

Navigating Gender Inclusion Dynamics: A Review of Women's Representation and Workplace Experiences in the Built Environment Professions

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Abstract. Gender inclusion in built environment guides equitable participation in planning, design, and implementation of project outcomes, prompting development organizations and donors to adopt this framework in project delivery. This study presents a review of gender dynamics in built environment professions, focusing on representation and workplace experiences. It synthesizes existing literature to assess the representation of men and women across various disciplines in the built environment and examines gender-specific workplace experiences, including barriers to entry and retention. The findings reveal that women are underrepresented, constituting approximately 20% of the workforce due to socio-cultural barriers such as traditional gender roles and stereotypes that suggest technical roles are more suitable for men who are likely to be inclined to STEM training. Furthermore, organisational culture often makes it difficult for many women to balance their family responsibilities with their careers. Additionally, the results indicate that women experience less favourable workplace conditions than their male colleagues, with a prevailing macho culture leading to bias and discrimination that negatively impacts their career advancement. Given the changing climate of workplace and training processes for professionals, we recommend that stakeholders (in both training and practice) of the built environment should promote gender inclusion. Gender-related concepts should be mainstreamed into our training, designing and practices of the built environment especially in the African context where there is limited empirical evidences.

Keywords: Career advancement, gender inequality, participation rates, organisational culture, Built Environment.

1. Introduction

The built environment (BUE) plays a crucial role in shaping our communities, influencing everything from urban planning and infrastructure to architecture, environmental management and sustainability. As a multidisciplinary field encompassing various disciplines such as Architecture, Engineering, Urban Planning, Estate Management, Quantity Surveying and Construction, the BUE is essential for creating and managing spaces to meet societal needs. However, despite its importance, the BUE sector has been historically characterized by gender inequalities, with women and other marginalized groups often underrepresented in both participation and leadership roles. This lack of representation hampers workplace integration, limits career growth opportunities, and results in inadequate support systems, collectively hindering professional advancement (Ntamarik & Isaiah, 2022; Khor et al., 2020). Gender inclusion enhances workforce diversity, promotes fairness and equity, and supports long-term organizational sustainability by fostering innovation, employee engagement, and competitiveness (Chikwe et al., 2024). In the built environment, gender inclusion guides equitable participation in planning, design, and implementation of project, prompting

development organizations and donors to adopt this framework for project delivery. When men, women, and marginalized groups participate in planning, design and implementation, projects better address community needs. This inclusive approach improves collaboration, communication, and overall outcomes, promoting social justice.

Gender is a sociocultural delineated masculine and feminine roles, which affect societal structures and behaviours, impacting social growth and empowerment. It encompasses three perspectives: the distinct experiences of men and women, how societal norms foster inclusion and exclusion, and how behaviours associated with each gender are shaped (WHO, 2024). Gender dynamics within the BUE are influenced by a complex interplay of social, cultural, and organisational factors. Studies indicate that women constitute a significantly smaller proportion of professionals in these fields compared to their male counterparts (Norberg & Johansson, 2021; Mosimanegape & Kola, 2021; Enwerekwe & Mangden, 2019). For instance, while women may enrol in architecture and engineering programs in equal numbers to men, their retention rates in the profession often decline due to various barriers, including bias, stereotyping, societal expectations and challenges in achieving work-life balance (Haarhoff et al., 2020). This phenomenon not only impacts individual career trajectories but also limits the diversity of perspectives and ideas that are crucial for innovation and problem-solving in the built environment.

Moreover, workplace experiences for women in the built environment (BUE) often differ significantly from those of their male peers. Norberg & Johansson (2021) noted issues such as gender stereotyping, bias, harassment, and the impact of unconscious bias on hiring decisions, promotions and access to training opportunities. Women may face assumptions about their abilities, experience sexism, and lack role models or mentors, which complicates their career navigation. Additionally, the demanding nature of BUE professions can hinder their ability to balance work and family responsibilities. These challenges contribute to limited career advancement and high turnover rates among female professionals, perpetuating underrepresentation. Understanding these dynamics is crucial for developing effective strategies to promote gender equality in the BUE field. This study reviews existing literature on gender participation and workplace experiences in built environment professional practice. Its specific objectives are to:

- i. assess the representation of women across various disciplines in the built environment;
- ii. examine women's workplace experiences in the built environment; and
- iii. explore gender equality interventions.

This study aims to bring to the fore the urgent need for policymakers, educators, and practitioners to promote a more inclusive and equitable built environment sector. As global awareness of gender equality increases, addressing these issues will benefit not only women but also enhance the overall effectiveness and innovation within built environment professions.

2. Methods

This study employed a qualitative systematic review to explore gender dynamics in participation and workplace experiences within the built environment profession. A comprehensive search was conducted across scholarly databases (JSTOR, Scopus, Web of Science, and Google Scholar) using the keywords "Participation in Built Environment," "Discrimination in the Workplace," "Gender Stereotypes," "Technical Fields," "Gender Inclusion in Construction," and "Gender Disparity." This search yielded 73 articles before

screening and exclusions. Eleven duplicates were removed, leaving 62 articles for title and abstract screening, during which 32 were excluded for not meeting the inclusion criteria. The remaining 30 articles were subjected to full-text assessment based on predefined criteria, including peer-reviewed status, publication in English between 2006 and 2024, focus on gender dynamics in built environment professions, and relevance to participation or workplace experiences. Six articles were further excluded for limited relevance (insufficient gender-based analysis and lacking relevance to professional practice), resulting in 24 studies that met all criteria. These articles were then analysed through narrative synthesis and thematic analysis to identify key themes on women's participation in built environment professions and their workplace experiences, including issues of bias, discrimination, limited career advancement, and work–life balance

3. Results and Discussion

3.1 Women's Representation in the Built Environment

The built environment professions exhibit significant gender imbalance. Despite an increasing awareness of gender equity in various professions and the growing number of women graduating with degrees in fields such as architecture, construction and engineering, their representation in the built environment professional membership remains disproportionately low compared to their male counterparts globally. For instance, women make up just 17 per cent of the global Royal Institution of Chartered Surveyors (RICS) membership (Norberg & Johansson). Studies have found that women are underrepresented in architecture, engineering and construction firms, constituting about 20 per cent of architects in the United States, 31 per cent in the United Kingdom and 23% in Australia, with fewer than 10% in senior roles (Heydari et al., 2024; Hickey & Cui 2020). Women make up roughly 15% of the engineering workforce in across the United States and 13.4% globally (Fouad & Singh, 2019). In South Africa, women comprise only 20% of architects, 12% of quantity surveyors, 2% of civil engineers, and 0.6% of construction managers. Professional associations in Nigeria also reflect a low ratio of female membership (Enwerekowe, 2019; Osubor, 2017), although specific statistics are often lacking. Current Nigerian studies found that women account for just 23% and 20% of the architects and estate surveyors and valuers, respectively (Chickeme et al., 2023; Oladapo, 2017).

The reviewed literature consistently demonstrates a persistent gender imbalance across built environment professions globally, despite increased female enrolment and graduation in related academic programmes. Women's representation within professional bodies and industry practice remains disproportionately low, particularly in senior and leadership positions. Evidence from professional associations such as the Royal Institution of Chartered Surveyors and national labour statistics across the United States, the United Kingdom, Australia, South Africa, and Nigeria highlights a recurring pattern of women's underrepresentation that intensifies at higher career levels.

This pronounced gender gap reflects women's limited visibility and participation within the profession and points to broader inequalities in access to professional opportunities and influence. The scarcity of women in professional associations and leadership roles also reduces the availability of female role models, which may discourage younger women from pursuing or sustaining careers in the built environment. Moreover, women's underrepresentation constrains diversity of perspectives and experiences within practice, with implications for innovation and the sector's capacity to respond effectively to the needs of diverse users and communities. Therefore, it is essential to address this imbalance, not only to improve women's

representation and career outcomes but also to strengthen equity, promote inclusion, and enhance the professional landscape for future generations, supporting the long-term sustainability of the built environment professions.

3.2 Women's Workplace Experiences in the Built Environment

- i. **Gender Stereotyping, Bias and Harassment:** Women often experience higher levels of discrimination and harassment, with gender stereotypes affecting perceptions of competence (Oladapo, 2017). Unconscious bias can hinder hiring and promotion, creating a biased system where women are frequently judged by different standards. For instance, in the U.K., women's errors are often attributed to their gender rather than individual circumstances, reinforcing negative stereotypes (Dainty & Lingard, 2006). Women in built environment professions experience sexism and harassment in the workplace, enduring inappropriate comments, unwelcome advances, and bullying from colleagues and supervisors. Women in New Zealand's construction industry report experiences of hostile sexism, which influence their work morale, sense of professional belonging, and overall wellbeing (Rotimi et al., 2023). Such discrimination undermines their confidence and self-esteem, leading to self-doubt and a tendency to adopt male attitudes to be accepted in the industry or leave their roles (Navarro-Astor et al., 2017).
- ii. **Career Advancement Opportunities:** Women's career trajectories are shaped by experiences of pay disparities and limited access to high-profile projects. Sang et al. (2014) report that women in architecture often describe experiences of exclusion from informal professional networks and fewer chances for promotion. These factors contribute to differences in experience and visibility within the industry, as women are less likely to be assigned to roles considered crucial for advancement. Their performance is frequently misjudged compared to their male counterparts, resulting in many being relegated to clerical or administrative positions (Dainty & Lingard, 2006).

The "glass ceiling" effect is prevalent, with women less likely to attain leadership roles (Eagly & Carli, 2007). For instance, studies indicate that women in the construction industry experience higher levels of physical exhaustion and emotional intelligence but are often overlooked for leadership positions due to implicit biases (Priya & Anandh, 2024; Arroyo et al., 2018). Similarly, female engineers are perceived as less competent than their male counterparts, leading to fewer opportunities for projects or leadership roles (Xalxo, 2023). In architecture, despite equal representation at entry levels, women encounter a "glass ceiling" that restricts their progression to senior positions (McFayden & Matthewson, 2023).

Furthermore, women in the built environment often have limited access to training, networking and mentorship opportunities, hindering their skill development. Male-dominated networks frequently exclude women, restricting their access to valuable information and mentorship (Powel et al., 2009). The lack of female role models in senior positions further impedes women's professional growth, depriving them of mentors who could inspire and motivate them. Studies indicate that women leaders in the Architecture, Engineering, and Construction (AEC) sector attribute their success to early career mentors and supportive networks (Hickey & Cui, 2024; Hickey & Cui, 2023). Additionally, studies show that women with access to mentorship are more

likely to secure promotions and experience less discrimination in the workplace (Esteban-Gonzalo et al., 2020).

- iii. **Work-Life Balance:** The demanding nature of professions in the built environment often clashes with family responsibilities, creating significant challenges for women. For example, a study of women civil engineers in the UK found that they frequently struggle to balance their roles as corporate workers with their personal responsibilities as caregivers (Watts, 2009). This conflict is intensified by long working hours and inflexible arrangements common in the industry. Additionally, women often bear a disproportionate burden of household chores and childcare, hindering their career advancement. Research indicates that heavy workloads significantly impact family responsibilities, with women in construction often needing to make alternative childcare and household arrangements (Tunji-Olayeni et al., 2021). Such work-family conflicts can lead to the "motherhood penalty," where mothers are perceived as less committed, negatively affecting their professional quality of life - health, sense of belonging, and job satisfaction (Soundarya Priya & Anandh, 2024).
- iv. **Health and Well-Being:** Workers in the built environment often face stress, anxiety, and emotional fatigue, with studies indicating female workers experience higher levels of stress and burnout compared to their male counterparts (Arditi et al., 2013). Earlier studies in UK and Australia indicate that female architects and construction workers report greater emotional fatigue and work-family conflict, impacting their overall well-being (Sang et al., 2009; Lingard & Francis, 2006).
- v. **Sense of Belonging:** A sense of belonging encompasses the feeling of "fitting in" and being valued, marked by acceptance, worth, and support from others within a community, profession, or organization (Deb & Kota, 2021). Many female professionals experience both benevolent and hostile sexism, resulting in hyper visibility and diminished feelings of belonging (Armstrong-Barker et al., 2024). In the Australian construction industry, women often feel excluded from informal networks and decision-making processes, negatively impacting their integration and sense of belonging (Lingard & Francis, 2006). Similarly, female construction professionals in the UK have reported a "chilly climate" that complicates their integration into a male-centric environment (Powell et al., 2009). The absence of support systems and role models further perpetuates feelings of unworthiness, discouraging women from pursuing careers in these fields (Dainty & Lingard, 2006).
- vi. **Job Satisfaction and Retention:** Factors influencing job satisfaction include professional engagement, opportunities for development, and workplace culture (Memon et al., 2023). Women often report lower job satisfaction than men, leading to higher turnover rates. For instance, a study found that 70% of women who graduated with engineering degrees in South Africa left the profession within five years due to lack of professional engagement and limited advancement opportunities. This trend is echoed globally, with women exiting architecture and engineering roles at a disproportionate rate compared to men (Chickeme et al., 2023). Turkish female construction workers were less satisfied with their job opportunities and work-life balance (Akpınar-Sposito, 2013). Women in the UK construction industry were more

likely to be dissatisfied with their work environment and limited career advancement (Dainty & Lingard, 2006).

From the foregoing, women's entry into and continued participation in built environment professions are shaped by gendered experiences embedded within socio-cultural and institutional contexts. Prevailing norms around gender roles often position technical work as masculine, influencing workplace cultures in ways that women describe as exclusionary and, at times, discriminatory. Organisational practices, including recruitment and career development processes, are frequently experienced as favouring men, with women reporting limited access to mentorship, professional networks, and advancement opportunities.

Women also describe persistent pay differentials and experiences of work–family tension arising from competing professional and caregiving responsibilities, particularly in contexts with limited flexible working arrangements. These experiences contribute to feelings of isolation, undervaluation, and a reduced sense of belonging within historically male-dominated environments, influencing women's retention, wellbeing, job satisfaction, and career progression in the built environment sector. Over time, these conditions influence women's career decisions, with some choosing to leave the profession in search of more supportive work environments, contributing to a “leaky bucket” effect in which women enter the built environment sector but later exit due to unfavourable workplace experiences. As a result, the industry continues to struggle with retention, particularly among women with caregiving responsibilities, who often seek employment in sectors that better accommodate their needs.

3.3 Gender Equality Initiatives

- i. **Structural interventions:** These are administrative strategies that reshape organisational systems to reduce gender bias. According to Tvorogova (2021), they include achieving a “critical mass” of women, often defined as over 10% or at least five women, which facilitates entry into male-dominated fields and improves workplace integration. Tvorogova (2021) also suggests that greater gender diversity on organisational boards has also been linked to stronger adoption of gender-equality policies, though similar effects are less evident in senior management teams. Shola & Abdulazeez (2020) indicated that professional bodies can support inclusion by creating women-only workforce databases to enable targeted recruitment in construction and related fields. Baker et al. (2021) reported gender quotas as another approach, noting that they can enhance women's career progression and reduce isolation or harassment, but they remain controversial due to concerns about merit-based selection. Additionally, pay transparency is a key structural measure; public disclosure of gender pay gaps increases accountability, reduces wage disparities, and promotes the recruitment and advancement of women. Manesh et al. (2020) reported that closing the gender pay gap in construction could attract more women in the United States of America.
- ii. **Training interventions** aim to raise awareness of gender equality and build employees' communication and collaboration skills. Wang et al. (2021) posited that apprenticeship programmes introduce participants to the physical, psychological, and business demands of work, while targeted workshops such as self-esteem and conflict-resolution training enhance job satisfaction and resilience for women in male-

dominated fields. Shatilova et al. (2021) and Lwamba et al. (2022) found that gender-focused training increases women's participation, improves cross-gender collaboration, reduces workplace barriers, and strengthens employee engagement.

- iii. **Mentorship, support initiatives, and open communication** are designed to help women enter, navigate, and succeed in male-dominated workplaces. According to Rosa et al. (2017), mentoring programs can aid women's advancement, noting that female mentors enhance perceptions of women in Australia's construction industry. Hajikazemi et al. (2024) however, found that support networks have proven highly effective. Workplace communities, professional groups, and trade associations effectively connect women with role models who provide guidance, help navigate workplace culture, and offer career development insights. Hajikazemi et al. (2024) further reported that open communication channels between managers and employees further promote trust, allow concerns about harassment or safety to be raised, and foster a more inclusive work environment.
- iv. **Work-life balance initiatives** aim to align employees' personal and professional responsibilities. Tvorogova (2021) and Hajikazemi et al. (2024) reported that flexible scheduling allows staff to manage tasks around personal needs, though some resist changes to traditional routines. Work rotation broadens skills and advancement opportunities by exposing employees to diverse tasks, while job crafting helps reduce stress and prevent burnout. Compensated parental leave and childcare support promote gender equality, but effectiveness is debated. Persistent assumptions about caregiving roles and perceptions of added costs can limit uptake, and mandated maternity leave may inadvertently discourage hiring women, complicating efforts to achieve workplace balance and equality.
- v. **Signalling interventions** help organizations show their commitment to equal opportunities for women by valuing their contributions and supporting professional development. According to Hajikazemi et al. (2024), gender-focused HR recruitment initiatives, such as setting clear targets and addressing biases, increase female representation by promoting fairness in hiring, promotion, and retention are a key component of this approach. In addition, gender-specific work-life balance programs like paid parental leave and flexible arrangements signal organizational support for employees' personal needs.
- vi. **Health and safety support programs** address physical and psychological challenges, particularly for women in the construction industry. Studies show that dedicated safety supervision for women helps protect them from workplace risks, while clear reporting channels ensure concerns are taken seriously. Also, providing women-specific PPE and facilities enhances comfort, reduces stigma, and promotes safety, whereas poorly fitting equipment and inadequate facilities hinder full participation and compromise safety (Lwamba et al., 2022; Guthridge et al., 2022; Pamidimukkala & Kermanshachi, 2022; Rasheed et al., 2020).

The review identifies interventions that enhance women's participation and retention in male-dominated built environment workplaces. **Structural measures**, such as achieving a critical

mass of women, gender quotas, board diversity, and pay transparency, reduce bias, improve integration, and increase accountability in recruitment and advancement. **Training programs**, including apprenticeships, self-esteem workshops, and conflict-resolution sessions, strengthen skills, resilience, and cross-gender collaboration, improving engagement and reducing barriers. Mentorship and support initiatives facilitate navigation of male-dominated workplaces, with broader support networks and professional communities often having a greater impact than mentoring alone. **Work-life balance initiatives**, such as flexible scheduling, job rotation, and parental leave, align personal and professional responsibilities but may face resistance due to traditional role expectations. **Signalling practices**, including gender-focused HR policies and visible support programs, demonstrate organizational commitment and encourage retention. Finally, health and safety programs, including women-specific PPE, dedicated safety supervision, and clear reporting mechanisms, address both physical and psychological challenges, enabling safer and more inclusive participation. The findings suggest that multifaceted interventions, structural, skill-building, support-oriented, and safety-focused are essential for promoting gender equality, improving retention, and fostering inclusive workplace environments.

4. Implications for Professional Practices in the Built Environment

This study holds significant implications for professional practices across different disciplines of the built environment. The findings underscore the necessity for a fundamental shift in societal, educational, and organizational perspectives on women in this field. Stakeholders in both training and practice within the built environment must actively promote the creation of an inclusive environment that encourages women's participation in built environment professions. This involves enacting policy changes to establish gender-neutral practices, remove discriminatory barriers, and build supportive structures that enhance representation and a sense of belonging while ensuring equal access to relevant opportunities. The implications of this study include the following:

- i. *Addressing Gender Imbalance:* The significant gender imbalance in built environment professions necessitates strategic initiatives to enhance women's representation. Organizations should focus on targeted recruitment efforts that specifically aim to attract women into architecture, engineering, and construction roles. By showcasing diverse female role models and promoting success stories, organizations can challenge stereotypes and encourage more women to enter these fields.
- ii. *Creating Supportive Work Environments:* To improve workplace experiences for women, organizations must foster inclusive cultures that actively combat discrimination and harassment. Implementing anti-discrimination policies, providing training on unconscious bias, and promoting zero-tolerance policies for harassment are essential. Creating a welcoming atmosphere is crucial for improving retention rates and job satisfaction among women.
- iii. *Enhancing Career Advancement Opportunities:* Organizations should develop clear pathways for career advancement for women, ensuring equal access to high-profile projects and leadership roles. By implementing mentorship and sponsorship programs, companies can connect women with experienced professionals who can provide guidance and support. Additionally, training programs should be established to enhance skills and prepare women for leadership positions.

- iv. *Promoting Work-Life Balance:* Given the demanding nature of built environment jobs, organizations need to adopt flexible work arrangements that accommodate family responsibilities. By offering options such as remote work, flexible hours, and parental leave, employers can help women balance their professional and personal lives, reducing the "motherhood penalty" and supporting career progression.
- v. *Cultivating Inclusive Professional Networks:* Building supportive professional networks that include women is vital for fostering a sense of belonging and community. Organizations should encourage participation in networking events and create platforms for women to connect and share experiences. This can help mitigate feelings of isolation and enhance professional growth.
- vi. *Investing in Awareness and Education:* Increasing awareness of gender disparities and the importance of gender equity in the built environment is crucial. Organizations and policymakers should invest in educational programs that promote STEM education for girls and challenge cultural norms that discourage women from pursuing careers in these fields.
- vii. *Monitoring and Evaluating Progress:* Establishing metrics to monitor the effectiveness of gender equality initiatives is essential. Organizations should regularly evaluate their practices and outcomes related to gender representation, career advancement, and workplace satisfaction. This data will be instrumental in identifying areas for improvement and ensuring accountability.

5. Conclusion

This study highlights ongoing gender inequality in the built environment, particularly in representation and workplace experiences. Women face challenges like gender stereotypes, lack of mentorship, and caregiving responsibilities, hindering their career advancement. However, existing literature mainly focuses on Western contexts, with limited insights into developing regions such as Africa, Southeast Asia, and the Middle East.

To promote gender inclusion, stakeholders in training and practice must integrate gender concepts into all aspects of the built environment. Targeted strategies, including mentorship programs, flexible work arrangements, training on unconscious bias, and gender-sensitive policies, can foster a diverse workforce. This approach is especially crucial in Africa, where empirical evidence on gender inclusion is scarce.

Mainstreaming gender considerations involves revising curricula, implementing supportive mentorship programs, and encouraging inclusive decision-making. Continuous dialogue about the importance of gender inclusion and sharing best practices can help dismantle barriers and enhance the quality and sustainability of the built environment. This study contributes to the literature by emphasizing how gender dynamics affect women's participation and opportunities, underscoring the need for more empirical research on gender representation and workplace experiences in Africa's built environment.

REFERENCES

- Adeyemi, A.Y., Ojo, S. O., Aina, O. O. & Olanipekun, E. A. (2006). Empirical Evidence of Women Under-representation in the Construction Industry in Nigeria. *Women in Management Review* 21 (7), 567-577.
- Akpınar-Sposito, C. (2013). Career barriers for women executives and the Glass Ceiling Syndrome: the case study comparison between French and Turkish women executives. *Procedia-Social and Behavioral Sciences*, 75, 488-497.
- Arditi, D., Gluch, P., & Holmdahl, M. (2013). Managerial competencies of female and male managers in the Swedish construction industry. *Construction Management and Economics*, 31(9), 979-990.
- Armstrong-Barker, E., Partridge, B., & Staniforth, L. (2024). Working in a man's world—An IPA study of women's lived experience in the UK construction industry. *Psychology of Women and Equalities Section Review*.
- Baker, M. Ali, M. & French, E. (2021). Leadership Diversity and its Influence on Equality Initiatives and Performance: Insights for Construction Management. *Journal of Construction Engineering and Management* 147(10), 04021123.
- Chikwe, C. F., Dagunduro, A. O., Ajuwon, O. A., & Kuteesa, K. N. (2024). Organizational development and gender inclusivity: a framework for sustainable change. *International Journal of Engineering Inventions*, 13(9), 284-291.
- Dainty, A. R., & Lingard, H. (2006). Indirect discrimination in construction organizations and the impact on women's careers. *Journal of Management in Engineering*, 22(3), 108- 118. Doi: 10.1061/(ASCE)0742-597X(2006)22:3:108"
- Debs, L. & Kota, B. R., (2021). Gender Differences in Construction Management Students' Sense of Belonging. American Society for Engineering Education, virtual, July 26-29.
- Enwerekwe E. O. & Mangden, D. D. (2019). Why does Female Underrepresentation Persist in Nigerian Architecture? *Civil Engineering and Architecture* 7(4), 89-98. DOI: 10.13189/cea.2019.070401.
- Esteban-Gonzalo, S., Sik Ying Ho, P., Aparicio-García, M. E., & Esteban-Gonzalo, L. (2020). Understanding the meaning of conformity to feminine norms in lifestyle habits and health: A cluster analysis. *International Journal of Environmental Research and Public Health*, 17(4), 1370. <https://doi.org/10.3390/ijerph17041370>
- Fouad, N. A., Chang, W. H., Wan, M., & Singh, R. (2017). Women's reasons for leaving the Engineering field. *Frontiers in psychology*, 8, 875.
- Guthridge, M., Kirkman, M., Penovic, T. & Giummarra, M. J. (2022). Promoting Gender Equality: A Systematic Review of Interventions. *Social Justice Research* 35(3), 318-343.
- Haaroff, E., Boarin, P., & Allen, N. (2020). *Architecture Graduate Progression to Practice in New Zealand, 1987-2018*. School of Architecture and Planning, University of Auckland.

- Hajikazemi, S., Locatelli, G. & Lawrence, K. (2024). Developing Effective Interventions for Gender Equality in UK Construction Project Organisations.
- Heydari, M. H., Shojaei, A., Naderi, H., & Iorio, J. (2024). Paving the Way for Progress: A Systematic Literature Review on Diversity, Equity, and Inclusion in the AEC Industry. *Journal of Management in Engineering*, 40(3), 03124001.
- Hickey, P. J., & Cui, Q. (2020). Gender Diversity in US Construction Industry Leader. *Journal of Management in Engineering*, 36(5), 04020069. Doi: 10.1061/(asce)me.1943-5479.0000838 10.1061/(asce)me.1943-5479.0000838.
- Khor, S. C., Sanmargaraja, S., & Wai, S. H. (2020). Male perspectives on female performance in the real estate industry of Malaysia. *International Journal of Social Science Research*, 2(2), 23-31.
- Lingard, H., & Francis, V. (2006). Does a supportive work environment moderate the relationship between work-family conflict and burnout among construction professionals? *Construction Management and Economics*, 24(2), 185-196.
- Lwamba, E., Shisler, S., Ridlehoover, W., Kupfer, M., Tshabalala, N., Nduku, P., Langer, L., Grant, S., Sonnenfeld, A., Anda, D., Eysers, J. & Snilstveit, B. (2022). Strengthening Women's Empowerment and Gender Equality in Fragile Contexts towards Peaceful and Inclusive Societies: A Systematic Review and Meta-Analysis. *Campbell Systematic Reviews* 18(1), e1214.
- Manesh, S. N., Choi, J. O., Shrestha, B. K., Lim, J., & Shrestha, P. P. (2020). Spatial analysis of the gender wage gap in architecture, civil engineering, and construction occupations in the United States. *Journal of Management in Engineering*, 36(4), 04020023.
- Memon, A. H., Khahro, S. H., Memon, N. A., Memon, Z. A., & Mustafa, A. (2023). Relationship between job satisfaction and employee performance in the construction industry of Pakistan. *Sustainability*, 15(11), 8699. <https://doi.org/10.3390/su15118699>.
- Mosimanegape, N. T., & Ijasan, K. (2022, January). Creating an inclusive built environment: achieving gender equality in the real estate industry. In *Procs 21st Annual African Real Estate Society (AFRES) Conference* 147-163.
- Navarro-Astor, E., Román-Onsalo, M., & Infante-Perea, M. (2017). Women's career development in the construction industry across 15 years: Main barriers. *Journal of Engineering, Design and Technology*, 15(2), 199-221. <https://doi.org/10.1108/JEDT-07-2016-0046>.
- Norberg, C., & Johansson, M. (2021). "Women and "ideal" women": The representation of women in the construction industry. *Gender Issues*, 38(1), 1-24. <https://doi.org/10.1007/s12147-020-09257-0>.
- Ntamark, J. J., & Asuquo, I. P. (2022). Issues affecting gendered roles of professionals in the built environment in Nigeria. *UNIUYO Journal of Gender Studies* 4, 197-211.
- Oladapo, R.A. (2017). Gender Bias in the Selection of Estate Surveyors and Valuers in Lagos Property Market. *FUTY Journal of the Environment* 11(1), 101-111.

Osubor, O. (2017) Headship of professional bodies in the built environment: the challenges facing the female gender, *IOSR Journal of Engineering (IOSRJEN)* 07(03), 81-87.

Pamidimukkala, A. & Kermanshachi, S. (2022). Development of strategies to improve health and safety of women in construction industry: A Delphi method. *Construction Research Congress*. 314-323.

Powell, A., Bagilhole, B., & Dainty, A. (2009). How women engineers do and undo gender: Consequences for gender equality. *Gender, Work & Organization*, 16(4), 411-428.

Rasheed, E. O., Yu, J., Hale, S., & Booth, N. (2022). The impact of external and internal sources of motivation on young women's interest in construction-related careers: An exploratory study. *International Journal of Construction Education and Research*, 18(2), 159-178.

Sang, K. J., Dainty, A. R., & Ison, S. G. (2014). Gender in the UK architectural profession: (re) producing and challenging hegemonic masculinity. *Work, Employment and society*, 28(2), 247-264.

Sang, K. J., Ison, S. G., & Dainty, A. R. (2009). The job satisfaction of UK architects and relationships with work-life balance and turnover intentions. *Engineering, Construction and Architectural Management*, 16(3), 288-300.

Shatilova, O., Sobolieva, T. & Vostryakov, O. (2021). Gender Equality in the Energy Sector: Analysis and Empowerment. *Polityka Energetyczna-Energy Policy Journal*, 19-42.

Shola, S. Z. & Abdulazeez, A. S. (2020). Factors Influencing the Involvement of Female Quantity Surveyors in the Nigerian Construction Industry: Perception of Professionals. *International Journal of Engineering Applied Sciences and Technology* 5(9), 105-114.

Soundarya Priya, M. G., & Anandh, K. S. (2024). Exploring the Determinants of Quality of Work Life in the Construction Industry: A Quantitative Approach. *Buildings*, 14(6), 1607.

Tunji-Olayeni, P. F., Kajimo-Shakantu, K., & Oni, A. A. (2021). Work-life experiences of women in the construction industry: A case of women in Lagos Mainland, Nigeria. In *IOP Conference Series: Earth and Environmental Science* 654. DOI: 10.1088/1755-1315/654/1/012012.

Tvorogova, A. (2021). The Effectiveness of Gender Equality Interventions in Project Based Organisations. Master Thesis, Politecnico di Milano.

Wang, C. C., Mussi, E., & Sunindijo, R. Y. (2021). Analysing gender issues in the Australian construction industry through the lens of empowerment. *Buildings*, 11(11), 553.

World Health Organization (WHO). Gender and Health, 2024. [Gender \(who.int\)](https://www.who.int/gender)

Xalxo, S., (2022). Women in Creating Equality in the Construction Industry: A Review. [http://dx.doi.org/10.2139/ssrn.4476645](https://dx.doi.org/10.2139/ssrn.4476645).