

Part II: Agents of Change and Innovation

Chapter 3

DIGITAL INCLUSION AND THE DEVELOPMENT DIVIDE

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INTRODUCTION

In the 21st century, digital technology has become a powerful driver of economic growth, social transformation, and political participation ([Roza et al. 2022](#)). The rapid proliferation of the Internet, smartphones, cloud computing, and artificial intelligence has redefined how societies interact, govern, and develop. However, alongside the promises of this revolution, the digital divide is a stark and growing challenge. This divide, reflected in unequal access to digital technologies, skills, and infrastructure, has become a key determinant of socioeconomic inequality across and within nations.

The term ‘digital inclusion’ has emerged in response to this inequality, referring to efforts that ensure that all individuals and communities, especially the most disadvantaged, have access to and the capacity to use information and communication technologies (ICTs) ([Chen & Li, 2021](#)). It encompasses not only connectivity, but also digital literacy, affordability, accessibility, and relevant content. In today’s globalized development landscape, digital inclusion is no longer a luxury or secondary concern; it is a fundamental precondition for equitable growth, access to services, and democratic participation.

Despite widespread awareness, deep disparities persist between urban and rural regions, the rich and the poor, and the educated and marginalized ([Chen, 2016](#)). In many parts of the world, especially in the Global South, digital exclusion exacerbates existing developmental divides, reinforcing structural inequalities in education, healthcare, livelihood, and governance. As development strategies increasingly rely on digital tools, the risk of leaving vast segments of the population is becoming more acute. Therefore, understanding and addressing digital inclusion are central to rethinking development in a digitally mediated world.

This chapter critically examines the intersection between digital inclusion and the broader developmental divide ([Hamburg & Lütgen, 2019](#)). Although digital technologies have the potential to act as great equalizers, in practice they often reproduce and even deepen existing patterns of exclusion. This chapter aims to unpack the complexities of digital access and participation, highlighting how digital disparities align with socioeconomic, geographic, gendered, and

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educational inequalities. By investigating the structural and institutional barriers to digital inclusion, this chapter seeks to contribute to a deeper understanding of how technological advancement interacts with inclusive and sustainable development goals. It explores how state policies, market forces, and global institutions either facilitate or hinder access to digital tools and opportunities, particularly in marginalized communities.

Furthermore, the chapter seeks to challenge the techno-centric view of development by emphasizing the importance of human agency, local context, and community-based digital strategies ([Sharov & Tønnessen, 2021](#)). In doing so, it advocates a reimagined development paradigm in which digital access is treated as a right and not a privilege. Ultimately, the chapter intends to provide scholars, policymakers, and practitioners with a critical lens through which to assess the role of digital inclusion in bridging, rather than widening, the developmental divide.

CONCEPTUAL CLARIFICATION

Digital inclusion refers to the process of ensuring equitable access to information and communication technologies (ICTs), including the Internet, digital devices, and relevant skills and services, regardless of socioeconomic, geographic, gender, age, or ability-based disparities ([Welch et al., 2015](#)). This concept evolved from the broader idea of the “digital divide,” which describes the gap between those who have access to digital technologies and those who do not. However, while the digital divide focuses on disparities, digital inclusion emphasizes proactive strategies to bridge these gaps.

The origin of the term can be traced back to policy and development discourses in the late 1990s and the early 2000s, when Internet proliferation rapidly reshaped economies and societies ([Ignatova, 2024](#)). The World Summit on the Information Society (WSIS) in 2003 and 2005 played a pivotal role in framing digital inclusion as a fundamental part of development, highlighting the need for inclusive access to ICTs as a basic human right in a knowledge society.

Digital inclusion encompasses five interrelated components: (1) affordable and reliable Internet connectivity; (2) access to appropriate digital devices; (3) digital literacy and skill development; (4) availability of relevant digital content and services; and (5) institutional support and policy frameworks that promote inclusion.

It is important to understand that digital inclusion is not merely about connectivity but also about enabling meaningful participation in social, economic, and political life through digital means ([Park et al., 2019](#)). For instance, having internet access without the ability to critically engage with digital content or utilize e-governance services does not amount to full inclusion. Thus, digital inclusion is a technological and socio-political project aimed at democratizing access and reducing structural inequality.

The concept of digital inclusion has evolved significantly in tandem with the changing landscape of digital technologies, development theory, and global policy priorities ([Kryklui, 2022](#)). In the early 2000s, digital inclusion was largely framed in techno-deterministic terms; access to infrastructure was seen as the key to unlocking economic growth and modernization. Governments and international organizations have focused on building ICT infrastructure, especially in low-income countries, to ‘catch up’ with the digital revolution.

However, by the mid-2010s, it became clear that the infrastructure alone was insufficient. A more nuanced understanding has emerged, recognizing the importance of digital skills, content relevance, and sociocultural factors that influence digital adoption ([Akkilic et al., 2017](#)). For example, access to smartphones in rural India did not automatically lead to improved educational outcomes or better market access unless users had the skills and confidence to navigate digital ecosystems.

This shift marked a transition from first-order digital divides (access to technology) to second-order divides (skills and usage), and more recently, to third-order divides (impact and outcomes). The COVID-19 pandemic has served as an inflection point ([Tasmilah et al., 2021](#)). The sudden pivot to digital education, work, and healthcare has made deep fractures visible through digital access. This shows how digital exclusion can reinforce and deepen existing inequalities in education, gender, health, and income.

Contemporary discussions now focus on "meaningful connectivity" and "digital empowerment" rather than just access ([Radhakrishnan et al., 2023](#)). Digital inclusion is increasingly seen as integral to achieving Sustainable Development Goals (SDGs), particularly those related to education (SDG 4), gender equality (SDG 5), decent work (SDG 8), and reduced inequalities (SDG 10). It is also tied to concepts, such as digital citizenship, open data, and inclusive e-governance.

This evolving understanding has led to multi-stakeholder approaches involving public-private partnerships, civil society engagement, and community-driven models ([Storeng & De Bengy Puyvallée, 2018](#)). Policy frameworks have been expanded to include issues such as digital rights, algorithmic bias, data justice, and inclusive innovation. Digital inclusion has transformed from technical intervention to a holistic developmental imperative embedded in the broader struggle for equity and justice.

Understanding digital inclusion requires unpacking several related, but distinct concepts.

1. **Digital Divide:** The foundational concept, the digital divide, refers to disparities in access to digital technologies. Initially centered on physical access to the Internet and devices, it now includes divides in quality of access, digital literacy, and outcomes of digital use. Digital inclusion goes beyond identifying the divide to address and remedy it through systemic change.
2. **Digital Literacy:** This refers to the skills required to use digital tools effectively. It includes not only basic operational skills (as using a smartphone) but also critical thinking, digital safety, information evaluation, and content creation skills. Digital inclusion is impossible without promoting digital literacy, especially among marginalized groups.
3. **Information Poverty:** A term used in communication studies and development theory describes the condition in which individuals or communities lack access to the information necessary for decision-making, participation, and development. Digital inclusion aims to overcome information poverty by enabling individuals to access and use relevant information through digital means.
4. **Techno-solutionism versus Digital Empowerment:** A key distinction in the discourse lies between techno-solutionist approaches, which see technology as a silver bullet for

development, and empowerment-based approaches that emphasize agency, participation, and rights. Digital inclusion aligns more closely with the latter, advocating not just access, but also autonomy and meaningful use.

5. Inclusive Innovation: This refers to the design and implementation of technologies and services that address the needs of underserved communities. It complements digital inclusion by focusing on innovation from margins rather than from margins.

In conclusion, while digital inclusion intersects several key ideas in development, it is distinguished by its integrative approach of merging technological, social, political, and cultural strategies to foster equitable participation in an increasingly digital world. Understanding these distinctions is essential in designing interventions that are both inclusive and transformative.

THEORETICAL FOUNDATIONS

Digital inclusion—the equitable access to and meaningful use of information and communication technologies (ICTs)—rests on several foundational development theories ([Lemos & Ferraz, 2014](#)). These theoretical frameworks help to explain both the promise and challenges of digital technologies in addressing the global development divide.

One of the central theories is the Modernization Theory, which views technological advancement as a key driver of societal progress ([Goorha, 2017](#)). Rooted in the post-World War II development discourse, modernization theorists such as Walt Rostow argued that societies evolve through a linear process, culminating in high mass consumption and technological advancement. Within this framework, digital inclusion is seen as a catalyst for transforming "traditional" societies into "modern" societies. ICTs are considered tools for accelerating education, market integration, public service delivery, and political participation, all of which are hallmarks of modern development.

The Human Capital Theory also supports digital inclusion as a means of enhancing individual capabilities ([Fix, 2018](#)). Popularized by economists such as Gary Becker, this theory posits that investment in education and skills, now increasingly mediated by digital access, can increase economic productivity and social mobility. In this context, digital literacy is not merely a technical skill, but a developmental asset that enables individuals to participate in the knowledge economy.

The capability Approach, developed by Sen and further expanded by Nussbaum, provides a more nuanced ethical foundation ([Bari, 2020](#)). It shifts focus from mere access to digital tools toward the freedom to achieve functionings—the real opportunities that individuals have to do and be what they value. From this perspective, digital inclusion is not just about plugging into the Internet, but about expanding people's substantive freedoms, such as the ability to engage in education, express opinions, or access healthcare.

Network Society Theory, introduced by Manuel Castells, explains how digital technologies reorganize social, economic, and political life around information networks ([Kirtiklis, 2017](#)). Castells argues that ICTs create a new mode of development, informationalism, in which power flows through networks. This helps explain both the integrative and exclusionary dimensions of digital infrastructure: while networks can democratize access and mobilize grassroots movements, they also marginalize those disconnected from them, reinforcing existing social hierarchies.

Finally, Critical Development Theory challenges dominant technocratic optimism by questioning who benefits from digital development ([Munck, 2021](#)). It posits that global digital expansion often reproduces the colonial patterns of dependency, corporate domination, and epistemic injustice. It emphasizes power, inequality, and structural constraints in analyzing how digital tools are deployed and controls the terms of inclusion.

Together, these core theories offer a multidimensional framework to analyze digital inclusion not just as a technical fix but also as a complex social, economic, and political process with deeply normative implications.

Technological Determinism asserts that technology is the primary force that drives social change ([Volti, 2020](#)). From this perspective, digital tools inevitably reshape society toward progress. However, critics argue that this view is overly simplistic and ignores the role of human agency, cultural contexts, and institutional structures. In contrast, Social Construction of Technology (SCOT) posits that technological development is shaped by social, cultural, and political factors. Thus, digital inclusion must be understood within specific social contexts and not as a one-size-fits-all solution.

Postcolonial Theory provides a strong critique of the dominant narratives of digital inclusion ([Elam, 2019](#)). It interrogates how global north-led digital development projects often impose external values and technologies on the global South, reinforcing epistemic hierarchies. Postcolonial scholars argue that digital inclusion must center on indigenous knowledge systems, local languages, and cultural autonomy to avoid becoming a new form of digital imperialism.

Dependency Theory, originating in Latin American thought, complements post-colonial critiques ([Acosta & Cajas-Guijarro, 2022](#)). It warns that digital development may deepen dependency on foreign hardware, software, and capital, thereby preventing self-sustained development. Access to digital platforms controlled by global tech giants can reproduce global asymmetries and extract data and values from peripheral economies, without fostering local capabilities.

Feminist and Intersectional Perspectives focus on layered exclusions embedded in the digital infrastructure ([Lyytinen et al., 2017](#)). They question who is included, and under what conditions? For example, women, especially in rural or marginalized communities, often face compounded barriers to digital access, literacy gaps, and affordability of patriarchal norms. Intersectional analysis ensures that digital inclusion efforts account for overlapping identities, such as caste, gender, class, and disability.

Ecological and Degrowth Theories raise sustainability concerns ([Vu, 2024](#)). The global push for digital inclusion often overlooks the environmental costs of digital expansion—e-waste, energy-intensive data centers, and extractivist practices. These perspectives caution against techno-solutionism and advocate ecologically responsible digital strategies aligned with planetary limits.

These diverse theoretical lenses—some critical and complementary—enrich our understanding of digital inclusion. They encourage us to see it not merely as a technical project, but as a deeply political and ethical endeavor.

In this chapter, the Capability Approach and Critical Development Theory are adopted as primary theoretical lenses. This choice is justified by their ability to capture the normative, structural, and contextual dimensions of digital inclusion jointly.

The Capability Approach provides a flexible, human-centered framework that closely aligns with the goals of inclusive development ([Costa, 2016](#)). Rather than focusing solely on technological access, it emphasizes what individuals are able to do with digital tools, such as participating in democratic discourse, accessing quality education, or securing economic opportunities. This shift from access to agency is vital for evaluating the true impact of digital inclusion in diverse settings. It also allows us to account for multidimensional barriers—gender norms, literacy, and infrastructure—that shape digital participation.

Complementing this, the Critical Development Theory offers tools to interrogate the power dynamics behind digital inclusion ([Munck, 2021](#)). It questions who controls digital infrastructure, whose voices are heard or silenced, and how digital divides intersect with historical patterns of inequality and marginalization. By foregrounding issues of power, control, and systemic exclusion, this framework prevents the romanticization of digital development and brings much-needed realism into policy debate.

The combination of these two frameworks enables a comprehensive understanding: the Capability Approach emphasizes positive freedoms and human development, while the Critical Development Theory guards against blind spots, unintended consequences, and the reproduction of global inequalities ([Lodge, 2018](#)). Together, they provide a theoretically robust and ethically grounded lens through which to analyse the promises, pitfalls, and pathways of digital inclusion in addressing the global development divide.

DEBATES, GAPS, AND THEORETICAL CHALLENGES

Discourse on digital inclusion is rife with tensions that challenge both policy frameworks and theoretical paradigms ([Thompson et al., 2014](#)). One of the central controversies is the instrumentalist versus the transformative view of digital technology. The instrumentalist perspective sees digital tools as neutral enablers of development, merely a means to an end. By contrast, the transformative view argues that digital technologies actively reshape social, economic, and political structures, potentially reinforcing or dismantling existing inequalities. This debate is especially relevant in the Global South, where structural conditions, such as poverty, illiteracy, and gender-based exclusion, intersect with digital inaccessibility.

Another tension lies in the urban-rural digital divide ([Feurich et al., 2023](#)). While urban areas often benefit from robust digital infrastructure and higher digital literacy rates, rural populations face infrastructural deficits, weak connectivity, and sociocultural barriers that limit meaningful use. Policies designed at the national level often fail to consider these subnational disparities, leading to uneven developmental outcomes.

The third key controversy surrounds the notion of access versus meaningful access ([Francis & Silvers, 2019](#)). Mere connectivity does not guarantee an effective inclusion. The debate shifts from providing infrastructure to ensuring digital literacy, affordability, contextual relevance of content,

and institutional support. This broader framing questions the dominant metrics used by global indices, such as the ITU's ICT Development Index or the World Bank's Digital Adoption Index, which often focus narrowly on connectivity rates and device penetration.

Furthermore, there is growing tension between technological and sociopolitical embeddedness ([Cavalcante Silva, 2025](#)). Proponents of techno-determinism advocate rapid digital interventions as panaceas to development challenges, often overlooking complex local realities. Critics caution that digital interventions without community engagement and systemic change risk reproduce the hierarchies they seek to dismantle.

Finally, debates about data governance and digital sovereignty have become increasingly prominent. As developing nations adopt digital technologies, concerns over data extraction, surveillance, and dependency on global tech giants (often headquartered in the Global North) have raised questions about autonomy, ethics, and accountability. Who owns the data? Who benefits from monetization? These questions point to unresolved tensions between development goals and digital capitalism.

These controversies illustrate the multidimensional character of digital inclusion, indicating that simplistic or one-size-fits-all approaches are not only inadequate, but potentially regressive.

Several critical perspectives have challenged the dominant narratives of digital inclusion and development. Post-colonial critiques argue that the digital divide cannot be understood outside the historical and structural legacies of colonialism and global capitalism. Digital infrastructure, platforms, and policies are often imposed through transnational development agendas shaped by Western epistemologies and interests, marginalizing local knowledge systems, and community-based innovation.

Feminist perspectives criticize the gendered nature of digital exclusion. They highlight how women, especially those in the Global South, are disproportionately affected by barriers to access, digital literacy, and online safety. Beyond mere access, feminist scholars have focused on issues of representation, participation, and the politics of care in digital spaces. They also question whether inclusion in male-dominated digital ecosystems is truly emancipatory, or just another form of assimilation into patriarchal structures.

Critical race theory and indigenous studies have focused on how digital technologies often replicate racialized and settler-colonial hierarchies. For example, the biometric identification systems used in welfare distribution can become sites of exclusion and surveillance of marginalized ethnic communities. These critiques caution against the techno-utopian assumption that digital tools are inherently empowering or egalitarian.

Political economy perspectives interrogate the commodification of digital access and the role of multinational corporations in shaping digital development ([Pârjoleanu, 2020](#)). The privatization of Internet infrastructure, data monetization practices, and concentration of power in the hands of a few tech monopolies call into question the democratic potential of digital inclusion. These perspectives highlight how the digital divide is not just a technical or infrastructural issue but a manifestation of broader neoliberal development models.

Furthermore, critical development theorists have challenged the notion that digital inclusion automatically leads to empowerment. They argue that development should be viewed through the lens of agency, relationality, and justice rather than technological metrics. From this standpoint, inclusion is not merely about bringing the excluded into the fold but reimagining the very structures of exclusion.

Together, these critical perspectives compel a shift from a techno-centric to a people-centric paradigm, in which questions of power, equity, and justice are foregrounded. They push us to re-evaluate not just how digital technologies are deployed but for whom, by whom, and to what end.

Despite a growing body of research on digital inclusion, several significant gaps persist in the literature ([Md Sabri et al., 2023](#)). First, much of the existing research remains quantitative and techno-centric, focusing on access statistics, device usage, and Internet penetration rates. This leaves out the qualitative, lived experiences of digital users, especially among marginalized groups, such as the social stigma attached to digital illiteracy or the informal strategies communities use to navigate digital barriers.

Second, there is a relative lack of intersectional analysis. While studies on gender, caste, class, or rurality exist, few comprehensively examine how these identities intersect to shape digital exclusion in complex ways ([Menon, 2022](#)). For example, the experience of a Dalit woman in rural India facing digital marginalization differs markedly from that of a middle-class urban woman, yet such a nuanced analysis is underrepresented.

Another gap lies in the evaluation of digital inclusion initiatives ([Ehimuan et al., 2024](#)). Many government-led programs and NGO interventions have been inadequately assessed for their long-term impact, sustainability, and community ownership. Case studies are often celebratory and lack critical reflection on unintended consequences, such as exclusion owing to faulty biometric authentication or privacy violations.

There is also limited research on alternative digital paradigms such as community networks, indigenous digital knowledge systems, and open-source technologies tailored to local needs ([Turkama, 2019](#)). These bottom-up approaches offer promising alternatives to top-down digital governance but remain marginal in the mainstream literature.

Finally, the geopolitics of digital infrastructure and data colonialism are emerging areas that require further investigation ([Shen & He, 2022](#)). Issues such as cross-border data flows, algorithmic biases, and dependencies on foreign technology providers have rarely been addressed in traditional development studies, although they significantly impact sovereignty and equity in the digital age.

Addressing these gaps is not merely an academic exercise; it is essential to develop digital development policies that are just, inclusive, and contextually relevant. Future research must engage with community voices, adopt interdisciplinary approaches, and remain attentive to the structural conditions that produce and perpetuate digital divide.

APPLICATION OR ILLUSTRATION

In the early 2000s, India witnessed a bold attempt to bridge the digital divide in its agrarian economy through an innovative public-private initiative, e-Choupal, launched by ITC Limited. Designed to digitally empower rural farmers, e-Choupal set out to mitigate the information asymmetry between small-scale farmers and market players ([Mukerji, 2020](#)). This initiative serves as a compelling case for understanding how digital inclusion can impact development in structurally disadvantaged contexts.

At its core, e-Choupal functions through Internet kiosks installed in rural villages and operated by trained local farmers, known as *Sanchalaks* ([Kendall & Singh, 2012](#)). These kiosks provide real-time information on the weather, crop prices, pest management, and best agricultural practices. By bypassing traditional middlemen, farmers gain direct access to market data, which enables them to negotiate better prices and reduce exploitation.

The success of e-Choupal can be understood through its multi-layered impact ([Mukerji, 2013](#)). First, they enhance economic inclusion. Farmers using the platform reported improved bargaining power and greater income stability owing to timely and accurate market information. Second, knowledge empowerment is promoted. Agricultural decision making, previously based on intuition or word-of-mouth, became evidence-informed. Third, it catalyzed social inclusion, as *Sanchalaks* often became local change agents, disseminating knowledge beyond just agriculture, such as digital literacy, health awareness, and access to government schemes.

However, this implementation faces critical challenges. The rollout was skewed toward regions with basic infrastructure, such as electricity and Internet connectivity ([Ehuitché, 2016](#)). Consequently, the most marginalized regions, often inhabited by Dalit, Adivasi, or nomadic communities, remained excluded. Moreover, gendered barriers persisted. Female farmers, despite their significant role in agriculture, had limited access to kiosks, reflecting the intersection of digital and gender divides.

The e-Choupal case underscores both the possibilities and limitations of digital inclusion ([Sharma & Sharma, 2017](#)). While digital platforms can facilitate development, their success depends on complementary investments in infrastructure, education, and inclusive governance. It also highlights how private sector actors can contribute to development agendas, although not without trade-offs related to data privacy, accountability, and long-term sustainability.

In recent years, newer models have emerged, such as Digital Green, which uses participatory videos to educate farmers, and the Common Services Centers (CSCs) initiative under India's Digital India campaign ([Dwivedi et al., 2016](#)). These models integrate lessons from earlier efforts, such as e-Choupal, emphasizing decentralization, gender inclusion, and community engagement.

Ultimately, e-Choupal illustrates that digital inclusion must go beyond access to technology; it must translate into agency, participation, and systemic change ([Mukerji, 2013](#)). The initiative demonstrates how technology, when embedded in social and institutional structures, can disrupt traditional hierarchies and create pathways for inclusive development, but only if inequalities in access, literacy, and representation are addressed simultaneously.

The case of e-Choupal invites us to reflect on the broader theoretical frameworks of digital justice and developmental equity ([Mukerji, 2020](#)). Traditionally, the digital divide has been viewed through a technocratic lens, emphasizing the lack of access to devices, connectivity, and infrastructure. However, this approach overlooks the social embeddedness of technology—how it interacts with caste, class, gender, geography, and power.

Theoretically, Sen’s Capability Approach offers a compelling framework for understanding digital inclusion ([Garcés Velástegui, 2020](#)). Access to technology becomes meaningful only when individuals have the capability to use it to achieve valued functionings such as participating in markets, accessing public services, or shaping community decisions. e-Choupal partially succeeded because it built local capacities through Sanchalaks, but it also fell short of universalizing these capabilities, particularly across gender and caste lines.

In addition, Nancy Fraser’s tripartite theory of justice, which involves recognition, redistribution, and representation, can deepen our understanding ([Tandon, 2021](#)). While e-Choupal facilitated some level of redistribution (economic gains to farmers), it lacked mechanisms for the recognition of marginalized identities, particularly women and lower castes, and representation in decision-making about digital governance.

Another lens is the Postcolonial Technopolitics perspective, which critiques the assumption that digital tools are inherently neutral or emancipatory ([Pavić et al., 2022](#)). Technologies such as e-Choupal often reflect the biases of their designers and market logic of their sponsors. When deployed without critical engagement with local knowledge and hierarchies, such interventions risk reinforcing inequalities under the guise of innovation.

The case also illustrates the concept of “infrastructural citizenship”—the idea that access to infrastructure (including digital infrastructure) is a mode of being recognized by the state and market as a rights-bearing subject ([Li et al., 2022](#)). In contexts in which connectivity is uneven and contingent, digital citizenship remains fractured and conditional.

CONTRIBUTION AND INNOVATION

This chapter offers a critical departure from traditional developmental paradigms by foregrounding *digital inclusion* as a dynamic and politically charged process, not merely as a technical fix or infrastructure challenge ([Baecker, 2019](#)). Much of the earlier discourse on the digital divide focused on access to devices and connectivity. While essential, this narrow framing overlooks the deeper structural inequities—economic, educational, gendered, and geographic—that shape who can meaningfully participate in the digital realm. Reframing digital inclusion as a matter of justice and capability enhancement, this chapter argues that access alone does not guarantee inclusion. Rather, true inclusion depends on how digital technologies are integrated into people’s lives in ways that empower, inform, and transform them.

This chapter challenges the prevailing assumption that digital technologies are inherently emancipatory or universally beneficial ([Ossorio, 2024](#)). Drawing on interdisciplinary insights from development studies, critical media theory, and political economy, it highlights how digital ecosystems often reproduce or even deepen existing socioeconomic inequalities. For example, algorithmic bias, surveillance capitalism, and digital labor precarity disproportionately affect

marginalized communities, particularly in the Global South. Far from being passive recipients, these communities must be viewed as agents of innovation, resistance, and alternative digital futures.

Moreover, this chapter introduces the concept of “*developmental digital citizenship*,” emphasizing not only the right to access but also the right to shape the terms of digital participation ([Pollicino, 2020](#)). This notion extends beyond inclusion metrics and policy benchmarks to consider the lived realities of digital users—how they negotiate power, identity, and opportunity within digital spaces. It also connects digital inclusion with the broader goals of sustainable development, education, and democratic accountability, advocating for a people-centered, context-specific approach.

Thus, the new insight offered here is that bridging the digital divide requires more than technological intervention; it also demands institutional reform, participatory governance, and epistemic inclusion. Digital inclusion, in this view, is not a destination, but a continuous, contested process rooted in social justice and human development.

This chapter proposes a multidimensional and justice-oriented framework for understanding and addressing digital inclusion in the context of global development ([Walton, 2019](#)). Rather than treating the digital divide as a static gap that needs to be closed through infrastructure or connectivity alone, it presents a relational and contextual synthesis that links digital inclusion to economic equity, cultural autonomy, political voice, and epistemic recognition.

At the core of this synthesis is the Digital Capabilities Model, a conceptual approach adapted from Sen’s capabilities theory and extended into the digital sphere ([Elishar-Malka et al., 2020](#)). This model suggests that what truly matters is not just access to digital technologies, but the *capabilities* they enable: the freedom to learn, communicate, organize, innovate, and critique. It calls for development policies that foster these freedoms across social strata, especially for historically marginalized groups, such as women, indigenous communities, and rural populations.

Furthermore, the chapter proposes the idea of “Digital Inclusion as a Commons,” advocating for open, participatory, and community-governed platforms that resist corporate enclosure and promote collective digital rights. This proposition rethinks digital infrastructure as a shared social good—akin to water, education, or clean air—rather than a privatized commodity.

In sum, this chapter moves beyond techno-solutionism to propose a holistic and normative framework for digital inclusion aligned with democratic development and social transformation. It invites scholars, practitioners, and policymakers to embrace a reimagined vision of digital futures: plural, inclusive, and just.

IMPLICATIONS AND FUTURE DIRECTIONS

The concept of digital inclusion, when situated within the broader discourse on development, compels fundamental rethinking of traditional development paradigms ([Kryklii, 2022](#)). Historically, development theory has centered on material infrastructure, economic growth, and access to basic services. However, in an increasingly digitized world, the inability to access and effectively utilize digital technologies has emerged as a significant and multidimensional form of

exclusion. This necessitates the evolution of development theory to incorporate "informational justice" and "digital capability" as core concerns.

Theoretically, this shift challenges the binary of "developed" versus "underdeveloped" by introducing gradations of digital access, literacy, and empowerment ([Pinheiro & Simões, 2020](#)). For instance, Sen's capabilities approach gains renewed relevance when applied to digital spaces, where the ability to access information, participate in digital economies, and engage civically online becomes a key determinant of agency and well-being. Similarly, critical development theory must now interrogate not only state and market failures, but also algorithmic bias, platform governance, and digital colonialism, which reproduce historical patterns of inequality under the guise of innovation.

Moreover, digital inclusion extends theoretical conversation around citizenship, identity, and participation ([Hänninen, 2025](#)). It asks us to reconceive inclusion not only as physical presence in systems (schools, hospitals, markets), but also as meaningful digital presence and interaction. The divide is no longer only about income or infrastructure; it is epistemological, institutional and algorithmic. Thus, the theory of development must now grapple with the questions of data sovereignty, technological autonomy, and networked power. Ultimately, integrating digital inclusion into development theory underscores that equitable digital access is not merely a policy choice, but a foundational aspect of justice in the 21st century.

The digital divide continues to evolve in scope and form, presenting multiple avenues for future research ([Aissaoui, 2021](#)). One emerging area is the intersectionality of digital exclusion: how digital access and use are shaped by the confluence of caste, gender, age, disability, and geography. Research is also needed to assess the long-term developmental impacts of digital interventions, especially in rural or marginalized communities, where infrastructural challenges intersect with social hierarchies.

Another promising line of inquiry involves platformisation and data justice ([Bourke, 2023](#)). As development increasingly relies on digital platforms for service delivery, such as welfare schemes, health services, and education, questions about algorithmic governance, data privacy, and user autonomy have become central. Scholars can also explore how AI and automation exacerbate or alleviate inequalities in digital economies.

Furthermore, participatory research methodologies can illuminate community-driven models of digital inclusion, highlighting local innovations and knowledge systems that are often overlooked in top-down approaches ([Evans et al., 2012](#)). Comparative studies between the Global South and North and within regions can provide insights into context-specific strategies that succeed or fail to bridge the digital divide. Overall, there remains a significant scope for interdisciplinary, critical, and practice-oriented research in this evolving domain.

From a policy and practice standpoint, the insights from this chapter urge a move beyond technocentric solutions ([Mitchell, 2017](#)). Simply providing devices or Internet access without addressing digital literacy, content relevance, and institutional readiness is insufficient. Governments, civil societies, and development agencies must prioritize inclusive design, multilingual access, and culturally responsive technologies.

Additionally, public-private partnerships must be critically evaluated to ensure that they serve equitable access and do not entrench corporate monopolies or surveillance capitalism. Empowering local communities to co-create digital solutions fosters sustainability and agency ([Klein, 2015](#)). Practitioners must also advocate policy frameworks that protect data rights, encourage open-source innovations, and support grassroots digital infrastructures.

In practice, digital inclusion is not a one-time intervention but an ongoing, participatory process of social transformation. It should be embedded in education, governance, and health strategies as a crosscutting developmental imperative. Only through such holistic integration can the digital divide be meaningfully addressed in the pursuit of equitable and just development.

CONCLUSION

This chapter critically explores the multifaceted relationship between digital inclusion and the developmental divide in the contemporary world ([Hamburg & Lütgen, 2019](#)). While digital technologies are often heralded as transformative tools capable of democratizing access to knowledge, resources, and services, their uneven distribution and use have deepened existing socioeconomic disparities. Digital inclusion—defined not just by access to devices and the Internet but also by digital literacy, relevance of content, and institutional support—has emerged as a crucial precondition for equitable development in the 21st century.

A central argument of this chapter is that digital access alone does not guarantee inclusion ([Ozili, 2024](#)). The digital divide is not merely a technological issue but also a deeply social and political one, shaped by intersecting factors such as income, geography, gender, caste, disability, and language. In both the Global South and North, marginalized communities often face systemic barriers to meaningful participation in the digital sphere. Consequently, digital policies must go beyond infrastructure development and address sociocultural and institutional inequities to be truly transformative.

Another core contribution of this chapter is the reframing of digital inclusion as a development right, not a luxury or afterthought ([Cerveró, 2016](#)). The digital divide today maps onto and amplifies other forms of deprivation—educational, economic, and political—making it imperative that digital justice be embedded within broader developmental agenda. Bridging this divide requires a rights-based, community-centric approach that empowers users as active participants, rather than passive recipients of technology.

The chapter also highlights several case studies and initiatives, from grassroots digital literacy campaigns to state-led e-governance platforms, which demonstrate the possibilities and challenges of inclusive digital development ([Khalatbari, 2024](#)). These examples underscore that context-sensitive, bottom-up strategies are often more sustainable and equitable than top-down, technocratic interventions.

Furthermore, the chapter drew attention to the risks of technological determinism and digital authoritarianism, where digital tools are used to survey, exclude, or manipulate rather than empower ([Yabanci, 2024](#)). In this regard, it argued for critical digital pedagogy and participatory governance frameworks that center on transparency, accountability, and public interest.

In conclusion, the digital divide is not just a technological gap but a manifestation of broader structural inequalities. Addressing it demands rethinking development itself, not just in terms of economic growth or innovation, but through the lens of justice, dignity, and democratic access. As we move deeper into a digitally mediated world, ensuring inclusive and equitable digital futures will be central to realizing the promise of development.

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