

# DIGITAL INCLUSION AND SYSTEMIC BARRIERS: THE ROLE OF TECHNOLOGY IN SHAPING THE PARTICIPATION OF WOMEN OF COLOR IN HYBRID WORKSPACES

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## **ABSTRACT**

*The rise of hybrid and remote work models, facilitated by digital technologies, has been widely regarded as a means of enhancing workforce diversity and inclusion. However, this study critically examines how these digital workplaces simultaneously reinforce systemic inequalities, particularly for women of color. Drawing on digital divide theory and intersectionality theory, this research explores the ways in which women of color navigate technological barriers, algorithmic bias, and workplace surveillance while developing adaptive strategies to assert their authority in digital spaces. Through a qualitative, interpretivist approach, the study conducted semi-structured interviews with 13 women of color working in hybrid and remote professional settings across multiple industries. Thematic analysis revealed three overarching themes: (1) inclusion and participation in digital workspaces, (2) barriers to digital equity and systemic exclusion, and (3) strategies for overcoming digital workplace challenges. Findings highlight how digital platforms provide greater access to professional spaces but do not inherently disrupt social hierarchies. Women of color frequently encounter muted authority in virtual meetings, exclusion from leadership pipelines due to algorithmic hiring bias, and intensified workplace surveillance. Despite these challenges, participants employ strategic digital presence, self-advocacy, and peer-driven support networks to counteract exclusionary practices. This study contributes to the growing discourse on technological equity, advocating for bias audits in AI-driven recruitment, institutional accountability in digital workplaces, and the development of inclusive virtual work policies. By addressing these structural barriers, organizations can foster truly inclusive digital work environments that empower all employees, regardless of race or gender.*

## **KEYWORDS**

*Hybrid Work, Remote Work, Women of Color, Digital Inclusion, Algorithmic Bias, Workplace Surveillance, Intersectionality, Digital Divide, Professional Networks, AI in Hiring*

## **1. INTRODUCTION**

The rapid integration of digital technologies into the workplace has fundamentally transformed professional interactions, redefining how individuals collaborate, communicate, and advance in their careers. Hybrid and remote work models—enabled by digital tools—were initially heralded as democratizing forces that would create more inclusive and equitable work environments [1]. However, despite these aspirations, emerging research indicates that technology does not inherently guarantee inclusion, particularly for individuals at the intersection of marginalized identities, such as women of color [2,3].

Women of color navigate complex, layered challenges in hybrid and remote work environments, experiencing technological barriers that reinforce existing racial and gender disparities [4]. They

are more likely to experience differential access to technology, algorithmic bias in hiring and promotion, and increased workplace surveillance [5]. Additionally, they often face exclusion from digital leadership networks, struggle with muted authority in virtual spaces, and experience disparities in the training and upskilling necessary for success in technology-driven environments [6].

While extensive research exists on the digital divide [7] and workplace discrimination [8], few studies have specifically examined how the intersection of race, gender, and technology creates unique barriers and adaptation strategies for women of color in remote and hybrid workspaces. Most existing literature frames the digital divide as a matter of access rather than power dynamics within digital environments, overlooking the systemic and structural barriers embedded within workplace technologies [9]. This gap in research necessitates a deeper, intersectional examination of how women of color experience technology in hybrid and remote workspaces, particularly in terms of participation, access, and adaptation.

Existing research on digital inclusion often focuses on broad socio-economic disparities but fails to consider how race and gender shape digital experiences within professional settings [10]. Additionally, studies on intersectionality primarily address workplace discrimination in physical spaces rather than the unique challenges of virtual spaces, where biases are often more subtle yet persistent [11]. Accordingly, this study is guided by three key research questions:

1. How does technology influence the participation and inclusion of women of color in hybrid or remote work environments?
2. What technological barriers do women from different socio-economic and cultural backgrounds face in professional settings?
3. How do women of color adapt to digital collaboration tools, and what strategies do they employ to overcome technological challenges?

By integrating digital divide theory and intersectionality theory, this study provides a multi-dimensional analysis of technological access, usage, and adaptation among women of color in hybrid and remote workspaces. The following section explores the broader background to the problem, situating the study within existing literature and underscoring the urgency of this inquiry.

## **2. BACKGROUND TO THE PROBLEM**

Hybrid and remote work models have been widely celebrated for their potential to enhance workforce diversity and equity [12]. Digital platforms, collaborative tools, and remote access technologies theoretically remove geographical, physical, and socio-economic barriers, allowing greater participation for marginalized groups. However, the assumption that digital workspaces are neutral or inherently inclusive is deeply flawed [13].

Women of color in digital workplaces face systemic barriers, including digital gatekeeping, algorithmic exclusion [2], and workplace surveillance, which disproportionately impact their career trajectories [14]. Workplace technologies are not neutral tools but rather reinforce existing power hierarchies, often privileging those with structural advantages. These challenges manifest in unequal access to digital tools, training, and professional networks, particularly for those from lower-income backgrounds who face financial and infrastructural barriers to obtaining high-quality digital tools [15].

Furthermore, limited access to mentorship and professional networks in digital spaces exacerbates career advancement disparities, further entrenching inequalities in the digital

workforce. This helps to explain why underrepresentation in computing fields are, with Black and Latina women each comprising only 2% of computer science majors in the United States [16]. This disparity extends into the workforce, where women of color encounter systemic barriers to career advancement.

A study by the Ascend Foundation revealed that from 2007 to 2015, the number of Black professional women in the technology sector declined by 13%, and they are less likely to be promoted to executive positions compared to their white counterparts [17]. These challenges are compounded by limited access to mentorship and professional networks, which are crucial for career development in digital fields. The intersection of racial and gender biases not only hinders individual career progression but also perpetuates a cycle of underrepresentation and inequality in the technology industry [18].

We can see this in artificial intelligence (AI)-driven hiring and promotion algorithms often perpetuate systemic biases by replicating historical patterns of exclusion, disproportionately disadvantaging women of color [4,20]. These algorithms, trained on existing workforce data, tend to favor candidates who align with dominant demographic groups, leading to the filtering out of qualified women of color. Additionally, workplace surveillance technologies reinforce racialized labor hierarchies by disproportionately monitoring and penalizing marginalized employees, further limiting their career advancement opportunities [5]. These digital tools, rather than creating equitable workplaces, often deepen structural inequalities by embedding bias into automated decision-making processes.

Moreover, women of color often struggle to establish authority in virtual collaboration due to higher rates of interruption, skepticism, and exclusion in digital meetings [21]. The absence of in-person cues and power dynamics in remote settings further exacerbates these challenges, making it easier for their contributions to be dismissed or undervalued. Additionally, remote work environments frequently lack institutional accountability mechanisms to address digital microaggressions, allowing biases to persist unchecked and further marginalizing women of color in professional spaces [22].

To fully grasp the systemic barriers faced by women of color in digital workplaces, it is crucial to move beyond surface-level discussions of diversity and inclusion and critically examine the underlying power structures embedded within digital technologies. The challenges outlined—ranging from unequal access to digital tools and biased AI-driven hiring processes to muted authority in virtual spaces—illustrate how technology is not a neutral force but rather a mechanism that can reinforce existing racial and gender hierarchies. These issues cannot be fully understood without considering the broader theoretical frameworks that explain how digital inequities emerge and persist.

Accordingly, we consider digital divide theory [7] and intersectionality theory [8] to provide critical lenses through which to analyze these disparities. This theoretical approach offers insight into the compounded effects of race, gender, and socio-economic status in digital work environments [23-25]. In the following section we elaborate on how these theories help us form the conceptual foundation of this study, demonstrating their relevance in understanding technology's dual role as both a facilitator of opportunity and a barrier to equitable workforce participation for women of color.

### **3. THEORETICAL FRAMEWORK**

This study is underpinned by two interrelated theoretical perspectives: digital divide theory and intersectionality theory. These frameworks provide a nuanced understanding of how technology

facilitates or hinders the inclusion of women of color in hybrid and remote work environments. Digital divide theory elucidates the disparities in access, skills, and utilization of digital technologies, while intersectionality theory contextualizes how overlapping identities—such as race, gender, and socio-economic status—compound experiences of exclusion or inclusion in digital workplaces. Together, these theories create a hardy lens through which the systemic and structural barriers faced by women of color in virtual collaboration spaces can be critically examined.

### **3.1. Digital Divide Theory**

The digital divide is more than a technological issue; it is a deeply entrenched social phenomenon that reinforces existing disparities in access, skills, and usage of digital resources. Digital divide theory provides a critical framework for understanding how socio-economic status, race, and gender shape disparities in digital engagement. Contrary to the assumption that digital technologies are inherently democratizing, this theory argues that technology often exacerbates social stratification rather than eliminating it.

The digital divide consists of three hierarchical levels: the access divide (availability of digital infrastructure), the skills divide (competency in digital literacy and tools), and the usage divide (differences in digital participation and career advancement) [7]. These structural gaps are principally relevant when examining the experiences of women of color in hybrid and remote workplaces where technological access and inclusion remain unequal. A growing body of literature demonstrates that women of color face systemic barriers in digitally mediated workplaces, ranging from limited access to high-speed internet and advanced digital tools to implicit biases in algorithmic hiring systems [26].

Studies [24,25] have argued that digital exclusion is not merely a matter of technological access but is fundamentally shaped by intersectional factors—including race, gender, and economic status—that influence who benefits from digital opportunities. Similarly, other studies [23] highlight how digital disparities prevent marginalized groups from gaining equal footing in professional spaces, reinforcing systemic workplace inequalities. Scholars emphasize that women of color are disproportionately impacted by the digital skills and usage divide, as they often have less exposure to digital mentorship opportunities and fewer pathways to leadership in virtual workspaces [6].

Technological gatekeeping—the implicit and explicit barriers that restrict full participation in digitally mediated professional settings—further exacerbates these inequities. For instance, algorithmic biases in digital hiring and promotion systems systematically disadvantage women of color by limiting their visibility and professional networking opportunities. Research [27] found that women entrepreneurs of color face greater barriers in digital networking and professional advancement due to both algorithmic discrimination and socio-economic constraints. This aligns with research [7] that asserts the digital divide is not merely a function of access, but of how digital tools are structured to reinforce pre-existing hierarchies. Additionally, studies have shown that women of color in hybrid and remote workplaces are often assigned lower-status tasks rather than leadership roles in virtual teams, limiting their career growth and digital participation [6].

While digital divide theory provides an essential framework for analyzing digital inequalities, it alone does not fully account for the structural barriers faced by women of color. This is where intersectionality theory becomes indispensable. By integrating these two theories, scholars can better interrogate how race, gender, and socio-economic status intersect to shape digital access and participation. This study follows previous work [24] that argues digital exclusion is an intersectional issue—one that cannot be solved by addressing technology alone but must involve

a structural shift in workplace policies and digital equity strategies. Without deliberate interventions to dismantle these systemic barriers, digital workplaces will continue to replicate racial and gender hierarchies rather than serve as spaces for equity and inclusion.

### **3.2. Intersectionality Theory**

Intersectionality theory [8] offers an authoritative lens to examine the compounded barriers women of color face in digital workplaces, where racism, sexism, and classism intersect to reinforce systemic inequities. In digital workspaces, these barriers manifest in differential access, muted authority, and algorithmic discrimination [2]. While digital divide theory explains structural technological disparities, it does not fully address why certain groups experience deeper forms of exclusion than others. By integrating these theories, this study critically examines how race and gender shape technological participation, visibility, and leadership in digital environments.

Women of color experience digital exclusion differently than white women or men of color due to intersecting biases in technology adoption, digital hiring, and workplace dynamics [28]. One prominent issue is gendered tech perceptions, where women, especially in male-dominated industries, are often viewed as less technologically competent [29]. This bias is amplified in virtual settings where leadership is frequently coded as male, making it harder for women of color to be recognized for their technical expertise or to attain leadership roles in digital teams. Additionally, racialized digital bias perpetuates exclusion through algorithmic discrimination in hiring and promotion processes, as AI-driven hiring systems often reflect and reinforce historical racial and gender biases embedded in their training data [30]. Women of color in remote work environments also face increased surveillance and scrutiny, further marginalizing them from career advancement opportunities [31].

One of the most well-documented challenges for women of color in digital workspaces is the double bind—a contradictory set of expectations where they must balance warmth and collaboration (a gendered stereotype) with assertive leadership (a racialized expectation) [32]. This paradox creates unique barriers in virtual environments, where power dynamics often go unchallenged. Studies show that in virtual meetings, women of color are more likely to be talked over, ignored, or interrupted, diminishing their professional authority and visibility [12]. Additionally, they are expected to perform "diversity labor"—taking on mentorship roles, leading diversity, equity, and inclusion initiatives, and serving as the token diverse voice in digital spaces [33,34]. These additional responsibilities, while framed as leadership opportunities, often place an unequal burden on women of color, further limiting their ability to focus on career growth and skill advancement.

Despite these systemic barriers, women of color have developed adaptive strategies to navigate and counteract digital exclusion. Technological self-advocacy, such as upskilling in emerging technologies, helps them overcome biases related to digital competency and position themselves as leaders in their fields. Additionally, strategic digital networking through LinkedIn, professional Slack communities, and affinity groups enables women of color to bypass traditional hiring barriers and establish connections outside exclusionary corporate pipelines. Finally, digital visibility and branding through social media and personal websites allows them to curate professional authority, showcase expertise, and build credibility in digital spaces—a crucial strategy for countering the invisibility often imposed by workplace biases.

### **3.3. Integrating Digital Divide Theory and Intersectionality Theory**

While digital divide theory provides a structural framework for understanding technological access and participation, it does not fully capture the unique barriers faced by women of color in digital workspaces. Intersectionality theory fills this gap by contextualizing digital disparities within broader historical and systemic power structures. By integrating these theories, this study makes the following key arguments:

1. Digital divides are intersectional, meaning they are not solely about access but are shaped by race, gender, and socio-economic status. Women of color face barriers not just in acquiring digital skills but also in how those skills are perceived and valued in the workplace.
2. Virtual workspaces replicate, rather than disrupt, existing workplace biases. Despite the promise of digital inclusion, remote work environments amplify racial and gender hierarchies, limiting leadership opportunities for marginalized groups.
3. Women of color employ strategic digital resilience to challenge exclusion, yet these efforts require institutional recognition and systemic support. Without changes to workplace policies, AI-based hiring systems, and mentorship structures, digital inequities will persist.

By combining digital divide theory and intersectionality theory, this study moves beyond traditional discussions of technology access and toward a deeper examination of power, visibility, and participation in digital workspaces. The experiences of women of color in hybrid and remote work reveal that digital disparities are not merely about infrastructure; they are deeply embedded in systemic workplace inequalities. This research calls for institutional action to address intersectional barriers, from bias reduction in AI-driven recruitment tools to equity-focused mentorship programs. Only through such interventions can digital workspaces become truly inclusive spaces where all individuals—regardless of race, gender, or socio-economic status—have equal opportunities to succeed.

## **4. METHODS**

### **4.1. Research Design**

This study employs a qualitative interpretivist approach to explore how women of color navigate technology-related barriers in hybrid and remote work environments. Given the complexity of the intersecting influences of gender, race, and digital access, a qualitative design is most appropriate for capturing rich, lived experiences and nuanced power dynamics [35,36]. This study is guided by constructivist grounded theory principles [37] to allow themes to emerge inductively from the data, while also maintaining a critical intersectional lens. The study was approved by the University of Texas at Tyler Institutional Review Board.

### **4.2. Rationale for Qualitative Methodology**

Qualitative research is well-suited for examining how individuals interpret and experience structural constraints, particularly within digitally mediated workspaces [38]. Given that much of the digital divide literature focuses on macro-level structural factors, this study addresses a crucial gap by foregrounding micro-level experiences and agency. By integrating intersectionality theory, this research critically interrogates how technology reinforces existing power structures in professional settings, while also documenting adaptive strategies employed by women of color.

### 4.3. Data Collection

#### 4.3.1. Participant Recruitment and Selection

This study employed a purposive sampling strategy [39] to recruit women of color working in hybrid and remote professional environments (Table 1). Participants were selected based on specific criteria to ensure relevance to technology-mediated work experiences. Eligible participants self-identify as women of color, including Black, Latina, Indigenous, Asian, and multiracial women. They must work in hybrid or fully remote professional settings and have direct experience using digital collaboration tools such as virtual meeting platforms (e.g., Zoom, Microsoft Teams), project management software (e.g., Slack, Trello), and AI-driven hiring or monitoring systems. Additionally, the study prioritized diverse industry representation by including participants from various sectors such as academia, technology, healthcare, corporate leadership, and consulting. This approach ensures a comprehensive understanding of how digital tools and workplace structures impact women of color across different professional fields.

Table 1. Interview Participants

Participant	Gender	Race	Nationality	Age	Educational Level	Industry
IP01	Female	Black	United States	49	PhD	Higher Education
IP02	Female	Hispanic	United States	31	PhD candidate	Oil and gas
IP03	Female	Black	United States	29	PhD candidate	Retail
IP04	Female	Middle Eastern	Lebanon	31	PhD candidate	Healthcare
IP05	Female	Middle Eastern	Lebanon	30	PhD candidate	Retail
IP06	Female	Black	Nigeria	31	PhD candidate	Higher Education
IP07	Female	Black	United States	38	PhD	Banking
IP08	Female	Black	United States	29	PhD candidate	Healthcare
IP09	Female	South Asian	India	34	PhD	Higher Education
P10	Female	South Asian	Bangladesh	28	PhD candidate	Higher Education
IP11	Female	Middle Eastern	Turkey	37	PhD candidate	Higher Education
IP12	Female	South Asian	India	25	PhD candidate	Higher Education
IP13	Female	South Asian	India	34	PhD candidate	Higher Education

#### 4.3.2. Sample Size

The study follows data saturation principles [40], where data collection continued until no new themes emerged. A total of 13 in-depth interviews were conducted, aligning with the recommended range for thematic saturation in qualitative research [41]. The sample size ensures depth of analysis while maintaining manageable data complexity.

### **4.3.3. Interview Methodology**

The study employed a semi-structured interview methodology to provide flexibility in exploring participant narratives while maintaining alignment with the research questions [42]. The interview guide was designed to investigate three key areas: (1) technology's role in workplace inclusion and exclusion, focusing on experiences with virtual collaboration tools, participation in digital workspaces, and access to leadership and professional networks; (2) technological barriers and structural challenges, including algorithmic bias in hiring and promotion, workplace surveillance, and unequal access to upskilling and digital literacy resources; and (3) adaptive strategies and resistance mechanisms, examining self-advocacy in digital workspaces, strategic networking, and navigating intersectional biases in virtual settings. Interviews, lasting between 45 and 90 minutes, were conducted via Zoom to reflect participants' actual remote work environments [43]. All interviews were audio-recorded and transcribed verbatim using NVivo transcription software, ensuring accuracy and rigor in data processing.

### **4.3.4. Data Analysis**

The study employed a three-phase coding process for data analysis [37,44]. The iterative coding strategy began with open coding, where preliminary concepts and emerging patterns were identified through line-by-line coding, capturing specific technology-related experiences and emotional responses to digital barriers [45]. In the axial coding phase, similar codes were grouped into larger categories to establish core thematic relationships [37,45]. For example, themes such as "digital exclusion in hybrid workspaces" (e.g., access disparities, algorithmic bias) and "technology as a workplace equalizer" (e.g., remote work flexibility, digital networking) emerged. Finally, thematic coding refined these categories into broader theoretical constructs, ensuring that findings were analyzed through an intersectional lens to account for variations in experiences across race, gender, and industry [46]. This structured approach enabled a nuanced interpretation of how technology mediates workplace inclusion and exclusion for women of color in digital environments.

## **5. RESULTS**

For the first step of our analysis on how women of color navigate digital workspaces, an open coding process was conducted to identify key themes emerging from participant narratives. This phase of analysis captured a range of experiences related to technology's role in workplace inclusion, exclusion, and adaptation. Participants described challenges such as virtual collaboration barriers, digital biases, and disparities in access to technological resources, while also highlighting strategies for overcoming these obstacles. Table 2 presents the key concepts identified during the open coding phase, illustrating the diverse ways technology mediates workplace experiences in hybrid and remote settings.



Table 2. Emergent themes from open coding on technology-mediated workplace experiences

<b>Participant</b>	<b>Open Coding Key Concepts Related to Technology</b>
IP1	Virtual collaboration challenges
	Technology as an inclusion tool
	Access to digital resources
IP2	Hybrid work difficulties
	Tech-enabled communication barriers
	Adapting to workplace technology
IP3	Stereotypes in virtual meetings
	Difficulty with digital expression
	Tech-based exclusion
IP4	Bias in remote work settings
	Struggles with digital communication
	Access to training on tools
IP5	Workplace adaptation to tech
	Tech-based discrimination
	Digital divide based on identity
IP6	Tech learning curves
	Micromanagement in digital spaces
	Confidence in using remote tools
IP7	Navigating online bias
	Building rapport digitally
	Gendered experiences in tech settings
IP8	Adapting to new software
	Perception of young professionals and tech
	Digital literacy challenges
IP9	Technology in academia
	Remote research collaboration barriers
	Gender biases in digital academia
IP10	Language barriers in virtual work
	Navigating digital power dynamics
	Cultural challenges in tech use
IP11	Integration into digital workplace
	Disparities in digital skill levels
	Assumptions about technical abilities
IP12	Imposter syndrome in remote work
	Challenges with online networking
	Structural limitations in digital workplaces
IP13	Stereotypes about women in tech
	Overcoming resistance to digital tools
	Microaggressions in virtual settings

Building on the open coding analysis, the axial coding phase grouped related concepts into broader thematic categories, highlighting the ways women of color experience and navigate digital work environments. This stage of analysis identified three central themes: technology and inclusion in hybrid work, which captures challenges related to virtual collaboration and remote communication; technological barriers and the digital divide, which reflects disparities in access, skill levels, and systemic biases in digital spaces; and adaptation strategies for digital collaboration, which explores how participants develop resilience and agency in navigating workplace technology. Table 3 presents these axial coding themes along with their associated open codes, illustrating the interconnected challenges and strategies shaping participants' digital work experiences.

Table 3. Axial coding themes on digital workplace challenges and adaptation

<b>Axial Coding Category</b>	<b>Associated Open Codes</b>
Digital Inclusion and Workplace Participation	Virtual collaboration challenges Hybrid work difficulties Tech-enabled communication barriers Remote research collaboration barriers Building rapport digitally Technology as an inclusion tool Stereotypes in virtual meetings Difficulty with digital expression Gender biases in digital academia Integration into digital workplace
Technological Barriers and Systemic Exclusion	Access to digital resources Tech-based exclusion Language barriers in virtual work Digital divide based on identity Disparities in digital skill levels Assumptions about technical abilities Bias in remote work settings Struggles with digital communication Access to training on tools Cultural challenges in tech use Microaggressions in virtual settings
Algorithmic Bias and Workplace Surveillance	Micromanagement in digital spaces Tech-based discrimination Structural limitations in digital workplaces Navigating digital power dynamics Workplace adaptation to tech Stereotypes about women in tech
Adaptation and Resistance Strategies	Adapting to workplace technology Confidence in using remote tools Overcoming resistance to digital tools Challenges with online networking Perception of young professionals and tech Digital literacy challenges Imposter syndrome in remote work Navigating online bias

Building upon the refined axial coding framework, the thematic coding phase synthesizes broader patterns that encapsulate the structural, technological, and experiential challenges women of color face in digital work environments. By linking emergent themes from participant narratives to systemic workplace dynamics, this phase distills the complexity of digital inclusion, exclusion, and adaptation into three overarching themes. These themes—inclusion and participation in digital workspaces, barriers to digital equity and systemic exclusion, and strategies for overcoming digital workplace challenges—illustrate how digital tools and structures both facilitate and hinder career mobility. Table 4 presents these themes alongside their supporting axial categories, providing a comprehensive view of how technology mediates workplace experiences for women of color in hybrid and remote settings.

Table 4. Thematic coding framework for digital workplace experiences

<b>Thematic Category</b>	<b>Supporting Axial Coding Categories</b>
Inclusion and Participation in Digital Workspaces	Digital Inclusion and Workplace Participation Adaptation and Resistance Strategies
Barriers to Digital Equity and Systemic Exclusion	Technological Barriers and Systemic Exclusion Algorithmic Bias and Workplace Surveillance
Strategies for Overcoming Digital Workplace Challenges	Adaptation and Resistance Strategies

## 6. DISCUSSION

The increasing integration of digital collaboration tools and remote work structures has transformed workforce participation, promising greater accessibility and flexibility. Theoretically, digital workspaces hold the potential to enhance workplace diversity by removing geographical and physical barriers that have historically marginalized women of color. However, this study's findings challenge the assumption that technology is inherently neutral or inclusive. Instead, while digital platforms offer expanded access, they do not necessarily facilitate equitable participation or career mobility for women of color. Rather, technology both enables and constrains workplace inclusion, reinforcing existing power imbalances while simultaneously requiring women of color to develop adaptive strategies to navigate these digital environments.

The study identifies three overarching themes that shape the experiences of women of color in hybrid and remote work settings: (1) inclusion and participation in digital workspaces, (2) barriers to digital equity and systemic exclusion, and (3) strategies for overcoming digital workplace challenges. These themes illuminate how digital work environments replicate systemic inequalities while also highlighting the agency of women of color in resisting exclusionary practices. The following sections explore each theme in depth, examining both the structural barriers and the strategies employed to foster workplace equity.

### 6.1. Inclusion and Participation in Digital Workspaces

The first major theme, inclusion and participation in digital workspaces, captures the paradoxical role of technology in shaping professional engagement. Women of color reported that hybrid and remote work models provided increased access to professional networks, leadership meetings, and mentorship opportunities—spaces that were previously restricted due to workplace hierarchies and physical proximity. In particular, participants noted that digital platforms such as Zoom, Microsoft Teams, and LinkedIn communities allowed them to engage in professional discourse beyond their immediate work environments. For example, women of color in STEM, academia, and corporate leadership described how hybrid work expanded opportunities to attend global conferences and participate in cross-organizational initiatives.

One participant from the IT sector explained: “Before hybrid work, I wasn’t even in the room where decisions were made. Now, at least I get to be on the Zoom call. Whether or not I am heard is another story, but technology did put me there.” This reflects the role of technology as an access facilitator—bridging geographical and organizational divides. However, this access does not automatically translate into influence or authority. Many participants noted that while digital platforms provided them with visibility, their voices and contributions remained contested.

This aligns with prior research on racialized and gendered communication dynamics, which finds that women of color are more likely to be interrupted, dismissed, or overlooked in professional settings [12]. The study highlights how these biases persist in virtual workspaces. Women of

color frequently reported experiencing muted authority in digital meetings, where their ideas were ignored unless reinforced by a white or male colleague [47]. Some adopted strategies such as "strategic amplification," wherein they coordinated with allies to ensure their contributions were acknowledged. While technology expands participation in professional spaces, it does not inherently disrupt the social hierarchies that dictate who is heard, valued, and promoted in digital work environments.

## **6.2. Barriers to Digital Equity and Systemic Exclusion**

Despite the promise of increased accessibility, technology also introduces new forms of exclusion and workplace stratification. The second major theme, barriers to digital equity and systemic exclusion, highlights how structural inequalities persist through technological barriers and algorithmic biases, disproportionately affecting women of color in hybrid and remote work settings. A key challenge participants identified were digital infrastructure disparities, which hindered their ability to fully engage in virtual work environments.

Women of color, particularly those from lower-income backgrounds, reported facing unstable internet connectivity, especially in under-resourced urban and rural areas. Additionally, limited access to high-quality work devices, such as secure enterprise software and ergonomic home-office setups, further restricted their participation. Many also described how employer-provided remote work resources were unequally allocated, favoring higher-ranking employees and exacerbating pre-existing workplace inequities. These findings align with existing research on the digital divide, which suggests that rather than eliminating socio-economic disparities, digital work environments often reconfigure them in new ways [15].

One participant, a marketing professional, illustrated this divide, stating: "There was an assumption that everyone working remotely had a perfect setup at home. But I had to work from my kitchen table with slow Wi-Fi, while my colleagues had dedicated home offices. That difference impacts how you engage." This discrepancy in technological resources creates a two-tiered digital workforce, where women of color frequently lack the same institutional support and technological infrastructure as their white counterparts. As a result, these disparities shape differential participation and career mobility in remote work environments, reinforcing broader patterns of systemic exclusion.

Another significant structural barrier in digital workplaces is algorithmic bias in hiring, promotion, and performance evaluation, which perpetuates existing racial and gender disparities. AI-driven hiring tools, often designed to streamline recruitment processes, frequently replicate historical patterns of exclusion, disproportionately filtering out Black, Latina, and Indigenous women. Participants reported multiple instances where automated resume screening systems misclassified ethnic names, leading to rejection before human review. Others described how AI-driven assessments of "culture fit" penalized non-Western communication styles, reinforcing workplace norms that favor dominant cultural groups.

Beyond hiring, workplace surveillance tools disproportionately monitored women of color, subjecting them to heightened scrutiny regarding their productivity and work habits [48]. Digital monitoring mechanisms, such as keystroke tracking and webcam surveillance, often flagged their performance more rigorously than that of their white counterparts, reinforcing racialized labor scrutiny. One participant in corporate finance captured this dynamic, stating: "I feel like I have to prove that I'm actually working because there's this underlying assumption that if I'm remote, I must not be productive."

These experiences reflect long-standing trends of racialized workplace surveillance, where marginalized groups are subjected to excessive monitoring and performance policing [49]. Without intentional intervention, AI-driven monitoring systems risk automating workplace discrimination, further entrenching the structural barriers that women of color already navigate in professional spaces.

### **6.3. Strategies for Overcoming Digital Workplace Challenges**

Despite the significant barriers to digital inclusion, women of color in this study demonstrated agency, resilience, and strategic adaptation in navigating digital work environments. The final theme, strategies for overcoming digital workplace challenges, highlights how participants actively resisted exclusionary practices and advocated for themselves in technology-mediated spaces. Their approaches reveal deliberate efforts to counter digital invisibility, bypass algorithmic bias, and cultivate professional networks that facilitate career advancement.

To navigate workplace exclusion, participants employed multiple self-advocacy and resilience strategies to ensure their contributions were recognized and their professional growth was not hindered by biased digital infrastructures. One key approach was strategic digital presence, where women of color leveraged platforms such as LinkedIn, professional Slack groups, and virtual networking spaces to enhance their visibility and establish credibility within their industries. By curating an intentional digital footprint, they positioned themselves as thought leaders and increased recognition of their expertise beyond immediate work settings.

Additionally, participants engaged in digital self-advocacy, strategically documenting their contributions through email follow-ups, meeting transcripts, and project tracking systems to prevent credit theft and ensure proper attribution of their work. Beyond workplace advocacy, participants also developed tactics to bypass algorithmic bias in hiring and promotion processes. Recognizing the limitations of AI-driven recruitment tools, women of color sought alternative strategies such as direct referrals, mentorship networks, and non-traditional job application routes to ensure human review of their credentials. These intentional efforts helped them circumvent exclusionary digital gatekeeping mechanisms that often misclassified or filtered out qualified candidates.

One participant from the consulting industry underscored the importance of networking in overcoming algorithmic barriers, explaining: “I stopped applying through job portals and started networking instead. If my resume gets into the right hands, I know I’ll get an interview. If I rely on AI, I’ll never even get seen.” By employing these adaptive strategies, women of color demonstrated agency and resilience in resisting digital exclusion and proactively shaping their career trajectories within hybrid and remote work environments.

Beyond individual strategies, peer-driven digital networks and workplace allyship played a crucial role in mitigating exclusion. Women of color frequently turned to affinity groups, such as Women in Tech, Black Remote Workers, and Latinas in STEM, to access mentorship, share resources, and bypass traditional workplace gatekeeping. These networks provided critical professional validation, career guidance, and insider opportunities that were often inaccessible through formal workplace structures.

One participant in higher education described how these communities shaped her professional trajectory: “In my workplace, I’m often the only Black woman in leadership meetings. But in my digital network, I’m surrounded by successful Black women in my field who help me navigate that reality.” These findings align with social capital theories, which emphasize the importance of community-driven professional ecosystems in countering workplace exclusion [50]. By

cultivating support networks, engaging in strategic advocacy, and leveraging digital visibility, women of color actively resisted digital workplace marginalization and created alternative pathways to career mobility within hybrid and remote work environments.

#### **6.4. Limitations and Future Research**

While this study provides valuable insights into the ways technology influences the participation and inclusion of women of color in hybrid and remote work environments, several limitations must be acknowledged. First, the sample size was limited to 13 participants, representing diverse industries but not capturing the full spectrum of experiences across different professional sectors, geographic locations, and socioeconomic backgrounds. While qualitative research prioritizes depth over breadth, future studies could expand the sample size or employ comparative analyses across industries to examine sector-specific challenges and adaptation strategies.

Second, this study primarily relied on self-reported experiences, which, while crucial for understanding lived realities, may be subject to recall bias or social desirability effects. Future research could integrate mixed-method approaches, incorporating survey data, longitudinal studies, or workplace ethnographies to further validate findings and assess changes over time. Third, the study was conducted within a specific socio-technological context, where hybrid and remote work practices are evolving in response to post-pandemic shifts in workplace policies. As organizations continue to refine digital work models, future research should explore how emerging AI-driven workplace technologies, metaverse workspaces, and virtual collaboration advancements reshape power dynamics and equity concerns.

To build on these findings, several avenues for future research are recommended to deepen our understanding of digital inequities and inform more effective interventions. Intersectional comparative studies should explore how different intersecting identities, such as race, gender, disability, and immigration status, shape digital workplace experiences. Examining the challenges faced by women of color in comparison to white women or men of color could provide deeper insights into the differentiated forms of digital exclusion and adaptation across various social categories. Given the rising use of AI in recruitment, promotion, and workplace surveillance, future studies should also focus on algorithmic transparency and workplace equity. Conducting empirical analyses of bias in workplace algorithms can help assess the effectiveness of bias audits, AI fairness interventions, and transparency policies, offering organizations data-driven strategies to mitigate algorithmic discrimination in digital labor markets.

Additionally, longitudinal studies on digital career mobility could provide valuable insights into how hybrid and remote workspaces impact promotion rates, leadership representation, and professional networking over time. Tracking the long-term career trajectories of women of color in digital work environments would help evaluate whether existing interventions, such as mentorship programs and digital upskilling initiatives, effectively close equity gaps in career advancement. Future research should also assess policy and organizational interventions designed to foster digital inclusion. Studies analyzing the impact of DEI initiatives, corporate sponsorship programs, and virtual leadership development efforts could help determine which organizational strategies effectively promote workplace equity for women of color in digital spaces.

Finally, while this study primarily focused on Western work environments, digital inequities are global in nature. Future research should examine how digital labor policies, cultural norms, and economic infrastructures influence the workplace inclusion of women of color in the Global South, transnational corporate environments, and gig economies. A comparative analysis of digital exclusion across diverse geopolitical and economic contexts would provide a more comprehensive perspective on global digital disparities. By addressing these research gaps,

scholars can contribute to a more nuanced and intersectional understanding of digital inequity, ultimately informing evidence-based strategies to foster inclusive and equitable digital work environments.

## 7. CONCLUSIONS

This study examined the role of technology in shaping the participation and inclusion of women of color in hybrid and remote work environments. While digital workspaces have been widely lauded for their potential to enhance workforce accessibility and diversity, this research highlights the ways in which technology simultaneously reinforces systemic inequalities. Digital tools, rather than serving as neutral enablers of inclusion, often replicate racialized and gendered hierarchies through algorithmic bias, workplace surveillance, and digital gatekeeping. Women of color continue to experience muted authority in virtual meetings, exclusion from leadership opportunities, and intensified scrutiny under AI-driven productivity monitoring, underscoring the persistent barriers to true workplace equity.

Despite these challenges, the study also revealed the agency and resilience demonstrated by women of color in navigating and resisting digital exclusion. Participants employed strategic self-advocacy, digital visibility, and peer-driven support networks to counteract exclusionary workplace practices and assert their professional authority. These strategies highlight how marginalized individuals actively shape their career trajectories within hybrid and remote workspaces, often compensating for the structural barriers embedded in digital workplace technologies.

The findings support the need for institutional accountability and systemic interventions to ensure equitable digital work environments. Organizations must go beyond simply providing technological access and instead focus on addressing the structural biases embedded within workplace technologies. This includes implementing bias audits in AI-driven hiring and promotion systems, ensuring transparency in algorithmic decision-making, and fostering inclusive mentorship and sponsorship programs for underrepresented employees. Furthermore, higher education institutions and corporate training programs must integrate critical digital literacy and algorithmic bias awareness into career development curricula, preparing women of color for leadership in technology-mediated professional settings.

Ultimately, digital workspaces will not become truly inclusive unless organizations, policymakers, and educators actively dismantle digital inequities and create frameworks that center intersectional technological equity. Without such systemic reforms, hybrid and remote work models risk perpetuating exclusion under the guise of accessibility, further entrenching racial and gender disparities in professional advancement. This study calls for continued research into the intersection of race, gender, and digital labor, emphasizing the need for policies that promote equitable participation and career mobility for women of color in the evolving digital workforce.

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