

## Conceptual Review of Information Equity and Sustainable Human Development

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| ARTICLE INFORMATION                                                                                                                                                                          | ABSTRACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <b>Article history:</b><br>Published: August 2026<br><br><b>Keywords:</b><br>Information Equity<br>Digital Divide<br>Sustainable Human Development<br>Digital Literacy<br>Economic Inclusion | Information equity is a critical element of the ongoing and highly significant debate of modern socio-economic discourse with regard to sustainable human development. The worldwide economy has transitioned to a stage where the amount of power and control you have is directly related to the kind of communication and information technology or infrastructure that you can access. What we used to call the "digital divide" has become over time just a problem of convenience to a major and fundamental obstacle for human flourishing. This conceptual review focuses on analyzing some of the theoretical linkages which can be drawn between a fair distribution of information and the much broader goals of sustainable development in education, economic inclusion, and the role of human resource capabilities. Based on current literature from 2021 to 2026, the paper argues that the actual challenge is not technology, but structure as a requirement for making any progress in harnessing the same weaknesses for attaining all the UN Sustainable Development Goals (SDGs). This review presents the major dimensions of digital inclusion, with a framework set that accommodates infrastructural access, digital literacy, and institutional governance in line with human development outcomes. Furthermore, the discussion presents important policy suggestions within the literature for higher education and workforce development. However, it must be acknowledged that few policies have been hitherto developed, let alone efforts dedicated to making them. Ultimately, from the review, it can be concluded that the development of an inclusive, sustainable, and resilient society through fosterization of digital equity on all the dimensions where it survives on, will determine the real success of governments. |

### 1. Introduction

Information equity is changing the development trajectory of sustainable human development fundamentally. Information in the context of modern society is not any longer understood from the technological development viewpoint only; rather, it becomes the material bases of economic participation, educational attainment, and civic-related activities. Information equity is, thus, among the central architectures of modern development sustainable in which fair, equal, and just distribution of information resources and digital capabilities become indispensable (Gracia, 2022).

While the early conceptualizations were binary about the divide, implying one had either a computer or not, the discourse has dealt with more layered aspects and seen as composed of many elements, such as algorithmic fairness, digital literacy, and the socio-cultural relevance of digital content (Park & Chun, 2024).

Costa Rica is known as an example of an internally sustainable model that prioritizes sustainable human development by enhancing human freedoms and capabilities. Information equity has to be integrated into it. The absence of equitable information results in an effective exclusion of the marginalized from the impact of this transformation, leading to ever-reinforced cycles of poverty and suffering. The gap between resource and unresourceful users of the same resources through digital tools increasingly determines individual ability to adapt to changes in the labor market and access services of utility to the public (Qureshi, 2023).

This paper provides a full conceptual review on information equity and sustainable human development. By reviewing some recent literature from 2021 to 2026, this paper intends to clarify the underlying theoretical principles of the connection between digital inclusion for human resource development and sustainability.

### 2. Methodology or Search Strategy

To look for a theoretical focus in the review, it was concerned with carrying out a systematic search that would allow the identification, selection, and analysis of scholarly materials that may be considered at the nexus between this strand of information equity, digital inclusion, and sustainable human development. The review has been carried out with only up-to-date knowledge from 2021 till 2026 to give a snapshot on what seems to be the next paradigm particularly against the backdrop of COVID-19 where inequalities have been thrown into stark relief and exacerbated due to the fact that millions of people of the world population went online. The search was performed from May 2021 to July 2021 offline as well as electronically in major academic databases, including Scopus, Web of Science, and Google Scholar. The search strategy revolved around primary search strings with the Boolean operators to combine key concepts: ("information equity" OR "digital equity" OR "digital inclusion") AND ("sustainable development" OR "human development" OR "human resources") AND ("framework" OR "review").

Inclusion criteria were defined very clearly to confirm that the research was theoretically rigorous and was precisely related to the topic of digital entitlement and some of the human development metrics such as education, well-being, or labor participation. In addition, these papers had to be peer-reviewed journal articles or book chapters by academic persons. Various study exclusion criteria included all the empirical studies lacking a broad theoretical framework, general commentary pieces, or those published out of the timeframe of 2021-2026.

The synthesized literature was subjected to thematic analysis. For example, key concepts, definitions, and proposed models were extracted and categorized under umbrella themes, such as educational sustainability, human resource development, and digital competency. The aforesaid methodological approach provided a sound theoretical footing for crafting the conceptual model thereafter.

### 3. Theoretical Bases

Information equity from within sustainable development is well ingrained in the Capability Approach, which was originally introduced by Amartya Sen (Bahr et al., 2024). Capability Approach when it comes to the digital age means that it is in having technology that actually determines what can be done with technology. Hence, information equity is not a matter of how many devices people have connected, but rather is evaluated on the grounds and offerings to human capabilities; for example, participation in democratic processes, having a kind of proper employment, and accessing lifelong learning (Colding et al., 2024).

Recent literature has clearly indicated that digital inclusion was an important determinant of human resource development. Lack of digital skills limits the chances of moving up with the tide as change in economies is getting oriented toward digitization. According to Eger (2024), the sustainable development of modern societies would mean a shrinking of the margin of digital exclusion through the enhanced availability of competency in information and communication technology (ICT); only then would citizens be able to get the potential of possible e-services, and only then could they adjust to challenging changes in labor markets. Furthermore, Eger (2024) has stressed that digital transformation critically influences abilities of workers, developing the demand for continuously changing skills for employees to ensure that people do not get left behind during the transition to the fully digital economy.

In education, that point matters because now people treat information equity as a key support for an institution that wants to last. School systems are often seen as the main way humans gain skills. At the same time, fair access to digital tools inside schools matters a lot for growth that includes everyone.

It should be noted that digital equity in school is not simply getting devices or an internet, but it has been defined as a wider idea-rich in itself, especially that it would have trained educators to guide students on the integrated use of digital tools, tools software, and spaces that are used in accordance with different cultures where several people work and troubleshoot problems in an entirely new way. Drljić, et al. (2025) linked the ethos of caring to digital equity in education. They made this possible by providing settings more appropriate for learning that are sustainable and comfortable for multitudes of participants.

By prioritizing digital equity schools, students get the opportunities to be provided with critical-thinking and technical skills needed to attain the Sustainable

#### 3.1 Development Goals.

The effect of these two theories shows the harmful effects of digital inequality. Generally, it has been noted in the literature that digital exclusion reproduces and accentuates offline inequalities of income disparities and geographical isolation (Tokovska et al., 2023). When a person is not capable of attaining information equity, one simultaneously experience the deprivation of capabilities, which make their vulnerability to economic shocks higher and their participation in sustainable development initiatives lesser- (Marciano et al., 2024).

#### 3.2 Proposed Conceptual Framework or Model

From the synthesis of the literature, this paper advances the Digital Capability and Equity Model (DCEM). This model proposes the Digital Capability and Equity Model (DCEM) as a synthesis of contemporary literature that practically gives evidence for the non-linear, multi-layered pathways through which information equity catalyzes sustainable human development. Further, it employs recent theories to manufacture the layers connected like substance; there are four of them. Moving from being able to fulfill foundational material access, the layering approach discloses that the technological application must be institutionalized to further effects of positivisation. (Park & Chun; 2024; van de Werfhorst et al., 2022)

**Foundational Access (The Infrastructure Layer):** This base layer represents the physical and economic availability of digital technologies, including broadband connectivity, cheap hardware, and reliable electricity, i.e. the other key area. Without this foundational layer, the more cultural constructs, such as literacy-capabilities, are assumed impossible in the subsequent stages of digital inclusion. Nonetheless, this model submits that infrastructural access is a necessary but insufficient condition for human development (Heeks, 2017; Kleine, 2013; Selwyn, 2004; van Dijk, 2005; Warschauer, 2003; World Bank, 2016).

**Competency and Literacy (The Human Capital Layer):** Taking from physical access to also staying started alongside digital skills with media literacy in their development. Human-resource development would not stop at any single phase of education or adjustment in the digital past, but in the future, it would require endless hours for education and adjustment. Human resource development would thus involve the capability of a human being to critically evaluate online information; navigate through the complex digital interfaces; and enable the use of software for creative and professional purposes (Eger-Blazquez, 2024).

**Institutional and Teaching Support (The Governance Layer):** This layer focuses on system-thinking and institutions for equal digital equity experiences. This layer is all about both the learning context and the student access to digitally competent instructors and the culturally compatible digital resources for the learning (Drljić et al. 2025).

**Capability Expansion (The Sustainable Development Layer):** The top level of this groundbreaking model again shows the much-awaited results of the digitization initiative in terms of information equivalence: improved human capabilities and sustainable development. Thus, when its three parts link well, it would lead to personalized consequences of increased economic productivity, heightened civic engagement, improved health literacy, and better outcomes in education. These individuality-available

improvements will, in totality, sum societal outcomes of resilience, inclusivity in the economy, and the advance in the direction of SDGs achievement (Saleh et al., 2023).

This calls for feedback loops related to the DCEM framework. For instance, if a person undergoes any practice of power outages-higher income, and higher educational attainments, as a structural level, these are going to affix back on the early access point and various manipulation competencies that cascade both forward and back in sustainable human development (Wang & Ye, 2024). Any hiatus in any of the layers would trigger a vicious cycle of digital exclusion and socio-economic marginalization. This means lack of digital readiness exacerbates social divides (Saleh et al., 2023).

#### 4. Discussion and Implications

Implications of the theoretical analysis and scope of the DCEM model are important with regard to policy formation, educational implementation, or economic strategy. The DCEM model actually recognizes a reliance between human capabilities and information equity implying the governance and management of digitized infrastructures in a much broader perspective.

In their implications for policy, the model contends that intervention for government must transcend hardware distribution. Internet access can be subsidized, yet government intervention should include robust state-sponsored programs on digital literacy tailored for various demographic groups (Valentín-Sívico et al., 2023). Policy makers need to see broadband and digital infrastructure as public utilities and accredit them along the same lines as clean water or electricity, vital human rights in a modern economy (Chen et al., 2024). Moreover, regulatory frameworks have to be established to address algorithmic bias and ensure that emerging technologies (such as artificial intelligence) do not inadvertently widen the digital divide by discriminating against marginalized profile data (Pasipamire & Muroyiwa, 2024).

In the educational industry, the implications are significant. Thus, it is imperative that unit high institutions embed digital equity in their core sustainable strategies. For instance, the information must be highlighted then that institutions created this capacity to enable the students to have adequate equipment that will serve them efficiently in the educational process. Somehow, appropriate digital pedagogical skills played a leading part in this scenario. The changing curriculum will be designed to train students in collaborative digital problem-solving and help them acquire the necessary skills to serve the digitalized economy. Additionally, such educational materials need to reflect culturally responsive strategies allowing access to individuals with varying physical and cognitive abilities, thereby creating a truly inclusive learning environment.

Therefore, any failing in information equity is identified to be as wasting an extensive human potential. Eger (2024) contends that in a European and global context, the development of human resources is constituted by digital engagement. Corporations and labor organizations must collaborate in providing ongoing upskilling and reskilling opportunities for the workforce. Boysen et al. (2023) suggest that countries should leverage digital inclusion as an asset to unlocking innovation and productivity and promote economic resilience against systemic shocks in the future.

#### 5. Limitations and Future Directions

Although the Digital Capability and Equity Model that has been proposed provides an encompassing view pertaining to understanding the dynamics of information equity, the existing conceptualization frames have notable limitations that require exploration in future works.

First, the existing literature on digital inclusion predominantly relates to Western high-income contexts. Possibly the new frameworks based on data from either European or North American countries fail to catch the country results in lower infrastructure, culture, and political barriers in the Global South. For example, most of the models are based on the assumption that the nation is operating with reliable electricity and has no cases of political instability that do not exist in many developing countries. It would be prudent for future studies to focus on empirical studies and validation of the framework in different geographical and socioeconomic locations around the globe.

Rapid change in the technological sphere, more so with artificial intelligence, spatial computing, and automation, continuously redefines digital literacy to clear obsolescence of earlier models of understanding competencies as a result of the way these changes take place. Future theoretical work should help to understand how the proposed autonomy at the AI level affects one's equity to do various judgments on information, especially who owns the algorithms and who is subject to the algorithms from the AI.

Long-term longitudinal empirical studies are most needed to confirm the reasonable paths of ontology, epistemology, and methodology proposed by the DCEM framework. The strong conceptual linkages in the framework should be further examined. With quantitative studies tracking the impact of particular digital inclusion policies on sustainable human development metrics in the long term, a refined model is crucial for the evidence-based policymaking regarding disabled person access.

#### 6. Recommendations

- To guarantee inclusiveness, broadband must immediately go from luxury to realization as a fundamental right of human life, with regulation and subsidy on a par with water and electricity networks.
- The distribution of hardware and internet should be strictly accompanied by continuous state-sponsored digital skills training per socioeconomic realities of the marginalized demographics.
- In addition to providing devices, higher education institutions must also teach students through educators trained in inclusive digital pedagogies that are facilitated by culturally responsive software and collaborative learning models.
- Local regulatory mechanisms should also have an early warning system against technology emerging, particularly focused on auditing artificial intelligence and automated decision-making systems to forestall algorithmic bias against vulnerable data profiles.
- Greater power must be devolved down for digital infrastructure decisions through government and global development organizations for the local community to prevent administrative exclusion and systemic imbalanced power relations.

## 7. The Way Forward

In moving forward, genuine information equality requires that global development work should be seen to the reality of infrastructure and political sociality in the so-called Global South and away from piling new frameworks on the assumption of Western baseline connectivity and power. Furthermore, the transformative embedding of generative AI and automated systems into everyday commerce and economies should necessitate much premature, proactive regulation for ensuring algorithmic fairness. Future research on these lines should be longitudinal focusing on real world impacts of these policies in digital inclusion through established metrics like the IHDI (Inequality-adjusted Human Development Index).

## 8. Conclusion

Information equity can no longer be understood as a marginal issue in the discourse of sustainable human development; it is the very foundation of it. In this respect, this shows that the ability to access, understand, and use digital information is closely related to the expansion of human abilities, the sustainability of education, and the durability in the economy. This movement goes from physical supply to total digital inclusion through imbibing holistic infrastructure investment, pedagogical nourishing, and just institutional governance. The Digital Capability and Equity Model is meant to serve as a plan for insight into these complex interdependencies. Indeed, unless globally throbbing strides are concerted to stave off the digital divide, achieving Sustainable Development Goals at the close of the decade could sound a daunting task. The onset of the Digital Agenda will accelerate the transition to a digital economy. In sum, fostering information equity is not merely a technological imperative; it is a moral requirement given that a future should be inclusive, just, equal, and sustainable for all in human development.

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