process and community acceptance of individuals with justice system involvement. Based on the social workers' voices, this article addresses digital advocacy and digital literacy as a shifting paradigm in prison-based social work, which requires the balancing of digital provisions and risk management on the individual, professional, and institutional levels.

Keywords

digital advocacy; digital and social inclusion; incarceration; prison; prison social workers; rehabilitation; reintegration

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1. Introduction

Digital inclusion challenges the historically and culturally ingrained approach to punishment, when prisons were understood as places and mechanisms of isolation with restrictions of freedom and communication with the outside world. Digital exclusion, including restrictions on the use of mobile phones and the internet, reflects the logic of deprivation and disconnection from society (Jewkes & Reisdorf, 2016). At the same time, digital inclusion represents an emerging dimension of rehabilitation and reintegration in the prison system, encouraging individuals to take responsibility for their own lives and facilitating their participation in society, which is increasingly becoming mediatised and digitalized (Järveläinen & Rantanen, 2021; Zivanai & Mahlangu, 2022). Prisons are now considered to be more open and humane institutions, with rehabilitation and reintegration as goals of incarceration, seeking to provide those incarcerated with access to social, educational, and healthcare services. For people in prison, access to these services implies access to technologies and digital skills (Järveläinen & Rantanen, 2021; Juvonen et al., 2026). Reforming the prison system also requires the engagement of new professionals—social workers, psychological counsellors, and other support staff—collaborating with other organisations to promote reintegration and challenge negative societal attitudes toward people in prison. In the process of enhancing digital inclusion and promoting the openness of prisons to the outside world, genuine integration cannot be achieved without addressing the social stigma and limited opportunities to participate in public discourse. Advocacy, including its digital forms, becomes an important aspect of reintegration, alongside the digital skills and access to technology of people in prison.

The aim of this article is to explore the new opportunities and challenges of digitalisation in the Lithuanian prison system from the perspective of prison social workers. The research questions include an inquiry into how social workers experience and understand digital inclusion, and the role of digital advocacy in introducing a rehabilitation- and reintegration-oriented approach in prison.

2. Literature Review

2.1. Digital Inclusion as a Part of Rehabilitation and Reintegration

In modern society, digital inclusion provides access to important public services and is related to employment, becoming a means of social and economic participation. In this context, digital transformation in the penal system has become part of European penal reforms, emphasising the principles of normalisation, rehabilitation and reintegration, human rights and dignity (Coyle et al., 2020; Van Zyl Smit & Snacken, 2009). These developments include digital skills training and the promotion of digital agency, digital confidence, and self-efficacy among people in prison (Van De Steene & Knight, 2017). However, the introduction of digital technologies in prisons remains uneven in different countries. For example, in some European prison systems, such as those in Finland, Belgium, and Norway, digital technologies have been introduced as part of initiatives to promote rehabilitation and reintegration (Järveläinen & Rantanen, 2021).

The ideas of rehabilitation and reintegration have influenced European prison policy and national reforms, including the 2021 Lithuanian prison reform concept. At the same time, another strand of thought—critical prison studies—provides additional tenets of prison reform besides humanisation. Within the principles of responsibilisation, self-regulation and soft power reshape control without reducing it (Crewe, 2015),

transforming prisons into disciplinary sites of surveillance, observation and supervision. Thus, the humanistic approach provides the normative basis for contemporary prison reforms in Europe and Lithuania. At the same time, critical prison studies allow us to understand how these changes are implemented in practice.

Digital inclusion in prisons ensures access to public institutions and their digital services, thereby realising digital e-government and digital citizenship. These services include education and online learning, job searches and interactions with employers, and rehabilitation programs (e.g., digital therapies and digital peer support groups for treating mental disorders and substance abuse). Other important interactions include communication with families, leisure activities and opportunities for self-development (Van De Steene & Knight, 2017). Beyens and Geerts (2026) found that digitalisation in the form of "smart" prisons and digital platforms improves prison management and increases the autonomy of incarcerated people by introducing two-way communication between staff and the people in prison, as well as access to prison services (libraries, canteens, television, games, and learning through Moodle), giving incarcerated people the opportunity to engage in self-management of their own day-to-day lives. Digital social work in prisons has become an important area of professional intervention, as digitalisation improves access to resources and services and promotes communication within collaborative networks (Juvonen et al., 2026).

2.1.1. Digital Advocacy as a New Role of Social Workers in Prisons

The transition of the prison system toward rehabilitation and reintegration underscores the important role of social workers, who provide services related to education, employment, healthcare, psychological and emotional support, helping people in prison prepare for their release and maintain relationships with their families, employers, and the wider community (Juvonen et al., 2026; Norvell, 2025; Planka et al., 2024; Stárek & Víšek, 2022). Among the numerous services provided by social workers to individuals before their release is addressing problems that hinder social reintegration, such as unemployment, debt, substance abuse, inadequate housing, etc. Solving these problems requires mediation and cooperation with other institutions, such as municipalities, employment agencies, and rehabilitation centres. However, social workers face challenges in providing successful social integration services due to the stigma surrounding people in prison and the discrimination from employers and the public (Maziliauskienė, 2025; Replevičiūtė, 2025). While the prison system is undergoing the process of digitalisation, the role of social workers includes supporting people in prison in accessing digital services and fostering digital skills (Juvonen et al., 2026).

Digitalisation of the prison system intersects with digital advocacy. Advocacy seeks to support disadvantaged groups in expressing their interests, influencing policies and politics, and promoting social or political change and collective action (Scaramuzzino & Scaramuzzino, 2017). In the context of digitalisation, new opportunities for political influence emerge through action on the internet and social media (Johansson & Scaramuzzino, 2019), advocacy 2.0 (Obar et al., 2012) and web-supported activism (Neumayer & Svensson, 2016). In prisons, digital advocacy would involve helping the people in the prison to access and use services (education, healthcare, employment, etc.) and communicate with external institutions and communities. In the process of promoting digital participation and diminishing public stigma, social workers become mediators and advocacy agents. The introduction of digital technologies in prisons challenges the traditional approach that incarceration involves the disconnection between prison and society, and the deprivation of freedom, including that of communication. "The interactivity and 'freedom' offered by the internet," say Jewkes and Reisdorf (2016), "conflicts with commonplace ideas about incarceration being a time of isolation, solitude and penitence, as well as retribution, material hardship and suffering" (p. 537).

Digital inclusion implies a cultural shift toward care (Järveläinen & Rantanen, 2021). It is important to consider the role of technology in prison, how open they are to the outside world, and the extent to which people in prison are isolated and disconnected from it (Beyens & Geerts, 2026; Crewe, 2015). The depth of imprisonment determines how the prison system allows contact with the outside world through visits and phone calls, and access to media, technology, and information (Crewe, 2015). Within the humanistic approach to prison reform, digital technologies can provide new services for people in prison—they can order food, medication, as well as books through digital kiosks. In this way, prisons can contribute to enhancing self-regulation and empowerment of incarcerated people. However, introducing digital technologies in prison can create challenges by reducing face-to-face interactions between staff and people in prison, thus raising concerns about privacy and surveillance.

2.1.2. The Challenges of Digital Inclusion for Incarcerated People

As some authors have noted, digital transformation is often hindered by organizational cultures and existing institutional practices. It may also be limited by prison infrastructure and architectural design, which may not permit the installation of internet cables, computer networks, and other electronic devices (Van De Steene & Knight, 2017). Järveläinen and Rantanen (2021) argue that, in Finland, limited access to computers and the internet, poor digital skills, and the absence of online banking IDs present challenges and create barriers to digital inclusion when accessing public services. Simultaneously, digital arrangements in prison settings and the introduction of technologies could be seen as a Foucauldian "panopticon": new means for control, monitoring, and surveillance that allow prison staff to trace the activities of incarcerated people (Hofinger & Pflegerl, 2024; Leclercq-Vandelannoitte, 2023). The staff may also become subject to monitoring.

ICT access can be used as a "soft power" by granting rewards and applying punishment (Knight, 2017). When discussing the role of digital technologies in prisons, Jewkes and Reisdorf (2016) highlight that prison officer gatekeepers use the access of incarcerated people to ICT as a form of "soft" power, employing a "carrot-and-stick" approach to control by granting or limiting access to certain technologies (e.g., in-cell television). Jewkes and Reisdorf (2016) stress that incarcerated people who lack digital skills and the self-efficacy to navigate digital systems experience digital inequalities and exclusion. Denying incarcerated people access to online media leads to their social isolation, turning them into "the most impoverished groups in the digital age" (p. 534). Different types of prisons demonstrate different approaches to the use of digital technologies. In more restrictive prison regimes, access to technologies is more controlled. In contrast, open-type prisons, which provide facilities for education, recreation and rehabilitation services, often provide greater access to digital technologies. "The use of digital media has thus led to a redefinition of the nature of "imprisonment" and the prison classification system" (Jewkes & Reisdorf, 2016, p. 541). It is important to consider the role of technology in prisons in relation to how open they are to the outside world and the extent to which incarcerated people are isolated and disconnected from it.

2.2. Digital Inclusion in the Context of the Lithuanian Prison Reform

2.2.1. Prison Reform: Introducing Rehabilitation and Reintegration Approaches

Prison reform in Lithuania has included a transition from a high-security punitive system inherited from the Soviet period to a rehabilitation- and reintegration-oriented approach, by implementing European standards.

The reform is based on the principles of dynamic security and greater attention to the individual needs of people in prison. As the Lithuanian reform aims to reduce the prison population, rehabilitation of people in prison is promoted by implementing the Social Skills Development Programme (Ministry of Justice of the Republic of Lithuania, 2016). As part of this reform, the open prison system is strengthened, including halfway houses, which could contribute to the process of reintegration. As presented in the 2024 SPACE I report (Aebi & Cocco, 2025), Lithuania is among the countries in the EU with the highest imprisonment rate—152.6 incarcerated people per 100,000 inhabitants or more than 1.5 times higher than the European median of 97.0 (p. 37). Ongoing Lithuanian penal system reform (Kalėjimų departamentas, 2021) seeks to address historically inherited pervasive issues from the Soviet era (Vaičiūnienė & Tereškinas, 2017). Reforms in post-Soviet countries are steps towards diminishing the power of criminal subcultures, reducing violence among incarcerated people, and increasing the chances for resocialization (Pallot & Zeveleva, 2023). The CPT report (Council of Europe, 2024) underlines inadequate infrastructure, unsafe and undignified living conditions, outdated and costly security systems, and non-digitalised management processes. The concept of Lithuanian prison reform (Kalėjimų departamentas, 2021) highlights the importance of the re-socialisation of people in prison and involves the introduction and enhancement of social work services, psychological counselling, employment opportunities, medical treatment, and other measures. To achieve these goals, investment has been planned in training, professional development, and motivation of prison employees, as well as in promoting cooperation with external organizations—non-governmental organizations and volunteers.

Social workers help to integrate people in prison upon release by preparing personal documents, providing psychosocial support, assisting with housing, and helping to reestablish contact with family members. The Lithuanian prison reform concept seeks to strengthen the social skills of people in prison by fostering communication and contact with relatives by, for example, facilitating phone calls and reducing restrictions on visits with children and families. Since 2014, Lithuania has been implementing the dynamic security model, adopted from Norway. This model emphasises that security is based not only on physical and technical measures, but also on positive interaction and relationships built on trust and mutual respect between correctional facility staff and people in prison.

2.2.2. Digitalisation in Different Prison Regimes

The 2021 Prison Reform Implementation Plan (Kalėjimų departamentas, 2021) encourages the wider use of information technology in the reintegration process, including the planned provision of computerised remote workstations for people in prison and staff. Need-centred analysis for remote services (psychological, social, and legal support) for people in prison is planned, and recommendations for expansion have been made. Electronic case files are to be introduced for working with people in prison individually, including an individual social rehabilitation plan and logbooks. The digitalisation of management and administration processes has been promoted. However, this does not necessarily have a positive impact on incarcerated people since it does not always enhance their digital skills or improve their access to public services (education, employment, etc.) and their digital participation in society.

Another important pillar of prison reform (Kalėjimų departamentas, 2021) has been the strengthening and expansion of the open prison model with low-security incarceration regimes. These forms include “closed,” “semi-open,” and “open” prisons as well as “halfway houses.” Different forms represent a system in which people in prison can gradually gain more freedom, autonomy, responsibility, and self-governance by

transitioning from a stricter to a more lenient regime. The system moves from the overt forms of coercion and control found in semi-open prisons to the more subtle forms of "soft power" found in open prisons, like applying incentives and rewards. In closed and semi-open prisons, people in prison are not allowed to use phones or the internet freely. Access to technologies (phones and the internet) depends on the category of incarceration, ranging from limited phone calls and internet access to unrestricted phone calls and more lenient internet use. In closed prisons, the number of phone calls permitted per week is limited. Online meetings with family, however, are permitted. Access to the internet is limited for people in prison, who can only access websites of specific institutions via a "limited access internet," including educational establishments and public service agencies. This list of approved websites is centrally managed.

In Lithuania, open-type correctional facilities are divided into open prisons and halfway houses. In open prisons, freedom is realised through giving incarcerated people more trust and increasing their opportunities to move around, communicate with the outside world (including relatives and family), access social services, and use digital tools (phones, internet). Work and studies are considered not only a privilege, but a requirement, since they are seen as a prerequisite for effective rehabilitation and reintegration. In open prisons, incarcerated people are permitted to use phones and access the internet.

2.2.3. Halfway Houses and Digital Participation

In Lithuania, halfway houses have been promoted as a distinct and most liberal form of open prison, where incarcerated people are intensively prepared for conditional release and probation supervision. Since 2016, eight such establishments have been opened, and plans are in place to further expand the system, enabling people in prison to serve out the remainder of their sentences there (Gerybaitė, 2025). The expansion of halfway houses is also taking place in cooperation with the Nordic countries—a project funded by the Kingdom of Norway is being implemented by the Lithuanian Prison Service. Residents of a halfway house spend most of their time in the local community, going to work or school, and participating in social programmes, including volunteering, which is promoted by the prison reform concept. People serving prison sentences in halfway houses are only required to return to the facility in the evenings. They can also use a phone, access the internet, have free access to money, possess valuable items, and communicate freely. Their freedom of movement is not greatly restricted: Residents of halfway houses have the right to leave the prison grounds without an escort to attend work, education, medical treatment, or for social integration purposes. Halfway houses are typically located within a community and provide community-based care. The main staff working with residents of halfway houses are social workers.

At the same time, it could be noted that the prison system in Lithuania is becoming more open not only in the physical sense, with people in prison having more opportunities to go outside, but also in a social sense, with greater exposure to society (transparency, openness, public opinion, and the media; see Maziliauskienė, 2025). Involvement of communities, strengthening trust between communities and prison institutions, and transparent communication about processes in the prison are part of the open prison concept. However, despite new developments, both the Committee for the Prevention of Torture and the Ombudsman of the Republic of Lithuania report that the reform of the prison system has not yet been implemented to the required level and is not progressing quickly enough, as some fundamental issues prevail. There are still many issues—a lack of adequate and qualified staff (unattractive working conditions, lack of necessary training, poor motivation), limited opportunities for people in prison to obtain an education, and the

insufficient employment of incarcerated people compared to other EU countries. As Maziliauskienė (2025) notes, in practice, there are still situations where correctional facilities do not provide adequate conditions for distance learning at institutions of higher education. Higher education in prisons remains the exception, with the main focus on general and vocational education. The Lithuanian Prison Service has expressed an intention to expand "limited access internet" in an attempt to address the issue of people in prison enrolling in online education programmes (Lietuvos kalėjimų tarnyba, 2025). Negative public attitudes toward people in prison hinder prison reform. As Maziliauskienė (2025) observes, negative, discriminatory, and stigmatising attitudes toward people in prison, as well as fear and mistrust of formerly incarcerated people, still prevail in Lithuania, impeding the reintegration of incarcerated people into society. The media plays a significant role in perpetuating negative images of people in prison (Maziliauskienė, 2025). In this context, digital advocacy is extremely important. Mediators, such as social workers, play a key role in negotiating interests between transforming prisons, local communities, and the wider society. Their role in the social integration of people in prison would include facilitating communication and digital forms of representation and interaction, and providing assistance in challenging public attitudes.

3. Methods

To examine how social workers navigate the ongoing shift in the Lithuanian penitentiary sector, we conducted three focus group discussions (FGDs) with 15 social workers (13 females and two males), with five participants in each group. The purposive sampling strategy was applied, inviting practitioners working in different prison regimes, such as semi-open and open prisons, as well as halfway houses. Group sizes were determined by the number of employees available at the establishments during the research period. Participation was voluntary, and those social workers who expressed a willingness to take part provided written consent. The focus groups were conducted in Lithuanian. Quotes selected for the article text were translated into English, seeking to preserve the initial meaning.

We adopted a case vignette methodological approach (Martin et al., 2025; Törrönen, 2018). Case vignettes present realistic and plausible stories which are "discursive constructions that evoke and materialise the phenomenon under study, placing it in concrete contexts and enabling the researcher to explore participants' views, feelings, experiences, interpretative resources, norms and voices that relate to or arise from the situations" (Törrönen, 2018, p. 277). In our research, we presented a case vignette depicting a social worker employed in an open prison facing resistance from the local community regarding the presence of incarcerated people in the area. The vignette describes the dilemma: Should the social worker advise people in prison to spend time and go shopping in other areas to avoid tensions in the community, or should the social worker engage in dialogue with the local residents by organising events and public discussions, and encouraging people in prison to participate in local activities and volunteering? The case was accompanied by questions for research participants about their emotions, ethical principles, and the roles and responsibilities of social workers. Despite the limitations of using case vignettes to investigate actual behaviour, as they may elicit socially desirable responses, case vignettes were employed as an elicitation tool in focus groups, moving from initial discussions on the case to sharing professional experiences, emotions, and reflections in other contexts. The themes of digital inclusion and advocacy emerged during the interviews when the research participants discussed the roles of social workers, rehabilitation practices, and relationships in the community. We used MAXQDA and applied thematic analysis by Braun and Clarke (2006). The initial coding framework was developed by drawing on the theoretical concepts: structural

change from (digital) deprivation to (digital) inclusion, and a changing approach to agency, from (digital) punishment to (digital) advocacy. During coding, through an iterative, reflexive process, new codes and themes emerged, and the coding framework was redefined using an inductive approach. To enhance the credibility of the empirical analysis, the authors discussed the initial codes and themes discerned by the author responsible for coding. The themes were then collaboratively revised, drawing on the authors' expertise in qualitative methods, theoretical analysis and practical work in the prison system.

4. Results

First, by approaching our data through the lens of a punitive, high-security penal system versus a rehabilitation- and reintegration-oriented system, we were able to inductively spot the main systemic and agency-related tensions mounting when implementing the transformative change in the Lithuanian prisons: punishment vs. rehabilitation; prohibition vs. self-responsibility; isolation vs. socialization; rejection vs. human connection and care (see Figure 1). We further present our data based on the different regimes in the Lithuanian system—semi-open, open, halfway house—questioning the inclusion of people in prison and the state of digital empowerment: (digital) exclusion vs. inclusion; (digital) punishment vs. advocacy.

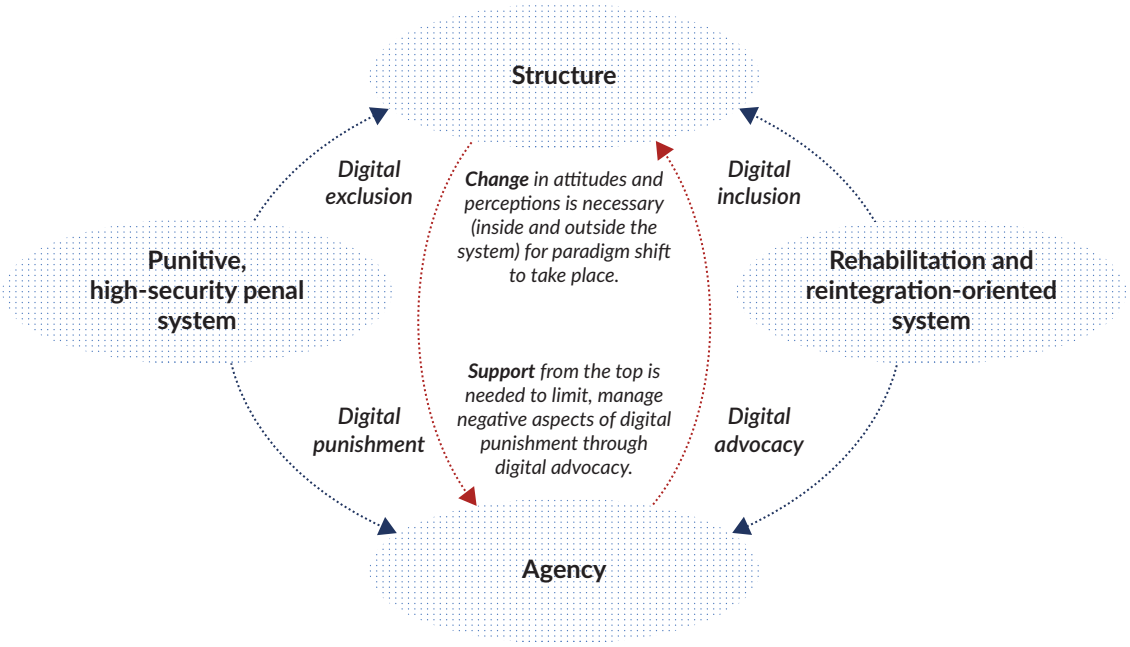


Figure 1. Digitalization in penitentiary sector: perceptional change and systemic support.

Second, to analyse how (and if) the digital transformations are unfolding in systemic structures, we question the prisons' digital strategies, which basically determine the level of access to technologies people in prison (or, in some cases, prison workers) have: digital exclusion vs. digital inclusion. Based on the testimonies of our research participants, we question the actual (a) access to public digital services by, for example, providing citizens technological gateways and platforms to access institutions, education and online learning, rehabilitation programs, or for job searching purposes or entertainment; as well as (b) digital literacy and education opportunities, achieved by supporting the self-management of people in prison and promoting their responsibilities. Third, to address the necessary shift in agency, we track the possibilities of digital advocacy to challenge digital punishment culture.

In the Lithuanian prison system, rehabilitation is the overarching aim in all prison regimes and forms (semi-open; open; halfway houses). At the same time, opportunities for reintegration are provided differently in various prison regimes, expanding more within open prison regimes by promoting communication with the outside world. Accordingly, digital inclusion levels vary across different imprisonment regimes, ranging from digital deprivation and limited participation in the semi-open regime to greater digital participation in the open regime and digital empowerment in halfway houses as the least restrictive form of imprisonment (Figure 2).

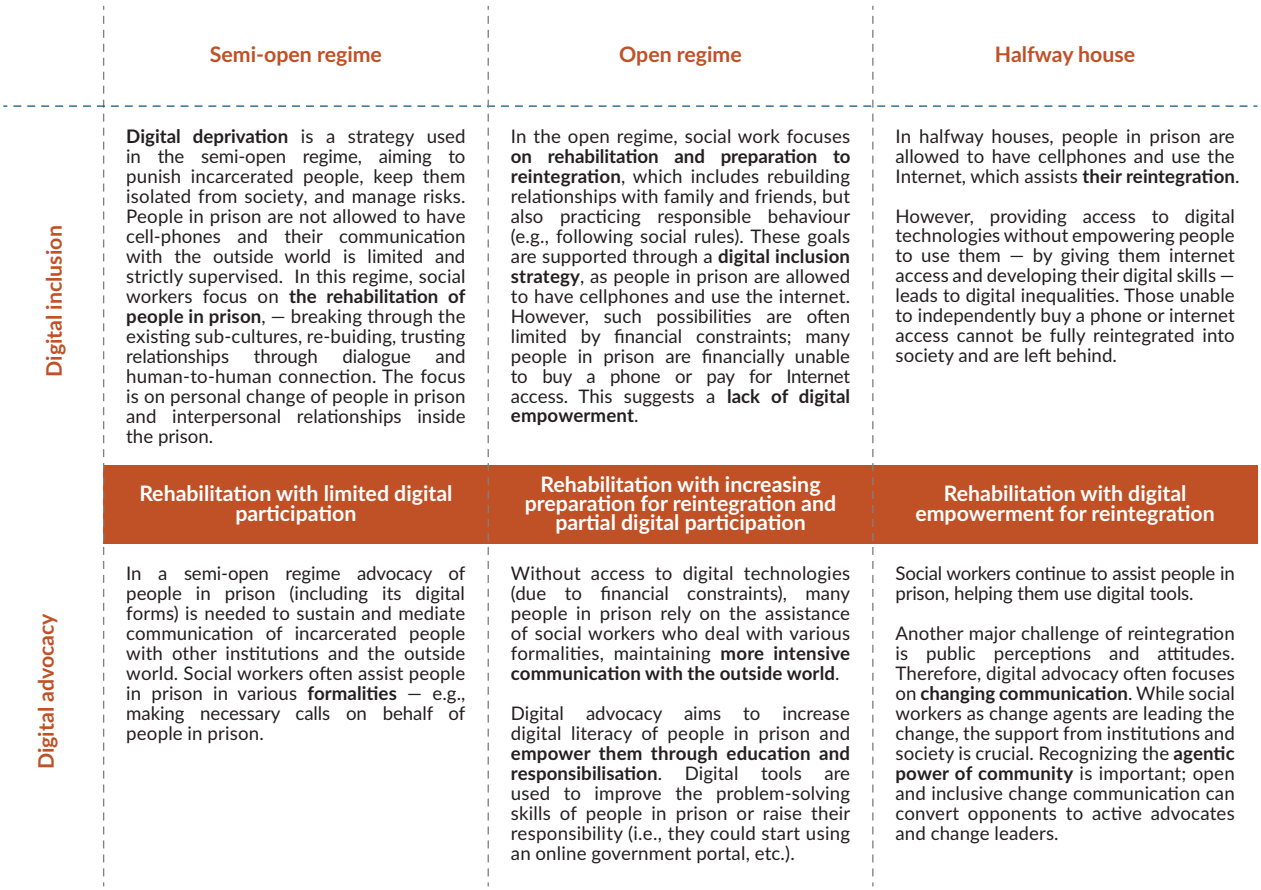


Figure 2. The logic of the three-stage system of the Lithuanian penitentiary sector: social workers' perspective.

4.1. Semi-Open Regime: Digital Deprivation

Prison social workers function as case managers, counsellors, and mediators between people in prison and society, focusing on behavioural change and practical needs. A goal of facilitating rehabilitation comes with at least two major challenging objectives: Social workers, being relatively new actors in the system (this position was introduced in 2021), must establish their authority and, at the same time, bring change. One of the first challenges social workers face in a semi-open regime is confronting existing prison sub-cultures and their informal hierarchies, with the division of incarcerated people into "castes," which is still evident both in relationships among people in prison and in the ways prison officers treat them. "Unwritten rules" shaping relationships inside penitentiary institutions often interfere with the core ideas of a prison oriented toward rehabilitation. But respondents also witness change brought by new generations of prison workers as well as people in prison and supported through more humane and inclusive approaches to incarceration.

Respondents share their experiences and explain how relationships and general culture inside the institution can be changed through social events and initiatives:

> They [incarcerated people of "higher castes"] have "unwritten" rules that certain inmates [from "lower castes"] can't sit at the same table as them….But if we have a family event—these rules are forgotten, and they eat cake together; they sit at the same table. It shows that they can share. (FGD 3, position of the quote in the MAXQDA transcript [Pos.] 110)

Family events are beneficial for many reasons—they (re)shape relationships inside the prison, change how the prison is seen by close family members, and increase the motivation of incarcerated people for change:

> Family events are especially popular. Inmates are waiting for them; they try hard for their families to organize a nice event. (FGD 3, Pos. 100–101)

> Even the toughest ones seem like different people when they meet their families, loved ones, their kids. They leave their masks aside and turn into different people—understanding, loving. (FGD 3, Pos. 103)

In a semi-open regime, communication of incarcerated people with the outside world is strictly limited. Phone calls via landline are supervised and ownership of personal mobile phones is not allowed—according to the official data of the Lithuanian Prison Service, 2367 mobile phones were confiscated from incarcerated people in 2025. Modems and other technological devices are also subject to confiscation. Such a strategy serves as a punishment and as a prevention to reduce risks to society, like possible phone scams from prisons. On the other hand, our research participants emphasize that it very much disempowers people in prison and limits their right to advocate for themselves. For instance, when paying their debts, incarcerated people often must communicate with responsible enforcement officers, but calling institutions from paid landline phones often ends in no answer. Social workers often assist people in prison to connect by calling from their work phones:

> Usually, officers [external bailiff clerks working on handling debts of incarcerated people] are very respectful and open to communication if we [social workers] call…sometimes it's hard to believe that they could ignore prisoners' phone calls…our mediation often helps. (FGD 3, Pos. 30)

Besides digital exclusion, the semi-open regime has other restrictions. Social workers often struggle to balance the punishment and rehabilitation approaches, while also establishing their authority and gaining trust from both prison staff and people in prison. On one hand, the organizational culture is still largely defined by hierarchical divides and the power of "uniforms." New approaches and innovative solutions related to humanization and rehabilitation are often met with scepticism and resistance. On the other hand, people in prison often do not understand and are uncertain about the new role of social workers—what are they aiming for? What is the point of talking to them? Do they have authority? But despite all these challenges, research participants witness change. The system is opening up to social workers and is starting to embrace and value their presence:

> The way they [prison staff] communicate with us today is proof of change. I believe social workers are becoming an irreplaceable part of the system: There is no way today's system could function without them. (FGD 3, Pos. 26–27)

While the success of shifting paradigms greatly depends on social workers, they often struggle with huge workloads, lack of human resources, and burnout. Our respondents testify that one social worker sometimes has 200 or even 400 clients—such numbers make humane and meaningful communication impossible:

> We as social workers dream of working with fewer individuals and providing high-quality, targeted assistance….I used to work previously at [a semi-open prison], where a single social worker was responsible for four hundred people. Four hundred inmates. (FGD 3, Pos. 74)

Social workers often act as mediators (between people in prison and the outside); they advocate and keep incarcerated people's voices heard (including online). The authority of social workers comes not only from their knowledge, but through humanistic and inclusive practices:

> We are helpers and enablers. We do not judge or punish; we do not wag fingers, like contact officers do. We are someone they [incarcerated people] trust, they come to us with their problems, they come to us to talk, share their stories, rejoice, and grieve. We have already established that connection. (FGD 3, Pos. 12)

As change agents, who keep the system shifting from punishment towards rehabilitation, social workers ground their authority in trusting relationships.

4.2. Open Regime: Digital Participation

Open regime prisons in Lithuania represent a more advanced level of rehabilitation. At this stage, social work focuses on reintegration, which includes not only rebuilding relationships with family and friends, but also the responsible behaviour of people in prison and preparing them for independent life after release. The problematic issues related to lack of responsibility or motivation are rather successfully targeted by the changing system—good behaviour is rewarded, and it motivates: People in prison get extra hours of freedom if they participate in certain activities, or they can be transferred to an open regime or a halfway house when/if conditions are met:

> All of them want to be free. Those long-term prisoners also want to be transferred to a halfway house to continue serving their sentences. They want to work, they want to live, they want to start a family, they want to enjoy what we have—freedom….There are really a lot of things in the changing system that encourage a convict to strive for change, motivate them to give up committing those crimes. (FGD 3, Pos. 59–61)

The bigger question, however, is often about readiness to adapt to society and the ability to cope with what is about to come: "They are eager to go back to freedom or be transferred to a halfway house, but they often are not ready to confront the public—which is ready to eat them alive" (FGD 3, Pos. 8). Research participants agree that digital empowerment is an important part of preparation for reintegration in this stage and can contribute to maintaining closer ties with family and friends, learning about changing conditions in the country and world; digital tools could also be used to improve problem-solving, coping skills or raise responsibility of people in prison. But, although incarcerated people in open regimes are allowed to have mobile phones and use the internet, many of them are financially unable to purchase them.

4.3. Halfway Houses: Digital Empowerment

The opening of the first halfway house in 2016 marks an important shift in Lithuania's penitentiary system. Today the country operates nine such institutions in different locations, which brings incarcerated people closer to their local communities, supports their rehabilitation, and prepares them for successful reintegration. In halfway houses, people in prison get individual consultations and other personalized help from social workers and other specialists. They have (or are looking for) jobs, they dress as locals, and their daily routines look very similar to those of anyone living in freedom. Just like in the open regime, they are allowed to have mobile phones and internet access.

While the new system provides incarcerated people with conditions enabling rehabilitation and necessary resources to support their reintegration (e.g., knowledge and authority of social workers), there are many challenges incarcerated people must overcome. Finding a job (which is one of the preconditions to stay in a halfway house) is one of the biggest. Business owners often reject such candidates, even if they have necessary qualifications and experience:

> An inmate under our supervision was a good cook, experienced, and educated. When a new diner opened in the town, our client called them for a job interview….He wanted to show his abilities, so he worked for free for a few days, and he was chosen—they offered him a job. However, the moment they heard about his situation, they cancelled the offer. (FGD 2, Pos. 23)

As demonstrated in this example, although paradigm shift is evident in structural elements through changing laws, rules, routines, and practices, many challenges are related to public perceptions and attitudes towards people in prison. When new strategies aimed at supporting rehabilitation and reintegration are introduced without changes in communication, they may have adverse effects. For instance, electronic tracking devices (ankle monitors), which can be considered a tool for rehabilitation and reintegration, can in fact increase exclusion not only for the incarcerated people but for their families, spouses, and children:

> In summer, when it is hot, and inmates usually do physical work outside, it becomes unbearable to wear jeans or long pants, but they still do, to hide the tracking device and to avoid condemnation from the locals….They feel even worse when spending time outside with family, spouses, or kids, who also get certain "treatment" from the public: It's trauma for the whole family. (FGD 2, Pos. 17)

Social workers who participated in our research argue that inclusive practices (e.g., bringing people in prison closer to the communities, having them work) must be applied together with building public awareness and changing communication. Research participants emphasize that when people (the broader public) do not know, they feel scared, resist, and fight the change. They cannot understand why incarcerated people are accommodated in their neighbourhoods. For instance, in 2024, when a halfway house was opened in a residential area in Lithuania, it was met with fierce opposition from locals:

> I have worked here [a community-based halfway house in one of the municipalities] since the first day. I witnessed the resistance from the community; it was fierce. It came from all sides—the community, the media….There was a lot of resistance and hostility. (FGD 2, Pos. 32)

Local community resistance, which started before the opening of this halfway house in 2024, later grew into regular protests and demonstrations. Local families were especially concerned about the halfway house's proximity to the kindergarten; they articulated fears over the safety of their children and (possibly) increasing crime rates. People were also frustrated about the lack of transparency and required to be included in decision-making processes. These tensions were greatly amplified through sustained media coverage emphasizing the conflict and legitimized by political leaders, criticizing responsible authorities for failing to address and include local voices. This is an example of the "Not in My Backyard" backlash in Lithuania, illustrating how important it is to communicate the change and prepare the public before the actual change is brought:

> In reality, sometimes we need to fear the local community, not the convicts. Residents [of the community] would climb over the fences, throw eggs at inmates, and call them [offensive] names. I think the community wanted answers and dialogue, but there was no communication from responsible institutions; their strategy was avoidance. And because of that, there was a big outburst of resistance and fear. (FGD 3, Pos. 4)

Despite sincere attempts and efforts to change and reintegrate, people in prison often experience contempt and rejection from locals, who refuse their help. Such perceptions and attitudes are often amplified through digital media and sometimes grow into digital punishment, directed at both the incarcerated people and their advocates (social workers). For instance, local community members opposing the opening of the halfway house were actively communicating on Facebook, where they shared news and attitudes. Later, social workers learned from community members that some of the messages sounded like this:

> Be careful, they [people in prison] are coming, they are bringing their stuff. Whatever it is, we don't need anything from these prisoners! (Prison Focus Group 2 Transcript, Pos. 18)

> Many people do not understand why we are advocating for them [incarcerated people]. Often it feels like we are the criminals ourselves, it's like we must share the punishment. (FGD No. 2, Pos. 76)

Advocating for people in prison and their rights is also a risky choice for political actors, sometimes leading to political suicide.

> I discussed with a representative of the Seimas [Lithuanian Parliament] about supporting convicts and improving their living conditions. But this is not a popular topic; it is a dangerous topic. Voters do not support it. Voters do not need it. And if a candidate articulates such ideas in public, they risk their political career. (FGD No. 3, Pos. 67)

Time, care, and proactive communication are crucial to mitigate public resistance and prepare local communities for the change. Transparency, openness, and honesty are the best strategies to counter public fear, stigma, and stereotypes. Social workers in halfway houses see this as one of the goals of the system:

> People have lots of questions: Why did they open this prison in their small town? Why does this prison have no fences or bars? Why do inmates walk freely?...More time and communication are needed for people to understand how everything is happening and what the system is aiming for. (FGD 2, Pos. 30)

Respondents also share that real-life engagement-based initiatives like family and community events, volunteering at animal shelters, nursing homes, and helping locals in their everyday lives are also very important, as they show people in prison in different, more humanistic ways—"they are just people, like us" (FGD 2, Pos. 100). Informing society and treating citizens as partners is important, not only for the success of reintegration but it also might help find new advocates and active agents to assist through the reintegration processes, e.g., business owners sharing their positive experiences, communities providing support and openness for a dialogue:

> There are local communities, who could find ways to support someone through their reintegration process. (FGD 3, Pos. 11)

> I can see changing views….When I talk to business owners, they even say that inmates work much better than others and they ask me to send them more such workers. (FGD 1, Pos. 29)

Participants agree that digital tools, like social media, can assist in changing public perceptions, but it often means the risk of being misunderstood, rejected, or even attacked online. Research participants emphasize that changing communication should not be left to social workers alone; instead, it needs to be integrated into systemic change and implemented through systemic means—social media campaigns, institutional communication—and implemented by responsible institutions (e.g., Lithuanian Prison Service).

The research findings show that the three prison regimes represent different levels of digital inclusion (see Figure 2 above). Digital deprivation in semi-open prisons takes the form of limited access to technologies during the rehabilitation process. In open-type prisons, digital participation is encouraged, seeking to promote greater reintegration, and, in halfway houses, digital empowerment represents the greatest level of digital inclusion, although some constraints remain due to a lack of digital skills and resources.

5. Discussion and Conclusion

The multilevel regime system introduced in the Lithuanian penitentiary sector as part of prison reform supports a shift from a punitive to a rehabilitation-oriented model of imprisonment. At the same time, less restrictive regimes promote greater opportunities for the reintegration of incarcerated individuals. In the semi-open regime, rehabilitation takes place under restrictive conditions. Contact with the outside world is limited, and digital deprivation is used as a punishment and a way to minimise possible risks to society. However, at a certain point of incarceration (after serving a significant part of the sentence and approaching the release date, or demonstrating good behaviour), people in prison within this regime are transferred to a more lenient open prison. Meanwhile, in an open regime, incarcerated people have access to the internet and are allowed to have mobile phones (as part of a digital inclusion strategy). However, due to a lack of digital skills or financial resources, they depend heavily on assistance and support from social workers, which complicates and slows down their preparation for reintegration. Halfway houses offer a lenient mode of incarceration and provide the greatest opportunity for digital inclusion, with access to mobile phones and the internet. However, digital empowerment can be limited as many people in prison lack the necessary skills and/or access to digital technology. Apparently, without a proper digital inclusion strategy and design, reintegration can remain challenging.

The testimonies of our study participants indicate three main outcomes. Firstly, change cannot be successful if implemented only on a structural level. A lack of change in communication and public awareness building leads to public resistance, which undermines the success of systemic change. Secondly, social workers as change agents cannot be expected to take responsibility for everything (change management, change communication, etc.) while establishing their own authority, dealing with a huge workload, and struggling with burnout. Institutional support mechanisms and political will for change are crucial. Thirdly, digital communication technologies are an essential part of rehabilitation and (re)integration, but proper digital strategies are necessary to ensure digital inclusion and empowerment of people in prison (through digital education or access), and to manage public perception and awareness (reducing digital punishment through digital advocacy). Furthermore, different institutional regimes require adjusted digital strategies and technology design.

The research demonstrates how contested the Lithuanian penal system reform is, with particular national and institutional features shaping the specific hybrid forms referred to by Pallot and Zeveleva (2023). This hybridity encompasses the emerging practices of the European model with the aims of rehabilitation and open prisons, as well as the legacy of the Soviet-era penal regime (Vaičiūnienė & Tereškinas, 2017). The legacy includes, besides other things, a lack of respect for the dignity of people in prison by staff, and stigmatization by the wider public. The study shows the slow pace of digitalisation and digital inclusion in the prison design. Some elements of digitalisation occur in an attempt to digitise administrative work and case management. However, people in prison have limited or no access to technologies and digital services (education, healthcare, social services, and employment). These findings reveal the pattern of digital exclusion described by Jewkes and Reisdorf (2016) and Järveläinen and Rantanen (2021). The three-level regime system (semi-open, open, and halfway houses) reflects a gradual transition from isolation to social integration. In the Lithuanian case, this incorporates the process of moving from digital exclusion to limited forms of digital participation; however, it does not reach the level of digital inclusion. The study unveiled challenges arising from the profound stigma faced by people in prison, as well as strong negative attitudes toward incarcerated people. Interviews with prison social workers illuminated contradictions in the digitalization process related to stigma. As highlighted earlier, the social dimension of prison openness involves transparency, accountability, and the communication processes through which prisons open up to the public, informing society and, at the same time, urging them to engage in the rehabilitation and reintegration process of incarcerated people.

The research revealed that current prison reform is constrained by conflicts and resistance from local communities. Besides long-standing historical and cultural factors, this is the result of insufficient communication efforts by prison institutions to change public attitudes. The potential of active communication strategies, including digital advocacy, cooperation with media and journalists, and active negotiations with local communities, has not been realised. The research findings reveal the ambivalent role of digital technologies and practices in prison. Electronic tagging tools, such as ankle monitoring devices, created to facilitate more lenient forms of incarceration, expose people in prison to social stigma. This suggests that the use of technologies cannot be separated from the principles of digital inclusion and advocacy. The role of digital advocacy is important yet underestimated by prison authorities, the media, journalists, and social advocacy groups. Public prejudices, hostility, and resistance among local communities against the establishment of halfway houses in their neighbourhoods show the need for advocacy and communication around the reintegration of people in prison. This could be actively promoted by institutions (prison administration, NGOs, policymakers). While social workers are willing to facilitate communication

among prisons, institutions, local communities, and wider society, it is clear that digital advocacy cannot be achieved without institutional support and the commitment of the justice system, nor without more inclusive stakeholder engagement as part of a whole-of-society approach. The limitations of this study, which is based on the analysis of social workers' perspectives and delves into the specific context of prison reform in Lithuania, can be addressed by conducting further studies that incorporate the self-advocacy strategies of incarcerated people. These studies could also consider social rehabilitation, reintegration, and digital transformation from the perspectives of people in prison. Furthermore, research could be conducted on the potential contributions of other social actors, groups and institutions, and comparative research could be conducted across different contexts.

Funding

This research has received funding from the European Union's Horizon Europe program project DIACOMET (Fostering Capacity Building for Civic Resilience and Participation: Dialogic Communication Ethics and Accountability, ID: 101094816, 2023–2026). Publication of this article in open access was made possible through the institutional membership agreement between Vytautas Magnus University and Cogitatio Press.

Conflict of Interests

The authors declare no conflict of interests.

Data Availability

The data from this research are not publicly available due to the confidential and sensitive nature of the research.

LLMs Disclosure

LLM tools, including DeepL and Grammarly, were used to support the preparation of the manuscript, namely for proofreading and language editing.

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SOCIAL INCLUSION
ISSN: 2183-2803

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