

ICT FOR EMPOWERING ACCESSIBILITY/INCLUSION:

THE IMPACT OF DIGITAL
INTEGRATION ON THE LIVES OF
PERSONS WITH DISABILITIES
(PWDS)

A STUDY OF DIGITAL
ENABLEMENT OF 300+ PWD
CHANGEMAKERS



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A Study of Digital Enablement of 300+ PwD Changemakers

This comprehensive report presents an impact study aimed at assessing and evaluating the role of ICTs in the socioeconomic empowerment of Persons with Disabilities (PwDs)



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EXECUTIVE SUMMARY

In India, while there are ongoing multistakeholder and collaborative advocacy efforts aimed at enabling and protecting the dignity and rights of Persons with Disabilities (PwDs), a range of challenges continue to shape their lives, including social stigma, institutional apathy, lack of sensitisation, policy gaps and systemic exclusion. One among many social and institutional barriers indicates towards the exclusivity of digital design, which reflects in the relative lack of infrastructural support, including access to the needed ICTs, assistive technologies, and accessibility features. In this context, this study, conducted in two phases with a total of 300+ PwDs becomes instrumental in assessing and evaluating if and how the current digital ecosystem, especially with the use of ICTs, impacts the lives of PwDs in terms of their personal wellbeing, as well as social and economic standing in society.

In the first phase, the study focuses on evaluating the socioeconomic impact of digital integration by surveying 243 PwDs across 17 states. In the second phase, 112 PwDs across 7 states are surveyed to examine the role of the localised digital service providers in steering the socioeconomic inclusion through capacity-building efforts, including facilitating access to infrastructure and information.

The findings indicate the crucial need for the latest Census data to account for the current demography, diverse range of disabilities and the socioeconomic status of PwDs. The Census data would enable the policymakers to build tailored digital

solutions, infrastructure, and intervention strategies to cater to the specific needs of persons with diverse disabilities.

To address this data gap, the Government created a National Database of PwDs with the aim to streamline the delivery of citizen entitlements. It, however, further deepened the crisis of inaccessibility by heavily relying on tedious documentation and lack of access to adequate digital infrastructure owing to no Census data thus failing to identify the requirements of persons with diverse disabilities. A comprehensive disability census is, therefore, required besides collaborating with existing databases. Moreover, the processes should be simplified and streamlined to make them more accessible and user-friendly.

Here, the use of non-consensual data collection processes is another systematic barrier that hinders their agency and autonomy. Departing from the Rights of Persons with Disabilities Act, 2016, which introduced provisions to ensure that adequate support is facilitated to secure informed consent from PwDs, the latest Digital Personal Data Protection Act (DPDP Act), 2023 has introduced a provision Section 9(1), which accords right to a 'legal guardian' to make decisions on the behalf of PwD in relation to one's personal data. Such a provision should be amended as it denies their autonomy and personhood, and raises serious concerns about compromised consent and privacy. To address the same, the DPDP Act, 2023 may refer to the Accessibility Standards notified under *IS 17802* that ensures accessibility to

privacy notices, consent forms and dispute resolution mechanisms.

Additionally, the question of access is central to achieving the participation of PwDs as citizens in society. Besides the persisting challenge of digital divide that requires enhanced access to ICTs, there is a lack of tailored assistive technologies and accessibility features to meet the specific needs of persons with diverse disabilities. Accessibility Standards, for instance, can be enforced to make websites and applications user-friendly for diverse disabilities, including adherence to *IS 17802* and Global Accessibility Guidelines. There is further a need to undertake a multistakeholder and multisectoral approach to building a national inventory of subsidised assistive technologies to ensure affordable access to digital infrastructure.

Another crucial intervention required is for the local digital ecosystem, comprising physical Digital Service Centres set up by the Central and State Government, to become remotely enabled for PwDs to access ICTs and avail the Government-to-Citizen (G2C) e-services. For them to be equipped with adequate digital infrastructure, there is a need for in-depth localised surveys examining the status and identifying the specific needs and gaps in digital design to deploy the necessary assistive technologies and accessibility features. In this regard, Accessibility Standards notified under *IS 17802* can be implemented among public and private service providers. Additionally, mechanisms to measure and monitor the impact of such interventions along with an inclusive feedback and grievance redressal mechanism must be developed to ensure accountability and implementation in the last mile. Most importantly, the learnings and insights from the grassroots and community engagement should inform

policymaking, with a bottom-up approach that treats PwDs as key stakeholders in the process of consultation.

In collaboration with the Government, civil society and the private sector, the digital design for PwDs should be strengthened by introducing low-cost digital solutions and subsidised financial assistance programs that can offset the costs of assistive technologies. Besides, the collaborative efforts should be directed towards developing tailored digital literacy curriculum, vocational and skill development training programmes to facilitate inclusive education, skill training, and employment generation. The literacy programmes and sensitisation efforts should be extended to the local communities for enhanced awareness and understanding of the lives and needs of PwDs. Additionally, the educational institutions should be equipped with necessary accommodations to enable an inclusive and integrated learning environment.

Overall, the comprehensive analysis of the study indicates that while we are witnessing the progress of digitalisation efforts in many noticeable ways, a careful and thorough scrutiny is required to identify and address the gaps, challenges, and shortcomings in building a disabled-inclusive digital design. The two-phased study has unequivocally demonstrated the need for furthering access to ICT tools, assistive technologies, accessibility features, curating and developing functional digital literacy curriculum and training programs that particularly cater to the PwDs, broadening efforts of outreach and networking, ensuring a continual feedback, mechanism for scope of improvement, and incorporating these learnings in building policies and practices that cater to the diverse needs of disabled populations in India.

INTRODUCTION

DISABILITY AND INCLUSION

Departing from earlier medicalised views of disability as an inherent human condition affecting physicality, the UN Convention on the Rights of Persons with Disabilities (CRPD) defines it as an evolving concept (Division for Inclusive Social Development, n.d.), whereby Persons with Disabilities (PwDs) may “have long-term physical, mental, intellectual or sensory impairments which, in interaction with various barriers, may hinder their full and effective participation in society on an equal basis with others.” According to the projection by WHO in 2023, an estimate of 1.3 billion people, constituting 16 per cent of the global population, live with significant disabilities². There is a huge data gap in today’s India owing to the delayed census. The last Census³ exercise pursued in 2011 accounts for 2.68 Cr persons with disabilities, constituting 2.21% of the total population⁴.

The disabled populations are diverse,

with experiences shaped by different disabilities, social, economic, and regional factors, including age, caste, class, gender identity, sexuality, religion, race, ethnicity, nationalities, and region. These factors heavily influence their social, economic, and political life, and pose numerous challenges, with the question of access being the core concern. While there has been a rapid rise of digital technologies and the influence of the internet in our daily personal and professional lives, the inequalities have further deepened owing to unequal access to internet connectivity, ICT tools, and the digital public infrastructure, thus, severely impacting the marginalised and underserved communities.

In a world largely built on ableism among other dominant social systems, there are different kinds of systemic barriers that continue to persist, leading to adverse socioeconomic outcomes and severe forms of social exclusion of PwDs. We see it in the form of various disparities, including accessing fundamental entitlements such as education, healthcare, housing, employment, infrastructure, information, etc. Their lived experiences in today’s digital world underscore the pressing need for inclusive policies and support systems to address the deep-rooted inequalities

1 <https://social.desa.un.org/issues/disability/crpd/article-1-purpose>

2 <https://www.who.int/news-room/fact-sheets/detail/disability-and-health>

3 <https://www.thequint.com/news/india/census-2021-delay-population-policy#read-more>

4 <http://www.ccdisabilities.nic.in/resources/disability-india>

and enhance their overall socioeconomic well-being, including their engagement at community and society level.

Olkin's (2002) classification of models – moral, medical, and social – provide three different conceptual frameworks of how the society treats 'impairments'. These models help understand how, and in what ways PwDs are perceived and treated in an ableist society. While stigma and prejudices are socio-culturally attached to disability in the moral model thus portraying it as an aberration and 'a mark of wrongdoing', the medical model treats disability as a pathological question, requiring clinical solutions to achieve as close to 'normalcy'. The determining factor for the medical model of disability is limited to one's physical or health condition. Treating disability as a 'personal' and an 'individual' medical problem, medical interventions and rehabilitative measures are suggested as solutions. The disability rights movement across the globe have rejected these models, and instead are advocating for a social model that operates on the premise that disability is one of several aspects of a person's identity, and the way to address disability is to make the environment and society inclusive. In the social model, the focus of intervention is to empower PwDs by facilitating, enabling, and enhancing their access to basic citizen entitlements and guarantees provided in legislations and policies. This conceptual framework emphasises that the social environment's lack of accessibility and inclusion influences the experiences of disability, which is otherwise is seen as an 'inherent' characteristic of a person. Moving away from medicalised solutions and interventions, the focus is on the social – that accommodates the diverse

needs of PwDs with different disabilities, positioned differently in the ladder of social hierarchies. It necessitates removing barriers, changing attitude, tailored policies and programs, and disabled-friendly physical environments to enable them to fully participate in all aspects of life.

The academic field of Disability Studies as well as policymaking across the globe have been heavily influenced by the medical and social models, with the social model being instrumental in holding institutions and society accountable, and promoting disability rights for meaningful

To examine the factors influencing our understanding about disability, the moral, medical and social models provide three different conceptions of how the society considers impairments.

integration and accessibility. It is in this context that this impact study situated in India wants to examine if and how the use of ICT tools and the ongoing global project of digitalisation can break down these systemic barriers by providing digital access, digital tools, digital literacy, and necessary infrastructure to empower PwDs to not just avail digital services as well as to use digital technologies to leverage their equal and meaningful participation in social, economic, political, and cultural aspects of life. With increased digitalisation of the welfare state, it is imperative to ensure the digital integration of Persons with Disabilities (PwDs), which in turn will enable their socioeconomic integration thus contributing to a robust digital economy.

ROLE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

ICTs hold immense potential in advancing the socioeconomic inclusion and empowerment of PwDs (Technology and Disability: Trends and Opportunities in the Digital Economy in ASEAN, n.d.). The proliferation of digital platforms and the emergence of tech-driven sectors, including the IT sector, edtech, healthtech, etc., transcends the limitations of physical and manual settings thus digitally enabling them to access the same from any location with internet connectivity and necessary accessibility features. This flexibility represents a significant step in breaking down a few barriers that hinder their physical participation in the workforce. The significant impact of ICTs is in generating employment and entrepreneurship opportunities through digital platforms. Using Artificial Intelligence (AI)-driven tools can help mitigate biases in the hiring process, improving the opportunities for PwDs. To ensure equitable access to the ICTs, it is imperative to design scalable policies and build commensurate infrastructure that cater to the specific needs of disabled populations.

One of the most effective ways to ensure inclusion is by creating tech-enabled working environments. These settings provide assistive technologies and tools, which help in equalising the opportunities and providing necessary virtual and

adaptable work arrangements for them to participate in the workforce effectively. A case in point is the collaboration between a social enterprise named Steps and IKEA in Thailand, which illustrates how inclusive offices can be designed using IKEA products, debunking the misconception that accommodations for PwDs are inherently complicated and expensive. Moreover, ICTs facilitate the establishment of flexible working arrangements, enabling PwDs to work remotely or from accessible locations.

Although ICTs have been lauded for its potential to foster social and economic inclusion by enabling real-time services that facilitate learning, work, entrepreneurship, travel, social interaction, shopping, and community engagement, the full integration of Information Technology (IT) in promoting socioeconomic integration of PwDs has yet to be fully achieved owing to the rapidly growing and deepening digital divide. As a result, technology-based applications and initiatives have not been widely utilised as universal tools to facilitate social and economic inclusion among this demographic. At the core of all these initiatives lies the crucial question of access and the urgent need for an inclusive digital design that enables them to avail the opportunities created by the ICTs.

WHY THIS STUDY?

The context of this study, India, among middle- and low-income economies, has been in the midst of a digital transformation, and claims to have made remarkable progress in the last decade in terms of building digital public infrastructure and its adaptability among citizens. In 2015, the Ministry of Electronics and Information Technology (MeitY) launched the Digital India flagship programme, which made technology central to enabling change, with the aim to create diverse avenues for socioeconomic empowerment of its citizens through the use of the Internet, ICT tools, digital platforms and digital financial services. While this initiative has been a crucial step towards facilitating seamless integration across ministries, departments and jurisdictions to transform India into a digitally empowered society and knowledge economy, the replication of offline manual systems by digital systems have created barriers to accessing public and private services, especially for the marginalised and underserved sections of the society. While India tops among the G20 countries in having the largest number of users, cheapest smartphones and data plans, and being the highest exporter of IT services, the country also has the largest number of unconnected

people and communities.¹

The persisting digital divide is a reflection of the existing socioeconomic inequalities based on gender, caste and class hierarchies, rural-urban divide, religion-based exclusions, regional hierarchies, etc., all of which continue to determine one's standing vis-a-vis the rapidly shifting and growing digital ecosystem. The Digital India programme is deploying emerging technologies to enhance the delivery of digital services to the citizens, it is failing relatively in ensuring the needed infrastructural development, especially among unconnected and underserved communities thus benefiting the privileged, who already own ICTs and have the knowledge to navigate the complexities in the ever-evolving digital landscape of India². One such community that continues to be subjected to digital exclusion among other forms of systemic social and bureaucratic exclusion is the Persons with Disabilities in India.

¹ State of India's Digital Economy (SIDE) Report, 2024, Indian Council for Research on International Economic Relations (ICRIER), Retrieved from:

² India Inequality Report 2022: Digital Divide, OXFAM India, Retrieved from: <https://www.oxfamindia.org/knowledgehub/workingpaper/india-inequality-report-2022-digital-divide>

INTERVENTION DESCRIPTION

Persons with Disabilities (PwDs) in India face substantial marginalisation owing to the apathy of society and the state, which is exacerbated by factors such as low literacy levels, stigma, indifference towards them, and lack of access to public infrastructure and assistive technologies. Although efforts have been underway to build a disabled-friendly and inclusive society, the digital divide has deepened the inequalities, especially among citizens in semi-urban and rural India. The lack of access to internet connectivity and ICTs, as well as the lack of affordability, has created barriers that further marginalisation, making it difficult for them to participate in the digital landscape of India (Chase India et al., 2023). To tackle the same, ICTs have the potential for transformative change through meaningful connectivity (Alliance for Affordable Internet, 2022). It can act as a bridge to bring transition from being seen as dependent beneficiaries to independent citizens, some of them transforming to become providers of digital solutions themselves, addressing both personal and community needs. In this context, this report conducts an impact study to explore if and how digital integration has had implications on the socioeconomic empowerment of PwDs,

and address broader societal challenges, positioning them as solution providers rather than solution seekers.

The study aims to evaluate the impact of digital integration in the lives of PwDs in India. The evaluation of digital enablement is grounded in several overarching principles aimed at comprehensively assessing their effectiveness and impact. Firstly, the study seeks to evaluate if and how ICT tools can play the role of an enabler and empower them to navigate the digital world independently. Secondly, it focuses on how the journey of digital empowerment brought socioeconomic changes in their lives, including improvements in employment status, income levels, and access to entrepreneurial opportunities. The study further examines how the social standing and community involvement of PwDs, including their interactions with family members and local communities,

ICT tools can play the role of an enabler and empower PwDs to navigate the digital world independently

are enhanced by digital integration. Through field-based assessments, this study further examines the role played by localised digital service providers in digitally empowering them with ICT tools, digital infrastructure, digital literacy, and other capacity-building efforts to use the internet meaningfully and avail employment and entrepreneurial opportunities, thereby enhancing their own autonomy and societal standing. Moreover, the ripple effects of digital enablement extend beyond individual PwDs, inspiring peers in the community to embark on this journey, influencing how the state, family, social networks, and communities start to perceive them, ultimately furthering a model of inclusivity for PwDs in Indian society. By considering both immediate outcomes and long-term implications, the study aims to provide a holistic assessment of the overall impact of digital integration on the well-being, autonomy, and quality of life.

Overall, the study attempts to explore the following questions to shed light on the impact and effects of integrating PwDs into the digital ecosystem, as well as effectiveness and implications on their socioeconomic development and community engagement:

1. What is the impact of ICTs on the lives of PwDs in India? Does digital enablement have implications on their personal and socioeconomic growth?
2. What are the socioeconomic changes experienced by PwDs after navigating the digital landscape? Has digital integration contributed to their social integration, including their interactions with family members, local stakeholders, and communities?
3. What has been the role of digital service providers in facilitating the journey of digital empowerment of PwDs? What are the gaps and challenges that need to be addressed to build scalable inclusive policies that enable them in India to access ICTs and meaningful connectivity?
 - ICT tools can play the role of an enabler and empower PwDs to navigate the digital world independently.
 - The study further examines the role played by localised digital service providers in digitally empowering PwDs with ICT tools, digital infrastructure, digital literacy, and other capacity-building efforts to use the internet meaningfully.
 - Considering both immediate outcomes and long-term implications, the study aims to provide a holistic assessment of the overall impact of digital integration on the well-being, autonomy, and quality of life of PwDs.

RESEARCH DESIGN

The first part of the two-phased study evaluates the impact and outcomes of digital integration using ICTs across 17 states in India, encompassing 243 PwDs. The second part of the study delves into the journeys of PwDs who avail digital services in a sustained manner, involving 112 PwDs in total. The study employs a comprehensive research approach, integrating quantitative and qualitative data collection methods. Bilingual questionnaires, available in both English and Hindi, were crafted to enable a thorough examination of participants' experiences. These questionnaires incorporated a mix of closed-ended and semi-open-ended questions, facilitating a nuanced analysis through a mixed-methods approach. Additionally, the research utilised structured interviews, the Rapid Impact Assessment Matrix (RIAM) tool, which is a systemic approach using qualitative data that can be expressed in a semi-quantitative way, and Focus Group Discussions (FGDs) to capture diverse perspectives and interactions, ensuring a holistic understanding of the research subject.

Data collection for the study was facilitated by integration of the questionnaires into the Digital Empowerment Foundation's KoBo Collect Survey App, ensuring efficient data collection. The research team, comprising District Coordinators (DCs) who run DEF's Communication Information Resource Centres (CIRCs), underwent thorough training to execute the study effectively. Accessibility measures were implemented for participants with physical disabilities, including alternative interview

formats and assistance for those with mobility challenges. Additionally, informed consent was obtained from all participants, and surveyors received specialised training on disability sensitivity, ensuring ethical conduct throughout the data collection process.

Pilot surveys were conducted to evaluate the questionnaires' relevance and quality, addressing any identified issues. Feedback from the pilot surveys was utilised to revise the questionnaires and enhance technical aspects of the data collection app, aiming to improve its reliability and efficiency. These revisions ensured the survey instrument's effectiveness in gathering accurate and valuable data.

Throughout the study's implementation, a dedicated research team closely monitored the process of data collection to address challenges and uphold data quality and accuracy. Feedback mechanisms were established to facilitate communication between the research and field teams, enabling prompt resolution of any issues that arose during the survey process. Additionally, data in the KoBo Collect App underwent rigorous backchecks to verify accuracy, ensuring the maintenance of high-quality data throughout the study.

- Evaluates the impact and outcomes of digital integration using ICTs across 17 states in India, encompassing 243 PwDs. The second part of the study delves into the journeys of PwDs who avail digital services in a sustained manner, involving 112 PwDs in total.




LITERATURE REVIEW

GLOBAL EFFORTS

WORLD HEALTH ORGANISATION

The **World Health Organisation (WHO)** has been actively involved in meeting the requirements of Persons with Disabilities (PwDs) by advocating for, and facilitating access to assistive technologies (Assistive Technology, 2024) to cater to different disabilities and demographics. Assistive technologies refer to a wide array of products and services designed to support and enhance one's cognitive abilities, communication skills, hearing, mobility, vision, and self-care. These encompass physical products like wheelchairs, glasses, and hearing aids, as well as digital solutions like captioning and speech recognition software. According to WHO, an estimate of 2.5 billion people across the globe needs assistive products, and an estimated 3.5 billion projected by 2050. Aligning with UN Sustainable Development Group's slogan - no one is left behind - WHO recognises the urgent need to bridge the gap in access to these essential tools (Leave No One Behind, n.d.).



Despite the evident benefits of flexibility, accessibility and upward social mobility, there exists a significant unmet need for assistive technologies across the world. The Global Report on Assistive Technology highlights the considerable inequity in access, with only 3% of people in low-income countries having access to necessary products in contrast to 90% in high-income countries. Barriers to access include low literacy, high costs, restricted mobility, lack of diversity of product range, and gaps in policies (World Health Organization & United Nations Children’s Fund, 2022). As a response to these challenges, the World Health Organisation (WHO) has outlined ten priority recommendations, emphasising the importance of improving access across all sectors of development, ensuring the safety and affordability of products, enhancing the capacity of the workforce, involving users and families in the access pathway, raising public awareness, investing in data-driven policies, promoting research and innovation, and strengthening international cooperation. To address the inequalities and the complexities at a global scale, WHO proposed the WHO-GATE 5P framework – policy, products, provisions, personnel, and people – and formulated guidelines that offer technical support to the member states (World Health Organisation, 2018).

Europe is a prominent global leader in terms of Internet connectivity, with an impressive household penetration rate of 85% in 2019, which surpassed the global average of 57% (International Telecommunication Union, 2021). The strong and reliable internet connectivity has enabled substantial progress in digital transformation, particularly in the realm of accessibility to public services. Despite the advanced levels of e-government and digital infrastructure, digital inclusion continues to remain a pressing issue across the European Union (EU). Only slightly more than half of the population uses the Internet to interact with public authorities and access services (Eurostat, 2019). In the last decade, the European institutions have implemented several innovating strategies and digital inclusion programs to ensure equitable access to digital tools and services. An example of such an initiative is the Digital Inclusion Program implemented by the National Family Allowances Fund (CNAF) in France. Although the online service delivery mechanisms are widespread, a considerable section of the French population encountered challenges in fully leveraging digital tools. To bridge this disparity, the CNAF’s initiative centered on identifying and assisting people who lack digital literacy, and needed help with navigating the internet, referring them to appropriate tailored tutorials and training resources (Corbobbesse, 2022). This comprehensive approach, guided by ISSA¹ guidelines, emphasised personalised support and accessibility, thereby facilitating greater participation in the digital ecosystem.

The State Social Insurance Agency (SSIA) in **Latvia** has introduced an “e-assistant” feature to facilitate access to e-services for customers lacking digital literacy skills. This program enabled individuals to seek assistance from designated personnel at Service Centres, who would thereafter submit applications, for required services, on their behalf (State Social Insurance Agency, 2022). The SSIA successfully enhanced service

¹ “The ISSA Guidelines offer social security managers access to concise and practical knowledge of international best practice in key areas of social security administration.”

accessibility while reducing administrative burdens by integrating digital and non-digital methods.

Germany's Social Insurance for Agriculture, Forestry, and Horticulture (SVLFG) focused on linguistic and cultural inclusivity in its digital initiatives. Recognizing the diverse backgrounds of seasonal workers, the SVLFG developed a web platform available in nine languages, accompanied by targeted outreach efforts to ensure widespread awareness and engagement (Social Insurance for Agriculture, Forestry, and Horticulture, 2022). This emphasis on clear communication and accessibility underscored the importance of catering to diverse user needs.

Finland's Social Insurance Institution (Kela) adopted an inclusive approach to digitalization, leveraging multi-channel service delivery strategies to accommodate varying levels of digital adoption among clients (Social Insurance Institution, 2021). The institution's commitment to continuous refinement and user-centric design, exemplified by the development of a chatbot with contextual capabilities, facilitated seamless interactions and enhanced accessibility.

Estonia's National Social Insurance Board (ENSIB) addressed digital disparities among distinct client segments, offering tailored solutions to accommodate varying levels of digital adoption and trust (Vaikmaa, 2021). ENSIB ensured equitable access to digital services across demographic groups by prioritising alternative authentication methods and proactive communication strategies.

These initiatives (Leaving No One Behind: Experiences in Digital Inclusion from Europe, 2022) underscore the critical success factors in promoting digital inclusion, including user-centered design, targeted outreach, and multi-channel service delivery. By prioritising inclusivity and accessibility, European institutions have demonstrated how digitalisation can truly benefit all members of society, paving the way for a more equitable and inclusive digital future. As Europe continues to lead in digital innovation, these lessons serve as invaluable guides for fostering meaningful digital inclusion initiatives worldwide.

The **United Nations (UN)** recognizes the challenges faced by persons with disabilities, particularly in humanitarian contexts such as displacement due to conflict, persecution, or climate-induced events. With an estimated 10.6 million displaced persons with disabilities worldwide², the UN acknowledges the critical need to address accessibility barriers, including digital exclusion, to ensure the full inclusion and participation of this vulnerable group in society. While technology has many advantages, the lack of affordability and adequate accessibility features in the digital ecosystem has deepened the digital divide for persons with disabilities.

In April 2020³, a study by the UN Refugee Agency (UNHCR) and GSMA M4H program

² <https://www.unhcr.org/innovation/wp-content/uploads/2021/03/Digital-Access-and-Inclusion-of-People-with-Disabilities.pdf>

³ https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/04/M4H_Annual_Report_Spreads.pdf

revealed the range of barriers in accessing ICTs, faced by refugee PwDs with hearing and visual disabilities. The barriers leading to their social exclusion included communication barriers, limited access to information and services due to lack of affordability, and little or no digital literacy. To tackle the same, UNHCR promoted “meaningful participation and leadership of people with disabilities through their engagement in the development and implementation of an inclusive and universally accessible response.”

The COVID-19 pandemic further underscored the importance of ICTS and internet connectivity for accessing information and assistance. Digital inclusion became crucial for refugees with disabilities to “access vital protection services, participation in humanitarian programming, increasing livelihood opportunities, and facilitates integration.” UNHCR’s Innovation Service launched a Digital Inclusion Program to address specific challenges faced by persons with disabilities in displacement contexts. The program aims to tackle access and affordability roadblocks, ensure accessible information and engagement mechanisms, build digital skills, and enhance livelihood opportunities for persons with disabilities. Priority areas encompass tackling access and affordability roadblocks through partnerships with local service providers and manufacturers to facilitate access to connectivity. Additionally, efforts are directed towards developing accessible information and engagement mechanisms to ensure effective communication and participation among persons with disabilities, their families, and service providers. Furthermore, initiatives aim to enhance livelihood opportunities through online income generation activities and job opportunities in the digital labour market.

The UNCHR Innovation Service⁴ invites proposals from operations aiming to address digital access and inclusion challenges for persons with disabilities in displacement contexts. While evidence around such interventions is limited, operations are encouraged to provide data demonstrating the potential success of their approach. This includes information on community needs, ongoing initiatives with local organisations, and support from third-party entities such as mobile operators and technology companies.

The UN’s initiatives underscore its commitment to promoting digital inclusion for persons with disabilities, particularly in displacement contexts. By addressing barriers to access and affordability, ensuring accessible information and engagement, building digital skills, and enhancing livelihood opportunities, the UN aims to empower persons with disabilities to fully participate in society and realise their rights and potential. Through collaborative efforts and innovative approaches, the UN strives to create a more inclusive and equitable world for all (UNHCR Innovation, n.d.)

4 <https://www.unhcr.org/innovation/digital-inclusion/>

BEST PRACTICES FROM DEVELOPED AND DEVELOPING COUNTRIES

This section delves into the best practices employed by both developed and developing countries to empower PwDs through digital inclusion and vocational training. Highlighting initiatives from different countries across the world, it showcases diverse approaches aimed at driving inclusivity, independence, and economic participation of PwDs. Each country's efforts reflect a commitment to building tailored solutions to bridge the digital divide.

In the **United States**, efforts to empower PwDs through digital inclusion and vocational training have been central to fostering greater independence, economic opportunity, and social inclusion. With a commitment to equality and accessibility,



Nawab Khan
Barmer, Rajasthan

initiatives aimed at bridging the digital divide and providing vocational training have not only transformed the lives of PwDs but have also enriched society. Digital inclusion initiatives in the USA have played a pivotal role in ensuring that PwDs have equal access to technology and online resources. Through various programs and partnerships, efforts have been made to provide assistive technologies, accessible websites, and digital literacy training tailored to the needs of PwDs (Reinkensmeyer et al., 2017).

One notable example is the Rehabilitation Engineering Research Center for Wireless Inclusive Technologies (Wireless RERC), funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR). This centre focuses on developing accessible wireless technologies and promoting their adoption among PwDs, thus enabling greater participation in the digital realm. Moreover, federal laws such as the Americans with Disabilities Act (ADA) and the Rehabilitation Act have played a crucial role in promoting digital accessibility (Goldstein & Taylor, 2015). These laws require public entities and businesses to ensure that their digital content and services are accessible to PwDs, thereby fostering greater inclusivity in the digital sphere.

Vocational training programs tailored to the needs of PwDs have been instrumental in enhancing their employability and economic independence. Organisations such as the National Technical Institute for the Deaf (NTID) and the American Foundation for the Blind (AFB) offer vocational training programs specifically designed to equip PwDs with the skills and knowledge needed to succeed in

various industries (Rochester Institute of Technology, n.d.). Internet training programs targeted at PwDs have been instrumental in promoting digital literacy and enhancing access to online resources. Organisations such as the World Institute on Disability (WID) and the National Federation of the Blind (NFB) offer internet training courses and workshops designed to teach PwDs how to navigate the internet safely and effectively (Disnmore, 1966). These programs cover topics such as web browsing, email communication, online banking, and social media usage, thereby empowering PwDs to connect with others, access information, and engage in online activities independently. By equipping them with the necessary skills and knowledge, internet training initiatives enable PwDs to fully participate in the digital age and leverage technology to enhance their lives.

Digital inclusion and vocational training initiatives in the USA play a crucial role in empowering PwDs and promoting their full participation in society. By providing access to technology, skills development opportunities, and support services, society enables PwDs to achieve their goals, pursue meaningful careers, and make valuable contributions to their communities. As efforts to promote inclusion and equality continue, it is essential to recognize the importance of empowering PwDs and ensuring that they have equal opportunities to thrive in the digital age.

Australia, like many developed nations, recognizes the importance of empowering PwDs to actively participate in society. Through comprehensive initiatives focusing on digital inclusion, vocational training, and internet literacy,

the country has made significant strides in enhancing opportunities for PwDs. By leveraging technology and skill-building programs, disabled individuals not only gain greater independence and self-sufficiency but also contribute meaningfully to society in various capacities. The Australian government has implemented various initiatives aimed at bridging the digital divide. These initiatives encompass accessibility standards for digital platforms, funding for assistive technology, and training programs tailored to the needs of PwDs (Olney & Dickinson, 2019). One such initiative is the National Disability Insurance Scheme (NDIS), which provides funding for assistive technology devices and services to eligible participants. Through the NDIS, PwDs can access essential tools such as screen readers, speech recognition software, and alternative input devices, enabling them to navigate digital platforms with greater ease and independence.

Moreover, Australia's commitment to digital accessibility extends to public sector websites and services. The Web Content Accessibility Guidelines (WCAG) outline standards for web accessibility, ensuring that online content is perceivable, operable, and understandable for all users, including those with disabilities (Wan Mohd Isa et al., 2016). By prioritising accessibility in digital design and development, Australia aims to create an inclusive online environment where people of all abilities can participate fully. In addition to digital inclusion, vocational training plays a pivotal role in empowering PwDs to enter the workforce and pursue meaningful careers. Through targeted programs and initiatives, Australia provides vocational training opportunities that cater to the

diverse needs and aspirations of PwDs.

The Disability Employment Services (DES) program, for example, offers job seekers with disabilities personalised support and assistance to find and maintain employment. This includes vocational assessments, skills development, job placement services, and ongoing support in the workplace. By equipping individuals with the necessary skills and support networks, DES enables them to overcome barriers to employment and achieve economic independence (Hayward et al., 2022). Furthermore, Australia's commitment to inclusive education and training extends to initiatives such as the National Disability Coordination Officer (NDCO) program. NDCOs work collaboratively with education and training providers to ensure that students with disabilities have equal access to educational opportunities and vocational training pathways. By fostering partnerships between stakeholders and promoting inclusive practices, the NDCO program facilitates smoother transitions from education to employment for persons with disabilities (McInnis, 2011).

Internet training and digital literacy programs are essential components of Australia's efforts to empower PwDs in the digital age. Recognizing the importance of digital skills for social inclusion and economic participation, the government and various organisations offer training programs tailored to the diverse needs of PwDs. The Australian Digital Health Agency (Biggs et al., 2019), for instance, provides resources and training materials to help PwDs navigate digital health platforms and access online healthcare services. By promoting digital literacy and awareness, these initiatives empower individuals to

take control of their health and well-being, regardless of their physical or cognitive abilities.

Empowering PwDs through digital inclusion and vocational training not only enhances their quality of life but also enables them to make valuable contributions to society. By gaining access to education, employment, and community participation opportunities, PwDs can leverage their skills, talents, and lived experiences to enrich their communities and drive positive social change.

In **Brazil**, efforts to empower PwDs through digital inclusion and vocational training have gained momentum in recent years, marking significant strides towards fostering inclusivity and enhancing opportunities for marginalised communities. Recognizing the importance of equitable access to digital resources and skills development, Brazil has embarked on initiatives aimed at bridging the digital divide and leveraging their unique talents and capabilities to contribute meaningfully to society (Costin, 2015).

Digital inclusion serves as a cornerstone in Brazil's efforts to empower PwDs and promote their active participation in the digital economy. The government, in collaboration with Non-governmental Organisations (NGOs) and private sector partners, has implemented various programs to provide access to technology and digital literacy training across the country. One notable initiative is the "Digital Inclusion for All" program, which focuses on providing accessible digital infrastructure and training resources tailored to the needs of PwDs. Through partnerships with community

centres, schools, and disability advocacy organisations, this program aims to ensure that they have access to computers, assistive technologies, and comprehensive digital skills training. By equipping PwDs with the necessary digital competencies, Brazil seeks to empower them to navigate online platforms, access educational resources, and pursue employment opportunities in the digital age.

Additionally, the government has implemented policies to promote the development of accessible websites, software, and digital content, ensuring that PwDs can fully engage with online resources and services (De Souza Cruz Ravaglio, 2023). These efforts align with international standards of web accessibility, promoting a more inclusive digital environment where they can participate actively in social, economic, and cultural spheres. In tandem with digital inclusion efforts, Brazil has prioritised vocational training programs designed to enhance their employability and economic independence. These initiatives aim to equip individuals with practical skills and knowledge relevant to various industries, enabling them to pursue sustainable livelihoods and contribute to the workforce.

One such program is the "Skills for Inclusion" initiative, which offers vocational training courses specifically tailored to the needs and abilities of PwDs. Through partnerships with vocational schools, training centres, and employers, this program provides hands-on training in fields such as information technology, hospitality, healthcare, and manufacturing. By focusing on skill development and job readiness, Brazil seeks to empower PwDs to secure gainful employment

and achieve financial stability. Moreover, vocational training programs often incorporate elements of entrepreneurship and self-employment, encouraging them to explore alternative pathways to economic empowerment. By fostering a culture of innovation and creativity, Brazil aims to unleash the potential of PwDs as entrepreneurs and business owners, driving economic growth and social inclusion.

Recognizing the transformative power of the Internet in facilitating access to information, education, and employment opportunities, Brazil has launched targeted internet training initiatives for PwDs. These programs aim to build digital literacy skills and promote responsible online behaviour, empowering them to harness the full potential of the digital landscape. One such initiative is the “Digital Citizenship” program, which provides interactive workshops and online resources to educate PwDs about internet safety, privacy, and digital rights. Through practical exercises and real-world scenarios, participants learn how to navigate online platforms safely, discern credible information from misinformation, and protect their data online. By promoting digital citizenship and responsible online engagement, Brazil seeks to empower PwDs to fully participate in the digital society while safeguarding their rights and well-being.

The efforts to empower PwDs through digital inclusion and vocational training have yielded tangible benefits for both individuals and society at large. Those who have undergone training and gained digital skills are better equipped to pursue educational and employment opportunities, thereby enhancing their

economic independence and quality of life. By fostering a more inclusive workforce, Brazil leverages the diverse talents and perspectives of PwDs to drive innovation, creativity, and productivity across various sectors.

Japan has been at the forefront of empowering PwDs through various initiatives focusing on digital inclusion, vocational training, and internet training. These efforts stem from both government policies and initiatives in collaboration with Non-Governmental Organisations (NGOs). By providing comprehensive support and opportunities, Japan aims to enhance their participation and contribution of PwDs to society. The legislation mandates companies in Japan to ensure a certain percentage of their workforce comprises PwDs (Manullang, 2023). To support the implementation of this law, the government provides subsidies and incentives to businesses that hire PwDs. Moreover, vocational training programs are funded to equip them with the necessary skills to enter the workforce successfully.

Japan prioritises universal design principles, ensuring that products, services, and environments are accessible to everyone, including PwDs. From public transportation and infrastructure to digital platforms and buildings, Japan’s commitment to universal design fosters inclusivity and accessibility for all citizens. The Japanese government invests in digital inclusion initiatives to ensure that they have access to technology and online resources. This includes funding for assistive technologies, accessible websites, and digital literacy programs tailored to the needs of PwDs. Special education and training centers are run across the country, providing specialised support

and vocational training for them. These centers offer a range of programs focusing on skill development, job readiness, and career advancement, empowering PwDs to pursue meaningful employment opportunities. The Japan Information Access Project for Persons with Disabilities (JIAP) is one such initiative that provides internet training and resources for PwDs. JIAP offers online tutorials, workshops, and training sessions on topics such as web accessibility, assistive technology usage, and online safety. Additionally, the government collaborates with NGOs and community organisations to offer internet training programs tailored to the specific needs and preferences of PwDs.

The Nippon Foundation is one of Japan's leading philanthropic organisations dedicated to promoting social inclusion and empowerment for PwDs. Through initiatives such as the Paralympic Support Center and the Zero Project Japan, the foundation advocates for their rights, provides access to sports and recreation activities, and supports employment opportunities. Barrier-Free Japan is an advocacy group focused on promoting accessibility and inclusivity for PwDs. Through campaigns, awareness-raising activities, and policy advocacy, the organisation works to eliminate physical, communication, and digital barriers in Japanese society (The Nippon Foundation, 2022).

Through digital inclusion, vocational training, and internet training initiatives, PwDs in Japan are empowered to make significant contributions to society across various sectors. In the workforce, they bring diverse skills, perspectives, and talents, enhancing innovation, productivity, and organisational performance. They contribute to economic growth and social

development by participating in meaningful employment, entrepreneurship, and civic engagement activities.

The **South African** government has recognized the importance of digital inclusion for PwDs and has taken steps to ensure their access to digital technologies and online resources. Through initiatives such as the National Integrated ICT Policy White Paper (Senaji, 2019), the government aims to bridge the digital divide by providing affordable internet access and promoting the development of accessible digital content and services. Additionally, the Universal Service and Access Obligation (USAO) ensures that telecommunication service providers extend their networks to underserved areas, including rural communities where many PwDs reside. By improving connectivity and expanding internet infrastructure, the government enhances their ability to access online education, employment opportunities, and essential services (Hanass-Hancock, 2017).

South Africa's Department of Social Development, in collaboration with other government agencies and stakeholders, implements vocational training programs tailored to the needs of PwDs. These programs focus on skill development, job readiness, and placement assistance to facilitate their integration into the workforce. Furthermore, the Employment Equity Act promotes the inclusion of PwDs in the labor market by requiring employers to adopt affirmative action measures and eliminate barriers to employment. This legislation encourages businesses to provide reasonable accommodations and create inclusive workplaces that accommodate their diverse needs (Steenkamp, 2023).

The government, through the Department of Communications and Digital Technologies, supports internet training initiatives aimed at improving digital literacy among PwDs. Community-based training centres, public libraries, and disability organizations offer workshops and courses on basic computer skills, internet navigation, and assistive technology use. NGOs such as Disability Rights South Africa (DRSA) and Disabled People South Africa (DPSA) play a crucial role in advocating for the rights and inclusion of PwDs (Disability Info SA, n.d.). These organizations raise awareness about disability issues, challenge discrimination, and lobby for policy reforms to promote equal opportunities and accessibility.

DRSA and DPSA engage in community outreach programs, legal advocacy, and public education campaigns to empower PwDs and promote their participation in decision-making processes. Through their efforts, they strive to create a more inclusive society that values and respects the rights of all individuals, regardless of their abilities. NGOs collaborate with government agencies and corporate partners to offer skills development programs specifically designed for PwDs. For example, organizations like the Association for the Physically Disabled (APD) and the South African Disability Alliance (SADA) run

vocational training centres and workshops that cater to the unique needs and abilities of PwDs (SADA, n.d.). These initiatives not only enhance their employability but also promote their economic independence and social inclusion.

NGOs actively promote digital accessibility and assistive technology adoption among PwDs to ensure their full participation in the digital society. They collaborate with software developers, website designers, and policymakers to advocate for the development of accessible digital content and technologies. Initiatives such as the South African National Council for the Blind (SANCB, n.d.) Accessibility Program provide training and resources to enhance the accessibility of websites, mobile applications, and electronic documents. By advocating for inclusive design practices and raising awareness about digital accessibility standards, NGOs contribute to creating a more inclusive online environment for PwDs.

PwDs in South Africa make valuable contributions to society across various sectors, including education, healthcare, arts, and advocacy. Through their participation in the workforce, PwDs contribute to economic growth and diversity, bringing unique skills, perspectives, and talents to their respective fields.

PERSONS WITH DISABILITIES (PWDS) IN INDIA

According to data from the Census of 2011¹ and the 76th round of the National Sample Survey (NSS), the rate of disability in India stood at 2.2%. Over the course of a decade, the population of PwDs in India experienced a slight increase, rising from 21.9 million in 2001 to 26.8 million in 2011. However, recent secondary data analysis of the NFHS-5 surveys (2019–21) suggests a higher prevalence of disability, with an estimated rate of 4.52% across the country (Pattnaik et al., 2023).

According to Census 2011, among the disabled population in India, it comprises 1.5 crore males and 1.18 crore females, with males constituting 56% and females 44%. This contrasts with the general population, where males represent 51% and females 49%. The majority of disabled individuals, around 69%, reside in rural areas, totalling 1.86 crore, while 0.81 crore live in urban regions. Census data from 2011



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also indicates that 8.3% of households, comprising 207.8 lakh households, have disabled members, with 71% of these households located in rural regions. Within the disabled population, literacy rates vary significantly. Overall, 45% are illiterate,

¹ <http://www.ccdisabilities.nic.in/resources/disability-india>

while 13% have secondary education, and 5% are graduates or above. Notably, among male disabled individuals, 38% are illiterate, compared to 55% of females. Rural areas exhibit lower literacy rates among disabled individuals, with 49% being literate, compared to 67% in urban areas. Among non-working disabled individuals, totalling 1.7 crore, among which, females are 54% and 46% are males. Dependency on family support is common among disabled non-workers, with 50% relying on their families for support. Additionally, a significant portion of male non-workers, around 33%, are students, while 22% of females fall into the same category.

Due to the various socioeconomic, political, and cultural obstacles faced by PwDs in India, the Rights of Persons with Disabilities (RPD) Act, enacted in December 2016, aims to operationalise the rights and responsibilities outlined in the United Nations Convention on the Rights of Persons with Disabilities, which India ratified nearly a decade earlier. This Act introduces several significant features that are expected to greatly impact the inclusion of Indians with disabilities. It acknowledges the critical importance of accessibility for inclusion, highlighting it as a cross-sectoral issue to be addressed by various stakeholders across different government departments, ministries, and agencies.

Throughout the Act's document, the terms "access" or "accessibility" are mentioned 48 times, reflecting its importance across various sectors such as judicial, political, cultural, economic, educational, housing, institutional, employment, health, infrastructural reforms, and access to art. Expanding the number of recognised

conditions to 19 from the 7 disabilities acknowledged under the 1995 legislation, the Act also empowers the Central Government to designate additional conditions as disabilities. A notable provision of the Act is the requirement for mandatory adherence to accessibility standards. It emphasises the significance of reasonable accommodation and universal design in facilitating equitable access and establishing an accessible framework for India's future. Unlike the previous Act, which allowed governments to make facilities accessible within economic constraints, the new Act extends this requirement to the private sector, private service providers, and private establishments, defining public services and buildings broadly to encompass those used by the public, regardless of ownership.

Another critical aspect is the Act's recognition that accessibility encompasses both environmental and information technology accessibility (ICT accessibility). It defines various barriers, communication modes, reasonable accommodation, and universal design to ensure comprehensive coverage. Furthermore, the Act mandates the formulation of standards for different areas, including physical environment and transportation, and requires measures for provision of accessible facilities and content. It also emphasises capacity building and training initiatives for various stakeholders. The Act establishes Central and State Advisory Boards, a Chief Commissioner for persons with disabilities, and special courts for the speedy trial of offences. It specifies punishments for contraventions and holds individuals liable for offences committed by companies. Overall, the Act underscores

the critical role of accessibility, both digital and environmental, in ensuring that persons with disabilities can exercise their rights and freedoms on par with others. Achieving the envisioned level of accessibility requires collaborative efforts from various stakeholders (Narasimhan, 2017).

As mentioned earlier, the 2016 Disability Act places a strong emphasis on accessibility, extending beyond physical environments to encompass digital inclusion, the significant impact of digital technologies on everyday life, particularly for PwDs. However, the public discourse has largely neglected this aspect. The Act mandates that all forms of media must be accessible, electronic goods designed universally, and television programs provided with sign language interpretation or subtitles. However, the implementation of previous policies aimed at enhancing electronic accessibility has been lacking, with many government websites and popular applications failing to meet basic accessibility standards. This is alarming given the increasing digitisation of services worldwide. India's rapid internet growth and the push towards a digital economy must consider the needs of PwDs. With the number of disabilities recognized under the Act expanding from seven to twenty-one, digital inclusion becomes even more crucial. Access to information and communication technologies is not only a human right but also essential for ensuring equality in the digital age. The Rights of Persons with Disabilities Act represents a significant step towards achieving this goal (Sharma, 2017).

In a country like India, where almost half of the population lacks proper internet access, the digital divide poses an even

greater challenge, particularly for Persons with Disabilities (PWD). This shift towards digital technology brings forth many issues beyond internet access, further exacerbating the barriers faced by PwDs. Among these challenges, the inadequate internet infrastructure stands out prominently. Even today, approximately 70 percent of the population has poor or no connectivity to digital services, with rural areas bearing the brunt of this disparity. This is particularly concerning given that close to 70% of PwDs reside in rural regions, as highlighted by the 'Disabled Persons in India-A Statistical Profile 2016' report. For the approximately 1 crore PwD population aged between 10 and 29, education and skill development are vital. Yet, the grim reality is that without proper internet access, the potential for skill development and employability among this significant demographic remains severely limited. Moreover, the accessibility to assistive technology poses another significant hurdle. Screen readers, magnification devices, and Augmentative and Alternative Communication (AAC) devices are essential tools for PwD to access digital information. However, their availability remains low, particularly in developing countries like India, mainly due to their high cost. Without access to such assistive technology, a visually impaired individual, for instance, cannot effectively consume most of their digital content. Thus, the lack of affordable assistive technology compounds the challenges faced by PwD in accessing digital information.

Furthermore, even if PwDs manage to overcome the barriers of internet access and acquire assistive technology, they encounter yet another obstacle: disability-

friendly content. Many educational and skill development resources fail to consider the needs of people with disabilities. For example, the absence of sign language interpretation renders educational videos inaccessible to those with hearing impairments. It is imperative to transform digital platforms, such as PM eVIDYA, into disability-friendly environments by ensuring accessibility features for all users. Hence, bridging the digital divide for Persons with Disabilities goes beyond addressing internet infrastructure challenges. It requires a comprehensive approach that encompasses ensuring access to affordable assistive technology and making digital content inclusive and accessible. Only by tackling these interconnected issues can we truly empower PwDs to participate fully in the digital age and unlock their potential for education, skill development, and employment.

In addition to the Right of Persons with Disabilities Act of 2016, India has showcased its commitment to accessibility both domestically and internationally, by complying with national laws and international agreements. India's international commitments regarding accessibility are shaped by significant agreements such as the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) of 2006, the Incheon Strategy, the Beijing Declaration, the Sendai Framework, and the Sustainable Development Goals (SDGs). These commitments encompass accessibility holistically and extend beyond just ICT accessibility.

India ratified the UNCRPD on March 30, 2007, ensuring that the responsibility for implementing the rights of Persons with Disabilities (PwDs) is shared among state, private, and civil society entities. The Convention mandates state parties to implement its provisions, align country laws with its principles, and submit country reports to enhance accountability. India adopted the Incheon Strategy in 2012, aiming to realise inclusive development goals for persons with disabilities in the Asia-Pacific region. ICT accessibility is emphasised in goal 3, which emphasises the need to improve access to the physical environment, public transportation, knowledge, information, and communication. Adopted in March 2015, the Sendai Framework underscores the importance of involving persons with disabilities in disaster risk reduction and response activities. India has subsequently developed guidelines for disaster risk reduction and management that consider the needs of persons with disabilities.

The United Nations has identified 17 Sustainable Development Goals (SDGs) to achieve a more sustainable future by 2030. Disability is addressed across various SDGs, particularly in areas related to education, economic growth, employment, reducing inequality, inclusive cities, and data collection and monitoring. The SDGs stress the importance of ensuring that persons with disabilities are included in development efforts, leaving no one behind. These international commitments reflect India's commitment to fostering inclusivity and accessibility for persons with disabilities on both national and global scales (Chase India et al., 2023).

CURRENT STATUS

Over the years, India has demonstrated a steadfast commitment to enhancing accessibility and inclusivity for persons with disabilities (PwDs) through a myriad of governance initiatives. From establishing national databases to promoting research on disability-related technology, the Indian government has been proactive in addressing the diverse needs of PwDs. Noteworthy projects such as the Unique Disability Identification (UDID) Project and advancements in

ICT accessibility guidelines reflect a concerted effort to ensure equitable access to essential services and opportunities. In this context, this section explores key governance initiatives undertaken by India to empower and integrate persons with disabilities into mainstream society, fostering a more inclusive and accessible environment for all (Chase India et al., 2023; Kumbhar, 2022).

CONSTITUTIONAL RIGHTS OF DISABLED PERSONS

The constitutional framework of India recognizes and upholds the rights of disabled persons through specific articles:

Article 41: Ensures protection of rights to work, education, and social and economic development for all citizens, including disabled persons. States are mandated to establish adequate provisions to safeguard these rights.

Article 243-G: Emphasises the social welfare of disabled persons, ensuring their inclusion and welfare alongside other citizens of the nation.

Article 243-W: Aims at protecting the interests of weaker sections of society, encompassing the intellectual disabled population. This provision underscores the importance of ensuring the well-being and rights of all individuals, including those with intellectual disabilities, within the broader framework of social welfare and protection.

LEGAL PROTECTION FOR PWDs

Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995: This act aims to ensure equal opportunities in education, employment, and rehabilitation for disabled persons. It endeavors to eliminate discrimination and provide proper social security to PwDs.

Rehabilitation Council of India Act, 1992: The purpose of this act is to facilitate research, training, and special education to develop human resources catering to the needs of the disabled population. It aims to empower PwDs through education and specialised training.

National Trust Act, 1999: This act aims to empower disabled persons by providing them with vocational training and financial support to promote self-reliance. It endeavors to facilitate the inclusion and independence of PwDs in society.

Mental Health Act 2017: This act seeks to provide proper treatment and care for mentally ill persons, including those in rural and remote areas under Primary Health Centers (PHCs). It aims to ensure accessible mental health services and support for all individuals, regardless of their location.

Draft National Policy for Persons with Disabilities (2022): This proposed policy by the Department of Empowerment of Persons with Disabilities (DEPwD) updates the 2006 policy to address emerging causes of disabilities and reaffirm the government's commitment to empowerment and inclusion. It outlines strategies for intervention in disability prevention, education, healthcare, social welfare, sports, and culture.

The National Policy on Universal Electronic Accessibility (2013): This policy aims to eliminate discrimination against PwDs by ensuring equal access to electronics and Information and Communication Technologies (ICTs). It advocates for universal accessibility, provides implementation guidelines, and emphasises awareness, capacity building, research, and procurement guidelines to meet accessibility needs.

WELFARE SCHEMES FOR PERSONS WITH DISABILITIES (PWDS)

Deen Dayal Disabled Rehabilitation Scheme (DDRS): Aimed at fostering an inclusive environment to ensure equal opportunity, equity, social justice, and employment for persons with disabilities.

Assistance to Disabled Persons for Purchase/Fitting of Aids/Appliances (ADIP): Designed to comprehensively rehabilitate disabled individuals, particularly those facing social and economic challenges, by providing them with necessary appliances to enhance their economic well-being.

Establishment of Disability Rehabilitation Centres: Schemes focused on capacity-building for disabled individuals through awareness campaigns, training, and guidance by professional experts to facilitate their comprehensive rehabilitation.

National Fellowship Programme: Intended to expand educational opportunities for students with disabilities, supporting their pursuit of higher education degrees such as M. Phil and Ph.D. in recognized universities.

Pre-Matric and Post-Matric Scholarships for Students with Disabilities: Providing financial assistance to disabled students for their education at pre-matric (Class IX and X) and post-matric levels (Class XI, XII, and up to Graduate Degree/Diploma levels).

National Overseas Scholarship for Students with Disabilities: Offering financial support for disabled students to pursue Master's and Ph.D. degrees globally.

Incentives to Private Sector Employees for Employing Persons with Disabilities (2008-2009): Aims to promote the employment of disabled individuals within the private sector.

Scheme for Awareness Generation and Publicity (2014): Geared towards sensitizing people, particularly in rural and remote areas, about the causes of disability and early prevention measures.

National Awards for the Empowerment of Persons with Disabilities, 2014: Recognizing individuals, institutions, districts, etc., for their significant contributions to the development and empowerment of disabled individuals.

Trust Fund for Empowerment of Persons with Disabilities: Established to implement various provisions of the Persons with Disabilities (Equal Opportunity, Protection of Rights and Full Participation) Act, 1995.

ACCESSIBILITY INITIATIVES

Accessible India Campaign (Sugamya Bharat Abhiyan): Launched by the Department of Empowerment of Persons with Disabilities (DEPwD) in December 2015, this nationwide campaign aims to build an accessible and inclusive environment for Persons with Disabilities (PwDs). It focuses on enhancing physical infrastructure, transportation, and Information and Communication Technology (ICT) accessibility. Highlighting the crucial role of ICT in daily decision-making, the campaign targets to increase the accessibility of documents, websites, sign language interpreters, and audio-visual media. Specific targets include conducting accessibility audits for 50% of government websites and ensuring that at least 50% of public documents meet accessibility standards by June 2022.

NITI Aayog on Assistive Devices Industry: NITI Aayog convened discussions on leveraging emerging technologies in assistive devices. Stakeholders explored challenges, opportunities, and the necessity for policy interventions such as capacity building and incentivization to encourage private sector investment in the industry. This initiative facilitated collaboration among diverse stakeholders and provided a platform for future advancements in assistive technology.

GOVERNANCE TOWARDS DISABILITY

Unique Disability Identification (UDID) Project: Initiated by the Department of Empowerment of Persons with Disabilities, this project aims to establish a national database of Persons with Disabilities (PwDs) and issue unique identity cards to them. The application software, hosted on the NIC cloud since May 2016, facilitates online issuance of disability certificates. The database enhances transparency, efficiency, and ease of government benefit delivery by capturing personal, identity, disability, education, employment, and income details.

Research on Disability-Related Technology, Products, and Issues: Launched by the DEPwD in January 2015 and aligned with the Rights of Persons with Disabilities (RPwD) Act, 2016, this scheme focuses on research and development in disability-related areas for evidence-based policy decisions and rehabilitation.

ICT ACCESSIBILITY GUIDELINES

Guidelines for Indian Government Websites (GIGW): Released by the National Informatics Centre (NIC) in three versions, GIGW aims to enhance accessibility of government websites. GIGW 1.0 focused on Web Content Accessibility Guidelines (WCAG) 1.0, while GIGW 2.0 improved upon it with WCAG 2.0 standards. GIGW 3.0 incorporates advanced features for improved user experience and mobile accessibility.

Bureau of Indian Standards 17802: Released in two parts, these standards specify accessibility requirements for ICT products and services. Part 1 (December 2021) covers a range of products like mobile phones and software applications, while Part 2 (April 2022) outlines testing procedures and evaluation methodologies.

Knowledge & Resource Centre for Accessibility in ICT (KAI): Funded by MeitY, this project aims to develop procurement guidelines for accessible hardware and software, conducting accessibility testing for various products.

While the initiatives outlined above exist, their effectiveness and impact remain uncertain. It is unclear whether these programs are operating efficiently and producing the desired outcomes. Furthermore, it is uncertain if there are robust monitoring and evaluation mechanisms in place to assess their performance accurately. Additionally, there is a lack of comprehensive data available to gauge the return on investment made through these policies. Therefore, there is a need for improved monitoring and evaluation frameworks to better understand the efficacy of these initiatives and their contribution to the intended goals.

For instance, the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), designed to prioritise employment opportunities for PwDs residing in rural India, requires a substantial

allocation of two lakh crore rupees to fully restore its operational capacity. However, funding for this vital scheme has been significantly reduced in recent years, with severe consequences felt this year, affecting approximately 18 million disabled villagers who are now deprived of MGNREGA employment opportunities.

The mandatory implementation of the National Mobile Monitoring System app by the central government on January 1, 2023, for overseeing MGNREGA employment has additionally posed significant challenges to the livelihoods of numerous disadvantaged rural workers, especially those with disabilities. Issues such as inadequate internet connectivity, unreliable electricity supply, frequent internet shutdowns, and limited digital literacy have hindered many workers from registering their attendance for workdays through the app. Moreover, the app fails

to accommodate the special provisions intended for PwDs under the MGNREGA scheme.

Furthermore, the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA), launched in 2017 to bridge the digital divide and promote digital literacy in rural areas, including among marginalised groups such as Scheduled Castes (SC), Scheduled Tribes (ST), Below Poverty Line (BPL) individuals, women, PwDs, and minorities, has faced discontinuation of government funding as of 2023.

Chase India (2023) also conducted a technical assessment of government websites and apps. This study revealed deficiencies in meeting accessibility standards, impacting user experiences. While 89% of users accessed government portals, accessibility varied across platforms. High-traffic sites are IRCTC, Income Tax, MyGov, Aarogya Setu, DigiLocker and Co-Win. Although the state is the primary agency to provide critical services, a smaller number of users were seen visiting the state portals/apps. This may have been partly due to lack of accessibility and partly due to lack of awareness among users about these apps and websites.

User feedback receiving low ratings for accessibility. 26 users rated the Umang App/Website as 'not accessible'. The most accessible rated websites indicated through the survey are MyGov, IRCTC, Income Tax and Co-Win. Many other applications and websites were given low ratings for meeting users' accessibility needs, suggesting a lack of extensive user testing in their development.

Key user suggestions for improvement include mandatory compliance with accessibility guidelines, replacing CAPTCHA with OTP, designated email-ID to report inaccessible content, and enhanced engagement of users with disabilities in the development process. Compulsory private sector compliance, increased accountability, and regular website audits were also recommended. Addressing these recommendations is essential to bridge accessibility gaps and ensure digital inclusivity for all individuals, regardless of ability.

In response to these difficulties and recommendations, the civil society and Tech-for-Good have played a crucial role in tackle the impending questions of the impending digital divide and its impact on PwDs in India.

THE ROLE OF ICTS IN THE LIVES OF PWDS: INSIGHTS FROM THE GROUND

In the first phase of the survey, a total of 243 PwDs were surveyed to evaluate the impact of the digital integration in enhancing their social and economic standing in society. The findings provide insights into their demographic characteristics, geographical distribution, types of physical disabilities, educational attainment, participation in pension schemes. The respondents in the study, aged 18 to 55 years, consisted of 189 males and 54 females, reflecting a gender distribution of 77.8% males and 22.22% females. Geographically, the survey covered a total of 17 states across India, including West Bengal, Bihar, Jharkhand, Uttar Pradesh, Odisha, Assam, Rajasthan, Delhi, Madhya Pradesh, Telangana, Haryana, Maharashtra, Chhattisgarh, Jammu and Kashmir, Andhra Pradesh, Uttarakhand, and Karnataka. Mobility issues were predominant among the respondents, with 84.36% reporting such disabilities, followed by 13.58% with visual disabilities and 2.06% with hearing disabilities. In terms of educational attainment, 41.15% had obtained a Bachelor's degree, while 38.27% had completed high school or obtained lower qualifications, and 16.46% had attended

college. Additionally, a significant portion reported diverse educational journeys, including post-graduate programs and specialized degrees. Regarding government pension schemes, 85.6% of respondents reported receiving pension benefits, while 14.4% stated that they did not receive any government pension.

To evaluate the impact of digital integration in terms of their socioeconomic growth, the status of educational attainment, employment condition, monthly income, sector of employment, and access to necessary digital infrastructure for the PwDs prior to little or no access to the ICT tools was surveyed among the respondents. It was observed that a considerable portion of respondents, 54.32%, were not enrolled in any



Almost 85 percent of surveyed PwDs found to be mobility challenged.



Only 41 percent of PwDs could manage to be graduates; while 38 percent were high school or lower qualification.



54 percent of the surveyed PwDs found to have not been enrolled in any educational program, blaming lack of awareness, knowledge and access.



Almost 86 percent of the PwDs surveyed were found to be availing government pension, clearly indicating their extreme poor socioeconomic condition, which forces them to rely on the meagre financial support provided by the Government.

educational program, indicating limited access to educational opportunities. In terms of monthly income, 11.11% of respondents had no stable monthly income, while 36.63% earned less than 1000 per month. Only a small fraction, 10.29%, earned more than 5000 per month. Employment opportunities were scarce, with only 11.93% of respondents reporting employment. The primary sector, particularly agriculture, dominated employment opportunities, followed by sectors such as education, healthcare, and entertainment. Access to necessary infrastructure and support was also limited, with 81.07% of respondents lacking access to basic facilities like PwD vehicles, wheelchairs, and family support. Moreover, a majority, 73.25%, did not have access to a personal vehicle for transportation, and 82.3% reported insufficient access to health funds for necessary treatment. These findings underscore the challenges faced by PwDs prior to accessing the digital infrastructure.

The study further evaluated the status of their access to ICT tools/digital devices, proficiency in operating devices, internet access, using online modes of payment and social media. While a majority, 96.71%, had access to smartphones, they primarily utilized digital devices for entertainment and online services rather than education or business purposes. Concerning online payment, 78.6% used online modes, and 62.55% were aware of and used internet banking services. However, 46.5% had no access to any other digital devices, and 30.86% faced challenges, including physical disabilities (43.21%) and difficulties in learning to use digital devices (43.21%). Social media was widely used for entertainment (79.01%)



About 96 percent of PwDs agreed they had access to smartphones and used it for either entertainment or e-services, but not for education or doing business.



78 percent of PwDs found to have had knowledge of internet banking and experience of making online transactions. This clearly indicates that the challenges faced by PwDs like restrictions of mobility and lack of disabled-friendly transport can be overcome by ensuring remote access to Internet using smartphones.

and education (76.54%), but awareness of social welfare schemes through digital media was low, with only 37.45% aware of them. Additionally, respondents encountered various social barriers and challenges, including physical disabilities (43.21%), mental challenges (37.86%), and social barriers (36.63%).



Unfortunately, only 37 percent of PwDs were found to have any knowledge of welfare schemes provided by the governments.

36 percent of PwDs explicitly said they suffered mental health challenges; while another 37 percent complained of social stigma.

DIGITAL ADOPTION AND MEANINGFUL CONNECTIVITY

The process of digital integration among Persons with Disabilities (PwDs) reveals the transformative journey of PwD respondents, empowering them with necessary digital access and skillset thus enabling them to use internet meaningfully and avail employment opportunities or a career in entrepreneurship. Initially, respondents encountered various challenges in adapting to digital technology, including hesitancy to learn, lack of understanding, limited access to necessary devices and internet connectivity, and competing daily priorities. A substantial 77.37% expressed hesitancy toward learning and adopting new technology, while 64.2% faced challenges in understanding it. Furthermore, 47.33% lacked access to computers or laptops necessary for mastering digital skills, and 38.68% lacked internet connectivity. Additionally, 22.63% cited competing daily challenges as a barrier to engaging with new technology. These findings underscore the multifaceted obstacles faced by individuals with disabilities in accessing and utilizing digital tools for empowerment and inclusion. However, driven by diverse motivations such as interactions with fellow PwDs who share a similar journey, social work aspirations, intrinsic drive for self-improvement, and the pursuit of financial independence, they embarked on the journey of digital empowerment.

The digital adoption proved instrumental in laying a strong foundation for respondents to acquire essential skills and knowledge. Respondents reported significant gains in digital literacy, entrepreneurial skills, operation of ICT tools, and awareness of social welfare schemes. The findings show the need for equipping PwDs with essential digital infrastructure, including printers, laptops, computers, smartphones, and tablets, to enable respondents to acquire and hone their digital skills.



77 percent expressed hesitancy in learning new tech tools, said they are fearful of new technologies.



64 percent faced serious challenges in understanding digital skill or digital functional skills.



More than 47 percent of PwDs were found to have no access to digital devices necessary for digital training.



Close to 37 percent of PwDs found to have no means to access the Internet as they live in data dark conditions.

Furthermore, the findings overwhelmingly demonstrated the effectiveness of digital integration, with 96.3% of respondents finding them helpful in acquiring new digital skills. A significant majority (88.48%) gained proficiency in operating various digital devices, including computers, printers, laptops, and tablets, enhancing their technological literacy. Additionally, a substantial portion (76.13%) acquired proficiency in utilizing online meeting platforms such as Zoom and Google Meet, facilitating virtual communication and collaboration. Furthermore, over two-thirds of respondents (66.26%)

developed the ability to search for relevant information on the internet and leverage it to their advantage. Notably, a considerable number of respondents (62.55% and 53.91%, respectively) embraced online transactions and shopping, demonstrating increased comfort and confidence in conducting financial transactions digitally. Moreover, respondents demonstrated proficiency in utilizing Microsoft Office applications and developed an understanding of digital marketing and Artificial Intelligence (AI). Additionally, a significant majority (78.6%) were able to access social welfare schemes and citizen entitlements.

The study shows that the digital adoption and increased use of ICT tools have not only played a crucial role in the lives of respondents but also among their peers and the community they reside in. This transformation at an individual level has in turn contributed to the broader goal of fostering digital inclusion and accessibility for wider community.



37 percent of PwDs said acquiring digital skills was extremely helpful and facilitated their journey to becoming digital entrepreneurs.



88 percent of the PwDs who went through digital skills said the functional and contextual understanding of the digital tools and access to internet helped them to operate all kind of digital tools for a meaningful ways including earning through them.



76 percent of the PwDs who went through rigorous digital skilling, adopted digital proficiency to the level of using communication tools like Zoom, Google Meet, and other digital collaboration systems including WhatsApp, especially through audio-visual functionalities of the tools.



66 percent of the PwDs, after digital adoption, claimed they could search the Internet meticulously so they could search anything that was relevant to the needs of the customers who came to ask them or needed.



More than 54 percent of the PwDs excelled in online transactions, banking, and offering the online services to their village level customers.



78 percent of the PwDs went through digital adoption and skilling, learnt how to access and know about the welfare schemes, specially those directly relevant to PwDs so that they could offer them as a service and means to avail them for their fellow villagers.



81 percent of PwDs expressed they did not have any of the basic facilities that a person with disabilities needed, such as vehicle or wheelchair, or a family member as support system.



While 11 percent of PwDs claimed to have sources of earning 5000 per month, 12 percents said they have regular employment.



Considering that most PwDs need essential health services on a daily basis, 82 percent of them complained about the lack of free access to health facilities and resources to avail affordable health support.



Almost 37 percent of PwDs who were breadwinners of the family claimed to have been earning less than Rs. 1000.



11 percent of PwDs had no regular or stable monthly income.

SOLUTION SEEKERS TO SOLUTION PROVIDERS: THE JOURNEY OF DIGITAL EMPOWERMENT

The journey of digital empowerment from being solution seekers to solution providers has significantly transformed the lives of the PwDs. By acquiring digital skills and engaging in entrepreneurship, PwDs have experienced various positive impacts. These include increased financial independence, enhanced self-esteem, confidence, expanded social networks, and improved access to livelihood opportunities. Additionally, their newfound abilities and roles as digital entrepreneurs have helped challenge societal perceptions and stereotypes about disability, fostering a more inclusive environment.



90.95% of PwDs started using social media as a source of education.



83.54% of PwDs started using social media handles to gather information.

The digital empowerment further enabled the PwDs to play a crucial role in advancing digital inclusion and community development. The study shows that the respondents, with their knowledge of using ICT tools, are further assisting their family and community members in accessing essential digital services such as helping with filling government document applications, facilitating online transactions, and sharing information about educational and employment opportunities. With adequate access to ICT tools and meaningful connectivity, PwDs are serving as agents of change, leveraging

technology to create more accessible and inclusive societies.

The digital integration has brought several changes in the lives of PwDs, profoundly impacting their lives in numerous ways. Firstly, it vastly improved accessibility and connectivity, with the majority of PwDs now having access to mobile phones, smartphones, and the internet. The data showed us that 97.94% had access to a smartphone. This increased connectivity has facilitated greater communication, access to information, and participation in various online activities. While 12.76% of PwDs still do not have access to digital devices, a significant majority of 87.24% of PwDs had access to either a tablet, a laptop or a computer. The findings further show that 93% of the PwDs reported that they were comfortable using a laptop or a computer during the survey. However, the remaining 7% faced challenges in using a laptop or computer and felt uncomfortable in operating digital devices.

Additionally, digital integration has empowered PwDs by providing opportunities for skill development and

entrepreneurship. PwDs acquired new skills, including digital literacy, entrepreneurship, and proficiency in using digital tools and platforms. For instance, the findings reveal a huge shift in the purpose of social media use for PwDs. Before, social media was used for entertainment purposes by the majority of these respondents. However, after the digital integration, it shifted to education and 90.95% of PwDs started using social media as a source of education. Moreover, 83.54% of PwDs started using social media handles to gather information. Additionally, 46.09% and 45.27% of PwDs started using social media for online marketing and online business, respectively. One of the PwDs used YouTube to start a YouTube channel named to share her motivational story. As a result, PwDs have been able to explore new avenues for education, employment, and economic independence, contributing to their overall empowerment and socioeconomic inclusion. Furthermore, social media engagement has emerged as a powerful tool for PwDs, enabling them to connect with others, share their experiences, and advocate for their rights and interests.

PERSONAL GROWTH AND FAMILY ENGAGEMENT

The digital integration of PwDs has not only impacted their individual lives but has also brought about positive changes within their families. Family support plays a crucial role in the journey of digital empowerment, with 41.15% of respondents acknowledging moral support from their families. Moreover, the socioeconomic growth of PwDs following the digital adoption has had significant implications for their family's financial situation, with 66.67% reporting a positive impact on financial stability. This improvement in income has, in turn, contributed to enhanced overall well-being, as reported by 71.19% of respondents. Furthermore, families have expressed pride and support for the PwDs' efforts in assisting others in accessing government schemes and services, with 83.95% of respondents indicating familial support for their social work initiatives. The influence of ICT tools in the lives of PwDs extends beyond their immediate families, inspiring 93.83% of respondents to encourage other family members and close friends to pursue similar paths of digital empowerment. Additionally, the community at large has benefited from the digital enablement of PwDs, with 87.65% of respondents



41 percent of PwDs their families good will is back and moral support has increased.



67 percent of PwDs said their family's financial situation improved.



71 percent of PwDs said there was a significant improvement in their overall wellbeing.



94 percent of PwDs are found to have been positively influencing peers in the community to adopt digital empowerment as a means to social empowerment.

noting improved access to government schemes and services for various segments, including women, adolescent girls, children, men, and transgender individuals. Overall, the digital integration of PwDs has not only uplifted their own lives but has also brought about positive ripple effects within their families and communities.

COMMUNITY ENGAGEMENT

The positioning of PwDs within their communities has undergone significant transformation following digital adoption. The survey findings reveal a notable increase in social activity among digitally equipped PwDs, with 87.24% reporting heightened engagement compared to pre-digital adoption. This surge in social interaction has also extended to community events, with 84.36% of respondents actively participating in various local gatherings. Moreover, digital adoption has bolstered the self-confidence of PwDs, evidenced by 98.35% of respondents noting an improvement in their self-assurance. Importantly, there has been a perceptible shift in how PwDs are perceived by others, with all respondents acknowledging a positive change in people's attitudes towards them, reflecting increased respect and appreciation for their contributions to their communities. Additionally, 80% of respondents believe they have made a positive impact on their community, while



87 percent of the PwDs express that there has been heightened social activities, and social engagements.



84 percent report that they now participate in all kind of social gatherings freely and with proactive invitations and acceptance.



80 percent felt they have been able to create huge social impact.

86% feel they have inspired other PwDs to embark on similar journeys of digital empowerment. Economically, digital enablement has translated into tangible benefits, with 93% of respondents reporting an improvement in their income. Furthermore, 60% of respondents have capitalized on new economic opportunities facilitated by their digital skills, highlighting the transformative impact of digital integration on their financial stability and independence. Overall, digital empowerment has not only enhanced the social standing and economic prospects of PwDs but has also empowered them to actively participate and contribute meaningfully to their communities.

CONCLUSION

The issue of disabilities affects millions of individuals worldwide, placing them at significant disadvantages across various aspects of life. In India, this challenge is particularly acute, with a vast number of people grappling with disabilities. The scale of this problem is immense, encompassing diverse disabilities ranging from physical impairments to cognitive and sensory limitations. Historically, the approach to addressing the plight of persons with disabilities has been conventional, focusing primarily on providing assistance and support. However, the most glaring observation from our study is that PwDs endure profound challenges stemming from stigma, societal indifference, and a pervasive lack of confidence. These obstacles, compounded by the diverse nature of disabilities, exacerbate their marginalisation and hinder their opportunities for socioeconomic advancement.

Amidst these challenges, one notable initiative has emerged as a beacon of hope: the use of digital tools to empower PwDs. Mobile phones, in particular, have emerged as powerful enablers, offering audio-visual capabilities that cater to diverse needs. Leveraging these digital tools, an innovative initiative has identified PwDs

with drive, willingness, and entrepreneurial spirit, assembling them into a cohesive cohort. Through comprehensive training, skills development, and a transformative mindset shift—from being seekers of assistance to providers of value – this initiative has yielded remarkable results. PwDs, equipped with digital skills and newfound confidence, have emerged as proactive contributors to society, defying stereotypes, and reshaping perceptions of disability.

In conclusion, while the challenges facing PwDs remain formidable, the transformative potential of digital empowerment offers a promising avenue for change. By harnessing the power of digital tools and fostering a culture of inclusivity and empowerment, we can create a more equitable society where every individual, regardless of disability, has the opportunity to thrive and contribute meaningfully.

To effectively address the multifaceted challenges faced by Persons with Disabilities (PwDs) in leveraging ICT tools, collaboration among the government, private sector, and civil society is paramount. Here's a revised version integrating their roles:

1. **Enhanced Access to Digital Infrastructure:**

The government can spearhead initiatives aimed at enhancing access to essential digital infrastructure by providing subsidies or grants for digital devices such as smartphones, laptops, and tablets. Collaborating with the private sector, it can facilitate the production and distribution of accessible ICT devices at affordable prices. Civil society organizations can play a crucial role in advocating for the rights of PwDs and ensuring that government policies and programs prioritize their digital inclusion needs.

2. **Tailored Digital Literacy Programs:**

The government, in partnership with the private sector and civil society, should develop tailored digital literacy programs catering to the diverse educational backgrounds and needs of PwDs. These programs should encompass basic and advanced digital skills relevant to employment, entrepreneurship, and social integration. Civil society organizations can assist in the design and delivery of inclusive training modules, while the private sector can contribute expertise and resources to enhance program effectiveness.

3. **Accessibility Standards and Guidelines:**

Governments should enforce regulations mandating accessibility standards in ICT products and services, with active involvement from the private sector and civil society in their development and implementation. Private sector companies developing digital solutions should prioritize accessibility in their

design and development processes, guided by established standards and guidelines. Civil society organizations can advocate for the adoption and enforcement of accessibility regulations, as well as provide training and support to ensure compliance.

4. **Financial Support for Skill Development:**

The government, private sector, and civil society should collaborate to provide financial support mechanisms for PwDs to access skill development programs related to digital technology. This can include scholarships, grants, and sponsorship opportunities for courses on digital marketing, e-commerce, programming, and other relevant areas. By pooling resources and expertise, stakeholders can maximize the impact of skill development initiatives and empower PwDs to succeed in the digital economy.

5. **Promotion of Entrepreneurship:**

Governments can incentivize entrepreneurship among PwDs through tax incentives, grants, and preferential procurement policies, with support from the private sector and civil society in providing mentorship, training, and access to funding. Civil society organizations can facilitate networking opportunities and promote the visibility of PwD-owned businesses, while the private sector can collaborate on joint initiatives to create inclusive entrepreneurial ecosystems. By fostering an enabling environment for PwD entrepreneurship, stakeholders can drive economic empowerment and social inclusion.

6. Awareness Campaigns and Sensitization Programs:

The government, private sector, and civil society should collaborate on awareness campaigns and sensitization programs to combat stigma and misconceptions surrounding disability. These initiatives should highlight the capabilities and contributions of PwDs in the digital age, leveraging diverse communication channels and platforms. Civil society organizations can lead grassroots advocacy efforts, while the government and private sector can provide funding and logistical support. By working together, stakeholders can promote a culture of inclusivity and respect for diversity.

7. Collaborative Partnerships:

Collaboration among the government, private sector, and civil society is essential to address the complex challenges faced by PwDs in accessing and leveraging ICT tools. By pooling resources, expertise, and networks, stakeholders can develop holistic solutions that address the diverse needs of PwDs and promote

their meaningful participation in the digital society. Public-private-civil society partnerships can leverage complementary strengths and perspectives to maximize impact and sustainability.

8. Continuous Monitoring and Evaluation:

Governments, private sector entities, and civil society organizations should collaborate on monitoring and evaluating the impact of ICT initiatives on the lives of PwDs. This involves collecting data on access, usage, and outcomes of digital interventions, as well as soliciting feedback from PwDs and relevant stakeholders. By conducting regular assessments and adapting interventions based on feedback, stakeholders can ensure that their efforts are effective, responsive, and inclusive.

By integrating the roles of government, private sector, and civil society, stakeholders can leverage their respective strengths and resources to create a more inclusive and equitable digital society for PwDs. This collaborative approach is essential for addressing the complex challenges faced by PwDs and unlocking their full potential in the digital age.

THE ROLE OF DIGITAL SERVICE PROVIDERS IN ENHANCING SOCIOECONOMIC INCLUSION OF PERSONS WITH DISABILITIES (PWDS)

The second phase of the study delves deeper into understanding the impact of digital integration on the lives of PwDs, with a specific focus on their interaction with local, accessible digital service providers¹. Through the analysis of 112 surveys, the objective is to examine the extent to which PwDs have benefited from these service providers and the role they play in enhancing the socioeconomic inclusion of PwDs within their communities and bridging the digital divide. By exploring the experiences and perspectives of PwDs in accessing and utilizing local digital services, the study aims to bring forth an analysis that can inform policies and interventions aimed at facilitating greater digital empowerment and accessibility for PwDs. Through this phase of the study, we seek to contribute to the ongoing discourse on digital

¹ The digital service providers are either Common Service Centers (CSCs) [<https://csc.gov.in/>] that are access points created by the Government of India for delivery of Government-to-Citizen (G2C) e-Services, or the Communication Information Resource Centers (CIRCs) [<https://circindia.org/>] run by Digital Empowerment Foundation in more than 2000 locations across the country.

inclusion and disability rights, ultimately striving towards a more inclusive and equitable society for all.

The respondents of the study hail from seven different states in India, namely Rajasthan, Uttar Pradesh, Jharkhand, West Bengal, Madhya Pradesh, Maharashtra, and Bihar. Out of the total 112 respondents, the majority, constituting 75%, were males, while 24.78% were females. The age range of the respondents varied from 19 to 89 years, indicating a wide representation across different age groups within the PwD community. In terms of educational attainment, the study revealed diverse levels of education among the respondents. Half of the respondents, accounting for 50%, had completed high school education or had attained lower qualifications. Furthermore, 39.29% of the PwD respondents had achieved a bachelor's degree, indicating a significant portion with higher educational qualifications. However, the number of respondents who completed their college education was notably low, comprising only 8.93% of the total. A minority of respondents, representing 1.79%, indicated that they had completed a diploma, showcasing the variety of educational journeys pursued by PwDs.

NEED FOR ADEQUATE DIGITAL INFRASTRUCTURE AND CAPACITY BUILDING

Out of 112 PwDs surveyed, a significant portion of respondents, totaling 36.61%, reported visiting digital service providers on a weekly basis, indicating regular utilization of their services. Additionally, 27.68% of the population visits these centers monthly, while 18.75% visit daily, suggesting a consistent reliance on the support provided by the digital service providers. However, a notable percentage, comprising 16.96% of respondents, indicated that they rarely avail themselves of these services.

A variety of motivations drove the respondents to approach digital service providers. Nearly half of the respondents, accounting for 48.21%, sought information on government schemes and policies, indicating a significant interest in accessing essential services and support. Additionally, 35.71% of participants were motivated by the desire to learn digital skills, highlighting a proactive approach towards self-improvement and empowerment. Furthermore, 15.18% of respondents expressed an interest in exploring entrepreneurial opportunities, underscoring a desire for economic independence and advancement.

The respondents who visited extensively utilised various online services provided by digital service providers to meet their diverse needs. These services included essential tasks such as photocopying and printing documents, facilitating the completion of application forms for government schemes and services, and providing information and training on digital skills, safety, and security, as well as the use of ICT tools and different government schemes. The

comprehensive range of services offered by digital service providers underscores their role in addressing the multifaceted needs of PwDs, ranging from administrative support to capacity building and empowerment.

When asked about potential areas for improvement in the design of digital service providers to better meet the needs of persons with disabilities, several suggestions were put forth by respondents. The majority of participants, comprising 54.46%, emphasised the importance of increased accessibility features. This indicates a critical need for digital platforms and services to be more inclusive and accommodating of various disabilities, ensuring that PwDs can navigate and utilise these platforms effectively. Additionally, 33.04% of respondents suggested the development of more tailored digital training materials. This recommendation highlights the importance of providing training content that is specifically designed to address the unique learning styles, needs, and capabilities of PwDs, thereby enhancing their ability to acquire digital skills effectively.

Furthermore, 12.5% of participants proposed additional staff training on disability awareness. This suggestion underscores the importance of equipping staff members at digital service centers with the knowledge and understanding necessary to effectively interact with and support PwD customers. By enhancing staff awareness and sensitivity towards disabilities, digital service providers can create a more inclusive and supportive environment for PwDs, thereby improving the overall quality of service delivery.

DIGITAL ACCESSIBILITY, OUTREACH & EMPOWERMENT

The findings among those respondents who avail the services of digital service providers indicate that it has played a significant role in digitally empowering PwDs and enabling their socioeconomic empowerment. A notable majority, comprising 88.39% of the respondents, reported availing social welfare schemes through digital service providers, highlighting the crucial role they play in facilitating access to essential government schemes and policies. However, a smaller proportion of respondents, 11.61%, indicated that such services were not available, suggesting a need for broader accessibility and outreach efforts to cater to the diverse and particular needs for PwD population.

Regarding the availability of ICT tools, the findings reveal a wide array of tools made accessible to PwDs by the digital service providers. A vast majority, 89.29% of respondents had access to computers, followed by printers (84.82%), smartphones (79.46%), tablets (36.61%), and laptops (34.82%). This comprehensive availability of digital devices underscores

the commitment of service providers to cater to the diverse needs and preferences of PwDs, enabling them to access digital services effectively.

While a majority of respondents did not identify specific areas of training particularly beneficial for PwDs, 35.71% of them highlighted the importance of tailored capacity building to address the unique challenges faced by this demographic. These areas of capacity building include basic digital literacy, utilization of ICT tools such as computers and printers, understanding of Artificial Intelligence, and knowledge about government procedures related to disability pension plans and employment opportunities. This highlights the importance of customised training programs that cater to the specific needs and capabilities of PwDs, empowering them to leverage digital tools for financial independence and socioeconomic inclusion.

Furthermore, initiatives implemented by digital service providers have been instrumental in catering to the needs of the PwD population. A significant

A vast majority, 89.29% of respondents had access to computers, followed by printers (84.82%), smartphones (79.46%), tablets (36.61%), and laptops (34.82%).

proportion of respondents, 71.68%, noted initiatives such as education about government schemes, awareness creation about employment and entrepreneurship opportunities, facilitation of joining such opportunities, establishment of WhatsApp groups for local PwDs to communicate and support each other, assistance in acquiring tricycles through government schemes, and general accessibility assistance for mobility-constrained individuals. The majority of respondents, constituting 98.21%, reported experiencing a positive change in their ability to access and understand government schemes after availing support from digital service providers. These initiatives reflect a proactive approach by service providers in addressing the unique challenges faced by PwDs and promoting their overall empowerment and inclusion within society.

The feedback from respondents with regard to the measure of impact of digital service providers on their community has been mixed. While a substantial portion, accounting for 54.46% of respondents, strongly believe that digital service providers have positively impacted the PwD community through their work, a notable percentage holds a contrary opinion. Specifically, 20.54% of respondents strongly disagree with the notion that digital service providers have had a positive impact, indicating a level of dissatisfaction or scepticism about the effectiveness of these providers in addressing the needs of the PwD community. However, the study clearly indicated that the digital enablement of PwDs has had a positive influence on fellow PwDs in their communities. While 41.07% of respondents reported that their digital empowerment significantly inspired other PwDs to seek similar employment opportunities, 31.25% of them stated that they were considerably inspired, further highlighting the positive influence of digital enablement. 13.39% of respondents mentioned that their digital empowerment moderately inspired other PwDs to pursue employment opportunities.

CONCLUSION

The second phase of the study brings forth the crucial role played by digital service providers in advancing socioeconomic inclusion for PwDs. Through the analysis of the data from 112 surveys, valuable insights were gained into how they interact with local digital service providers. The demographic diversity of respondents across seven Indian states underscores the varied needs within the PwD communities. While males dominated the respondents, the age range and educational backgrounds varied widely, emphasizing the necessity for tailored support. A significant proportion of respondents availed digital services regularly, driven by motivations such as accessing government schemes and acquiring digital skills. The range of online services utilised by respondents reflects the comprehensive support offered by digital service providers. Suggestions for improvement include enhancing accessibility features, providing tailored training, and increasing staff awareness of disability issues. Despite some mixed feedback on the overall impact, the majority reported positive changes in their ability to access government schemes, with their digital empowerment inspiring other PwDs to pursue similar opportunities. In conclusion, digital service providers play a vital role in bridging the digital divide and building inclusivity, but ongoing efforts are needed to ensure equitable access and support for all PwDs.

POLICY RECOMMENDATIONS

Problem Statement: In the absence of Census Data from 2011, any policymaking will continue to remain incomplete in terms of its scope and outreach among diverse Persons with Disabilities (PwDs) in India. Updating the census data is crucial in gaining an accurate understanding of the demographic and socioeconomic status of PwDs. This updated data should encompass various factors such as demographics, social dynamics, economic conditions, and the diverse range of disabilities prevalent in society.

Different types of disabilities present distinct challenges and require specific accommodations to recognise and address intersectionalities within the disabled community placed differently in the ladder of socioeconomic, regional, and demographic hierarchies. Collecting detailed data on the types of disabilities among PwDs at the intersection of other identities is a crucial step in formulating effective policies that leverage ICTs to improve their lives. Understanding the specific disabilities individuals face allows policymakers to tailor ICT solutions to their unique needs, ensuring that intervention strategies are not only relevant and impactful, but also facilitates targeted funding and resource allocation.

Recommendation One for the Office of the Registrar General and Census Commissioner of India under the Ministry of Home Affairs, Government of India:

1. THE LATEST CENSUS DATA MAY MAKE AVAILABLE COMPREHENSIVE INFORMATION ON DEMOGRAPHIC AND SOCIOECONOMIC STATUS OF PERSONS WITH DISABILITIES (PWDS), INCLUDING THEIR ACCESS TO ICT AND OTHER RESOURCES

Problem Statement: The aim of introducing Unique Disability ID Card (UDID) alongside disability certificate has been to create a National Database of PwDs, issue a UDID card, and streamline the delivery of citizen entitlements and welfare schemes to diverse PwD population in the country. However, challenges such as lack of census data and demographic estimate, heavy reliance on Aadhar; documentation and a longer process for issuing the ID card and disability certificate; inaccessible and non-consensual data collection processes; and inadequate IT infrastructure among other institutional gaps, failing to accommodate

diversity among PwDs, the latest amendments to the Rules of the Rights of Persons with Disabilities Act (RPwD Act) of 2016 has furthered the systemic barriers.

Recommendation Two for the Department of Empowerment of Persons with Disabilities under Ministry of Social Justice & Empowerment:

2. ADDRESSING THE DATA GAP BY CONDUCTING COMPREHENSIVE DISABILITY CENSUS AND COLLABORATING WITH EXISTING DATABASES

3. SIMPLIFY AND STREAMLINE PROCESSES TO MAKE THEM MORE ACCESSIBLE AND USER-FRIENDLY TO FACILITATE EASE OF ACCESS TO DIGITAL SERVICES AND RESOURCES FOR PWDS

Problem Statement: The implications of the latest Digital Personal Data Protection Act (DPDP Act), 2023 on the lives of PwDs are many, including concerns about compromised consent and privacy in the current data collection practices. Due to digital inaccessibility of web pages and apps, and jargon-heavy language used in the consent and privacy forms, PwDs are facing multiple barriers in exercising the right to take decisions in relation to the use of their personal data. Moreover, the vagueness around the role of the 'Legal Guardian' and 'Legal Capacity' in the DPDP Act, 2023 hinders the decision-making capacity of PwDs. The Section 9(1) of DPDP Act, 2023 denies the autonomy and personhood of PwDs by authorising the appointed legal guardian to give consent on behalf of the

person with disability. The same is not aligned with the Rights of Persons with Disabilities Act, 2016 (RPwD Act) and the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)

Recommendation Three to the Ministry of Electronics & Information Technology (MietY):

4. AMEND DPDP ACT, 2023 BY REMOVING THE MANDATE UNDER SECTION 9(1) OF OBTAINING CONSENT OF PWDS THROUGH THEIR LEGAL GUARDIAN WHERE APPOINTED. IN THE INTERIM, MIETY MAY REFRAIN FROM PUBLISHING RULES PERTAINING TO THE IMPLEMENTATION OF SECTION 9(1) FOR PWDS

5. ALIGNED WITH THE RPWD ACT, 2016, THE DPDP ACT, 2023 MAY INTRODUCE A PROVISION TO ENSURE THAT ADEQUATE SUPPORT IS FACILITATED TO SECURE INFORMED CONSENT OF PWDS WITH REDUCED DECISION-MAKING CAPACITY

6. THE DPDP ACT, 2023 MAY REFER TO THE ACCESSIBILITY STANDARDS NOTIFIED UNDER IS 17802 TO ENSURE ACCESSIBILITY TO PRIVACY NOTICES, CONSENT FORMS AND DISPUTE RESOLUTION MECHANISMS

Problem Statement: Efforts directed at improving and enhancing access to ICTs for Persons with Disabilities (PwDs) are multifaceted, encompassing connectivity, effortless digital platform accessibility, and provision of affordable technologies. Moreover, while there is already a plethora of technologies designed to cater to the diverse needs of Persons with Disabilities (PwDs), the government's pivotal responsibility lies in ensuring that these technologies are not only accessible but also financially viable for all members of society. Therefore, it becomes imperative for the government to conduct a comprehensive inventory of available solutions and tailor them to suit the specific requirements of PwDs in India. Most importantly, enhancing internet connectivity in remote regions is crucial to ensuring that PwDs in marginalised communities can effectively access online resources.

Recommendation Four to the Ministry of Communications and Ministry of Electronics and Information Technology (MeitY):

7. BRIDGE DIGITAL DIVIDE BY ENHANCING INTERNET ACCESS AND CONNECTIVITY IN REMOTE, RURAL, AND UNDERSERVED REGIONS

Problem Statement: Without the accessibility features, no digital technology can support or facilitate the participation of persons with disabilities as citizens in society. The enforcement of accessibility standards, therefore, plays a pivotal role in ensuring that websites and applications are user-friendly for diverse needs of PwDs, thus promoting inclusivity in the digital sphere.

Recommendation Five for the Ministry of Electronics and Information Technology (MeitY):

8. ROLE OUT THE IMPLEMENTATION OF ICT ACCESSIBILITY STANDARD IS 17802 AMONG PUBLIC AND PRIVATE SERVICE PROVIDERS

Problem Statement: This engagement entails implementing initiatives such as subsidies and forging partnerships with private entities to collaboratively develop affordable digital solutions that cater to the socioeconomic realities of individuals. By strategically aligning these efforts with the unique needs and circumstances of PwDs, the government can play a proactive role in fostering greater accessibility and inclusivity within the technological landscape. By making existing technologies more affordable and widely known, the government can significantly enhance accessibility and inclusivity for PwDs. Subsidies and financial assistance programs can offset the costs of assistive devices and technologies, making them more attainable for those with limited financial resources. Moreover, partnering with private entities allows for the development of innovative yet affordable solutions tailored to the diverse socioeconomic backgrounds of PwDs.

Recommendation Six for the Department of Empowerment of Persons with Disabilities (Divyangjan) under Ministry of Social Justice & Empowerment:

9. CARRY OUT AN IMPACT STUDY ON EXISTING SUBSIDY PROGRAMS RELATING TO

ASSISTIVE TECHNOLOGIES FOR PWDS WITH A VIEW TO IMPROVING THEIR REACH AND EFFICACY

10. COLLABORATE WITH ORGANISATIONS WORKING ON DISABILITY INCLUSION, TO UPDATE THE LIST OF ASSISTIVE TECHNOLOGIES TO BE PROVIDED UNDER THESE SCHEMES ACCOMPANIED WITH THE NECESSARY TRAINING TO USE THEM

11. ESTABLISH PARTNERSHIPS WITH PRIVATE SECTOR ENTITIES TO CO-CREATE AND PROVIDE LOW-COST DIGITAL SOLUTIONS FOR PWDS, FOCUSING ON TECHNOLOGICAL INNOVATIONS THAT MEET DIVERSE SOCIOECONOMIC NEEDS

Problem Statement: ICTs and digital services, which are currently largely limited to physical locations, should be made accessible to PwDs, making it flexible for them to access services, trainings, and support from a remote location with stable internet connectivity. The collaborative efforts of the Government, private sector, civil society and the Tech-for-Good must ensure that the digital service providers are equipped with necessary assistive technologies and accessibility features to cater to the diverse needs of different categories of disabilities, including physical, cognitive, and neurological disabilities. To

achieve the same, large-scale surveys need to be conducted in respective communities and regions to get a quantitative assessment of the technological needs. Efforts should be directed towards strengthening the digital ecosystem especially in underserved and unconnected regions.

Recommendation Seven for the Ministry of Electronics and Information Technology (MeitY) and Department of Empowerment of Persons with Disabilities:

12. ENABLE REMOTE ACCESS TO DIGITAL SERVICE CENTERS TO ENSURE THAT PWDS CAN ACCESS SERVICES AND TRAININGS FROM ANY LOCATION WITH INTERNET CONNECTIVITY, ALLOWING FOR GREATER FLEXIBILITY AND INCLUSION

13. CONDUCT LARGE-SCALE SURVEYS TO ASSESS TECHNOLOGICAL NEEDS OF PWDS IN LOCAL COMMUNITIES, FOCUSING ON UNDERSERVED AND UNCONNECTED REGIONS, TO INFORM THE DESIGN AND DEPLOYMENT OF ASSISTIVE TECHNOLOGIES

Problem Statement: Through collaborative efforts of the government, private sector, and civil society, tailored digital literacy and skill development training programs and capacity building initiatives should be implemented so PwDs can leverage their ICT accessibility for their socioeconomic empowerment. However, existing programs often lack tailored

curriculum and design to accommodate the needs of the persons with disabilities.

Recommendation Eighth for the Ministry of Skill Development and Entrepreneurship and Department of Empowerment of Persons with Disabilities:

14. DEVELOP TAILORED DIGITAL LITERACY AND SKILL DEVELOPMENT TRAINING PROGRAMS FOR PWDS, ENSURING CURRICULUM AND INFRASTRUCTURAL SUPPORT THAT ACCOMMODATES DIVERSE DISABILITY NEEDS AND PROMOTES SOCIOECONOMIC EMPOWERMENT

Problem Statement: Supporting Persons with Disabilities (PwDs) through education, skill training, and transition to work opportunities is crucial for their independence and quality of life. Inclusive education ensures that educational institutions are accessible and equipped with necessary accommodations, promoting academic and social growth. Skill training programs, tailored to individual abilities, offer vocational and life skills training.

Collaboration with the private sector and tech-based civil society initiatives should provide diverse skill development opportunities. Transitioning from education to employment requires comprehensive support, including career counselling and workplace accommodations.

Recommendation Nine for the Ministry of Education and Department of Empowerment of Persons with Disabilities:

15. ENSURE ACCESSIBLE AND INCLUSIVE EDUCATION INSTITUTIONS WITH REQUIRED ACCOMMODATIONS TO SUPPORT ACADEMIC AND SOCIAL GROWTH OF PWDS, PROMOTING AN INTEGRATED LEARNING ENVIRONMENT

16. IMPLEMENT TAILORED VOCATIONAL AND LIFE SKILL TRAINING PROGRAMS FOR PWDS IN COLLABORATION WITH THE PRIVATE SECTOR AND TECH-BASED CIVIL SOCIETY INITIATIVES TO EXPAND AND DIVERSIFY SKILL DEVELOPMENT OPPORTUNITIES

Problem Statement: Accurately measuring the impact of current and future interventions on both the economy and society, particularly regarding the integration of PwDs is crucial. Despite the inherent challenges in quantifying the well-being of PwDs, it is essential to continue exploring methodologies for assessing the diverse benefits and challenges associated with the policies. These methodologies should consider various factors, such as changes in employment opportunities for PwDs and the subsequent effects of reliance on government assistance programs. Through a thorough evaluation of the outcomes of inclusion initiatives, policymakers can make well-informed decisions, allocate resources effectively, and create an environment where PwDs can actively participate in and benefit

from economic progress and societal development.

Recommendation Ten for the Ministry of Social Justice and Empowerment and Ministry of Statistics and Programme Implementation:

17. DEVELOP IMPACT EVALUATION FRAMEWORKS THAT ACCOUNT FOR THE DIVERSE ECONOMIC AND SOCIAL BENEFITS AND CHALLENGES ASSOCIATED WITH INCLUSION POLICIES FOR PWDS, CONSIDERING FACTORS LIKE EMPLOYMENT OPPORTUNITIES AND DEPENDENCY ON GOVERNMENT ASSISTANCE

Problem Statement: In addition to quantifying the impact of interventions on the economy and society, it is crucial to regularly evaluate the influence of ICTs and digital integration on the experiences of PwDs. Feedback from PwDs and other relevant stakeholders should inform the development of legislation and policies that govern their lives. Hence, establishing an efficient, adaptable, and inclusive mechanism for addressing the grievances of PwDs is imperative. By incorporating the voices and experiences of PwDs into policymaking processes, policymakers can ensure that interventions are responsive to their needs and promote genuine inclusion and empowerment. This holistic approach to evaluation and policy development could help in enabling a more equitable society.

Recommendation Eleven for the Ministry of Social Justice and Empowerment and Department of Empowerment of Persons with Disabilities:

18. IMPLEMENT A COMPREHENSIVE IMPACT EVALUATION AND FEEDBACK MECHANISM TO TRACK THE OUTCOMES OF INCLUSION INITIATIVES, ENABLING EVIDENCE-BASED POLICYMAKING AND RESOURCE ALLOCATION FOR ENHANCED SOCIAL AND ECONOMIC INTEGRATION OF PWDS

19. IMPLEMENT ACCESSIBLE AND INCLUSIVE FEEDBACK AND GRIEVANCE REDRESSAL MECHANISMS THAT ALLOW PWDS AND STAKEHOLDERS TO INFORM POLICYMAKING, FACILITATING ADAPTIVE AND RESPONSIVE LEGISLATIVE AND POLICY DECISIONS

20. INCORPORATE VOICES AND EXPERIENCES OF PWDS IN POLICYMAKING TO PROMOTE GENUINE INCLUSION AND EMPOWERMENT, BUILDING A SOCIETY THAT IS ADAPTIVE AND RESPONSIVE TO THEIR NEEDS

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This comprehensive report is an impact study to assess and evaluate how digital enablement of Persons with Disabilities (PwDs) can strengthen the digital ecosystem, wherein the PwDs are not merely seen as solution seekers, but as solution providers. Shedding light on national and international efforts, as well as getting empirical insights from India, this report seeks to examine how the use of ICT tools has had an impact on the lives of PwDs in terms of their socioeconomic development as well as their positioning in the society. From reviewing existing literature to examining the situation in India, the report navigates through challenges and opportunities in ensuring digital inclusion for PwDs. Through field-based assessment of ground impacts, learnings, and examples, it explores the role of ICTs in enabling the socioeconomic empowerment of PwDs through digital literacy, skill development, and inclusive technologies.

The multidimensional impact is assessed through the study of the assessment and its impact of ICT tools on the lives of the PwDs. The survey, grounded in field-based assessment, evaluates social, economic, personal growth, and digital factors, employing a mixed-methods approach with in-depth interviews, Rapid Impact Assessment (RIAM) tools, and both quantitative and qualitative data collection methods. The study of the impact and the outputs through a measure called the Social Return on Investment (SROI), brings out the various ways in which PwDs have been digitally and socially empowered, the key aspect of which is also to understand their family's moral, social and community standing in society.

Guided by these insights, the report presents recommendations for advancing digital enablement for PwDs, emphasizing the need for collaborative efforts among governments, civil society, and private sectors. By embracing inclusivity in the digital landscape, we pave the way for a future where everyone can thrive, regardless of ability.

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