Women in Building Surveying: Challenges and Contributions Towards a Sustainable Future

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ABSTRACT

The construction and built environment sectors have traditionally been male-dominated. Based on data from February 2022, women represented only 18% of RICS then 139,000 international professionals across 23 pathways. Similarly, in Malaysia, the situation mirrors that abroad, with women's participation in the profession remaining low, although this number is gradually increasing. These women bring fresh perspectives, inclusive leadership styles, and a strong commitment to sustainability. Their expertise in building maintenance, safety, and life-cycle management makes them valuable contributors to national sustainability goals. Despite their capabilities, women in this profession continue to face various challenges, such as limited access to mentorship, gender biases, and underrepresentation in decisionmaking positions. Additionally, the building surveying profession itself faces broader concerns, including a lack of legal recognition, slow digital adoption, and low public awareness, which further hinder women's advancement. Therefore, this paper examines the key challenges faced by women in the Malaysian building surveying field, focusing on issues of career progression, visibility, and participation in sustainabilitydriven roles. By addressing these gaps, Malaysia's construction industry can move towards a more diverse, innovative, and sustainable future, where women building surveyors are empowered to lead and thrive.

Keywords: Women, building surveyors, gender equality, sustainability, Malaysia, professional challenges, industry development

INTRODUCTION

The Malaysian construction sector is evolving rapidly towards sustainability and digitalisation, guided by frameworks such as the Construction Industry Transformation Programme (CITP) 2021–2025 and the Twelfth Malaysia Plan (2021–2025). These frameworks call for a more diverse and competent professional workforce to support national sustainability targets and the transition to a low-carbon economy (CIDB,2023). Building surveyors play a crucial role in maintaining building integrity, safety, and lifecycle performance, particularly across Malaysia's vast portfolio of ageing public assets—schools, hospitals, and government complexes. Despite the profession's importance, women remain significantly underrepresented. As of May 2025 (12th GCM), the total count of individuals registered with RISM under the Building Surveying Division, including Fellows, Members, Graduates, Probationers, Technicians, Associate Members, and Students, is only 1591 members, with women representing approximately less than 30% (RISM, 2025). This underrepresentation limits not only gender equality but also the potential for innovation and sustainability that diverse teams can bring. Therefore, this paper highlights both the challenges and the valuable contributions of women building surveyors in achieving the Sustainable Development Goals (SDGs) in Malaysia. This paper also aims to recommend strategies for empowering women and strengthening the profession.

LITERATURE REVIEW

The field of building surveying work and services is a profession that has existed in Malaysia since the 1950s, beginning with the appointment of the first Building Surveyor who served in the Kuala Lumpur Municipal

Council, expanding its services to the Penang City Council (1955) and the Petaling Jaya Municipal Council (1970s). Building surveying in Malaysia remains underdeveloped relative to the well-established frameworks in the UK and Australia. The profession covers building inspection, maintenance management, refurbishment, forensic diagnostics, fire safety, and post-occupancy evaluation (Shah A.S and Chen, 2013). In Malaysia, surveyors are essential to ensuring compliance with regulations such as the Uniform Building By-Laws (UBBL 1984) and the Fire Services Act 1988, and to participating in sustainability certification schemes such as the Green Building Index (GBI) and MyCREST (RISM, 2025). Moreover, recent years have seen increased emphasis on sustainability audits, energy performance assessments, and adaptive reuse of buildings under green initiatives by CIDB, KPKT, and MGBC. However, women remain underrepresented in these emerging areas due to limited access to specialised training, field exposure, and mentorship.

Challenges Faced By Women In The Malaysian Building Surveying Field

The analysis of women's participation in Malaysia's building surveying field focuses on three interconnected themes: career progression, visibility, and participation in sustainability-driven roles. These themes highlight the structural, social, and professional factors that most influence gender equity in the profession. Exploring this theme is essential because it ties gender equity to national sustainability and innovation goals, ensuring that women are not only present but also empowered to lead Malaysia's green transformation. Together, these three pillars—career progression, visibility, and sustainability participation—offer a holistic framework for understanding gender dynamics in building surveying.

Career Progression

Career advancement remains one of the most significant barriers for women in Malaysia's building surveying profession. Despite holding equivalent qualifications and technical skills, women often encounter systemic and cultural constraints that hinder their professional growth. The following sub-challenges have been identified:

Male-Dominated Culture

In the context of inspection-oriented and enforcement roles, the prevailing perception of the construction industry as a "male domain" remains a significant barrier. Women are frequently channelled into administrative or compliance-related tasks rather than into technically complex, high-visibility field or forensic diagnostics projects, thereby undermining their credibility, visibility, and promotion potential (Valitherm, A., 2021).

Safety and Facilities

Gender-sensitive workplace provisions remain inconsistent across agencies. Women frequently encounter challenges, including ill-fitting personal protective equipment (PPE), inadequate field safety protocols, and a lack of secure welfare facilities during site visits (Onyebeke, L. C. et al., 2016). These shortcomings not only discourage participation in field inspection roles but also contravene best-practice inclusive occupational safety standards. For example, global literature describes how ill-fitting PPE compromises protection for female workers.

The Glass Ceiling Effect

Women in Malaysia's built-environment professions continue to face invisible barriers to senior roles. Empirical studies point to organisational culture and male-dominant norms, opaque or biased promotion practices, and limited leadership development or mentoring pathways as reinforcing mechanisms of the glass-ceiling effect. Sectoral work on construction shows women are under-represented in fee-earning technical and leadership tracks and are more often channelled into support functions, patterns that depress visibility and slow advancement. Evidence from Malaysia's construction firms and broader corporate studies also shows a thin representation of women at top-management or board levels, which in turn normalises the perception that leadership in surveying and allied fields "belongs" to men (Hussin, H. et al, 2021).

Gendered Expectations.

Women in the Malaysian built-environment professions often face the invisible weight of caregiving and domestic responsibilities, which limit their availability for site-intensive roles, extensive travel, or flexible hours.

This dynamic constrains their progression into senior or leadership positions, even when qualifications are equal. Moreover, in the Malaysian construction industry, a study found that "work-life conflict" is among the top barriers for women, with early-career drop-out and reduced access to demanding assignments linked to heavy domestic roles. These patterns reduce exposure to high-visibility, complex projects that are often precursors to leadership roles, effectively erecting hidden barriers in women's career progression (Valitherm, A.,2021).

Limited Networking Opportunities.

In Malaysia's surveying and construction sectors, professional networks remain largely male-dominated, shaping how opportunities, information, and influence circulate within the industry. Informal mentorship, sponsorship, and collaboration networks—often developed through after-hours social or site-based interactions—are crucial for career visibility and progression. Yet, women are frequently excluded from these spaces, whether intentionally or through subtle social norms that make participation uncomfortable. The International Labour Organisation (ILO, 2022) has noted that such exclusionary dynamics contribute to slower career advancement and perpetuate gender gaps across technical professions.

Visibility

Social and Cultural Recognition Visibility addresses the social and cultural aspect of gender equity. The following sub-challenges have been identified:

Underrepresentation in Public and Professional Spaces

Women remain significantly under-represented in the building-surveying and wider surveying professions in Malaysia, a situation that reinforces their invisibility and perpetuates gendered stereotypes (RISM, 2025). Furthermore, Ananthan Valitherm (2021) asserts that women in the Malaysian construction professions are under-represented across all building occupations and face significant barriers to entry, continuity, and advancement. These findings highlight that the scarcity of women in prominent field-inspection, technical leadership or public-facing surveying roles contributes to persistent beliefs that such professions are inherently male domains.

Public recognition gap

In Malaysia, the title "building surveyor" remains poorly understood by both the public and industry stakeholders. It is often confused with related professions such as quantity surveying or civil engineering, resulting in limited recognition of the unique technical and regulatory expertise that building surveyors contribute. This identity confusion weakens the professional visibility of surveyors in general and disproportionately affects women, who already contend with underrepresentation and gender bias (Ahzahar, N et al., 2015).

Lack of Role Models

The scarcity of visible female leaders in building surveying has created a leadership vacuum, leaving few aspirational figures for younger professionals to emulate. When women are absent from conferences, technical publications, or professional leadership panels, their contributions risk being overlooked, reinforcing a cycle of invisibility within the profession. As reported by the Royal Institution of Surveyors Malaysia (RISM, 2023), women occupy fewer than 10% of senior management positions within registered building surveying consultancies nationwide. This imbalance not only highlights a gender gap in leadership but also indicates that limited representation affects motivation and retention among aspiring women surveyors.

Media and Outreach Gaps

Limited media coverage and outreach initiatives targeting women in technical fields contribute to low awareness of building surveying as a viable career path. Broader research on women in construction also highlights that poor media visibility and a lack of female representation in outreach campaigns perpetuate gender stereotypes about technical work, thereby discouraging women from entering or advancing in such fields (Valitherm, A., 2021).

Participation in Sustainability-Driven Roles

Professional Relevance and Future Competence Participation in sustainability-driven roles focuses on the professional and future-oriented aspects of the study. The following sub-challenges have been identified:

Gender Bias in Project Assignments

Although the field of sustainability is often considered more inclusive, women in Malaysia rarely occupy highimpact roles such as green retrofitting, post-disaster audits, or life-cycle cost analyses within built-environment projects. Women in the construction and surveying sectors are frequently confined to support or administrative roles, while men disproportionately undertake technical assignments and high-visibility sustainability projects (Fateh A.M. et al., 2025). This disparity may reduce women's participation in strategic, technical sustainability work and thus limit their recognition, skill development, and advancement opportunities.

Lack of Training and Inclusion in ESG Strategy

In recent years, sustainability roles in Malaysia's built-environment sector have increasingly required familiarity with Environmental, Social, and Governance (ESG) frameworks as part of national commitments to sustainable development. However, women professionals often report fewer opportunities for upskilling and certification in these areas, which limits their participation in high-impact sustainability projects such as green retrofitting, carbon assessment, and life-cycle cost analysis. The Construction Industry Development Board (CIDB, 2023) has highlighted that the integration of ESG and green-building principles into Malaysia's construction industry remains uneven, with limited gender inclusion in capacity-building initiatives. Similarly, female professionals in Malaysia's construction and surveying sectors face structural barriers to advanced training and technical exposure, resulting in unequal access to leadership roles and sustainability-related assignments (Fateh A.M. et al., 2025).

Institutional Gaps in Promoting Gender Equity in Sustainability

Only a few Malaysian institutions have policies that explicitly promote gender diversity in sustainability leadership roles. As a result, women often lack access to formal systems of recognition, training, and advancement in emerging sustainability domains. Research highlights that although gender equality is a stated goal in many organisations, the policies and practices are weak and poorly implemented, creating systemic barriers for women seeking leadership in sustainability-related work (Fateh A.M. et al., 2025).

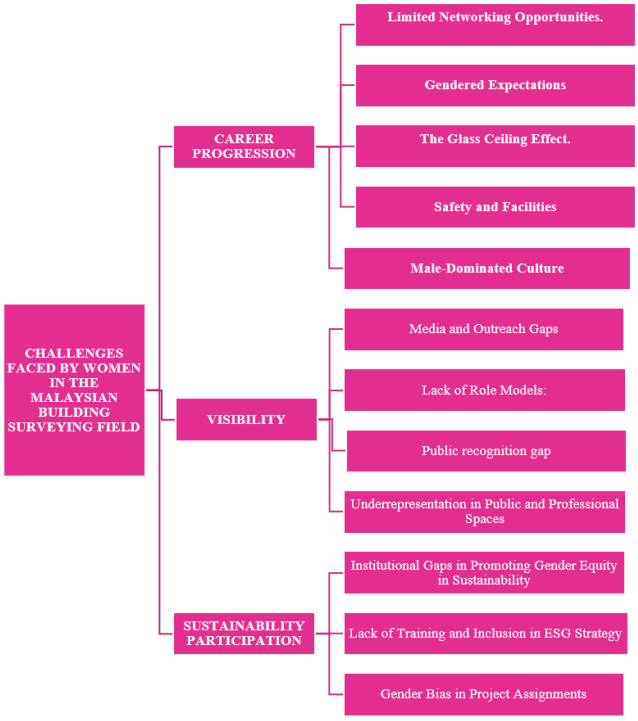

Figure 2.1: Challenges Faced by Women in the Malaysian Building Surveying Field Strategies for empowering women and strengthening the profession

The following recommendations are proposed to strengthen women's participation and leadership in the Malaysian building surveying sector:

1. Establish mentorship programmes connecting junior women with experienced professionals.
2. Promote inclusive hiring and promotion practices to dismantle the glass ceiling.
3. Increase visibility through media campaigns, awards, and leadership spotlights.
4. Create targeted training programmes for women in sustainability and ESG-related roles.
5. Encourage industry-wide collaboration to develop gender-equity policies.
6. Institutionalise work–life balance and safety policies.

Contributions To Professional Practice & Sustainability Future

Women building surveyors in Malaysia are actively involved in core professional tasks such as building condition surveys, defect diagnosis, and maintenance planning (Ahzahar et al., 2015). These roles require strong analytical skills, systematic documentation, and careful assessment of building performance. Such competencies support integrated and lifecycle-based approaches to building management, which are increasingly important in managing ageing buildings and ensuring long-term asset sustainability. Kayat (2021) reported that women practitioners often demonstrate strong adherence to professional standards, accuracy in reporting, and effective coordination with multiple stakeholders. These qualities contribute to improved inspection outcomes, clearer communication with clients and authorities, and more informed decision-making in building maintenance and compliance. Although these contributions may not be formally labelled as innovative, they enhance efficiency and reliability in professional practice.

Women building surveyors in Malaysia are increasingly involved in sustainability-related activities, including building maintenance planning, compliance with environmental standards, and support roles in green building initiatives (Ahzahar et al., 2015; Kayat, 2021). These activities contribute to extending building lifespan, improving operational efficiency, and ensuring regulatory compliance. However, existing literature suggests that women's contributions to sustainability are often embedded in routine professional tasks rather than recognised as specialist or leadership roles. As a result, their involvement in sustainability-driven outcomes may be underrepresented, despite its importance to sustainable building performance. The expanding scope of building surveying offers opportunities to further strengthen women's contributions, particularly in sustainable facilities management, post-occupancy evaluation, building performance monitoring, and green building compliance. Kayat (2021) noted that many women surveyors are interested in roles that combine technical expertise with sustainability and long-term planning. With Malaysia's increasing focus on sustainable development and building lifecycle management, greater recognition of women's contributions could enhance gender inclusivity and strengthen the professional relevance of building surveying. Improved visibility may also encourage more women to enter and remain in the profession, supporting its long-term development.

RESEARCH METHODOLOGY

This paper addresses the objectives identified in the extensive literature review and the employment of online questionnaires. Two categories of data, primary and secondary, were utilised. Primary data were collected through online questionnaires, while secondary data were obtained from existing sources, including research texts, documents, papers, and media accessible through library resources. This study used nonprobability purposive sampling to reach respondents who could speak directly to the realities of building surveying practice in Malaysia. Purposive sampling is appropriate when the research goal is to engage participants with specific characteristics and experience relevant to the research questions, rather than to produce statistically representative population estimates. The target population consisted of practising building surveying professionals and building surveying trainees / early-career graduates working in building surveying works projects resulting 89 women responding to the questionnaires. Data were collected via an online questionnaire,

since its practical reach across geographically dispersed practitioners and its suitability for professional populations with limited time availability. The questionnaire used in this study was designed into two main sections:

Section A – Respondent Demographics

This section gathered background information such as respondents' job roles, years of experience in the construction industry, and types of projects they were involved in. These questions helped to contextualize the responses and ensure a diverse range of professional perspectives.

Section B – Challenges Faced by Women in the Malaysian Building Surveying Field

This core section was designed to identify specific challenges across three pillars—career progression, visibility, and sustainability participation. Respondents were asked to rate various potential obstacles on a 5-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). These questions were formulated based on insights from previous literature and refined to suit the local construction context and underwent Reliability testing with Cronbach's alpha (α). Internal consistency reliability for multi-item constructs was assessed using Cronbach's alpha (α), introduced by Cronbach (1951) as a measure of internal consistency for scale items intended to measure the same construct. Reliability testing is particularly relevant when a survey uses multiple items per construct (e.g., "career progression") because alpha reflects how well items cohere as a single scale. Interpretation follows widely cited guidance that "acceptable" alpha values often fall in the approximate range 0.70–0.95, with very high values sometimes indicating redundancy rather than desirable breadth. In SPSS, Cronbach's alpha was computed using Analyse → Scale → Reliability Analysis, and the output tables report the alpha coefficient, number of items, and "alpha if item deleted" diagnostics to identify problematic items. Below are the Reliability results for multi-item constructs for the Section B as designed in the questionnaires.

Table 3.1: Internal consistency reliability for Section B constructs (Cronbach's alpha)

Constructs - Section B	Items	Cronbach's α	Interpretation
Career progression	5	0.88	High internal consistency
Visibility	4	0.87	High internal consistency
Sustainability participation	3	0.86	High internal consistency
Overall	12	0.89	High internal consistency

The collected data then, were analysed using the Statistical for Social Science (SPSS). Frequency analysis is obtained from the SPSS output and average index method is adopted for analysis from the result of frequency analysis. The analysis result then presented in the form of table, bar chart and pie chart.

RESULT AND DISCUSSION

Section A : Demographic Profile of Respondents (n = 89)

As shown in Chart 4.1, most respondents were aged between 25–34 years (46.1%), indicating strong representation from early to mid-career women building surveyors. Most respondents were employed in the private sector (58.4%). Although 41.6% of respondents reported involvement in sustainability-driven roles, more than half indicated limited or no participation, highlighting potential barriers to women's engagement in sustainability-related assignments within the profession. This study is subject to several limitations that should be acknowledged when interpreting the findings. The analysis is primarily descriptive and exploratory, focusing on women in the Malaysian building surveying profession as a single group. Although the survey included demographic variables such as age, educational background, years of experience, employment sector, and professional status, the study did not conduct extensive subgroup comparisons due to the scope of the research and sample size considerations. As a result, potential differences in challenges faced by women across career stages, sectors, or levels of professional registration may not be fully captured.

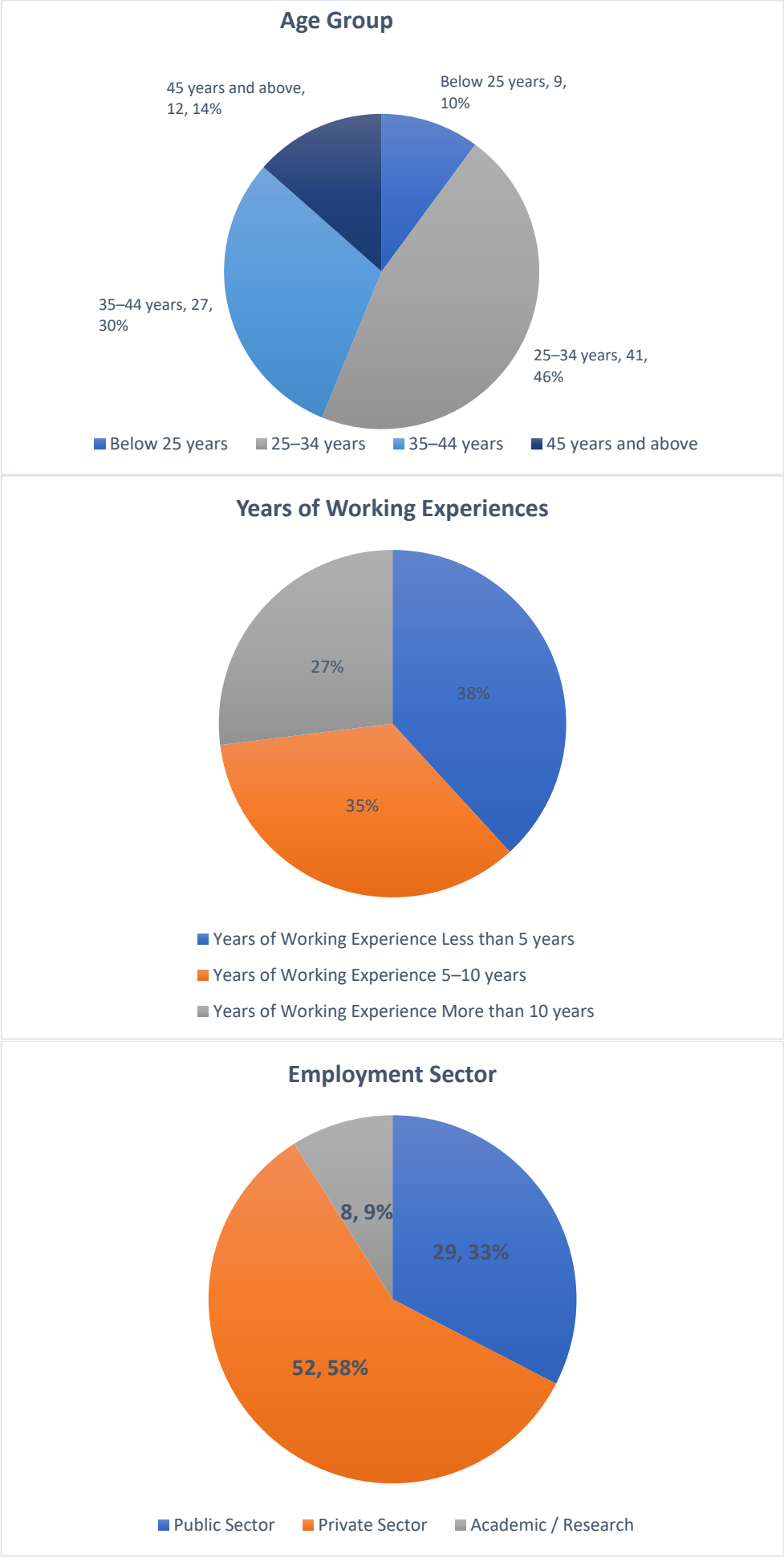

Chart 4.1: Age Group, Years of Working Experiences and Employment Sector

Section B : Career Progression Challenges

Career progression remains one of the most significant barriers for women in Malaysia's building surveying profession. Using SPSS 27.0, descriptive analysis of 89 respondents, this study assessed five main indicators influencing women's upward mobility.

Table 4.1: Descriptive Analysis of Career Progression Challenges

Career Progression Challenges	Average Index (AI)	Interpretation
Male-Dominated Culture	4.36	Very High
Safety and Facilities	4.15	High
The Glass Ceiling Effect	4.48	Very High
Gendered Expectations	4.22	High
Limited Networking Opportunities	4.40	Very High

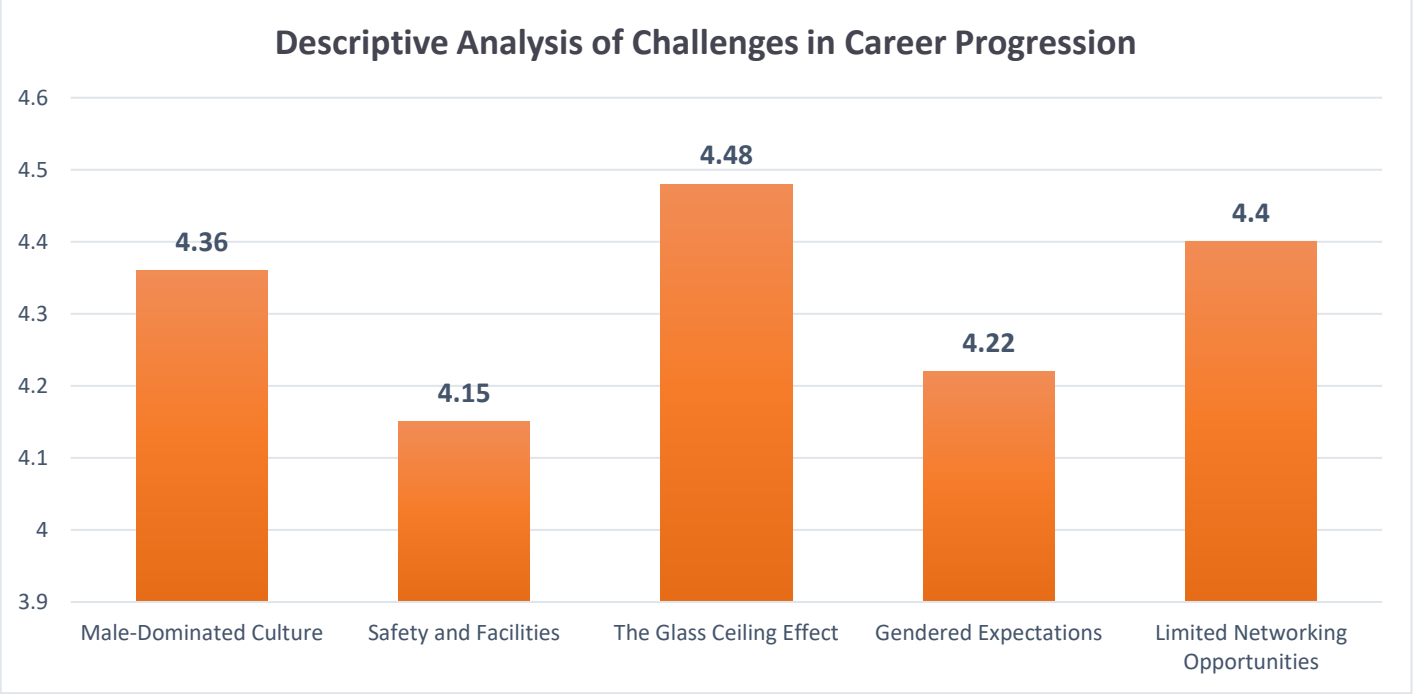

Figure 4.1: Descriptive Analysis of Career Progression Challenges

The analysis reveals that the Glass Ceiling Effect (AI = 4.48), Limited Networking Opportunities (AI = 4.40), and Male-Dominated Culture (AI = 4.36) are the top-ranked challenges hindering women's career advancement in the Malaysian building-surveying and construction sector. These findings indicate that organisational bias and gendered informal networks continue to influence women's progression and leadership visibility. Meanwhile, Safety and Facilities (AI = 4.15) and Gendered Expectations (AI = 4.22) rank slightly lower but remain significant, especially for women engaged in field-based inspection and site-management roles. The highestranked challenge (AI = 4.48) underscores persistent organisational hierarchies that hinder women's upward mobility. For example, a Malaysian study on gender inequality in the construction industry indicates that women are under-represented in all building occupations and professions, and they face difficulties in entering, surviving and advancing in this field (Valitherm,2021). Such under-representation is consistent with the metaphor of a "glass ceiling" restricting access to senior leadership positions in male-dominated sectors. The finding that women building surveyors experience limited access to professional networks and mentorship can be interpreted through social capital theory, which emphasises the value of social relationships, trust, and networks in facilitating career advancement and access to opportunities. In male-dominated professions such as building surveying, professional networks are often informal and gendered, making it more difficult for women to accumulate the same level of social capital as their male counterparts. Consequently, women may have reduced access to information, project opportunities, and professional sponsorship, which affects career progression and visibility within the profession.

Section B : Visibility Challenges

Visibility plays a crucial role in attracting, retaining, and advancing women within the building surveying profession. When women's expertise and accomplishments are underrepresented in public and professional arenas—such as conferences, publications, and leadership panels—it fosters the perception that the field lacks female role models. A SPSS descriptive analysis of 89 respondents assessed the perceived visibility of women in building surveying. Respondents rated four indicators on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Table 4.2 : Descriptive Analysis of Visibility Challenges

Visibility Challenges	Average Index (AI)	Interpretation
Underrepresentation in Public and Professional Spaces	4.40	Very High
Public Recognition Gap (Professional Identity)	4.25	High
Lack of Role Models and Leadership Figures	4.48	Very High
Media and Outreach Gaps	4.32	Very High

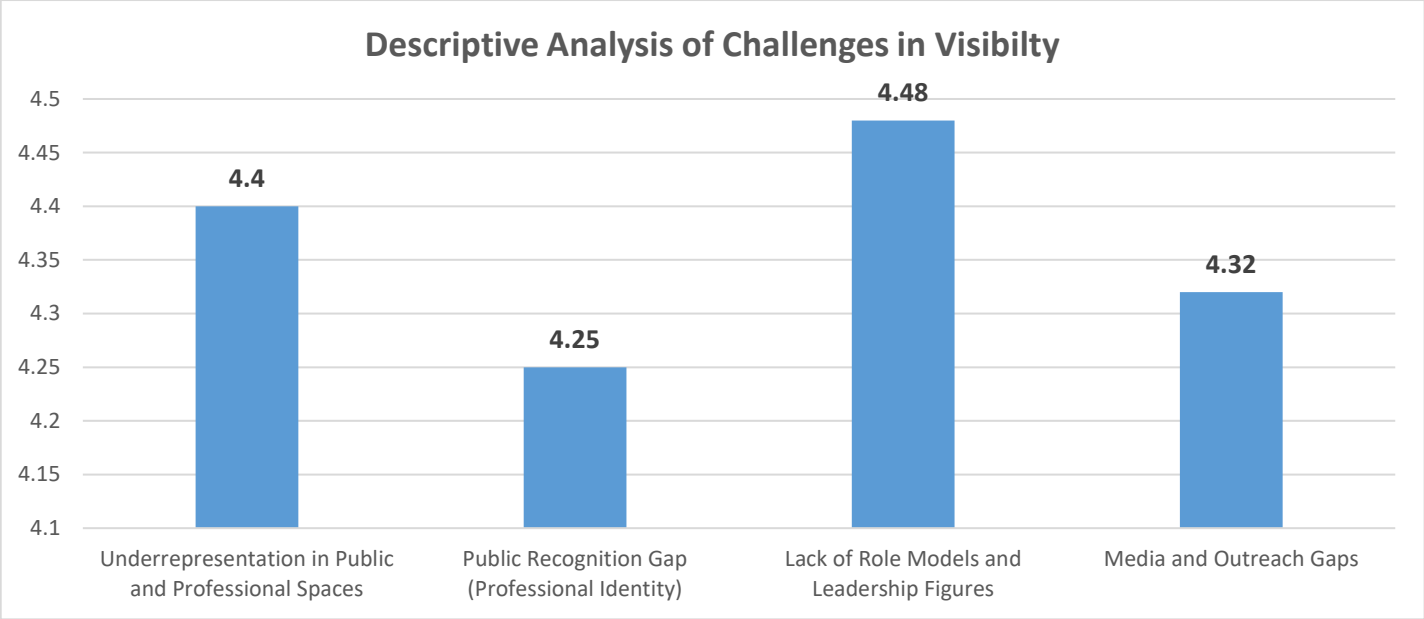

Figure 4.2: Descriptive Analysis of Visibility Challenges

The analysis results in Table 4.2 and Figure 4.2 highlight visibility and recognition as major factors influencing women's participation and advancement in Malaysia's building surveying profession. The most significant visibility challenge identified was the lack of female role models and leadership figures (AI = 4.48). These findings from the Royal Institution of Surveyors Malaysia (RISM, 2023) report that women occupy fewer than 10% of senior management positions in registered building surveying consultancies. The absence of visible female leaders not only limits mentorship opportunities but also weakens women's professional identity in the field. The second-highest factor, underrepresentation in public and professional spaces (AI = 4.40), reveals how women's contributions are often overlooked in mainstream construction narratives. Their presence at conferences, industry panels, and in academic publications remains minimal, which reinforces masculine norms in professional discourse. Another major issue, the public recognition gap (AI = 4.25), stems from persistent misconceptions about the "building surveyor" title in Malaysia. The profession is often conflated with quantity surveying or engineering, leading to the undervaluation of its distinct expertise in building diagnostics, safety assessment, and post-occupancy evaluation. This misunderstanding, highlighted by CIDB (2023), disproportionately affects women, whose technical competencies are already subjected to greater scrutiny due to gender bias. Finally, gaps in media and outreach (AI = 4.32) highlight the lack of targeted communication efforts that celebrate women's achievements in the field. Respondents noted that the absence of career campaigns, storytelling platforms, and social media features contributes to poor recruitment of female students and limited public recognition of women's professional roles.

Section B : Sustainability Participation Challenges

Sustainability-driven work in building surveying—covering green retrofitting, energy audits, life-cycle assessment, and ESG integration—represents the fastest-growing professional frontier in Malaysia's built environment. An SPSS 27.0 descriptive analysis of 89 respondents assessed women's participation and leadership in sustainability-related surveying work, using three key indicators on a 5-point Likert scale.

Table 4.3 Descriptive Analysis of Sustainability Participation Challenges

Sustainability Participation Challenges	Average Index (AI)	Interpretation
Gender Bias in Project Assignments	4.42	Very High
Lack of Training and Inclusion in ESG Strategy	4.30	Very High
Institutional Gaps in Promoting Gender Equity	4.18	High

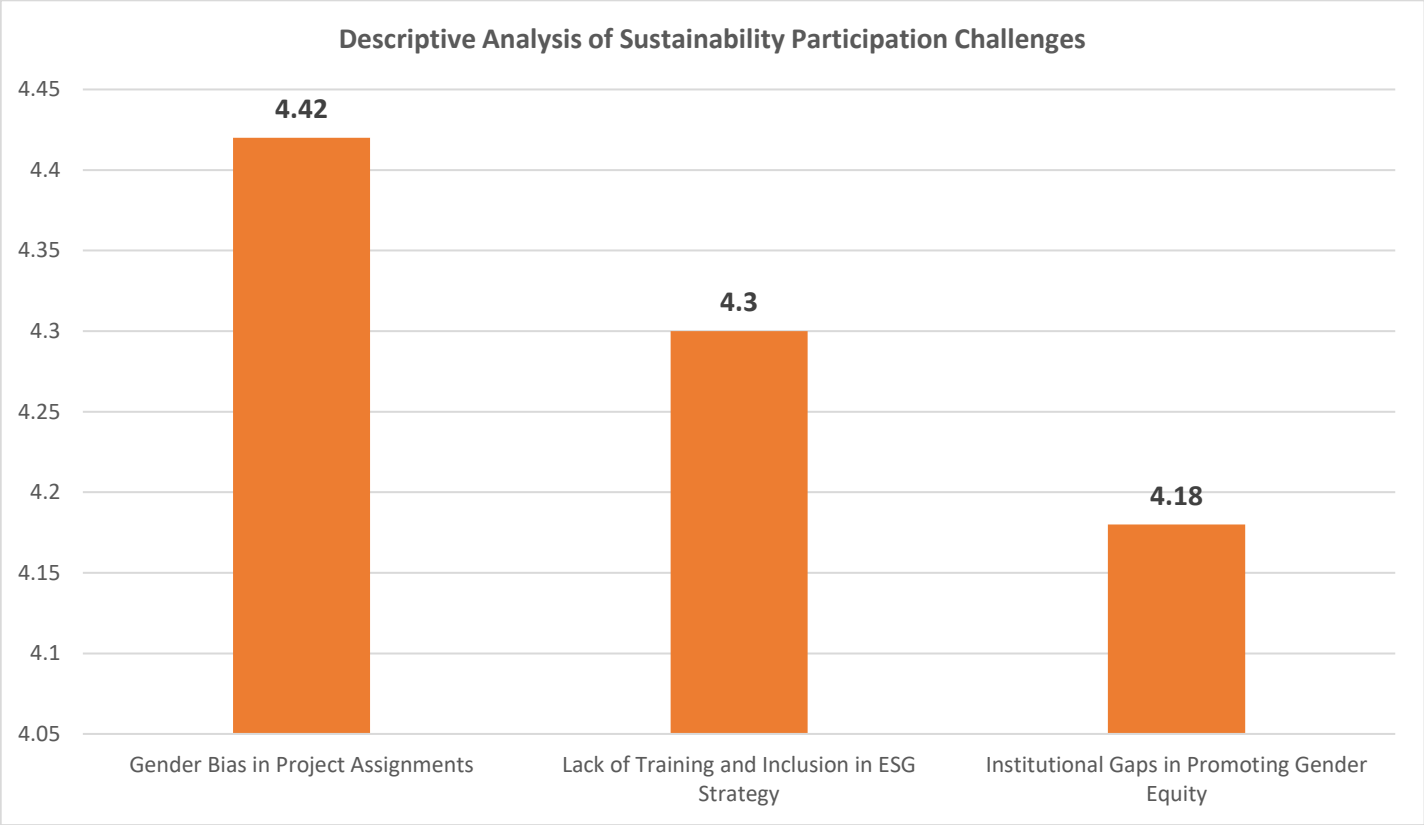

Figure 4.3: Descriptive Analysis of Sustainability Participation Challenges

From the analysis shown in Figure 4.3 and Table 4.3, gender bias in project assignments (AI = 4.42) is the most critical factor limiting women's participation in sustainability-related work. Although sustainability is often viewed as an inclusive field, project selection processes and client-facing roles remain shaped by tenure, networking, and male-dominated decision hierarchies. Lack of training and inclusion in ESG strategy (AI = 4.30) was identified as the second-highest barrier, indicating that women have fewer opportunities to upskill in sustainability analytics, life cycle costing, and ESG reporting. Finally, institutional gaps in gender equity (AI = 4.18) highlight the need for formal frameworks within CIDB, RISM, and public-sector agencies to promote women's leadership in sustainability projects.

CONCLUSION AND RECOMMENDATION

Women's participation in Malaysia's building surveying profession remains modest, although encouraging signs of growth are evident. This study examined the key challenges faced by women, focusing on career progression, professional visibility, and involvement in sustainability-driven roles, and analysed their implications for gender equity and professional sustainability. The findings reveal that the glass ceiling effect (AI = 4.48), lack of role models (AI = 4.48), and gender bias in project assignments (AI = 4.42) are the most critical barriers limiting

women's advancement and recognition within the profession.Despite these challenges, the study highlights the potential for strengthening women's leadership and participation through targeted strategies, including mentorship programmes, inclusive promotion frameworks, visibility initiatives, ESG-focused training, and industry-wide gender equity policies. The effective implementation of such strategies would not only support women's professional advancement but also enhance innovation, professionalism, and sustainability within the building surveying discipline in Malaysia.

FUTURE RESEARCH DIRECTIONS

To extend the findings of this study, several specific avenues for future research are recommended. First, longitudinal studies tracking women building surveyors over different career stages would provide deeper insight into career trajectories, retention patterns, and progression into senior and leadership roles. Second, qualitative research, such as in-depth interviews or focus groups, could explore lived experiences more comprehensively, particularly by including male allies, supervisors, and organisational leaders to better understand workplace cultures, informal networks, and decision-making processes that influence women's advancement.In addition, comparative studies across ASEAN countries would allow Malaysia's experience to be examined within a regional context, enabling comparisons of professional structures, gender participation, and sustainability roles in building surveying. Such studies could identify transferable practices and policy approaches that support gender inclusivity across the region. Finally, future research may evaluate the effectiveness of professional body initiatives and organisational policies in promoting gender equity and sustainability leadership within the profession. By addressing structural barriers, enhancing recognition, and equipping women to lead sustainability-driven initiatives, Malaysia can cultivate a more balanced, resilient, and globally competitive profession that reflects the principles of equity and excellence in the built environment.

REFERENCES

1. Ahzahar, N., Kayat, N. A., Zakaria, I. B., & Hashim, S. Z. (2015). Women In Building Survey. International Academic Research Journal of Social Science, 1(2), 95-100.
2. Ananthan Valitherm, (2021) A Study on Gender Inequality in Malaysian Construction Industry International Journal of Scientific Research and Engineering Development-– Volume 4 Issue 2, Mar- Apr 2021,1265-1275.
3. Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. Psychometrika, 16, 297–334.
4. Construction Industry Development Board (CIDB). (2023). Embracing Diversity: A New Approach to Tackling Labour Shortages. Malaysia. https://www.cidb.gov.my/eng/embracing-diversity-a-newapproach-to-tackling-labour-shortages/
5. Fateh, M. A. M., Hashim, J., & Hong, W. T. (2025). Constructing Inclusivity: Strategies for Promoting Gender Equality in Developing Countries' Construction Sector. Journal of Construction in Developing Countries, 30(1), 49-76.
6. Husain, S. H., Che-Ani, A. I., Affandi, H. M., & Nasri, N. M. (2017, November). Building Surveying Graduates Performance From The Perspective of Building Surveyors in Malaysia. In 2017 7th World Engineering Education Forum (WEEF) (pp. 371-376). IEEE.
7. Hussin, H., Tuah, S. N. A., Naseri, R. N. N., Shariff, S., Mohammad, N., & Zamri, N. A. K. (2021). Decisive Factors Of "Glass Ceiling" On Women Career Development In Malaysia. Journal of Academic Research in Business and Social Sciences, 11(1), 269-285.
8. Isnin, Z., Hisham, S. S. D. B., Ramele, R., & Zawawi, E. M. A. (2016). Challenges To Building Surveyors From The Perspectives Of Non Surveyors. In MATEC Web of Conferences (Vol. 66, p. 00097). EDP Sciences.
9. Nkwunonwo, U. C. (2025). Women In Surveying (WIS): Urgently Bridging The Gender Divide For The Sustainable Development Of Geoinformatics And Surveying Profession. Survey Review, 1-9.
10. Onyebeke, L. C., Papazaharias, D. M., Freund, A., Dropkin, J., McCann, M., Sanchez, S. H., ... & Zuckerman, N. C. (2016). Access to properly fitting personal protective equipment for female construction workers. American Journal of Industrial Medicine, 59(11), 1032-1040.
11. Royal Institution of Surveyors Malaysia 2025, Building Surveying Division: RISM Annual Report for Session 2024/2025, 2025

12. Royal Institution of Chartered Surveyors (RICS). (2022). Women In Surveying: Insight Report. /https://www.rics.org/content/dam/ricsglobal/documents/reports/Womenin-Surveying_FINAL-1.pdf
13. Shah Ali, A., & Jia Woon, C. (2013). Issues and challenges faced by building surveyors in Malaysia. Structural Survey, 31(1), 35-42
14. The International Labour Organization (ILO). (2022). Annual Report 2022. https://www.ilo.org/publications/annual-report-2022