INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 15, Issue 8, (2025) E-ISSN: 2222-6990

Women in Leadership: An Industry-Level Quantitative Analysis

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DOI Link: http://dx.doi.org/10.6007/IJARBSS/v15-i8/26185

Published Date: 13 August 2025

Abstract

Persistent gender disparities in organizational leadership remain a global concern, with recent data showing that women hold only 27.5% of managerial positions worldwide and just 31.7% of senior and middle management roles as of 2024. This cross-industry, multi-country quantitative study analyzed large-scale public datasets from 2019–2024 to assess gender representation in leadership across key sectors, including health, education, finance, technology, and manufacturing. Results indicate that while women comprise over 50% of senior managers in healthcare and educational services in some countries, their representation drops to 29% in finance, 21% in manufacturing, and only 18% in information technology. Regional analysis reveals higher female representation in senior management in North America (up to 41.6% in the United States) and Nordic Europe (over 40% in Sweden and Finland), compared to persistent gaps below 20% in many Asian and MENA countries. Intersectional analysis further demonstrates that women of color remain particularly underrepresented, accounting for just 6% of C-suite roles in the U.S. Despite modest gains over the past decade, progress has plateaued in recent years, emphasizing the ongoing influence of structural and cultural barriers such as occupational segregation, exclusion from informal networks, and bias in advancement criteria. These findings highlight the urgent need for coordinated, data-driven policy and organizational interventions, including transparent succession planning, targeted leadership development, and accountability mechanisms, to accelerate progress toward gender parity in leadership across all sectors and regions.

Keywords: Gender Diversity, Leadership, Industry Analysis, Intersectionality, Organizational Barriers, Policy Intervention, Stem, Women In Management

Introduction

Gender diversity in leadership is not only a matter of representation but a critical driver of organizational performance, innovation, and social equity in the contemporary economy, making it an important subject of both academic inquiry and policy action (Prieto-Rios & Lopez-Figueroa, 2024; LeanIn.Org & McKinsey & Company, 2024). Across global industries, from finance to manufacturing to education, leadership diversity has been linked to improved

financial outcomes, enhanced problem-solving capabilities, and stronger organizational resilience in the face of complex challenges (Onalaja & Otokiti, 2022). Beyond these organizational benefits, gender-balanced leadership is associated with more equitable workplace cultures and positive societal outcomes, including advances in public health, education, and governance, thereby situating the research problem within a broader social and theoretical landscape (Prieto-Rios & Lopez-Figueroa, 2024;World Economic Forum, 2024).

Despite a growing consensus on the value of gender-diverse leadership, global progress remains uneven and, in many contexts, frustratingly slow. According to the World Economic Forum's 2024 Global Gender Gap Report, women currently hold less than 30% of managerial positions and a mere 10.2% of Fortune 500 CEO roles (World Economic Forum, 2024; Górska & Burlakova, 2025). In major economies such as the United States and the European Union, gender parity in corporate boardrooms and executive suites is still decades away at the current pace of change (Catalyst, 2023). This underrepresentation persists despite significant increases in women's educational attainment and labor force participation (Kyambade et al., 2024).

Multiple theoretical frameworks have been advanced to explain the persistence of gender gaps in organizational leadership. The "leaky pipeline" metaphor highlights how women's representation diminishes at each step up the corporate hierarchy, often due to the cumulative effects of structural barriers, work-life integration challenges, and cultural expectations (Nyoni & He, 2019). Organizational cultures often privilege agentic leadership traits (assertiveness, decisiveness, risk-taking) over communal attributes such as collaboration, empathy, and participatory decision-making, which are more commonly associated with women leaders (Mathews, 2021; Onalaja & Otokiti, 2022). Such biases, often embedded in formal leadership competency models and informal organizational practices, can result in the systematic undervaluation of women's leadership potential and contributions (Mathews, 2021).

Empirical studies have shown that even in organizations with explicit gender equality commitments, unconscious bias and gendered expectations continue to influence promotion, pay, and leadership selection (Kyambade et al., 2024; Nicholson, 2020). Quantitative analyses of promotion rates, salary progression, and leadership appointment patterns consistently reveal that women face significant disadvantages compared to their male counterparts, particularly in male-dominated sectors such as finance, technology, and manufacturing (Górska & Burlakova, 2025; Kreiss & Adams, 2019).

The existing literature provides valuable insights into the mechanisms underlying gender disparities, but important gaps remain. Most comparative studies rely on aggregate data at the national or organizational level, offering limited granularity regarding sectoral or industry-specific dynamics. Further, much of the evidence on women's leadership is drawn from either qualitative interviews or case studies, which, while rich in detail, may lack generalizability (Nicholson, 2020). Therefore, to address this research gap, it is necessary to situate the analysis within both the broader social implications of leadership diversity and the theoretical frameworks that explain persistent disparities, while applying a systematic, quantitative approach.

This study seeks to address these limitations by providing a comprehensive, industry-by-industry analysis of gender representation in organizational leadership using the most current, publicly available quantitative data. Specifically, it addresses the following research questions:

1. What is the distribution of women and men in leadership roles across major industries and regions?
2. Where are gender gaps most and least pronounced, and what trends are observable over recent years?

By advancing a cross-sectoral, data-driven perspective, this research contributes to the understanding of persistent barriers and emerging opportunities for gender parity in leadership. The findings hold direct implications for organizational leaders, policymakers, and scholars seeking to design targeted interventions and benchmark progress toward gender equity.

The remainder of this paper is structured as follows: Section 2 reviews relevant literature and policy context; Section 3 details data sources and analytical methods; Section 4 presents results; and Section 5 discusses implications for research, practice, and policy.

Literature and Policy Context

Theoretical Perspectives on Gender and Leadership

The underrepresentation of women in organizational leadership has been explored through a range of theoretical frameworks. Role congruity theory posits that the perceived incongruity between the qualities traditionally ascribed to women (communal, nurturing) and those stereotypically associated with leadership (agentic, assertive) leads to bias in the evaluation and selection of leaders (Mathews, 2021; Onalaja & Otokiti, 2022). This incongruity is reflected in empirical studies showing that women leaders are frequently penalized for displaying both too much and too little assertiveness, creating a “double bind” that constrains their advancement (Nyoni & He, 2019; Nicholson, 2020).

Social capital theory emphasizes the role of professional networks, sponsorship, and informal relationships in career advancement. Women’s exclusion from influential networks, whether through homophily, bias, or organizational culture, further restricts access to leadership opportunities, particularly in male-dominated sectors (Onalaja & Otokiti, 2022; Kreiss & Adams, 2019).

Meanwhile, intersectionality theory calls for recognition of how multiple identities, such as race, class, and age, compound gendered disadvantage in organizational hierarchies. Recent quantitative studies find that women from racialized or other marginalized groups are often doubly underrepresented in leadership positions, even when aggregate gender figures show progress (Catalyst, 2023; Mathews, 2021; Prince, 2022).

Empirical Patterns of Gender Gaps in Leadership

Cross-national and sectoral analyses consistently reveal substantial gender gaps in senior roles. According to the World Economic Forum’s 2024 Global Gender Gap Report, women globally represent only 29% of senior management positions, and just 8% of Fortune 500 CEOs are women (World Economic Forum, 2024; Górska & Burlakova, 2025). In technology,

manufacturing, and finance, the gaps are often wider, while fields such as education and healthcare show comparatively higher female representation, albeit often in less influential leadership tracks (Nicholson, 2020; Bi et al., 2021).

Recent research also documents the "glass cliff" phenomenon, where women are more likely to be appointed to precarious leadership roles during periods of crisis or poor organizational performance (Prieto-Rios & Lopez-Figueroa, 2024). Such dynamics not only obscure progress but can reinforce stereotypes about women's leadership capability when organizations continue to struggle.

The pipeline problem is further worsened by gender differences in access to high-visibility assignments, sponsorship, and mentoring. Data from longitudinal studies indicate that, controlling for education and tenure, women are less likely to receive promotions or be considered for stretch roles critical for advancement (Kyambade et al., 2024; LeanIn.Org & McKinsey & Company, 2024).

Organizational Competency Models and Gendered Assessment

Leadership competency frameworks, which are formalized descriptions of the skills, behaviors, and attributes deemed essential for advancement, play a significant role in shaping who rises to the top. Scholars have critiqued such models for being implicitly gendered, privileging agentic over communal competencies and reinforcing "think leader, think male" stereotypes (Mathews, 2021). Empirical evidence demonstrates that women are less likely to be rated as "high potential" or "ready now" for top roles, even when performance metrics are equal al (Onalaja & Otokiti, 2022; Mathews, 2021).

Organizational interventions, such as blind evaluation processes, structured interviews, and explicit criteria for advancement, have demonstrated partial success in mitigating bias, but the effects are often sector- and context-specific (Kyambade et al., 2024; Bi et al., 2021).

Recent Policy Developments and Global Initiatives

Policy responses to gender disparities in leadership include legislative quotas (e.g., for corporate boards), transparency requirements, and gender pay reporting, with notable successes in several European countries (Górska & Burlakova, 2025). Voluntary initiatives such as the United Nations' Women's Empowerment Principles and the 30% Club have spurred organizations to adopt more ambitious diversity targets, but progress remains uneven, particularly outside large multinational firms (Nicholson, 202).

Despite this activity, a persistent gap in the literature remains: few studies systematically compare gender representation in leadership at the industry level, using recent, standardized, and publicly available quantitative data. Even fewer offer rigorous cross-national or cross-sectoral benchmarking that could inform evidence-based policy and organizational strategy.

The Need for Cross-Industry, Data-Driven Analysis

Given these dynamics, there is an urgent need for studies that move beyond broad generalizations and offer granular, industry-by-industry analysis. Utilizing recent public datasets enables such comparison, and yields practical insights for both scholars and practitioners seeking to target interventions where gender gaps are widest and progress has

stalled. This study addresses this gap by leveraging robust, transparent data sources to map the current state of women's advancement in leadership across major sectors and regions.

Data and Methods

Research Design and Rationale

This study employs a quantitative, cross-sectional research design, leveraging publicly available datasets to analyze gender representation in organizational leadership across multiple industries and geographic regions. The approach is grounded in the need for robust, large-scale benchmarking to identify patterns, disparities, and trends in women's advancement to leadership roles, an approach increasingly recognized as vital for addressing sector- and country-level nuances in gender equity research (Mathews, 2021; World Economic Forum, 2024).

Data Sources

Data for this analysis were drawn from the following publicly available and peer-reviewed sources, chosen for their methodological rigor, international scope, and sectoral granularity:

- **World Economic Forum's Global Gender Gap Reports (2019–2024):** Annual, cross-national data on women's representation at various levels of leadership in business, public administration, and other sectors (World Economic Forum, 2024).
- **International Labour Organization (ILO) Statistics:** Sector-specific labor force participation and managerial role data, with a breakdown by gender, region, and industry (Interantional Labour Organization (ILO), 2023a,b).
- **Industry-Specific Studies and Audits:** For granular and under-studied sectors, such as architecture, academia, or the petroleum industry, we included quantitative audits and published studies using validated methodologies (Mathews, 2021; Nicholson, 2020; Ngxongo, 2022; Onalaja & Otokiti, 2022; Bi, et al., 2021; Kyambade et al., 2024; Górska & Burlakova, 2025; Prieto-Rios & Lopez-Figueroa 2024;).
- **National Workforce Databases:** For country-specific analyses, national statistical bureaus, such as the U.S. Equal Employment Opportunity Commission (EEOC), European Institute for Gender Equality, and relevant government publications were consulted (U.S. Equal Employment Opportunity Commission (EEOC), 2024a); EEOC, 2024b; (EEOC, 2024c; EEOC, 2023).

All sources were vetted for recency (2019-2024), transparency of data collection and coding procedures, and sample size adequacy. When sectoral data were missing from primary international sources, recent peer-reviewed empirical studies and quantitative audits supplemented coverage.

Variable Operationalization

- **Leadership Position:** Defined as occupying senior management, executive, or board roles as specified by each dataset or study.
- **Gender:** Self-identified or, in some cases, coded based on publicly available demographic data; limitations and ethical considerations around binary gender classification are acknowledged.
- **Industry/Sector:** Coded according to the International Standard Industrial Classification (ISIC) or equivalent schema for comparability.

- **Geography:** Regions, countries, and in some studies organization type (e.g., public vs. private sector).

Where available, intersectional variables (e.g., race, age, firm size) were extracted, but analysis remains primarily at the gender-industry-region level due to data availability constraints (Prince, 2022).

Analytical Strategy

The analytical approach in this study combined several complementary methods to provide a comprehensive assessment of gender representation in organizational leadership. Descriptive statistics were calculated to determine the proportions of women and men in leadership positions, with results disaggregated by sector, country or region, and, where available, over time. These statistics established the foundational patterns and trends within the data. Subsequently, comparative analyses were performed on both a sector-by-sector and country-by-country basis, which enabled the identification of industries and regions where gender gaps are either widest or narrowing most rapidly [(Nicholson, 2020)]. To ensure clarity and facilitate benchmarking across sectors and regions, findings were visualized using bar charts, heatmaps, and tables. This approach allowed for effective communication of complex patterns and supported evidence-based interpretation of the results.

Limitations and Ethical Considerations

This analysis is limited by the scope and completeness of public datasets, especially regarding intersectionality and sectoral granularity outside major industries. The reliance on secondary data may introduce bias based on the original collection and coding. The study adheres to ethical standards in secondary research by ensuring all data is publicly accessible and appropriately cited, and by discussing the potential implications of binary gender coding and reporting limitations.

Results

Global and Regional Overview of Women in Leadership

As of 2023, women held 27.5% of managerial positions globally, according to the International Labour Organization (ILO, 2023a), while the global average for women in senior and middle management roles was 31.7% in 2024, based on data from the World Economic Forum (WEF, 2024). Figure 1 presents the global trend in the proportion of women in senior and middle management roles from 2010 to 2024, showing gradual increases over the past decade, with the rate of progress plateauing since 2020.

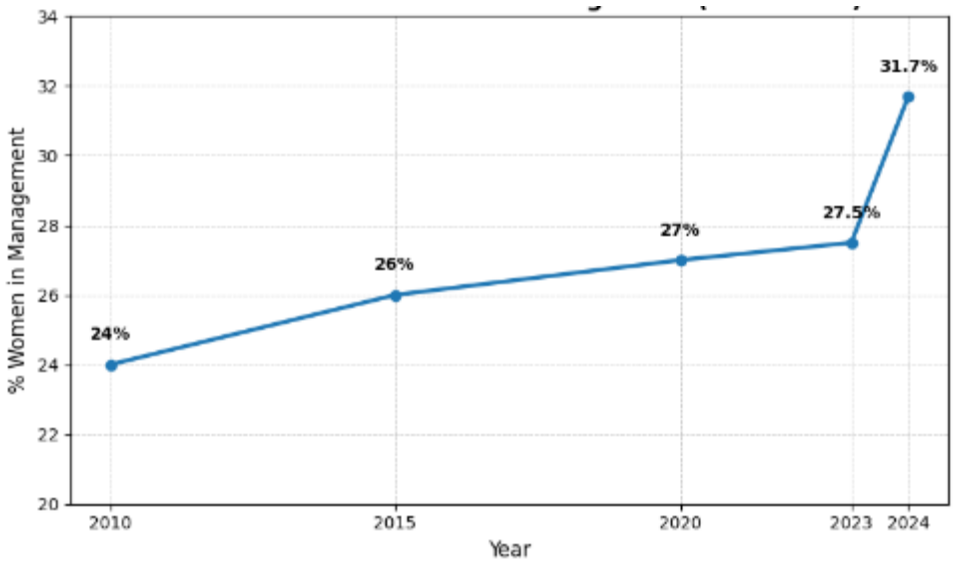

Figure 1. Global trend in the proportion of women in senior and middle management roles, 2010–2024. The data show slow but steady progress over the last decade, with the pace of improvement plateauing since 2020.
Sources: ILO (2023a); WEF (2024).

Table 1 summarizes women's representation in senior and middle management for selected countries between 2021 and 2024. The data indicate that, in 2024, the United States reported 41.6% of such roles held by women. Other countries show considerable variation, including Germany (29.0%), France (38.3%), Japan (15.2%), Brazil (37.1%), South Africa (38.8%), the United Kingdom (36.8%), and India (19.7%). In all cases, the figures remain below parity.

Table 1
Women's Representation in Senior and Middle Management, Selected Countries (2021–2023)

Country	**% Women in Senior/Middle Management (2021)**	**% Women in Senior/Middle Management (2023/24)**
United States	43.2% (ILO)	41.6% (WEF)
Germany	26.4% (ILO)	29.0% (WEF)
France	34.9% (ILO)	38.3% (WEF)
Japan	12.8% (ILO)	15.2% (WEF)
Brazil	35.4% (ILO)	37.1% (WEF)
South Africa	35.1% (ILO)	38.8% (WEF)
United Kingdom	34.7% (ILO)	36.8% (WEF)
India	14.4% (ILO)	19.7% (WEF)
Global Average	27.5% (ILO, 2023)	31.7% (WEF, 2024)

Sources: ILO (2023a): Charting progress on the global goals and decent work – ILOSTAT; WEF (2024): Global Gender Gap Report 2024

Regional differences in women's leadership representation are further illustrated in Figure 2, which presents the proportion of women in senior management roles by world region for 2023 and 2024. North America reports the highest proportions, with the United States at approximately 42% and Canada near 38%. In Europe, Nordic countries consistently report rates above 40%, while Eastern and Southern Europe remain closer to 30%. In contrast, the

Asia-Pacific and Middle East and North Africa (MENA) regions show lower representation, with many countries reporting women in less than 20% of senior management roles. Recent gains are also observed in certain African and Latin American countries, such as Brazil and South Africa, which now approach or exceed the global average.

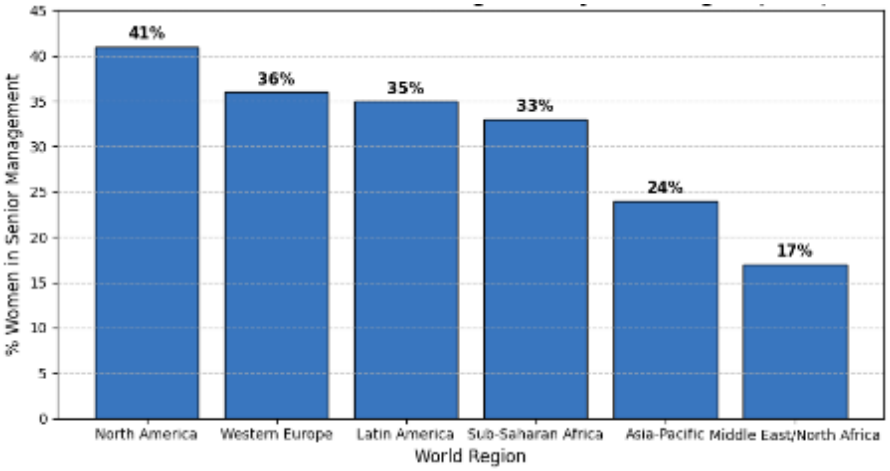

Figure 2. Proportion of women in senior management roles by world region, 2023/2024. North America and Western Europe lead, while gender gaps persist in Asia-Pacific and MENA regions.
Sources: ILO (2023a); WEF (2024).

Overall, the data in Figure 1, Figure 2, and Table 1 demonstrate that, despite some progress, no country has achieved gender parity in leadership roles. The highest proportions of women are typically found in middle management, with a notable drop at the executive level across all regions.

Country-Specific Findings: United States and European Union

United States

Table 2 presents the distribution of women and men across key job categories in the U.S. private sector for 2023. Women represented 34.5% of Executive/Senior-Level Officials & Managers and 43.3% of First/Mid-Level Officials & Managers. Among professionals, women accounted for 51.4%, while overall, women made up 47.7% of all employees. Figure 3 displays these data visually by job category, illustrating the persistent decline in female representation at higher levels of organizational hierarchy.

Table 2
U.S. Private Sector: Gender Representation by Job Category (2023)

Job Category	Men	Women	% Women
Executive/Senior-Level Officials & Managers	805,057	423,713	34.5%
First/Mid-Level Officials & Managers	4,616,498	3,526,256	43.3%
Professionals	8,205,283	8,671,826	51.4%
All Employees (Total)	24,280,408	22,144,882	47.7%

Source: EEOC, 2023

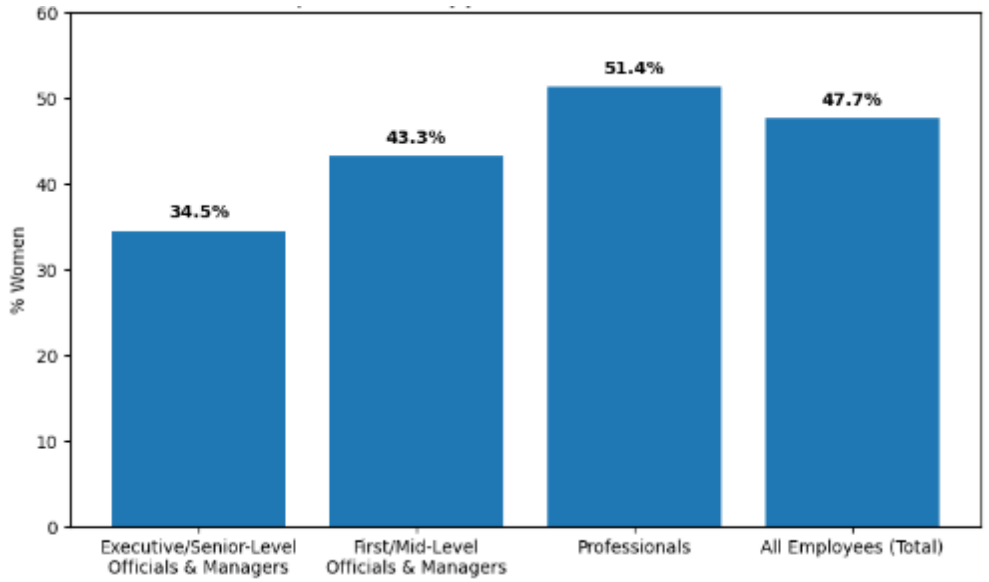

Figure 3. Gender Representation by Job Level in U.S. Private Sector (2023)

Further analysis of the corporate sector, based on LeanIn.Org and McKinsey & Company (2024) data, indicates that the proportion of women decreases with increasing seniority: women comprised 48% of entry-level employees, 40% of managers, 39% of directors, 37% of vice presidents, 34% of senior vice presidents, and 29% of C-suite executives. Figure 4 presents a pipeline-style visualization of women's representation by corporate level in 2024.

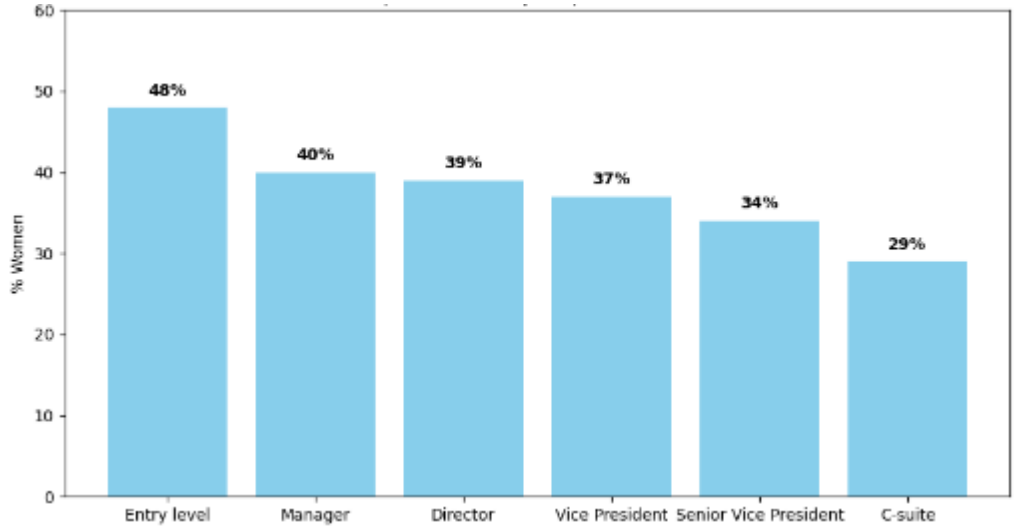

Figure 4. Women's Representation by Corporate Level, U.S. (2024)
Source: LeanIn.Org & McKinsey & Company, 2024

Intersectional analysis reveals that women of color remain particularly underrepresented at the highest ranks. In 2024, women of color held 6% of C-suite positions, compared to 23% for White women. At the manager level, women of color accounted for 24%, while White women comprised 27%. These figures highlight the disproportionate attrition faced by women of color at each stage of advancement.

European Union

Table 3 summarizes women's representation in senior management across selected European Union countries for 2023. The EU average was 35.2%, with substantial variation by country. Nordic countries, such as Sweden (44.2%) and Finland (42.9%), reported the highest levels of female representation in senior management, while Germany (29.0%) and Italy (27.8%) were among those with lower figures. France (38.3%) and Poland (36.1%) were above the EU average.

Table 3
Women in Senior Management: Selected EU Countries (2023)

Country	**% Women in Senior Management (2023)**
Sweden	44.2%
Finland	42.9%
France	38.3%
Germany	29.0%
Italy	27.8%
Poland	36.1%
EU Average	35.2%

Sources: EIGE (2023); WEF (2024)

Regional patterns are illustrated in Figure 5, which presents women's leadership representation by EU country in 2023. The figure highlights the leadership of the Nordic countries and the wider variability across the EU. Data also indicate that policy interventions, such as board quotas and transparency requirements, are associated with higher rates of women in senior management roles in some countries.

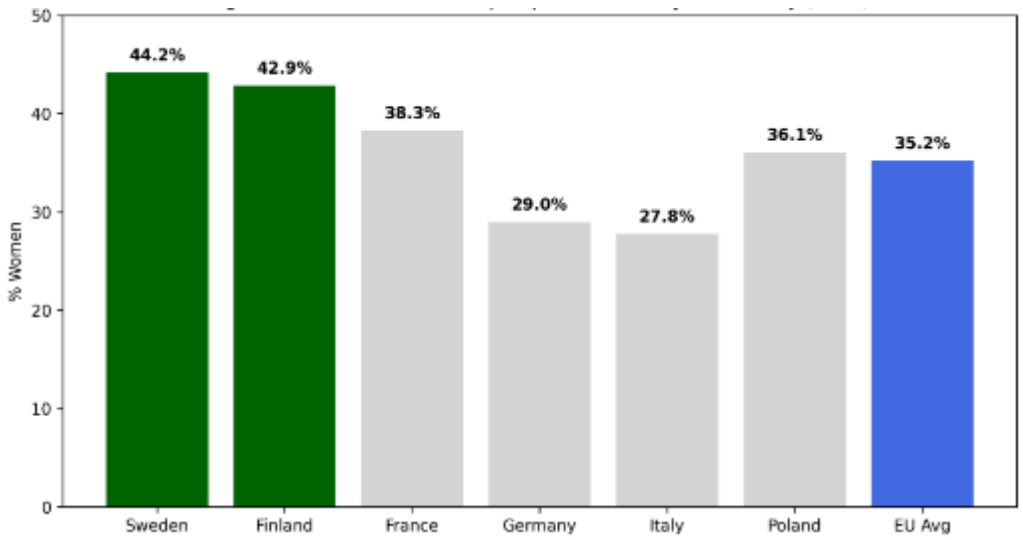

Figure 5. Women's Leadership Representation by EU Country (2023)

Sectoral/Industry Deep Dive

Analysis of sectoral data indicates substantial variation in women's representation in leadership roles across industries. Table 4 summarizes the percentage of women in executive and senior management positions by U.S. industry for 2023. The highest proportions were observed in Health Care & Social Assistance (55%), Educational Services (52%), and Public Administration (47%). In contrast, women's representation in executive or senior

management roles was notably lower in Finance & Insurance (29%), Manufacturing (21%), and Information Technology (18%). The overall average for all industries in the U.S. was 34.5% according to the EEOC (2023). Figure 6 provides a horizontal bar chart visualization of women's representation by industry, highlighting industries above and below the national average.

Table 4
Women's Representation in Senior Management by U.S. Industry (2023)

Industry	**% Women in Exec/Sr Mgmt (2023)**	**Source**
Health Care & Social Assistance	55%	EEOC, 2023
Educational Services	52%	EEOC, 2023
Public Administration	47%	EEOC, 2023
Retail Trade	43%	EEOC, 2023
Finance & Insurance	29%	EEOC, 2023
Manufacturing	21%	EEOC, 2023
Information Technology	18%	LeanIn/McKinsey, 2024
Professional/Technical Services	34%	EEC, 2023
All Industries (U.S. Avg)	34.5%	EOC, 2023

Note: Data rounded to nearest whole number for clarity.

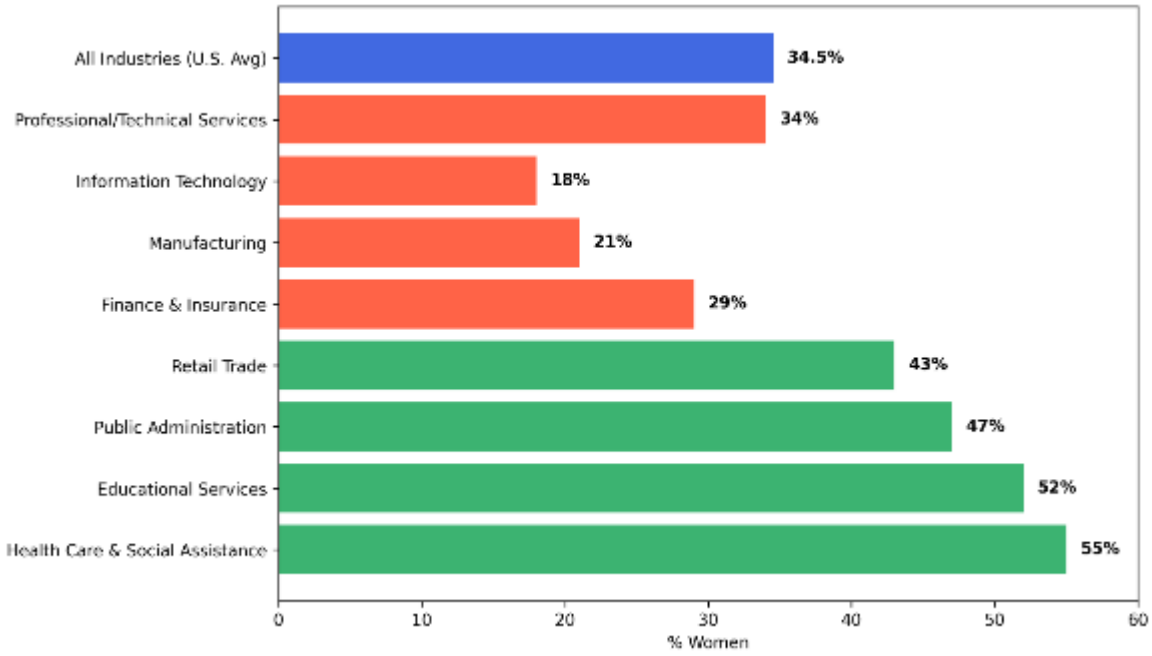

Figure 6. Percentage of Women in Executive/Senior Management by U.S. Industry (2023)

Additional data from Table 5 focus on leadership within STEM and academia. In the U.S. federal sector, women held 25.9% of senior leadership roles in STEM fields, while women comprised 18% of executive leaders in U.S. corporate technology sectors. Representation in academia was also below parity, with women accounting for 29% of senior leadership positions in U.S. academia overall, and 13–18% in STEM faculties specifically. Similar trends were observed in the European Union, where women represented 33% of senior leadership roles in academia (EIGE, 2023).

Table 5
Women in STEM and Academia Leadership (Selected, 2023)

Sector/Field	% Women in Senior Leadership	Source
STEM (Federal sector, U.S.)	25.9%	EEOC, 2023
STEM (U.S. corporate tech)	18%	LeanIn/McKinsey, 2024
Academia (U.S., all fields)	29%	Nicholson, 2020
Academia (EU, all fields)	33%	EIGE, 2023
Academia (STEM faculties, U.S.)	13–18%	Bi et al., 2021

Sectoral patterns were consistent internationally. Higher proportions of women in leadership were reported in sectors traditionally associated with education, health, and social services, while finance, manufacturing, STEM, and technology industries continued to show significant gender gaps at senior levels. Table 4, Figure 6, and Table 5 collectively illustrate the marked variation in women's advancement to leadership roles by industry and field.

Intersectional Analysis

The intersectional analysis reveals pronounced disparities in leadership representation when gender is considered alongside race and ethnicity. Table 6 presents the distribution of C-suite and manager-level positions in the U.S. corporate sector in 2024, disaggregated by gender and race/ethnicity. Among C-suite executives, White men accounted for 62%, White women for 23%, men of color for 9%, and women of color for only 6%. At the manager level, White men represented 32%, White women 27%, men of color 17%, and women of color 24%.

Table 6
C-Suite and Manager-Level Representation by Gender and Race/Ethnicity (U.S., 2024)

Group	C-Suite (%)	Manager (%)
White men	62	32
White women	23	27
Men of color	9	17
Women of color	6	24

Source: LeanIn.Org & McKinsey & Company, 2024

Figure 7 provides a pipeline or stacked bar visualization of women of color as a percentage of the leadership pipeline across corporate levels in the United States for 2024. The data illustrate a persistent decline in representation for women of color at each successive stage of advancement, with the lowest proportions observed at the C-suite level.

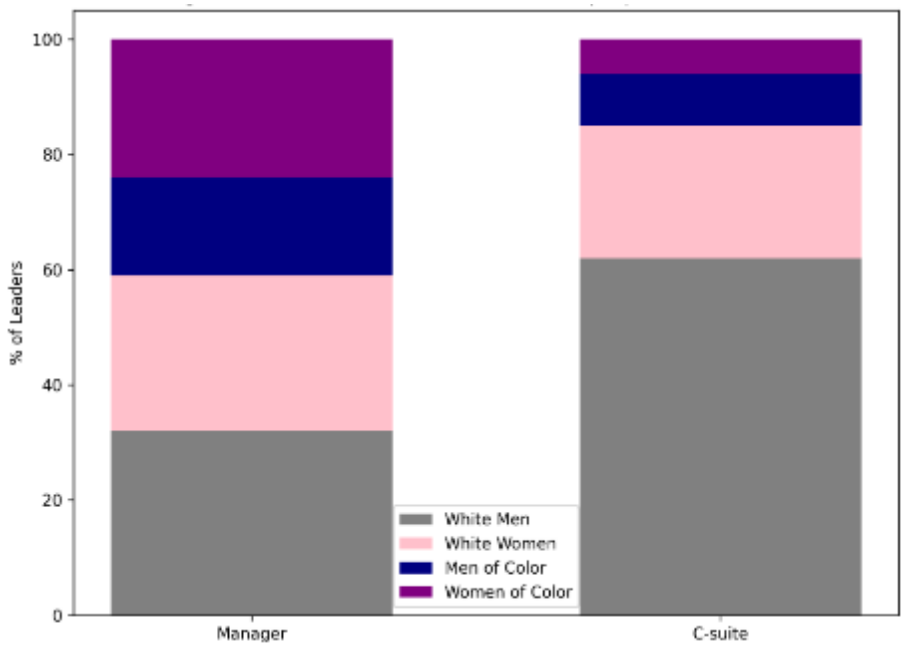

Figure 7. Women of Color as % of Leadership Pipeline, U.S. (2024)

Comparable patterns were observed in the public sector, where women of color comprised less than 10% of federal Senior Executive Service (SES) roles and less than 5% of STEM leadership positions. In academia, women of color held fewer than 5% of department chair positions, and in orthopaedic surgery leadership, under 1%. International data, though more limited, indicated similar trends, with ethnic minority women less likely than White women or minority men to reach senior or executive positions.

Table 6 and Figure 7 collectively highlight that intersectional gaps are widest at the highest organizational levels, and that women of color are particularly underrepresented in senior leadership roles across sectors.

Progress and Gaps: Change Over Time

Longitudinal analysis demonstrates that women's representation in senior and middle management has increased globally over the past decade, though the rate of progress has slowed in recent years. As shown in Figure 8, the global average share of women in senior and middle management rose from approximately 24% in 2010 to 27.5% in 2023 (ILO), and to 31.7% in 2024 (WEF). The upward trend was most notable from 2010 to 2020, with progress plateauing since 2020.

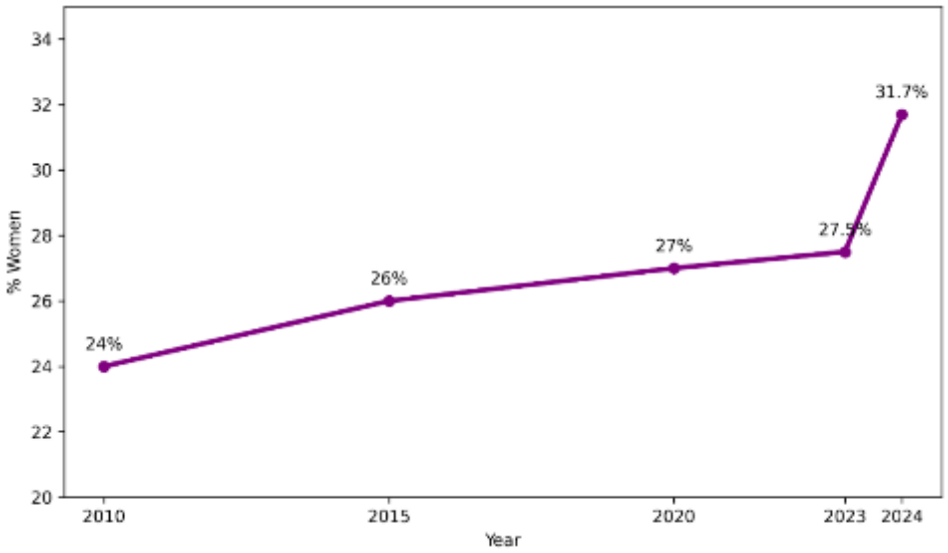

Figure 8. Global Trend in Women's Share of Senior/Middle Management (2010–2024)

In the United States, Figure 9 displays the longitudinal patterns in the private sector from 2010 to 2023. Women's share of Executive/Senior-Level Officials & Managers increased from 28% in 2010 to 34.5% in 2023 (EEOC EEO-1 data). Similarly, in the corporate sector, the proportion of women in C-suite positions rose from 17% in 2015 to 29% in 2024 (LeanIn.Org & McKinsey & Company).

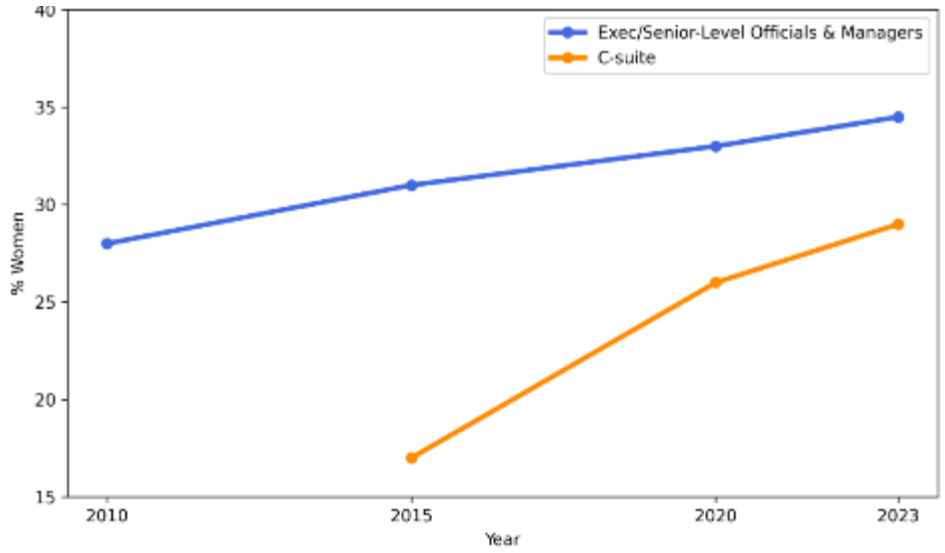

Figure 9. U.S. Private Sector: Women in Senior Management, 2010–2023

For the European Union, Figure 10 presents multi-line trends for the EU average and selected countries. The EU average increased from 29% in 2010 to 35.2% in 2023, with the fastest gains observed in the Nordic countries. However, several Southern and Eastern European countries remained below 30% throughout the period.

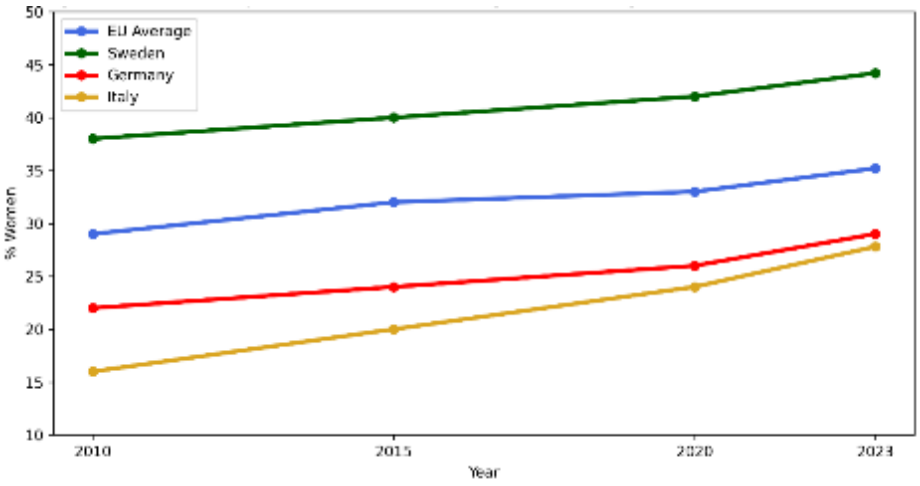

Figure 10. Women's Representation in Senior Management—EU Average and Select Countries, 2010–2023

Table 7 summarizes the change in women's share of leadership roles in selected regions and sectors between 2010 and 2024. The largest absolute gains were observed in the U.S. C-suite (from 17% to 29%) and in healthcare leadership (from 44% to 55%), while smaller increases were noted in tech and STEM fields. The data also indicate that the most significant gains occurred prior to 2020, with subsequent years characterized by stagnation or minimal growth.

Table 7
Change in Women's Share of Leadership Roles, Selected Regions/Sectors (2010-2024)

Region/Sector	2010 (%)	2020 (%)	2024 (%)	Change (2010–2024)
Global (ILO/WEF)	24	27	31.7	+7.7
U.S. C-suite	17	26	29	+12
EU Average	29	33	35.2	+6.2
Healthcare (U.S.)	44	51	55	+11
Tech (U.S. Corp.)	11	15	18	+7

Overall, Figures 8, 9, 10, and Table 7 collectively show that while progress has been made in increasing women's representation in leadership roles globally and within specific regions and sectors, the pace of change has slowed, and persistent gaps remain, particularly in high-status sectors and at the highest organizational levels.

Discussion

This study provides robust evidence that, despite decades of advocacy and incremental policy progress, significant gender gaps in organizational leadership remain entrenched across industries, regions, and especially at the highest levels of management. These findings align with the latest global research, which consistently identifies persistent disparities in women's advancement to senior and executive positions, even in countries widely recognized as leaders in gender equity such as Iceland and across Europe (Óladóttir & Christiansen, 2025). Sectoral patterns are evident: women are best represented in leadership within health care, education, and public administration, but remain significantly underrepresented in technology, finance, manufacturing, and STEM fields, a gap mirrored in emerging digital industries worldwide (Mousa et al., 2022; Mishra, 2021; Cadena, 2020).

A key contribution of this research is the industry-level granularity it provides, supporting evidence that sectoral cultures, occupational segregation, and the persistence of "glass cliffs" continue to hinder equitable advancement (Óladóttir & Christiansen, 2025; Rippon, 2023). Our findings also reinforce contemporary explanations for the gender leadership gap, which emphasize structural, organizational, and cultural factors over individual-level "deficits." Research in neuroscience and organizational behavior demonstrates that negative workplace climates, exclusion from networks, and biased advancement criteria erode women's self-belief and sense of belonging, amplifying attrition at each stage of the pipeline (Rippon, 2023; Mousa et al., 2022).

Intersectional gaps are particularly concerning: women of color and other marginalized groups face steeper attrition and lower representation in senior and C-suite roles, a "double disadvantage" now well-documented in the literature and confirmed by our data (Mousa et al., 2022; Cheng et al., 2023). In STEM and emerging technology sectors, a shortage of visible role models, persistent stereotypes, and exclusion from high-visibility assignments and informal networks further reinforce gendered barriers (Mishra, 2021; Cadena, 2020).

Recent research shows that targeted organizational interventions can be effective, but only if embedded in broader structural reforms. In healthcare leadership, for example, meta-ethnographic reviews highlight the necessity of leadership commitment, accountability, and readiness for culture change as critical for advancing women to senior positions (Mousa et al., 2022). Succession planning, leadership development programs, and transparent advancement criteria have been identified as underutilized but promising strategies, particularly when supported by male allies and reinforced by external accountability mechanisms (Óladóttir & Christiansen, 2025; McCollum, 2024).

At the policy level, a growing evidence base supports the efficacy of quotas, pay transparency, wage equity audits, and affirmative action for accelerating change, although such interventions alone rarely resolve barriers at lower and middle management levels or address the underlying cultural and structural sources of bias (Morin, 2025; Heckbert, 2018; Saenz Wu et al., 2025). The literature also emphasizes the importance of early exposure, mentorship, and institutional support in STEM, as well as the role of male colleagues and organizational leaders as champions of diversity (Mousa et al., 2022; Mishra, 2021).

The persistence of these gaps has direct economic and social consequences, limiting organizational performance and innovation and reducing overall GDP growth (World Bank, 2024) as summarized in Óladóttir & Christiansen (2025) and Morin (2025). Thus, the case for closing the leadership gap is both an ethical and economic imperative.

This study's limitations, including reliance on secondary data and limited intersectional detail outside major economies, mirror broader gaps in the literature. Future research should prioritize mixed-methods and longitudinal analyses, expand intersectional data collection, and systematically evaluate the effectiveness of specific interventions across contexts (Óladóttir & Christiansen, 2025; Mousa et al., 2022).

In summary, our findings reinforce the urgency of coordinated, data-driven, and intersectional strategies to dismantle persistent barriers to women's advancement in

leadership. The ongoing challenge will be to translate evidence-based interventions into sustained organizational and societal change, ensuring that progress is both meaningful and durable.

Conclusion

This study provides a comprehensive industry-level analysis of women's representation in organizational leadership across regions and sectors. The results underscore the persistence of gender gaps at the highest levels of management, with especially wide disparities in STEM, technology, and finance, and intersectional disadvantages for women of color and other marginalized groups. Even in countries recognized for their progress on gender equality, women remain underrepresented in executive roles, echoing recent global evidence (Óladóttir & Christiansen, 2025; Mousa et al., 2022).

Our findings affirm that organizational culture, occupational segregation, and structural barriers, including exclusion from informal networks and biases in advancement, are major impediments to gender parity in leadership (Rippon, 2023). Evidence from recent literature highlights that the most effective interventions are those embedded within broader, systemic reforms: transparent advancement criteria, leadership development, succession planning, and policy measures such as quotas and pay transparency can accelerate change when sustained by leadership commitment and organizational accountability (Mousa et al., 2022; Saenz Wu et al., 2025).

Future research should prioritize intersectional, longitudinal, and mixed-methods approaches to further elucidate how sectoral and cultural dynamics shape women's leadership trajectories. There remains a need to rigorously evaluate the long-term impact of organizational and policy interventions, especially in under-studied sectors and regions, while ensuring data collection encompasses a broader range of identities and experiences.

In sum, closing the gender leadership gap will require coordinated, evidence-based strategies at every level of organizations and society. Only by addressing both structural barriers and cultural norms can organizations fully leverage the leadership potential of all talent, driving equity, innovation, and sustainable development.

References

Bi, A., Fisher, N., Bletnitsky, N., Rao, N., Egol, K., & Karamitopoulos, M. (2021). Representation of Women in Academic Orthopaedic Leadership: Where Are We Now?. *Clinical Orthopaedics and Related Research*, 480, 45 - 56. https://doi.org/10.1097/CORR.0000000000001897.

Cadena, M. (2020). Gender job gaps and challenges in the digital economy: Findings from global governance entities. , *36*(67), 158-171. https://doi.org/10.25100/CDEA.V36I67.8767

Catalyst (2023). The Facts about Gender Representation. https://www.catalyst.org/insights/featured/gender-representation

Cheng, D., Suh, E., He, J., Kang, S., Does, S., Gallus, J., Lawson, M., Matz, S., Götz, F., Apfelbaum, E., & Norton, M. (2023). New Pathways to Understanding Barriers to Gender Equality. *Academy of Management Proceedings*. https://doi.org/10.5465/amproc.2023.14240symposium

European Institute for Gender Equality. (2023). Gender Statistics Database. https://eige.europa.eu/gender-statistics/dgs

Górska, M., & Burlakova, I. (2025). The role of women's leadership in business: Challenges and prospects. *Economics, Finance and Management Review*, *1*(21), 116–129. https://doi.org/10.36690/2674-5208-2025-1-116-129

Heckbert, L, A. (2018). Closing the Gender Gap in Corporate Advancement: Insights and Solutions from Behavioural Economics (July 6, 2018). Originally published in Windsor Yearbook of Access to Justice, 35 (2018) at 187-225 (open access)., Available at SSRN: https://ssrn.com/abstract=3352758

International Labour Organization (ILO). (2023a). Charting progress on the global goals and decent work. https://ilostat.ilo.org/blog/charting-progress-on-the-global-goals-and-decent-work/

International Labour Organization (ILO). (2023b). Women in leadership roles. https://www.ilo.org/bureau-employers-activities/areas-work/women-business-and-management/women-leadership-roles

Kreiss, D., & Adams, K. (2019). Navigating the brogrammers and the boys' club: Women's representation and experiences in political technology. *New Media & Society*, 21, 1967 - 1987. https://doi.org/10.1177/1461444819835573

Kyambade, M., Tushabe, M., & Namatovu, A. (2024). Work life balance and women representation in leadership positions in Ugandan public universities. *SN Social Sciences*, *4*(142). https://doi.org/10.1007/s43545-024-00947-0

LeanIn.Org, & McKinsey & Company. (2024). *Women in the Workplace 2024: The 10th Anniversary Report*. https://womenintheworkplace.com/

Mathews, E. (2021). Representational belonging in collections: A comparative study of leading trade publications in architecture. *Library Resources & Technical Services*, *65*(3). https://journals.ala.org/index.php/lrts/article/view/7486

McCollum, J. (2024). Why the leadership gender gap matters—and what organizations can do to close it. *Leader to Leader*, *2024*(112), 19-25. https://doi.org/10.1002/ltl.20809

Mishra, A. (2021). Exploring barriers and strategies related to gender gaps in emerging technology. *International Journal of Multidisciplinary Research and Growth Evaluation*, *2*(4): 877-88. https://doi.org/10.54660/.IJMRGE.2021.2.4-877-881

Morin, S. (2025). The Gender Pay Gap: A Persistent Socioeconomic Challenge. *SocioEconomic Challenges*, *9*(1), 162-174. https://doi.org/10.61093/sec.9(1).162-174.2025

Mousa, M., Skouteris, H., Boyle, J., Currie, G., Riach, K., & Teede, H. (2022). Factors that influence the implementation of organisational interventions for advancing women in healthcare leadership: A meta-ethnographic study. *eClinicalMedicine*, 51, 101514 . https://doi.org/10.1016/j.eclinm.2022.101514

Ngxongo, T. (2022). Women at the top: unlocking the full potential of women in leadership in the petroleum industry. Doctoral Dessertaion, University of KwaZulu-Natal, Durban. https://doi.org/10.29086/10413/21198

Nicholson, N. (2020). Rank and Representation: A Quantitative Analysis of Female Representation Within Entry Level Faculty Positions. *Advances in Social Sciences Research Journal*, *7*(12), 202–209. https://doi.org/10.14738/ASSRJ.712.9465

Nicholson, N. (2020). Rank and Representation: A Quantitative Analysis of Female Representation Within Entry Level Faculty Positions. *Advances in Social Sciences Research Journal*, *7*(12), 202–209. https://doi.org/10.14738/ASSRJ.712.9465

Nyoni, W. P., & He, C. (2019). Barriers and biases: Under-representation of women in top leadership positions in higher education in Tanzania. *International Journal of Academic Multidisciplinary Research (IJAMR), 3*(5), 20–25.

Óladóttir, Á., Christiansen, T., & Guðmundsdóttir, H. (2025). Succession Planning to Address the Gender Gap in Executive Positions: Insights from Iceland. *International Conference on Gender Research*, *8*(1). https://doi.org/10.34190/icgr.8.1.3372

Onalaja, A., & Otokiti, B. (2022). Women's Leadership in Marketing and Media: Overcoming Barriers and Creating Lasting Industry Impact. *International Journal of Social Science Exceptional Research*, *1*(1): 173-185. https://doi.org/10.54660/ijsser.2022.1.1.173-185

Prieto-Rios, S., & Lopez-Figueroa, J. (2024). Unveiling the Positive Influence of Women Leaders on Public Policy and Business Industries. *Journal of Student Research*, *13*(2). https://doi.org/10.47611/jsrhs.v13i2.6766

Prince, N. (2022). Women of Colour and Black Women Leaders are Underrepresented in Architectural Firms Featured in Key Trade Publications. *Evidence Based Library and Information Practice*, *17*(3). https://doi.org/10.18438/eblip30180

Rippon, G. (2023). Mind the gender gap: The social neuroscience of belonging. *Frontiers in Human Neuroscience, 17*,1094830. https://doi.org/10.3389/fnhum.2023.1094830

Saenz, C., Wu, S., Uddaraju, V., Nafei, A., & Liu, Y. (2025). Advancing Gender Equality in Executive Leadership: The Role of Cultural Norms and Organizational Practices in Sustainable Development—A Case Study of Taiwan and Guatemala. *Sustainability*, *17*(7), 3183. https://doi.org/10.3390/su17073183

U.S. Equal Employment Opportunity Commission. (2023). Special topics annual report: Women in STEM. https://www.eeoc.gov/special-topics-annual-report-women-stem

U.S. Equal Employment Opportunity Commission. (2024). EEO-1 Employer Information Report statistics. https://www.eeoc.gov/data/eeo-1-employer-information-report-statistics

U.S. Equal Employment Opportunity Commission. (2024). EEO-4 State and Local Government Information Report statistics. https://www.eeoc.gov/data/eeo-4-state-and-local-government-information-report-statistics

U.S. Equal Employment Opportunity Commission. (2024). Federal sector reports. https://www.eeoc.gov/federal-sector/reports

World Economic Forum. (2024). *Global Gender Gap Report 2024*. https://www.weforum.org/publications/gender-gap-report-2024/