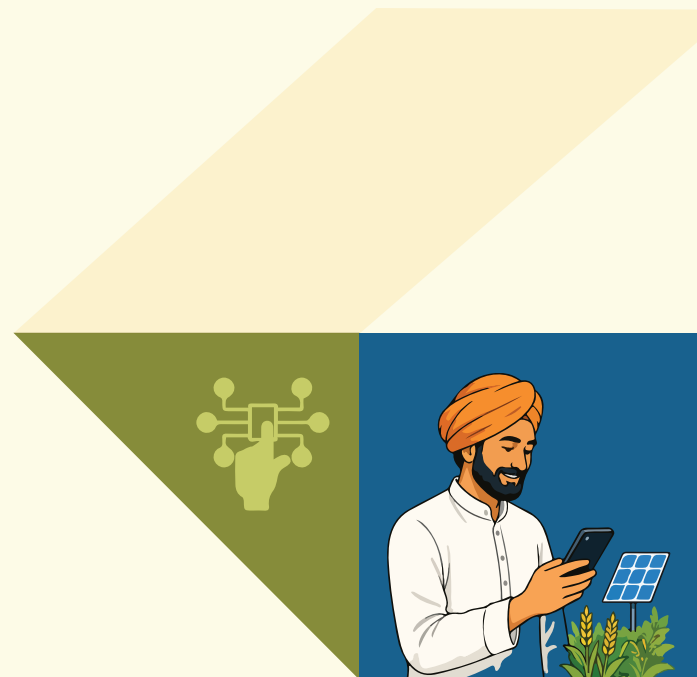
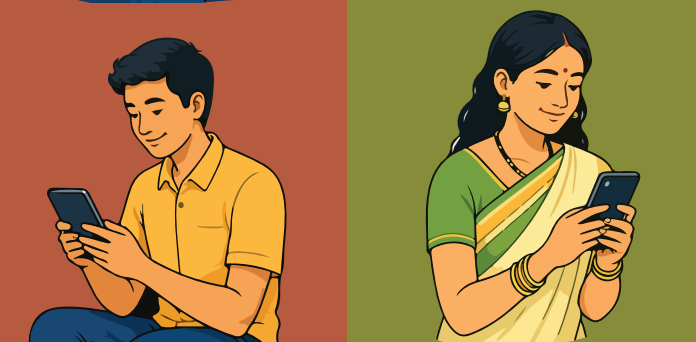
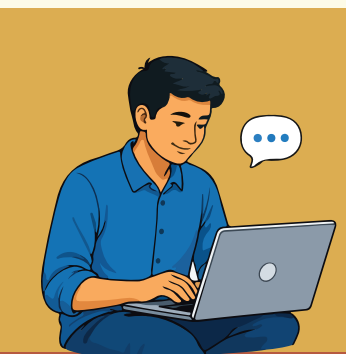




The Evolving Landscape of Digital Inclusion in India

India's Transformation: A Series by NCAER





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National Council of Applied Economic Research (NCAER)

in partnership with

The Quantum Hub (TQH)

Women in Digital Economy Network (WiDEN)

Research Report 2026



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NCAER is a leading independent economic policy research institute in India that undertakes studies on growth, trade, poverty, and public policy, generating evidence to support informed decision-making by governments, businesses, and society.

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BEYOND DIGITAL CONNECTIVITY: INSIDE THIS REPORT

India's digital expansion over the past decade has been unprecedented. The country's internet user base grew from roughly 198 million in 2015 to more than 1.03 billion by 2025, driven by affordable smartphones, low-cost mobile data, and rapid expansion in digital infrastructure.

Yet, beneath this remarkable expansion lies a more uneven reality. Inequalities emerge in the quality of connectivity, the devices people use, the skills they possess, and the extent to which digital technologies translate into education, finance, work, government services access, and social participation.

Drawing on nationally representative data from the **India Human Development Survey (IHDS-III)**, this report highlights a layered and evolving hierarchy of digital participation in India:

01

95.1% of households report owning a mobile device. Only **8%** report owning a computer or laptop.

02

Around **71.4%** of households access the internet through mobile devices, but with substantial differences across rural (**67%**) versus urban areas (**80.8%**). The use of broadband or cable internet remains limited.

03

Among households that use digital services, 1 in 5 households report needing help from someone outside the household (**20.4%**). This rises to nearly 1 in 3 among households with no education.

04

Among connected households, **66%** report using the internet to watch movies, television, or news content, while only **16.1%** report engagement in online courses or classes and **11.4%** report using the internet for accessing government services online.

05

Although **70.9%** of individuals (15 years and above) have access to a mobile device, only **39.7%** use the internet.

06

Among working-age adults (15–59 years), internet use among women is **35.6%**, compared to **57.6%** among men, with variations across social groups, economic groups and geography. Economic progress narrows but does not close the gender gap.

07

Among children aged 13–16 years, **37.8%** actively use the internet, with strong disparities across gender, location, and parental education. Only **9.4%** of individuals aged 60 and above use the internet.

The report argues that India's next digital challenge is not merely expanding connectivity, but ensuring meaningful and equitable participation in the digital economy. As digital technologies increasingly mediate access to education, employment, finance, welfare, and social opportunity, the key policy question is whether digital transformation will reduce – or reproduce – existing social and economic inequalities. This report takes a step toward answering that question.

SECTION 01

INTRODUCTION: FROM DIGITAL ACCESS TO MEANINGFUL INCLUSION

Over the past decade, India has emerged as one of the world's fastest-growing digital economies. Flagship initiatives such as Digital India, alongside the rapid rollout of affordable 5G services by telecom providers, have sharply reduced the cost of connectivity. Combined with the widespread availability of low-cost smartphones, these developments have driven an unprecedented expansion in mobile internet access across both urban and rural India¹. India's internet user base grew from roughly 198 million in 2015 to nearly 1.03 billion by October 2025², while the country has also become the world's second-largest smartphone market, with around 750 million devices in use³. Large-scale surveys such as the National Statistical Office's Comprehensive Modular Survey⁴ (CMS) and recent rounds of the National Family Health Survey⁵ (NFHS) have been instrumental in documenting this transformation, forming the backbone of our understanding of India's evolving digital landscape.

Yet, beneath this remarkable expansion lies an uneven and complex reality. Globally, the digital landscape is shaped by two overlapping divides: first, the persistent gap between the nearly three-quarters of the world's population that is now online and the 2.2 billion people who remain offline⁶; and second, the less visible but equally consequential disparities in how effectively households and individuals are able to use digital technologies to access opportunities⁷. India exemplifies this duality sharply. Despite its vast user base, the country ranks only 12th among G20 nations in terms of the average user's level of digitalization, pointing to a significant gap between the scale of connectivity and the depth of meaningful digital engagement⁸.

¹ Slotta, D. (2025, December 17). Internet usage in India – statistics & facts. Statista. <https://www.statista.com/topics/2157/internet-usage-in-india/#topicOverview>

² Kemp, S. (2025, November 5). Digital 2026: India. DataReportal. <https://datareportal.com/reports/digital-2026-india>

³ Reuters. (2026, January 29). India's vast internet, social media apps market. <https://www.reuters.com/business/media-telecom/indias-vast-internet-social-media-apps-market-2026-01-29/>

⁴ National Sample Survey. (Last Modified: 2026, April 17). Comprehensive modular survey on telecom-NSS 80th round-2025. Ministry of Statistics and Programme Implementation, Government of India. <https://microdata.gov.in/NADA/index.php/catalog/239>

⁵ National Family Health Survey. NFHS User Portal. International Institute for Population Sciences, Ministry of Health and Family Welfare, Government of India. <https://www.nfhsiips.in/nfhsuser/index.php>

⁶ International Telecommunication Union. (2025). Measuring digital development: Facts and figures 2025. <https://www.itu.int/itu-d/reports/statistics/facts-figures-2025/>

⁷ International Telecommunication Union. (2024). Measuring digital development: Facts and figures 2024. https://www.itu.int/hub/publication/D-IND-ICT_MDD-2024-4/

⁸ ICRIER-Prosus Centre for Internet and Digital Economy (IPCIDE). (2023). State of India's Digital Economy Report 2023. Indian Council for Research on International Economic Relations (ICRIER). https://icrier.org/pdf/State_of_India_Digital_Economy_Report_2023.pdf

These inequalities are reflected across gender, geography, and income. NFHS-5 data show that only 33.3% of women in India had ever used the internet, compared to 57.1% of men⁹. Similarly, according to CMS 2025, use of mobile phones connected to Wi-Fi for internet access remained low overall, but was substantially lower in rural areas (1.3%) than in urban areas (9.5%)¹⁰. Such disparities suggest that while access to digital technologies has expanded rapidly, the nature and quality of digital engagement remains uneven.

THE GAP NOW: HOW DIGITAL TECHNOLOGIES ARE EXPERIENCED

The policy discourse around digital inequality has largely focused on access—whether households/individuals possess devices and internet connectivity. However, as infrastructure constraints have eased, this framing must expand beyond connectivity alone to consider meaningful access at the household and individual level. As digital adoption deepens, India stands at a critical juncture where success should be measured not merely by the number of users connected, but by the extent to which digital technologies enable meaningful participation for all and reduce—rather than reproduce—existing inequalities. The latest round of the India Human Development Survey (IHDS-III) helps address this gap.

By linking household-level access with individual-level use, it enables an examination of how digital technologies are utilised across groups differentiated by gender, socio-economic status, and geography. This entails studying how digital technologies are used, by whom, and to what end, allowing the analysis to move beyond connectivity toward understanding how digital technologies are embedded within existing social norms and inequalities.

In this context, this report seeks to examine the evolving nature of digital transformation and inequality in India by addressing the following questions:



As mobile access has expanded, what inequalities persist in access to advanced digital infrastructure across economic groups, geography, and social groups?



How does India's mobile-first internet shape the quality and nature of digital access?



Among connected households, is internet use primarily entertainment-driven, or does it also enable activities such as using computer programs for educational purposes and accessing financial services and government schemes?



Does increased household access to mobile connections extend to all household members, or do gaps persist across age, gender, and education?

⁹ Ministry of Health & Family Welfare. (2025). National Family Health Survey-5 (2019-21): India Fact Sheet. https://dhsprogram.com/pubs/pdf/OF43/India_National_Fact_Sheet.pdf

¹⁰ Ministry of Statistics and Programme Implementation, Government of India. (2025). Comprehensive modular survey: Telecom report. https://www.mospi.gov.in/sites/default/files/publication_reports/CMST_report_m.pdf

This report draws on data from the latest round of the IHDS-III, conducted between 2022 and 2024 by NCAER and the University of Maryland. The **IHDS-III is a nationwide, multi-topic survey covering a wide range of socio-economic indicators across both rural and urban India. The survey includes 47,473 households and 212,607 individuals across all states and union territories, except Andaman and Nicobar Islands, Lakshadweep, and Ladakh. Data were collected using Computer-Assisted Personal Interviewing (CAPI).**

The sampling design ensures broad geographic and demographic representation. Villages and urban blocks, each comprising 150–200 households, served as the primary sampling units (PSUs) from which households were drawn. Distinct sampling strategies were employed across rural and urban areas: in rural areas, villages were selected using stratified random sampling, whereas in urban areas, towns and cities were chosen using probability proportional to population (PPP). As the IHDS is a longitudinal survey initiated in 2004–05, the PSU framework reflects the spatial distribution at the time of baseline selection; consequently, peri-urban areas that have expanded or newly emerged since then may be underrepresented.

Information on digital access and use is drawn from household-level modules, with data collected for each household member. All estimates presented in this report are weighted using cross-sectional survey weights.



SECTION 02

DECODING INDIA'S DIGITAL LANDSCAPE AT THE HOUSEHOLD LEVEL

This section explores how digital inclusion in India unfolds across multiple layers – from access to devices, to the quality of connectivity, to the outcomes of digital use. It investigates how structural inequalities shape not just which households are connected, but how digital technologies are used and who benefits from them. The analysis reveals the gap between widespread access and meaningful participation.

2.1. FIRST-ORDER ACCESS: CLOSING HOUSEHOLD MOBILE GAP; INEQUALITY IN OTHER DEVICES

2.1.1. Near-Universal Household Mobile Penetration

Nationally, **95.1% of households report owning a mobile device**, indicating near-universal access to basic digital devices. Ownership is slightly higher in urban areas (97.3%) than in rural areas (94.1%). Smartphones are also widely prevalent, with 74.8% of households reporting that anybody in the household has a touchscreen device or a device that can connect to the internet – rising to 85% in urban areas and 70.1% in rural areas.

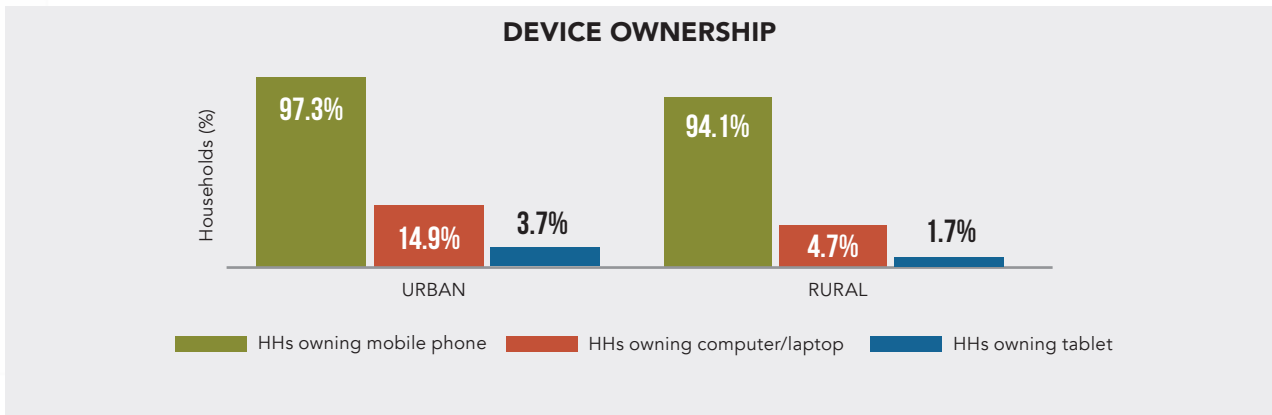
Access to mobile devices is nearly universal, but inequalities remain in the number of mobile devices owned by households. The average number of mobile phones per household increases steadily across economic groups, from 1.5 among the poorest households to 2.9 among the richest households. Social differences are also evident, with Christian, Jain, and other minority households (grouped as “Others”) and Forward/General caste households reporting the highest average number of mobile phones (2.6 and 2.3, respectively), compared to lower averages among Scheduled Tribe (ST) (1.9), Scheduled Caste (SC) (2), and Muslim (2.1) households.

2.1.2. Device Inequality Beyond the Mobile Device

Access to advanced digital devices, such as computers, laptops, and tablets, reveals a more unequal landscape. **Only 8% of households report owning a computer or laptop**, and just 2.3% own a tablet. **Urban households are about three times more likely than rural households to own a computer** (14.9% versus 4.7%), as in Fig. 1, representing structural gaps in the quality and range of digital participation available to different sections of society¹¹.

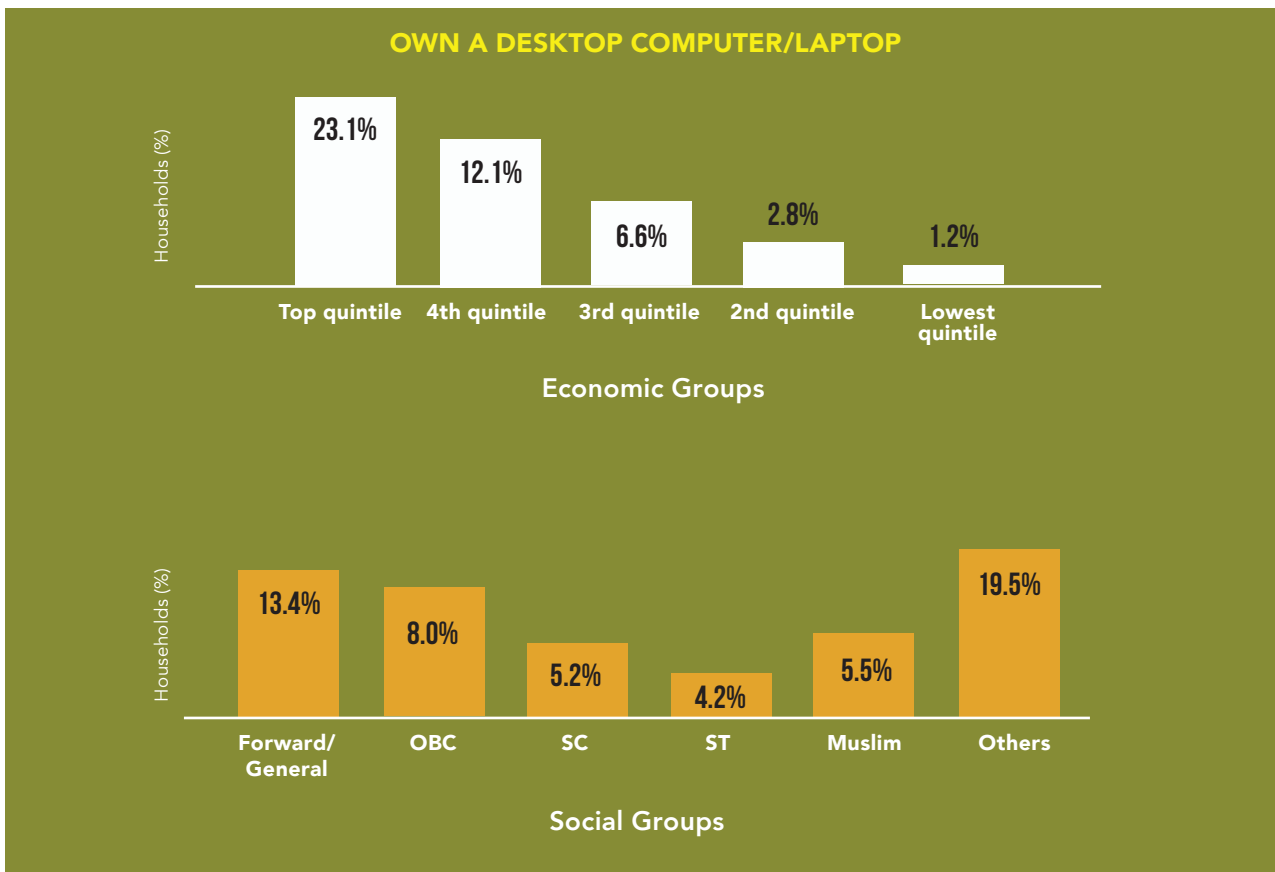
¹¹ Similar to the findings of a Internet and Mobile Association of India (IAMAI) and Kantar report, which found that only 20% of active internet users in India are multi-device users. Cited in: Internet and Mobile Association of India (IAMAI), & Kantar. (2026, January 29). Internet in India 2025: Press release. India Digital Summit. <https://www.indiadigitalsummit.in/wp-content/uploads/2026/01/Internet-in-India-2025-Press-Release-Final.pdf>

Figure 1: Device Ownership in Urban and Rural Households (All India)



These inequalities are more pronounced across economic groups, measured by consumption quintiles. Among households in the lowest quintile, only 1.2% report owning a computer, compared to 23.1% in the highest quintile – a gap of nearly twenty times. This figure is 5.2% and 5.5% among SC & Muslim households respectively, and 4.2% among ST households – while 13.4% of forward caste households report computer ownership (Fig. 2).

Figure 2: Computer or Laptop Ownership Across Social and Economic Groups (All India)



Geographically, North India leads in the share of households that own a desktop computer/laptop, with 12.5% of households reporting ownership. Southern and North-Eastern regions follow at 10.7% and 9.3%, respectively. In contrast, Central and Eastern regions lag considerably, with only 4.7% and 5.2% of households respectively reporting that they own a desktop computer/laptop.

Access, therefore, is not binary but stratified, with the depth and quality of device ownership closely aligned with economic, social and regional hierarchies.

KEY INSIGHT. Mobile access is nearly universal, but there is unequal access to advanced devices.



own mobile devices, access to advanced devices like computers remains highly stratified by economic group, social group, and geography.

2.2. SECOND-ORDER ACCESS: WIDESPREAD MOBILE CONNECTIVITY, MANY HOUSEHOLDS STILL OFFLINE

2.2.1. The Mobile-Only Internet

India's internet ecosystem is overwhelmingly mobile-driven. **Around 71.4% of households access the internet through mobile devices, making them the primary – and often the only – gateway to digital connectivity.** In contrast, fixed connections that enable sustained, high-quality access remain limited.

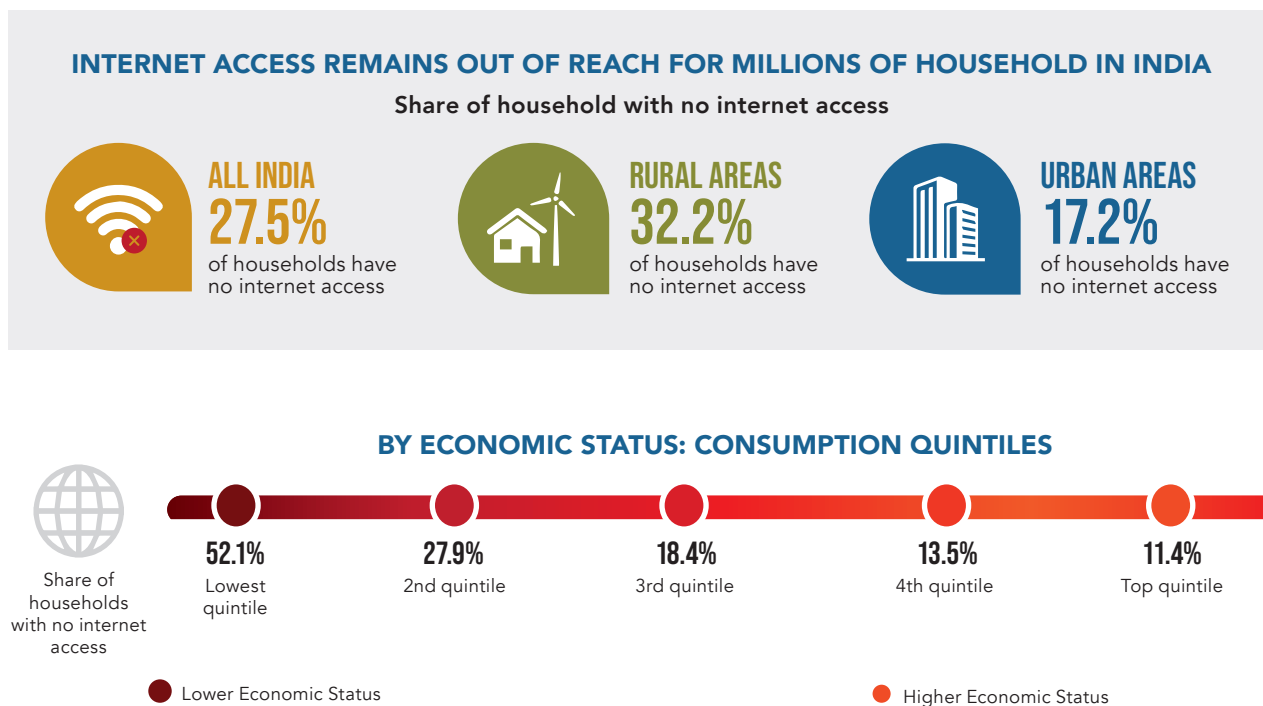
This mobile-first architecture has important implications for the quality and nature of digital engagement. Reliance on mobile-only access often translates to usage centering around phone-calls and entertainment¹², with limited use for productivity-enhancing activities such as extended learning or advanced financial transactions, as we will note in Section 2.3 below.

2.2.2. Gaps in Internet Connectivity

Despite the rapid spread of mobile internet, connectivity in India remains far from universal. **Nationally, 27.5% of households report having no internet access – whether through landline/broadband or cable, dongle/hotspot, or mobile devices.** This gap is significantly wider in rural areas, where 32.2% of households remain offline, compared to 17.2% in urban areas. The economic gradient is even more pronounced: nearly 52.1% of households in the lowest economic group lack internet access, compared to just 11.4% in the highest group – underscoring the concentration of connectivity among a relatively small, economically advantaged segment of the population (Fig. 3).

¹² Laskar, M. H. (2023). Examining the emergence of digital society and the digital divide in India: A comparative evaluation between urban and rural areas. *Journal of Social and Economic Development*, 25, 240–263. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10130454/>

Figure 3: Internet Access Across Rural and Urban India and Economic Classes (All India)



Regional disparities are smaller than urban-rural divides. Central India has the highest share of offline households (34.1%), followed by the South (31.1%) and East (30.3%). Even among connected households, access is overwhelmingly mobile-based – exceeding 80% in the North and Northeast, and remaining dominant across all regions.

KEY INSIGHT. India’s internet is mobile-first – but quality-constrained








Most households rely on mobile-only connectivity, with minimal access to broadband, limiting the depth and productivity of digital engagement. Further, **over one-quarter of households remain offline**, with exclusion concentrated among rural communities, economically marginalised groups, and certain regions.

2.3. THIRD-ORDER OUTCOMES: ENTERTAINMENT-LED USE, LIMITED GAINS IN EDUCATION AND GOVERNMENT SERVICES

2.3.1. Digital Use Skewed Toward Entertainment

Among connected households, 66% report using the internet to watch movies, television, or news content and 53.8% for social media (Fig. 4).

Figure 4: Internet Activities Reported by Households (All India)

	Internet Activities	Households Reporting Use
	To watch movies/serials/news in the past 12 months	66.0%
	Social media	53.8%
	To send/receive money in the past 12 months	40.8%
	To take online courses/educational classes in the past 12 months	16.1%
	To access govt services (Receipt of benefits, birth certificates, address change)	11.4%
	Paid for utilities via ewallet/paytm/Bhim in 12 months	11.7%
	Paid for utilities via internet banking in 12 months	4.4%

While internet access and smartphone ownership have become widespread – including in rural India, where 67% of households access the internet via mobile¹³ – entertainment has emerged as the most widely adopted form of digital engagement¹⁴. However, data also documents substantial reliance on online digital financial transactions, reflecting growth in digital payment systems.

2.3.2. Growing but Uneven Digital Finance Services

40.8% of households report using the internet to send or receive money, underscoring the growing adoption of digital financial services. However, adoption remains uneven: 56% of urban households use digital transfers compared to just 33.8% in rural areas. Despite this growth, cash continues to dominate everyday transactions. Nearly 90.5% of households continue to pay in cash – with little difference between rural and urban consumers. In comparison, digital wallets account for just 11.7% of payments, while internet banking contributes only 4.4%.

This coexistence of digital and cash systems suggests that connectivity alone is insufficient for digital financial inclusion. Sustained adoption will depend on building trust, improving digital literacy, and ensuring accessible and user-friendly platforms.

¹³ Ibid

¹⁴ The IAMAI and Kantar report also highlighted that short-video consumption is the primary engagement vector among internet users. Cited in: Internet and Mobile Association of India (IAMAI), & Kantar. (2026, January 29). Internet in India 2025: Press release. India Digital Summit. <https://www.indiadigitalsummit.in/wp-content/uploads/2026/01/Internet-in-India-2025-Press-Release-Final.pdf>

2.3.3. Gaps in Use of Internet for Education and Government Services

Online education has a potential to bridge the gap when schools are closed due to environmental conditions or epidemics, and for individuals located in far flung communities. **Among IHDS households, 16.1% report use of the internet for engagement in online courses or classes in the past year.** This varies sharply by economic groups: just 5.7% of households in the lowest quintile report such use, compared to 28.3% in the highest quintile. Regional disparities are also pronounced: 26.7% of households in the North and 23% in the West reported using the internet for education, compared with only 11%–14% across the Central, East, Northeast, and South regions (13.9%, 12.8%, 12.8%, and 11.5%, respectively).

Use of government services online is limited. **Only 11.4% of households report using the internet for services such as receiving benefits, requesting a birth certificate, or updating their address**¹⁵. Even among households where the highest level of education is a graduate degree, usage rises to just 18.9%. While uniformly high levels of internet use for accessing government services may not be expected, given the need-based nature of many such services, sensitivity to gaps in access and digital skills can support the design of platforms and services that are more accessible to diverse segments of the population.

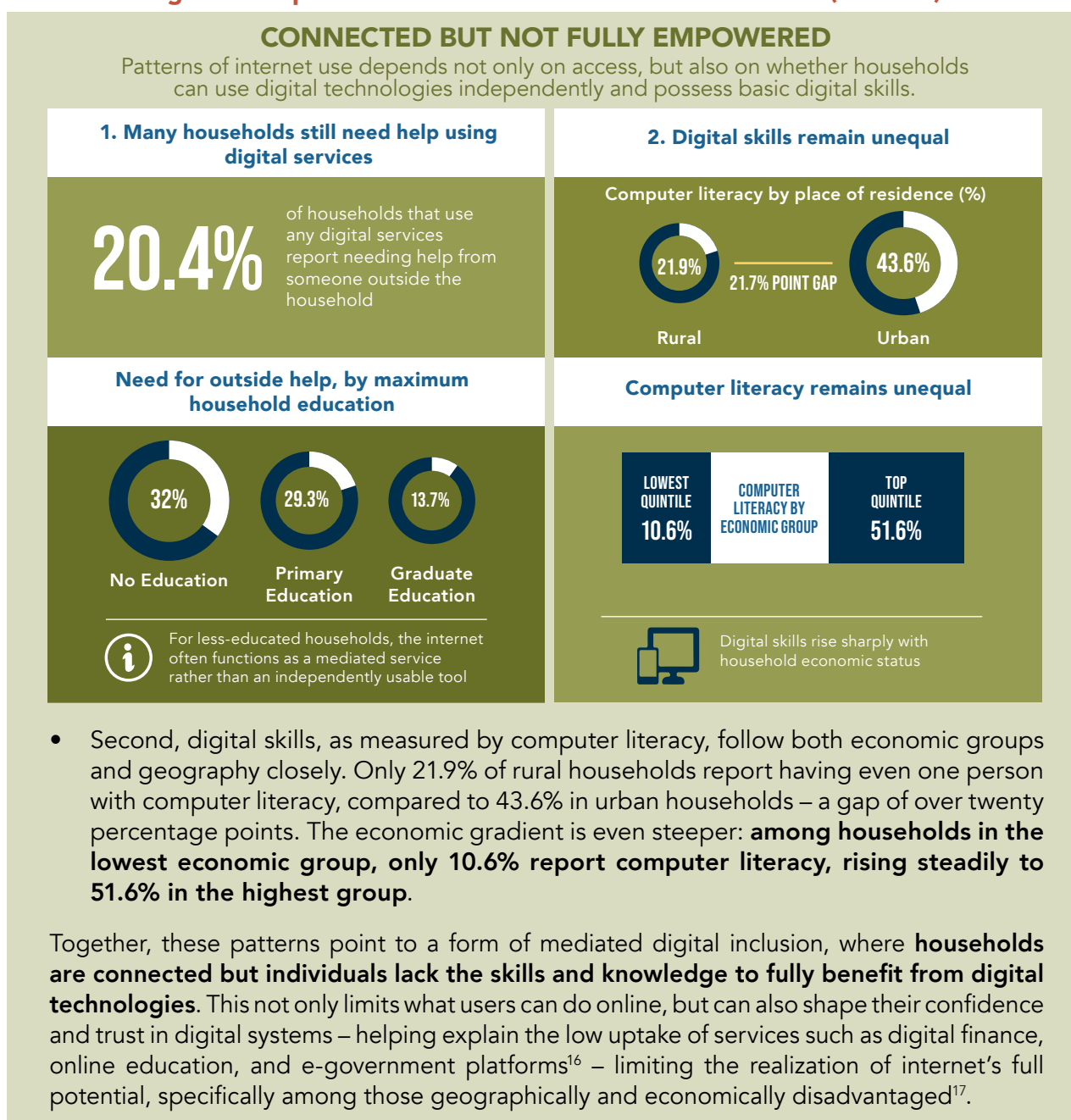
BOX 1. IN FOCUS: DIGITAL SKILLS AND KNOWLEDGE – THE HIDDEN DIVIDE

Patterns of internet use are shaped not just by access, but by digital skills and the ability to use technologies independently. Two findings highlight this aspect:

- First, among households that use any digital services, **one in five households (20.4%) report needing help from someone outside the household.** This dependence on external assistance is closely tied to education. Households with graduate-level education report the lowest need for intermediaries (13.7%), while those with no education or only primary education reported the highest dependence (32% and 29.3% respectively), as in Fig. 5. For less-educated households, the internet often functions as a mediated service rather than an independently usable tool.

¹⁵ Instances of such schemes include PM Kisan Samman Nidhi Yojana (Rs. 6000/year directly into farmers Aadhar-linked bank accounts) – linked with OTP verification; PM Ujjwala Yojana – LPG subsidy transferred directly to beneficiaries – where booking & subsidy are tracked directly via mobile app/SMS, eSanjeevani Telemedicine Service – Doctor consultations via internet video calls, with digital prescriptions.

Figure 5: Dependence on Intermediaries for Internet Use (All India)



KEY INSIGHT. Digital use is widespread but entertainment-driven.

Engagement in education, government services, and other productive activities remains limited. **A hidden divide in skills and knowledge shapes outcomes:** Many households lack the literacy skills or independence to fully utilize digital tools, leading to mediated access and constrained benefits.

¹⁶ Kumar, A. (2025, December). Challenges to digital governance in rural India: Technological, socio-economic, and administrative perspectives. Journal of Advance and Future Research, 3(12). <https://rjwave.org/jafr/papers/JAAFR2512198.pdf>

¹⁷ ICRIER-Prosus Centre for Internet and Digital Economy (IPCIDE). (2023). State of India’s Digital Economy Report 2023. Indian Council for Research on International Economic Relations (ICRIER). https://icrier.org/pdf/State_of_India_Digital_Economy_Report_2023.pdf

SECTION 03

INDIVIDUAL-LEVEL INEQUALITIES IN DIGITAL PARTICIPATION

While household-level data reveals broad patterns in access and connectivity, individual-level data provides a sharper lens on who actually participates in India's digital ecosystem. Although 70.9% of individuals (aged 15 years and above) have access to a mobile device, only 39.7% use the internet – highlighting a significant gap between access and actual online engagement. This disconnect is not uniform, and varies across age, education, and gender, as discussed below¹⁸

3.1. DIGITAL MARGINS OF THE ELDERLY AND CHILDREN

Internet use varies sharply by age. Among working-age individuals aged 15–59 years, 46.3% report using the internet, while among the elderly – those aged 60 and above – this figure drops dramatically to just 9.4%. This gap is not limited to internet use alone; it is reflected across all digital indicators, with older adults consistently reporting lower levels of computer use and mobile-based communication.

These patterns have implications that extend beyond individual participation. As government welfare programmes and social protection systems increasingly shift to digital modes of delivery, elderly populations who remain offline face a heightened and compounded risk of exclusion from services that are often critical to their well-being¹⁹.

BOX 2. IN FOCUS: CHILDREN IN THE DIGITAL WORLD – INTERGENERATIONAL TRANSMISSION OF DIGITAL INEQUALITY

The digital landscape for children aged 13–16 years provides another lens into how inequalities are reproduced across generations. **65.3% of children have access to a mobile device, and 37.8% actively use the internet.** Social media use stands at 21.3%. While these figures are lower than adult rates, they reflect a generation growing up with increasing – but still uneven – digital exposure. Crucially, disparities along gender, location, and parental education are evident, suggesting that without intervention, digital inequality is likely to be inherited.

¹⁸ Ibid

¹⁹ Examples of such schemes include UMANG (Unified Mobile Application for New-age Governance) – a platform that allows senior citizens to check their pension status and file grievances, Jeevan Pramaan – biometric-enabled digital life certificate service for elderly pensioners, or Ayushman Bharat Pradhan Mantri Jan Aarogya Yojana – free health coverage of ₹ 5 lakh per year to all senior citizens aged 70 and above

GENDER GAPS BEGIN EARLY

Gender disparities are visible even at an early stage. 68.7% of boys have access to mobile devices, compared with 61.7% of girls. Similarly, 41.9% of boys use the internet, compared with 33.6% of girls. Social media use reflects the same trend, with 26.4% of boys using these platforms versus 16% of girls. These differences are not merely a result of device allocation within households; they potentially reflect deeper social norms and concerns – such as perceived risks around girls’ online engagement – that shape and constrain digital access for girls²⁰.

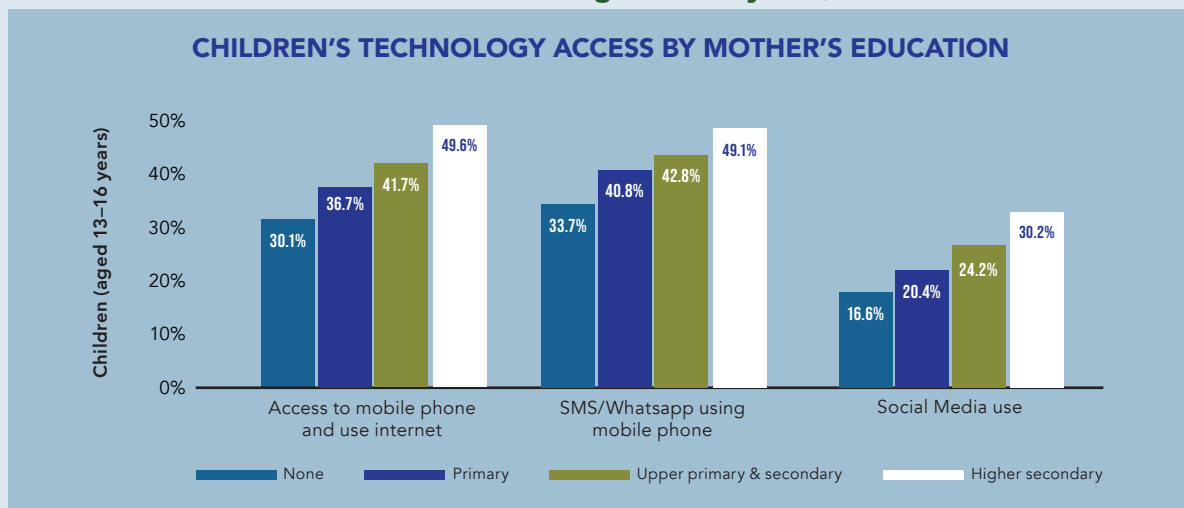
GEOGRAPHIC DISPARITIES IN CHILDREN’S DIGITAL ENGAGEMENT

Location-based disparities are equally pronounced. In metro urban areas, 73.1% of children have mobile access and 49.3% use the internet, compared to 64.2% and 33.3% respectively in less-developed villages. Social media use declines correspondingly from 30.7% in metro areas to 18.5% in rural settings.

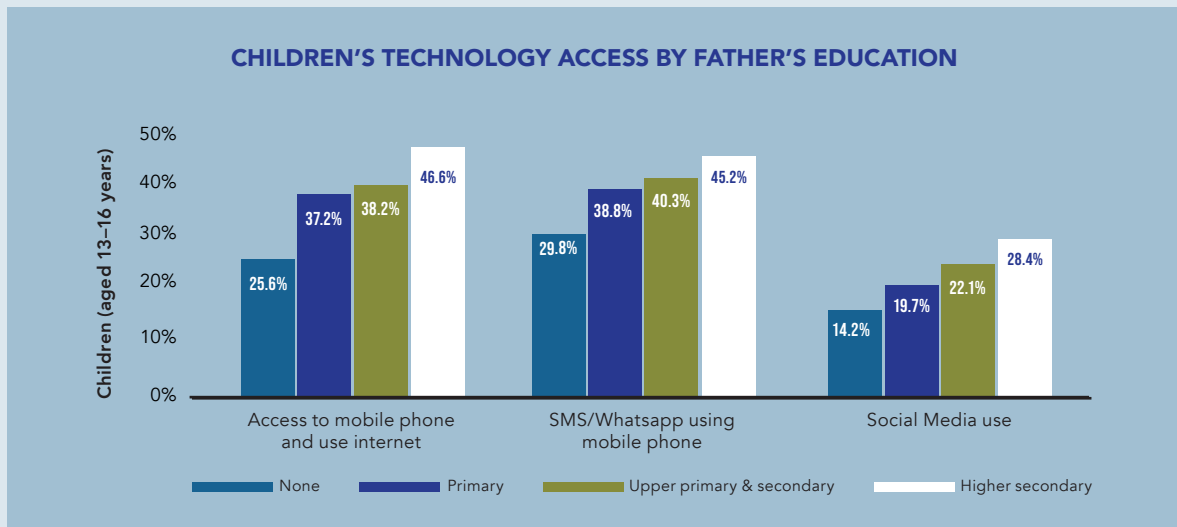
PARENTAL EDUCATION AS A DRIVER OF DIGITAL (IN)EQUALITY

Parental education emerges as a strong lever of children’s digital engagement. Among children whose mothers have no schooling, only 30.1% have access to a mobile phone and use the internet, while just 16.6% use social media. In contrast, among children whose mothers have completed higher secondary education or above, these proportions increase to 49.6% and 30.2%, respectively (Fig. 6).

Figure 6: Children’s Access to Technology by Parental Education Level (All India, children aged 13–16 years)



²⁰ Kumawat, S., & Garg, C. (2025). Mobile phones, mothers, and patriarchy: Understanding digital interactions of adolescent Indian rural girls under watchful eyes. *Media, Culture & Society*, 47(5). <https://doi.org/10.1177/01634437251320845>



A similar pattern is observed with fathers' education. Among children whose fathers have no schooling, only 25.6% have access to a mobile phone and use the internet, and 14.2% use social media. These figures rise substantially to 46.6% and 28.4%, respectively, among children whose fathers have attained higher secondary education or above.

This underscores how digital inequality is transmitted across generations, while also highlighting the potential multiplier effects of investing in parent's education and digital literacy.

Digital inequalities among children – across gender, location, and parental education – risk entrenching structural disadvantages across generations.

KEY INSIGHT. Age-based exclusion is stark

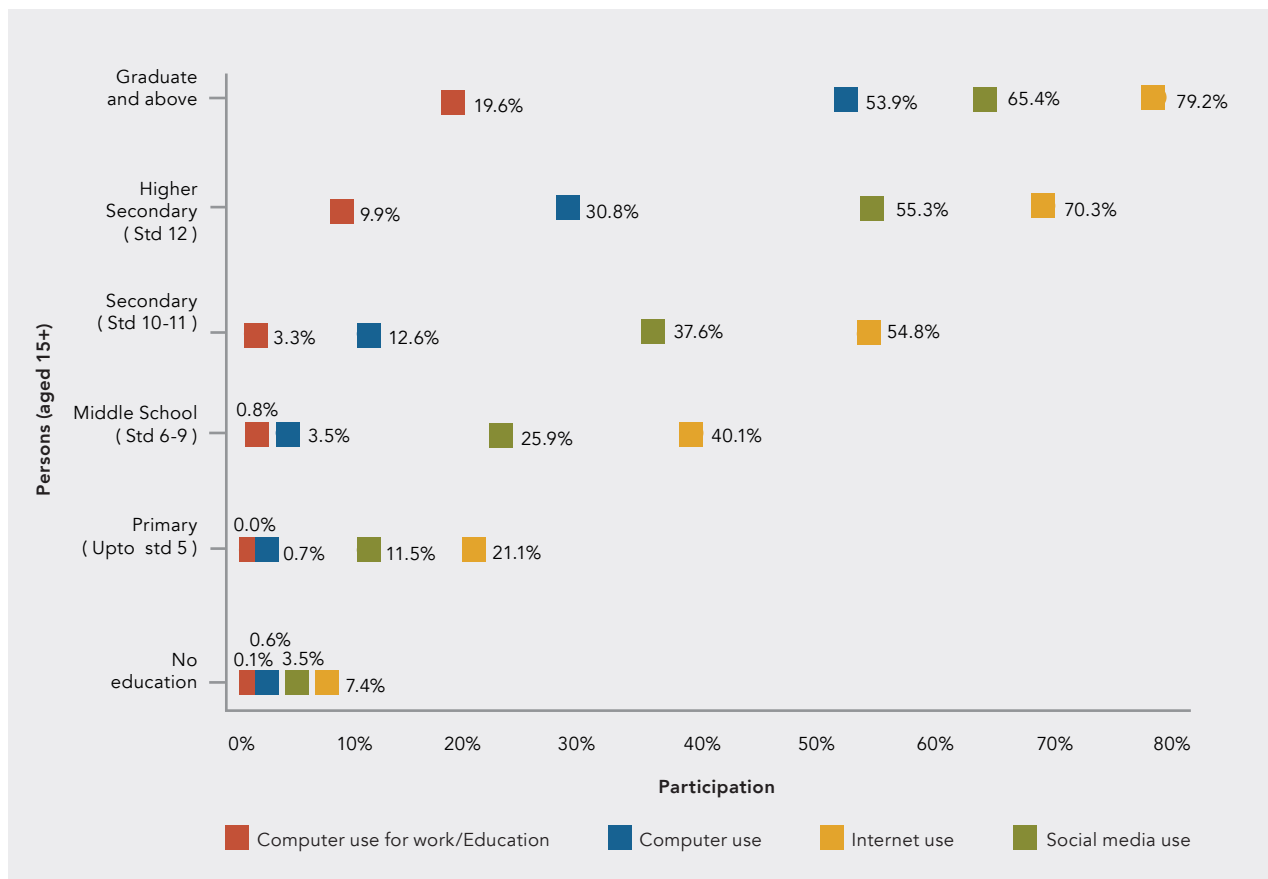
Elderly populations remain largely offline, with only 9.4% using the internet, placing them at risk of exclusion as essential services increasingly shift online. Among children, disparities by gender, location, and parental education mirror adult inequalities, suggesting that **digital disadvantage is being transmitted intergenerationally**, although each cohort is better connected than the preceding one.

3.2. EDUCATION AS AN ENABLER OF DEPTH OF DIGITAL ENGAGEMENT

Education also exhibits a strong and consistent relationship with digital engagement and patterns of use among adults. Among individuals with no formal education, computer use is negligible at 0.6%, internet use stands at just 7.4%, social media use at 3.5%, and computer use for work or education is nearly absent at 0.1% (Fig. 7).

These indicators rise steadily with each level of educational attainment. By secondary school (Standard 10–11), computer use reaches 12.6% and internet use climbs to 54.8%. Among graduates and above, engagement is significantly higher: 53.9% use computers, 79.2% use the internet, 65.4% use social media, and 19.6% use computer applications for work or education.

Figure 7: Digital Technology Use by Education Level (All India, persons aged 15+)



These gradients highlight that education is a key determinant not just of digital access, but of the depth, quality, and productivity of digital participation, shaping the extent to which individuals can translate connectivity into meaningful opportunities.

KEY INSIGHT. Education is a key determinant of depth of digital engagement

Higher educational attainment is strongly associated not just with access, but with more advanced and productive uses of digital technologies.

3.3. GENDER DIGITAL DIVIDE COMPOUNDED BY OTHER VULNERABILITIES

Gender remains a persistent and consequential axis of digital inequality in India²¹. Across device access, internet use, and digital engagement, women are consistently less likely than men to participate fully in the digital ecosystem, with gaps widening across social groups, economic groups, and geography.

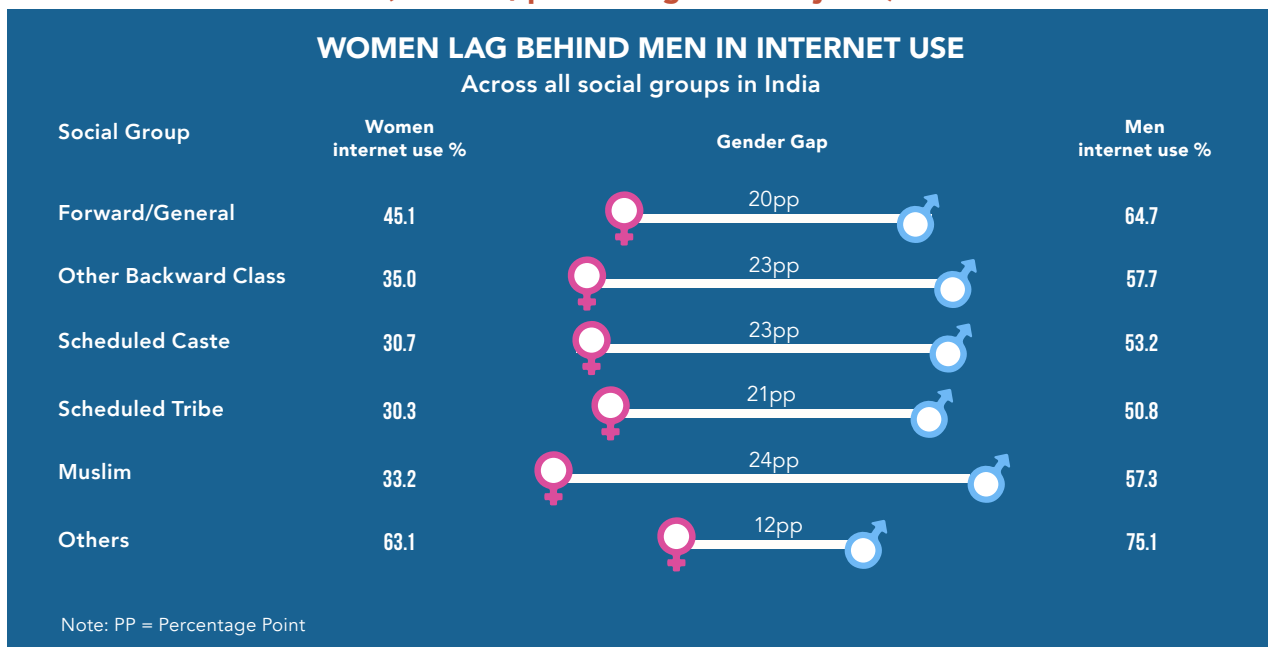
3.3.1. Rural vs Urban Gaps

Among working-age adults (15-59 years), men outpace women in both mobile device access and internet use (mobile: 86.7% vs 68.2%; internet: 57.6% vs 35.6%). These disparities widen across rural-urban lines. In urban areas, 89.8% of men have mobile access compared to 77% of women; in rural areas, the figures drop to 85.2% for men and 64.1% for women. A similar pattern holds for internet use: 53.3% of rural men use the internet, compared to just 30.1% of rural women. As a result, rural women fare worse – lagging behind both men in their own areas and women in urban areas.

3.3.2. Social Groups: Compounded Exclusion

Among the relatively more connected forward caste groups, women’s internet use (45.1%) trails men’s (64.7%) by nearly twenty percentage points. These gaps persist across all social groups. Among SCs, 30.7% of women use the internet compared to 53.2% of men (22pp gap), while among STs the figures are 30.3% versus 50.8% (21pp gap), and among Muslim women’s usage is 33.2% compared to 57.3% for men – a 24 percentage point gap (Fig. 8).

Figure 8. Gender Gap in Internet Use Across Social Groups (All India, persons aged 15-59 years)



Among working-age men, forward caste individuals lead in computer use at 28.1%, well ahead of SC men (16.5%), ST men (12.5%), and Muslim men (14.5%). Women reported lower computer use than men across all groups. At the same time, disparities exist among women themselves, with

²¹ Asrani, C. (2020, June). Bridging the digital divide in India: Barriers to adoption and usage. Indian Council for Research on International Economic Relations (ICRIER). https://icrier.org/pdf/Bridging_the_Digital_Divide_in_India.pdf

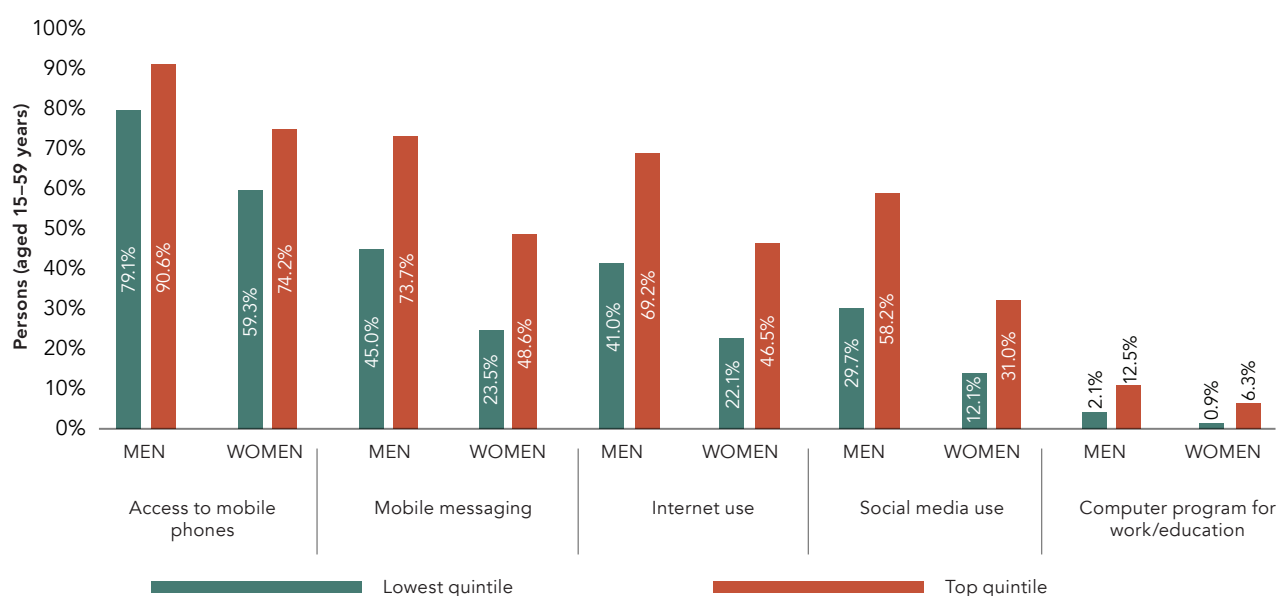
computer use declining from 15.3% among forward caste women to 9.1% among SC women, 7.7% among ST women, and 7.6% among Muslim women, highlighting a compounded disadvantage shaped by both gender and social group.

Hence, gender and social group combine to create a layered and consistent structure of exclusion²². As a result, individuals located at the intersection of multiple disadvantages are significantly less likely to be digitally included²³.

3.3.3. Economic Status: The Poorest Women Fall Furthest Behind

Among the highest economic group, the female-to-male ratio of mobile device access stands at 0.82, declining to 0.75 in the lowest economic group. These disparities are even more pronounced in **internet use, where the ratio falls from 0.67 in the highest to 0.54 in the lowest economic group (Fig. 9).**

Figure 9: Digital Technology Use by Gender: Lowest vs. Top Economic Groups (All India, persons aged 15–59 years)



A similar pattern is evident in mobile messaging. Only 23.5% of working-age women in the lowest economic group report using mobile messaging (SMS, WhatsApp), compared to 45% of men. In the higher economic group, usage rises to 48.6% for women and 73.7% for men. Here, the female-to-male ratio declines from 0.66 in the highest economic group to 0.52 in the lowest. This shows that while women are consistently disadvantaged – even in the richest economic group – the disadvantage is more pronounced among the poorest, indicating that **economic advancement reduces gender disparities but does not eliminate them.**

3.3.4. Regional Variation: Widest Gaps in Central and Eastern India

Gender gaps persist across all regions, but a broader view across internet use, social media, and productive computer use reveals important variations, as in Fig.10 below.

²² A Chaudhary, S. (2022, May 20). Exploring India’s digital divide. Observer Research Foundation. <https://www.orfonline.org/expert-speak/exploring-indias-digital-divide>

²³ Asrani, C. (2020, June). Bridging the digital divide in India: Barriers to adoption and usage. Indian Council for Research on International Economic Relations (ICRIER). https://icrier.org/pdf/Bridging_the_Digital_Divide_in_India.pdf

Figure 10: Gender Differences in Internet, Social Media, and Computer Use Across Regions (All India, persons aged 15–59 years)

	India	North	Central	East	Northeast	West	South
Internet Use - Male	57.6%	67.7%	49.7%	56.5%	58.1%	62.9%	56.0%
Internet Use - Female	35.6%	45.0%	28.1%	34.4%	40.5%	38.3%	36.1%
Internet Use - F:M	0.62	0.67	0.56	0.61	0.70	0.61	0.65
Social Media Use - Male	45.8%	55.6%	38.8%	45.4%	50.7%	50.3%	42.7%
Social Media Use - Female	21.7%	27.1%	14.9%	22.2%	34.6%	23.7%	21.4%
Social Media Use - F:M	0.49	0.49	0.38	0.49	0.68	0.47	0.50
Computer Use* - Male	6.9%	8.5%	4.6%	5.9%	7.4%	7.2%	8.8%
Computer Use* - Female	3.2%	4.2%	1.6%	1.7%	3.6%	3.6%	5.7%
Computer Use* - F:M	0.47	0.50	0.35	0.29	0.49	0.50	0.65

*Computer use for work/education

- The North records the highest internet use among men (67.7%), but women lag at 45.0% (F:M ratio is 0.67). Social media use shows a wider gap (55.6% vs 27.1%). Computer use for work and/or education remains low for both, though men (8.5%) still outpace women (4.2%).
- The Central region shows some of the lowest levels of digital engagement overall, with sharp gender gaps. Women’s internet use is just 28.1% compared to 49.7% for men (ratio: 0.56), while social media use drops to 14.9% for women versus 38.8% for men. Use of computer programs for work and/or education is negligible for women (1.6%), indicating deep exclusion from higher-value digital activities.
- In the East, 56.5% of men use the internet compared to 34.4% of women. Social media use (45.4% vs 22.2%) and use of computer programs for work and/or education (5.9% vs 1.7%) show similar disparities, indicating consistent gender gaps across all forms of engagement.
- The Northeast stands out for relatively higher female participation. Women’s internet use reaches 40.5% compared to 58.1% for men (ratio: 0.70), one of the narrower gaps. Notably, women’s social media use (34.6%) is the highest across regions and closer to men (50.7%), suggesting more inclusive digital social engagement.
- The West shows high levels of usage overall, with 62.9% of men and 38.3% of women using the internet (ratio: 0.61). Social media use remains uneven (50.3% vs 23.7%), and use of computer programs for work and/or education shows a gap (7.2% vs 3.6%), indicating that higher access does not eliminate gender disparities.
- The South presents a more balanced profile. While internet use gaps persist (ratio: 0.65), it stands out for the highest levels of computer use among women (5.7%), closer to men (8.8%). This suggests a relatively better translation of access into meaningful digital engagement for women.

Hence, while some regions (Northeast, South) show relatively narrower divides, others (Central, East) exhibit deep and persistent exclusion – highlighting that regional challenges in including women in the digital economy shapes not only access, but the depth and quality of women’s digital participation.

BOX 3. DIGITAL ACCESS AND SOCIAL AGENCY: SHIFTS IN INTIMATE AND SOCIAL PRACTICES

Beyond work-related and educational use, digital technologies are quietly reshaping social practices – including the deeply personal arena of marriage and partner communication. These changes are nascent and unevenly distributed, but they offer a lens through which to understand how digital inclusion – or its absence – shapes life choices and social agency.

Contact with life partner before marriage

Among women aged **25-34 YEARS** **44%** of women reported talking to their husband on the phone before marriage

This is a marked improvement from 2011-12, where the number stood at 19%, according to IHDS-II (2011–12). Currently, urban women (55.6%) are more likely to have done so than rural women (39.7%).

Use of email or internet chat before marriage is even more strongly shaped by education: among women with no formal education, 1.3% used digital communication before marriage. This rises to 2.5% among those with primary education, 6.1% with middle school, 12.5% with secondary schooling, 25.7% with some college, and 43% among graduates.

Regional differences further illustrate the uneven spread of digital communication practices. Women in the Western region report the highest levels of pre-marital digital communication through email/chat at 20.4%, with marginal differences among the Northeast (20%), the North (18.5%), and the South (17.5%). By contrast, substantially lower rates are observed in the Central and Eastern regions (10.4% and 8.7% respectively). These patterns mirror the broader regional digital divide observed in infrastructure and use as well as cultural norms shaping marriage patterns²⁴.

Uneven Exposure to Digital Matrimonial Platforms

Awareness of online matrimonial platforms also varies significantly across populations. 39.1% of women aged 25-34 years have heard of such websites, with awareness considerably higher in urban areas (51.2%) than in rural areas (34.6%).

Notably, awareness rises sharply with education: only 11.6% of women with no formal education report awareness, increasing steadily to 65.5% among graduates. These gradients highlight that factors such as location and education shape not just digital access, but exposure to specific use cases – such as platforms that can expand social choice and agency for women.

KEY INSIGHT. Gender is a persistent and compounding axis of exclusion

Women consistently lag behind men across all indicators. Women from SC, ST, and Muslim communities report significantly lower levels of internet use, reflecting layered and compounded exclusion. Economic progress reduces but does not eliminate gender inequality – whereby gender gaps narrow with rising class, but remain substantial even among higher economic groups. While some regions (Northeast, South) show relatively narrower gender gaps, others (Central, East) exhibit deep and persistent exclusion, particularly in higher-value digital activities.

²⁴ Desai, S., Dubey, A., Joshi, B. L., Sen, M., Shariff, A., & Vanneman, R. (2010). Human development in India: Challenges for a society in transition. Oxford University Press.

CONCLUSION

FROM ACCESS TO MEANINGFUL AND EQUITABLE PARTICIPATION

India's digital transformation is best understood not as a binary story of inclusion versus exclusion, but as a layered and evolving hierarchy of participation. While the divide in access to basic devices has largely narrowed – with 95.1% of households owning mobile devices – this headline progress masks deeper inequalities in the quality of access.

India's internet ecosystem is overwhelmingly mobile-first, with most households relying on mobile devices as their primary – and often only – gateway to the internet. At the same time, over one-quarter of households remain completely offline, with exclusion concentrated among rural and marginalised economic class households. Even among connected households, limited access to high-quality broadband constrains the depth and reliability of digital engagement.

Furthermore, internet use remains predominantly entertainment-oriented. Other uses – such as education, government services, and digital financial inclusion – are limited and unevenly distributed – pointing to gaps in digital readiness that extend beyond connectivity. A critical dimension underlying these outcomes is the divide in digital skills and autonomy. A significant share of households depend on intermediaries to access digital services, and digital capabilities – such as computer literacy – remain sharply stratified by economic class and geography. This results in a form of mediated digital inclusion, where individuals are connected but lack the capacity to independently use digital technologies, limiting both their confidence in and ability to benefit from digital systems.

At the individual level, a clear gap exists between access and use, with many individuals having access to devices but not actively participating in the digital ecosystem. This gap is shaped by age, education, and gender. Elderly populations remain largely excluded, raising concerns as essential services increasingly move online. Among children, early patterns of access and use already reflect inequalities by gender, location, and parental education, indicating that digital disadvantage is being reproduced across generations.

Education emerges as a key determinant of meaningful digital engagement, shaping not only access but the depth and productivity of digital use. At the same time, gender remains the most persistent and cross-cutting axis of digital inequality. Women consistently lag behind men across all indicators, with disparities widening at the intersections of socio-economic group and geography. Notably, economic advancement narrows these gaps, but does not eliminate them.

Taken together, four imperatives emerge from this analysis:

Imperative	Key Survey Evidence	Emerging Policy Focus
<p>Imperative 1: Improving connectivity quality to bring the offline online and enable meaningful engagement</p>	<ul style="list-style-type: none"> • 27.5% households offline; 52.1% in lowest quintile • 71.4% households rely on mobile internet; fixed connections remain limited • 66% households use internet for entertainment vs 16.1% for education and 11.4% for government services • 20.4% households depend on intermediaries (29.3% among low-education households) • Household computer literacy is 10.6% in the lowest quintile vs 51.6% in the highest one 	<p>Expand access:</p> <ul style="list-style-type: none"> • Expand affordable broadband and public Wi-Fi infrastructure • Improve network reliability in underserved regions • Encourage development of low-bandwidth, high-functionality services • Increase access to digital devices beyond mobile devices for enabling higher order use cases <p>Enable meaningful use:</p> <ul style="list-style-type: none"> • Scale digital literacy programmes focused on functional use (payments, services, learning) • Design simplified, vernacular, mobile-friendly platforms • Utilise reliance on intermediaries as assistance to acquire digital skills in the short-term, focusing on independent use in the long term
<p>Imperative 2: Investing in the next generation to reduce intergenerational digital gaps and enable future participation</p>	<ul style="list-style-type: none"> • Only 37.8% of children use the internet • Strong gender and rural gaps noted • Internet use rises from 30.2% among children whose mothers have no schooling to 52.7% among those whose mothers have higher secondary education or above. Similar pattern is noted for fathers 	<ul style="list-style-type: none"> • Integrate digital literacy into school curricula • Promote access for girls and rural students • Invest in maternal and paternal education and household-level digital awareness – powerful levers shaping children’s digital use

Imperative	Key Survey Evidence	Emerging Policy Focus
Imperative 3: Providing digital assistance to older adults to enable access to government and welfare benefits	<ul style="list-style-type: none"> • Among individuals aged 60+, only 42.5% have access to a mobile phone • Only 9.4% of older adults use the internet 	Strengthen assisted access to digital public services: <ul style="list-style-type: none"> • Expand assisted digital service centres and community-based facilitation for older adults • Provide doorstep or local support for Aadhaar-linked authentication, online verification, and digital applications • Design simplified, vernacular, and age-friendly digital interfaces for welfare access
Imperative 4: Closing the gender gap at every level – access, use, and outcomes	<ul style="list-style-type: none"> • Women lag across all indicators (20–24 pp gaps in internet use) • F:M internet use: Ratio falls from 0.67 in the highest quintile to 0.54 in the lowest. • Lower internet use for messaging, social media, and productive activities among women compared to men 	<ul style="list-style-type: none"> • Collect evidence beyond access to study intra-household access to the internet to understand women’s digital participation deeply and to address social norms around it



APPENDIX

ABOUT THE INDIA HUMAN DEVELOPMENT SURVEY

The India Human Development Survey (IHDS) is a nationally representative, multi-topic longitudinal survey jointly undertaken by the NCAER and the University of Maryland. Conducted in three waves – IHDS-I (2004–05), IHDS-II (2011–12), and IHDS-III (2022–24) – the survey was designed to examine changes in livelihoods, social conditions, and human development outcomes during a period of rapid economic and social transformation in India.

Building on this broader focus on social and developmental change, the IHDS-III uniquely captures multiple dimensions of digital engagement, including device ownership, internet connectivity, digital skills, and online participation at both the household and individual levels, allowing analysis of how socioeconomic and demographic factors shape meaningful digital use.

The IHDS-III covers 47,473 households and 212,607 individuals across all states and union territories of India, except Andaman and Nicobar Islands, Lakshadweep, and Ladakh. Data collection was conducted using Computer-Assisted Personal Interviewing (CAPI), thereby improving data collection consistency and quality. The survey follows a longitudinal sample design initiated in 2004–05. The panel design remains a major strength of the IHDS, enabling the study of long-term social and economic transitions within the same households over nearly two decades.

ATTRITION

In common with other longitudinal panel surveys, the IHDS is subject to sample attrition across survey waves. IHDS-III (2022–24) successfully reinterviewed 78% of the original 41,554 households surveyed in IHDS-I (2004–05). To maintain cross-sectional representativeness, fresh 7,320 households were added in IHDS-III, including two new households in each rural PSU and five in each urban PSU. All estimates presented in this report are weighted using cross-sectional survey weights.

Appendix Table 1: Characteristics of IHDS-III sample at the household and individual levels (aged 15+)

Key Characteristics	Household level distribution		Individual level distribution	
	Unweighted	Weighted	Unweighted	Weighted
Age				
15-59 years			82.2	82.0
60+			17.8	18.0
Gender				
Men			48.9	48.5
Women			51.1	51.5
Education level				
None			25.0	25.6
1-5 std			13.0	13.1
6-9 std			23.3	23.1
10-11 std			14.1	13.7
12 & some college			13.6	13.4
Graduate+			11.1	11.1
Place of residence				
Rural	67.3	68.4	66.7	67.7
Urban	32.7	31.6	33.3	32.3
Consumption quintiles				
Lowest	25.6	27.1	18.8	20.1
2nd quintile	20.3	20.7	19.0	19.6
Middle	18.9	18.7	19.8	19.8
4th quintile	18.2	17.5	20.8	20.0
Top	17.0	16.1	21.7	20.4
Maximum Household Education				
None	11.7	12.7	8.4	9.0
1-5 std	10.0	10.6	8.4	8.8
6-9 std	21.6	21.3	20.2	20.1
10-11 std	13.9	13.5	13.9	13.5
12 & some college	18.8	18.1	20.7	20.0
Graduate+	24.0	23.9	28.5	28.6

Key Characteristics	Household level distribution		Individual level distribution	
	Unweighted	Weighted	Unweighted	Weighted
Social groups				
Forward/General	20.0	18.9	19.8	18.8
Other Backward Class	32.7	35.2	32.9	35.3
Scheduled Caste	22.1	22.9	21.8	22.4
Scheduled Tribe	9.8	9.3	9.5	9.1
Muslim	12.8	11.6	13.4	12.3
Others	2.7	2.2	2.6	2.2
Region				
North	23.2	14.0	24.9	15.2
Central	21.0	21.7	21.7	22.9
East	17.7	21.9	16.9	21.4
Northeast	5.6	3.9	5.1	3.7
West	11.9	14.2	12.3	14.8
South	20.6	24.2	19.1	22.0
No. of observations	47,473		163,936	

