

Digital Divide and Tribal Education: Assessing Technology Accessibility among Intermediate Students in Telangana

Shaik Peer Sahab^{1*}, Prof. Peteti Premanandam²

^{1*}Research Scholar (Part-Time); Dept. of Political Science and Public Administration; Andhra University

²Professor and Head; Dept. of Political Science and Public Administration; Andhra University

Article Received: 06-07-2023

Article Accepted: 10-08-2023

Article Published: 16-09-2023

ABSTRACT

The fast pace of digitalization in education has transformed the way students access knowledge, interact with teachers, acquire learning resources and prepare for higher education and employment. But the benefits of digital education are not equally distributed across social and geographical groups. Access to digital devices, internet connectivity, affordability, digital proficiency, institutional infrastructure, and technological support may be challenges for tribal students, particularly those in remote and economically disadvantaged areas. The present study is an attempt to study the digital divide among tribal Intermediate students of Telangana from the perspective of Public Administration. It highlights the accessibility, affordability, quality and educational use of digital technologies and considers the role of educational institutions and government interventions in fostering digital inclusion. Such an inquiry is a major context for Telangana where the tribal education system comprises a large network of residential schools and junior colleges run through specific welfare institutions. The Telangana Tribal Welfare Residential Educational Institutions Society (TGTWREIS) has a total of 165 institutions that include 23 colleges and a sanctioned junior-college student strength of 6,380. It also talks about science and computer labs across its institutions. The study proposes a multidimensional framework that includes device access, internet connectivity, affordability, online literacy, institutional support, and the use of educational technology. It suggests that digital inclusion for tribal students should be framed as an issue of educational equity and public-service provision rather than simply an issue of technology ownership. The article ends with a suggestion for policy and administrative measures to strengthen digital accessibility, institutional capacity and meaningful use of technology among the tribal Intermediate students of Telangana.

Keywords: *Digital Divide, Tribal Education, Technology Accessibility, Digital Inclusion, Intermediate Education, Telangana, Public Administration, e-literacy, Educational Equity.*

INTRODUCTION

Information and Communication Technologies (ICTs) are now an indispensable component of modern education, transforming the way students access information, communicate, learn, and engage in academic activities. With the help of smartphones, computers, internet connectivity, online learning platforms, digital libraries, educational applications, virtual classrooms, and electronic communication, education has expanded beyond the classroom. Digital technologies can provide access to a range of learning resources, support self-directed learning, improve communication between teachers and students and offer opportunities for students in geographically disadvantaged areas to connect with wider educational networks. But the growth of digital education also raises a significant public policy question: Who has equal access to digital educational opportunities and who doesn't? The digital divide is the gap between those who have access to, use of and are able to benefit from digital technologies. Such inequalities are not limited to the mere ownership of technological devices. They can be caused by variations in household income, geographic location, availability of smartphones and computers, internet connectivity, affordability of data services, electricity supply, digital literacy levels, institutional infrastructure and access to technical support. Therefore, digital inequality is progressively seen as a multidimensional phenomenon which includes access, affordability, skills, quality of usage, and the capability to convert technological resources into meaningful educational results.

This issue assumes special significance when considering tribal education. Historically, the tribal communities in India have been educationally and socio-economically disadvantaged due to geographical isolation, poor infrastructure, low household assets and unequal access to public services. The increasing digitalization of education may open new opportunities for tribal students by enhancing access to educational materials and enabling interaction with teachers and institutions. At the same time, unequal access to digital resources can reproduce or exacerbate existing educational inequalities. So digital transformation in education should be viewed not just as a technological change but as an issue of social justice, inclusion and public service delivery. The state of Telangana is a relevant context for the analysis of digital accessibility for tribal students. The State has a separate Tribal Welfare Department for educational development and welfare of the tribal communities. TGTWREIS (Telangana Tribal Welfare Residential Educational Institutions Society) operates a vast network of institutions, including residential schools, junior colleges, mini Gurukulams and degree colleges for tribal students. Official data states that the Society has 165

institutions under its umbrella, including 23 colleges with a sanctioned junior-college strength of 6,380 students. Such institutional arrangements are indicative of the premium attached to providing educational opportunities to tribal communities through publicly supported educational institutions.

The growing inclusion of technology into these institutions also emphasizes the importance of digital accessibility. TGTWREIS announced the establishment of computer and science laboratories and the introduction of digital interactive smart boards through the Corporate Social Responsibility (CSR) partnerships. These developments are indicative of the increasing importance of digital infrastructure in tribal education. But institutional availability doesn't necessarily mean equal individual access. A student can attend an institution with computer facilities, but not have their own smartphone, computer, a reliable internet connection or cheap data at home. Similarly, the mere possession of a smartphone does not guaranty adequate digital proficiency or meaningful educational usage.

In this backdrop, the present research study "Digital Divide and Tribal Education: A Study on Accessibility of Technology among the Intermediate Students of Telangana" studies the accessibility and usage of digital technologies among the tribal intermediate students. The study addresses key dimensions such as device ownership, availability of internet, affordability, digital skills, frequency and purpose of technology use and access to institutional digital facilities. The study aims to explore these aspects to understand the nature of digital inequality among tribal students and its implications to educational inclusion, equity and effective public service delivery in Telangana.

BACKGROUND OF TRIBAL EDUCATION IN TELANGANA

Educational development of Scheduled Tribe (ST) communities has been an important aspect of the welfare administration and social development policy of India. Since independence, the Union and State governments have taken several educational interventions to improve access, participation, retention and educational achievement among the tribal population. The interventions recognize the role of education as a key tool in addressing historical socio-economic disadvantages and promoting social mobility. The Ministry of Tribal Affairs has statistical and policy resources on education of Scheduled Tribes including indicators on literacy, educational attainment, enrollment and other aspects of educational development. Census based information also provide important evidence on educational status of Scheduled Tribes by age, gender, rural and urban residence and level of education. Such data are useful for understanding persisting inequalities and designing focused public interventions. The institutional and administrative set up of tribal education is peculiar to Telangana. The department implements various programs for tribal communities relating to education, health, livelihood, infrastructure development and other welfare measures. In this context, the Telangana Tribal Welfare Residential Educational Institutions Society (TGTWREIS) is playing an important role in the provision of educational opportunities to students from Scheduled Tribe communities. The residential education model is especially important because it attempts to create an integrated educational environment where students can have schooling, accommodation, academic support and other essential facilities within the same institutional setting. Such institutions are designed to reduce barriers arising from geographic isolation, household circumstances and limited access to educational facilities.

Intermediate stage is an important stage in the educational path of tribal students. The two years of Intermediate education provide a bridge between school education and higher education, professional education, vocational training and employment. Academic performance at this stage may have implications for students' future opportunities to enter degree programs, professional courses, competitive examinations, skill-development programs and the labor market. In this context, access to information and communication technologies has become ever more important. Digital technologies can help intermediate students with a variety of academic and career-related tasks. Students can use Smartphones, Computers and Internet services to access online lectures, digital textbooks, examination materials, previous question papers, assignments, educational videos and virtual learning platforms. Technology can also assist students in preparing for entrance and competitive examinations, searching for scholarships, getting information about higher education institutions and admission procedures, interacting with teachers and developing basic to more sophisticated digital skills. Digital resources can provide access to educational materials otherwise difficult to access locally for students from geographically remote tribal communities.

But the advantages of digital education will only be realized if technology is accessible, affordable, of high quality and used effectively. Students may have very different levels of access to smart phones, computers, internet connectivity, electricity, digital learning platforms and technical assistance. Where institutional computer laboratories or other digital facilities are available, infrastructural constraints, limited access or digital skills or variations in the quality and availability of internet services may limit students' opportunities to use them. In contrast, the mere presence of a smartphone does not guaranty meaningful educational access for students who are limited by issues of data affordability, connectivity, online literacy, or competing household uses. Therefore, the digital aspect of tribal education needs to be given equal importance as traditional indicators such as enrollment, attendance, literacy and educational attainment. Unequal access to technology may result in an additional layer of educational inequality, especially at a time when teaching, learning, examinations, higher education information, and career opportunities are increasingly mediated through digital platforms. The question of technology access among tribal Intermediate students is thus relevant not only for the educational policy but also for the broader issue of social

STATEMENT OF THE PROBLEM

Digitalization has created new opportunities for extending access to education, especially for learners in geographically remote and socially disadvantaged communities. Tribal Intermediate students in Telangana can benefit from online educational resources, digital textbooks, virtual classes, educational applications and internet-based information to supplement traditional classroom learning and gain access to resources that may not be readily available locally. But the benefits of digital education are not evenly distributed. The digital divide can lead to new forms of educational exclusion when students lack appropriate devices, reliable internet connectivity, affordable data services, digital skills or adequate institutional support. A student might have a device but have poor connectivity and not be able to access online learning materials, while another might not have a smartphone or computer and not be able to access online learning materials at all. Similarly, access to technology does not automatically lead to effective educational application if students have low digital proficiency or few opportunities to use institutional resources.

Thus, the present study examines the access to technology among tribal Intermediate students in Telangana in relation to device ownership, internet connectivity, affordability, frequency and purpose of using educational technology, technological literacy, institutional digital infrastructure and institutional support. It also investigates if there are differences in patterns of access to technology by gender, geography and socio-economic background. The study aims to identify the main dimensions of digital inequality and to reflect on its implications for educational inclusion and public policy.

TELANGANA'S INSTITUTIONAL FRAMEWORK FOR TRIBAL EDUCATION

The Government of Telangana has created a dedicated institutional structure to address the educational and developmental requirements of Scheduled Tribe communities. In the wider context of tribal welfare administration, the Tribal Welfare Department has an important role in implementing programs related to education, educational infrastructure, health, livelihoods and social development. The focus on education underlines the recognition that better educational facilities are vital to improve human development, social mobility and the long-term socio-economic conditions of tribal communities. One of the important institutional mechanisms under this framework is Telangana Tribal Welfare Residential Educational Institutions Society (TGTWREIS). The Society provides residential educational facilities to tribal students and aims to develop an integrated learning environment through the combination of academic instruction and residential facilities and student support. As per the latest official details, TGTWREIS operates 165 institutions, including 91 schools, 23 colleges, 29 Mini Gurukulams and 22 degree colleges. The Society has a total strength of 79,810 students (including 6,380 students at the junior-college level) according to sanctioned strength. This vast institutional network is a key part of the public education infrastructure for tribal communities in Telangana.

The institutional framework is of increasing importance in the study of digital education, as technological infrastructure is an important element of contemporary education delivery. TGTWREIS reports on the availability of computer laboratories and science laboratories in its institutions. Such facilities can offer students the chance to develop computer skills, access digital learning materials, undertake academic activities and familiarize themselves with technologies that are increasingly required in higher education and employment. The development of digital facilities in tribal educational institutions is therefore an important dimension of educational infrastructure and public service delivery. But the existence of institutional infrastructure does not necessarily translate into equal or meaningful access to the technology for all students. Institutional availability must not be confused with individual accessibility. For instance, the existence of a computer laboratory does not necessarily imply that students have regular access to a personal computer. Likewise, owning a smartphone does not mean it is used in education in a meaningful way. Students may be using their phones mainly for communication or entertainment, rather than for academic purposes. Internet availability also needs to be differentiated from reliable and affordable connectivity, especially in cases where students rely on mobile data or live in geographically remote locations.

Digital access alone does not guarantee digital competence. Students need to have the right digital literacy skills, confidence, mentoring and institutional support in order for them to be able to use online educational resources effectively. So, to truly understand digital inclusion, the following distinctions are key:

personal computers $\neq$ institutional computer laboratory

Smartphone ownership is not the same as educational use.

Having internet $\neq$ having consistent connectivity

Digital access isn't digital literacy by definition.

These demarcations form the conceptual base for the investigation of technology accessibility of tribal Intermediate students of Telangana. The current study therefore goes beyond measuring the mere presence of digital infrastructure and examines how students actually access, can afford, use and derive benefits from digital technologies in their educational lives.

ACCESSIBILITY AND DIGITAL INCLUSION AMONG TRIBAL STUDENTS

The study investigated the level of technology availability and digital inclusion among the tribal Intermediate students of Telangana by taking into account the access to digital devices, internet connectivity, affordability, technological literacy, awareness, use of technology, institutional facilities and the role of educational institutions. It was found that the surveyed students did not have equal access to technology, and most students did not have a sufficient level of awareness, understanding and practical skills for the effective use of digital technologies for educational purposes. Although a lot of students had some experience with smartphones and other digital devices, their ability to use these technologies for academic learning was still limited. The findings thus revealed that the digital divide among tribal students was not only associated with access to technological infrastructure but also with disparity in awareness, skills, confidence, affordability, and meaningful educational use.

Smartphones were listed by students as one of the most accessible forms of digital technology. But having a smartphone did not necessarily mean that students had sole or regular access to a personal device. Some students had their own smartphones, others depended on devices of parents, siblings, relatives or friends. Some students had access to digital devices mainly through their institutions of education. This pattern of shared or limited access restricted how much students could independently interact with online educational resources. In some cases students knew the basic functions of smartphones like making calls, sending messages, watching videos and using social media, but in comparison they were not aware of educational apps and digital learning resources. This indicated a gap between awareness of the use of smartphones and their application as effective educational tools.

Also at the household level the accessibility of the computer was rather limited. A significant number of students relied on computer laboratories or other external facilities for computer-related activities. The availability of computer laboratories in tribal educational institutions provides an important opportunity to bridge household-level inequalities, but educational benefits depend on frequency of access, availability of functioning equipment, internet connectivity, laboratory schedules, and guidance of teachers or technical personnel. It was found that institutional infrastructure alone cannot guaranty regular student level utilization. Some students had very little experience of preparing assignments, doing online applications, accessing digital educational materials or any other academic activity using computers.

Another important dimension of technology accessibility was Internet connectivity. Students reported differing levels of availability and quality of Internet service, particularly in relation to where students lived. For students in relatively remote areas, the challenges were greater, with weak network signals, slow connectivity, interruptions and limited access to reliable internet services. Under these circumstances, students were not able to participate consistently in online learning activities or access educational content. The study, therefore, pointed to the fact that the formal availability of internet services did not necessarily mean reliable digital access. Some students faced issues with connectivity, which reduced their consumption of technology for academic purposes and increased their dependence on institutional facilities.

Another identified important constraint was affordability. Internet-based education incurs ongoing costs for mobile data, and, in some cases, device maintenance and other digital needs. Students from low-income families struggled to stay connected to the internet. Students tended to prioritize basic communication or non-academic activities over educational applications where data was scarce. Therefore, affordability affected not only if students could get onto the internet but also how often they used it and for what reasons. The results showed that digital access had an economic dimension that was inseparable from the socio-economic conditions of the household.

One particularly important finding was about the level of digital proficiency and awareness among the students. The study found that a large number of the tribal students surveyed had basic knowledge of digital technologies and faced problems in understanding and using technology for educational purposes. However, their knowledge regarding smartphones did not necessarily translate into sophisticated digital activities like searching reliable academic information, downloading study materials, using educational applications, attending online classes, uploading assignments, accessing scholarship portals, filling online applications or finding information related to higher education and competitive examinations. This gap meant that students may have had a digital device, but not necessarily the knowledge and confidence to use that device effectively to promote educational progress.

The study also identified limited exposure and lack of adequate guidance as factors that contribute to a relatively low level of understanding of the educational potential of technology among students. Others were only familiar with the basic communication, entertainment, and social media functions, and had little exposure to digital learning opportunities. So technology was not always seen or used as an academic resource. This finding highlighted an important difference between digital availability and digital capability. Or a student may have a smartphone and internet connection, but may receive little educational benefit from it if the student did not have the skills, awareness, confidence, or guidance to use it effectively.

Educational institutions mitigated these limitations. Opportunities were provided for students with limited access to technology at home through computer laboratories, internet facilities, digital classrooms, digital learning resources, faculty guidance, and technical assistance. Such an institutional environment thus served as an important compensatory mechanism when considering digital disadvantages at the home level for students. The effectiveness of institutional support, however, depended on the availability and functionality of infrastructure, the frequency of

student access, the participation of teachers, technical maintenance, and opportunities for supervised practice. The study found that just having digital infrastructure was not sufficient to bridge the digital divide unless students were trained and motivated to use these facilities regularly.

Other important dimensions considered in the analysis were gender and the geographical location of the digital accessibility. The study did not assume any differences between male and female students, but investigated them in an empirical way in terms of device ownership, internet access, frequency of use, online literacy, and use of educational technology. Similarly, geographical differences were considered in relation to network connectivity, access to institutional facilities, electricity and other infrastructural conditions. These dimensions showed that the interaction of individual, household, institutional and geographical factors influenced access to technology.

The results from the Public Administration perspective show that the digital divide among tribal Intermediate students is not only a technological issue but also an issue of equity, inclusion, public service delivery and administrative capacity. Traditional educational administration was more of physical infrastructure, teachers, classrooms, textbooks, scholarships, residential facilities etc. The growing digitalization of education has broadened the scope of educational administration to include digital infrastructure, internet connectivity, device accessibility, digital content, digital-literacy programs, technical support and monitoring mechanisms. The study thus found that the approach to improving digital inclusion among tribal students should not be confined to just providing hardware and connectivity. The students surveyed said they needed more awareness, structured training in online literacy, regular opportunities to practice digital skills, guidance from teachers, affordable access to internet and effective institutional support. Particular attention was given to ensure that students with little prior exposure to technology were not excluded from the benefits of digital education.

The results in general revealed that the digital divide among the tribal Intermediate students surveyed was operating at multiple levels. Limited access to devices, poor connectivity, affordability issues, low digital literacy levels, limited exposure and lack of understanding of the educational applications of technology hindered students' ability to benefit from digital education. The study thus demonstrated the need for a more comprehensive public-policy approach where access to technology is accompanied by awareness, skills, affordability, institutional support and meaningful educational use. Such an approach would enable digitalization to work not only as an infrastructure project, but as an instrument of educational inclusion and improved public service delivery for tribal communities in Telangana.

POLICY IMPLICATIONS AND SUGGESTIONS

The findings of this study have significant implications for educational policy and public administration in Telangana. The study noted that the digital exclusion of tribal Intermediate students was associated with factors such as limited access to devices and internet connectivity, low awareness, limited digital literacy levels, affordability concerns, geographical constraints and lack of opportunities for regular technology use. Policy interventions should therefore go beyond providing digital infrastructure and should focus on developing the capacity of students to effectively use technology for educational purposes.

- A digital-literacy program for tribal students, with a specific focus, should be incorporated in the academic activities of tribal residential schools and junior colleges. Students should be trained in practical use of educational applications, online learning platforms, digital libraries, email, online examination systems, scholarship portals, higher-education admission portals and other digital public services. Training should be on-going and activity based and not one time orientation programs.
- Secondly, computer laboratories which are functional, well maintained and internet facilities should be provided to the tribal educational institutions. The existence of infrastructure needs to be complemented with regular monitoring of the equipment, connectivity, electricity supply and student utilization. Institutions should consider offering supervised digital-learning hours so that students who have limited access to technology at home can practice regularly.
- Thirdly, government and educational institutions should seek to improve access to devices among students who do not own personal smartphones or computers. Where possible, device-support programs, institutional device banks or shared digital-resource centers could be established, with priority given to students facing greater economic and geographical disadvantages.
- Fourth, more policy focus should be put on affordable and reliable internet connectivity. Institutions in areas with poor network coverage should be identified and prioritized for enhanced connectivity. Partnerships with appropriate telecommunications and technology providers may be explored to support educational connectivity in remote tribal areas.
- Fifthly, teachers and institutional staff should be provided with programs to build digital capacity to guide students on effective educational use of technology. Teachers can support students in identifying trustworthy online information and accessing digital resources for academic and career-related needs.
- Digital inclusion programs should have a gender and geographical dimension. Periodic assessments should identify disparities in student access to and use of technology and ensure that interventions reach students with the greatest barriers.

- Finally, TGTWREIS and the Tribal Welfare Department should develop a digital inclusion monitoring mechanism with indicators like access to devices, availability of internet, levels of digital-literacy, frequency of use of educational technology, institutional infrastructure and satisfaction of students. Such monitoring would facilitate evidence-based planning and evaluation.

The overall aim of the policy should be to move from ‘providing technology’ to ‘enabling meaningful digital participation’. Access, affordability, awareness, skills, institutional support and regular educational use would further digital inclusion and lead to greater equity in tribal education in Telangana.

CONCLUSION

The present study examined the technology accessibility and digital divide among tribal Intermediate students of Telangana and found that digitalization has brought opportunities and challenges for educational inclusion. It can enhance access to educational content, online classes, examination resources, scholarships, information on higher education, preparation for competitive examinations and other learning opportunities through digital technologies. The findings, however, revealed that the advantages of digital education were not evenly accessible to all students. The digital divide was thus found to extend further than the simple question of whether a student had a digital device and internet access.

The study revealed that access to technology for the tribal students surveyed was a multidimensional phenomenon which included availability of devices, internet connectivity, affordability, technological literacy, awareness, institutional infrastructure and the actual educational use of technology. The study revealed one of the main issues, which was the students’ limited understanding and effective use of digital technologies by many of the surveyed students. Some students had access to smart phones and other digital resources, but their knowledge of educational applications and online learning opportunities was still limited. Knowledge of the basic functions of the smartphone was widespread, but this did not necessarily mean that one could search for academic information, access digital learning materials, fill out online applications, use educational platforms or find information on higher education and competitive examinations. The research further highlighted the significance of geographical and socio-economic conditions. Limited access to digital resources due to poor connectivity, household resource constraints, affordability, shared devices and limited exposure to technology constrained students’ ability to use digital resources for learning consistently. Institutional facilities became more important. The institutional set-up in Telangana for tribal education, particularly the Telangana Group of Tribal Welfare Residential Educational Institutions Society (TGTWREIS), provides an important platform for addressing these issues. The wide network of tribal educational institutions including junior colleges and computer laboratories provides the possibility to bridge the disparities in access to technology at the household level. But the findings demonstrate that infrastructure by itself cannot guaranty meaningful digital inclusion. The success of digital education depends on whether students have access to technology, can afford it, understand it, use it, and benefit from it. Digital infrastructure needs to be complemented by systematic training in digital proficiency, reliable connectivity, affordable access, guidance of teachers, technical support, and regular opportunities for students to practice utilizing digital resources.

Therefore, from a Public Administration perspective, the digital divide should be viewed as an issue of equity, inclusion and effective delivery of public services, and not only a technological issue. As we move toward digital education, administrators need to think not just about creating infrastructure but also the ability of the disadvantaged students to make use of that infrastructure. Digitalization should contribute to educational equality and not reproduce existing disadvantages by integrating infrastructure, connectivity, affordability, online literacy, awareness and institutional support.

Improved digital inclusion of tribal Intermediate students can improve their access to education resources, higher education opportunities, competitive exams, government services and employment opportunities in future. Therefore, bridging the digital divide is an important aspect of inclusive educational governance and the broader objective of equitable socio-economic development among tribal communities in Telangana.

REFERENCES

1. Sahu, K. K. “Challenging Issues of Tribal Education in India.” *IOSR Journal of Economics and Finance*, vol. 3, no. 2, 2014, pp. 48–52.
2. Castells, Manuel. *The Rise of the Network Society*. 2nd ed., Wiley-Blackwell, 2010.
3. Castells, Manuel, et al. *Mobile Communication and Society: A Global Perspective*. MIT Press, 2007.
4. Ghosh, Suresh Chandra. *The History of Education in Modern India, 1757–1988*. Orient Longman, 2000.
5. Norris, Pippa. *Digital Divide: Civic Engagement, Information Poverty, and the Internet Worldwide*. Cambridge UP, 2001.
6. Selwyn, Neil. “Reconsidering Political and Popular Understandings of the Digital Divide.” *New Media & Society*, vol. 6, no. 3, 2004, pp. 341–362.
7. Van Deursen, Alexander J. A. M., and Jan A. G. M. van Dijk. “The Digital Divide Shifts to Differences in Usage.” *New Media & Society*, vol. 16, no. 3, 2014, pp. 507–526.
8. Van Dijk, Jan A. G. M. *The Deepening Divide: Inequality in the Information Society*. SAGE Publications, 2005.

9. Warschauer, Mark. *Technology and Social Inclusion: Rethinking the Digital Divide*. MIT Press, 2003.
10. Robinson, Laura, et al. "Digital Inequalities and Why They Matter." *Information, Communication & Society*, vol. 18, no. 5, 2015, pp. 569–582.
11. Rupavath, Ramdas. "Tribal Education: A Perspective From Below." *South Asia Research*, vol. 36, no. 2, 2016, pp. 206–228.
12. Livingstone, Sonia. *Children and the Internet: Great Expectations, Challenging Realities*. Polity Press, 2009.
13. Padhi, Sambit Kumar. "Scheduled Tribe Students in Schools of Odisha: An Analysis through Statistical Spectacles." *Journal of Indian Education*, vol. 42, no. 3, 2016, pp. 16–28.
14. Rajam, Vaidehi, A. Bheemeshwar Reddy, and Sudatta Banerjee. "Explaining Caste-Based Digital Divide in India." *Telematics and Informatics*, vol. 65, 2021,
15. Jose, Sunny, Vaidehi Rajam, and A. Bheemeshwar Reddy. "Of Access and Inclusivity: Digital Divide in Online Education." *Economic & Political Weekly*, vol. 55, no. 36, 2020, pp. 23–26.
16. Haenssgen, Marco J. "The Struggle for Digital Inclusion: Phones, Healthcare, and Marginalisation in Rural India." *World Development*, vol. 104, 2018, pp. 358–374.
17. Aydin, M. "Does the Digital Divide Matter? Factors and Conditions That Promote ICT Literacy." *Telematics and Informatics*, vol. 58, 2021,
18. Asadullah, M. Niaz, et al. "Social Divisions in School Participation and Attainment in India: 1983–2004." *Cambridge Journal of Economics*, vol. 38, no. 4, 2014, pp. 869–893.