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Leadership Without Mirror: Systemic Underrepresentation in Courts, Health Boards, and Schools in England

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Research Article

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Abstract

This study examines how administrative data infrastructure shapes visibility of intersectional inequality in public sector leadership across England. Drawing on Crenshaw's intersectionality framework, the research addresses a fundamental accountability problem: when equality monitoring systems report gender and ethnicity separately rather than simultaneously, institutions can claim diversity progress while women of colour remain excluded. The analysis integrates three years of judicial diversity data (2023–2025) enabling direct intersectional measurement, alongside ethnic diversity indicators from NHS Workforce Race Equality Standard reports (2022–2024) and Department for Education School Workforce Census data (2010–2024) where gender-disaggregated ethnicity reporting is unavailable. The judiciary analysis reveals that despite women approaching parity at 43.6 percent of all judges, global majority women constitute only 5.4 percent of the judiciary and just 12.3 percent of female judges, demonstrating how gender progress disproportionately benefits white women. This white ceiling pattern exemplifies compound marginalization measurable only when data systems cross-tabulate identity dimensions. The NHS and education sectors demonstrate ethnic diversity at 16.3 percent and 5.3 percent respectively, yet the absence of gender-disaggregated reporting prevents assessment of whether these gains reach women of colour specifically. This measurement gap allows organizations to celebrate diversity achievements that may mask intersectional exclusion. The study's primary contribution lies in demonstrating empirically what intersectionality theory predicts: single-axis diversity metrics obscure persistent exclusion at the intersection of multiple marginalized identities. Where direct measurement exists, severe underrepresentation of women of colour becomes visible. Where measurement systems prevent intersectional analysis, accountability for reaching multiply marginalized groups cannot be established

1. Introduction

Originating from Kimberlé Crenshaw's foundational critique of single-axis legal and political frameworks, intersectionality provides essential insight into how systems of power operate simultaneously rather than as discrete forces affecting different groups in isolation (Crenshaw, 2006). Crenshaw's analysis revealed that women positioned at the intersection of multiple subordinated identities experience forms of marginalization that cannot be captured by examining gender or race independently. When feminist advocacy centers white women's experiences while antiracist organizing prioritizes men of colour, Black women's specific experiences of compounded exclusion fall outside both frameworks, rendering their concerns invisible to political mobilization and institutional accountability (Crenshaw, 2015). This theoretical insight has achieved global recognition across social sciences (Agénor, 2020; Fehrenbacher and Patel, 2019), yet its application within quantitative leadership research remains constrained by a fundamental infrastructure problem: administrative data systems rarely cross- tabulate identity dimensions, preventing measurement of outcomes at the intersection.

This study addresses a critical gap in both intersectionality scholarship and public sector accountability by examining how measurement infrastructure shapes visibility of intersectional inequality in English

leadership. The research demonstrates that the challenge extends beyond conceptual frameworks to empirical infrastructure. Organizations cannot be held accountable for what they do not measure, and when equality monitoring systems report gender and ethnicity separately, intersectional patterns remain invisible regardless of institutional

commitments to diversity. An organization can truthfully report both gender parity and ethnic diversity at senior levels while women of colour remain severely underrepresented if advancement opportunities disproportionately benefit white women and minoritized men. Without explicit measurement of representation at the intersection of multiple marginalized identities, such exclusion operates beyond the reach of transparency mechanisms and accountability frameworks.

Public sector leadership represents a particularly important domain for examining these dynamics. Courts, health systems, and schools constitute sites of significant institutional authority, shaping not only service delivery but also societal norms around whose voices are heard, whose experiences are validated, and who is seen as capable of exercising power. When leadership in these domains remains demographically narrow, consequences extend beyond individual fairness to questions of institutional legitimacy and democratic governance. Research demonstrates that homogenous leadership structures reproduce organizational cultures that marginalize minoritized professionals, limit policy responsiveness to diverse constituencies, and undermine public trust in governing institutions. For women of colour specifically, the intersection of racial and gender hierarchies creates what scholars term a double bind, wherein advancement requires navigating both gendered expectations about leadership style and racialized assumptions about competence, professionalism, and belonging (Pogrebna et al., 2024).

Despite the significance of these questions, no study has systematically examined what becomes empirically visible when administrative systems enable intersectional measurement versus what remains obscured when they report identity dimensions separately. Existing research on diversity in English public leadership remains siloed within sector-specific literatures and typically employs single-axis frameworks that measure gender representation separately from ethnic diversity. This fragmentation makes it difficult to assess whether diversity initiatives reach women of colour specifically or whether progress concentrates among white women and minoritized men. The result is a policy environment where the language of intersectionality has become widespread yet empirical infrastructure to measure intersectional outcomes remains underdeveloped.

This study provides the first systematic analysis of how measurement infrastructure shapes accountability for intersectional representation in English public leadership. Drawing on administrative data from three major institutional domains, the research demonstrates what becomes visible when data systems cross-tabulate gender and ethnicity versus what remains hidden when they do not. The judiciary offers a unique opportunity for direct intersectional measurement, as gender-disaggregated ethnicity data published by the Ministry of Justice allows precise quantification of global majority women's presence among judges over a three-year period from 2023 to 2025. This analysis reveals patterns that single-axis diversity metrics would obscure. For NHS trust boards and state-funded school

headteachers, where published data report gender and ethnicity separately, the study demonstrates the analytical limitations imposed by measurement infrastructure. These sectors provide ethnic diversity indicators spanning 2022 to 2024 for the NHS and an extensive fifteen-year series from 2010 to 2024 for education, yet the absence of gender-disaggregated reporting prevents assessment of intersectional representation. This variation in data availability across sectors is not incidental but rather constitutes a central finding: measurement infrastructure itself determines what forms of inequality become subject to institutional accountability.

The research addresses interconnected questions about measurement, visibility, and accountability. First, where intersectional data exist, what patterns of representation emerge? Specifically, does the judiciary's progress toward gender parity reflect proportional advancement for women across ethnic groups, or do gains concentrate among white women while women of colour remain marginalized? Second, what can be determined about intersectional representation when administrative systems report gender and ethnicity separately? Can aggregate ethnic diversity indicators reveal whether minoritized professionals in NHS and education leadership include women proportionally, or does measurement infrastructure prevent such assessment? Third, how does measurement availability shape institutional accountability? When organizations report diversity through single-axis metrics, can they claim progress while women of colour remain excluded? Fourth, what do cross-sector patterns reveal about whether measurement infrastructure inadequacy reflects sector-specific data practices or systemic features of equality monitoring frameworks?

The findings contribute to intersectionality scholarship by demonstrating empirically how administrative infrastructure functions as a mechanism of political marginalization. Where data systems enable intersectional measurement, as in the judiciary, analysis reveals that women's representation approaches 43.6 percent yet global majority women constitute only 5.4 percent of all judges and just 12.3 percent of female judges. This pattern confirms what intersectionality theory predicts: gender progress can mask racial stratification, with advancement accruing disproportionately to white women while women of colour face compounded barriers. Where measurement systems prevent intersectional analysis, as in NHS boards and school leadership, aggregate ethnic diversity of 16.3 percent and 5.3 percent respectively cannot determine whether these gains reach women specifically. This measurement gap allows institutions to celebrate diversity achievements without demonstrating that progress benefits those facing multiple forms of marginalization.

2. Literature Review

Understanding leadership representation at the intersection of gender and race requires theoretical frameworks capable of capturing how systems of power operate simultaneously rather than as discrete forces affecting different groups in isolation. This literature review establishes the conceptual foundations for examining intersectional inequality in public leadership, traces how intersectionality scholarship has developed within and beyond management research, and identifies the critical gaps that quantitative cross-sector analysis can address. The review demonstrates that while intersectionality

theory has achieved widespread recognition across social sciences, its application within leadership and management scholarship remains underdeveloped, particularly in empirical studies that measure representation outcomes across multiple organizational contexts. This gap is especially pronounced in quantitative research, where methodological challenges and data availability constraints have limited systematic assessment of how race and gender combine to shape access to positions of authority.

2.1 Foundational Framework: Crenshaw's Intersectionality

The theoretical foundation for this study rests on Kimberlé Crenshaw's seminal conceptualization of intersectionality, which emerged from critical race feminism's challenge to single-axis frameworks in both legal doctrine and social movement politics. Crenshaw's original formulation addressed a specific empirical puzzle: why women of color remained marginalized within both feminist movements focused primarily on gender and antiracist movements centered primarily on race. Her analysis revealed that women positioned at the intersection of multiple subordinated identities experience forms of discrimination that cannot be adequately captured by examining gender or race independently. When feminist advocacy prioritized the experiences of white middle-class women and antiracist organizing centered the experiences of Black men (Crenshaw, 2015), Black women's specific

experiences of compounded marginalization fell outside both frameworks, rendering their concerns invisible to political mobilization and legal redress (Crenshaw, 2006).

Crenshaw distinguished between structural intersectionality and political intersectionality to clarify how these dynamics operate. Structural intersectionality describes how the convergence of race and gender structures the material conditions of women of color's lives in ways that differ qualitatively from the experiences of white women or men of color (Crenshaw, 2005). A Black woman seeking refuge from domestic violence, for instance, confronts barriers shaped simultaneously by gendered assumptions about family privacy and racialized stereotypes about Black families, economic constraints rooted in labor market discrimination affecting Black women specifically, and immigration policies that may threaten deportation for non-citizen women (Simpson and Helfrich, 2014). These intersecting structures create distinct experiences of vulnerability that single-axis analyses overlook. Political intersectionality, in contrast, addresses how social movements and policy agendas often pursue conflicting priorities that marginalize those at the intersection (Okoro et al., 2021). Feminist advocacy historically centered white women's experiences while antiracist organizing prioritized Black men's concerns, leaving Black women's specific needs unaddressed by either movement (Harris and Patton, 2018). This political marginalization compounds structural disadvantage, as those facing the most severe forms of inequality receive the least attention from movements ostensibly committed to equality.

The implications for leadership research are profound. If women of color experience professional environments through intersecting systems of subordination that operate simultaneously rather than sequentially, then understanding their underrepresentation in positions of authority requires frameworks that can capture this complexity (Pogrebna et al., 2024). Single-axis diversity metrics that measure

gender representation separately from ethnic diversity risk obscuring whether advancement opportunities reach women of color specifically or concentrate among white women and minoritized men (Fleming et al., 2024). Organizational interventions designed to address gender inequality without attention to how race mediates women's experiences may produce gains that accrue disproportionately to white women, while initiatives targeting ethnic diversity without considering gender may primarily benefit men (Juan et al., 2016). Crenshaw's framework directs scholarly attention precisely to these dynamics, insisting that marginalization at the intersection of multiple subordinated identities must be analyzed on its own terms rather than as the simple sum of separate disadvantages.

2.2 The Management Gap: Underutilization in Leadership Scholarship

Despite intersectionality's widespread adoption across sociology, health sciences, and critical legal studies, its integration into business ethics and management theory remains limited (Ruiz et al., 2021). Derry argues that management scholarship's continued reliance on single-axis assessments of workplace inequality reflects not merely methodological convenience but a deeper failure to interrogate the systemic practices that perpetuate unequal distribution of organizational rights and privileges. When research examines gender inequality and racial inequality as separate phenomena, it implicitly treats these as distinct problems requiring discrete solutions rather than recognizing them as interlocking dimensions of organizational power structures (Ulnicane, 2024). This fragmentation allows institutions to claim progress on diversity while failing to address the compounded barriers facing those positioned at multiple axes of marginalization (Derry, 2023).

The consequences of this theoretical gap extend beyond scholarly understanding to organizational practice. Diversity initiatives designed around single-axis frameworks tend to define success through aggregate metrics that measure overall representation of women or overall representation of minoritized ethnic groups without examining whether progress reaches those facing multiple forms of marginalization (Bryant et al., 2021). An organization could truthfully report both gender parity and ethnic diversity at senior levels while women of color remain severely underrepresented if advancement opportunities disproportionately benefit white women and minoritized men (Verduzco-Gutierrez et al., 2022). Without explicit measurement and analysis of intersectional positioning, such patterns remain invisible, allowing institutions to celebrate diversity achievements that mask persistent exclusion (Dennissen et al., 2018). The management literature's slow uptake of intersectionality theory thus has material consequences for accountability and institutional change, as what cannot be measured often cannot be addressed through policy intervention.

Recent scholarship has begun challenging this limitation, calling for fundamental reconceptualization of how leadership research approaches identity and inequality (Humbert et al., 2018). Rodriguez and colleagues contend that management scholarship must move beyond essentialist categorizations that treat women leaders as a homogeneous group sharing common experiences and challenges. Such approaches reproduce dominant leadership narratives that position white masculinity as the unmarked

norm against which all other identities are defined as deviations (Rodriguez et al., 2023). Women leaders become the gendered other, minoritized leaders become the racialized other, but the specific positioning of women of color as simultaneously gendered and racialized others receives insufficient attention. Rodriguez and colleagues propose instead an analysis of intersectional situatedness, which recognizes that leaders' experiences are shaped not only by categorical identities but by spatial and temporal contexts that shift across their life courses and socio-historical moments. A Black woman executive navigating corporate leadership in contemporary England occupies a position shaped by current organizational cultures, historical legacies of colonialism and racism, evolving equality frameworks, and her own trajectory through educational institutions and professional networks that have themselves been sites of inclusion and exclusion (Moorosi et al., 2018).

This reconceptualization challenges static treatments of identity that assume intersectional positioning produces uniform experiences (Núñez et al., 2019). Leaders positioned at the intersection of multiple marginalized identities navigate what Rodriguez and colleagues term the status of outsider within, simultaneously holding formal authority while being marked as not fully belonging to dominant organizational cultures. This positioning involves what they describe as the simultaneity of privilege and disadvantage, wherein senior roles confer certain forms of organizational power while the holders of those roles continue to face assumptions, microaggressions, and structural barriers rooted in their gender and racial positioning. Moreover, this simultaneity is not fixed but shifts across contexts and career stages, requiring analytical frameworks capable of capturing how intersectional experiences unfold dynamically rather than as static burdens (Pogrebna et al., 2024). The implication for leadership research is that understanding representation requires attention not only to who holds positions of authority but to the experiences and constraints that shape how they access and exercise that authority.

2.3 Dynamic Intersectionality: Behavioral and Longitudinal Perspectives

Advancing beyond conceptual frameworks, recent empirical research has begun demonstrating how intersectionality operates dynamically across time and contexts to shape leadership trajectories and decision- making patterns (A. Bell et al., 2024). Pogrebna and colleagues employ behavioral data science approaches to trace how intersectional positioning influences leadership rhetoric and strategic choices over extended historical periods. Their analysis reveals that the effects of intersectionality are not merely static disadvantages that compound at a single point but rather dynamic forces that shape how leaders navigate professional environments, respond to constraints, and are perceived by others across their careers. This temporal dimension proves critical, as patterns invisible in cross-sectional snapshots become apparent when leadership experiences are traced over time (Pogrebna et al., 2024).

Their findings demonstrate that Black women leaders often adopt higher risk-tolerance strategies compared to white women or Black men in similar positions, a pattern that reflects what they term intersectional invisibility. Women of color in positions of authority face the dual challenge of being underestimated due to gendered and racialized stereotypes while simultaneously being hypervisible as

tokens whose failures are attributed to their demographic categories rather than individual circumstances (Chance, 2021). This paradoxical combination of invisibility and hypervisibility creates conditions in which Black women leaders must take strategic risks to achieve recognition and advancement, as conforming to conservative expectations renders their contributions invisible while bold initiatives attract attention necessary for career progression. The behavioral patterns observed across two centuries of leadership rhetoric suggest that these dynamics persist across historical periods despite surface-level changes in equality discourse and formal opportunities (Pogrebna et al., 2024).

Critically, Pogrebna and colleagues identify asymmetric updating of behavioral schemas across demographic groups. White women leaders demonstrate adaptive shifts in rhetoric and strategy in response to changing societal norms and expanding opportunities, suggesting that their professional behaviors adjust as structural constraints ease. In contrast, Black women leaders show remarkable consistency in addressing the same core challenges across

generations, indicating that the intersectional barriers they face prove resistant to the formal equality gains that have benefited white women (Pogrebna et al., 2024). This finding has profound implications for understanding why aggregate diversity metrics may show improvement while women of color's specific experiences of marginalization remain largely unchanged. If structural barriers operate differently for women depending on racial positioning, then organizational interventions that reduce constraints for white women may leave intersectional barriers intact, producing the white ceiling pattern wherein gender diversification disproportionately benefits dominant ethnic groups (Sim and Bierema, 2024).

2.4 Empirical Evidence from Educational Leadership

While management scholarship gradually incorporates intersectionality theory, educational leadership research provides rich empirical documentation of how intersectional barriers operate in professional contexts (Sadaf et al., 2024). Rollock's examination of Black women professors in United Kingdom higher education reveals career trajectories characterized by structural obstacles that differ qualitatively from those facing white colleagues. Her participants describe professional environments marked by lack of transparency in promotion processes, passive forms of bullying that create hostile climates without overt discrimination, and persistent racial microaggressions that communicate assumptions about competence and belonging. These women report functioning as what participants termed the mules and donkeys of academic labor, shouldering excessive service responsibilities, mentoring minoritized students whose needs go unmet by white colleagues, and performing diversity work on behalf of institutions while their own scholarship receives less recognition than that of white peers (Rollock, 2019).

The necessity of hypervigilance and over-preparation emerges as a consistent theme. Competence assumed in white colleagues must be repeatedly demonstrated by Black women academics, whose qualifications are questioned and contributions scrutinized in ways that reflect intersecting stereotypes

about both gender and race (Fiske, 2017). Women of color in academia describe strategic practices of anticipating challenges, preparing exhaustively for routine professional interactions, and carefully managing self-presentation to counter assumptions that they are affirmative action beneficiaries rather than merit-based appointments. This additional emotional and cognitive labor required merely to navigate professional environments that white colleagues experience as relatively neutral represents a form of structural disadvantage that aggregate diversity metrics cannot capture (Keaton, 2024). An institution might report increasing numbers of women in senior academic positions while the specific women who are Black remain concentrated in more precarious roles, face greater scrutiny, and invest disproportionate effort in establishing legitimacy.

Cross-cultural comparative research strengthens these findings by demonstrating that intersectional barriers to leadership operate across national contexts despite different equality frameworks and organizational cultures (Aaron, 2019). Moorosi and colleagues examined Black women school principals in England, South Africa, and the United States, finding common patterns despite dramatic differences in demographic composition, historical trajectories of racial inequality, and educational governance structures. Across these contexts, Black women principals construct their leadership identities through commitments to social justice rooted in their own working- class backgrounds and experiences of marginalization. Their definitions of successful leadership emphasize holistic development of children, service to communities, and functioning as positive role models rather than merely climbing career hierarchies or maximizing organizational performance metrics that dominate mainstream leadership discourse (Moorosi et al., 2018).

This alternative construction of leadership success reflects both values commitments and strategic responses to environments that may not recognize Black women's authority through conventional metrics. When promotion into senior leadership requires conformity to norms established by and for white middle-class professionals, women of color who advance often do so by explicitly centering their communities and social justice commitments rather than attempting to assimilate into dominant organizational cultures (Wilkins and Nelson, 2016). The finding that these patterns hold across three national contexts with different racial compositions and equality policies suggests that intersectional barriers to leadership stem from deeper structural forces than specific national policies or organizational arrangements (Zounlome et al., 2019). Educational institutions in all three contexts reproduce leadership demographics that underrepresent Black women despite surface differences in equality discourse and formal diversity initiatives.

Wane's examination of Black women leaders in Canadian academia further illuminates the strategic adaptations required to survive and advance in predominantly white institutional environments. Her participants describe donning armor as psychological preparation for professional interactions likely to involve microaggressions, stereotyping, and subtle forms of exclusion (Wane, 2023). This metaphor captures how women of color must develop protective strategies against cumulative harms that white colleagues rarely encounter. Additionally, participants describe shifting, the strategic modulation of speech patterns, behavioral presentations, and even research topics to navigate white-normative

expectations while maintaining authentic connections to their communities and identities. These adaptive strategies represent not merely individual coping mechanisms but responses to institutional cultures that position Black women as perpetual outsiders whose full selves cannot be accommodated within existing professional norms (Titanji et al., 2022).

Significantly, many participants frame their leadership practice through spiritual and ancestral connections that provide resilience against systemic erasure. For these women, holding positions of authority becomes inseparable from honoring ancestors who faced exclusion, serving as bridges for future generations, and maintaining cultural integrity within institutions designed around dominant group norms (Shell-Duncan et al., 2018). This framing rejects individualistic conceptions of leadership success that dominate mainstream management literature, instead positioning professional achievement within collective struggles for recognition and justice. The necessity of such framings reveals how thoroughly institutional environments fail to support women of color, who must construct alternative meaning systems to sustain themselves in professional roles that were not designed with their presence or contributions in mind.

2.5 Systemic Failure and the Need for Structural Analysis

Collectively, this scholarship establishes that underrepresentation of women of color in leadership positions reflects not individual deficits but systemic failures to support their advancement. Rollock emphasizes that the patterns documented across her participants' careers demonstrate institutional rather than personal problems, yet organizations persistently frame diversity gaps as pipeline issues or individual choices rather than examining how their own structures, cultures, and evaluation criteria systematically disadvantage women of color. Pogrebna and colleagues reinforce this interpretation through their finding that Black women leaders are often twice as tall in qualifications and demonstrated capabilities yet face persistent discriminatory outcomes in advancement and recognition. When those holding positions of authority despite facing compounded barriers demonstrate exceptional qualifications compared to peers from dominant groups who advance more easily, this indicates that selection processes systematically filter minoritized candidates more stringently than others.

This evidence base creates an urgent mandate for research that can document the scale and consistency of intersectional exclusion across organizational contexts (Settles et al., 2020). While qualitative scholarship provides essential insights into experiences and mechanisms, understanding whether the patterns observed in specific settings reflect broader structural forces requires quantitative analysis across multiple sectors and extended time periods. If Black women face comparable barriers to leadership in education, healthcare, corporate management, and public administration despite differences in governance structures and professional pathways, this would strengthen inferences about systemic rather than sector-specific causes (Borger et al., 2025). Conversely, if representation levels and trajectories vary substantially across sectors, this would suggest that institutional arrangements matter for intersectional outcomes in ways that policy intervention might address.

Moreover, existing research identifies a critical measurement challenge that this study directly engages (Barboza- Wilkes et al., 2022). When public institutions and researchers measure diversity through single-axis frameworks that report gender and ethnicity separately, intersectional patterns remain invisible. An organization can claim gender parity in leadership while women of color remain marginalized if the expanding population of women leaders consists overwhelmingly of white women (Reingold et al., 2019). Similarly, improvements in overall ethnic diversity at senior levels may concentrate among minoritized men, leaving women of color underrepresented along both dimensions simultaneously. Without explicit measurement of representation at the intersection of multiple marginalized identities, accountability for intersectional inclusion cannot be established, and interventions cannot be evaluated for whether they reach those facing compounded barriers.

2.6 Quantitative Intersectionality: Methodological Debates and Measurement Challenges

While intersectionality theory has achieved widespread recognition, translating its insights into quantitative research designs presents substantial methodological challenges that shape what can be empirically demonstrated about intersectional inequality (Agénor, 2020). These challenges extend beyond technical matters of statistical analysis to fundamental questions about how administrative data systems conceptualize and record identity, what forms of inequality become measurable through available data structures, and how researchers can advance intersectional understanding despite infrastructure limitations (Settles et al., 2020).

A central debate within quantitative intersectionality research concerns how to operationalize intersectional positioning when most administrative datasets record identity dimensions separately. Standard demographic data collection asks respondents to select categories for gender, then separately for ethnicity, enabling single-axis analyses but not direct measurement of intersectional positioning unless variables are cross-tabulated. Scholars have developed multiple analytical approaches to address this limitation. Some employ interaction terms in regression models to test whether effects of one identity dimension vary across levels of another, asking for example whether the relationship between gender and leadership attainment differs for white women versus women of colour. Others use multilevel modeling approaches that simultaneously examine between-group differences and within-group heterogeneity, revealing how outcomes vary at the intersection of multiple social positions (Bell et al., 2024). Still others advocate for analyses that treat intersectional positioning as primary categories rather than interactions, creating compound variables such as white women, white men, Black women, Black men as distinct analytic groups.

Each methodological approach carries advantages and limitations. Interaction term approaches can be implemented with standard datasets and permit statistical testing of whether intersectional effects differ from additive predictions. However, they typically frame intersectionality through comparison to a dominant reference category, potentially obscuring experiences of those at the intersection by measuring only their divergence from normative patterns. Multilevel models enable sophisticated

examination of how individual positioning within social hierarchies shapes outcomes, yet they require large sample sizes and substantial within-group variation that may not exist for small populations such as women of colour in senior leadership. Compound category approaches center intersectional positioning as the primary analytic unit, avoiding forced comparisons to dominant groups, but they require data that cross-tabulate identity dimensions and produce small cell sizes when minoritized groups are underrepresented in the population of interest (Núñez et al., 2019).

These methodological debates reflect deeper tensions between intersectionality theory's insistence that marginalization operates through compounding rather than additive processes and quantitative methods' tendency toward decomposition of variance into independent main effects and interactions. Crenshaw's original formulation emphasized that Black women's experiences cannot be understood as gender discrimination plus race discrimination but rather as a distinct form of marginalization shaped by their positioning at the intersection. Yet standard statistical approaches parse variation into components attributable to gender, components attributable to race, and residual interaction effects, potentially reproducing the single-axis thinking that intersectionality critiques (Harris and Patton, 2018). Some scholars argue that quantitative methods are inherently incompatible with intersectionality theory's complexity, while others contend that methodological innovation can enable measurement of intersectional patterns at scales impossible through qualitative inquiry alone.

A related challenge concerns data availability and administrative infrastructure. Quantitative intersectionality research depends fundamentally on whether organizations collect and report data in ways that enable intersectional analysis. Many public sector equality monitoring frameworks mandate demographic reporting but specify single- axis metrics such as overall workforce gender composition and overall workforce ethnic composition without requiring cross-tabulation. This reflects both practical concerns about confidentiality when cell sizes are small and political judgments about which dimensions of inequality warrant sustained institutional attention. The consequence is that researchers often confront data structures that record multiple identity dimensions but do not connect them at the individual level in accessible formats (Barboza-Wilkes et al., 2022).

When published data report gender and ethnicity separately, researchers face a choice between inferring intersectional patterns through indirect methods or acknowledging analytical limitations imposed by infrastructure constraints. Some studies employ synthetic estimation techniques that combine marginal distributions with

assumptions about independence to approximate intersectional representation, calculating for example that if 40 percent of leaders are women and 10 percent are from minoritized ethnic groups, then approximately 4 percent would be women of colour if gender and ethnicity were independent. However, such estimates assume precisely what intersectionality theory questions: that identity dimensions operate independently rather than through compounding processes that produce non-additive effects. Other researchers advocate transparency about what cannot be measured, presenting single-axis

diversity indicators while explicitly noting that intersectional representation remains unknown without cross-tabulated data (Fehrenbacher and Patel, 2019).

These methodological challenges have practical consequences for accountability and policy evaluation. When equality frameworks mandate single-axis reporting, organizations can demonstrate compliance without revealing intersectional patterns. A public institution might truthfully report that 45 percent of senior leaders are women and 15 percent are from minoritized ethnic groups, suggesting meaningful diversity progress. Yet if the women leaders are overwhelmingly white and the minoritized leaders are predominantly men, women of colour would remain severely underrepresented despite aggregate metrics suggesting otherwise. Without intersectional measurement, such patterns operate beyond the reach of transparency mechanisms and accountability frameworks (Dennissen et al., 2018).

Recent scholarship has called for systemic changes to equality monitoring infrastructure rather than merely methodological innovation within existing data constraints. Rodriguez and colleagues argue that administrative data collection systems should routinely cross-tabulate demographic variables, enabling intersectional analysis as standard practice rather than specialized undertaking (Rodriguez et al., 2023). This requires addressing legitimate concerns about confidentiality and identification risk when populations at specific intersections are small, potentially through aggregation strategies, banded reporting, or secure access arrangements that protect individual privacy while enabling intersectional measurement at organizational or sectoral levels. It also requires political commitment to measuring outcomes for those facing multiple forms of marginalization, recognizing that what organizations choose to count reflects judgments about which inequalities matter enough to monitor systematically (Ulnicane, 2024).

The debate extends to questions of causal inference and policy evaluation. Understanding whether diversity initiatives reduce intersectional inequality requires not merely cross-sectional measurement of representation at the intersection but longitudinal data tracking how intersectional composition changes following policy interventions. Most equality monitoring systems lack temporal depth at the intersectional level even when they provide single-axis time series, preventing rigorous assessment of whether interventions targeting gender inequality or ethnic underrepresentation actually reach women of colour. Some scholars argue for quasi- experimental designs that compare organizations implementing intersectionality-focused initiatives with those employing single-axis approaches, yet such comparisons require coordinated data collection across multiple organizations over extended periods (Borger et al., 2025).

2.7 Positioning This Study: Empirical Demonstration of Measurement Infrastructure Effects

This study contributes to these methodological debates by providing empirical demonstration of what becomes visible when administrative systems enable intersectional measurement versus what remains obscured when they do not. Rather than attempting to infer intersectional patterns from single-axis data or developing synthetic estimates based on independence assumptions, the analysis leverages natural

variation in data infrastructure across sectors. The judiciary publishes gender-disaggregated ethnicity data, enabling direct calculation of global majority women's representation among judges. NHS and education systems report gender and ethnicity separately, preventing such calculation and thereby illustrating measurement infrastructure limitations that affect most public sector equality monitoring.

This approach treats data availability not as a technical constraint to work around but as a substantive feature of how organizational accountability systems operate. When the judiciary cross-tabulates gender and ethnicity in published statistics, it creates conditions for external scrutiny of intersectional outcomes. When NHS and education systems report these dimensions separately, intersectional representation remains invisible regardless of underlying patterns. The variation across sectors demonstrates that measurement infrastructure choices are neither inevitable nor uniform but rather reflect institutional decisions about what forms of inequality warrant explicit monitoring.

By analyzing all three sectors, the study reveals both what intersectional analysis shows when data permit it and what analytical limitations result when measurement systems prevent intersectional assessment.

The findings respond to calls within intersectionality scholarship for moving beyond conceptual frameworks to empirical documentation of intersectional outcomes at organizational scales. Where direct measurement is possible, the judiciary analysis provides quantitative validation of theoretical predictions about how single-axis diversity progress can mask intersectional exclusion. Where measurement systems prevent intersectional analysis, the NHS and education findings demonstrate how aggregate diversity metrics may obscure whether progress reaches those facing multiple forms of marginalization. Together, these components build toward understanding how administrative infrastructure itself functions as a mechanism shaping what dimensions of inequality become subject to institutional accountability.

3. Methodology

This study examines how measurement infrastructure shapes visibility of intersectional inequality across three major public leadership domains in England: the judiciary, NHS trust boards, and state-funded schools. The research design leverages natural variation in data availability to demonstrate what intersectional analysis reveals when administrative systems cross-tabulate identity dimensions versus what analytical limitations result when they do not. This methodological approach treats data infrastructure not as a constraint to overcome but as a substantive feature of how accountability systems operate, with direct implications for what forms of inequality organizations monitor and address.

The central challenge in quantitative intersectionality research is that theoretical frameworks emphasizing how marginalization operates through compounding rather than additive processes require data structures that capture multiple identity dimensions simultaneously. Measuring whether women of colour face distinct barriers beyond those affecting white women and men of colour separately

demands administrative systems that record both gender and ethnicity for the same individuals and report these dimensions in cross-tabulated formats enabling intersectional calculation. Yet most public sector equality monitoring frameworks collect gender and ethnicity data but report them separately, producing aggregate indicators such as proportion of women leaders and proportion of global majority leaders without revealing representation at the intersection.

The three sectors examined in this study exhibit different patterns of data availability that enable distinct forms of analysis. The judiciary publishes annual diversity statistics that disaggregate ethnicity within gender categories, allowing precise calculation of how many judges are women of colour specifically rather than merely how many are women and separately how many are from minoritized ethnic backgrounds. This measurement infrastructure creates rare opportunity for direct intersectional analysis in a domain where women of colour face documented barriers to advancement. The NHS and education sectors maintain comprehensive demographic data on workforce composition but publish equality reports that present gender and ethnicity as separate metrics without cross- tabulation. This infrastructure prevents direct intersectional measurement while enabling assessment of aggregate ethnic diversity over time.

Rather than treating this variation as methodological limitation requiring synthetic estimation or indirect inference, the analysis employs each sector's available data to address different analytical questions. The judiciary provides empirical demonstration of what becomes visible when measurement infrastructure enables intersectional analysis, revealing whether gender progress benefits women across ethnic groups proportionally or concentrates among white women. The NHS and education sectors illustrate what remains unmeasured when data systems report identity dimensions separately, demonstrating that aggregate ethnic diversity indicators cannot determine intersectional representation without additional information. This strategic approach transforms data availability from constraint into analytical leverage, using variation in measurement infrastructure across sectors to illuminate how administrative systems shape what forms of inequality become visible and accountable.

3.1 Data Sources and Institutional Context

The three sectors were selected based on institutional significance, data availability that enables comparison of measurement infrastructure effects, and complementarity in addressing different aspects of public leadership.

Courts, health systems, and schools exercise substantial authority over citizens' lives through adjudication, healthcare delivery, and educational provision. Leadership demographics in these domains carry both symbolic weight influencing perceptions of institutional legitimacy and material consequences shaping organizational cultures that affect thousands of professionals and millions of service users. Importantly for this study's focus on measurement infrastructure, these sectors have developed different approaches to equality monitoring. The judiciary publishes gender-disaggregated ethnicity data enabling intersectional analysis. The NHS maintains mandatory reporting through the

Workforce Race Equality Standard that provides ethnic composition metrics but not gender-disaggregated breakdowns. Education collects comprehensive demographic data through the School Workforce Census yet publishes summary statistics that present gender and ethnicity separately.

This variation across sectors with different governance structures and professional pathways enables assessment of whether measurement infrastructure patterns are sector-specific or reflect broader features of equality monitoring frameworks. If only the judiciary with its centralized appointment process through the Judicial Appointments Commission has developed intersectional reporting while the NHS with quasi-independent trust governance and schools with varied academy and local authority structures have not, this could suggest that governance centralization facilitates intersectional measurement. Alternatively, if intersectional reporting remains absent across all three despite their institutional differences, this would indicate systemic rather than sector-specific measurement infrastructure inadequacy. The findings illuminate not whether one sector is better than others in achieving diversity but rather how measurement systems shape visibility of intersectional outcomes across different organizational contexts.

Judicial diversity statistics were obtained from the Ministry of Justice annual publications covering 2023, 2024, and 2025. These datasets provide detailed demographic breakdowns of judges by seniority, appointment type, gender, ethnicity, age, and professional background. Critically for intersectional analysis, Table 3.3 in each annual release reports ethnicity within gender categories for all judges across courts and tribunals, enabling calculation of how many judges are women, how many of those women are from global majority backgrounds, and what proportion global majority women constitute of the overall judicial population. This reporting structure makes the judiciary the only sector among those examined where direct intersectional measurement is possible from publicly available data.

NHS trust board composition data were drawn from Workforce Race Equality Standard supporting datasets published annually by NHS England for 2022, 2023, and 2024. The WRES framework established in 2015 mandates that all NHS trusts report workforce demographics at multiple organizational levels including board membership disaggregated by executive and non-executive roles. These datasets provide trust-level ethnic composition showing percentage of board members who are white, Black and Minority Ethnic, or of unknown ethnicity. The WRES reporting structure ensures data quality and consistency through standardized definitions and centralized validation but does not require gender disaggregation within ethnicity categories, preventing direct intersectional measurement while offering high-quality sector-wide indicators of aggregate ethnic diversity.

School leadership demographics were extracted from the Department for Education School Workforce Census covering 2010 through 2024. This annual enumeration of all teachers in state-funded schools includes detailed characteristics such as role designation, gender, ethnicity, and school type. The census provides the longest available time series on leadership diversity in any sector examined, enabling assessment of whether representation patterns reflect recent shifts or long-standing structural features. However, while individual-level data include both gender and ethnicity variables, published summary

statistics present these dimensions separately rather than cross- tabulated, preventing intersectional analysis without access to underlying microdata.

3.2 Analytical Framework: What Can Be Measured and What Cannot

The core analytical strategy recognizes that different data structures enable different forms of analysis and that these limitations carry substantive implications for accountability. This section explicates precisely what each sector's data infrastructure allows calculation of and what remains beyond measurement given available reporting formats.

For the judiciary, gender-disaggregated ethnicity reporting enables calculation of four key intersectional indicators. First, total women judges and their proportion of all judges, revealing progress toward gender parity. Second, global majority women judges in absolute numbers, indicating the scale of representation at the intersection. Third, global majority women as proportion of all judges, measuring their presence within the entire judicial population. Fourth, global majority women as proportion of female judges specifically, revealing whether the expanding cohort of women judges reflects ethnic diversity or remains predominantly white. These four indicators together demonstrate whether gender diversification benefits women across ethnic groups proportionally or produces a white ceiling wherein advancement accrues disproportionately to white women.

The calculation is straightforward when data are structured appropriately. The Ministry of Justice publishes a table showing total judges, then separates this by gender, then within the female judge population provides ethnic breakdowns. This allows direct extraction of the number of female judges who identify as from global majority backgrounds. Dividing this count by total judges yields the proportion of all judges who are women of colour. Dividing by female judges yields the proportion of women judges who are from global majority backgrounds. These are simple arithmetic operations that become possible only because the data structure cross-tabulates gender and ethnicity rather than reporting them separately.

For NHS trust boards, ethnic composition reporting enables calculation of sectoral diversity indicators but prevents intersectional assessment. The WRES datasets show what percentage of board members identify as white, as Black and Minority Ethnic, or as unknown ethnicity, averaged across all trusts. This allows determination that global majority representation reaches 16.3 percent in 2024, revealing substantial ethnic diversity compared to other sectors. However, the data structure does not indicate what proportion of these global majority board members are women versus men. The 16.3 percent could theoretically consist entirely of minoritized men, entirely of women of colour, or any distribution between these extremes. The aggregate diversity indicator therefore cannot answer the intersectional question of whether women of colour hold board positions proportionally.

This limitation is not a failure of data collection but rather a feature of reporting infrastructure. NHS trusts collect both gender and ethnicity data at individual level for all board members, as evidenced by

their ability to report each dimension separately. The datasets include columns for percentage white, percentage BME, and percentage unknown for board ethnicity, with separate indicators reporting gender composition of boards. However, these dimensions are not cross-tabulated in published WRES reports, preventing external analysts from calculating intersectional representation without access to underlying trust-level microdata that connect gender and ethnicity for the same individuals.

For school headteachers, the School Workforce Census provides extensive longitudinal data on ethnic composition but similarly prevents intersectional analysis through its published reporting structure. The census enables calculation of how many headteachers identify as white, global majority, or unknown ethnicity across fifteen years from 2010 to 2024, revealing that global majority representation increased from 2.8 percent to 5.3 percent. Separately, the census reports gender composition showing that women constitute approximately 70 percent of headteachers. Yet because published statistics present ethnicity and gender as separate metrics rather than cross- tabulated, the analysis cannot determine what proportion of headteachers are women of colour specifically.

Simple multiplication of marginal proportions might suggest an upper bound: if 70 percent are women and 5.3 percent are global majority overall, then assuming independence would yield approximately 3.7 percent as women of colour. However, this calculation assumes precisely what intersectionality theory questions—that gender and ethnicity operate independently rather than through compounding processes. If women of colour face barriers beyond those affecting white women and men of colour separately, their representation might be lower than independence would predict. Conversely, if headship advancement disproportionately benefits women of colour who overcome barriers to enter teaching, representation could be higher. Without data that cross-tabulate gender and ethnicity, such patterns remain unknown.

3.3 Variable Construction and Standardization

To enable meaningful comparison across sectors despite their different data structures and reporting practices, all ethnicity variables were recoded into a standardized three-category framework used across public sector equality

monitoring: White, encompassing all individuals identifying with white ethnic backgrounds; Global Majority, consolidating all minoritized ethnic groups including Asian, Black, Mixed, and other ethnic categories; and Unknown, capturing cases where ethnicity information was not recorded, refused, or otherwise unavailable.

This classification balances analytical tractability with theoretical relevance. The term Global Majority is employed deliberately rather than alternatives such as Black and Minority Ethnic or BAME, reflecting evolving practice in UK equality discourse that recognizes minoritized groups collectively constitute the global majority while remaining underrepresented in positions of power within predominantly white institutions. The consolidation of diverse ethnic groups into a single category is not without limitations, as it obscures variation in experiences and outcomes across Asian, Black, Mixed, and other ethnic

backgrounds that intersectionality theory emphasizes remain distinct. However, given small absolute numbers of minoritized leaders in each sector, further disaggregation would produce cell sizes too small for robust analysis while risking identification of individuals in senior roles where populations at specific intersections number in single digits.

For each sector and year, the standardized dataset includes total leadership headcount, counts of leaders in each ethnic category, and proportional shares calculated as percentages. Where gender disaggregation exists in the judiciary data, additional indicators capture total women leaders, global majority women specifically, white women, and women of unknown ethnicity. These enable calculation of representation metrics addressing different analytical questions. The share of all leaders who are global majority captures aggregate ethnic diversity. The share of women who are global majority reveals whether gender diversification benefits minoritized women proportionally—a calculation possible only with intersectional data. The ratio of global majority representation in leadership relative to workforce or population provides context for assessing representation gaps.

3.4 Analytical Limitations and Contributions

This methodology makes no claim to have conducted intersectional analysis across three sectors. Only the judiciary provides data enabling such analysis. The NHS and education components serve different analytical purposes: demonstrating what remains unmeasured when data infrastructure prevents intersectional assessment and providing sectoral context on aggregate ethnic diversity against which the judiciary's intersectional findings can be interpreted. This is not a limitation requiring apology but rather a central finding about how measurement infrastructure shapes accountability.

The judiciary analysis provides rare empirical documentation of intersectional exclusion in a domain where professional pathways, appointment processes, and organizational cultures shape access to positions of authority. By revealing that women approach parity at 43.6 percent while women of colour constitute only 5.4 percent of judges and 12.3 percent of female judges, the analysis demonstrates empirically what intersectionality theory predicts: gender progress can mask racial stratification when advancement accrues disproportionately to white women. This finding is possible only because data infrastructure enables intersectional measurement.

The NHS and education analyses cannot determine intersectional representation but they establish important context. The NHS shows 16.3 percent global majority board representation, substantially higher than the 5.3 to 5.4 percent observed in courts and schools. This indicates that aggregate ethnic diversity varies considerably across sectors with different governance structures and workforce compositions. Yet the absence of gender-disaggregated reporting means we cannot determine whether this higher diversity reaches women of colour proportionally. The education data provide fifteen years of temporal depth showing that global majority headteacher representation doubled from 2.8 to 5.3 percent between 2010 and 2024, revealing that change occurs but at incremental pace. Again, whether this includes women of colour proportionally remains unknown without intersectional data.

Together, these components illuminate how measurement infrastructure determines what becomes visible and accountable. The judiciary demonstrates that when systems cross-tabulate identity dimensions, severe intersectional underrepresentation becomes empirically demonstrable. The NHS and education sectors demonstrate that when systems report dimensions separately, intersectional outcomes remain unmeasured regardless of underlying patterns. This variation across sectors strengthens inference that measurement infrastructure inadequacy reflects systemic features of equality monitoring rather than sector-specific data

practices, as even the NHS with its robust WRES framework has not implemented intersectional reporting as standard practice.

4. Results

This section presents findings on leadership representation across three sectors, organized to foreground what direct intersectional measurement reveals before examining what remains unmeasured when data infrastructure prevents such analysis. The judiciary provides empirical demonstration of patterns that become visible when administrative systems cross-tabulate gender and ethnicity. The NHS and education sectors illustrate analytical limitations imposed when data structures report identity dimensions separately, preventing assessment of whether aggregate diversity gains reach women of colour specifically. Throughout, the presentation emphasizes not merely representation levels but rather what measurement infrastructure enables or prevents from becoming empirically visible and institutionally accountable.

4.1 The Judiciary: What Intersectional Measurement Reveals

The judiciary offers the only window among sectors examined into how gender and ethnicity combine to structure access to leadership positions. Between 2023 and 2025, the total judicial population remained stable at approximately 5,290 judges across courts and tribunals. Within this cohort, women's representation increased from

41.9 percent in 2023 to 43.6 percent in 2025, suggesting that efforts to address gender imbalance have yielded measurable if incremental progress toward numerical parity. This trajectory appears to indicate successful gender diversification when examined through a single-axis framework focused exclusively on the gender dimension of judicial composition.

However, when ethnicity is disaggregated within the female judge population—an analysis possible only because the Ministry of Justice publishes data cross-tabulating these dimensions—a markedly different pattern emerges that reveals how single-axis diversity metrics can obscure intersectional inequality. Table 1 presents the complete demographic composition enabling intersectional assessment across the three-year observation period.

Table 1
Demographic Composition of the Judiciary (UK Courts and Tribunals), 2023–2025

Year	Total Judges	Total Women	GM Women	Share Women	Share GM (All Judges)	Women	GM Share Among Women
2023	5,292	2,215	251	41.9%	4.7%		11.3%
2024	5,298	2,264	268	42.7%	5.0%		11.8%
2025	5,294	2,310	284	43.6%	5.4%		12.3%

Note: GM = Global Majority. Share calculations are percentages of total judges or total women judges as indicated.

Table 2. Aggregate Ethnic Composition of NHS Trust Boards in England, 2022–2024

Year	Share White	Share Global Majority	Share Unknown
2022	79.7%	15.5%	4.8%
2023	79.7%	15.5%	4.8%
2024	78.3%	16.3%	5.4%

Note: Figures represent mean percentages across all NHS trusts in England. Global Majority category corresponds to BME (Black and Minority Ethnic) in WRES reporting. Data source: NHS England Workforce Race Equality Standard 2022-2024.

Table 3
Aggregate Ethnic Composition of Headteachers in State-Funded Schools in England, Selected Years 2010–2024

Year	Total Headteachers	GM Count	White Count	Unknown Count	Share GM	Share White	Share Unknown
2010	22,360	617	21,217	526	2.8%	94.9%	2.4%
2015	22,213	807	20,699	707	3.6%	93.2%	3.2%
2020	22,363	989	20,109	1,265	4.4%	89.9%	5.7%
2023	22,516	1,167	19,708	1,641	5.2%	87.5%	7.3%
2024	22,455	1,189	19,355	1,911	5.3%	86.2%	8.5%

Note: GM = Global Majority. Data source: DfE School Workforce Census 2010–2024.

In 2010, headteachers were 94.9 percent white and 2.8 percent from global majority backgrounds. By 2024, these proportions shifted to 86.2 percent white and 5.3 percent global majority, representing nearly a doubling of minoritized representation over fifteen years. Figure 4 visualizes this full trajectory, showing gradual but steady change.

TABLE I IS HERE

In 2023, global majority women constituted just 4.7 percent of all judges, increasing marginally to 5.0 percent in 2024 and 5.4 percent in 2025. The absolute scale provides context: the total number of women of colour serving as judges grew from 251 in 2023 to 284 in 2025, representing an addition of 33 individuals across the entire judicial system over three years. While the direction of change is positive, the magnitude underscores how thoroughly the judiciary remains white-dominated even as overall gender representation improves.

The intersectional indicators reveal the limitations of celebrating gender progress without examining its ethnic composition. In 2023, global majority women represented only 11.3 percent of all female judges, meaning that nearly nine in ten women holding judicial positions were white. By 2025, this proportion had increased to 12.3 percent—a one percentage point gain over three years. Despite modest growth, women of colour remain a small minority within an already underrepresented gender group, indicating that the benefits of gender diversification have accrued disproportionately to white women rather than women across ethnic groups proportionally.

Figure 1 visualizes these dual trajectories, illustrating how progress on gender as a single axis diverges substantially from progress for women of colour at the intersection. Between 2023 and 2025, the share of all judges

who are women increased by 1.7 percentage points, while the share who are women of colour increased by only

0.7 percentage points. This differential pace demonstrates what intersectionality theory predicts: addressing gender inequality without explicit attention to how race mediates women's experiences produces gains that concentrate among those from dominant ethnic groups.

FIGURE I IS HERE

Figure 2 provides alternative perspective by examining ethnic composition within the expanding female judicial population specifically. This lens directly addresses whether gender diversification has made the cohort of women judges more ethnically diverse or whether it has primarily expanded white women's representation. The data show modest improvement, with women of colour's share of female judges increasing from 11.3 percent to 12.3 percent. Yet this incremental change over three years indicates that ethnic stratification among women judges remains deeply entrenched. Even as women approach numerical parity within the judiciary overall, the vast majority continue to be white.

FIGURE II IS HERE

These patterns exemplify what scholars describe as the white ceiling within gender progress—institutions celebrate advancing women into leadership while the specific women who advance remain overwhelmingly from dominant ethnic groups. The judiciary has made genuine progress toward gender parity, yet this progress has disproportionately benefited white women who continue to dominate female representation. Women of colour remain marginalized along both dimensions simultaneously, constituting neither a substantial portion of all judges nor a proportional share of women judges.

This finding is empirically demonstrable only because the judiciary's data infrastructure cross-tabulates gender and ethnicity. Without such measurement, external analysts could observe that 43.6 percent of judges are women and separately that approximately 12 percent are from global majority backgrounds overall (including both women and men), potentially inferring that the judiciary has achieved meaningful diversity. The intersectional data reveal that among the expanding population of women judges specifically, only 12.3 percent are women of colour, indicating that gender diversification has not reached minoritized women proportionally. This pattern becomes visible and therefore accountable only when administrative systems enable intersectional measurement.

4.2 NHS Trust Boards: Aggregate Diversity Without Intersectional Visibility

Leadership demographics in NHS trust boards present a markedly different profile from judicial composition in aggregate ethnic diversity levels, though measurement infrastructure prevents determination of intersectional representation. Using Workforce Race Equality Standard data for 2022 through 2024, the analysis establishes that NHS boards demonstrate considerably higher aggregate ethnic diversity than court or school leadership while representation gaps persist relative to both national demographics and NHS workforce composition. Critically, the absence of gender-disaggregated

ethnicity reporting means the analysis cannot assess whether this aggregate diversity includes women of colour proportionally.

TABLE II IS HERE

In 2022 and 2023, the average ethnic composition across trust board members showed that 79.7 percent identified as white, 15.5 percent as Black and Minority Ethnic, and 4.8 percent had unknown ethnicity. These proportions remained essentially unchanged across these years. By 2024, modest shift occurred with white representation declining to 78.3 percent while global majority representation increased to 16.3 percent.

Figure 3 visualizes these temporal patterns, revealing both comparative advantage relative to other sectors and limited magnitude of change over the observation period. The most striking feature is stability rather than transformation, with only marginal movement in any category between 2022 and 2024.

FIGURE III IS HERE

NHS boards demonstrate global majority representation approximately three times higher than that observed in judicial and school leadership. This substantial difference suggests that institutional factors including mandatory WRES reporting, diverse workforce composition, and governance structures emphasizing community representation produce moderately higher ethnic diversity. Yet even this comparative advantage falls short of demographic parity, as minoritized ethnic groups constitute approximately 18 to 20 percent of England's population and exceed 20 percent of the NHS workforce in many roles and regions.

The critical limitation is that WRES reporting structure prevents intersectional analysis. The 16.3 percent global majority representation in 2024 does not indicate how many board members are women of colour specifically versus minoritized men. The data structure shows what percentage of board members identify as from global majority backgrounds and separately what percentage are women, but these dimensions are not cross-tabulated in published reports. Therefore, the analysis cannot determine whether the NHS's comparative advantage in aggregate

ethnic diversity reflects proportional representation of women of colour or whether diversity gains have concentrated among minoritized men.

This represents not a failure of data collection—NHS trusts collect both gender and ethnicity data for board members—but rather a reporting infrastructure choice. The WRES framework mandates ethnicity reporting but does not require disaggregation by gender, preventing external assessment of intersectional outcomes despite underlying data availability. An institution could have 16.3 percent global majority board representation consisting predominantly of men while women of colour remain severely underrepresented, and this pattern would be invisible in published WRES reports.

4.3 School Leadership: Temporal Depth Without Intersectional Measurement

The education sector provides the longest available time series on leadership diversity, spanning fifteen academic years from 2010 to 2024. This temporal depth enables assessment of whether underrepresentation reflects recent phenomena or entrenched structural features, revealing that change occurs incrementally over extended periods. However, as with the NHS, published data structures prevent intersectional analysis by reporting gender and ethnicity separately rather than cross-tabulated.

TABLE III IS HERE

FIGURE IV IS HERE

The pace of change reveals structural constraints rather than rapid transformation. Global majority representation increased by 2.5 percentage points over fifteen years, yielding average annual growth of approximately 0.17 percentage points. At this rate, achieving proportional representation comparable to England's demographic composition would require multiple additional decades. The incremental pace indicates that whatever forces maintain leadership homogeneity operate with sufficient strength to resist substantial demographic change even across periods when policy discourse and equality frameworks have intensified focus on diversity.

As with NHS boards, the education data cannot determine intersectional representation despite collecting both gender and ethnicity information. The School Workforce Census shows that 5.3 percent of headteachers are from global majority backgrounds and separately that approximately 70 percent are women, but published statistics do not cross-tabulate these dimensions. Therefore, the analysis cannot calculate what proportion of headteachers are women of colour specifically. Simple multiplication assuming independence would suggest approximately 3.7 percent, but this assumes precisely what intersectionality theory questions—that identity dimensions operate independently rather than through compounding processes that may produce non-additive effects.

4.4 Cross-Sector Comparison: A Hierarchy in Aggregate Diversity

Direct comparison using the most recent available year for each dataset reveals substantial variation in aggregate ethnic diversity across sectors, though only the judiciary enables assessment of intersectional representation specifically. Table 4 presents this comparison while clearly distinguishing what can be measured from what remains unknown.

Table 4
Leadership Representation by Sector: What Can Be Measured

Sector	Year	Global Majority Share	Measurement Note
Judiciary (all women judges)	2025	5.4%	Women judges only
NHS Trust Boards (all members)	2024	16.3%	All board members
School Headteachers	2024	5.3%	All headteachers
Note: Judiciary global majority overall includes both women and men; only judiciary data enable disaggregation by gender.			

TABLE IV IS HERE

Figure 5 visualizes the hierarchy in aggregate ethnic diversity, with NHS boards showing substantially higher representation than courts or schools.

This sectoral ranking is robust across available observation years, suggesting it reflects institutional features rather than temporary fluctuations. Yet the comparison must be interpreted carefully. The NHS demonstrates higher aggregate ethnic diversity, but without gender-disaggregated data, we cannot determine whether this reaches women of colour proportionally. The judiciary shows lower aggregate ethnic diversity but provides the only empirical window into intersectional representation, revealing that among the 12 percent global majority judges overall, women of colour constitute 5.4 percent while minoritized men presumably constitute the remainder. Education shows aggregate diversity similar to overall judicial levels but cannot determine intersectional composition.

The findings demonstrate that even sectors with comparatively high aggregate ethnic diversity like the NHS may or may not have achieved meaningful intersectional representation. Without measurement infrastructure that cross- tabulates identity dimensions, this remains unknown. The judiciary's transparency in publishing intersectional data, whatever its motivations, enables precisely the accountability that other sectors' reporting structures prevent.

4.5 Summary: Visibility Depends on Measurement Infrastructure

These results establish three empirical patterns. First, where intersectional measurement is possible, as in the judiciary, analysis reveals that women of colour remain severely underrepresented despite gender progress, occupying marginal positions both within the overall leadership population and within the expanding cohort of women leaders. Second, aggregate ethnic diversity varies substantially across sectors, with NHS boards showing approximately triple the representation observed in courts and schools, yet this variation in aggregate metrics does not determine whether any sector has achieved proportional intersectional representation for women of colour. Third, and most critically, what can be empirically demonstrated about intersectional inequality depends fundamentally on whether administrative systems cross-tabulate identity dimensions rather than reporting them separately.

The judiciary analysis provides quantitative validation of intersectionality theory's prediction that single-axis progress can mask compound marginalization. Gender representation approaching parity does not indicate

proportional advancement for women of colour, who constitute only 12.3 percent of female judges. The NHS and education findings demonstrate that even sectors with robust equality monitoring frameworks have not implemented intersectional reporting as standard practice, preventing external assessment of whether diversity initiatives reach those facing multiple forms of marginalization. No sector examined demonstrates that intersectional measurement has become routine in public sector accountability, despite widespread adoption of intersectionality language in equality discourse.

5. Discussion

The empirical findings presented in this study reveal a fundamental accountability deficit in how public institutions monitor and report leadership diversity. Across England's core public leadership domains, measurement infrastructure determines what forms of inequality become visible and therefore subject to institutional scrutiny. Where administrative systems cross-tabulate gender and ethnicity, as in the judiciary, intersectional exclusion becomes empirically demonstrable. Where systems report these dimensions separately, as in NHS boards and school leadership, intersectional patterns remain unknown regardless of underlying reality. This variation in measurement infrastructure has profound implications for both scholarly understanding of intersectional barriers and institutional capacity to address compound marginalization through policy intervention.

5.1 The Measurement Infrastructure Problem: When Accountability Requires Visibility

The study's primary contribution lies in demonstrating empirically that current equality monitoring frameworks operate with measurement infrastructure fundamentally inadequate for intersectional accountability. This inadequacy operates at multiple levels. Most obviously, when organizations report gender and ethnicity as separate single-axis metrics, external analysts cannot determine whether diversity gains reach those positioned at the intersection of multiple marginalized identities. The NHS can report 16.3 percent global majority board representation and separately report gender composition, yet without cross-tabulation, no external party can assess whether women of colour hold board positions proportionally. Schools can document that 5.3 percent of headteachers are from global majority backgrounds and separately that 70 percent are women, yet published data cannot reveal what proportion are women of colour specifically.

This measurement gap allows institutions to claim diversity progress based on aggregate metrics while intersectional exclusion potentially persists. An organization could truthfully report both gender parity and ethnic diversity at senior levels while women of colour remain severely underrepresented if advancement opportunities disproportionately benefit white women and minoritized men. The judiciary

provides empirical demonstration of precisely this pattern. Women approach 43.6 percent of judges, suggesting successful gender diversification. Yet women of colour constitute only 5.4 percent of the judiciary overall and just 12.3 percent of female judges, indicating that gender progress has concentrated among white women rather than reaching women across ethnic groups proportionally. This pattern becomes visible only because judicial diversity statistics cross-tabulate gender and ethnicity, enabling calculation of representation at the intersection.

The finding that only one of three sectors examined publishes data enabling intersectional analysis suggests that measurement infrastructure inadequacy reflects systemic features of equality monitoring rather than sector-specific choices. The NHS operates under robust WRES framework mandating ethnic diversity reporting with standardized definitions and centralized validation. Education maintains comprehensive School Workforce Census with detailed demographic characteristics. Yet neither has implemented intersectional reporting as standard practice in published equality statistics. This cannot be attributed to data unavailability, as both systems collect gender and ethnicity at individual level. Rather, it reflects reporting infrastructure decisions about which demographic breakdowns warrant publication and therefore external scrutiny.

These infrastructure choices have practical consequences for accountability. Policy interventions targeting gender inequality or ethnic underrepresentation cannot be evaluated for whether they reach women of colour without intersectional measurement. Diversity initiatives may produce gains that accrue to white women and minoritized men while women facing compounded barriers remain excluded, yet this outcome operates beyond the reach of transparency mechanisms and performance monitoring when measurement systems prevent intersectional

assessment. Organizations can demonstrate compliance with equality frameworks through single-axis metrics while avoiding scrutiny of intersectional outcomes that existing data structures render invisible.

5.2 What Intersectional Measurement Reveals: The White Ceiling Empirically Demonstrated

The judiciary analysis provides rare quantitative documentation at organizational scale of patterns that intersectionality theory predicts and qualitative research suggests but that single-axis diversity metrics systematically obscure. The finding that women constitute 43.6 percent of judges while women of colour constitute only 12.3 percent of female judges empirically validates theoretical arguments about how addressing gender inequality without explicit attention to race produces gains concentrating among dominant ethnic groups within each gender category.

This pattern cannot be explained by pipeline arguments suggesting insufficient qualified candidates from minoritized backgrounds. Women of colour enter legal professions in numbers that, while below demographic parity, exceed their 12.3 percent representation among female judges. The progression barrier operates at the transition to senior positions where appointment processes, professional networks, and assumptions about judicial temperament systematically filter women of colour more

stringently than white women despite comparable or superior qualifications. Pogrebna and colleagues' finding that Black women leaders are often "twice as tall" in demonstrated capabilities reflects this dynamic—those who advance despite compounded barriers show exceptional qualifications precisely because selection processes filter them more stringently than others.

The white ceiling phenomenon has implications extending beyond descriptive statistics to questions of institutional legitimacy. The judiciary exercises extraordinary authority over citizens' lives through adjudication, legal interpretation, and sentencing. When such power concentrates among a demographically narrow subset reflecting neither the legal profession's diversity nor society's composition, this creates legitimacy deficits that undermine public confidence across minoritized communities. Moreover, the pattern suggests that judicial recruitment and appointment processes, whether through explicit bias or structural advantages embedded in professional pathways, systematically disadvantage candidates positioned at the intersection of gender and racial marginalization.

Critically, this pattern would remain invisible without measurement infrastructure enabling intersectional analysis. External observers noting that 43.6 percent of judges are women might reasonably infer substantial gender progress. Those separately noting approximately 12 percent global majority representation overall might perceive modest ethnic diversity. Only when these dimensions are examined simultaneously does the severe underrepresentation of women of colour at 5.4 percent of all judges and 12.3 percent of female judges become empirically demonstrable. The judiciary's transparency in publishing gender-disaggregated ethnicity data, whatever its motivations, creates accountability conditions that other sectors' reporting structures prevent.

5.3 What Remains Unmeasured: NHS and Education as Cases of Measurement Absence

The NHS and education findings demonstrate analytical limitations imposed when data infrastructure prevents intersectional measurement. Both sectors maintain comprehensive demographic data collection yet publish equality reports presenting gender and ethnicity separately. This reporting structure enables assessment of aggregate ethnic diversity—16.3 percent for NHS boards, 5.3 percent for school headteachers—but cannot determine whether these gains include women of colour proportionally.

The NHS demonstrates considerably higher aggregate ethnic diversity than courts or schools, reaching levels approximately three times those observed in judicial and educational leadership. This comparative advantage likely reflects multiple factors including mandatory WRES reporting creating transparency and accountability mechanisms, substantial workforce ethnic diversity providing larger pools of candidates eligible for board positions, and governance structures emphasizing geographic representativeness and community connection. Yet without gender-disaggregated ethnicity data, external analysts cannot assess whether this aggregate diversity translates into proportional representation of women of colour specifically.

Consider the implications for different scenarios that would all produce identical published statistics. Scenario one: NHS board ethnic diversity of 16.3 percent includes women of colour proportionally, with approximately 8 to 10 percent of board members being women of colour and similar proportions being minoritized men. Scenario

two: diversity gains have concentrated among minoritized men while women of colour remain underrepresented, with perhaps 12 percent minoritized men and 4 percent women of colour. Scenario three: women of colour are overrepresented relative to their workforce presence while minoritized men are underrepresented. All three scenarios produce the same aggregate ethnic diversity metric of 16.3 percent, yet they represent vastly different intersectional outcomes. Current reporting infrastructure provides no basis for determining which scenario reflects reality.

This measurement absence has direct consequences for policy evaluation and accountability. The NHS could celebrate its comparative success in achieving higher ethnic diversity than other public sector domains while women of colour specifically remain severely underrepresented, and this pattern would be invisible in published WRES reports. Diversity initiatives might be designed and evaluated based on aggregate ethnic diversity targets without ever assessing whether interventions reach women of colour, allowing compound marginalization to persist despite apparent progress on single-axis metrics.

Education presents similar analytical limitations despite offering the longest temporal series. The finding that global majority headteacher representation doubled from 2.8 to 5.3 percent over fifteen years indicates that change occurs but incrementally. Yet whether this includes women of colour proportionally remains unknown. If the teaching workforce shows that women of colour enter schools but do not advance to headship at rates matching white women, this would indicate that promotion processes systematically favor white candidates for senior leadership. However, published census statistics prevent such assessment without access to underlying microdata cross-tabulating gender and ethnicity.

5.4 Implications for Intersectionality Scholarship: Beyond Conceptual Frameworks to Measurement Infrastructure

These findings contribute to intersectionality scholarship by demonstrating that advancing from conceptual frameworks to empirical accountability requires addressing data infrastructure systematically. Intersectionality theory's insight that marginalization operates through compounding rather than additive processes demands measurement systems capable of capturing outcomes at the intersection. Yet most administrative data collection operates through single-axis frameworks that record identity dimensions separately, preventing the cross- tabulation necessary for intersectional assessment.

Scholars have developed various analytical techniques attempting to work within these constraints, including interaction terms in regression models, multilevel approaches examining between-group and within-group variation, and synthetic estimation combining marginal distributions with independence

assumptions. Yet these methodological innovations cannot overcome fundamental data structure limitations when published reports prevent access to intersectional measures. The researcher employing sophisticated multilevel modeling techniques still cannot calculate what proportion of NHS board members are women of colour if WRES datasets report ethnicity and gender separately without cross-tabulation.

This study's methodological approach treats measurement infrastructure variation as analytical leverage rather than constraint. By comparing what becomes visible when systems enable intersectional analysis versus what remains hidden when they do not, the research demonstrates empirically that data structure choices have substantive implications for what forms of inequality organizations monitor and address. The judiciary provides proof that when administrative systems cross-tabulate identity dimensions, intersectional exclusion becomes quantifiable and therefore accountable. The NHS and education sectors demonstrate that without such infrastructure, intersectional outcomes remain unmeasured regardless of institutional commitments to diversity.

The implication for future research is that advocating for improved data collection practices represents not merely technical refinement but fundamental advancement of intersectional accountability. When equality monitoring frameworks mandate single-axis reporting, they create infrastructure that allows organizations to claim diversity success without demonstrating progress for those facing multiple forms of marginalization. Expanding intersectional measurement across public sector reporting would substantially strengthen both scholarly capacity to document compound barriers and institutional accountability for addressing them.

5.5 Policy Implications: Toward Intersectional Equality Frameworks

The findings reveal that current equality frameworks operate with measurement infrastructure fundamentally inadequate for intersectional accountability, yet the solution is straightforward in principle if complex in implementation. Public sector organizations should adopt reporting frameworks that cross-tabulate gender and ethnicity at minimum, enabling assessment of whether diversity initiatives reach women of colour specifically. Where sample sizes permit, further disaggregation by role level, organizational function, and career trajectory would illuminate whether intersectional barriers operate uniformly or concentrate at particular transition points such as promotion to senior positions.

Several considerations shape how such reforms might be implemented while addressing legitimate concerns. First, confidentiality protections become critical when populations at specific intersections are small. Publishing that an organization has two Black women executives among twenty senior leaders could enable identification when combined with other publicly available information. Solutions include aggregated reporting at sectoral rather than organizational levels, banded categories reporting ranges rather than exact counts, and secure access arrangements providing researchers and oversight bodies with microdata while publishing only aggregate summaries.

Second, intersectional reporting should become standard practice rather than optional enhancement in equality monitoring frameworks. The WRES framework demonstrates that mandatory reporting with standardized definitions and centralized validation can produce high-quality sector-wide data enabling robust analysis. Extending WRES to require intersectional reporting would establish NHS boards' demographic composition at the intersection of gender and ethnicity as routinely monitored and publicly reported metrics. Similar frameworks could be implemented across public sector domains, creating comprehensive infrastructure for intersectional accountability.

Third, organizations should move beyond demographic representation metrics to examine career progression patterns intersectionally. Representation snapshots reveal outcomes but not the processes producing them. Longitudinal data tracking advancement rates would enable assessment of whether women of colour face barriers at specific career stages such as promotion from entry-level to mid-level positions or transition into executive leadership. Such analysis requires administrative systems that not only record intersectional demographics at single points but track individuals over time, enabling calculation of promotion rates, retention patterns, and career trajectories disaggregated by intersectional positioning.

Fourth, equality targets should specify intersectional outcomes rather than merely aggregate diversity. An organization committing to increase women in leadership and increase ethnic diversity might achieve both goals while women of colour remain excluded if gains concentrate among white women and minoritized men. Targets specifying that women of colour should constitute particular proportions of senior positions would create direct accountability for whether progress reaches those facing compounded barriers rather than assuming single-axis initiatives will automatically benefit all groups.

These reforms require political commitment to measuring what matters rather than merely what is convenient. Current single-axis reporting frameworks reflect partly legitimate concerns about confidentiality with small populations but also institutional preferences for metrics that allow diversity claims without scrutiny of intersectional outcomes. Organizations may resist intersectional reporting precisely because it would reveal patterns such as those documented in the judiciary—that apparent gender progress masks severe underrepresentation of women of colour. Yet democratic accountability demands transparency about whether public institutions exercise authority through leadership reflecting the communities they serve, particularly for those facing multiple forms of marginalization.

5.6 Limitations and Future Research Directions

This study's empirical scope reflects both data availability and strategic methodological choices. Most significantly, direct intersectional measurement is possible only for the judiciary where administrative systems publish gender-disaggregated ethnicity data. The NHS and education analyses demonstrate measurement infrastructure limitations but cannot determine actual intersectional representation in these sectors. Future research

with access to underlying microdata could provide comprehensive intersectional assessment across all three sectors, strengthening inferences about whether patterns documented in courts extend to health boards and schools.

The treatment of ethnic diversity as binary White versus Global Majority distinction obscures heterogeneity across Asian, Black, Mixed, and other ethnic groups. Intersectionality theory emphasizes that experiences and barriers facing, for example, Black Caribbean women judges may differ substantially from those facing British Chinese women despite their shared positioning as minoritized professionals. However, small absolute numbers prevent further disaggregation without risking individual identification. As minoritized representation grows, future analysis could examine whether underrepresentation affects all global majority groups equally or whether some face more severe barriers than others.

The temporal coverage varies by sector, with education providing fifteen years but judiciary and NHS contributing only brief recent windows. Longer series across all domains would strengthen assessment of whether patterns reflect long-standing structural features or recent developments potentially responsive to policy intervention. Additionally, the analysis describes representation outcomes but cannot directly measure mechanisms producing them. Understanding why women of colour remain underrepresented requires qualitative investigation examining how recruitment practices, promotion criteria, mentorship networks, and institutional cultures shape career trajectories differently across intersectional positions.

Future research should extend intersectional measurement to additional organizational levels and sectors. Incorporating workforce demographics alongside leadership composition would enable calculation of representation parity indices assessing whether minoritized professionals advance to senior positions proportionally. Expanding to local government, higher education, policing, and corporate sectors would reveal whether patterns generalize beyond courts, health, and schools. Most critically, longitudinal studies tracking how intersectional composition changes following policy interventions would enable rigorous evaluation of whether diversity initiatives reduce compound marginalization or merely produce single-axis gains.

6. Conclusion

This study has examined how measurement infrastructure shapes visibility of intersectional inequality across three major public leadership domains in England. The research provides the first systematic analysis demonstrating empirically what becomes visible when administrative systems cross-tabulate gender and ethnicity versus what remains obscured when they report identity dimensions separately. The findings reveal a fundamental accountability deficit: current equality monitoring frameworks measure diversity through single-axis metrics that cannot capture outcomes at the intersection of multiple marginalized identities, allowing institutions to claim progress while women of colour potentially remain excluded.

Where intersectional measurement is possible, as in the judiciary through gender-disaggregated ethnicity data spanning 2023 to 2025, the analysis reveals patterns that single-axis diversity metrics systematically obscure. Women's representation approaches 43.6 percent of all judges, suggesting successful gender diversification that would appear as meaningful progress when examined through gender-focused frameworks. Yet women of colour constitute only 5.4 percent of the judiciary overall and just 12.3 percent of female judges, demonstrating that advancement has accrued disproportionately to white women. This white ceiling pattern provides quantitative validation of intersectionality theory's prediction that addressing gender inequality without explicit attention to how race mediates women's experiences produces gains concentrating among dominant ethnic groups.

Critically, this pattern becomes visible only because judicial diversity statistics cross-tabulate identity dimensions rather than reporting them separately. Without such infrastructure, external analysts observing that women constitute 43.6 percent of judges and separately that approximately 12 percent are from global majority backgrounds might infer meaningful progress on both dimensions without recognizing severe underrepresentation at the intersection. The judiciary's transparency in publishing intersectional data creates accountability conditions enabling external scrutiny of whether diversity gains reach women of colour specifically—conditions that other sectors' reporting structures prevent.

The NHS and education findings demonstrate that measurement infrastructure inadequacy extends across public sector domains despite varying institutional contexts and equality frameworks. NHS trust boards show 16.3 percent global majority representation, substantially higher than the 5.3 to 5.4 percent observed in courts and schools, suggesting that mandatory WRES reporting, diverse workforces, and governance emphasizing community representation produce moderately higher ethnic diversity. Yet the absence of gender-disaggregated ethnicity reporting prevents assessment of whether this aggregate diversity includes women of colour proportionally. The

16.3 percent could consist predominantly of minoritized men while women of colour remain severely underrepresented, or could reflect proportional intersectional representation—current data structures provide no basis for determination.

Education demonstrates similar analytical limitations despite maintaining the longest temporal series spanning fifteen years from 2010 to 2024. Global majority headteacher representation doubled from 2.8 to 5.3 percent, indicating that change occurs incrementally over extended periods. Yet whether this includes women of colour proportionally remains unknown without gender-disaggregated reporting. The School Workforce Census collects both gender and ethnicity at individual level but published statistics present these dimensions separately, preventing external calculation of intersectional representation without access to underlying microdata.

The finding that only one of three sectors examined publishes data enabling intersectional analysis suggests that measurement infrastructure inadequacy reflects systemic features of equality monitoring rather than sector-specific choices. Even the NHS with robust WRES framework has not implemented intersectional reporting as standard practice. This cannot be attributed to data unavailability, as both

NHS and education systems collect gender and ethnicity for all individuals. Rather, it reflects reporting infrastructure decisions about which demographic breakdowns warrant publication and therefore external scrutiny.

These measurement gaps have profound consequences for accountability and policy evaluation. Organizations can claim diversity progress based on aggregate metrics showing both gender parity and ethnic diversity while women of colour remain excluded if advancement opportunities disproportionately benefit white women and minoritized men. Diversity initiatives cannot be evaluated for whether they reach those facing compounded barriers without intersectional measurement. Equality frameworks mandating single-axis reporting allow compliance demonstration without scrutiny of intersectional outcomes, enabling institutions to avoid accountability for whether progress benefits multiply marginalized groups.

The study's primary contribution lies in demonstrating that this is not merely a conceptual or theoretical challenge but an empirical infrastructure problem with direct implications for institutional accountability. Intersectionality scholarship has established theoretically that marginalization operates through compounding rather than additive processes, that women of colour face distinct barriers beyond those affecting white women and men of colour separately, and that single-axis frameworks inadequately capture experiences at the intersection. Yet translating these insights into quantitative documentation requires administrative systems that cross-tabulate identity dimensions rather than reporting them separately. Where such systems exist, intersectional exclusion becomes empirically demonstrable and therefore accountable. Where they do not, compound marginalization operates beyond the reach of transparency mechanisms regardless of institutional commitments to diversity.

For intersectionality scholarship, the findings advance understanding of how measurement infrastructure itself functions as a mechanism of political marginalization. Crenshaw distinguished between structural intersectionality—how material conditions are shaped by positioning at the intersection—and political intersectionality—how policy agendas and accountability mechanisms marginalize those at the intersection. This study demonstrates that administrative data systems reporting gender and ethnicity separately constitute a form of political intersectionality, creating infrastructure that allows organizations to pursue single-axis diversity initiatives without ever establishing whether they benefit women of colour. What cannot be measured cannot be held accountable, and when measurement systems prevent intersectional assessment, institutions avoid scrutiny of outcomes for those facing multiple forms of marginalization.

For policy development, the implications point toward systemic reforms in equality monitoring infrastructure. Public sector organizations should adopt reporting frameworks that cross-tabulate gender and ethnicity at minimum, enabling assessment of whether diversity initiatives reach women of colour specifically. Where sample

sizes permit, further disaggregation by role level and career trajectory would illuminate whether intersectional barriers concentrate at particular transition points. Regulatory bodies should mandate

intersectional reporting as standard practice rather than optional enhancement, establishing demographic composition at the intersection as routinely monitored metrics. Equality targets should specify intersectional outcomes rather than merely aggregate diversity, creating direct accountability for progress reaching those facing compounded barriers.

These reforms require political commitment to measuring what matters rather than what is convenient. Organizations may resist intersectional reporting because it would reveal patterns such as those documented in the judiciary—that apparent progress masks severe exclusion at the intersection. Yet democratic accountability demands transparency about whether institutions exercising authority over diverse populations constitute their leadership diversely, particularly for those facing multiple forms of marginalization. The persistence of measurement infrastructure inadequacy despite widespread adoption of intersectionality language in equality discourse suggests that current approaches have prioritized rhetoric over accountability.

The path forward requires recognizing that achieving representative leadership demands not merely removing explicit barriers and providing pipeline support but rather fundamentally restructuring how professional advantage accumulates, leadership potential is recognized, and advancement decisions are made. It requires developing interventions that explicitly target intersectional positioning rather than assuming support for women and minoritized professionals will automatically benefit women of colour. It requires accountability frameworks that measure intersectional outcomes and mandate transparency about progress specifically for those facing compounded barriers. Most fundamentally, it requires establishing measurement infrastructure enabling institutions to demonstrate empirically whether their diversity commitments reach women of colour or merely benefit white women and minoritized men.

This study's evidence confirms that public leadership in England does not reflect the society it serves, that measurement infrastructure prevents comprehensive assessment of intersectional representation across most sectors, and that where such assessment is possible, severe underrepresentation of women of colour becomes visible despite apparent progress on single-axis metrics. Addressing this requires moving beyond incremental reforms toward structural transformation of both equality monitoring frameworks and the organizational practices they are designed to measure. The urgency stems not merely from principles of fairness, though these matter profoundly, but from democratic imperatives that institutions exercising power over diverse populations must themselves be constituted diversely to command legitimacy and function effectively in service of all communities. Without measurement infrastructure enabling intersectional accountability, this democratic imperative remains aspirational rather than empirically verifiable or institutionally enforceable.

Declarations

Conflict of Interest Statement

The author declares no conflicts of interest in relation to this research. This study received no specific funding from commercial, public, or not-for-profit sectors. The research analyzes publicly available administrative data and the author has no financial, personal, or professional relationships that could inappropriately influence the work presented in this manuscript.

Author Contribution

Y.S.B. wrote the main manuscript text and Y.S.B. prepared figures 1-3. All authors reviewed the manuscript.

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Figures

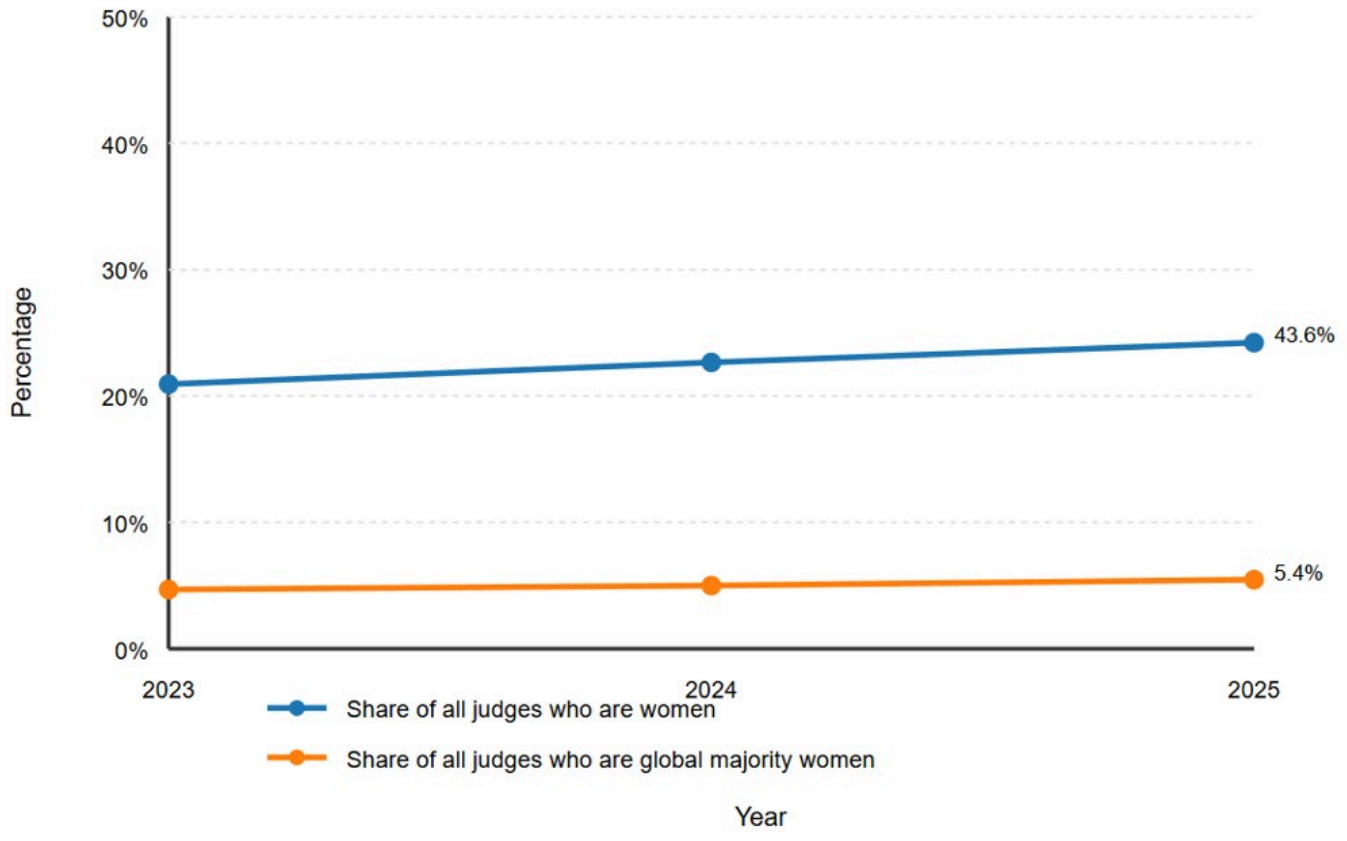


Figure 1

Representation of Women and Global Majority Women in the Judiciary (UK Courts and Tribunals), 2023–2025

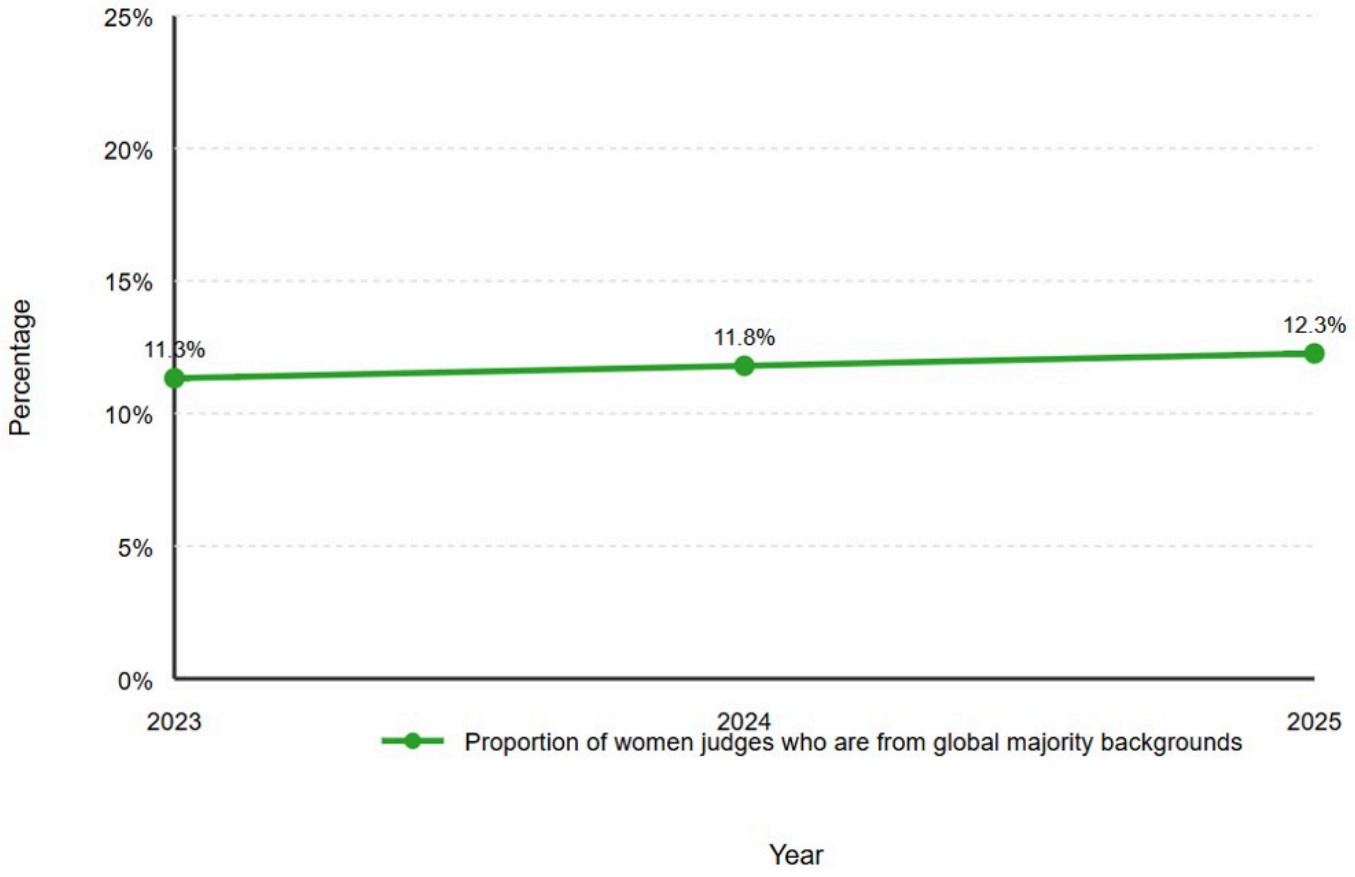


Figure 2

Global Majority Share Among Women Judges (UK Courts and Tribunals), 2023–2025

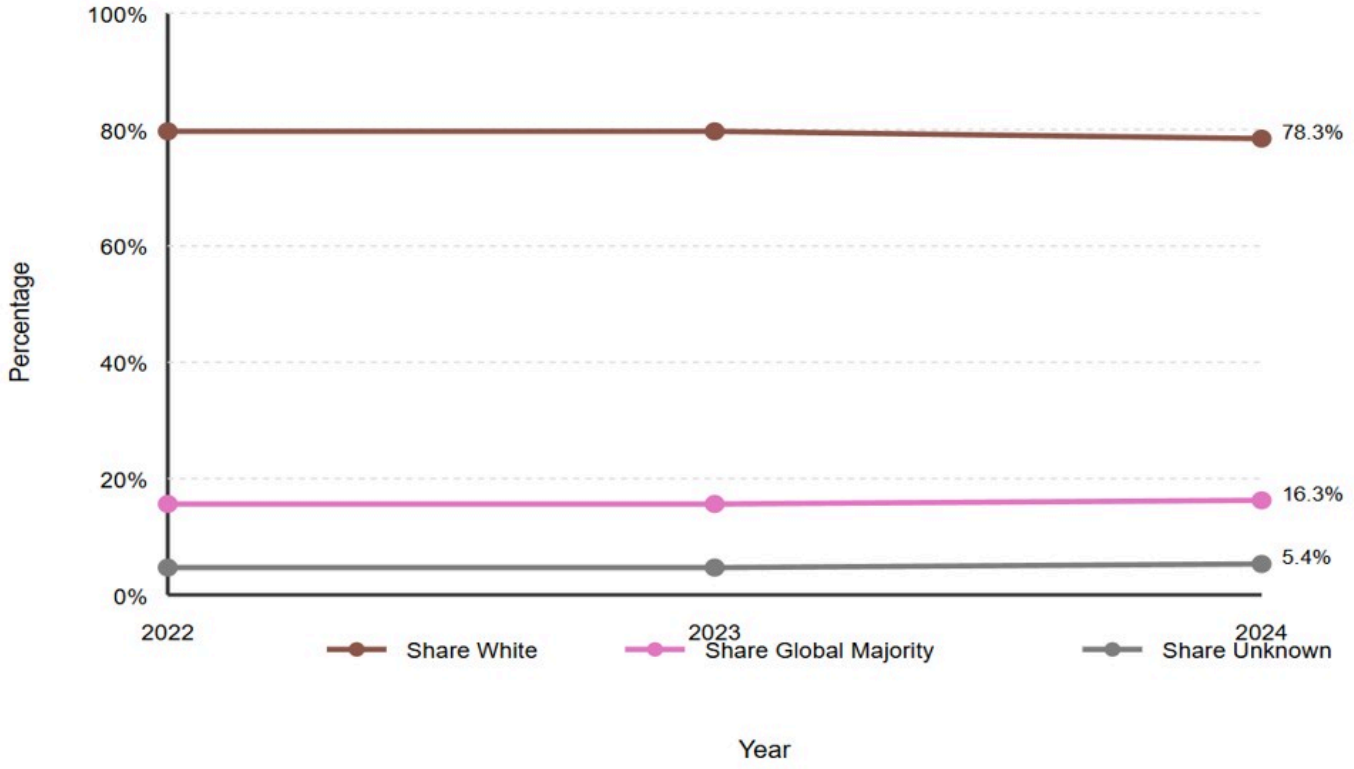


Figure 3

Ethnic Composition of NHS Trust Boards in England, 2022–2024

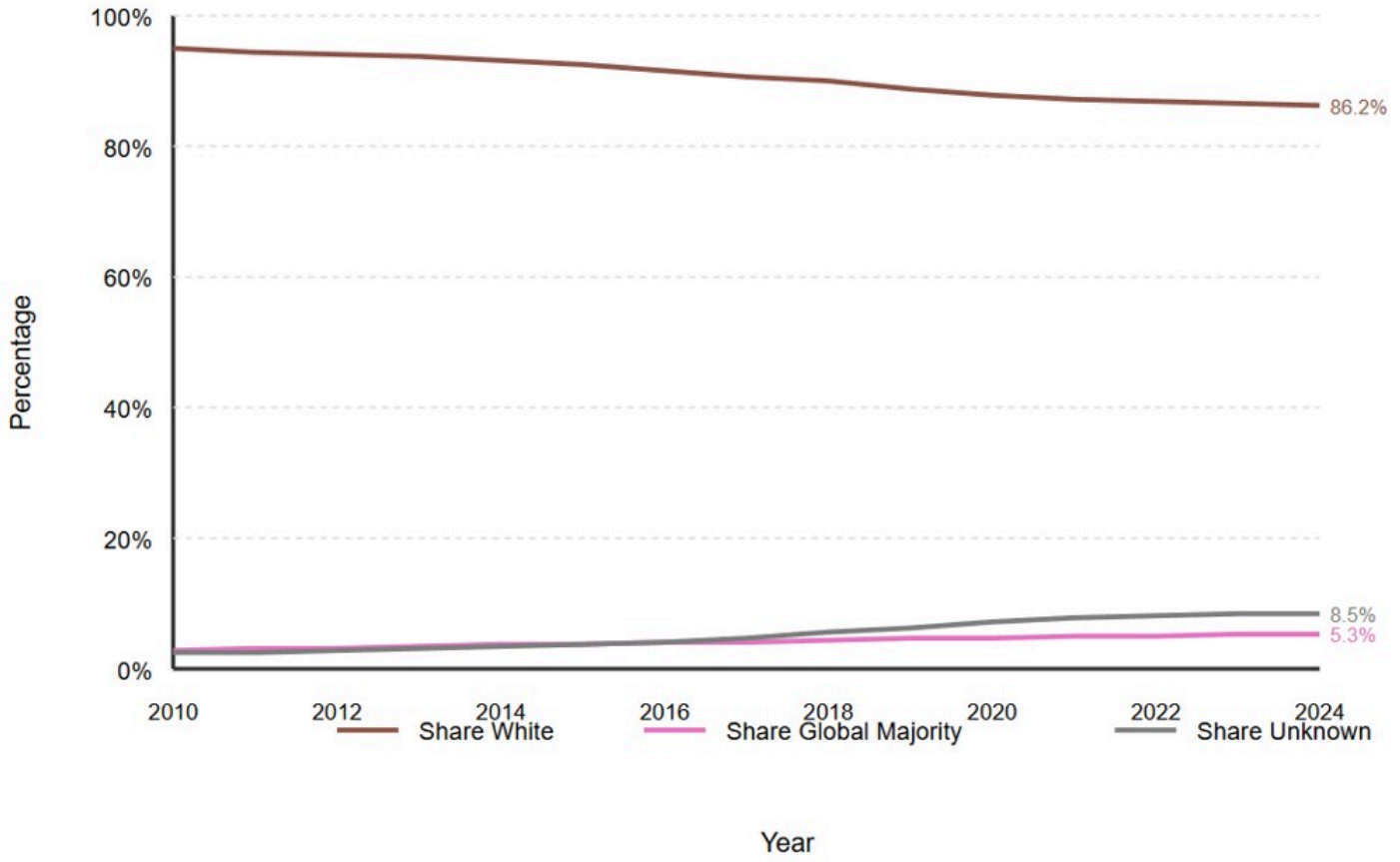


Figure 4

Ethnic Composition of Headteachers in State-Funded Schools in England, 2010–2024

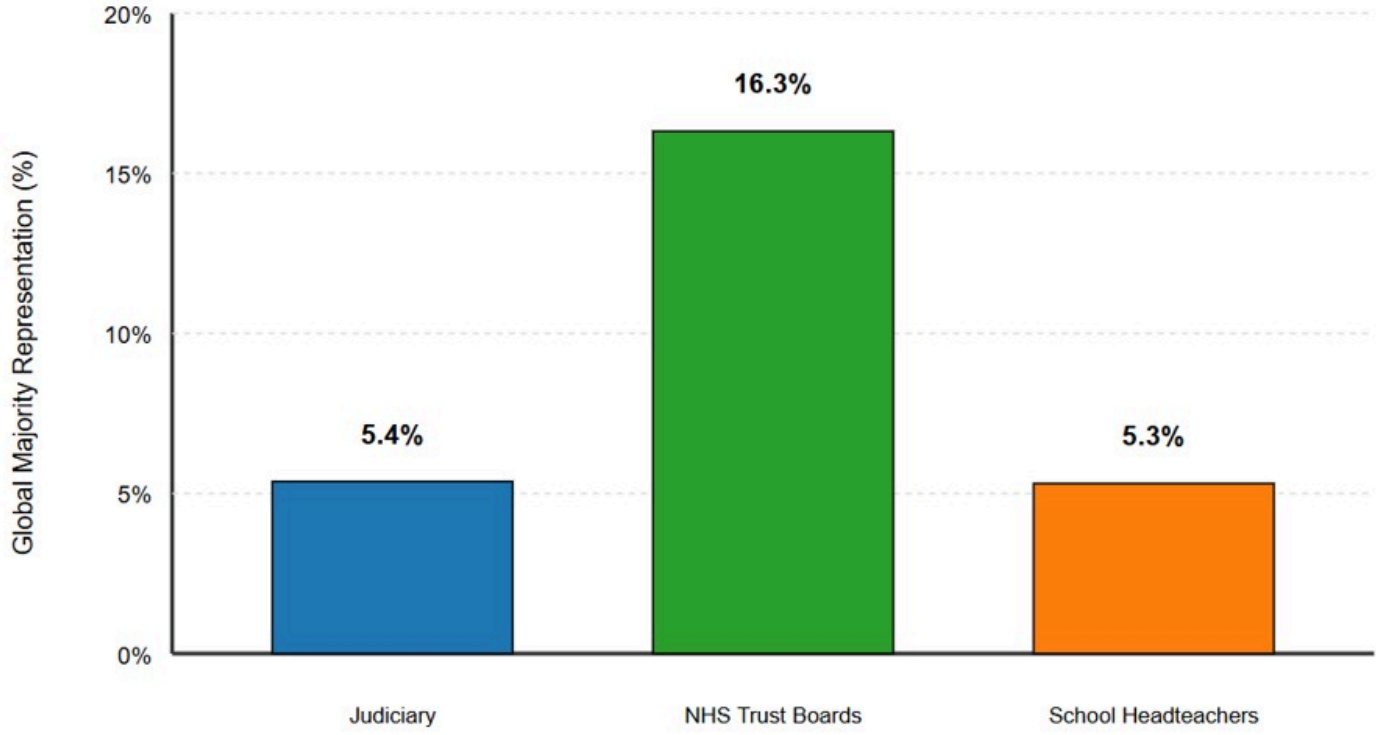


Figure 5

Global Majority Representation in Leadership by Sector, Latest Year

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