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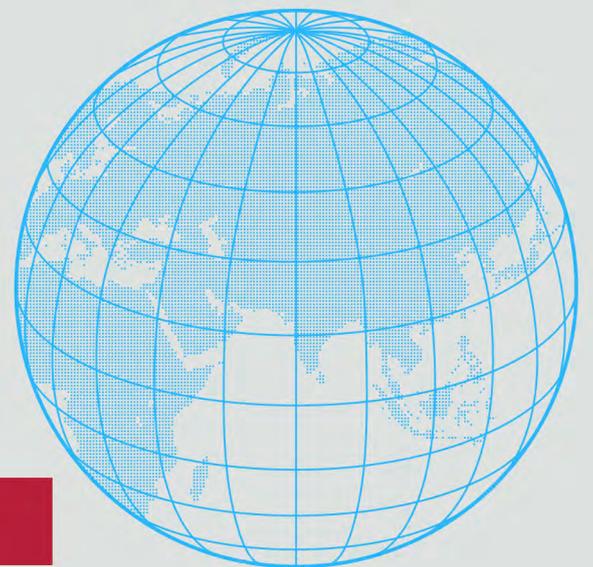
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Right to Digital Empowerment (RiDE)

Legal Foundation and Future Direction

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CSEP RESEARCH

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Designed by Umesh Kumar

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Legal Foundation and Future Direction

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Abbreviations

BE	Budget Estimate	NBM	National Broadband Mission
BNSS	Bharatiya Nagarik Suraksha Sanhita	NCT	National Capital Territory (of Delhi)
BPL	Below Poverty Line	NDLM	National Digital Literacy Mission
CAG	Comptroller and Auditor General of India	NTP	National Telecommunication Policy
CrPC	Code of Criminal Procedure, 1973	OFC	Optical Fibre Cable
DBN	Digital Bharat Nidhi	PADI	Publicly Available Digital Infrastructure
DBT	Direct Benefits Transfer	PAN	Permanent Account Number
DigComp	Digital Competence	PIB	Press Information Bureau
DIKSHA	Digital Infrastructure for Knowledge Sharing	PMGDISHA	Pradhan Mantri Grameen Digital Saksharta Abhiyan
DISHA	Digital Saksharta Abhiyan	PMKK	Pradhan Mantri Kaushal Kendra
DoT	Department of Telecommunications	PMKVY	Pradhan Mantri Kaushal Vikas Yojana
DPI	Digital Public Infrastructure	RE	Revised Estimate
EU	European Union	RiDE	Right to Digital Empowerment
FLN	Foundational Literacy and Numeracy	RTE	Right to Education Act
FLN+D	Foundational Literacy, Numeracy and Digital Literacy	RTI	Right to Information Act
GoI	Government of India	SFLC	Software Freedom Law Centre
GSMA	Global System for Mobile Communications Association	SIM	Subscriber Identity Module
ICT	Information and Communications Technology	SSC	Sector Skill Council
IST	Information Science and Technology	TRAI	Telecom Regulatory Authority of India
IT	Information Technology	UDISE	Unified District Information System for Education
KYC	Know Your Customer	UNESCO	United Nations Educational, Scientific and Cultural Organisation
Mbps	Megabits per second	UoI	Union of India
MoSPI	Ministry of Statistics and Programme Implementation	UPI	Unified Payments Interface
MSDE	Ministry of Skill Development and Entrepreneurship	USOF	Universal Services Obligation Fund
NAPS	National Apprentice Promotion Scheme	USP	Universal Service Provider

Executive Summary

India's digital economy is expanding rapidly as digital technologies permeate public administration, private enterprise, and everyday life. Central to this transformation is the State's emphasis on digital public infrastructure (DPI), which has become increasingly ubiquitous, and in many cases *de facto* mandatory, through initiatives such as Aadhaar-based authentication and the migration of citizen services to online platforms. Originally introduced to streamline Direct Benefits Transfer (DBT) and improve the delivery of e-governance services, Aadhaar has gradually evolved into a foundational component of routine socio-economic transactions. Since the first Aadhaar number was issued on September 29, 2010, an entire generation of Indians has grown up in an environment where DPI is embedded in daily interactions. This paper posits that persons born in India after this date are referred to as "DPI Natives," for whom digital literacy will be a critical aspect of foundational literacy competency.

The ongoing expansion of digitalisation raises several policy questions, foremost among which are those of resource adequacy and institutional capacity to support a digital way of life. One aspect of this is the need for universal and uninterrupted internet access. Universalising internet has been a long-standing aspiration articulated by Indian policymakers. To meet this goal, the Government of India (GoI) has launched multiple initiatives, such as the National Broadband Plan, 2004, the National Telecommunication Policy (NTP), 2012, the National Digital Communication Policy, 2018, and the National Broadband Mission (NBM), 2019. Various steps taken under GoI's Digital India Programme have also enabled the digitalisation of governance and various citizen services. As a result, telecom infrastructure and mobile penetration in India have expanded sharply in recent decades.

However, while overall mobile ownership and internet adoption have expanded, access, availability, and affordability of mobile phones and internet in India remain inequitable along the historical fault lines of gender, geography, and income. These inequities are compounded by governance challenges such as frequent and prolonged internet shutdowns, which disrupt access to essential services and undermine digital participation.

In a socio-economically and culturally diverse country such as India, this digital divide is often a mani-

festation of underlying systemic problems. As digital systems build on existing ones, it becomes necessary to reassess patterns of resource distribution and public policy design. Poorly conceived or unevenly implemented digital governance risks exacerbating pre-existing inequities and undermining the transformative potential of digital technology.

This paper finds that while India has made significant progress in infrastructure expansion, policy measures specifically aimed at digital inclusion, in terms of connectivity, affordability, and digital literacy, remain inadequate. It recommends a rights-based approach to address these gaps through a statutory Right to Digital Empowerment (RiDE), centred on two foundational entitlements:

- Right to universal and uninterrupted (24X7) internet access, including essential digital resources;
- Right to digital literacy.

Targeted financial measures, such as support for device ownership among low-income households, are recommended as necessary complements to these rights.

This paper discusses the suitability of the rights framework by analysing the existing distribution of digital resources, along with the relevant governance framework, including that on internet shutdowns. Based on its review of existing programmes on digital literacy, the paper observes significant gaps in digital literacy among children as well as adults. The paper recommends that a comprehensive digital literacy programme should be a part of the RiDE. The paper argues that digital literacy must also be included within the definitional scope of foundational literacy, changing Foundational Literacy and Numeracy (FLN) to Foundational Literacy, Numeracy and Digital Literacy (FLN+D). This FLN+D should henceforth form the basis of all literacy programmes of GoI.

The paper argues for a rights-based approach that is not only consistent with existing legal doctrine but is in fact necessary in light of the mandatory nature of DPIs (like Aadhaar) for availing critical citizen-services (like DBT). It notes that digital empowerment is critical to achieving growth of the digital economy. The paper demonstrates that there exists a strong fiscal support for these initiatives via the existing

Digital Bharat Nidhi (DBN), which currently stands under-utilised due to poor administrative design and absence of appropriate legislative direction. International experience, particularly the evolution of the UK's universal service obligations into an enforceable right, illustrates the suitability of a rights-based model for internet access. India's own experience on rights-based welfare legislation, including the right to

education, the right to information, and the right to food, among others, has remained exemplar. A statutory framework empowering citizens to gain meaningful internet access on demand would provide the missing link in India's universal internet connectivity policy measures. To that end, this paper recommends the creation of such a framework in the form of a RiDE Act through parliamentary legislation.

1. Introduction

DPI is now a ubiquitous phenomenon in India. Elements of *India Stack*, the moniker for a suite of digital public goods originated by the GoI that offer, inter alia, online identity verification (e.g., Aadhaar), data verification, and payment platforms (e.g., Unified Payments Interface [UPI]), have become all-pervasive over the last decade. Propelled by the lockdown caused by the COVID-19 pandemic, DPI uptake (especially UPI; see Srivastava, Swami, & Sharma, 2025) has been sustained even after the retreat of the emergency that led to its rise. Widespread adoption of digital services is also evident in the case of privately owned, publicly available digital goods, such as Google Maps, YouTube, and Amazon (collectively referred to as Publicly Available Digital Infrastructure [PADI], which is a superset of DPI) (Srivastava et al., 2025).

Since DPI is hailed as not only a propeller of the digital economy, but also a prerequisite for e-governance services as well as citizen welfare delivery, it merits the question: Is DPI accessible and available to all Indian citizens universally and equitably? If not, then what is to be done about it?

This paper first discusses the state of digital divide in India, including the inequitable distribution of telecom infrastructure, internet connectivity, and capabilities across (i) gender, (ii) income, and (iii) urban vs. rural geography. Next, it reviews the present status of digital literacy and related policy initiatives in India and discusses the critical gaps therein. It then underlines the extant governance concerns having a bearing on uninterrupted internet availability. The final chapter argues that a rights-based approach can fill in significant parts of the gaps in the prevailing infrastructure and governance landscape, thereby ensuring universal internet connectivity and availability. It highlights the acute need for a statutory right to internet resources and capabilities, especially when the funds dedicated for universal access and digital literacy continue to be grossly under-utilised due to a lack of legislative impetus.

DPI adoption and effectiveness of its usage rests on certain key pillars, including (i) telecommunication infrastructure and (ii) adoption and usage of telecommunication services, which nowadays extend well beyond the basic usage (talk, video call, or messenger app) to advanced usage (web search, online transaction, digital payment, etc.). In the former,

India has consistently made progress in expansion of its telecommunications infrastructure since the turn of the century. In the latter, the adoption and usage of telecommunication services continues to be highly uneven across urban–rural divide, income divide, and gender divide. Digital adoption, particularly in terms of mobile phone ownership and internet use, is skewed in favour of (i) men over women, (ii) urban citizens over rural citizens, and (iii) historically richer states over poorer ones.

This paper explores the legal basis for creating a statutory right guaranteeing individuals internet access, alongside a state mandate to ensure digital literacy as well as digital resources. The telecommunications sector is largely self-sufficient to support digital inclusion to a significantly wider extent than it currently does, as proven by the substantial corpus of funds in the DBN (formerly Universal Services Obligation Fund [USOF]). The paper argues that the statutory rights-based approach is an essential policy intervention to channelise these funds, and to ensure foundational support to all citizens as part of India's digital transformation journey.

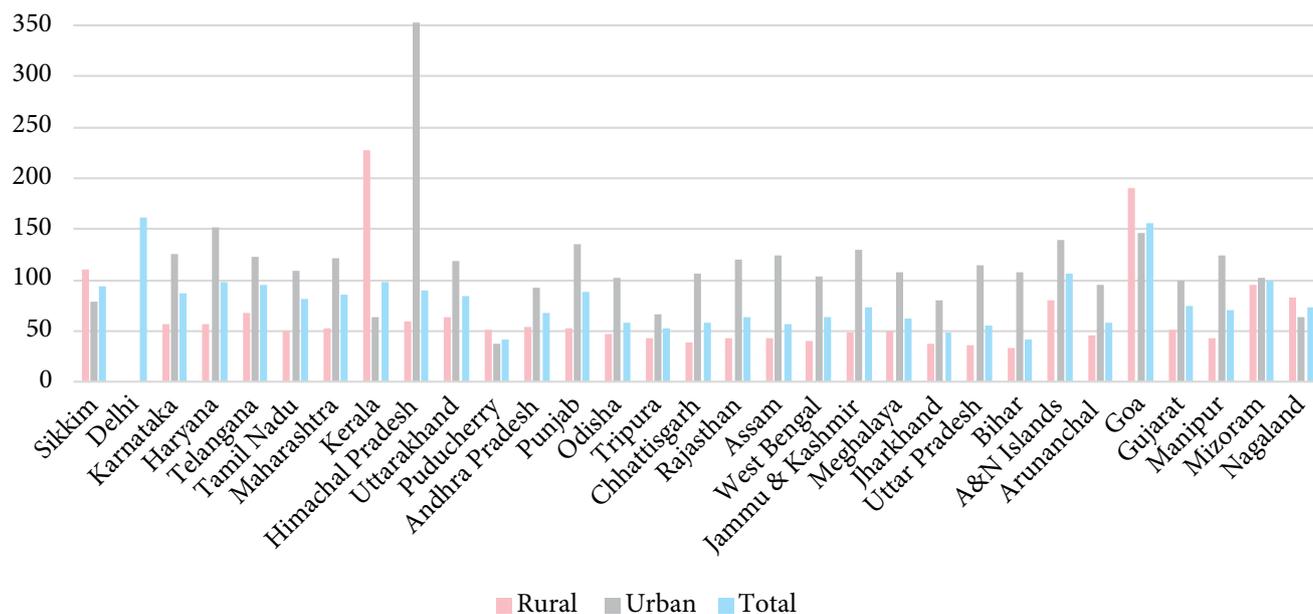
2. Digital Divide: Internet Connectivity and Adoption in India

Currently, the number of telecom subscriptions in India stands at 1190 million, of whom 660 million are urban and 530 million are rural. India's overall tele-density is 85 per cent, with urban tele density being 132 per cent and rural tele-density being as low as 58 per cent (Telecom Regulatory Authority of India [TRAI], 2025).

The total number of internet subscriptions in India is 970 million, of which nearly 570 million are urban and 410 million are rural. Total internet subscriptions per 100 persons in urban areas is 113, while it is as low as 45 in rural areas (TRAI, 2025).

Figure 1 plots the States along the x-axis in order of decreasing per capita state GDP from left to right, mapped to internet subscription levels. The graph shows that historically low-income states such as West Bengal, Rajasthan, Meghalaya, Arunachal Pradesh, Odisha, Chhattisgarh, Madhya Pradesh, Assam, Uttar Pradesh, Tripura, Jharkhand, and Bihar

Figure 1: State-Wise Internet Subscribers per 100 Persons



Source: Telecom Regulatory Authority of India, 2025.

exhibit significantly lower internet density per 100 persons. In contrast, middle- and high-income states including Tamil Nadu, Punjab, Karnataka, Kerala, Telangana, and Maharashtra record higher levels of internet density (TRAI, 2025).

2.1 Digital Divide: Mobile Phone Usage

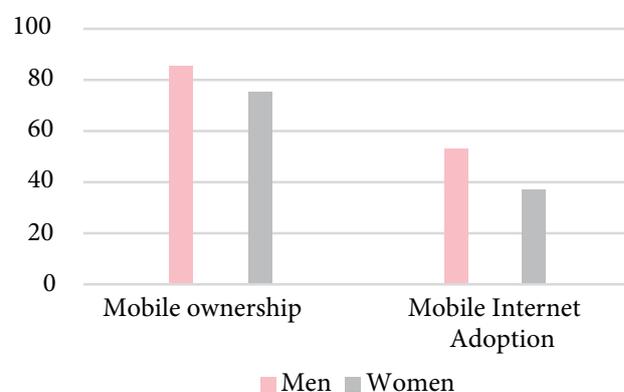
Overall, 87 per cent of the Indian population is able to use mobile phones (including smartphones), with 92 per cent of males and a relatively lower 81 per cent of females being able to do so. For age group 15–29 years, the gender gap is less: 94 per cent of this age group used a mobile phone with an active Subscriber Identity Module (SIM) in the three months preceding the survey, with 96 per cent of males and 92 per cent of females in this group reporting mobile phone usage (Ministry of Statistics and Programme Implementation [MoSPI], 2024).

2.2 Digital Divide: Internet Usage

The deficit in terms of internet usage is significantly wide, where as few as 60 per cent of people above the age of 15 years reported being able to use the internet. The deficit is smaller for the age group 15–29 years, 84 per cent of whom could use the internet as of the date of the survey. However, the gender gap within this age group continues to persist, with 89 per cent

of men reporting being able to use the internet, as opposed to the relatively much lower 79 per cent of women (MoSPI, 2024).

Figure 2: Mobile Ownership and Mobile Internet Adoption in India (Percentage)



Source: Global System for Mobile Communications Association (GSMA), 2024.

The internet usage divide is wide in rural areas, where as few as 54 per cent of people above the age of 15 years reported being able to use the internet, as opposed to 74 per cent in urban areas. The gender gap in internet usage in the age group 15 years and above is significant, with merely 43 per cent females vis-à-vis 59.5 per cent males reporting using the internet (MoSPI, 2024).

2.3 Digital Divide: Digital Know-How

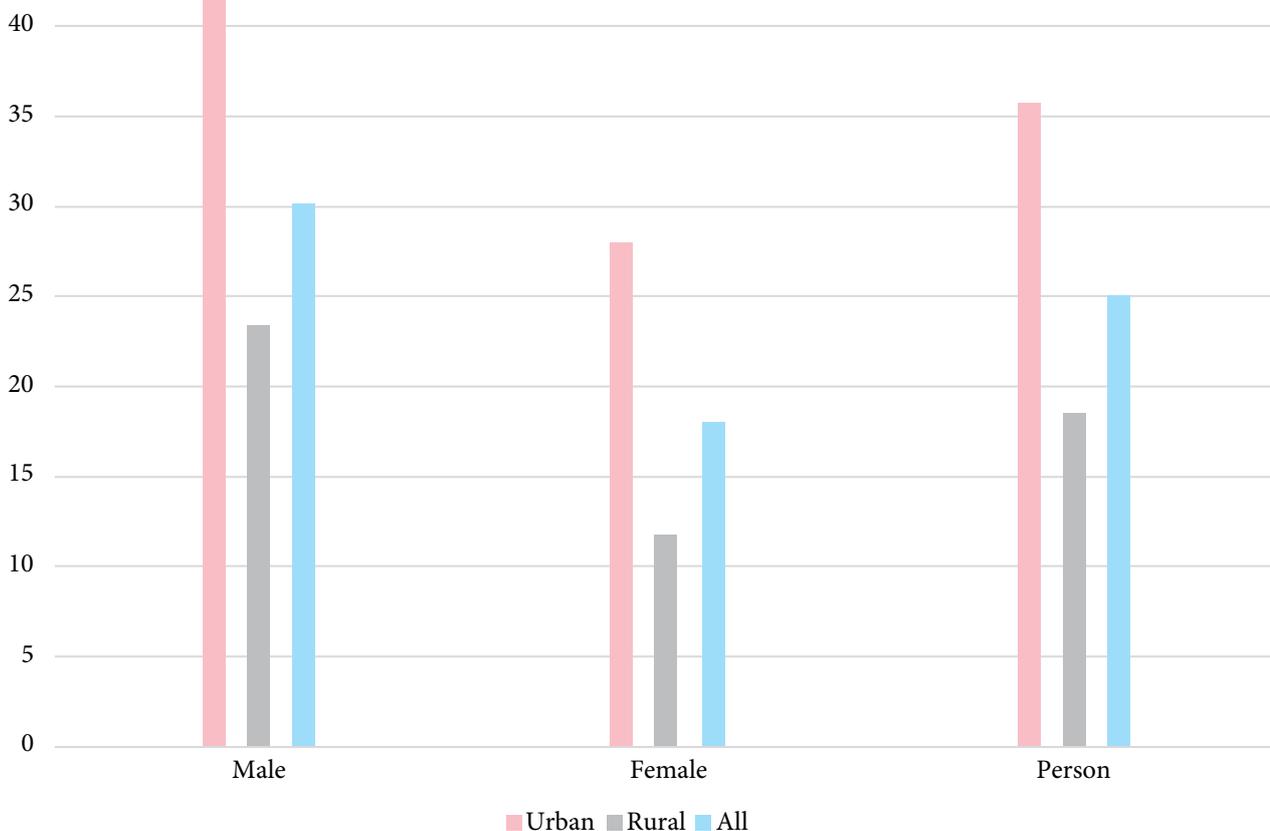
As per MoSPI 2024 data, in the age group 15 years and above:

- As low as 43 per cent of persons could send and receive emails.
 - Females: only 37 per cent (vis-à-vis 49 per cent males).
- As low as 46 per cent of persons reported having the ability to use copy-and-paste tools.
 - Females: only 38 per cent (vis-à-vis 54 per cent of males).
 - Rural population: only 40 per cent (vis-à-vis 60 per cent of the urban population).
- As low as 60 per cent of persons reported being able to search the internet for information.
 - Females only 56 per cent (vis-à-vis 63 per cent of males).

- As low as 38 per cent of persons could perform online banking transactions.
 - Females: only 25 per cent (vis-à-vis 47 per cent of males).
 - Rural population: only 30 per cent (vis-à-vis 51 per cent of the urban population).
- As low as 25 per cent of persons could do all three (execute copy-and-paste skills, search the internet for information, and perform online banking transactions).
 - Females: only 18 per cent (vis-à-vis 30 per cent of males).
 - Rural population: only 19 per cent (vis-à-vis 36 per cent of the urban population).

As Figure 3 shows, the geographic divide is deeper than the gender divide, as urban women have higher internet adoption than rural men.

Figure 3: Persons Above 15 Years of Age who can Search Internet for Information, Send or Receive Emails, and Perform Online Banking Transactions



Source: Ministry of Statistics and Programme Implementation, 2024.

Ownership of a mobile phone is 85 per cent among men and a relatively lower 75 per cent among women. Mobile internet adoption is as low as 53 per cent among men and an even lower at 37 per cent among women (GSMA, 2024). Urban wireless tele-density is 125 per cent, whereas rural tele-density is a mere 58 per cent (TRAI, 2025).

In summary, the digital divide in India disproportionately affects rural populations relative to urban, women relative to men, and lower-income groups relative to higher-income groups. Consequently, rural women below the poverty threshold remain the most excluded from India’s digital reforms. This pattern underscores an important policy imperative: digital governance initiatives must account for the structural disadvantages faced by this demographic group, particularly given that policymaking institutions continue to be dominated by urban, male, and economically advantaged stakeholders.

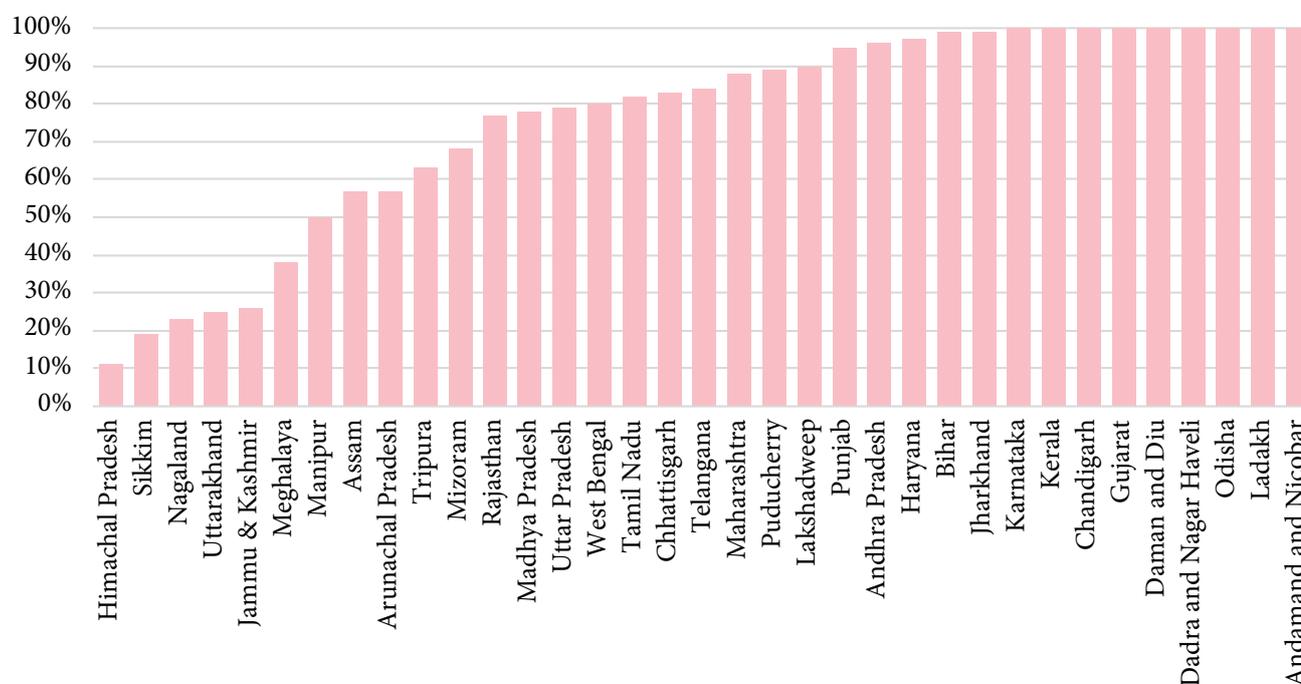
2.4 Telecommunications Infrastructure in India

Telecommunications (Telecom) infrastructure is a basic enabler and prerequisite for equitable and universal access to DPI at population scale, across the length and breadth of the seventh-largest country by area and the most populous country on the planet. It includes not only access but also speed/latency and capacity/bandwidth.

From Figure 4, it is clear that rural areas and hilly terrains are grossly under-served by existing telecom infrastructure, implying that citizens and visitors in these areas are at a high risk of exclusion from public services requiring online connectivity to the DPI ecosystem (e.g., UPI, Digital Infrastructure for Knowledge Sharing [DIKSHA], e-Shram) and are also left behind in the usage of privately owned digital platforms (e.g., Google Maps, YouTube, Facebook).

Concerns relating to universal, affordable, and quality broadband access have featured across most telecom policies of India. The NBM, 2019, sought to address them most directly. However, as showcased in Table 1, it fell short of achieving them.

Figure 4: Percentage of Gram Panchayats Covered Under BharatNet



Source: Authors’ analysis from Press Information Bureau (PIB), 2025.

Table 1: Status of Targets Under National Broadband Mission, 2019

S. No.	Key Deliverables Under the NBM, 2019 (to be achieved by 2024)	Present Status
1.	All villages to have access to broadband by 2022.	Only approximately 50,000 have optical fibre connectivity (Ministry of Electronics & IT, 2025). (This is different from mobile internet connectivity which is now present in 0.62 out of 0.64 million villages in India.)
2.	To increase present route length of 2.2-million-kilometre optical fibre cable (OFC) to 5 million kilometres.	4.213-million-kilometre route (Ministry of Electronics & IT, 2025).
3.	To increase tower density from 0.42 towers per 1000 population, with around 0.565 million towers, to one per 1000 population, by setting up an additional 1 million towers.	At present, only 0.823 million towers installed against the goal of 1 million towers (Ministry of Electronics & IT, 2025).
4.	Increase fiberisation of telecom towers to two-and-a-half times.	As of December 2022, approximately 35.11 per cent of towers were fiberised (Ministry of Communications, 2022).

Source: Authors' compilation.

In terms of affordability, TRAI noted that 61 per cent of people are not using mobile internet. “In 2022, the cost of cheapest internet-enabled smartphone in India was 35 per cent of average monthly income (Rs 4,999)” (TRAI, 2023). This cost is considerably higher for 5G-enabled smartphones.

3. Digital Divide: Digital Literacy and Capabilities

The first use of the term digital literacy is attributed to Paul Gilster in 1997, who described it as “the skills needed to critically navigate information in an increasingly digital world.” Gilster’s definition emphasised accessing, managing, evaluating, and creating information as constituent competencies of digital literacy (Gilster, 1997). Over time, the conceptual framework on digital literacy has expanded to highlight the growing relevance of media, information and communications technology (ICT), and internet literacy, among others. The rapid influx of mass media that accompanied digitalisation emphasised the inclusion of media literacy within digital literacy. Media literacy is defined as the ability to “decode media messages (including the systems in which they exist); assess the influence of those messages on thoughts, feelings, and behaviours; and create media thoughtfully and conscientiously” (Media Literacy Now, 2025). There is a broad convergence on the aforementioned frameworks within digital literacy.

Despite its growing recognition as an essential life skill, digital literacy is yet to receive the same recognition as foundational literacy (FLN), on a par with reading, writing, and arithmetic (Choudhary & Bansal, 2018). In terms of the digital divide, females across age groups as well as males above 25 years of age form a majority of the digitally non-literate groups of Indian citizens (MoSPI, 2024). This paper posits that digital literacy must also be included within foundational literacy, making it FLN+D. This FLN+D should form the basis of all literacy programmes of the GoI.

The United Nations Educational, Scientific and Cultural Organisation (UNESCO) has put forth certain core components of digital literacy (UNESCO, 2018). The UNESCO framework was designed to allow each country to develop its own digital literacy strategies and programmes in accordance with its unique socio-economic contexts and needs. It described digital literacy as the “ability to access, manage, understand, integrate, communicate, evaluate, and create information safely and appropriately through digital technologies for employment, decent jobs and entrepreneurship. It includes competencies that are variously referred to as computer literacy, ICT literacy, information literacy and media literacy” (UNESCO, 2018). The framework reviewed digital literacy initiatives across 146 countries and built largely on the Digital Competence Framework for Citizens (DigComp) initiative started by the European Com-

mission. Based on the competences delineated by DigComp, the UNESCO framework focused on the areas discussed in Table 2. In addition to the five competency areas listed in DigComp, it identified new ones reflecting the needs of lower-middle-income countries, including India. These were as follows:

- Devices and software operations (ICT literacy).
- Career-related competences: competences in the use of digital technologies that are important productivity tools for particular business sectors.

In the context of India, the flagship digital literacy programme, National Digital Literacy Mission (NDLM), was launched in 2015 with a key stated objective of training non-information technology (IT) literate citizens to enable them to “actively and effectively participate in democratic and developmental processes and enhance their livelihood.” It defined digital literacy as “the ability of individuals and communities to understand and use digital technologies for meaningful actions within life situations” (Ministry of Electronics & IT n.d.).

Table 2: Competence Areas Outlined in DigComp

Competence Area	Competences
Information and data literacy	<ul style="list-style-type: none"> • Browsing, searching and filtering data, information and digital content • Evaluating data, information, and digital content • Managing data, information, and digital content
Communication and collaboration	<ul style="list-style-type: none"> • Interacting through digital technologies • Sharing through digital technologies • Engaging in citizenship through digital technologies • Collaborating through digital technologies • Netiquette • Managing digital identity
Digital content creation	<ul style="list-style-type: none"> • Developing digital content • Integrating and re-elaborating digital content • Copyright and licenses • Programming
Safety	<ul style="list-style-type: none"> • Protecting devices • Protecting personal data and privacy • Protecting health and well-being • Protecting the environment
Problem solving	<ul style="list-style-type: none"> • Solving technical problems • Identifying needs and technological responses • Creatively using digital technologies • Identifying digital competence gaps

Source: UNESCO, 2018.

Table 3: Key Policy Initiatives on Digital Literacy in India

S. No.	Policy/Programme	Objectives of the Programme	Status and Remarks
1.	NDLM and Digital Saksharta Abhiyan (DISHA); 2014–2016	The NDLM was aimed at a cumulative target of training 5.205 million persons (one person from every eligible household) across India. It focused on providing one person per eligible household to acquire computer skills through two levels of training. The first level involved appreciation of digital skills, including operating digital devices, sending and receiving emails, searching the internet for information, etc. The second level offered training on accessing government services online.	5.36 million beneficiaries were trained—of which around 42 per cent were from rural India. However, the NDLM primarily benefited men, with 62 per cent of beneficiaries being men (Council for Social Development, 2017).
2.	Pradhan Mantri Grameen Digital Saksharta Abhiyan (PMGDISHA), 2017	It aimed to make 60 million rural households (one person per household) digitally literate within a period of two years.	
3.	DIKSHA	5563.7 million learning sessions have been imparted using DIKSHA.	The absorption of the wide range of resources made available through the programme remains a concern.

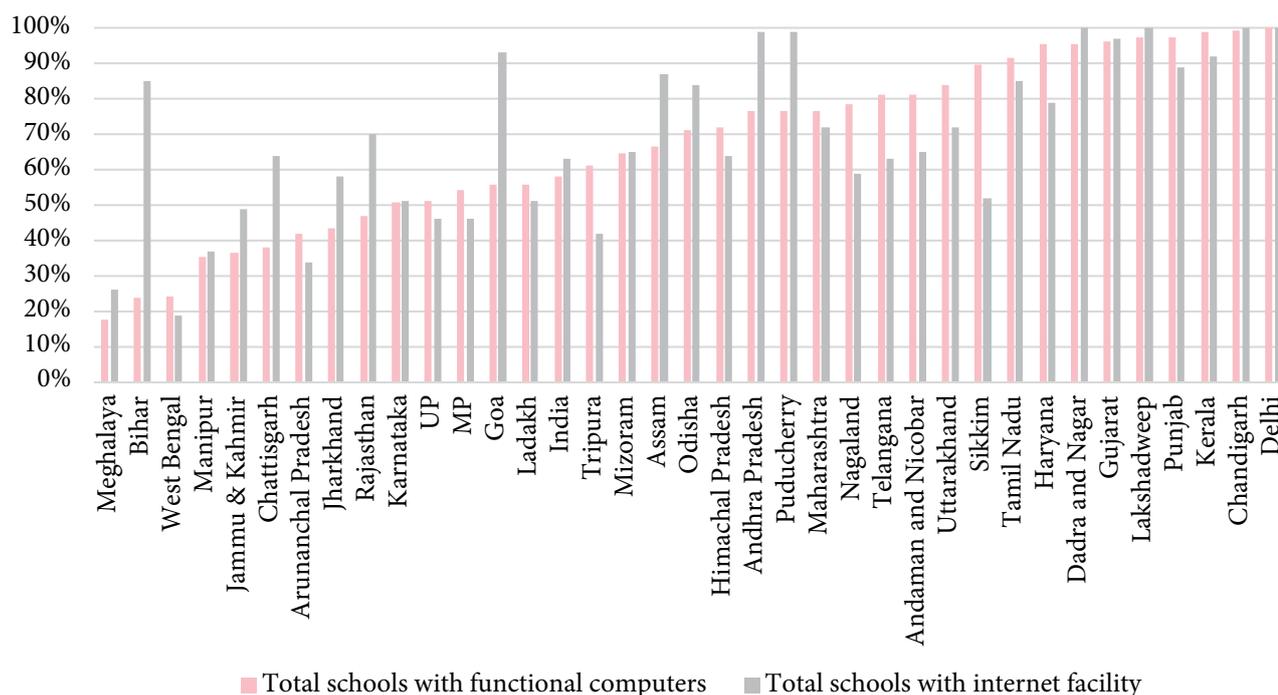
Source: Authors' compilation.

The NDLM sought to provide digital literacy training through short-term (20–40 hours) training on (i) “appreciation of digital literacy” and (ii) “basics of digital literacy.” While the mission rightly focused on building technical skills, it did not address competencies in online safety, data privacy, and critical thinking. This rendered it inadequate to achieve its stated wider objective of “active and effective participation in democratic and developmental processes.”

Moreover, the measures taken on digital literacy in NDLM also do not cover the range of competencies identified by DigComp and reiterated by UNESCO. The NDLM did not take the various dimensions of the digital divide into consideration and was not targeted at any specific marginalised group. A mere 38 per cent of the mission’s beneficiaries were women. Eighty per cent of the programme’s beneficiaries were in the age group of 14 to 25 years, while 64 per cent of the beneficiaries were from below poverty line (BPL) families (Council for Social Development, 2017).

Subsequently, PMGDISHA (2017) addressed the specificity and prioritisation missing in the NDLM, by directing its focus explicitly on rural areas, which had remained behind in digital connectivity in contrast to their urban counterparts. However, short-term missions and programmes continue to be the mainstay of India’s efforts on digital literacy, akin to a rising trend in India’s policymaking on vocational training. Mehrotra and Sharma (2025) argue against skilling policies that favour quick certifications, which do not substitute substantive skill development. They highlight this as a concerning trend since a majority of Indians spend less than 15 years in formal education and a majority of the Indian workforce is still in the informal sector. The extent of wage inequality across occupations and sectors is increasing in the Indian economy, and the role of skill development in addressing skill gap, which was previously positive (2011–2012 to 2017–2018), has become insignificant since 2023–2024, possibly due to a shift towards short-duration courses (Sharma et al., 2025).

Figure 5: Total Schools With Functional Computers and Internet Facility (Percentage)



Source: Unified District Information System for Education (UDISE) Report 2024–2025.

In terms of school education, the National Education Policy, 2020 has focused on the uptake of digital learning in schools. However, as Figures 5 and 6 show, only 58 per cent of total schools in India have functional computers for pedagogical purposes, and only 63 per cent of total schools have internet facilities. This points to the need for serious attention to infrastructure deficiencies that need to be addressed to achieve desirable learning outcomes in digital literacy.

In Figure 5, the observation that in some states the proportion of schools reporting internet access exceeds the proportion with functional computers reflects that connectivity and hardware availability are measured separately. Several schools are connected through broadband or mobile networks but operate with limited, shared, or partially non-functional computer infrastructure. The gap therefore highlights an important dimension of the digital divide: while basic connectivity has expanded rapidly, adequate and usable computing infrastructure in schools has lagged behind.

High-speed broadband connectivity to key institutions, including schools, has been envisaged as one of the targets of the NBM, 2025. However, as Table 1 illustrates, targets envisaged under the previous

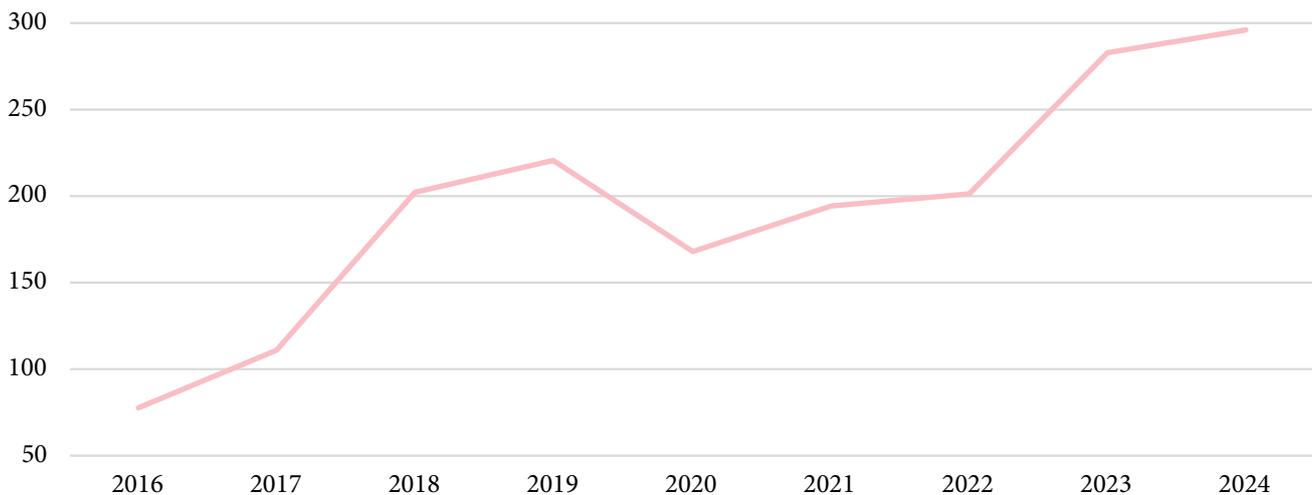
NBM, 2019 have not been met, highlighting the need for concerted efforts on digital literacy.

Available evidence indicates that a significant proportion of India’s adult population lacks adequate digital skills and that children, despite growing up as “DPI Natives,” are not being sufficiently prepared for a digitally intensive future. This alerts that access to inexpensive mobile devices and data, while valuable, is not by itself sufficient to enable meaningful digital empowerment. These trends highlight the need for policymakers to prioritise comprehensive digital capability building to ensure that the next generation is equipped for emerging socio-economic and technological demands.

4. Governance Concerns

Apart from imbalance in digital resources and capabilities, issues relating to internet regulation also have an important bearing on the uninterrupted provision of internet. Indiscriminate use of legal provisions on internet shutdowns for routine administrative measures has contributed to India gaining the dubious distinction of having the highest number of internet shutdowns in the world for six years in a row (Access Now, 2024).

Figure 6: Number of Internet Shutdowns in India¹



Source: Access Now, 2024.

Internet access in India is governed by a varied set of laws, including the Indian Telegraph Act, 1885 (Telegraph Act),² which has recently been replaced by the Telecommunications Act, 2023 (Telecom Act),³ and the respective rules made under these enactments. Cybersecurity provisions provided under the Information Technology Act, 2000 (IT Act, 2000) lay down procedures for the blocking of websites. Criminal law provisions, including Section 144 of the Code of Criminal Procedure (CrPC), 1973, now incorporated under Section 163 of the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023, empower executive authorities to direct any person to abstain from a certain act or to take certain orders with respect to certain property in their possession or under their management.

As per the law, Section 144 of the CrPC can only be used by authorities in urgent cases of nuisance or apprehended danger. In practice, however, it is often used indiscriminately, and without recording appropriate reasons for its invocation, in disregard of a mandatory requirement of the law.

The Supreme Court dealt with the legality of internet suspension orders in the case of *Anuradha Bhasin v. Union of India (UoI)* (2020). The Court in this case was deciding on three issues, namely, i) the legality of the government's exemption from producing orders

passed under Section 144 of the CrPC; ii) whether the freedom of speech and expression and the freedom to practise any profession, or to carry on any occupation, trade, or business over the internet is a part of fundamental rights; and iii) whether the government's action prohibiting internet access is valid. The Court held that the government is mandated to publish all internet suspension orders, that the freedom of speech and expression and the freedom to practise any profession or carry on any trade, business, or occupation over the medium of internet enjoys constitutional protection under Article 19(1) (a) and Article 19(1)(g), and laid down substantive and procedural guidelines to be adhered to prior to shutting down internet in light of the facts and circumstances of each case. It ruled that "the triangulation of a restriction [on fundamental rights (author's addition)] requires the consideration of appropriateness, necessity, and the least restrictive measure before being imposed."

Yet, despite strict guidelines by the Supreme Court to publish all orders on internet suspension, the same have been reported to be flouted across States, with authorities continuing to not publish orders and to continue internet suspensions for routine administrative reasons (Malhotra, 2024). Critical gaps in the

¹ This figure reports the annual count of internet shutdown incidents in India, with each shutdown treated as a single event irrespective of its duration, geographic scope, or population affected. Consequently, the trend reflects the growing frequency of resort to shutdowns as a policy instrument, rather than their relative severity or socio-economic impact. Short, localised suspensions and prolonged, state-wide shutdowns are thus weighted equally in this count.

² Section 5(2) of the Telegraph Act, 1885, read with the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017.

³ Section 20 (2) (b), Section 56 (2) (t), Section 56 (2) (u) of the Telecommunications Act, 2023 read with Temporary Suspension of Telecommunication Services Rules, 2024.

statutory institutional mechanism on internet suspension have contributed to this misalignment.

Under the Telecom Suspension Rules, 2017, enacted under the Telegraphy Act, 1885, the authority to suspend internet vested in the Secretary, Ministry of Home Affairs, in case of the UoI, and with the Secretary, Department of Home Affairs, in case of the State government (referred to as competent authorities). The Rules empowered these authorities to permit an authorised officer of Joint Secretary rank or above to issue a suspension order, subject to confirmation by them within 24 hours of issue. In case of failure to obtain this approval, the order ceases to exist within the period of 24 hours.

The competent authority was also mandated to forward these orders to a Review Committee within the next working day. This Review Committee was to meet within five working days and record findings as to the legality of the competent authority's decision within five working days. At the Central government level, this committee consisted of the Cabinet Secretary, the Secretary, Department of Legal Affairs, and the Secretary, Department of Telecommunications (DoT). At the State government level, it comprised of the Chief Secretary of State, the Secretary, Law or Legal Remembrancer In-Charge, Legal Affairs, and a Secretary of the State government other than the Home Secretary.

However, this institutional set-up entrenched critical issues. Firstly, the 2017 Rules did not mandate the publication of internet suspension orders passed by the competent authority. This meant that orders remained unavailable to aggrieved persons desirous of contesting them before an appropriate judicial forum. Secondly, while a Review Committee was created to review the impugned orders on their legality and record reasons for its decision, it was not empowered to set aside these orders. Its decisions were also not published, nor was any mechanism put in place whereby aggrieved persons could approach it for redressal. Moreover, in case the competent authority was not able to review suspension orders within 24 hours, they automatically ceased to exist. As most internet suspension orders are passed for only a day or two, this rendered the role of the Review Committee largely defunct. Finally, no specified period

was prescribed for which internet suspension could remain in force, meaning that internet suspension orders under the 2017 Rules could go on indefinitely.

Recently, the Telecom Suspension Rules, 2024, have been enacted to supersede the Telecom Services Rules, 2017, which address some of the existing gaps. Most importantly, they mandate the publication of all internet suspension orders, as ruled by the Supreme Court in *Anuradha Bhasin v. UoI* (2020). However, no mechanism is explicitly delineated through which these orders will be published, in adherence to the Court's guideline on publication of the orders through a suitable mechanism. The rules also specify that the reasons for such orders should be explicitly stated, and that they be limited to a clearly defined geographical area and telecommunication service. Furthermore, a limit of 15 days is specified for which an order may remain in force. The Review Committee has now been empowered to set aside an order if it is not in accordance with legal requirements. Yet, many critical issues remain. While an upper limit has been specified for which an individual order may remain in force, no cumulative duration has been specified for which orders may be enforced (Malhotra & Panjiar, 2024). So, the extant problem where orders are passed in close succession to effectively render internet services suspended for prolonged periods persists. There is no explicit provision mandating the publication of orders by the Review Committee. While the Review Committee has been given powers to set aside suspension orders, the mandated timeline of five days for reviewing the matter exceeds the typical duration for internet suspension orders, which is often a day or two. This has rendered the review process by the Committee a largely academic exercise (Rajmohan & Lanka, 2024).

Further, many state authorities continue to utilise Section 144 of the CrPC to order internet suspension, often in violation of prescribed Supreme Court guidelines. The complexities of internet suspension laws and rules, the lack of adequate redressal mechanisms for citizens, and poor enforcement of existing rules and judicial mandates remain impediments to uninterrupted internet provision. Remedies and safeguards to address these issues should be part of a comprehensive legislative intervention on the right to internet access.

To summarise, judicial intervention is an inadequate and ultimately limited substitute for comprehensive legislative reforms. The core challenge extends beyond arbitrary internet shutdowns by the government and administration and lies in the absence of an overarching statute that secures the citizens' right to uninterrupted internet access.

5. From Digital Divide to Digital Empowerment: A Statutory Right

Despite major advances in telecom infrastructure and internet penetration, deep inequalities in digital access and usage persist in India across urban and rural regions, between men and women, and between richer and poorer households. These disparities, perpetuated by a schooling infrastructure with limited computer facilities, reflect structural socio-economic exclusion rather than a mere technology lag. As the internet becomes central to economic activity and public service delivery, limited connectivity, inadequate digital literacy, and uneven access to devices continue to constrain human development. Paradoxically, the groups most dependent on government benefits, namely low-income households, women, and rural communities, are also those least equipped to use the DPI. This systemic divide, combined with the increasingly mandatory role of the DPI, highlights the need for a comprehensive legislative framework that treats digital empowerment as a prerequisite, and therefore a right, for meaningful participation by citizens in government welfare schemes, essential citizen services, and the digital economy.

India's experience with rights-based legislation shows that there is ample space for such a framework to play out as a policy design choice. For socio-economic issues, rights-based mechanisms have delivered effectively than other mechanisms, even if they are not perfect or ideal. Rights-based approaches have significantly helped move the needle in a positive direction on critical citizen-centric issues. The Right to Information (RTI) Act institutionalised transparency and accountability in governance, while the Right to Education (RTE) Act transformed a developmental aspiration into a legal entitlement. As Ruparelia (2013) and others note, RTE and RTI defined a "new paradigm in India's welfare architecture" by translating policy goals into claimable rights.

In contrast, India's current digitalisation drive, led by initiatives such as **Aadhaar**, **India Stack**, and the

broader **DPI** framework, marks a **departure from the rights-based paradigm, wherein** the State has pursued technocratic delivery and bureaucratic welfare governance without providing legal guarantees or institutional recourse for affected individuals. As digital systems become mandatory for accessing public goods and services, the absence of corresponding rights leaves citizens dependent on administrative discretion rather than legal entitlement.

A rights-based approach is thus not only normatively justified but also functionally necessary. It guarantees **transparency, accountability, and institutional mechanisms** that can assure the delivery of essential digital services. Moreover, as a form of **citizenship practice**, claim-making itself becomes meaningful, as it enables citizens to engage the State as rights-holders rather than beneficiaries (Ruparelia, 2024). The global debate on the right to internet access has evolved from an abstract moral discourse to an operational policy question. While early proponents viewed it as indispensable to freedom of expression and participation (Horner, 2011), others argued that it is instrumental rather than intrinsic (Cerf, 2012). The conceptual test often revolved around two questions: "Is the interest in internet access universal?" and "Does its absence constitute serious deprivation?" (A., 2010).

The argument on the internet's instrumental relevance might not have had enough weight until the medium became the crucial and only infrastructure for education, work, health, and all primary day-to-day activities during the COVID-19 pandemic (Reglitz, 2020). Since then, there has been a resurgence of rights-focused perspectives to ensure universal internet access (UN Human Rights Commissioner, 2023).

Currently, several jurisdictions across the world grant internet access as a legal right. Finland mandated 1 megabit per second (Mbps) of broadband access as a part of its universal service obligation requirement in 2009, subsequently granting affordable internet access as a legal right in 2011. It then revised its universal service target in 2011, aiming to provide 100 Mbps for 99 per cent of the population by 2015. Mexico granted a constitutional right to internet access in 2013. The UK's universal service obligation programme has mandated certain service providers to provide internet access to eligible households upon request since March 2020. Prior to that, the UK had laid the groundwork for minimum speed guarantees through policy initiatives since 2015 (Ofcom, 2023). In the USA, the Infrastructure Investment and Jobs

Act, 2022 has made provisions for an “Internet for All” initiative (Nathaniel-Ayodele, 2024).

In the case of India, there exists a substantive legal basis for a statutory right to internet, as public and private services are moving to exclusively digital realms. For instance, recognising the obstacles faced by persons with visual and facial motor impairments in fulfilling digital know your customer (KYC) processes, the Supreme Court, in a recent verdict, affirmed that meaningful access to the internet is necessary for the right to life with dignity under Article 21 of the Constitution of India (Supreme Court of India, 2025).

5.1 Conceptual Foundation for Rights-Based Approach

The question of right to internet access in India featured within the purview of the right to freedom of speech and expression using the medium of the internet in the Anuradha Bhasin judgement, 2020. This is largely in line with a popular pathway of couching a right to internet access through a progressive interpretation of existing negative liberties like the right to freedom of speech, the right to privacy, and so on (Wicker & Santoso, 2013). Notably, while the Anuradha Bhasin judgement guaranteed the right to free speech on the internet, it fell short of articulating a distinct right to internet access itself.

More recently, the right to internet access came under consideration in Pragma Prasun v. UoI, (2025). The petitioners argued before the Supreme Court that digital KYC norms were not designed with persons with disability accessibility needs in mind and thus violated Articles 14, 15, 16, and 21 of the Constitution of India. They emphasised that digital KYC has become indispensable for accessing essential services and government benefits, yet they faced persistent barriers in meeting its requirements. In particular, persons with visual impairments and survivors of acid attacks found the process exclusionary. They cited instances of KYC procedures mandating capturing a live photograph, where blinking of eyes was set as the necessary verification criterion. This technical standard was unattainable for individuals with restricted facial movements, effectively excluding them from compliance. The absence of features such as audio instructions or screen-reader compatibility also rendered the process inaccessible to persons with visual and cognitive disabilities. Recognising these challenges, the Supreme Court affirmed that meaningful access to the internet is necessary for the

right to life with dignity under Article 21 of the Constitution of India (Supreme Court of India, 2025). While primarily addressing persons with disabilities, the Supreme Court judgement throws light on the wider need for accessible digital systems.

Beyond judicial pronouncements, several policy initiatives and instruments have emphasised the goal of universal internet connectivity. The New Telecom Policy, 1999, introduced a provision for a universal service levy to fund telecom access in rural areas (Ministry of Communications, GoI, 1999). The policy vision of the universal service levy discussed in the NTP, 1999, achieved statutory status with the introduction of the Indian Telegraphy (Amendment) Act, 2003 through the establishment of the USOF. The USOF was a pool of funds generated by a 5 per cent Universal Service Levy charged to all the telecom service providers on their Adjusted Gross Revenue, with the objective to provide support for affordable access to a reliable and ubiquitous telecom network to remote and rural areas. Over time, the scope of the USOF has expanded from basic telecom services to broadband internet. However, USOF’s scope was confined largely to voice services. Internet connectivity appeared only later as a clearly articulated or operationalised component of the Fund’s mandate (Jain & Raghuram, 2009). The recently enacted Telecom Act, 2023 has rechristened the USOF as DBN.

The NTP, 1999’s successor, the NTP, 2012, repositioned “mobile device as an instrument of socio-economic empowerment of citizens,” noting that “once a mere communication device, the telephone has now the potential of being an instrument of empowerment.” It envisioned that “a unique AADHAR-based electronic authentication framework would be integral part of providing service to the people.” Simultaneously, it set the target of achieving rural tele-density from then level of 39 per cent to 70 per cent by the year 2017, and 100 per cent by the year 2020. As of July 2025, rural tele-density (both fixed line and mobile) stands at 59 per cent (Ministry of Communications, 2025). The policy also sought to “recognise telecom, including broadband connectivity as a basic necessity like education and health” and the “realisation of a ‘Right to Broadband’ (Ministry of Communications and IT, 2012).

From 2015 onwards, the Digital India Programme aimed to provide digital infrastructure as a core utility to every citizen, governance and services on demand, and universal access to mobile connectivity (Ministry of Electronics & IT, 2015). Building on this,

the National Digital Communication Policy, 2018 sought to bridge the digital divide and deliver universal broadband connectivity by 2020 (Ministry of Electronics & IT, 2015).

The policy initiatives and judicial pronouncements discussed above lay the conceptual foundation for guaranteeing universal internet connectivity. However, the principal vehicle to operationalise the same, i.e., the DBN (USOF), remains significantly under-utilised due to both administrative inefficiencies and structural limitations. Despite a clear policy intent, the persistent underutilisation of USOF highlights the need for systemic reform. Jain and Raghuram (2009) have long identified the absence of handset subsidies under USOF as a critical barrier to universal connectivity in India. They argue that for the USOF to be truly effective, its support must extend beyond infrastructure and directly benefit individuals. They highlight the current USOF model's failure to develop robust fund deployment as a key weakness and emphasise that instead of focusing narrowly on clusters, the USOF shall introduce a comprehensive, large-scale rollout plan to realise its full potential (Jain & Raghuram, 2009).

India's constitutional and policy tradition has progressively expanded the scope of socio-economic rights through new legislations. The RTE (2009) and RTI (2005) are emblematic of this trend. These frameworks demonstrate that when a developmental objective is embedded in a rights-based architecture, it gains durability, enforceability, and public legitimacy that far exceeds those of approaches relying solely on judicial interventions and/or executive actions.

However, India's digital governance has not received the same importance. The Aadhaar project and subsequent digitalisation initiatives have transformed welfare delivery but without providing legal entitlements to data-connectivity, digital literacy, and uninterrupted internet access. This has resulted in a paradox: citizens are required to authenticate themselves digitally to access benefits, yet the State does not guarantee the means to do so. The digital ecosystem thus reproduces existing hierarchies, privileging high-income urban men over low-income

rural women. This digital paradox must be addressed through rights-based statutory intervention, centring direct individual benefit in the design of universal connectivity policies.

5.2 Absent a Rights-Based Approach, Digital Bharat Nidhi is Languishing

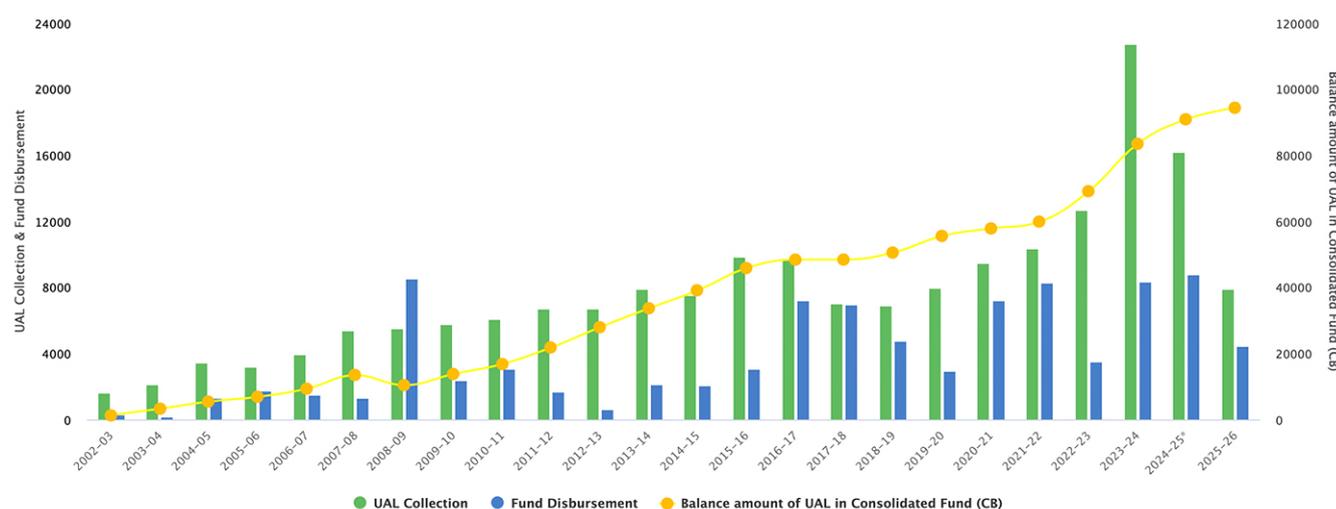
The DBN (earlier USOF) represents India's key instrument for funding and enabling universal connectivity. The Telecommunications (Administration of DBN) Rules, 2024 empower the Administrator of the DBN to settle claims and disburse funds from the DBN to projects that:

- "Provide telecommunication services, including mobile and broadband services and telecommunication equipment required for delivery of telecommunication services, and enhancing telecom security in underserved rural, remote and urban areas."
- "Create telecommunication network for provisioning of telecommunication services, including mobile and broadband services in underserved rural, remote and urban areas."

However, funds collected for the DBN are frequently not diverted to the designated public account. Even when they are credited, disbursement is slow and fragmented. This prevents the Fund's optimal utilisation. Existing legal provisions confer a robust *enabling* mandate on the DBN to advance universal internet connectivity. However, this enabling mandate has not translated into effective provisioning on the ground. As of now, a substantial Rs 83,447.66 crore remains parked in the DBN (see Figure 7).

The levy collected from telecom service providers is to be first credited to the consolidated fund of India, and then, transferred to the public account of India from time to time. As per its mandate, the DBN is to be realised exclusively to achieve universal services obligation targets. Comptroller and Auditor General of India (CAG) reports, however, have repeatedly highlighted discrepancies between receipts and disbursements, with substantial balances remaining unutilised (CAG, 2023).

Figure 7: Status of Fund Utilisation of Digital Bharat Nidhi



Source: Digital Bharat Nidhi.

Table 4: Trends in Underutilisation of Universal Service Obligation Funds (All Figures in Rs Crore)

Year	Receipt (Universal Access Levy)	Transfer to the USOF		Actual Transfer to the Fund	Short Transfer with reference to Actual Receipts	Cumulative Short Transfer	Actual Disbursement from the Fund	Balance in the Fund as per UGFA
		Budget Estimate (BE)	Revised Estimate (RE)					
(1)	(2)	(3)	(4)	(5)	(6) = (2) - (5)	(7)	(8)	(9) = (8) - (5)
Opening Balance as at the end of FY 2017-2018						48426.76		
2018-2019	6,911.5	10,000	5,000	4,788.22	2,123.28	50,550.04	4,788.22	0.00
2019-2020	7,961.53	8350	3,000	2,926.00	5,035.53	55,587.57	2,926.00	0.00
2020-2021	9,471.23	8000	7,200	7,200.00	2,271.23	57,856.80	7,200.00	0.00
2021-2022	10,376.23	9000	8,300	8,300.00	2,076.23	59,933.03	8,300.00	0.00
2022-2023	12,692.68	9000	3,010	535,000.00	(40,807.32)	19,125.71	3,500.00	50,000.00

Source: Report of the Comptroller and Auditor General of India for the year ended March 31, 2023.

In the newly enacted DBN Rules, the fund administrator has been granted wider powers to select implementing bodies, in comparison to what was provided under the USOF Rules. This is a positive step to usher increased utilisation of the funds (Alam, 2024). However, concerns persist about the effectiveness of the current administrative framework.

Comparative international experiences also highlight gaps in India's mechanism and shows examples to address them. In many jurisdictions, universal service obligations are financed through levies on telecom service providers, often supplemented by public

funding. Crucially, these funds are implemented under the oversight of independent regulators or delivered through designated providers or competitive allocation mechanism. These checks ensure end-user focused and accountable delivery of universal internet access by design (Table 5).

By contrast, the DBN in India is administered within the telecommunication ministry itself, without independent regulatory oversight. The absence of designated providers or enforcement mechanisms in the design of the existing mechanism further undermines both transparency and effectiveness of the DBN.

The UK’s Universal Service Obligation for broadband, introduced in 2020, is exemplar in this case. It provides every resident and business a legal right to request a “decent” broadband connection (currently defined as download speeds of at least 10 Mbps and upload speeds of 1 Mbps). India’s DBN lacks such a rights-based mechanism. Without a legal entitlement, citizens have no direct recourse to gain internet access despite the presence of dedicated funds

in this regard. The UK framework has also ensured to include two designated service providers whom citizens can approach to deliver connections within a time and cost threshold. This ensures clear roles, timelines, and enforcement mechanisms. The UK also ensures the sector regulator’s oversight over service delivery. The UK model presents an excellent model for India to emulate.

Table 5: Universal Internet Access Policy Mechanisms in Top-Performing Countries of the Network Readiness Index, 2024

Country	Mechanism/Model	Year Introduced	Financing	Oversight
High-Income Countries				
Finland	Legal right to broadband.	2009	Costs are borne by telecom operators who may apply for government subsidies in case of remote areas.	The Finnish telecom sector regulator designates operators for ensuring universal internet provision and oversees them.
Sweden	Legal right to universal internet access.	2018	Costs are partly borne by state operators and supported by the state.	The telecom sector regulator administers and enforces universal internet access guarantee.
European Union (EU) (EEC Directive)	Universal service obligation for broadband. The European Electronic Communications Code explicitly requires each member state to ensure affordable broadband internet access.	2019	The directive does not specify a criteria and member states may come up with their own criteria.	Monitored by the European Commission.
UK	Eligible premises (homes and businesses) have a right to ask for a decent internet connection from a designated internet provider (decent is defined as at least 10 Mbps download and 1 Mbps upload).	2020	There is a cost threshold, which is 3400 per premises, excess cost is paid by customer. Costs are covered by service providers, other industry-based funding mechanisms.	Compliance is overseen by the sector regulator.
Korea	Access to 100 Mbps broadband as a universal service.	2020	Funds the losses incurred by telecom operators in providing universal service.	The Ministry of Science and Technology oversee the implementation of the universal service guarantee.

Country	Mechanism/Model	Year Introduced	Financing	Oversight
Japan	Has a universal service obligation system for telecom services since 2006. Broadband services were included in the purview of the service, from 2022 onwards.	2022	The universal service obligation system is financed in part through levies on telecom carriers and in part through end-users.	Regulatory oversight is exercised by the ministry. There are designated carriers to provide universal services obligation.
Upper Middle-Income Countries				
China	Subsidy programme for universal internet provision.	2016	It is financed through government subsidies and operator contributions.	Administered by the Ministry of Industry and Information Technology, and managed on the fiscal side by Ministry of Finance.
Malaysia		2002	The Universal Service Provider (USP) Fund is financed through levy imposed on licensed network operators.	It is administered and regulated by the communications sector regulator. Policy direction to the funds is provided by the Ministry of Communications.
Thailand	Universal service obligation programme.	2011	Financed by levy on TSPs.	Managed and administered by the sector regulator.
Low Middle-Income Countries				
Vietnam	Universal service obligation for internet access.	2005	It is funded through licensed service providers, State government allocations, and others.	It is categorised as a state financial institution, it is implemented and monitored by.
India	Universal service obligation for internet access	2011	Funded through levy on telecom service providers.	Administered through a separate administrative unit under the DoT.

Source: Authors' compilation.

5.3 Compelling Need for Legal Right to Uninterrupted and Guaranteed Internet Access

A natural corollary to India's DPI revolution is the recognition of legal rights to digital resources and internet access, which have become both a normative and practical necessity. Without these rights, the promise of the DPI transformation is fundamentally undermined and risks violating basic principles of fairness and natural justice.

Constitutionally, the right to internet access is consistent with India's rights jurisprudence under Articles 14, 19, and 21. As digital authentication becomes mandatory for accessing education, health, welfare, and finance, denial of or interruption in internet access effectively curtails the enjoyment of fundamental rights enshrined in the Indian Constitution. The Supreme Court's recognition of the *right to life with dignity* in *Pragya Prasun (2025)* reinforces this linkage.

Figure 8: Hohfeld’s Fundamental Jural Relations Contrasted with One Another

{ Jural Opposites	right no-right	privilege duty	power disability	immunity liability
{ Jural Correlatives	right duty	privilege no-right	power liability	immunity disability
<p><i>Immunity-disability:</i> Hohfeld describes immunity in the context of power. “Whereas a power is one’s affirmative control over a given legal relation against another, an immunity is one’s freedom from legal power or control as regards that legal relation.” The correlative of immunity, disability, implies no power to shift legal interest.</p>	<p><i>Right-duty:</i> In Hohfeld’s view, the word claim comes closest to the word right. A right is a claim against someone to get them to perform a duty. The correlative right and duty are understood in the sense that if a right of “x” is violated, a duty by “y” to uphold the same is violated.</p>	<p><i>Privilege-no right:</i> Essentially, privilege is the absence of duty precisely opposite to the privilege in question. State protection to carry out the wishes of a person is privilege. The closest synonym of legal privilege is legal liberty.</p>	<p><i>Power-liability:</i> Legal power is said to vest in those persons whose volitional control is paramount to have the effect of changing legal relations involved in the problem. The nearest synonym for this is legal ability – the opposite of inability or disability. In Hohfeld’s view ability denotes responsibility. Legal liability correlates to a specific power or complex of powers.</p>	

Source: Hohfeld, 1913.

From a policy and institutional standpoint, a rights-based framework offers a tested design for ensuring transparency, accountability, and citizen recourse. India’s experience with RTI and RTE demonstrates that such frameworks can mobilise administrative machinery, strengthen grievance mechanisms, and institutionalise claim-making. At a conceptual level, this shift can be understood through Hohfeld’s analytical framework (1913).

Aadhaar is mandatory for accessing public services, including bank account, financial transactions, accessing the benefits of public welfare schemes, and utilising the now widely prevalent DPI, which includes not just India stack but all PADI (Srivastava, Swami, & Sharma, 2025). However, the necessary infrastructure (digital resources and capabilities + internet access) on which Aadhaar machinery functions is not guaranteed as a claim. This skews citizen-State relations disproportionately in favour of the state, and exacts an undue burden on the citizens, especially on those on the other side of digital divide.

The mandatory nature of Aadhaar, gives rise to a legal **duty** on the part of citizens to obtain Aadhaar for accessing bank accounts, getting Permanent Account Number (PAN) card, getting KYC done,

and for availing benefits accruing from social welfare schemes. And a corresponding **right** on concerned government authorities to seek proof of Aadhaar from applicants. Similarly, the **privilege** or the freedom to seek a public service like opening a bank account is negated to a **no-right** in the absence of Aadhaar. Further, the concerned government authority, by making Aadhaar mandatory for accessing certain services or accessing certain social welfare benefits, wields the **power** to determine users/beneficiaries of the said services/benefits. This power of the government creates a **liability** on citizens seeking to use the services/benefits.

With the introduction of a right to internet access, the State would incur a positive **duty** to provide individuals access to the internet, which every individual could **claim** as a matter of entitlement. A person would acquire the **privilege** of internet access as a right to access all DPI and online government services, with the State having **no-right** to restrict internet access. It would empower citizens to seek remedies against denial of internet access, particularly if the same impedes Aadhaar-linked services. The State would be compelled to provide internet access and be subject to judicial scrutiny in the absence of the same.

A statutory right to internet access will serve as a pre-requisite and critical policy instrument to effectively fulfil existing state obligations related to universal digital connectivity. This right must establish a minimum threshold of broadband connectivity, which should be periodically updated by the TRAI. Moreover, while setting a technical minimum threshold for state obligation is essential, internet access must be complemented by adequate provisions for digital literacy.

6. Recommendations

In view of the preceding analysis, this paper recommends a framework for advancing digital empowerment in India through a statutory enactment on RiDE. The RiDE Act framework should include the following foundational rights, with scope for progressive expansion over time:

- a. A universal right to internet access, guaranteed at quality standards prescribed by TRAI (e.g., download/upload speed and capacity with latency benchmarks).
- b. Time-bound and actionable obligations on digital literacy, developed through consultative identification of relevant competencies, progressively crystallising into a right to digital literacy and aligned with the FLN+D principles.
- c. Stringent regulation of internet shutdowns, including precise criteria and accountability mechanisms.
- d. Targeted financial support for digital inclusion, such as the provision of one smartphone per BPL household (to be provided to the adult woman member of the family).

While fiscal constraints present a significant barrier in giving effect to positive state obligations, India possesses a substantial resource in the DBN, with the fund balance currently standing at Rs 83,717 crore, as of November 2025. This fund, dedicated to expanding internet access, remains underutilised due to weak administrative design and the absence of appropriate legislative direction.

International experience shows how the universal service obligations can evolve into enforceable entitlements. The UK's universal service obligation

regime, initiated in 2017, developed into a legal right to request “decent internet access” in 2020. It illustrates the growing relevance of an individual-focused approach. For India, where adoption at the individual level is the critical missing link in universal connectivity, such a framework is particularly useful.

Given India's reliance on the DPI for welfare and service delivery access, universal internet access should be a state-guaranteed prerequisite. To this end, this paper recommends the parliamentary enactment of the RiDE Act to operationalise the aforementioned measures. By grounding digital access and literacy in enforceable rights, India can move beyond infrastructure provision to inclusive and universal digital empowerment.

7. Conclusion

India continues to face a deep and systemic digital divide, especially along the fault lines of gender, geography, and income. This divide is especially visible when comparing urban and rural regions as well as higher income states and lower income states. It is further perpetuated across generations as many schools lack computers and adequate resources for digital literacy. As the DPI becomes increasingly central to welfare access, service delivery, and civic participation, these inequities pose a risk to inclusive development.

In addition to shortcomings in infrastructure and adoption, challenges in governance, including arbitrary internet shutdowns, also impede India's digital transformation. India has accumulated a substantial corpus of funds intended to bridge the digital divide, notably through the DBN. However, these resources remain significantly underused, reflecting the absence of a clear legislative mandate and persistent shortcomings in executive action, even after repeated judicial interventions.

Together, these factors demonstrate the need for a statutory right to uninterrupted internet access, along with a broader RiDE encompassing digital resources and universal digital literacy. Embedding these entitlements in a legislative framework will provide the structural foundation necessary for inclusive, equitable, and effective citizen participation in India's increasingly digital society.

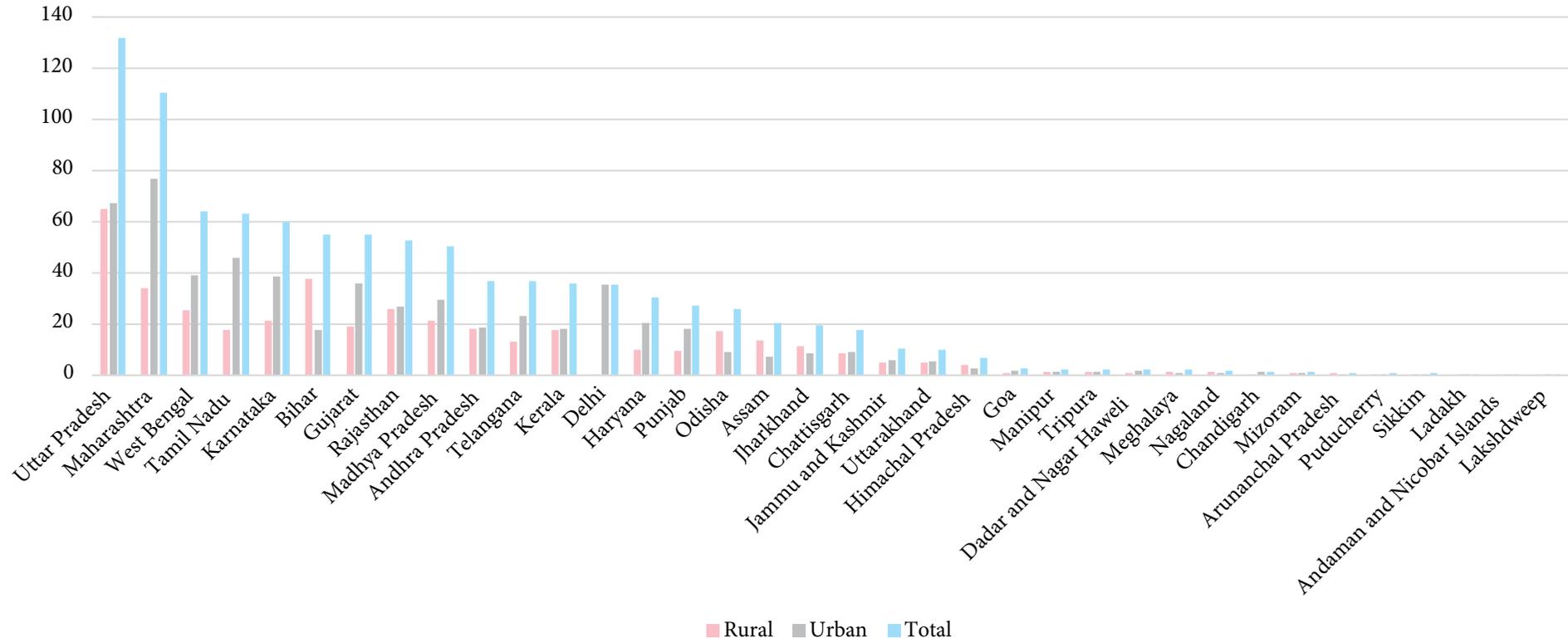
References

- A., T. N. (2010). Is Internet Access a Human Right? *Proceedings of the 6th International Conference on Web Information Systems and Technology (WEBIST)*, (pp. 287–292).
- Access Now. (2024, May 14). Unabashed and unabated: India leads the world shutdown count for sixth year. <https://www.accessnow.org/press-release/india-keepiton-internet-shutdowns-2023-en/>
- Alam, Y. (2024, October 4). *Digital Bharat Nidhi: A renewed effort for bridging the digital divide*. <https://www.techpolicy.press/digital-bharat-nidhi-a-renewed-effort-for-bridging-the-digital-divide/>
- Cerf, V. G. (2012, January 4). *Internet access is not a human right*. <https://www.nytimes.com/2012/01/05/opinion/internet-access-is-not-a-human-right.html>
- Choudhary, H., & Bansal, N. (2018). Barriers affecting the effectiveness of digital literacy training programs (dltps) for marginalised populations: A systematic literature review. *Journal of Technical Education and Training*, 110–127.
- CAG. (2008). Report No. PA 1 of 2008 for the period ended March 2007. Comptroller and Auditor General of India.
- CAG. (2025). Report No. 1 of 2025 (Compliance Audit): Report of the Comptroller and Auditor General of India for the year ended 31 March 2023, Union Government, Finance & Communication. Comptroller and Auditor General of India.
- Council for Social Development. (2017). *Digital literacy training to non IT-literate citizens*. Council for Social Development.
- DoT. (2025, January 13). *State/UT-wise list of Gram Panchayats (GPs) provided broadband connectivity under the BharatNet project as on 13.01.2025*. https://usof.gov.in/upload/parliament_questions/RSPQ/Annexure_of_RSPQ_No_335.pdf
- DoT. (2025). *Fund status*. Digital Bharat Nidhi (Universal Service Obligation Fund), Ministry of Communications, GoI.
- European Commission. (n.d.). *Digital competence framework for citizens (DigComp)*. https://joint-research-centre.ec.europa.eu/projects-and-activities/education-and-training/digital-transformation-education/digital-competence-framework-citizens-digcomp_en
- EU. (2022). *European Declaration on Digital Rights and Principles for the Digital Decade*. [file:///D:/OneDrive%20-%20CSEP/MY%20DATA/Downloads/European_Declaration_on_Digital_Rights_and_Principles_signed_002_sPqb0eme38LoyyLQatnQJjkCZGU_94370%20\(1\).pdf](file:///D:/OneDrive%20-%20CSEP/MY%20DATA/Downloads/European_Declaration_on_Digital_Rights_and_Principles_signed_002_sPqb0eme38LoyyLQatnQJjkCZGU_94370%20(1).pdf)
- Gilster, P. (1997). *Digital literacy*. Wiley Computer Pub.
- GSMA. (2024). *The Mobile Gender Gap report*. GSMA.
- Hert, P. D., & Kloza, D. (2012). Internet (access) as a new fundamental right. Inflating the current rights framework. *European Journal of Law and Technology*.
- Hohfeld, W. N. (1913). Some fundamental legal conceptions as applied in judicial reasoning. *The Yale Law Journal*, 16–59.
- Horner, L. (2011, June). *A human rights approach to the mobile internet*. <https://www.gp-digital.org/wp-content/uploads/2013/10/Horner-L-2011-Human-Rights-approach-to-Mobile-Internet.pdf>
- Jain, R., & Raghuram, G. (2009). *Role of universal service obligation fund in rural telecom services: Lessons from the Indian experience*. India Institute of Management.
- Khatri, H. (2024). *Mobile Network Experience Report*. Open Signal.
- Malhotra, G. (2024, February 26). *Supreme Court orders publication of review committee orders relating to internet shutdowns*. <https://internetfreedom.in/supreme-court-orders-publication-of-review-committee-orders-relating-to-internet-shutdowns/>
- Malhotra, G., & Panjiar, T. (2024, September 3). <https://internetfreedom.in/telecom-suspension-rules-2024-analysis/#:~:text=This%20provision%20pertains%20to%20the,in%20practice%2C%20issued%20successive%20orders.>
- Media Literacy now. (2025, March 26). *Our definition of media literacy*. <https://medialiteracynow.org/challenge/what-is-media-literacy/>
- Mehrotra, S., & Sharma, H. (2025, January 1). *The illusion of skill development in India: Decoding the sudden increase in the 'vocationally trained'*. <https://thewire.in/labour/the-illusion-of-skill-development-in-india-decoding-the-sudden-increase-in-the-vocationally-trained>
- Ministry of Communications. (2024, December 12). *Out of 6,44,131 villages in the country around 6,22,840 are having mobile coverage*. pib.gov.in: [https://pib.gov.in/PressReleasePage.aspx?PRID=2083735#:~:text=Out%20of%206%2C44%2C131%20villages%20in%20the%20Country%20\(as%20per,2024.](https://pib.gov.in/PressReleasePage.aspx?PRID=2083735#:~:text=Out%20of%206%2C44%2C131%20villages%20in%20the%20Country%20(as%20per,2024.)
- Ministry of Communications. (2022, July 22). *Progress of National Broadband Mission*. <https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1843752®=3&lang=1>

- Ministry of Communications. (2024, December 26). *DoT makes significant strides in strengthening the Indian telecom ecosystem*. <https://pib.gov.in/PressReleasePage.aspx?PRID=2088195>
- Ministry of Communications. (2025, August 29). *Highlights of Telecom Subscription Data as on 31st July 2025*. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2161931#:~:text=The%20overall%20tele%2Ddensity%20in,59.19%25%20during%20the%20same%20period>
- Ministry of Communications. (2025, January 17). *New Sanchar Saathi Mobile App brings telecom security tools directly to the fingertips of every citizen*. <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2093732>
- Ministry of Communications and IT. (2012, June 12). *National Telecom Policy 2012*. https://www.trai.gov.in/sites/default/files/2024-10/NTP_2012.pdf
- Ministry of Communications, GoI. (1999). *New Telecom Policy, 1999*. <https://dot.gov.in/new-telecom-policy-1999>
- Ministry of Education. (2025). UDISE+ report for the academic year 2024-2025. Department of School Education & Literacy, GoI.
- Ministry of Electronics & IT. (2025, April 2). *Government of India takes measures for digital infrastructure upgradation in villages*.
- Ministry of Electronics & IT. (2015). *Digital India: Power to Empower*. <https://www.digitalindia.gov.in/about-us/>
- Ministry of Electronics & IT. (n.d.). *National Digital Literacy Mission*. <https://nielit.gov.in/ajmer/content/national-digital-literacy-mission>
- MSDE. (2020, March 20). *National Policy on Skill Development*. <https://pib.gov.in/newsite/PrintRelease.aspx?relid=200504>
- MSDE. (2022). *National Apprentice Promotion Scheme 2.0*. <https://www.myscheme.gov.in/schemes/naps>
- MSDE. (2024, July 29). *Industry-relevant skill training*. <https://pib.gov.in/PressReleasePage.aspx?PRID=2038384>
- MoSPI. (2024). *Comprehensive Annual Modular Survey, 2022-23 NSS 79th Round*. National Sample Survey Office.
- Nathaniel-Ayodele, S. (2024, July 2). *Internet access: Essential utility or human right?* <https://www.goodthingsfoundation.org/policy-and-research/research-and-evidence/research-2024/internet-is-essential-utility-and-human-right>
- Ofcom. (2023, March 17). *Universal service obligations (broadband and telephony)*. <https://www.ofcom.org.uk/phones-and-broadband/telecoms-infrastructure/universal-service-obligation>
- Rajmohan, K., & Lanka, S. N. (2024, December 4). *First Read on Telecom (Temporary Suspension of Services) Rules, 2024*. <https://internetfreedom.in/first-read-telecom-suspension-rules-2024/>
- Reglitz, D. M. (2020, June 3). *Internet access is a necessity not a luxury – it should be a basic right*. <https://www.birmingham.ac.uk/news-archive/2020/internet-access-is-a-necessity-not-a-luxury-it-should-be-a-basic-right>
- Ruparelia, S. (2024). The rights-based approach to social policy in India: Innovations, advances and setbacks. In I. Yi, A. Kaasch, & K. Stetter, *Emerging Trends in Social Policy from the South: Challenges and Innovations in Emerging Economies* (pp. 137–160). Policy Press.
- Sharma, H., Beher, M., & Mehrotra, S. (2025). Status of vocational education and wage gap in the Indian economy: Empirical evidence. *The Indian Journal of Labour Economics*.
- Software Freedom Law Centre. (2026). *Internet Shutdowns Tracker*. [InternetShutdowns.in](https://internetshutdowns.in).
- Srivastava, S., Swami, N., & Sharma, D. (2025). *Measuring the economic impact of India's digital public infrastructure: an assessment*. CSEP.
- Supreme Court of India. (2020, January 10). *Anuradha Bhasin v. UoI*.
- Supreme Court of India. (2025, April 30). *Pragya Prasun & Ors. v UoI*. <https://cdnbbsr.s3waas.gov.in/s36ee69d3769e832ec77c9584e0b7ba112/uploads/2024/11/20250501496797524.pdf>
- TRAI. (2025). *The Indian telecom services performance indicators*. TRAI. [summaries/2023/03/it-may-be-time-reinforce-universal-access-internet-human-right-not-just](https://www.trai.gov.in/summary/2023/03/it-may-be-time-reinforce-universal-access-internet-human-right-not-just)
- UN Human Rights Council. (2016, July 18). *The promotion, protection and enjoyment of human rights on the internet: resolution adopted by Human Rights Council*. <https://www.refworld.org/legal/resolution/unhrc/2016/en/112398>
- UNESCO. (2018). *A global framework of reference on digital literacy skills for indicator 4.4.2*. UNESCO Institute for Statistics.
- Wicker, S. B., & Santoso, S. M. (2013, June 1). *Access to the internet is a human right*. <https://cacm.acm.org/opinion/access-to-the-internet-is-a-human-right/>

Appendices

Appendix 1: State-Wise Internet Subscribers



Source: Telecom Regulatory Authority of India, 2025.

Appendix 2: Initiatives on Vocational Training in India

S. No.	Initiative	Objectives	Remarks
1	National Policy on Skill Development and Entrepreneurship, 2015	It came on the back of the National Skill Development Policy, 2009. Its primary objective was to address the skilling challenges of India at scale and provide an umbrella framework for skilling activities to align them with common standards and demand centres (Ministry of Skill Development and Entrepreneurship [MSDE], 2020). In its landmark initiatives, it launched the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), 2015 and set up Sector Skill Councils (SSCs).	–
2	PMKVY, 2015	Began with 2 components: 1. Short-term training. 2. Recognition of prior learning, which assessed and certified individuals through orientation or bridge courses.	It trained 1.985 million candidates in its 2015–2016 iteration.
3	PMKVY 2.0, 2016–2020	Scaled up the sector and geography in which this scheme operated. It claimed to be aligned with other GoI schemes such as Make in India, Digital India, Swachh Bharat; and to be aligned with the actual needs of the country. It also sought to further standardisation so as to build the foundation for a registry of skills.	–
4	PMKVY 3.0, 2020–2022	Launched in 2021, with the aim to address industry and market needs, impart skills in new-age market roles. It aimed to benefit 0.8 million youth of the country.	As per the government, 5.688 million candidates have been certified in short term training; of which 2.43 million candidates have been reported placed. Out of these 2.43 million, 0.294 million are reported to be self-employed (MSDE, 2024).
5	PMKVY 4.0	In line with its predecessors, the scheme offers three types of training, including: a. Short-term training (STT) ranging between 300–600 hours (targeting 15–45 years age group). b. Recognition of prior learning (targeting 18–59 years age group). c. Special projects—short-term skilling initiatives (15–45 years age group).	Proposes the undertaking of periodic skill gap studies to identify human resource requirements based on emerging trends in respective sectors.
6	Pradhan Mantri Kaushal Kendra (PMKK)	Under the Skill India Mission, the MSDE has initiated the establishment of model training centres in every district of India, known as PMKKs—these focus on running high-quality, industry driven courses. The PMKKs were created with the aim of institutionalising training centres as opposed to the mission driven short-term training programmes. As of June 30, 2024, 508 PMKKs were operational in India (MSDE, 2024).	–
7	Skill Loan Scheme	Launched on July 25, 2024, this scheme seeks to provide easy access to advance-level skill courses.	–
8	National Apprentice Promotion Scheme (NAPS)	Launched in 2016, it provides financial incentives to institutions with the goal of promoting apprenticeship uptake therein. It focuses on skill-development and upskilling through apprenticeship programmes. The scheme's second iteration aims to train 4.6 million apprentices from FY 2022–2023 to FY 2025–2026 (MSDE, 2022).	–

Appendix 3: State-Wise Number of Internet Shutdowns in India (2012–2025)

S. No.	State	Total Shutdowns
1	Jammu and Kashmir	445
2	Rajasthan	104
3	Manipur	55
4	Haryana	46
5	UP	35
6	West Bengal	27
7	Bihar	24
8	Maharashtra	19
9	Meghalaya	16
10	Odisha	15
11	Punjab	15
12	Gujarat	11
13	Assam	9
14	Arunachal Pradesh	9
15	Tripura	8
16	Jharkhand	8
17	Madhya Pradesh	7
18	Telangana	5
19	Nagaland	5
20	National Capital Territory (NCT) of Delhi	4
21	Uttarakhand	3
22	Ladakh	1
23	Andhra Pradesh	1
24	Chhattisgarh	1
25	Karnataka	1
26	Tamil Nadu	1
27	Chandigarh	1

Source: Software Freedom Law Centre (SFLC.in).

About the authors



Naini Swami is Research Analyst in the Growth, Finance, Health & Human Development vertical at CSEP. Her work focuses on the digital economy, primarily the economic impact of digital public infrastructure and the need for universal Internet access. She has also contributed to studies on municipal finance, particularly on trends in municipal property tax collection.

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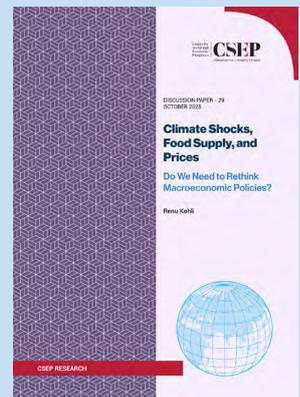
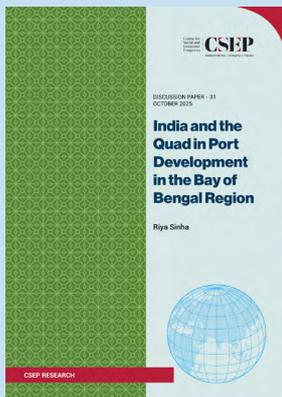
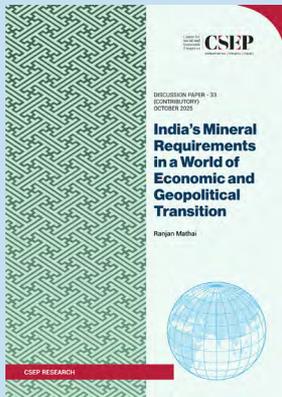
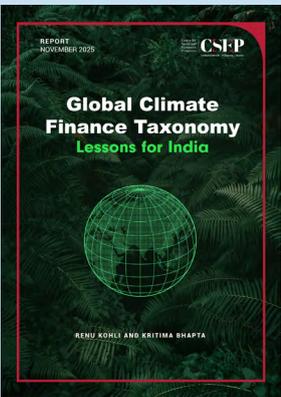
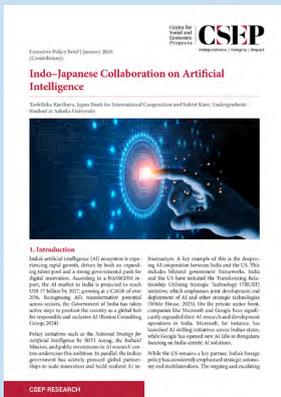
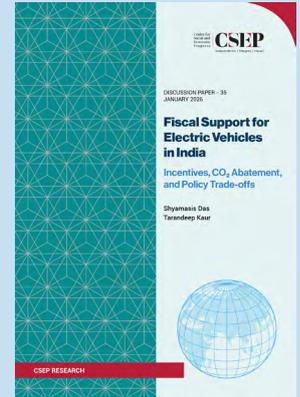
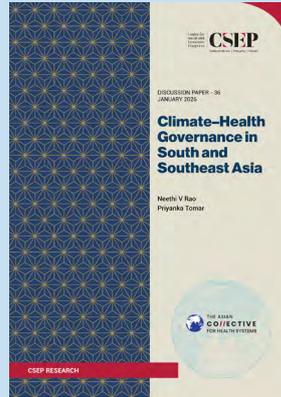
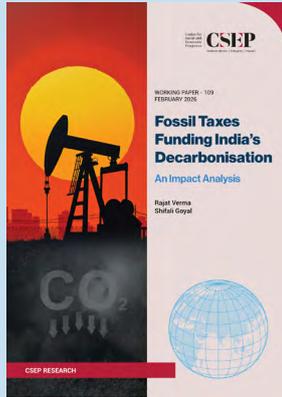
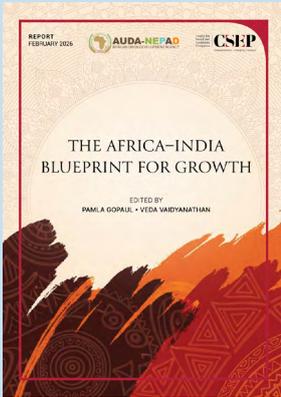


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