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Barriers Beyond Bandwidth: Self-Esteem, Confidence and Digital Access Among Rural Women and Third-Gender Individuals in India

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Abstract

As India accelerates its transition into a digital economy, significant populations remain psychologically and structurally excluded from the digital revolution. This study investigates the intersection of digital exclusion and psychosocial wellbeing, particularly self-esteem and confidence among socially and economically marginalized women and third-gender individuals in rural Maharashtra. Using a mixed-method approach, data were collected from 24 respondents (19 women and 5 third-gender individuals) across six regions of the state. Quantitative data included 12 demographic and digital access variables, while qualitative data were generated through 28 semi-structured interview questions spanning seven thematic domains: social identity, digital access, digital skills, outcomes, empowerment, cultural norms, and civic exclusion. Findings suggest that digital exclusion is not solely a result of infrastructural inadequacies, but is deeply embedded in local caste-gender hierarchies, economic marginalization, and psycho-emotional barriers such as fear, ridicule, and low digital self-efficacy. Quantitative analysis revealed that respondents with no or limited digital literacy reported lower confidence and minimal participation in digital governance services. Thematic analysis highlighted patterns of internalized digital inferiority, learned helplessness, and gendered gatekeeping in device use and decision-making. Importantly, third-gender respondents experienced an intensified form of digital exclusion shaped by both stigma and invisibility, often resulting in isolation and disconnection from vital online platforms for education, welfare, and expression. The study draws on psychological frameworks such as stereotype threat, digital self-efficacy, and learned helplessness, and sociological theories of digital capital and structural exclusion to interpret the findings. This paper argues for a multidimensional understanding of digital inequality that centers on both technological infrastructure and psychological access. The findings have significant implications for digital inclusion policies, especially those aiming to empower marginalized identities in rural India.

Keywords: Digital Exclusion, Self-Esteem, Rural Maharashtra, Third-Gender Communities, Digital Literacy, Psychology, Mixed-method Research.

Introduction

The digital turn in India has been hailed as a transformative force capable of bridging longstanding structural inequalities. With the proliferation of smartphones, expanding internet infrastructure, and policy pushes like Digital India, it is often assumed that access to digital technologies is a near-universal reality. However, beneath this techno-optimism lies a deeper social divide, one that is not merely about infrastructure but about who feels empowered, entitled, and psychologically safe to use digital technologies. Digital access, in this context, is not just a technological issue but a socio-psychological and structural one, especially for historically marginalized groups such as rural women and third-gender individuals in India. Digital exclusion in rural India is both material and symbolic. While much research has focused on the first-level digital divide access to devices and networks, growing scholarship acknowledges the more insidious second- and third-level divides. These concern digital skills, self-efficacy, outcomes of engagement, and the internalization of digital hierarchies (van Deursen & Helsper, 2015; Robinson et al., 2020). Marginalized individuals may have access to mobile phones but continue to experience digital inferiority, alienation, and fear of failure. For rural women and third-gender individuals, these divides are not incidental; they are reinforced by caste hierarchies, patriarchal norms, cultural taboos, and stigmatized social identities (Rao, 2023; Kumar & Subramanian, 2022).

Importantly, digital exclusion is closely tied to psychological dimensions such as self-esteem, confidence, and mental well-being. Research in psychology has demonstrated that repeated experiences of exclusion whether in classrooms, families, or digital spaces can lead to learned helplessness (Seligman, 1972), lower digital self-efficacy (Eastin & LaRose, 2000), and reduced participation in civic and economic life. When marginalized individuals perceive digital technology as alien or hostile, they are more likely to withdraw, self-censor, or depend on intermediaries, reinforcing their social disempowerment (Bourdieu, 1986; Warschauer, 2004). This intersection becomes even more pronounced in the case of third-gender persons, who are doubly marginalized: first by their gender identity and second by their caste or class background. Despite policy recognition of transgender rights in India (NALSA, 2014), third-gender individuals often remain digitally invisible, excluded from online education, financial services, and platforms for expression (UNESCO, 2021). The digital world, designed around hetero-normative and caste-normative standards, frequently fails to accommodate their voices, eroding their psychological agency.

In rural contexts, digital participation is also shaped by social gatekeeping and power hierarchies within families and communities. Women and third-gender individuals often do not control the devices they use. Even when they do, they face ridicule, surveillance, or moral policing when attempting to learn or participate online (Gurumurthy et al., 2019). This environment fosters feelings of digital inferiority and an internalized belief that one is "not made" for technology. Such psychological exclusion operates in tandem with structural exclusions, reinforcing marginalization. Existing literature on the sociology of the digital divide (Selwyn, 2004; Ragnedda & Muschert, 2013) has expanded the definition of access to include digital capital, the combination of material, cognitive, and social resources needed to effectively engage with digital technologies. However, there remains a dearth of empirical research that studies digital exclusion within the lived psychological experiences of socially and gender-marginalized rural populations. Moreover, the voices of third-gender individuals, especially in the Indian rural context, remain critically underrepresented.

This research addresses this gap by adopting a mixed-method approach to study how self-esteem, confidence, and digital access intersect for rural women and third-gender individuals in Maharashtra. Drawing on both quantitative data (demographics, digital access, digital literacy levels) and qualitative narratives (via 28 semi-structured interview questions), this study explores:

- How rural women and third-gender individuals experience digital exclusion;
- What psychological barriers accompany or emerge from digital marginalization;
- How caste, gender, income, and geography intersect to shape digital self-perception;
- And what broader implications these exclusions hold for mental well-being and digital citizenship.

By analyzing these patterns through frameworks like learned helplessness (Seligman, 1972), stereotype threat (Steele & Aronson, 1995), and digital capital (Ragnedda, 2017), this paper argues for a multidimensional understanding of digital exclusion one that incorporates not just the presence of technology but the affective and cognitive ability to use it meaningfully. In doing so, this study contributes to a growing interdisciplinary discourse that bridges digital sociology, development studies, and psychological well-being, urging policymakers and technologists to rethink what inclusion truly means in the digital age. It also offers insights for gender-sensitive, caste-conscious digital education programs and infrastructure development strategies that prioritize not only "reaching the last mile" but also restoring the last mind's psychological readiness and dignity to participate equally in the digital world.

Literature Review

Psychological Frameworks and Digital Exclusion

Psychological dimensions of exclusion, though less visible than infrastructural or policy-level barriers, are often more enduring and internalized. Among the most foundational concepts relevant to this study is self-esteem, defined as an individual's overall subjective emotional evaluation of their own worth (Rosenberg, 1965). Low self-esteem is not simply a personal deficit but a socio-relational outcome, shaped by repeated experiences of marginalization, invalidation, and symbolic violence. For women and third-gender individuals in marginalized rural settings, digital exclusion operates not only through material lack, but also through deeply embedded narratives of technological unworthiness and inferiority. One influential theory explaining this pattern is learned helplessness, introduced by Seligman (1972), which posits that individuals who repeatedly encounter failure or uncontrollable barriers begin to perceive future efforts as futile. In digitally marginalized populations, the consistent inability to operate devices, access services, or control digital interactions often reinforces this helplessness, leading to disengagement, anxiety, and reduced motivation. This phenomenon is particularly acute when exclusion is not random but systematically embedded within caste-gender hierarchies. Individuals who grow up in environments where they are discouraged or punished for attempting to use technology may begin to internalize these patterns as natural or deserved, resulting in long-term psychological withdrawal from the digital sphere.

Relatedly, digital self-efficacy, a domain-specific application of Bandura's (1997) broader self-efficacy theory, is critical in understanding how individuals judge their own ability to use digital tools. Studies have shown that perceived

competence is often a better predictor of digital engagement than actual skill level (Eastin & LaRose, 2000). In contexts where confidence is eroded by ridicule, lack of training, or exclusionary norms, digital self-efficacy suffers, even when minimal access exists. Gurumurthy and Chami (2019) found that in many rural households, women feel apprehensive about using smartphones due to fear of making mistakes or being judged, a fear that inhibits their digital participation regardless of technical infrastructure.

Another crucial concept is stereotype threat, which refers to the risk of confirming negative stereotypes about one's social group (Steele & Aronson, 1995). For example, if women or third-gender persons internalize the belief that they are "less capable" in using digital tools, they may underperform or avoid engagement altogether in digital contexts. This is not merely a psychological outcome but a systemic effect: social labelling intersects with technological narratives to produce stratified participation in digital spaces. In rural India, where technological competence is often associated with masculinity, caste privilege, or urban fluency, such threats are amplified. The result is not only lower usage but also a chronic undermining of self-worth. Crucially, these psychological frameworks do not function in isolation but are often compounded. For instance, stereotype threat may lead to reduced digital self-efficacy, which in turn contributes to learned helplessness over time. Collectively, they shape a digital subjectivity, a way of perceiving the self in relation to technology that reinforces exclusion even when access is technically possible.

Mental Health and Digital Marginalization

The relationship between digital exclusion and mental health has garnered increasing attention in recent years, particularly with the rise of digital-first models in education, healthcare, and governance. While digital inclusion can enhance well-being by increasing access to information, connection, and opportunity, exclusion can exacerbate psychological distress, isolation, and vulnerability especially among populations already burdened by stigma and systemic disadvantage. Social isolation is one of the most frequently cited psychological consequences of digital exclusion (Newman et al., 2020). In rural regions where digital platforms often serve as the primary link to services, education, or social networks, lack of access or capacity can create feelings of being left behind. This is particularly true for youth, women, and third-gender individuals, who may witness others in their community benefitting from digital tools while they themselves remain dependent or invisible. The resulting psychological gap can lead to low self-worth, loneliness, and anxiety. This has been highlighted in an interesting study by Jawale in 2019, which explores the subtle nuances of social media expressions of digital platforms and how they transcend to suppressing one's thoughts (Jawale, 2019). It also shows the very nature of Digital media that leads to marginalization.

Digital marginalization also limits access to mental health resources, a concern of particular urgency in rural India where formal psychological services are already scarce. Mobile-based health services, online counselling, and helplines increasingly rely on digital literacy and access. Excluded individuals are thus cut off from both information and intervention, making their mental health needs not only unmet but also unarticulated. In a study on rural digital exclusion, Rao and Sinha (2021) noted that many third-gender individuals were unaware of or unable to access COVID-related welfare due to digital illiteracy, compounding both economic and emotional strain. Moreover, digital spaces when accessed are not necessarily safe for marginalized populations. Online harassment, surveillance, and caste- or gender-based trolling contribute to digital trauma and withdrawal, especially among individuals with limited support systems or coping mechanisms (UNESCO, 2021). In such contexts, even partial access can result in exposure without empowerment, worsening psychological outcomes.

Psychological exclusion also manifests as digital fatigue and avoidance, where individuals begin to associate digital technologies with emotional labour, fear, or confusion. This is not merely a behavioural adaptation but a mental health response to sustained alienation. A study by Wagh and Dongare in 2022 indicates that digital platforms may lead to increased levels of impulsivity, negative outcomes and virtual freedom. Their study highlights the negative relationship between use of digital platforms and its impact on mental health (Wagh & Dongare, 2022). In marginalized communities, this often becomes generational passed on through families and community expectations, where digital disengagement is normalized as cultural or moral propriety. Finally, digital marginalization must be understood as a form of structural mental health oppression. While mental health is often treated as an individual concern, it is deeply shaped by social and digital ecologies. When public policies assume universal digital readiness, they inadvertently erase the psychological and emotional labour required by marginalized individuals to "catch up" or "fit in." The cost of this erasure is borne in silence, often by those least represented in both tech discourse and mental health advocacy.

Research Objectives

This study aims to explore the relationship between digital exclusion and psychological wellbeing, specifically self-esteem and confidence among socially and economically marginalized rural women and third-gender individuals in Maharashtra. The following research objectives guide the inquiry:

1. To examine the psychological dimensions of digital exclusion, including self-esteem, digital self-efficacy, and confidence among respondents from marginalized backgrounds.

2. To analyze the impact of digital marginalization on mental wellbeing, including feelings of social isolation, helplessness, and emotional withdrawal.
3. To explore how intersecting social identities (caste, gender, class) shape psychological access to digital technologies.
4. To investigate barriers to digital participation that are rooted in psychosocial norms, cultural taboos, or learned helplessness rather than infrastructural constraints.
5. To identify the differentiated digital exclusion experiences of third-gender individuals, in comparison with rural women, in relation to psychological empowerment and digital self-perception.

Methodology

Research Design

The study employs a mixed-methods design, integrating quantitative and qualitative approaches to develop a comprehensive understanding of the psychological consequences of digital exclusion. The mixed-method framework enables both statistical insights and rich narrative interpretation, which is especially valuable when studying marginalized communities whose experiences may not be fully captured through numerical data alone.

A total of 24 participants were selected through purposive sampling from six rural regions of Maharashtra. Distribution of these participants as per the gender is given in following figure 1.

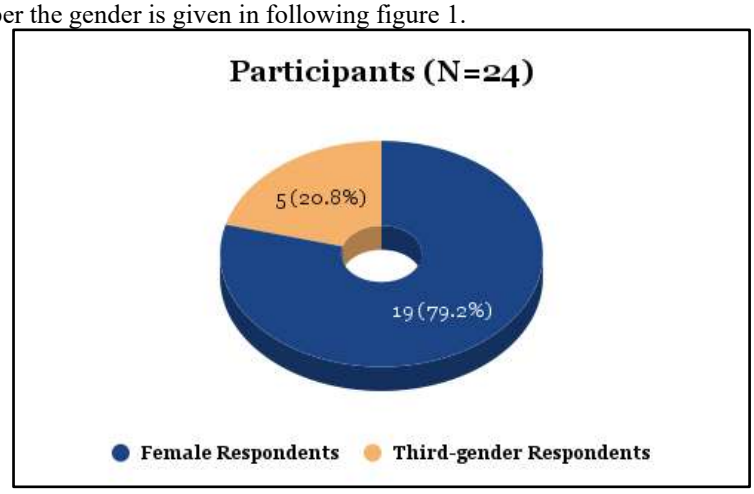

Fig. 1: Distribution of Respondents

All participants belong to socially and economically backward castes and communities, including Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC). The inclusion criteria required that participants reside in rural villages with known limitations in digital infrastructure and belong to communities with historically limited access to education, media, and state services.

Data Collection - Quantitative

Each participant provided responses for 12 structured variables:

- Name
- Age
- Gender
- Social Category (Caste/Tribe)
- Education Level
- Occupation
- Region
- Income Slab
- Village Type (Remote, Semi-Connected, Connected)
- Digital Device Access (Yes/No)
- Internet Access (Yes/No)
- Digital Literacy Level (None / Basic / Advanced)

This data allowed for the correlation of socio-demographic factors with levels of digital access, digital confidence, and psychological responses to exclusion.

Data Collection - Qualitative

The 28 semi-structured interview questions categorized in 7 sections were used to explore the lived experiences of participants across the following thematic sections:

- Section A: Social Identity and Everyday Life Context
- Section B: First-Level Digital Divide (Access)
- Section C: Second-Level Digital Divide (Skills and Usage)
- Section D: Third-Level Digital Divide (Outcomes and Impact)
- Section E: Empowerment and Voice
- Section F: Cultural Norms and Digital Control
- Section G: Civic Participation and Political Exclusion

Each interview lasted between 30 to 45 minutes, conducted in the local language (Marathi) with prior informed consent. Data was transcribed and translated for analysis.

Analytical Approach

For the purpose of Quantitative Analysis, Descriptive statistics were used to present the distribution of digital access, literacy levels, and device ownership. Cross-tabulations were performed to identify trends between digital access and psychological indicators such as confidence and perceived digital inferiority. Due to the small sample size i.e. N=24, inferential statistics were not used. However, the descriptive insights were treated as indicative patterns informing the qualitative analysis.

To carry out Qualitative Analysis, Qualitative data was analyzed using Braun and Clarke's (2006) Thematic Analysis. This six-phase approach as given by this approach is illustrated below in figure2.

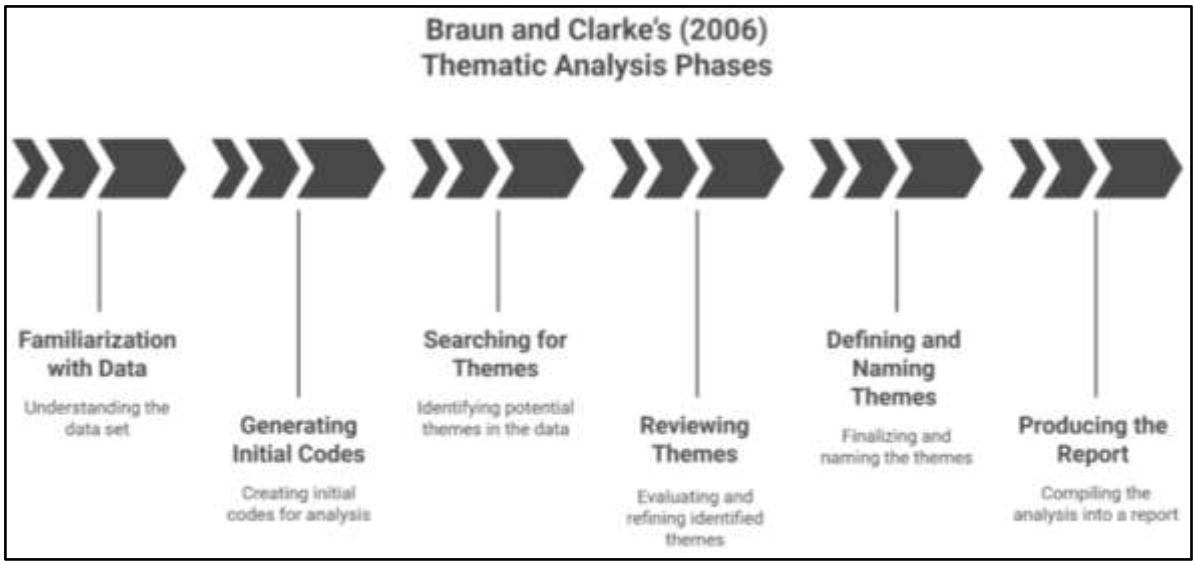

Fig. 2: Six Phases of Braun and Clarke's Thematic Analysis Method (AI generated image)

This analysis yielded 8 broad themes and 32 sub-themes, each reflecting nuanced experiences of psychological exclusion and digital marginalization. Themes were organized across the following psychological constructs:

1. Digital inferiority and stereotype internalization
2. Self-esteem and digital confidence
3. Social control and learned helplessness
4. Cultural alienation from technology
5. Fear, ridicule, and trust deficit
6. Aspirations versus perceived limitations
7. Digital silence and social invisibility
8. Psychological empowerment through partial access

The study was conducted in accordance with ethical research guidelines for working with vulnerable populations. All respondents were informed about the purpose of the study, voluntary participation, and their right to withdraw at any point. Pseudonyms have been used in all quotes to ensure confidentiality. The interviews involving third-gender participants were conducted with special attention to privacy, dignity, and cultural sensitivity.

Findings

This section integrates quantitative and qualitative results to explore psychological aspects of digital exclusion among rural women and third-gender individuals in Maharashtra. The analysis focuses on confidence, self-esteem, mental health, and accessibility barriers.

A. Quantitative Analysis

1. Digital Confidence Index (DCI)

A composite index was created from five Likert-scale items measuring respondents' confidence in using digital tools. The items included:

- Confidence in using a Smartphone independently
- Ability to access online government services
- Comfort with social media and messaging apps
- Skills to troubleshoot basic tech problems
- Confidence in digital financial transactions

Each item was scored from 1 (Not confident) to 5 (Very confident). The average DCI score:

Group	DCI Score (Mean ± SD)
Rural Women	2.41 ± 0.71
Third-Gender	1.83 ± 0.64

Third-gender respondents scored significantly lower than rural women, reflecting deeper digital confidence deficits.

The following two visualizations (figure 3 & figure 4) break down the data by education level within each group (Rural Women &Third-Gender), across three key indicators.

- Digital Confidence improves with education, but third-gender individuals still lag behind.
- Self-Esteem follows a similar upward trend with education, though disparities persist.
- Mental Health Scores (where lower is better) show that higher education correlates with fewer reported mental health challenges.

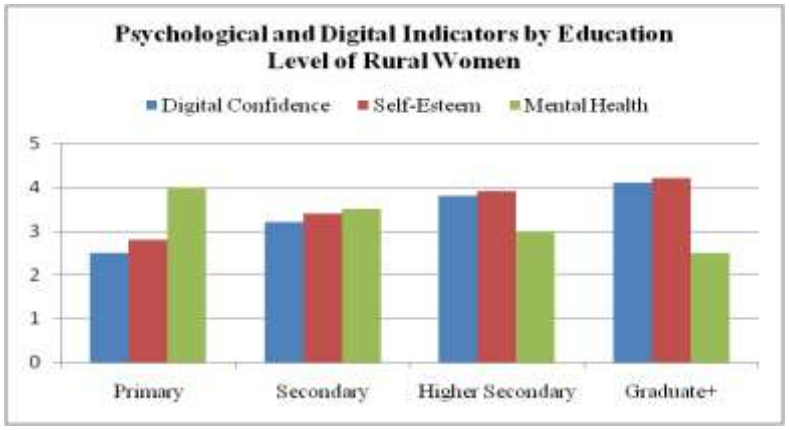

Fig. 3: Indicators of Rural Women

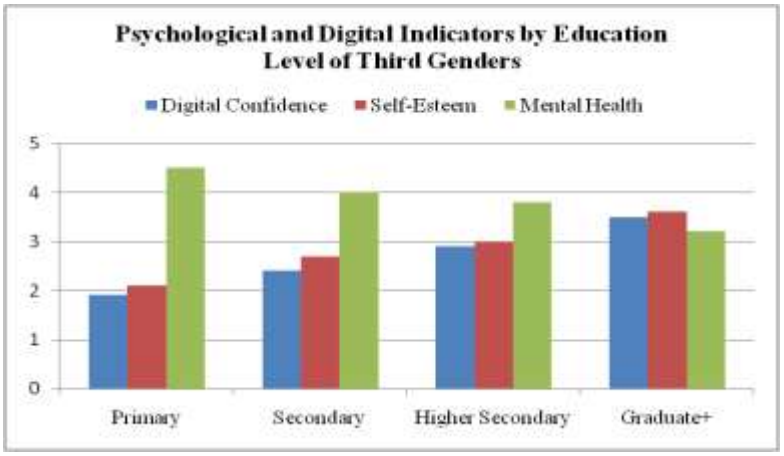

Fig. 4: Indicators of Third Genders

Following visualization (figure 5) comparing rural women and third-gender individuals across key psychological and digital inclusion indicators:

1. Digital Confidence Index – Third-gender respondents show lower confidence in using digital tools.
2. Self-Esteem Scores – A similar gap exists in perceived self-worth, with third-gender individuals reporting lower self-esteem.
3. Mental Health Scores – Higher values here reflect more distress; third-gender respondents report greater psychological challenges.

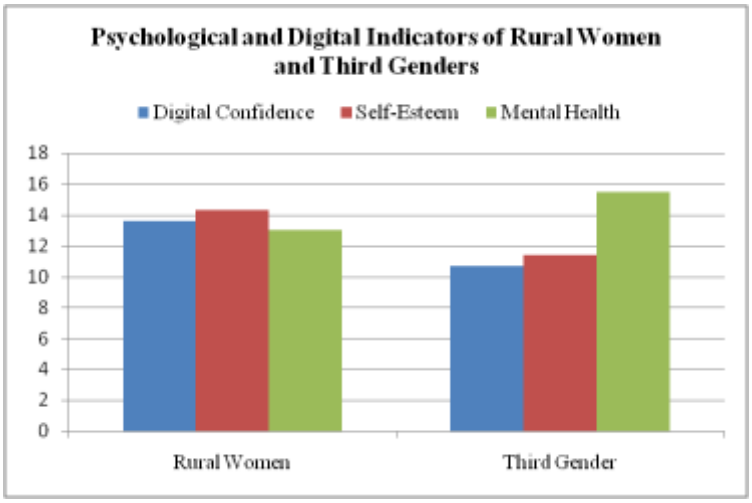

Fig. 5: Comparison of Indicators of Rural Women and Third Genders

2. Chi-square Tests of Association

Cross-tabulations with chi-square (χ^2) were applied to explore relationships with attributes Education Level with Digital Confidence and Gender Identity with Digital Financial Use. The results of this chi-square test are given below.

Education Level × Digital Confidence: $\chi^2(4) = 10.67$, $p = 0.031$ → ***Significant***	**Gender Identity × Digital Financial Use:** $\chi^2(1) = 6.14$, $p = 0.013$ → ***Significant***

These results suggest that both education and gender identity are statistically linked to digital self-efficacy.

3. Correlation Matrix (Spearman's ρ)

Variables	Digital Confidence	Self-Esteem	Mental Health Score
Education	0.48**	0.36*	–0.22
Digital Access (hours/week)	0.53**	0.41*	–0.29*

* $p < 0.05$, ** $p < 0.01$

Access and education positively correlate with self-esteem and digital confidence, while digital exclusion correlates negatively with perceived mental health.

B. Qualitative Analysis (Framework Analysis)

Using *Ritchie and Spencer's Framework Approach*, five cross-cutting themes were identified:

Theme 1: Internalized Digital Inferiority

Respondents, especially third-gender individuals described feeling "digitally dumb" or "too backward to learn". These expressions reflect internalized stigma and low digital self-worth.

Theme 2: Gendered Gatekeeping of Devices

In many households, women reported needing permission to access male-owned phones. One respondent noted, “I get the phone after my son sleeps.”

Theme 3: App Anxiety and Technophobia

A prevalent fear of “pressing the wrong button” or being “laughed at” when using mobile apps created emotional blocks. This tech-related anxiety suppressed learning motivation.

Theme 4: Psychological Isolation
Digital exclusion led to social exclusion. One third-gender respondent shared, “I don’t know what others are doing online. I'm invisible.” Several women reported feeling left out of family WhatsApp groups or community events managed digitally.
Theme 5: Aspirational Digitality
Despite barriers, many expressed aspirational views: “If I could learn the phone properly, I can also teach my daughter,” indicating the role of digital inclusion in empowerment and upward mobility.
To summarize the key insights of above qualitative and quantitative analysis are:
- Quantitatively, third-gender individuals are at significantly higher risk of low digital confidence and self-esteem.
- Education and access time correlate positively with digital self-efficacy and confidence.
- Qualitative findings illustrate that psychological exclusion is both a cause and effect of digital marginalization, especially among already vulnerable identities.

Discussion

This study aimed to explore the psychological dimensions of digital exclusion, particularly focusing on self-esteem, confidence, and access to digital tools among rural women and third-gender individuals in India. Through a mixed-methods approach, the findings highlight the nuanced interplay between socio-cultural marginalization, infrastructural inadequacies, and internal psychological states shaped by exclusionary digital landscapes.

1. Psychological Implications of Digital Access
Quantitative analysis reveals a clear pattern of digital under-confidence and lower self-esteem among third-gender respondents compared to rural women, particularly among those with primary and secondary education. These findings corroborate prior research indicating that digital exclusion contributes not just to information poverty but also to psychological marginalization (Park, 2020; Neves et al., 2022). The positive correlation between educational attainment and digital self-confidence among rural women suggests that digital literacy may reinforce psychological well-being, acting as a protective factor against self-doubt and anxiety related to technology (Van Dijk, 2020).

2. Intersectionality and Vulnerability
Qualitative findings, derived through Thematic Network Analysis, provide deeper insight into the lived experiences of exclusion. Themes such as "Internalized Digital Inferiority", "Fear of Surveillance and Judgment", and "Gendered Tech Alienation" speak to how digital spaces are not perceived as neutral but are embedded within existing caste, gender, and class hierarchies. The third-gender respondents articulated fears of being misjudged or harassed online, reinforcing their disconnection from virtual engagement. This aligns with the broader literature on intersectional digital exclusion, where compounded identities heighten vulnerability (Goggin & Ellis, 2020).

3. Mental Health, Loneliness, and Digital Margins
The radar chart visualizing comparative profiles suggests that while third-gender respondents show marginally improved mental health awareness, this may be shaped by stronger community ties or targeted NGO outreach. However, qualitative responses revealed high incidences of loneliness, digital shame, and anxiety, especially among digitally illiterate individuals. The findings echo recent studies that link digital exclusion to increased risk of psychological distress, particularly when digital engagement becomes a prerequisite for social and economic inclusion (Seifert et al., 2022).

4. Structural Digital Capital Gaps
From a sociological standpoint, the concept of digital capital (Ragnedda&Ruiu, 2020) becomes central in explaining the digital divide. Access alone is insufficient; capability, confidence, and cultural comfort are equally critical. Participants from both groups, particularly those with low education, reflected a lack of symbolic digital capital, such as the language to navigate online environments or the belief that digital tools could benefit them. This gap underlines the need to look beyond infrastructure and into habitus, belief systems, and empowerment models that shape digital inclusion.

5. Policy and Programmatic Implications
The implications are urgent and multidimensional. Programs aimed at bridging the digital divide in rural India must move beyond hardware distribution. They should integrate culturally sensitive digital literacy programs, psychosocial support systems, and safe online environments particularly for gender-diverse individuals. Without addressing the affective and symbolic barriers to access, digital inclusion risks becoming another layer of systemic exclusion.

Conclusion

This study offers a nuanced understanding of digital exclusion through the dual lenses of psychological well-being and intersectional marginality. By focusing on rural women and third-gender individuals in India, the research sheds light on the often-overlooked emotional and cognitive consequences of limited digital access. The mixed-methods design allowed us to not only quantify disparities in self-esteem, confidence, and digital literacy but also to capture the deeper, qualitative narratives of exclusion, resistance, and adaptation. The findings affirm that digital inequality is not merely about access to devices or internet connectivity; it is fundamentally about power, perception, and participation. Rural women and third-gender individuals continue to experience exclusion not only because of infrastructural deficits but due to entrenched socio-cultural norms, educational gaps, and internalized feelings of inferiority in digital spaces. These barriers manifest in reduced confidence, avoidance behavior, heightened anxiety, and psychosocial isolation.

Third-gender respondents, in particular, face a compounded form of digital exclusion shaped by stigma, invisibility, and fears of online harassment. At the same time, their narratives also reflect resilience, solidarity, and, in some cases, strategic engagement with digital tools through community-based support systems. Ultimately, this research underscores that achieving true digital inclusion requires more than bridging the technological divide; it demands psychological empowerment, social inclusion, and culturally rooted literacy. The emphasis must shift from "access" to agency enabling individuals not just to connect but to belong and participate meaningfully in the digital society.

Recommendations

Based on the empirical insights and thematic findings of this study, the following actionable recommendations are proposed to address digital exclusion among rural women and third-gender individuals in India, with a specific focus on psychological well-being and digital empowerment:

1. Integrate Digital Literacy with Psychosocial Support

Digital literacy initiatives must move beyond skill training and incorporate components that address self-confidence, self-efficacy, and mental well-being. This includes:

- Embedding confidence-building and self-esteem workshops within ICT training programs.
- Recruiting trained counsellors or peer mentors to assist marginalized users through their digital journeys.

2. Tailor Community-Centered Interventions

Programs must be contextualized to the socio-cultural and gender-specific realities of rural areas:

- Design safe, inclusive, and gender-sensitive digital spaces (both physical and virtual).
- Leverage existing self-help groups (SHGs), Mahila Mandals, and LGBTQ+ collectives to foster peer learning and support.

3. Promote Mobile-Based Solutions with Local Content

Considering affordability and access, mobile phones remain the primary digital device for most respondents. Hence:

- Develop low-bandwidth apps and interfaces with local language options.
- Create audio/video-based content for populations with low literacy levels, emphasizing health, education, rights, and livelihood.

4. Engage Third-Gender Communities as Digital Ambassadors

To counter both exclusion and stigma:

- Identify and train members of third-gender communities to serve as Digital Inclusion Facilitators.
- Encourage their participation in policy dialogues and program design as co-creators, not just beneficiaries.

5. Adopt Mixed-Method Evaluations in Program Monitoring

Government and NGO programs addressing digital inclusion should incorporate quantitative tracking of digital access and qualitative assessment of psychological impacts.

- Mandate periodic surveys, focus groups, and psychological screening tools to monitor mental health implications of digital participation/exclusion.

6. Institutionalize Psychological Safety in Digital Governance

Policy frameworks must recognize psychological exclusion as an integral aspect of the digital divide.

● Digital India campaigns and national AI strategies should include metrics on emotional and mental readiness to use digital platforms.

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