



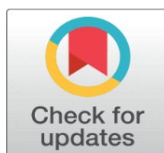
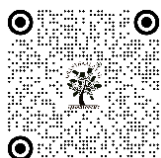


INTERSECTIONAL DIGITAL CAPABILITY: REFRAMING WOMEN'S ARTISTIC AGENCY IN INDIA'S TECHNOLOGY ECOSYSTEM

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1. INTRODUCTION

1.1. BACKGROUND

Technology has become an integral part of life. It shapes our personalities, the way we perceive, work, and learn. From payments to accessing public services, technology has played a very important role in shaping every minute of our lives. But then comes a series of questions that often remains unexplored, who contributed to building this digital infrastructure, who leads them and decides how to use them?

ABSTRACT

Technology has transformed contemporary life on an unprecedented scale. From navigation platforms guiding billions of users to software-as-a-service (SaaS) infrastructures powering global economies, digital systems shape how societies communicate, work, and govern. Yet beneath narratives of seamless innovation lies a persistent structural imbalance in which designs, leads, and benefits from technological transformation. In India's rapidly expanding digital economy, women, particularly those situated at the intersections of caste, class, geography, and socio-economic marginality, remain significantly underrepresented in core technological roles, leadership positions, and decision-making spaces. This conceptual paper argues that the digital gender gap must be reconceptualized not merely as a disparity in access or participation, but as an intersectional capability deficit embedded within structural, socio-cultural, and institutional systems. Drawing on Feminist Technology Theory, the Capability Approach, Intersectionality, and Digital Divide scholarship, the paper proposes an Intersectional Digital Capability Framework (IDCF) to analyze layered inequalities in India's technology ecosystem. Moving beyond inclusion-based narratives, the framework advances a shift toward digital sovereignty, where women are not only users or employees in technological systems but active architects of digital futures. By integrating theoretical depth with policy relevance, this paper contributes to debates on women-led development, digital justice, and structural transformation in emerging economies.

Keywords: Women in Tech, Digital Infrastructure, Digital Gender Gap, Feminist Technology Theory, Leadership Positions

These questions are important because technology today is emerging every second and often seen as a power symbol. Who it should serve and how much it has to be used for each, and every function is shaped by human and institutional interests. Feminist scholars have argued that digital infrastructure upon which existing technology is made are socially constructed platforms, reflecting the values and hierarchies of the those who dominate them [Wajcman \(2004\)](#).

In India, the growth of women in tech sectors have shown measurable gains. Though, these gains are not proportional. The patterns in women workforce participation have been highly influenced by glass ceiling and glass cliff factors preventing women to reach leadership positions, making critical decisions and in taking innovative ownership [NASSCOM \(2023\)](#), [World Economic Forum \(2024\)](#).

Digital ecosystem of India is expanding its wings. At the same time, the opportunities for women to contribute to the present ecosystem has been quite challenging and not uniformed, where metropolitan's cities offer access to high visibility jobs, mentoring and support to build path towards career growth in IT sectors. On the other hand, tier 2 and tier 3 cities limit entering into job market, followed by rural areas where they may have access to internet connectivity but still face constraints related to safety, language, and unpaid work care. These differences are because skills are not the only factors that influence career, they largely depend on the working conditions too. Furthermore, research has shown that despite having connectivity and devices to access internet inequality still persist. These differences emerge in skills, usage patterns and economic outcomes that creates exclusion layers [Van et al. \(2005\)](#), [Scheerder et al. \(2017\)](#) making it difficult for women's entering in the job market, creating unstable career growth and decision-making authority.

Most discussion on women role in technology, framework the problem as a skill, training or a pipeline issue which could be true only to an extent. Women despite having all the necessary education, skill set and ambitions yet face barriers that limits opportunities. These differences can be explained by capability approach that shows resources and freedom should work together to convert resources into valued outcomes. Societal norms, institutional rules, workplace cultures, and family responsibilities shape the existing barriers [Sen \(1999\)](#), [Nussbaum \(2011\)](#).

Genders cannot alone account for workplace inequalities. Class, caste, religion, region, and disability intersect with gender to produce patterns of advantages and disadvantages. This intersection shows that gender cannot create a single layer for exclusion that is usually visible category [Crenshaw \(1989\)](#), [Collins and Bilge \(2020\)](#). Women from metro cities and rural areas both faces different digital landscapes in term of entering different work domains. These realities expose the barriers that women are facing, limiting their critical role in workforce.

This present paper is an attempt to reframe the digital gender gap an intersectional capability deficit embedded within structured, sociocultural, and institutional systems. Further, it focuses on creating digital inclusivity where women are not only users of digital space, or employees in digital firms, but as active members shaping digital futures. To support this shift, the paper aims to develop Intersectional Digital Capability framework. the framework allows us to integrate feminist technology theory, the capability approach and intersectionality to explain why women participation doesn't at leadership roles. The contribution of this paper is conceptual, but it is also policy relevant offering a structured way to map barriers and enablers across different levels.

1.2. PROBLEM STATEMENT AND RESEARCH GAP

Despite growing attention to women's participation in India's technology sector, most of the studies are fragmented and non-uniformly framed. There are studies that focuses on education, developing skills or on treating women as a homogenous group and technology as a neutral space. Yet, it has been observed that large numbers of women continue to exit technology sectors, fails to secure leadership and innovation leading positions. The problem is not simply how to bring women into technology but to make them stay, grow, and help them exercise influence within digital infrastructure.

Current policy framework highly focuses on inclusion metrics such as enrollment, hiring, and basic digital literacy. But they often overlook the conditions that help women to grow and pursue a stable career, entrepreneurial ownerships, and decision-making authority. In India, these barriers are often shaped by class, caste, religion, safety, and unpaid working hours. Yet they are rarely analyzed together within digital focused research. Furthermore, another gap lies in integrating feminist technology theory, the capability approach and intersectionality approach altogether. As a result, existing models struggle to connect structural inequalities and institutional practices altogether. Research on role of women tech in India are exclusively focused on corporate offices located in metro cities, completely ignoring the

experiences of women in non-metro regions, platform based work and emerging underexplored digital sectors. The present study addresses these gaps by proposing Intersectional Digital Capability Framework that brings together structural, sociocultural and dimension's related to women engagement with technology. Moreover, by focusing on capability and digital sovereignty, the framework offers a more complete way to understand both barriers and enablers influencing women.

2. REFRAMING THE DIGITAL GAP

2.1. FROM ACCESS TO POWER IN DIGITAL SYSTEMS

The digital gender gap is most often described as a gap in access. Women are less likely to own smartphones, are less likely to have reliable internet, and less likely to receive formal digital training. This pattern is commonly observed in lower- and middle-income countries which often contribute to the first layer of inequality. Furthermore, studies on digit divides hints that even after having connectivity and devices inequality still persist and it unfolds at multiple levels including accessing, skills, usage, and outcomes [Van et al. \(2005\)](#). Later study proposed that inequality depends on social position, education, income, and institutional support despite people that have access to digital platforms [Scheerder et al. \(2017\)](#). This points to the fact getting into digital infrastructure is not easy, especially for women effecting stable livelihood, growth, and social mobility. In technology sectors, tech is not about consumption but about governance, design, and production. Wherein every code and data matter, the gender divide gets wider. Feminist scholar working the field of technology have argued that digital system and platforms carry the assumptions and interests of the designer. Moreover, when design and leadership remain socially focused, inequality is often reflected in the framework of the technology itself [Wajcman \(2004\)](#), [Cockburn \(1985\)](#). In India, the digital architecture is emerging. From government digital infrastructure to private sector startups have transformed necessary services and have raised the scale of employment, yet the distribution in terms of gender and their influence on digital system, remains scattered. Women may use digital platform, may work in the same sector but the power to make decision lies with other. This results in creating a situation where women may be present in the digital economy without fully belonging to it.

2.2. THE LIMITS OF THE INCLUSION FRAMEWORK

Policy and corporate strategies often focus on bringing women into existing system through education, hiring, mentorship, and workplace diversity. though these efforts are important and helped a lot of women in expanding an ocean full of opportunities, reducing workplace discrimination, and making women capable to contributing to growing economy. Yet these inclusive policies and strategies have clear limitations.

Institutions tend to only hirer women's just for the sake of hiring, fulfilling the policy guidelines treating the technology sector fixed and structured which places the burden of adjustment on women, rather than on the institutions that shape technological work. Moreover, women belonging to upper and middle class often have social advantage serving them access to elite educational institution and work opportunities but at the same time they face challenges related to glass ceiling and glass cliff, where they are functioning are limited. Furthermore, Inclusion policies for women belonging to marginalized group are often ineffective as they face additional barriers in terms of language, safely concern, caste and limited mobility. This created a unique pattern where women might be represented in the inclusive created environment but remain underrepresented within the same space.

2.3. CAPABILITY, CONVERSION AND CONSTRAINTS

Despite having inclusion policies and corporate strategies, it doesn't lead to empowerment. Researchers have long argued that wellbeing should be evaluated in term of what people have instead focus on what they are able to do and be with it having access to resources such as education, stable income and technology may only be useful when people can convert these resources into valued outcomes [Sen \(1999\)](#), [Nussbaum \(2011\)](#). At the same time, these conversion processes are often shaped by social and institutional conditions. A women may have access to laptop, internet and qualification certificates but still not might be able to pursue technology-oriented career, as if she may face safety risk while commuting, family role conflict, marriage pressure and there are many more to add to it. These are structural barriers that society creates, not failure of an individual. In India, these barriers are usually more powerful. Women are expected to manage work and family role altogether limiting time and flexibility required for the job role. Adding more

to it, safety concerns in non-metro cities, class and caste shapes the access to institutions and workplace. All of these factors influence how digital resources can be converted into real opportunities. Moreover, capability approach explains how if after having necessary skills, we cannot expect valued outcomes. What matters is whether I can use those skills to secure stable job or not.

2.4. INTERSECTIONALITY AND UNEQUAL DIGITAL PATHWAYS

In India, gender has always overlapped with other axes of inequalities. Many studies have shown that how system of oppression creates a unique form of disadvantage that operates at every level across institutions, drafting policies and day to day life [Crenshaw \(1989\)](#). Moreover, [Collins and Bilge \(2020\)](#) highlights how systems of oppression overlap to create distinct forms of disadvantage. In current digital economy, this means all women do not experience technology in same ways as women belonging to rural setting or from marginalized community face barriers that are often invisible in the form of caste, religion, language, and socioeconomic barriers. Many digital skilling and entrepreneurship programs assume a generic user. They overlook the realities of women who lack English fluency, who cannot travel freely, or who cannot afford periods without income. As a result, well-intentioned programs may fail to reach those who need them most. Intersectionality therefore challenges the idea that there is a single pathway into technology. It also calls for policies and institutional practices that recognize differences rather than assuming sameness.

2.5. FROM PARTICIPATION TO DIGITAL SOVEREIGNTY

If the goal is women led development, participation is not enough. What matters is whether women can exercise authority within digital systems. This includes the ability to shape product design, control data, own intellectual property, and influence governance frameworks and this is terms as digital sovereignty, referring to the power to make choices about how a particular platform can be used, who will be the user and how it be regulated. Women in the tech sector usually faces these issues limiting their role.

Despite being part of the digital framework, they often have a very limited role and highly dependent on structures that do not control. Moreover, they remain vulnerable to algorithmic management and exclusion from leadership positions. This further, reframe our focus from what counts success to how much does women hold within the digital system.

3. THEORETICAL FOUNDATIONS

The focus should not be only on women's workforce question. Rather it should be about how power, opportunity, and value are organized in digital systems. To understand why women, remain underrepresented in leadership, innovation, and ownership, it is not enough to count how many women are hired or trained. We need to understand how technology itself is structured and how social inequalities shape who can benefit from it.

This section draws on four bodies of theory that together provide a deeper explanation of women's position in India's technology ecosystem: feminist technology studies, the capability approach, intersectionality, and theories of socio technical systems. Each helps illuminate a different layer of the problem.

3.1. FEMINIST TECHNOLOGY THEORY: WHY TECHNOLOGY IS NEVER NEUTRAL

Feminist scholars have long challenged the idea that technology is objective or gender free. Instead, they argue that technological systems reflect the values, assumptions, and power relations of the societies that create them [Wajcman \(2004\)](#), [Cockburn \(1985\)](#). Tools, platforms, and workplaces are shaped by the people who design them and the institutions that support them. Still, Technology remains men dominated field, this could be due to long working hours commitments, constant availability and being free from caregiving responsibilities. These all factors together tend to reward men.

In India, this trend is highly visible and observed. Many startups and private companies operate with intense schedule and rigid project timelines due to which many women face hidden penalties as women face barrier related to family role, location and safety despite job role being gender neutral. Moreover, the feminist technology theory explains

when a tech platform, product or design are constructed by socially narrowed groups, they tend to encode their perspective in it. This affects the marginalized groups including women whose interests are often ignored.

3.2. THE CAPABILITY APPROACH: FROM RESOURCES TO REAL FREEDOM

This approach explains a lot about why access does not mean equal empowerment and offers powerful lens to balance factor that might help women representation in the technology sector without hidden penalties and convert resources into meaningful opportunities. Furthermore, this approach argues that development should be assessed by what people are able to do and be, not by what they own or earn. [Sen \(1999\)](#), [Nussbaum \(2011\)](#). A women may own a phone, internet connectivity and still may not be able to use it properly due to limited control over it which is further shaped by domestic role and expectations.

In India, as discussed earlier these barriers are shaped by society and its expectation limiting the freedom to pursue technology career even when access exists. Therefore, capability helps in shifting focus from inputs to outcomes.

3.3. INTERSECTIONALITY: WHY ONE SIZE DOES NOT FIT ALL

Intersectionality shows that gender not alone shape outcome. Rather, it intersects with dimensions such as class, caste, region, and disability which creates unique experiences of inclusion and exclusion [Crenshaw \(1989\)](#), [Collins and Bilge \(2020\)](#).

In the technology sector, a women's digital pathway to inclusivity is highly non-uniform influenced by several factors creating difference sense of opportunity for women's coming from urban and rural backgrounds, where a woman from urban background is more likely to access to facilities to shape opportunities. On the other hand, women from rural background may face additional barriers related to language, safety, and economic diversity.

discrimination, safety, and economic insecurity.

Many digital inclusion programs assume a universal user. They offer training or microcredit without addressing the layered constraints that different women face. As a result, these programs may reinforce inequality by primarily benefiting those who are already better positioned to succeed. Intersectionality forces us to ask who benefits from digital growth and who is left behind, even when overall numbers improve.

3.4. TECHNOLOGY AS A SOCIO TECHNICAL SYSTEM

Technology does not exist in isolation. It is embedded in networks of institutions, regulations, markets, and social norms. Theories of socio technical systems and actor network theory highlight how technologies, organizations, and people co produce outcomes [Latour \(2005\)](#).

In the Indian digital economy, platforms, algorithms, and data systems shape how work is allocated, how performance is measured, and how income is distributed. Moreover, this system may offer flexibility-based work but at the same time produce insecurity and restrict hierarchy movement. On the other hand, algorithmic management can obscure bias while making harder to contest decisions. Also, excluding women from the design and governance create dependence for them on the system.

3.5. BRINGING THE THEORIES TOGETHER

Each of the above perspective point towards a core insight that the digital gap in India is not just about skills or access. Rather, it depends on who can convert digital participation into power. The capability approach explain access to resources does not guarantee empowerment, whereas feminist theory and intersectionality point towards gender dominated field and how inequalities arise. Followed by socio technical theory that shows how technology and institutions interact to produce desired outcome.

4. GAPS IN THE EXISTING LITERATURE

Research in the domain on gender gap in digital access, employment and leadership across different countries and sectors have rapidly grown in last two decades. In India, these studies have provided with insights on different field of

work ranging from IT to STEM and on Gender differences in digital adoption. However, it cannot account for our ability to understand why women's participation in technology has not looked into deeper aspects of power, security, and leadership.

4.1. OVEREMPHASIS ON ACCESS AND ENTRY

There have been many studies that focuses on basic digital skills, access to the internet and devices and have provided with great insight on scale of digital inclusion, especially among women in low income and rural contexts. However, many of these studies assume that once device is accessible, it will lead to employment.

These assumption does hold true. Since, many women who gain access to device and connectivity are confined to unstable jobs and low pays. Moreover, current studies do not examine what happens after entering a job role. As a result, it creates a gap to understand what lies beyond the entering helping to understand retention, career progression, leadership, and entrepreneurial survival receive far less attention.

4.2. WEAK ATTENTION TO POWER AND DESIGN AUTHORITY

Whereas the majority of the literature on women in technology focuses on women as workers or users, relatively fewer studies center women as designers, innovators, founders, or regulators. However, it is precisely in these areas that the power of influence and value creation is most evident. The questions of who builds algorithms, who owns digital platforms, and who sets the standards for new technologies are rarely posed as gender questions, and this is a blind spot of considerable proportions. The lack of women in these areas means that their views and values are not represented in the systems that impact the lives of millions of people. Similarly, the lack of attention to design authority means that policy talk is not clear about who is setting the direction of technological development, and thus it is difficult to assess whether the expansion of digital technologies is supporting or undermining existing inequalities.

4.3. LIMITED USE OF INTERSECTIONALITY IN TECHNOLOGY RESEARCH

When we talk about gender studies, intersectionality is a topic we must consider. For some reason digital economies are not really looking at intersectionality. A lot of research still looks at women as one group. This is a problem in a place like India. In India things like what caste you're how much money you have, what religion you practice and where you are from really affect the chances you have, in life. Intersectionality and digital economies need to be studied more often, and women should not be treated like they are all the same. Intersectionality is therefore important to understand economies.

This results in people making statements that do not show the important differences. The problems that an upper middle-class woman who works for a company like a multinational firm face are different from the problems that a woman who works in a small digital services center in a rural area face. The problems are also different, for a woman who works on a gig app. A lot of what people write about this topic treats the experiences of these women as if they are all the same.

Without intersectional analysis, policy recommendations risk being designed for the most visible or privileged women while leaving others behind.

4.4. URBAN AND CORPORATE BIAS

When it comes to studying India's digital infrastructure one usually focuses on metro regions like Bengaluru, Hyderabad and Gurgaon contributing to a large amount of empirical literature on women in technology, which to a point remains one sided and creates bias in understanding true nature of India's digital economy. Contribution of women from tier 2 and 3 cities remains very limited and rare. Hence, creating a ground for the present study.

4.5. FRAGMENTED THEORETICAL APPROACHES

The existing literature on women in technology remains highly scattered. Some uses feminist theories. While other uses digital divide theories to understand the barriers hindering the progress of women in technology role. This creates a need for a unified theory to understand different perspectives altogether.

4.6. THE NEED FOR AN INTEGRATED CONCEPTUAL FRAMEWORK

Cumulatively, these gaps highlight the imperative need for a new conceptualization of women and technology in the Indian setting. In particular, there is a need for a conceptual framework that is able to take into account, at the same time, the structural context, the social hierarchy, the role of institutional mediation, and individual capability. In recognition of this imperative need, the current paper proposes the use of the Intersectional Digital Capability Framework. Through the combination of feminist technology theory, the capability approach, and intersectionality in one conceptual framework, the proposed framework promotes a move away from reasoning centered on access to a more sophisticated understanding of how women can gain power, stability, and influence in the Indian digital economy.

5. THE INTERSECTIONAL DIGITAL CAPABILITY FRAMEWORK (IDCF)

The presented framework works on the intersection of socioeconomical, cultural, institutional, and individual levels creating pathways to understand different perspectives on women in digital spaces. The question that drives this study revolves around the notion whether digital leveraging capabilities of women are able to achieve sustainable impact within digital spaces while also being concrete and future proof.

5.1. STRUCTURAL LAYER

Within the IDCF, the structural layer refers to the overall economic and political ecosystem in which the digital economy functions. It includes national technology policy, digital infrastructure, labor market structures, and capital investment patterns. Keeping India as the prime subject technological growth as been fed by multiple stage level and central level initiative as well as investments by the private sector in IT startups and digital platform business. One the prime example for this could be digital India initiative. This leads to a concentration of the finest venture capital investments in hi-tech jobs and research facilities in selected few cities. While being a datable disadvantage, with respect to this pose as an advantage, for the population with the ability to relocate and build social connection.

5.2. SOCIO CULTURAL LAYER

With respect to the study, within India, caste system, gender roles, safety concerns, social norms revolving around marriage and child welfare are critical factors that determine a women's personal time and energy. The sociocultural level, hence, represents the values, norms, and social structures that frame women's lives. Technical work involves extended hours of work, continuous skill upgrades, and high levels of availability. Such technical work also comes within the share of women who are expected to perform most of the family care and childcare work which is unpaid labor. They are also subject to increased surveillance and danger in public spaces, impacting their commute, travel, and late hours of work. Caste and class further mediate these experiences. Women belonging to lower castes face issues of discrimination in education and employment, lack of access to English language education, and poor networking opportunities. These issues are not left behind in the digital space; rather, they accompany women into these spaces. Thus, the sociocultural level not only shapes who enters the technical space but also who can stay and succeed in it.

5.3. INSTITUTIONAL MEDIATION LAYER

Institutions are often referring to as the gatekeeper of digital infrastructure serving women's to be opportunity to be part of this ecosystem. Whether it be corporations, institutions, or government initiatives that all contribute to the process of building capabilities. Lack of accountabilities in the upkeep in the processes involving recruitment,

promotion, mentoring, and performance management can greatly impact the lives of women. Therefore, institutions and corporations remain key points of transformation.

5.4. INDIVIDUAL CAPABILITY LAYER

The layers highlights why blaming women for lack of ambition or persistence is misguided. Individual skills, aspiration, motivation, and confidence are often shaped by socioeconomic, structural, and institutional support hindering their contribution to the digital economy.

5.5. OUTCOME LAYER

The present layer includes employment, earnings, and job security as well as leadership role achievements that describes women roles in the digital economy. Moreover, the proposed framework assesses the importances of real-world outcomes. In particular, it looks at who becomes a founder, who wields control over data, and who sits on decision-making boards. Such outcomes reveal whether digital infrastructure is becoming more inclusive or simply more crowded.

5.6. DYNAMIC INTERACTION ACROSS LAYERS

The effectiveness of the IDCF is made possible by the interaction between its various layers. Structural policies define the behavior of institutions, whereas social norms shape individual desires. Gatekeeping by institutions defines who has the ability to convert skills into success. Outcomes will then shape future norms and expectations.

A good example of this feedback process is the rise of women to prominent leadership positions in the field of technology, which can challenge stereotypes, shape policy, and reshape institutional cultures. Therefore, the framework above proposes that inequality is a process rather than a fixed state, pointing to where interventions are most likely to succeed and fail if considered in isolation.

6. CONCEPTUAL PROPOSITIONS

The proposed Intersectional Digital Framework can guide empirical studies, policy design, and institutional reforms by producing the set of insights upon how women's participation, progression and power in India are shaped.

Proposition 1: Digital participation does not guarantee digital empowerment unless capability conversion is addressed.

Just being in the field does not guarantee digital empowerment. What matters is whether women can convert accessible resources and skills into better employment, career progression, leadership, and ownership. Structural constraints such as unpaid care work, safety risks, and financial precarity often limit this conversion. As a result, women may be digitally active yet economically and professionally marginal within technology systems.

Proposition 2: Intersectional disadvantage amplifies digital exclusion even within formal technology sectors.

Gender based barriers interact with caste, class, region, language, and disability to shape unequal digital trajectories. Women from marginalized communities face compounded constraints that reduce their ability to benefit from digital growth, even when they receive the same formal training or access as more privileged women. Policies and programs that treat women as a uniform group are therefore likely to reproduce inequality rather than reduce it.

Proposition 3: Institutions are the primary mediators of whether digital inclusion becomes digital mobility.

Training centers, firms, incubators, financial institutions, and government programs act as conversion points between individual capability and structural opportunity. Where institutions provide mentoring, placement, financial access, and safe working conditions, women's digital participation is more likely to lead to advancement. Where institutions rely on symbolic diversity initiatives or rigid work cultures, women remain clustered in low influence roles.

Proposition 4: Concentration of design authority is a major source of gendered inequality in the digital economy.

Power in digital systems is located in who designs platforms, controls data, owns intellectual property, and sets technological standards. These platforms are usually dominated by socially narrow groups, where women's viewpoints and interest are underrepresented in the digital framework. therefore, by increasing women's participation in the decision-making process can increase potential of digital inclusivity.

Proposition 5: Women Led development in technology requires coordinated changes across different layers.

Intervention should work across multiple layers at a time. Focusing on one layer at time cannot produce long-lasting changes. Moreover, structural, institutional polices, socio economic practices all must evolve together. When change occurs in one layer without corresponding shifts in others, gains remain fragile and reversible.

7. POLICY AND INSTITUTIONAL IMPLICATIONS

If the digital gender gap is understood as an intersectional capability deficit rather than a simple access gap, then policy and institutional responses must also change. Interventions that focus only on distributing devices, offering short-term training, or improving recruitment numbers will not be sufficient. What is required is a coordinated approach that reshapes the conditions under which women engage with technology across multiple levels.

7.1. RETHINKING DIGITAL INFRASTRUCTURE AND PLANNING

Digital infrastructure policy is often framed in technical terms, such as broadband coverage, platform integration, and data systems. However, infrastructure is also social. The location of training centers, co-working spaces, and innovation hubs determines who can realistically use them.

In India, most high value digital infrastructure remains concentrated in major metropolitan areas. This spatial concentration excludes large numbers of women who cannot migrate or commute long distances. Policy must therefore priorities the development of technology hubs, incubators, and skill ecosystems in Tier 2 and Tier 3 cities, as well as in rural regions. Local language support, safe transport, and flexible scheduling should be treated as core components of digital infrastructure rather than optional add Ons.

7.2. RECOGNIZING THE CARE ECONOMY AS A DIGITAL POLICY ISSUE

One of the most powerful but least addressed barriers to women's participation in technology is unpaid care work. Women's responsibility for children, elders, and households limits the time and flexibility required for many digital roles. Technology policy rarely acknowledges this. Yet without care support, women's digital capabilities cannot be fully realized. Public investment in childcare, eldercare, and safe community services should be understood as part of the digital economy. These services enable women to engage in training, employment, and entrepreneurship on more equal terms. employers also have a role. Flexible work arrangements, predictable schedules, and caregiving leave are not just benefits.

7.3. DESIGNING INTERSECTIONALLY GROUNDED SKILLING PROGRAMS

Most digital skill programs are designed with a generic learner in mind. They tacitly assume English proficiency, uninterrupted time, and economic stability, which are not the realities for most women, especially those from marginalized sections.

Skilling programs need to be made relevant to the context, which would include training in local languages, stipends or economic support during the training period, and the inclusion of placement and mentoring services in the program design. Skills developing programs should not merely be a certificate course but should focus on building real capabilities, same can be ensure by collaborating with local women bodies and institutions.

7.4. REFORMING CORPORATE AND STARTUP ECOSYSTEMS

Even though we have existing policies on gender equality in workspaces. Yet women face challenges in promotion, pay, and attainment of leadership positions. There still remains a need for the private institutions and organizations to

assess the gap and monitor the policies. furthermore, there should be specialized funds, mentoring initiatives, and a committee to look upon all the necessary changes contributing to diversity and inclusion efforts.

7.5. EMBEDDING GENDER IN DIGITAL GOVERNANCE

Since digital ecosystems are evolving, the question of governance has become a crucial site of power. As without involvement of women, the system would be biased and likely to contribute to discrimination. Thereby, the women's representation in critical role making, regulation of digital platforms remains highly needed. Making digital governance an essential part of digital economy.

8. TOWARDS DIGITAL SOVEREIGNTY

Often, digital transformation is seen as a process of inclusion where people are onboard platforms, providing service access in the sphere of digital economy. In India, though many women's have gain access to connectivity, economic and technological knowledge there remain a wide gap in power distribution that is how certain platform would be use and what would be the purpose. This could be terms as digital sovereignty.

In the Indian technology context, most women are either users, workers, or service providers in the technology system. They use digital platforms, contribute their labor, but do not determine the governing rules of the system. The algorithms decide how tasks are allocated; the platforms decide the pricing; the corporations decide the design priorities. When women are not part of these decision-making spaces, they are left dependent on a system they did not build. Therefore, digital sovereignty demands a change in basic assumptions in the role of women in the digital economy. Women must be positioned as founders, designers, regulators, and owners of intellectual property. This is critical for the long-term exercise of influence. Without it, women will be at the mercy of market, platform, and policy change.

This is significant in terms of developmental outcomes. When women are positioned to shape digital systems, technology will be more likely to focus on issues such as care, safety, health, education, and informal economy. The experiences of women inject different values into the design and regulation of technology. This is not only beneficial to women but also to technology that is more responsive to society. In the Indian context, the need for digital sovereignty is urgent. The digital economy in India is growing at a fast pace, and the choices made today will shape opportunities for the next eight decades. If women remain on the periphery of technological power, the existing inequalities will be replicated at a digital level. However, if women gain sovereignty, the digital economy can be a catalyst for more balanced development.

9. CONCLUSION

With time digital infrastructure around us is evolving and transforming life the way we engage, learn and work. Even though it has brought accessibility to learn and contribute to the digital ecosystem, there are still certain barriers causing gender inequality. Where, opportunities for women to contribute to the present ecosystem has remain quite challenging and limited. These challenges are not merely related to technical knowledge or education but are embedded in societal expectations, institutional norms, and access to equal power distribution. Therefore, the present paper focuses on the Intersectional Digital Capability Framework which suggests women should utilize all the available resources into lasting employment and leadership roles. Hence, influencing the overall development and management of digital technologies.

The present framework focuses on how structural changes, socioeconomic and cultural factors intersect with gender, influencing the digital experiences of women. Moreover, the present study integrates the feminist theory with capability and intersectionality approaches to understand and address these issues. As the world is moving towards digitalization, it important to that women equally participate and contribute to the ocean digital infrastructure that allows them to take initiatives, make critical role and shape gender neutral technologies. At the same time, the current institutional and development policies should be updated addressing concerns related to care, security, adjustment, and inclusivity. This will not shape blocks for sustainable development but will be gender justice too. Helping women's to leading a path towards empowerment.

CONFLICT OF INTERESTS

The Authors have no conflict of Interest.

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REFERENCES

- Cockburn, C. (1985). *Machinery of Dominance: Women, Men, and Technical Know-How*. Pluto Press.
- Collins, P. H., and Bilge, S. (2020). *Intersectionality* (2nd ed.). Political Press.
- Crenshaw, K. (1989). Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory, and Antiracist Politics. *University of Chicago Legal Forum*, 1989(1), 139–167.
- Latour, B. (2005). *Reassembling Society: An Introduction to Actor-Network-Theory*. Oxford University Press. <https://doi.org/10.1093/oso/9780199256044.001.0001>
- NASSCOM. (2023). *Women and IT Workforce in India: Trends and Insights*. National Association of Software and Service Companies.
- Nussbaum, M. C. (2011). *Creating Capabilities: The Human Development Approach*. Harvard University Press. <https://doi.org/10.4159/harvard.9780674061200>
- Scheerder, A., van Deursen, A. J. A. M., and van Dijk, J. A. G. M. (2017). Determinants of Internet Skills, Uses, and Outcomes: A Systematic Review of the Second- and Third-Level Digital Divide. *Telematics and Informatics*, 34(8), 1607–1624. <https://doi.org/10.1016/j.tele.2017.07.007>
- Sen, A. (1999). *Development as Freedom*. Oxford University Press.
- Van Dijk, J. A. G. M. (2005). *The Deepening Divide: Inequality in the Information Society*. Sage Publications. <https://doi.org/10.4135/9781452229812>
- Wajcman, J. (2004). *TechnoFeminism*. Polity Press.
- World Economic Forum. (2024). *Global Gender Gap Report 2024*. World Economic Forum.