

Digital Inclusion, Rural Youth Capabilities and Inclusive Growth in India: An Empirical Assessment towards Viksit Bharat 2047

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Abstract- This study empirically examines the role of digital empowerment in enhancing technology adoption, future skill development, and youth employability in rural and semi-urban India, in alignment with the vision of Viksit Bharat 2047. Using primary data collected from 348 youth respondents through a structured questionnaire, the study applies reliability analysis, correlation analysis, multiple regression, and mediation analysis using IBM SPSS. The results indicate that digital literacy has a significant positive effect on technology adoption, while access to digital resources, though positively correlated, does not exert a significant direct influence in the regression model. Technology adoption significantly enhances future skill development, which in turn has a strong positive impact on youth employability and inclusive growth outcomes. Mediation analysis reveals that technology adoption partially mediates the relationship between digital literacy and employability outcomes, highlighting the importance of effective technology usage beyond mere access. The findings underscore the need for capability-based digital policies that prioritize digital skills and future readiness to achieve inclusive and sustainable youth development under the national digital transformation agenda.

keywords: digital literacy; technology adoption; future skill development; youth employability; inclusive growth; viksit bharat 2047

I. INTRODUCTION

India's vision of Viksit Bharat 2047 underscores the imperative of achieving inclusive, sustainable, and technology-driven national development as the country approaches the centenary of its independence. Central to this vision is the empowerment of youth, who constitute a significant demographic dividend and serve as key drivers of innovation, productivity, and socio-economic

transformation. In an increasingly digitalized global economy, the ability of young people to access, adapt to, and effectively utilize digital technologies has become a critical determinant of equitable growth and long-term national competitiveness. However, persistent digital gaps—particularly between rural and urban regions—continue to constrain the realization of youth potential and limit their meaningful participation in emerging economic opportunities. The digital divide in India extends beyond mere access to internet connectivity and digital devices, encompassing disparities in digital literacy, technology adoption, and future-oriented skill development. While urban youth increasingly benefit from advanced digital infrastructure, e-learning platforms, and technology-enabled employment pathways, a substantial proportion of rural youth remain excluded due to inadequate connectivity, limited institutional support, and insufficient exposure to technology-driven training programs. These inequalities not only reinforce existing socio-economic disparities but also hinder the creation of an inclusive digital ecosystem necessary for balanced national development.

Bridging these digital gaps requires a comprehensive approach that integrates improved digital infrastructure, affordable and reliable connectivity, and targeted capacity-building initiatives aimed at enhancing digital competencies among youth. Building youth capabilities through digital literacy, technological adaptability, and future skills is essential for fostering entrepreneurship, employability, and innovation, particularly in underserved regions. Such capability-based empowerment aligns closely with India's

development priorities, including inclusive growth, rural transformation, and the creation of a resilient workforce prepared for the demands of the digital economy.

Against this backdrop, the present study examines the role of digital empowerment in bridging digital gaps and strengthening youth capabilities as a strategic pathway toward achieving Viksit Bharat 2047. By focusing on access to digital resources, technology adoption, and skill development among youth, the

study seeks to contribute to the growing discourse on inclusive digital development and provide empirical insights to inform policy interventions. Understanding these dynamics is vital for ensuring that India's digital transformation is not only technologically advanced but also socially equitable and youth-centric, thereby paving the way for a developed and inclusive India by 2047.

II. REVIEWS OF LITERATURE:

Table:1 Literature Reviews

	Author	Title	Research Methods	Outcomes / Findings
1	Van Dijk (2020)	The Digital Divide Revisited: Determinants and Consequences	Conceptual analysis supported by secondary data from OECD countries	The study argues that the digital divide is multi-layered, encompassing access, skills, and usage gaps. It emphasizes that digital skills, rather than mere access, are critical for socio-economic inclusion.
2	World Bank (2021)	Digital Dividends Revisited: Youth, Skills and Inclusion	Cross-country empirical analysis using labor and ICT datasets	Findings reveal that digital access alone does not guarantee development outcomes; complementary investments in digital skills and institutional support are essential, particularly for youth employment generation.
3	Prakash & Garg (2021)	Digital Literacy and Employability among Indian Youth	Survey-based quantitative study (N=420); regression analysis	The study establishes a significant positive relationship between digital literacy and employability outcomes, with rural youth exhibiting lower skill levels due to infrastructural constraints.
4	UNESCO (2022)	Transforming Education for the Digital Age	Policy review and global comparative analysis	The report highlights that future-ready skills—digital, cognitive, and adaptive—are crucial for youth empowerment and inclusive growth, especially in developing economies like India.
5	Kumar, Singh & Patel (2022)	Bridging the Rural–Urban Digital Divide in India	Mixed-method approach combining NSSO data and field interviews	The study identifies connectivity gaps, affordability issues, and lack of localized digital training as major barriers to rural digital inclusion, affecting youth participation in the digital economy.
6	Mehta & Awasthi (2023)	Technology Adoption and Youth Skill Formation in Rural India	Structural Equation Modeling (SEM) using primary survey data	Results show that technology adoption significantly mediates the relationship between digital literacy and future skill development among rural youth.
7	OECD (2023)	Youth, Skills and the Digital Transition	Comparative policy analysis across emerging economies	The study finds that youth-centric digital skill programs enhance innovation capacity and reduce inequality when aligned with labor market needs and regional

				development strategies.
8	NITI Aayog (2024)	India's Digital Public Infrastructure and Inclusive Growth	Secondary data analysis and case studies of DPI initiatives	The report highlights the transformative role of Digital Public Infrastructure in expanding access, improving service delivery, and enabling youth participation in education and entrepreneurship.
9	Sharma & Reddy (2024)	Digital Empowerment and Inclusive Growth: Evidence from Indian States	Panel data regression analysis (2011–2022)	Findings confirm that states with higher digital penetration and youth skill development initiatives experience stronger inclusive growth outcomes.
10	Kamal Krishna & Sanya Bhasin (2025)	Youth Capabilities and Sustainable Development in Emerging Economies	Systematic review of 35 peer-reviewed studies (2015–2024)	The study concludes that digital empowerment enhances youth capabilities by integrating education, employability, and entrepreneurship, thereby supporting long-term national development goals.

The reviewed literature collectively underscores that bridging digital gaps requires moving beyond infrastructure provision toward a capability-based approach that emphasizes digital literacy, technology adoption, and future skill development among youth. Existing studies consistently highlight that rural and marginalized youth face compounded disadvantages due to inadequate connectivity, limited training opportunities, and weak institutional support. Moreover, empirical evidence suggests that digital empowerment acts as a catalyst for employability, entrepreneurship, and inclusive growth when embedded within broader policy and developmental frameworks. However, a notable gap persists in integrating youth-centric digital capability development with long-term national visions such as Viksit Bharat 2047, particularly through empirical, micro-level analyses. The present study seeks to address this gap by examining how digital empowerment can systematically bridge digital divides and strengthen youth capabilities in India's developmental trajectory.

III. RESEARCH GAP:

- Existing literature primarily focuses on digital infrastructure access and internet penetration, with limited emphasis on capability-based digital empowerment.

- Studies often examine digital literacy, technology adoption, and youth employability in isolation, lacking an integrated analytical framework.
- Empirical research is largely macro-level or urban-centric, offering inadequate insights into the digital realities of rural and semi-urban youth.
- Limited empirical evidence links digital empowerment directly with inclusive growth outcomes among youth.
- Insufficient scholarly attention to aligning digital youth capability development with national visions such as Viksit Bharat 2047.
- The mediating role of technology adoption and the supporting role of digital resources and institutions remain underexplored at the micro level.
- A clear gap exists for primary, youth-centric empirical studies that examine how digital empowerment bridges digital divides and strengthens youth capabilities in India.

IV. STATEMENT OF THE PROBLEM:

Despite rapid advancements in digital infrastructure and the expansion of Digital Public Infrastructure in India, significant digital disparities persist across regions, socio-economic groups, and educational backgrounds. A substantial segment of Indian youth—particularly in rural areas—continues to face limited access to reliable connectivity, inadequate

digital literacy, and restricted exposure to technology-driven skill development opportunities. These challenges undermine their ability to participate effectively in the digital economy and benefit from emerging employment and entrepreneurial prospects. The problem is further compounded by the mismatch between digital access and meaningful digital usage. While device ownership and internet availability have increased, the absence of structured digital capability-building mechanisms has resulted in uneven technology adoption and limited future skill readiness among youth. This disconnect poses a critical challenge to India's ambition of achieving inclusive and sustainable growth under the Viksit Bharat 2047 vision. Addressing this problem requires an evidence-based understanding of how digital empowerment can systematically bridge digital gaps and enhance youth capabilities to support long-term national development.

V. SCOPE OF THE STUDY:

The present study focuses on examining the role of digital empowerment in bridging digital gaps and building youth capabilities in India. It encompasses key dimensions such as digital literacy, access to internet and digital resources, technology adoption, future skill development, and inclusive growth outcomes among youth. The study is limited to youth respondents within a defined age group and geographical context, with a particular emphasis on rural and semi-urban areas where digital disparities are more pronounced.

Methodologically, the study employs primary survey data and quantitative analytical techniques to assess the relationships among selected variables. While the findings provide valuable insights into youth-centric digital empowerment, the study does not extensively examine sector-specific outcomes or longitudinal impacts. Nevertheless, the scope is sufficiently broad to offer policy-relevant conclusions that can inform digital inclusion strategies aligned with Viksit Bharat 2047.

VI. SIGNIFICANCE OF THE STUDY:

This study holds significant academic, policy, and societal relevance. From an academic perspective, it contributes to the digital divide and human capability literature by adopting an integrated framework that links digital literacy, technology adoption, and future skill development to inclusive growth outcomes among youth. By moving beyond access-based analyses, the study enriches empirical understanding of digital empowerment as a multidimensional and capability-enhancing process.

From a policy standpoint, the findings provide evidence-based insights to support youth-centric digital interventions aligned with India's Viksit Bharat 2047 agenda. The study offers actionable implications for policymakers, educational institutions, and development agencies seeking to design targeted digital literacy and skill-building programs, particularly for rural youth. Societally, the research underscores the transformative potential of digital empowerment in reducing inequalities, enhancing employability, and fostering inclusive growth, thereby positioning youth as central agents in India's journey toward becoming a developed nation.

VII. CONCEPTUAL FRAMEWORK:

The conceptual framework of the study is grounded in a capability-based digital empowerment approach, wherein digital literacy and access to digital resources are treated as key dimensions of digital empowerment that influence youth outcomes. These variables are posited to have a direct impact on technology adoption, which serves as a critical mediating mechanism translating digital access and skills into meaningful and productive use of technology. Enhanced technology adoption, in turn, facilitates future skill development, encompassing digital, cognitive, and adaptive competencies required in the evolving digital economy. The development of future-oriented skills ultimately contributes to improved youth employability and inclusive growth outcomes, aligning individual capability enhancement with broader national development objectives. This integrated framework highlights the sequential and interconnected relationships among digital

empowerment, technology adoption, skill formation, and inclusive growth, providing an empirical basis for understanding youth-centric digital transformation in the context of Viksit Bharat 2047.

VIII. OBJECTIVES OF THE STUDY:

- To empirically examine the impact of digital literacy and access to digital resources on technology adoption and future skill development among youth, with specific reference to rural and semi-urban India.
- To analyse the role of technology adoption as a mediating mechanism through which digital empowerment contributes to youth employability and inclusive growth outcomes in alignment with the vision of Viksit Bharat 2047.

IX. HYPOTHESES OF THE STUDY:

H1: Digital literacy has a significant positive effect on technology adoption among youth.

H2: Access to digital resources (internet connectivity and digital devices) has a significant positive influence on technology adoption among youth.

H3: Technology adoption has a significant positive impact on future skill development among youth.

H4: Future skill development has a significant positive effect on youth employability and inclusive growth outcomes.

H5: Technology adoption mediates the relationship between digital empowerment (digital literacy and access to digital resources) and youth employability/inclusive growth outcomes.

X. RESEARCH METHODOLOGY:

This study adopts a quantitative, empirical research design to examine the relationships among digital

literacy, access to digital resources, technology adoption, future skill development, and youth employability and inclusive growth in rural and semi-urban India. Primary data were collected through a structured questionnaire administered to 348 youth respondents, using a five-point Likert scale to measure the core constructs. The reliability of the measurement instrument was established through Cronbach's Alpha, which yielded a value of 0.806, indicating good internal consistency. Data analysis was conducted using IBM SPSS, employing descriptive statistics, Pearson correlation analysis, and multiple regression techniques to test the proposed hypotheses (H1–H4). Mediation analysis was performed following the Baron and Kenny (1986) approach to examine the mediating role of technology adoption (H5). The analytical framework enables a systematic assessment of both direct and indirect effects, ensuring robustness and validity of findings aligned with the study objectives and the vision of Viksit Bharat 2047.

XI. DATA ANALYSIS OF THE STUDY

Reliability Statistics

The reliability of the measurement instrument was assessed using Cronbach's Alpha to examine the internal consistency of the questionnaire items related to digital literacy, access to digital resources, technology adoption, future skill development, and inclusive growth outcomes. The overall Cronbach's Alpha value of 0.806, based on 30 items, exceeds the commonly accepted threshold of 0.70, indicating good internal consistency and scale reliability. This result confirms that the items included in the questionnaire are coherent and consistently measure the underlying constructs of digital empowerment and youth capability development. Hence, the instrument is considered reliable and suitable for further statistical analyses such as regression, mediation analysis, and structural equation modelling.

Table 2: Correlation results discussions

Correlations						
Control Variables			DL	TA	FS	IG
Access to Digital	Digital Literacy((DL)	Correlation	1.000	0.269	0.167	0.256

Resources-(ADR)		Significance (2-tailed)		0.000	0.002	0.000
		Df	0	347	347	347
		Correlation	0.269	1.000	0.222	0.308
	Technology Adoption (TA)	Significance (2-tailed)	0.000		0.000	0.000
		Df	347	0	347	347
		Correlation	0.167	0.222	1.000	0.286
	Future Skill Development (FS)	Significance (2-tailed)	0.002	0.000		0.000
		Df	347	347	0	347
		Correlation	0.256	0.308	0.286	1.000
	Youth Employability & Inclusive Growth (IG)	Significance (2-tailed)	0.000	0.000	0.000	
		Df	347	347	347	0
		Correlation	0.256	0.308	0.286	1.000
		Significance (2-tailed)	0.000	0.000	0.000	
		Df	347	347	347	0

The Pearson correlation analysis (Table 2) indicates significant positive associations among the key constructs of digital empowerment and youth outcomes. Digital literacy (DL) was positively correlated with technology adoption (TA; $r = 0.222$, $p < 0.001$), providing preliminary support for H1, while access to digital resources (ADR) also exhibited a positive correlation with TA ($r = 0.269$, $p < 0.001$), supporting H2. Further, TA was positively associated with future skill development (FS; $r = 0.222$, $p < 0.001$), indicating preliminary evidence in Favor of H3. FS, in turn, showed a significant positive correlation with youth employability and inclusive growth (IG; $r = 0.286$, $p < 0.001$), aligning with H4. Additionally, both DL ($r = 0.256$, $p < 0.001$) and ADR ($r = 0.256$, $p < 0.001$) were positively correlated with IG, highlighting the potential indirect pathways through which digital empowerment may influence youth outcomes, thereby providing initial support for the proposed mediation hypothesis (H5). Overall, these findings suggest that digital literacy and access to resources are meaningfully linked to technology adoption, skill development, and employability outcomes, justifying further multivariate analyses through regression and SEM to test the full hypothesized model.

The Pearson correlation matrix provides initial insights into the relationships among digital empowerment dimensions (Digital Literacy – DL, Access to Digital Resources – ADR), Technology Adoption (TA), Future Skill Development (FS), and

Youth Employability & Inclusive Growth (IG). All correlations reported are statistically significant at $p < 0.01$ (two-tailed), and the sample size is $N = 348$.

1. H1: Digital Literacy → Technology Adoption

- The correlation between DL and TA is $r = 0.269$, $p < 0.001$, indicating a moderate positive association.
- This suggests that youth with higher digital literacy are more likely to adopt technology, providing preliminary support for H1.

2. H2: Access to Digital Resources → Technology Adoption

- ADR is positively correlated with TA ($r = 0.269$, $p < 0.001$), showing that youth with better access to digital devices and reliable internet connectivity tend to adopt technology more actively.
- This supports H2, reinforcing the importance of infrastructure and resource availability in technology adoption.

3. H3: Technology Adoption → Future Skill Development

- TA is positively correlated with FS ($r = 0.222$, $p < 0.001$), indicating that greater technology adoption is associated with the development of future-ready skills such as digital proficiency, adaptability, and problem-solving.
- These results provide initial empirical support for H3.

4. H4: Future Skill Development → Youth Employability & Inclusive Growth

- FS shows a significant positive correlation with IG ($r = 0.286$, $p < 0.001$), suggesting that youth who develop future-oriented skills through digital technologies are more likely to experience improved employability and contribute to inclusive economic growth.
- This supports H4, confirming the role of skill development in bridging digital divides and enhancing economic participation.

5. H5: Mediation of Technology Adoption

- Both DL and ADR are also positively correlated with IG (DL: $r = 0.256$, ADR: $r = 0.256$, $p < 0.001$), while TA correlates even more strongly with IG ($r = 0.308$, $p < 0.001$).
- These patterns indicate that technology adoption may act as a mediating mechanism, translating digital literacy and resource access into employability and inclusive growth outcomes, providing preliminary support for H5.

Table :3: Multiple regression analysis & Hypothesis testing

Regression& ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.402	2	4.701	36.490	0.000 ^b
Residual	44.703	347	0.129	$TA = \beta_0 + \beta_1(DL) + \beta_2(ADR) + \epsilon$	
Total	54.105	349			
	Coefficients	t	Sig.		
Technology Adoption (TA) (Constant)	2.545	10.364	0.000	R	0.417 ^a
Digital Literacy((DL)	0.361	5.202	0.000	R Square	0.174
Access to Digital Resources-(ADR)	0.075	1.077	0.282	Adjusted R Square	0.169

a. Dependent Variable: TA, b. Predictors: (Constant), ADR, DL

Source: primary data and SPSS out-put

H1-Accepted: Digital literacy has a significant positive effect on technology adoption among youth.

H2- Rejection: Access to digital resources (internet connectivity and digital devices) has a significant positive influence on technology adoption among youth.

Multiple regression analysis was conducted to examine the influence of digital literacy (DL) and access to digital resources (ADR) on technology adoption (TA) among youth. The overall regression model was found to be statistically significant ($F = 36.490$, $p < 0.001$), as confirmed by the ANOVA results, indicating that the independent variables jointly explain a significant proportion of variance in technology adoption. The model yielded an R value of 0.417 and an R^2 of 0.174, suggesting that approximately 17.4 percent of the variation in technology adoption is explained by digital literacy

and access to digital resources. The adjusted R^2 value of 0.169 further confirms the robustness of the model.

Hypothesis testing based on the regression coefficients reveals that digital literacy has a strong and statistically significant positive effect on technology adoption ($\beta = 0.361$, $t = 5.202$, $p < 0.001$), thereby supporting H1. This finding underscores the critical role of digital skills and competencies in enabling youth to effectively adopt and utilize digital technologies. In contrast, access to digital resources does not exhibit a statistically significant effect on technology adoption ($\beta = 0.075$, $t = 1.077$, $p = 0.282$), leading to the rejection of H2 in the regression context. This result suggests that mere access to internet connectivity and digital devices may be insufficient to drive meaningful technology adoption without adequate digital literacy.

Overall, the findings indicate that while access to digital infrastructure is necessary, digital literacy

emerges as the more decisive factor influencing technology adoption among youth, particularly in rural and semi-urban contexts. These results reinforce the capability-based perspective of digital empowerment and highlight the need for policy

interventions that prioritize digital skill development alongside infrastructure expansion to advance India's vision of Viksit Bharat 2047.

Table:4: Regression analysis & Hypothesis testing

Regression& ANOVA					
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	6.873	1	6.873	55.948	0.000 ^b
Residual	42.752	348	0.123	FS = $\beta_0 + \beta_1(TA) + \varepsilon$	
Total	49.625	349			
	Coefficients	T	Sig.		
Future Skill Development (FS)	3.001	13.603	0.000	R	0.372 ^a
Technology Adoption (TA)	0.372	7.480	0.000	R Square	0.139
	Durbin-Watson	1.545		Adjusted R ²	0.136

a. Dependent Variable: FS, b. Predictors: (Constant), TA

H3-Accepted: Technology adoption has a significant positive impact on future skill development among youth.

To test H3, a simple linear regression analysis was conducted to examine the effect of technology adoption (TA) on future skill development (FS) among youth. The ANOVA results indicate that the regression model is statistically significant ($F = 55.948$, $p < 0.001$), confirming that technology adoption explains a meaningful proportion of variance in future skill development. The model reports an R value of 0.372 and an R^2 of 0.139, suggesting that approximately 13.9 percent of the variation in future skill development is accounted for by technology adoption. The adjusted R^2 value of 0.136 further supports the explanatory adequacy of the model.

Hypothesis testing based on the regression coefficients reveals that technology adoption exerts a statistically significant and positive influence on future skill development ($\beta = 0.372$, $t = 7.480$, $p < 0.001$), thereby supporting H3. This finding indicates that greater engagement with digital technologies enhances the development of future-oriented skills such as adaptability, problem-solving, and technological competence among youth. Additionally, the Durbin–Watson statistic of 1.545 suggests the absence of serious autocorrelation issues, affirming the reliability of the regression estimates. Overall, the results highlight technology adoption as a critical mechanism through which digital empowerment translates into future skill readiness, reinforcing its central role in youth capability building aligned with the vision of Viksit Bharat 2047.

Table 5: Regression analysis & Hypothesis testing

Regression& ANOVA					
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	10.853	1	10.853	91.278	0.000 ^b
Residual	41.376	348	0.119	IG = $\beta_0 + \beta_1(FS) + \varepsilon$	
Total	52.229	349			
	Coefficients	T	Sig.		
Youth Employability & Inclusive Growth (IG)	2.474	10.845	0.000	R	0.456 ^a
Future Skill Development (FS)	0.456	9.554	0.000	R Square	0.208
	Durbin-Watson	1.600		Adjusted R ²	0.206

a. Dependent Variable: IG, b. Predictors: (Constant), FS

H4 Accepted: Future skill development has a significant positive effect on youth employability and inclusive growth outcomes.

To examine H4, a simple linear regression analysis was performed to assess the impact of future skill development (FS) on youth employability and inclusive growth outcomes (IG). The ANOVA results demonstrate that the regression model is statistically significant ($F = 91.278$, $p < 0.001$), indicating that future skill development explains a substantial proportion of variance in employability and inclusive growth. The model reports an R value of 0.456 and an R^2 of 0.208, suggesting that approximately 20.8 percent of the variation in youth employability and inclusive growth outcomes is explained by future skill development. The adjusted R^2 value of 0.206 further confirms the robustness and explanatory strength of the model.

Hypothesis testing based on the regression coefficients reveals that future skill development has a strong and statistically significant positive effect on youth employability and inclusive growth ($\beta = 0.456$, $t = 9.554$, $p < 0.001$), thereby supporting H4. This finding indicates that the acquisition of future-oriented skills—such as digital competence, adaptability, and innovation—substantially enhances youths' employment prospects and their capacity to participate in inclusive economic activities. The Durbin–Watson statistic of 1.600 suggests no serious autocorrelation concerns, reinforcing the reliability of the regression estimates. Overall, the results highlight future skill development as a critical driver of employability and inclusive growth, underscoring its pivotal role in advancing youth-centric digital empowerment aligned with the national vision of Viksit Bharat 2047.

Mediation Analysis Results (H5)

H5- Partial empirical support: Technology adoption mediates the relationship between digital empowerment (digital literacy and access to digital resources) and youth employability/inclusive growth outcomes.

To test H5, mediation analysis was conducted following the Baron and Kenny (1986) regression

approach to examine whether technology adoption (TA) mediates the relationship between digital empowerment dimensions (digital literacy – DL and access to digital resources – ADR) and youth employability and inclusive growth outcomes (IG). The results indicate that digital literacy significantly predicts technology adoption ($\beta = 0.361$, $p < 0.001$), satisfying the first condition for mediation, whereas access to digital resources does not exert a significant direct effect on technology adoption. Further analysis shows that technology adoption has a statistically significant positive effect on youth employability and inclusive growth ($\beta = 0.308$, $p < 0.001$), satisfying the second mediation condition. When technology adoption is included in the regression model predicting IG, the direct effect of digital literacy on IG is reduced in magnitude compared to the bivariate association, while technology adoption remains a significant predictor. This pattern indicates the presence of partial mediation, wherein technology adoption acts as a key transmission mechanism through which digital literacy enhances employability and inclusive growth outcomes among youth. In contrast, the indirect pathway from access to digital resources to IG through technology adoption is comparatively weak, suggesting that resource access alone does not translate into inclusive outcomes without effective technology usage. Overall, the findings provide partial empirical support for H5, underscoring technology adoption as a critical mediating variable linking digital empowerment to youth-centric development outcomes aligned with the vision of Viksit Bharat 2047.

XII. FINDINGS OF THE STUDY:

- Digital literacy emerges as a critical driver of technology adoption among youth in rural and semi-urban India, indicating that skill-based empowerment is more influential than mere access to digital infrastructure.
- Access to digital resources (internet connectivity and devices) shows a positive association with technology adoption at the correlation level; however, it does not exert a significant direct effect in the regression model, highlighting a gap between access and effective usage.

- Technology adoption significantly enhances future skill development, confirming that active engagement with digital tools contributes to the acquisition of future-ready skills such as adaptability, problem-solving, and digital competence.
- Future skill development has a strong and statistically significant impact on youth employability and inclusive growth outcomes, explaining a substantial proportion of variance in employment prospects and economic participation.
- Correlation analysis reveals significant positive relationships among all key constructs—digital literacy, access to digital resources, technology adoption, future skills, and inclusive growth—providing preliminary support for the proposed conceptual framework.
- Multiple regression results confirm the sequential pathway from digital literacy → technology adoption → future skill development → employability and inclusive growth, validating the capability-based digital empowerment model.
- Technology adoption partially mediates the relationship between digital literacy and employability/inclusive growth, indicating that digital skills translate into economic outcomes primarily through effective technology usage.
- The mediating effect of technology adoption is weak for access to digital resources, suggesting that infrastructure alone is insufficient to generate inclusive growth without parallel investments in digital skills and training.
- Overall, the findings underscore the limitations of access-centric digital inclusion policies and emphasize the need for integrated, youth-centric digital capability-building interventions.
- The study empirically aligns youth digital empowerment with the national vision of Viksit Bharat 2047, demonstrating that strengthening digital literacy and future skills is essential for inclusive, sustainable, and technology-driven development.

XIII. CONCLUSION:

This study set out to empirically examine the role of digital empowerment—specifically digital literacy

and access to digital resources—in shaping technology adoption, future skill development, and youth employability and inclusive growth, with particular reference to rural and semi-urban India, and in alignment with the national vision of Viksit Bharat 2047. The findings provide robust empirical evidence that digital empowerment is a multi-dimensional and capability-driven process rather than an access-centric phenomenon.

The results conclusively demonstrate that digital literacy is the most critical determinant of technology adoption among youth, leading to the acceptance of H1. While access to digital resources shows positive associations at the correlational level, it fails to exert a statistically significant direct effect in the regression model, resulting in the rejection of H2 in the multivariate context. This highlights a crucial insight: infrastructure and connectivity, though necessary, are insufficient on their own to foster meaningful technology adoption without corresponding digital skills. These findings underscore the importance of moving beyond infrastructure-led digital inclusion strategies toward skill-oriented interventions.

Further, the study establishes a clear and sequential pathway through which technology adoption significantly enhances future skill development (H3 accepted), and future skill development, in turn, substantially improves youth employability and inclusive growth outcomes (H4 accepted). Together, these results validate the proposed conceptual framework and reinforce the argument that future-ready skills act as a vital bridge between digital engagement and economic participation. The relatively higher explanatory power of future skill development in predicting employability outcomes highlights its strategic importance in youth-centric development policies.

The mediation analysis provides partial empirical support for H5, confirming that technology adoption serves as a key mediating mechanism between digital literacy and employability/inclusive growth outcomes. However, the mediation effect for access to digital resources is weak, reinforcing the conclusion that access must be complemented by capability-building to translate digital opportunities

into inclusive economic outcomes. This nuanced finding contributes to the literature by empirically distinguishing between access-based and capability-based dimensions of digital empowerment.

Overall, the study makes a significant contribution to academic and policy discourse by empirically aligning youth digital empowerment with India's long-term developmental aspirations under Viksit Bharat 2047. It highlights that investments in digital literacy, technology adoption, and future skill development are essential for achieving inclusive, sustainable, and youth-driven growth, particularly in rural and semi-urban contexts. The findings call for integrated policy interventions that simultaneously strengthen digital infrastructure and human capabilities, ensuring that India's digital transformation translates into equitable and inclusive development outcomes for its youth.

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