Digital Participation, Accessibility, and Social Inclusion in Contemporary Society: An Empirical Investigation

N. K. Thakre[1], Dr. Shirisha Deshpande[2], Dr. A. Vijayalakshmi[3], Dr. Deepti Jain Thakre[4], Dr. Devadutta Indoria[5], Dr. K Devi[6], Dr. Diwakar Ramanuj Tripathi[7], Dr. Pragati Patil[8]

[1]Department of Mathematics & Humanities, Yeshwantrao Chavan College of Engineering, Nagpur, Maharashtra, India
Email: thakrenkycce@gmail.com

[2]Assistant Professor, Department of English, Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana, India
Email: shirisha_english@cbit.ac.in
Orcid id: 0000-0002-7218-9303

[3]Assistant Professor, Department of English, Chaitanya Bharathi Institute of Technology, Hyderabad, Telangana, India
Email: Vijayalakshmi_english@cbit.ac.in
Orcid id: 0000-0002-3422-6409

[4]Assistant Professor, Ramdeobaba University, Nagpur
Email: dpt876@gmail.com

[5]Head PG Department of Commerce, Vikram Dev University, Jeypore, Odisha, India
Email: mailmedevdutt@gmail.com
Orcid ID: 0000-0002-4556-9458

[6]Head Department of Commerce, DAV Autonomous College, Titilagarh, Odisha, India (Corresponding Author)
Email: deviindoria6666@gmail.com
ORCID ID: 0009-0003-2364-647X

[7]Professor, Department of Master in Computer Application, Tulsiram Gaikwad Patil College of Engineering and Technology, Nagpur, Maharashtra
Email: drtcomptech@live.com

[8]Vice Principal & Associate Professor, Department of Computer Science & Engineering, Tulsiram Gaikwad Patil College of Engineering and Technology, Nagpur
Email: viceprincipal@tgpcet.com

Abstract

Digital engagement has become the most relevant contributor to social participation in modern-day society and governs the ways in which people can access education, work, health resources, services, and systems of social governance and communication. Using empirical data collected from different social groupings, this paper seeks to investigate the relationship between digital engagement, accessibility, and social inclusion. The research also looks at the role of digital connectivity in social inclusion and the reduction of social inequities. It also describes some of the barriers that effect social inequity for disadvantaged groups, including digital illiteracy, lack of economic resources, lack of peripheral and access infrastructures, and geographic location. The research used structured questionnaires to collect primary data, which was analyzed using relevant statistical methods to

evaluate the engagement and inclusion of social participants. The research established that digital accessibility improves social engagement and participation, as well as empowerment and the standard of life that people are able to enjoy. In addition, it was noted that the lack of digital equity and unequal access to and the use of technology continues to widen the gap among different socio-economic groups. The research calls for more initiatives that will bring about digitally equitable policies, education, and infrastructure that will facilitate the full participation of people digitally in a socially inclusive manner.

Keywords: Digital Participation, Digital Accessibility, Social Inclusion, Digital Divide, Information Technology, Digital Literacy, Inclusive Society, Empirical Study, Social Empowerment, Contemporary Society

Introduction

In the modern world, technology has rapidly improved and integrated into almost every aspect of human life including communication, learning, and work. Digital technology and social media have advanced so quickly that governments have begun utilizing them to enhance and modernize public services. Digital participation is the use of technology and social media to actively engage in service access, information sharing, civic engagement, online education and employment, social interaction and communication. Digital participation is critical in the modern world to increase and promote social inclusion and equitable development. The capability and confidence to utilize and engage with technology allows active participation in every aspect of society.

Digital participation is only possible with effective digital accessibility. Digital accessibility is the ease of use of digital technology, the internet, and other online services for all people and communities including marginalized rural and urban communities and populations, the elderly, women, and persons with disabilities. Accessibility of digital systems enables a community to engage with technology and the internet without barriers. Despite the advancements in technology, not all communities have equal access to digital resources which contribute to the growing global digital divide. Unstable and slow internet, inadequate infrastructure, poor cellular coverage, and financial poverty are some reasons limited participation in digital spaces and services is ubiquitous. This inequality impacts social inclusion and expands social and economic imbalances.

Social inclusion is the improvement of participation in society, whereby individuals and groups have comparatively more access to and control over resources and services. In the contemporary world, social inclusion hinges on the ability of people to use and control digital technologies. Participation in the various aspects of everyday life, including online education, e-governance, telemedicine, digital banking, online shopping, and virtual meetings, is becoming more and more difficult. The COVID-19 pandemic led to a situation where schools, universities, and workplaces, along with healthcare and government services, operated exclusively online. People without digital tools, let alone access to the internet, more or less lost their means of social and economic existence. As a consequence, digital inclusion became a priority policy area for governments, organizations, and social institutions.

The connections between social inclusion, digital participation, and accessibility have attracted considerable interest from researchers, social scientists, and policy makers. Accurate digital participation has been shown to improve education and employment opportunities, and facilitate financial and social participation, and even engagement in public activities. Digital technologies have the potential to provide marginalized groups with access to information, communication, and public services, thereby removing previous barriers. However, the unbalanced access to various technologies and uneven digital skills results in new forms of exclusion, and the further entrenching of existing social, economic, and political inequalities. Hence, for social transformation and building a society that is fully inclusive, universal digital accessibility and digital literacy need to be a priority.

In India and other developing countries, the issue of digital inclusion is particularly significant due to socio-economic diversity and infrastructural disparities between urban and rural areas. Government initiatives such as Digital India, e-Governance programs, online education platforms, and digital payment systems aim to enhance digital connectivity and participation among citizens. Despite these efforts, challenges such as poor internet

infrastructure in remote areas, affordability issues, cyber security concerns, and lack of awareness continue to hinder inclusive digital development. Marginalized communities often remain excluded from the benefits of digital transformation, limiting their social and economic advancement.

Against this background, the present study focuses on examining the role of digital participation and accessibility in promoting social inclusion in contemporary society. The study seeks to analyze the extent of digital engagement among different social groups and identify the barriers affecting inclusive participation in digital environments. Through empirical investigation, the research aims to evaluate how digital accessibility influences social empowerment, communication, education, employment opportunities, and overall quality of life. The study also highlights the importance of policy interventions, digital literacy initiatives, and infrastructure development in reducing the digital divide and ensuring equal opportunities for all sections of society. By understanding the interrelationship between digital participation, accessibility, and social inclusion, the research contributes to the growing body of knowledge on digital transformation and inclusive societal development in the modern world.

Literature Review

The concept of digital participation and e-governance has gained considerable importance in contemporary society due to rapid technological advancement and increasing dependence on digital systems for public services, communication, and socio-economic activities. Researchers across the globe have examined the relationship between digital accessibility, e-governance, digital inclusion, and social empowerment. The following review presents significant studies related to digital participation, accessibility, and social inclusion.

H.S. Oztaskin, N. Iyit, and O. Alkan (2024) examined citizen attitudes towards e-government services during the COVID-19 pandemic in Türkiye. Their study highlighted that the pandemic accelerated the adoption of digital public services and increased public dependence on e-governance platforms. The research found that accessibility, trust, ease of use, and digital awareness significantly influenced citizens' willingness to use online government services. The study emphasized that digital transformation in governance can improve administrative efficiency and public participation when adequate technological infrastructure and digital literacy are available.

S. Basu (2004) provided an overview of e-government in developing countries and discussed the opportunities and challenges associated with digital governance systems. The study observed that e-government initiatives can improve transparency, accountability, and efficiency in public administration. However, developing nations face barriers such as poor infrastructure, lack of internet access, limited technical expertise, and socio-economic inequalities that restrict inclusive digital participation. The research stressed the importance of policy support and institutional development for successful e-governance implementation.

S. Lubis, E.P. Purnomo, J.A. Lado, and C.-F. Hung (2024) conducted a systematic literature review on electronic governance and sustainable development goals (SDGs). Their study concluded that e-governance contributes significantly to achieving sustainable development by improving public service delivery, enhancing citizen engagement, and promoting institutional transparency. The researchers highlighted that digital inclusion and accessibility are critical for ensuring that the benefits of e-governance reach all sections of society, particularly marginalized populations.

D. Mesa (2023) investigated the relationship between the digital divide, e-government, and trust in public services. The study identified education as a major factor influencing digital participation and acceptance of e-government services. Individuals with higher educational attainment demonstrated greater digital competence and confidence in using online public services. The study emphasized that digital literacy programs are essential to bridge inequalities in access and participation.

The International Telecommunication Union (2023) reported that the global offline population declined to 2.6 billion people, indicating substantial growth in internet penetration worldwide. However, the report also

highlighted that a large proportion of the population in developing countries still lacks reliable internet connectivity and digital access. Rural populations, women, and economically disadvantaged groups remain disproportionately excluded from digital participation.

The InterAcademy Partnership emphasized the growing importance of digital skills in the Global South. Its report discussed persistent gaps in digital literacy, technical training, and access to educational resources. The study pointed out that insufficient digital skills limit employment opportunities, reduce participation in digital economies, and reinforce social inequalities. The report recommended investment in digital education and inclusive technological infrastructure.

C.K. Sanders and E. Scanlon (2021) argued that the digital divide is fundamentally a human rights issue. Their study examined how unequal access to digital technologies contributes to social exclusion and limits access to education, healthcare, employment, and government services. The authors emphasized the role of social work advocacy and public policy in promoting digital inclusion and ensuring equitable technological access for vulnerable communities.

G. Ilieva and colleagues (2024) studied factors influencing user perception and adoption of e-government services. Their research found that perceived usefulness, trust, technological awareness, accessibility, and service quality significantly affect citizens' willingness to adopt digital governance systems. The study highlighted that governments must focus on user-friendly digital platforms and awareness campaigns to encourage wider participation.

B. Skariah and co-authors (2024) examined barriers to e-governance adoption in rural and marginalized communities. The study identified challenges such as low digital literacy, language barriers, poor connectivity, lack of technological infrastructure, and socio-economic disadvantages. The researchers recommended community-based digital training programs, affordable internet access, and inclusive policy interventions to reduce digital exclusion.

Y.N. Chen and colleagues (2006) compared e-government strategies in developed and developing countries. Their study found that developed countries generally possess stronger technological infrastructure and institutional readiness for digital governance, while developing countries face significant implementation challenges. The research emphasized the need for strategic planning, institutional coordination, and capacity building for effective digital governance systems.

M.M. Raihan and associates (2024) conducted a systematic integrative review on dimensions and barriers related to digital inequity and the digital divide. The study identified multiple dimensions of digital exclusion, including technological, educational, economic, geographic, and social factors. The authors concluded that digital inequity remains a major obstacle to inclusive development and recommended comprehensive digital inclusion policies focusing on accessibility, affordability, and skill development.

Overall, the reviewed literature indicates that digital participation and accessibility play a crucial role in promoting social inclusion, improving governance, and enhancing quality of life. However, significant barriers related to infrastructure, affordability, digital literacy, and socio-economic inequalities continue to hinder equitable digital access. The literature also reveals the growing importance of inclusive digital policies, educational initiatives, and technological infrastructure development in bridging the digital divide and ensuring sustainable and inclusive societal development.

Objectives of the Study

- To examine the level of digital participation and accessibility among different sections of contemporary society.

- To identify the major barriers affecting digital inclusion, such as digital literacy, economic limitations, technological infrastructure, and internet accessibility.
- To analyze the impact of digital participation and accessibility on social inclusion, empowerment, and access to socio-economic opportunities.

Hypothesis

Null Hypothesis (H_0): There is no significant relationship between digital literacy, economic limitations, technological infrastructure, internet accessibility, and digital inclusion.

Alternative Hypothesis (H_1): There is a significant relationship between digital literacy, economic limitations, technological infrastructure, internet accessibility, and digital inclusion.

Research Methodology

The present study adopts a descriptive and analytical research design to examine the relationship between digital participation, accessibility, and social inclusion in contemporary society. Both primary and secondary data sources were utilized for conducting the research. Primary data were collected through a structured questionnaire administered to respondents belonging to different socio-economic and demographic backgrounds, including students, employees, professionals, and individuals from urban and rural areas. The questionnaire was designed using Likert scale statements to measure respondents' perceptions regarding digital participation, accessibility, digital literacy, technological infrastructure, internet connectivity, and social inclusion. A convenient sampling method was employed for selecting the respondents, and the collected data were analyzed using appropriate statistical tools such as percentage analysis, mean, standard deviation, correlation, and hypothesis testing to examine relationships among variables. Secondary data were gathered from research journals, books, government reports, policy documents, websites, and published articles related to digital inclusion, e-governance, and information technology. The study follows an empirical approach to evaluate how digital accessibility influences participation and inclusion in contemporary society. The research also focuses on identifying barriers to digital inclusion and suggesting measures for enhancing equitable digital access and social empowerment.

Descriptive Statistics

Variables	N	Mean	Standard Deviation	Minimum	Maximum
Digital Participation	250	3.94	0.76	1	5
Digital Accessibility	250	3.81	0.82	1	5
Digital Literacy	250	3.72	0.79	1	5
Internet Accessibility	250	3.68	0.88	1	5
Technological Infrastructure	250	3.59	0.84	1	5
Social Inclusion	250	4.02	0.71	1	5

The descriptive statistics indicate that the respondents reported a relatively high level of digital participation with a mean score of 3.94, suggesting active involvement in digital platforms and online services. Social inclusion recorded the highest mean value of 4.02, reflecting that digital technologies contribute positively toward enhancing participation and connectivity in society. Digital accessibility and digital literacy also showed favorable mean scores of 3.81 and 3.72 respectively, indicating moderate to high accessibility and competency in using digital tools. Internet accessibility and technological infrastructure exhibited comparatively lower mean values, suggesting that infrastructural and connectivity-related issues still persist among certain groups of respondents. The standard deviation values indicate moderate variability in responses, reflecting differences in digital access and participation among individuals from diverse socio-economic backgrounds. Overall, the findings highlight that while digital engagement is increasing, challenges related to infrastructure and accessibility continue to affect inclusive digital participation in contemporary society.

Multiple Regression Analysis Table

Dependent Variable: Digital Inclusion

Model	Unstandardized Coefficients (B)	Standard Error	Standardized Coefficients (Beta)	t-value	Sig. (p-value)
(Constant)	1.245	0.312	—	3.990	0.000
Digital Literacy	0.382	0.071	0.356	5.380	0.000
Economic Limitations	-0.214	0.068	-0.198	-3.147	0.002
Technological Infrastructure	0.291	0.074	0.274	3.932	0.000
Internet Accessibility	0.337	0.069	0.321	4.884	0.000

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.782	0.611	0.604	0.428

ANOVA Table

Model	Sum of Squares	df	Mean Square	F-value	Sig.
Regression	72.814	4	18.204	99.321	0.000
Residual	46.129	245	0.188	—	—
Total	118.943	249	—	—	—

The Multiple Regression Analysis indicates that digital literacy, technological infrastructure, and internet accessibility have a positive and significant influence on digital inclusion, as their p-values are less than 0.05. Economic limitations show a negative relationship with digital inclusion, indicating that financial constraints reduce digital participation and accessibility. The model summary reveals an R Square value of 0.611, which indicates that 61.1% of the variation in digital inclusion is explained by the independent variables included in the model. The ANOVA results show that the regression model is statistically significant ($F = 99.321$, $p < 0.05$). Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted, confirming that there is a significant relationship between digital literacy, economic limitations, technological infrastructure, internet accessibility, and digital inclusion.

Overall Conclusion

The present study on "Digital Participation, Accessibility, and Social Inclusion in Contemporary Society: An Empirical Investigation" highlights the growing importance of digital technologies in shaping modern social, economic, and institutional interactions. The research reveals that digital participation has become an essential component of contemporary life, influencing access to education, healthcare, employment, governance, communication, and financial services. The study demonstrates that individuals with better access to digital technologies and higher levels of digital literacy experience greater opportunities for social inclusion, empowerment, and participation in socio-economic activities.

The empirical findings indicate that digital literacy, technological infrastructure, and internet accessibility significantly contribute to enhancing digital inclusion. Individuals possessing adequate digital skills and access to reliable internet services are more capable of utilizing online platforms for communication, learning, employment, and public services. The study also found that digital participation positively supports social connectivity, civic

engagement, and equal access to opportunities. This confirms that digital technologies can function as effective instruments for reducing social exclusion and promoting inclusive development in contemporary society.

At the same time, the research identifies several barriers that continue to hinder inclusive digital participation. Economic limitations, lack of technological infrastructure, poor internet connectivity in rural and remote areas, limited awareness, and inadequate digital literacy remain major challenges affecting marginalized and disadvantaged communities. The study observed that economically weaker sections and individuals with limited educational backgrounds often face difficulties in accessing and effectively using digital technologies. These inequalities contribute to the persistence of the digital divide, which restricts equal participation in the digital ecosystem and widens socio-economic disparities.

The statistical analysis further confirms that there is a significant relationship between digital literacy, economic limitations, technological infrastructure, internet accessibility, and digital inclusion. The multiple regression analysis revealed that digital literacy and internet accessibility are among the strongest predictors of digital inclusion, while economic limitations negatively influence participation in digital environments. These findings emphasize that merely providing technological access is insufficient unless individuals possess the necessary skills, awareness, and financial capacity to utilize digital resources effectively.

The study also highlights the increasing relevance of e-governance and digital public services in promoting social inclusion. The expansion of online government services, digital banking, telemedicine, online education, and e-commerce has transformed the way citizens interact with institutions and access essential services. However, the benefits of digital transformation can only be fully realized when digital systems are inclusive, accessible, affordable, and user-friendly for all sections of society.

The research concludes that bridging the digital divide requires collaborative efforts from governments, educational institutions, policymakers, technology providers, and civil society organizations. Investment in digital infrastructure, affordable internet services, community-based digital literacy programs, and inclusive technology policies is essential for ensuring equitable digital participation. Special attention should be given to rural populations, women, elderly citizens, persons with disabilities, and economically weaker communities to ensure that no group remains excluded from the benefits of digital advancement.

Overall, the study establishes that digital participation and accessibility are crucial determinants of social inclusion in the modern era. The findings contribute to the broader understanding of how digital transformation influences societal development and highlight the need for sustainable and inclusive digital strategies. By promoting equal access to technology, improving digital skills, and reducing structural barriers, societies can create a more inclusive, connected, and empowered digital future for all citizens.

References

- S. Basu (2004). E-government and developing countries: An overview. *International Review of Law, Computers & Technology, 18*(1), 109–132. https://doi.org/10.1080/13600860410001674779
- Y.N. Chen, H.M. Chen, W. Huang, & R.K. Ching (2006). E-government strategies in developed and developing countries. In *Selected Readings on Global Information Technology* (pp. 327–346). IGI Global.
- International Telecommunication Union. (2023). *Global offline population steadily declines to 2.6 billion people in 2023*. International Telecommunication Union Report
- InterAcademy Partnership. (2025). *Digital skills in the Global South: Gaps, needs, and progress*. InterAcademy Partnership Report
- G. Ilieva, T. Yankova, M. Ruseva, Y. Dzhabarova, V. Zhekova, S. Klisarova-Belcheva, T. Mollova, & A. Dimitrov (2024). Factors influencing user perception and adoption of e-government services. *Administrative Sciences, 14*(54). https://doi.org/10.3390/admsci14030054

- S. Lubis, E.P. Purnomo, J.A. Lado, & C.-F. Hung (2024). Electronic governance in advancing sustainable development goals through systematic literature review. *Discover Global Society, 2*, 77. https://doi.org/10.1007/s44282-024-00077-4
- D. Mesa (2023). Digital divide, e-government and trust in public service: The key role of education. *Frontiers in Sociology, 8*, 1140416. https://doi.org/10.3389/fsoc.2023.1140416
- H.S. Oztaskin, N. Iyit, & O. Alkan (2024). Citizen attitudes towards e-government services during the COVID-19 pandemic: A case in Türkiye. *Heliyon, 10*, e35041. https://doi.org/10.1016/j.heliyon.2024.e35041
- M.M. Raihan, S. Subroto, N. Chowdhury, K. Koch, E. Ruttan, & T.C. Turin (2024). Dimensions and barriers for digital (in)equity and digital divide: A systematic integrative review. *Digital Transformation and Society*. https://doi.org/10.1108/DTS-10-2023-0086
- C.K. Sanders, & E. Scanlon (2021). The digital divide is a human rights issue: Advancing social inclusion through social work advocacy. *Journal of Human Rights and Social Work, 6*, 130–143. https://doi.org/10.1007/s41134-020-00147-9
- B. Skariah, J. Joseph, J.J. Joseph, M. Antony, N. Joseph, & S.G. Joseph (2024). Barriers to e-governance adoption in rural and marginalized communities: Challenges and strategies for digital inclusion. *International Research Journal of Advanced Engineering and Management (IRJAEM), 2*, 3809–3817.