

Challenges of Safety Women Work-life Balance in Construction Site Risk

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Abstract

Now a day, must women in professionals in a variety of disciplines. However, striking a balance is challenging, especially given one's professional and domestic obligations. Women workers are few in the construction business because of the many obstacles they face, including the industry's preponderance of men. Because of these barriers, women are less likely to work on construction sites. The focus of this research is on the experiences of women in the construction industry. The objectives of this research are to identify the challenges of women in construction site work-life. Second, to identify the current practice of women in construction industry and to suggest the well-being working conditions for women in construction site. Therefore, this research was done to identify barriers and propose solutions for the safety and well-being of women in the construction industry. This research utilises a literature review alongside quantitative techniques which surveying G7 contractors. The area in Johor Bahru where this research was done is now under construction. Out of a total of 719 contractors, 248 (or 36%) were randomly chosen to participate in this survey. The SPSS statistical package was used to analyse the results of the questionnaire distribution study. The finding shows difficulties women face on construction sites, as well as recommendations for improving their working circumstances, require a descriptive statistical study, including frequency distribution and mean score. Additionally, the construction sector is required to make it easier for women to advance their careers in the field, particularly on building sites, by providing them with the self-assurance, opportunity, and space to do so. In conclusion, the findings of this research have implications for increasing the number of professional women in the construction business.

1. Introduction

This section describes the research background, problem statement, research questions, research objectives, research scope and significance of research. Women's roles are substantially different today than they were previously. Many women are currently working in their fields of specialization. However, striking a balance, particularly between duties as a job and responsibilities to one's family, is a difficult undertaking. While women have overcome all preconceptions and are now breadwinners across the world, their presence in the male-dominated construction business is highly recommended. The building industry contributes significantly to the national GDP of any country, yet it is suffering from a severe talent deficit because of high turnover intentions. Women's roles include not just household management but also contribution to the family economy. This

obligation is shared not just by married women, but also by some of those who are not married (Siti Nur Husna *et al.*, 2017). Awang *et al.*, (2022) states that the implication is that a woman's position in the family is as an obedient kid to both parents, wives who obey their husbands and always take care of themselves, and moms who prioritise children with religious upbringing.

Furthermore, from a social standpoint, they are interested in charitable activities and participate in educational, economic, and political aspects. At the same time, this will have a direct influence on the family's, community's, and country's economic growth (Siti Nur Husna *et al.*, 2017). Women's engagement in construction has earned recognition in Malaysia, leading to the formation of a non-profit organisation named Women in Construction Industry Malaysia (WIBM) on January 30, 2015. However, women continue to confront obstacles and problems in their attempts to advance in the construction business. According to research on women's career progression in Malaysia for a manufacturing organisation (Yet-Mee *et al.*, 2013), career women encounter more obstacles and hurdles than males. The construction industry is often dominated by male workers, which is identified as a source of challenges for women and, as a result, women's participation in this sector is low. This is supported by Amaratunga (2005), who claims that women who want to venture and be maintained at construction sites must be paid attention to because there are a variety of problems that must be addressed at the construction site, whether related to work or problems that arise from men. These issues result in the least level of engagement of women on building sites.

Working on a construction site is linked with arduous and dangerous tasks. According to a survey done by the New York Committee for Occupational Safety and Health (2014), most female construction workers face cultural issues as well as health and safety issues at work. Workplace disagreements, sexual harassment, marginalisation, and precarious employment are examples of cultural difficulties. Furthermore, health and safety issues include ergonomics, improper personal protective equipment, and sanitary facilities. With the rise of the issues, it is evident that the organisation cannot take chances in hiring women to work on construction sites. The conclusion is corroborated by prior research revealed by Rindonggon (2020), which shows that occupations in the construction sector are controlled by males 90% of the time and women 10% of the time. The building site atmosphere in Malaysia is synonymous with risk, which would generate discomfort for female employees, resulting in stress at work (Latiffi *et al.*, 2020). The objective of the research are, to identify the challenges of women in construction site work-life, to identify the current practice of women in construction and to suggest the well-being working conditions for women in construction site. This study focuses on the occupations held by women who work as project managers, project engineers, on-site surveyors, site supervisors, and other related positions. This research, which concentrated on construction sites with more than five full-time female employees, was done on women's professions who work on construction sites in around the construction area in Johor Bahru. This is because the state of Johor is a rapidly developing state in the construction sector, (Town and Country Planning Department of Peninsular Malaysia, 2020). Besides that, according to the Johor State Economic Planning Division (2019), the state of Johor is also a state the third largest contributor to the construction sector in Malaysia.

2. Literature Review

This section describes the literature review related to the objective of the study.

2.1 Study Definition

Table 1 Comparison of object definitions and study subjects

Bill	Object / Subject	Definition	Reference
1.	Women	Women (more refined), women's group. femininity, the characteristics of women; about women	The Dictionary
2.	Work life	Work life balance includes no other salaried or non-work responsibilities. children and families and can be used for a diverse workforce of men, women, singles, parents, two-career families and others.	(Vasumathi, 2018)
3.	Construction Site	Achieving satisfying experiences in all. life domains and to do so requires personal. resources such as energy, time, and commitment. to be well distributed across domains'	Kirchmeyer (2000)
4.	Construction Site	Where the structure will be built, and so forth	Hall dictionary fourth edition (2017)
			Hall dictionary fourth edition (2017)

A comparison of the object and subject definitions utilised in this investigation is shown in Table 2.1. The goal and focus of this study are women and the work-life balance.

2.2 Challenges of Women in Construction Site Work-life

Various forms of issues and impediments that must be overcome on a building site dominated by males. Amaratunga (2005) reveals in his study that men are usually able to work for long periods of time, often until late at night, which is different from women and makes it one of the competitors for women. Furthermore, women have a slower professional growth than men, and they face more job pressure, such as being constantly requested to complete a task and labour. According to Tracy Soidi and Agnis Sombuling (2016), the position of women in the family structure has changed, particularly for those who are not just mothers but also workers. In addition, according to Dainty's (2000) study, one of the most prevalent impediments and challenges faced by women is an image or description of the building site's actual condition.

Table 2 Challenges of women in construction site work-life

Bill	Challenges of Women in Construction Site Work-life
1.	Stress caused by the demands of career duties and family responsibilities
2.	Lack of Effective Time Management
3.	Need for Assistance and Child Care Resources
4.	Overwork and a lack of employer support
5.	Women's Equal Opportunity in the Workplace
6.	Bad weather
7.	Respect
8.	Cultural Problems
9.	Conflict in The Workplace
10.	Facilities at the construction site
11.	Site Condition
12.	Sexual Harassment
13.	Appearance and Women's Needs
14.	The Distance Between the Construction Site and The Residence
15.	Construction Industry Image Issues

Women working in the construction industry face multiple challenges that significantly impact their work-life balance. The longer working hours of men, as revealed by Amaratunga (2005), creates a competitive environment that disadvantages women. In addition, women experience slower professional growth and high work pressure. Conflict between career duties and family responsibilities is a major stressor, with issues such as lack of family time, childcare problems, and overall work-related stress (Tracy *et al.*, 2016). Effective time management becomes challenging due to excessive workload, affecting professional and family duties (Noor Rahamah Abu Bakar, 2012). Childcare remains a critical issue, with expensive care facilities and a lack of viable options forcing some women out of the workforce (Pusat Kepimpinan Wanita Tun Fatimah Hashim, UKM, 2018).

In addition, excessive work and lack of employer support contribute to stress, affecting mental health and work performance, as highlighted by Tan Sri Lee Lam Thye (2019). Gender inequality persists, hindering women's equal opportunities in the workplace (Zakaria, 2020). Working in harsh weather conditions poses a major challenge for women in construction, according to Sarah Dean (2021). Moreover, women often struggle to gain respect in the construction industry, facing disregard for their expertise and opinions. Cultural issues, workplace disputes, and sexual harassment further hinder women's professional involvement (Ginanjar, 2017). Differences in pay and perceived differences in productivity create conflict in the workplace (Abidin *et al.*, 2016). Inadequate sanitary facilities, hazardous site conditions, sexual harassment (Latiffi *et al.*, 2020), and negative perceptions of the industry (Rostiyanti *et al.*, 2021) contribute to the challenge. Despite these barriers, addressing and correcting these issues is critical to fostering a more inclusive and supportive environment for women in construction.

2.3 Current Practice of women in construction

The current practice of women in construction sites varies depending on the region, culture, and the specific construction industry. However, in recent years, there has been a growing recognition of the importance of diversity and inclusion in traditionally male-dominated sectors like construction. As a result, more women are entering and making contributions to the construction industry.

Women make up 46.8% of the U.S. workforce in 2020, but the statistics are very different in the construction sector. According to the Bureau of Labour Statistics, 10% of all construction employees are women. Therefore, there is one woman working in the construction industry for every 10 persons. In contrast, women make up nearly 25% of the workforce in the construction sector in India. There are roughly 1.46 million construction employees in India, and about 36 lakh of them are women, according to data from 2020. Despite the fact that this statistic might appear low, it indicates a tremendous improvement over past year (Sakhre, 2023).

Table 3 Current practice of women in construction

Bill	Current practice of women in construction
1.	Employment opportunities
2.	Increasing participation
3.	Safety and accommodations
4.	Breaking stereotypes

The current practice of women in the construction industry is marked by regional and cultural variations. Although women make up 46.8% of the U.S. workforce in 2020, only 10% of construction workers are women, showing a significant gender gap (Bureau of Labor Statistics). On the other hand, women constitute almost 25% of the construction workforce in India, exhibiting significant progress (Sakhre, 2023). Efforts to increase women's involvement in construction are ongoing, with initiatives promoting diversity and equal opportunities. Azurawaty Amar, CEO of Vertex South Industries, supports increased attention to women in all fields and supports women pursuing careers in civil engineering and public works (Mohd, 2018). The initiative aims to increase women's participation, with the industry focusing on hiring more staff to address the shortage of skilled labour (Zhao, 2021). Safety and accommodation for women on construction sites is emphasized, prompting women to bravely ask for safe and separate toilet facilities (McIntyre, 2014). Breaking stereotypes is important, with female engineers like Fauziah acting as role models, challenging perceptions, and highlighting that being a female engineer is an asset in the construction industry (Utusan Borneo Online).

2.4 Suggest The Well-Being Working Conditions for Women in Construction Site

According to Jaafar and Sazili (2017), the number of women who are actively participating in the labour force has recently climbed to 54.3%. This assertion is backed up by Miscon (2019), which states that the budget for 2020 will also provide up to 33,000 work opportunities for people of all different backgrounds. In addition, the possibilities and room for advancement in careers available to women is also empowered in the National

Women's Policy, which places an emphasis on the growth and empowerment of women as a top priority in order to help women realise their full potential in national planning and development (National Women's Policy, 2021). This is done with the goal of achieving gender equality. In addition, The Malaysian Construction Industry Women's Association (WIBM) was founded in order to empower women and strive towards making them more active and productive in the nation's construction industry, as stated by Hashim, Baharudin, and Ghazali (2015). This was the motivation behind the establishment of the organisation. Therefore, it is evident that numerous measures have been implemented to create chances and space for women's careers in this country, particularly in the construction sector. This is especially true in the case of the construction industry.

Table 4 Suggest the well-being working conditions for women in construction site

Bill	Suggestion the well-being working conditions for women in construction site
1.	Women's working hours should be made more flexible
2.	Provide proper personal protective equipment (PPE).
3.	Encourage Training and Education
4.	Encourage women to take part in decision-making

Ensuring the well-being of women in the construction industry involves implementing measures to enhance their working conditions. Initiatives such as the National Women's Policy and the Malaysian Construction Industry Women's Association (WIBM) reflect the Malaysian government's commitment to empowering women in construction (Jaafar *et al.*, 2017). To improve working conditions, flexible hours, as advocated by Previous Deputy Prime Minister Datuk Seri Dr Wan Azizah Wan Ismail (2018), can enable women to balance work and familial responsibilities effectively. Additionally, providing proper personal protective equipment (PPE) designed for women's comfort and safety is crucial (Amie, (2010). Encouraging training and education through programs like Malaysia's Training Scheme (SL1M) creates opportunities for women to develop skills and find employment in the construction sector (The Sun Daily, (2020). Addressing gender disparities in decision-making, as highlighted by Datuk Maimunah Mohd Sharif, is essential for achieving economic and social empowerment for women (United Nations Human Settlements Programme, 2023). These comprehensive measures contribute to fostering a supportive and inclusive environment for women in construction.

2.5 Research Gaps

Table 5 shows list of the challenges faced by women in the construction industry from previous studies.

Table 5 List of challenges faced by women in the construction industry sector in previous studies

Challenges of women in construction site work-life	Sources of previous studies
Cultural challenges	Ghazi (2017), Shibani <i>et al.</i> (2021), Mastura (2015), Salahuddin (2015), Anuar <i>et al.</i> (2017), Awang (2022)
Health and safety challenges	Ghazi (2017), Mastura (2015), Salahuddin (2015), Rostiyanti <i>et al.</i> (2021), Anuar <i>et al.</i> (2017), Awang (2022)
Today's technological challenges	Awang (2022)
The challenge of inflexible working hours Challenge gender stereotypes	Mastura (2015), Salahuddin (2015), Rostiyanti <i>et al.</i> (2021), Anuar <i>et al.</i> (2017), Awang (2022) Shibani <i>et al.</i> (2021), Nalitorela <i>et al.</i> (2020), Rostiyanti <i>et al.</i> (2021), Anuar <i>et al.</i> (2017), Awang (2022)
Challenges of the construction industry	Ghazi (2017), Shibani <i>et al.</i> (2021), Nalitorela <i>et al.</i> (2020), Mastura (2015), Rostiyanti <i>et al.</i> (2017), Anuar <i>et al.</i> (2017), Awang (2022)
The challenge of personal and family commitment	Mastura (2015), Salahuddin (2015), Anuar <i>et al.</i> (2017), Awang (2022)

Based on the findings of a variety of research publications, the difficulties that have been described have, for the most part, received the highest level of consensus among the studies that have been analysed. One of the obstacles that prevents women from participating in building projects is the cultural barrier that exists on construction sites. On the other hand, for the construction health and safety challenge, only Ghazi (2017), Mastura (2015), Salahuddin (2015), Rostiyanti *et al.* (2021), and Anuar *et al.* (2017) are in agreement, while Ghazi (2017), Shibani *et al.* (2021), Awang (2022), Salahuddin (2015), and Anuar *et al.* (2017) are in agreement regarding the cultural challenges at this construction site. In addition, Mastura (2015), Salahuddin (2015), Rostiyanti *et al.* (2021), and Anuar *et al.* (2017) all agree that inflexible working hours as well as no challenge to women. On the other hand, the challenge of gender stereotypes is agreed upon by Shibani *et al.* (2021), Nalitlela *et al.* (2020), Rostiyanti *et al.* (2021), and Awang (2022). In addition, apart from Salahuddin (2015), agreed that the construction business faces a struggle with its image. In conclusion, the difficulty of balancing personal and family responsibilities is another significant factor that affects the participation of women in the construction business. The authors Mastura (2015), Awang (2022), Salahuddin (2015), and Anuar *et al.* (2017) all concur with this assessment.

3. Research Methodology

The quantitative techniques gained through the dissemination of questionnaires are used in the design of this study. The primary data for the study was collected via a questionnaire. Gerring (2011) defines research design as "a planned arrangement that shows how this research is conducted." A descriptive research study was employed in this investigation. Before being used as research conclusions, data collected from a sample of respondents is analysed in the form of frequency and mean score values in descriptive research. Figure 1 shows the research methodology process.

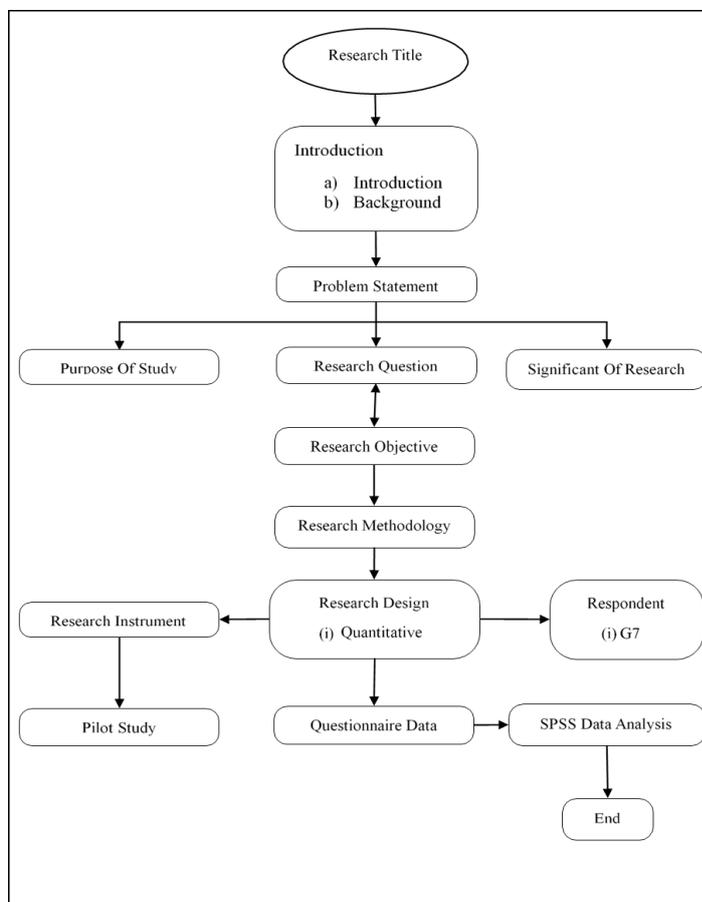


Fig. 1 Research methodology process

Questionnaires are the most often used quantitative research tool. Quantitative data may be analysed statistically (Watson *et al.*, 2006). Quantitative research methods are concerned with collecting and analysing data that is structured and can be represented numerically. One of the central goals is to build accurate and reliable measurements that allow for statistical analysis. Data may be described in terms of percentages, central tendency (mode, median, mean) and spread (range and standard deviation). In research, two sorts of sources

are used: primary sources and secondary sources. Primary sources include raw data and the oldest evidence. The researcher can find information about the study topic through original sources. The questionnaire was the primary source of data. Secondary sources provide data and analysis from other academics that cannot be obtained in primary sources. Journal articles, book reviews, and scholarly books are some examples. Secondary sources can be utilised to explain and interpret main sources in a variety of ways (Dana, 2019). The research process is depicted in Figure 1.

4. Result and Discussion

This section explains the findings of the study.

4.1 Cronbach's Alpha Reliability Test

This Cronbach's Alpha reliability test involved two participants from the academic side and one from the industry side. It was then subjected to a reliability test with SPSS software. Table 6 displays the Cronbach's Alpha value, which was found to be all above 0.7 for the gathered replies. According to the literature assessment, the greater the value of Cronbach's Alpha, the higher the level of data reliability. In conclusion, the collected feedback data is trustworthy and suitable for analysis.

Table 6 Reliability statistic

Cronbach's Alpha	N of Item	N of Respondent
0.972	79	139

4.2 Data Analysis

In this study, around 248 questionnaires were delivered via an online type of survey to respondents who were grade 7 (G7) contractors working in the construction business in Johor Baharu. All respondents are directly or indirectly involved in the sector of construction, particularly on building sites. Because the majority of the respondents are experienced and competent in the construction industry, the results obtained are true and reliable.

This survey is divided into four sections: Part A, Part B, Part C, and Part D. Part A discusses the respondent's background, including gender, age, education level, position, and work experience in the construction business, as well as the scope and field of employment. Part B discusses the obstacles that women experience in their work lives on construction sites, while Part C discusses present practices for women in construction and Part D provides a suggestion for improved working conditions for women on construction sites. The findings of this section's data analysis were presented in the form of pie charts and tables.

4.3 Item Analysis Based on Research Questions

Based on the mean for each question, the index range is applied to each mentioned feature to ascertain the degree of agreement. The degree of agreement based on the mean index range is displayed in Table 7. A result in the range of 3.80 to 5.00 indicates a high interpretation, whereas a value in the range of 1.00 to 2.49 indicates a low interpretation.

Table 7 Interpretation mean score

Index table	Interpretation
1.00-2.49	Low
2.50-3.79	Moderate
3.80-5.00	High

This survey questionnaire was issued to G7 Contractors working in construction projects in Johor via Google Form using online digital survey methods. The total number of distributed questionnaires was 248 sets of questions, with a response rate of 56.4%, or 139, from respondents. Looking at research on survey distribution methods, Cleave (2022) finds that the average online survey response rate at this time is roughly 30%. Chung (2022) backs up this claim, stating that a good survey response rate is between 5% and 30%. A response rate of 50% or greater is considered excellent. Part A consists of 5 questions which are, gender, age, level of education, experience working in the construction industry, position.

4.4 Respondents Backgrounds

Table 8 Respondent background analysis

Respondents' Background	Frequency (n)	Percentage (%)
Gender		
Female	84	60.4
Male	55	39.6
Age		
20-30 years old	46	32.6
31-40 years old	18	28.3
41-50 years old	27	19.1
51-60 years old	28	19.9
60 years old and above	22	15.6
Education level		
Certificate	27	26.2
Diploma	27	19.4
Degree	50	36
Masters	31	22.3
PHD	26	18.7
Job Position		
Site engineer	35	25.2
Architect	33	23.7
Surveyor	32	32
Engineer	27	19.4
Other	12	8.6
Experience in the industry		
5 years and below	66	47.9
5-10 years	46	33.8
11-15 years	24	17.6
15 years and above	1	0.7

The gender analysis of 139 participants reveals a distribution of 39.6% men and 60.4% women. Notably, respondents aged 20 to 30 years constitute the majority at 32.6%, emphasizing the study's youthful demographic. Regarding education levels, those with a bachelor's degree form the largest group at 36%, underlining the respondents' strong academic qualifications. Job experience analysis indicates that 47.9% have less than 5 years of experience in the construction business. In terms of positions, site engineers dominate at 25.2%, followed by architects at 23.7%, emphasizing the diversity of roles within G7 contractors. This comprehensive analysis provides valuable insights into the demographics, education, experience, and roles of participants in the construction industry study.

Table 9 The results of a descriptive analysis of the challenges of women in construction site

No.	Item	Mean	Level of Agreement
B1) The challenge of stress caused by task demands career and Family responsibilities			
1.	Conflict between family and work	3.96	High
2.	Difficulty focusing on tasks	3.96	High
3.	Extreme pressure in one time	3.95	High
4.	Work environment stress	3.84	High
5.	Peer pressure	4.05	High
6.	Emotional stress at work	3.99	High
Mean Average		3.96	High
Overall Level of Agreement		High	
B2) Challenge of lack of effective time management			

1.	Lack of quality time with family	3.91	High
2.	Lack of time for yourself	4.10	High
3.	No time to work overtime	3.99	High
	Mean Average	4.01	High
	Overall Level of Agreement	High	
B3 Challenges of child care needs and resources			
1.	The cost of sending a child to nursery school is quite a bit expensive	4.05	High
2.	Problems getting childcare while working	4.11	High
3.	Availability of care facilities unfit children	3.92	High
	Mean Average	4.03	High
	Overall Level of Agreement	High	
B4 The challenge of excess work and lack of support employer			
1.	Feeling pressured to work overtime. by the employer	4.05	High
2.	Lack of support from employers in maintaining the well-being of employees	4.00	High
3.	Feeling difficulty in balancing work life and personal life	3.98	High
	Mean Average	4.01	High
	Overall Level of Agreement	High	
B5 The challenge of conflict in the workplace			
1	Segregation in the distribution of jobs and different wages between workers man and women	3.97	High
2.	Male workers are paid more wages. higher than female workers	3.91	High
3.	Women are considered less productive and lack of leadership skills	3.85	High
	Mean Average	3.91	High
	Overall Level of Agreement	High	
B6 Bad weather challenge			
1.	Bad weather affects daily activities	3.94	High
2.	Bad weather affects health	3.98	High
3.	Affecting the quality and productivity of work	3.93	High
4.	Safety factors when working in bad weather	4.03	High
	Mean Average	3.97	High
	Overall Level of Agreement	High	
B7 The challenge of getting respect			
1.	Lack of respect from employees another	3.94	High
2.	Affects self-confidence and emotional well-being	4.05	High
3.	Get support or help from other party	3.91	High
4.	Equality of support in the workplace	4.06	High
	Mean Average	3.99	High
	Overall Level of Agreement	High	
B8 Cultural challenges			
1.	High workload	4.03	High
2.	Wages and salaries	3.99	High
3.	Distribution of work scope	3.90	High
4.	Mentality/ Culture of thought	3.93	High
5.	Trust of colleagues	3.90	High
	Mean Average	3.95	High
	Overall Level of Agreement	High	

B9 The challenge of conflict in the workplace

1	Discrimination in the workplace	3.98	High
2.	Emotional disturbance	3.97	High
3.	Intellectual disorder	3.87	High
4.	Sexual harassment	4.0	High
	Mean Average	3.96	High
	Overall Level of Agreement		High
B10 Facility challenges at construction site			
1.	Lack of facilities	3.94	High
2.	Dilapidated and dirty facilities	3.95	High
3.	Risk of health problems	4.05	High
	Mean Average	3.98	High
	Overall Level of Agreement		High
B11 Challenges of construction site conditions			
1.	Dirty construction site conditions	4.05	High
2.	Hot construction site conditions	3.96	High
3.	The condition of the construction site dangerous	4.00	High
	Mean Average	4.00	High
	Overall Level of Agreement		High
B12 The challenge of sexual harassment			
1.	Employees are not comfortable doing work	4.01	High
2.	Fear and trauma	4.02	High
3.	Emotional disturbances	4.00	High
4.	Emotional stress	4.03	High
	Mean Average	4.02	High
	Overall Level of Agreement		High
B13 The challenge of distance between construction sites and residences			
1.	Risk of accidents	4.10	High
2.	Time management	4.05	High
3.	Traffic congestion	4.02	High
4.	Long distance life with family	4.05	High
	Mean Average	4.05	High
	Overall Level of Agreement		High
B14 The challenge of equal opportunities for women in the workplace			
1.	Discrimination in the workplace	3.94	High
2.	The response of the workers to women's ability	3.81	High
3.	Limited scope of work	4.01	High
	Mean Average	3.95	High
	Overall Level of Agreement		High
B15 Image challenges of the construction industry			
1.	Women's perception of the environment work	4.07	High
2.	Psychological perception of women to work in construction site	4.07	High
3.	Perception of women's confidence to work at the construction site	4.10	High
	Mean Average	4.05	High
	Overall Level of Agreement		High

Table 11 outlines the challenges faced by women in the construction industry, featuring fifteen key issues. Topping the list are 'The challenge of distance between construction sites and residences' and 'Image challenges of the construction industry,' both scoring the highest mean of 4.05 with a 'high' level of agreement. Following closely is the 'Challenges of childcare needs and resources' at the 2nd position, registering a mean of 4.03 and maintaining a 'high' level of agreement. 'The challenge of sexual harassment' secures the 3rd position with a mean of 4.02 and significant agreement. Occupying the 4th position are 'Challenge of lack of effective time management' and 'The challenge of Overwork and lack of support employer,' sharing the same mean of 4.01. 'Challenges of construction site conditions' takes the 5th position with a minimum score of 4.00. The 6th position is held by 'The challenge of getting respect' with a minimum mean of 3.99, followed by 'Facility challenges at construction site' at the 7th position with a mean of 3.98. 'Bad weather challenge' secures the 8th

position with a mean of 3.97, and the 9th position is shared by 'The challenge of stress caused by task demands career and family responsibilities' and 'The challenge of conflict in the workplace,' both with a mean of 3.96. Occupying the 10th position are 'Cultural challenges' and 'The challenge of equal opportunities for women in the workplace' with an identical mean of 3.95. The lowest position in the ranking is 'The challenge of conflict in the workplace' with a mean of 3.91. This comprehensive summary highlights the nuanced nature of challenges faced by women in construction, ranging from logistical and family-oriented issues to workplace culture and equality concerns.

4.5 Current Practice of Women in Construction

Table 10 *The results of a descriptive analysis of the current practice of women in construction*

No.	Item	Mean	Level of Agreement
Employment Opportunities			
1	Create job opportunities	4.08	High
2.	Improve the economic position women	4.01	High
3.	Encourage more entrepreneurs engineer	3.95	High
Mean Average		4.01	High
Overall Level of Agreement		High	
Increasing Participation			
1.	Attract women's interest in construction industry	4.09	High
2.	Keep more women in development sector	4.06	High
3.	Promoting diversity and opportunities for women	4.02	High
Mean Average		4.06	High
Overall Level of Agreement		High	
Safety And Accommodation			
1.	Adding toilet facilities on site construction	3.95	High
2.	Provide separate toilets on site construction	4.00	High
3.	Segregation of women's rest areas more comfortable	4.10	High
Mean Average		4.02	High
Overall Level of Agreement		High	
Breaking Stereotypes			
1.	Full support from the employer	3.93	High
2.	Prove that women can compete with men	4.02	High
3.	Women's mental and physical readiness	4.03	High
Mean Average		4.06	High
Overall Level of Agreement		High	

Table 10 provides a concise summary of Objective 2, focusing on the current practices of women in the construction industry. The analysis reveals three key positions. Leading the list are 'Increasing Participation' and 'Breaking Stereotypes,' securing the first position with the highest mean of 4.06 and a 'high' level of agreement. This indicates a positive trend towards greater inclusivity and the dismantling of gender-based stereotypes in the construction sector. Following closely is the 2nd position occupied by 'Safety and Accommodation,' showcasing a mean of 4.02 and a 'high' level of agreement. This underscores the industry's commitment to enhancing safety measures and providing suitable accommodations for women, addressing crucial aspects of their working conditions. Lastly, in the 3rd position is 'Employment Opportunities' with a mean of 4.01 and a 'high' level of agreement. While slightly lower in mean, the high level of agreement suggests a significant acknowledgment of efforts to improve employment opportunities for women in construction. In summary, the findings suggest a promising trajectory in the industry, with a notable emphasis on increasing

participation, breaking stereotypes, prioritizing safety and accommodation, and enhancing employment opportunities for women in construction.

4.6 Suggest The Well-Being Working Conditions for Women in Construction Site

Table 11 *The results of a descriptive analysis of the suggestion the well-being working conditions for women in construction site*

No.	Item	Mean	Level of Agreement
Women's Working Hours Should Be Made More Flexible			
1	Work from home	3.93	High
2.	Maternity leave facility	4.01	High
3.	According to office hours	4.01	High
Mean Average		3.98	High
Overall Level of Agreement		High	
Provide Personal Protection Equipment (PPE) Which Appropriate			
1.	Create a safe environment	4.07	High
2.	Give comfort to women	4.01	High
3.	Appropriate size	3.94	High
Mean Average		4.00	High
Overall Level of Agreement		High	
Promote Training and Education			
1.	Strengthening skills training	4.03	High
2.	Strengthen site management training	4.23	High
3.	Empowering skill training effective communication	3.99	High
Mean Average		4.08	High
Overall Level of Agreement		High	
Encourage Women to Take a Part In Making Decisions			
1.	Empowering women to make decision	4.05	High
2.	Empowering women in give suggestions	4.01	High
3.	Empower women to get involved in the field of construction	4.02	High
Mean Average		4.03	High
Overall Level of Agreement		High	

Table 11 offers a comprehensive summary of Objective 3, focusing on suggesting well-being working conditions for women in the construction site. The analysis reveals four key positions. Leading the list is 'Promote Training and Education,' securing the first position with the highest mean of 4.08 and a 'high' level of agreement. This underscores the importance of continuous learning and development to enhance the skills and expertise of women in the construction industry. In the 2nd position is 'Encourage Women to Take a Part in Making Decisions,' with a mean of 4.03 and a 'high' level of agreement, indicating a strong consensus on the need for women to actively participate in decision-making processes within the construction sector.

Following closely is the 3rd position held by 'Provide Personal Protection Equipment (PPE) Which Appropriate,' showcasing a mean of 4.00 and a 'high' level of agreement. This highlights the significance of ensuring that women have access to suitable and effective personal protective equipment tailored to their needs, emphasizing the industry's commitment to their safety. In the 4th and final position is 'Women's Working Hours Should Be Made More Flexible,' with a mean of 3.98 and a 'high' level of agreement. This position indicates a collective recognition of the importance of flexible working hours to better accommodate the diverse responsibilities of women in the construction site, acknowledging the need for adaptability in scheduling to promote work-life balance. In summary, the findings underscore the significance of education, participation in decision-making, appropriate PPE provision, and flexible working hours to enhance the well-being of women in the construction industry.

5. Conclusion

In conclusion, this study has achieved the objectives that have been set. The highest challenges that contribute to the involvement of women in the construction industry sector, especially construction sites. Arithmetic mean analysis shows that the findings collected from G7 contractor respondents can identify the highest challenge position is the challenges of distance between construction sites and residences, image challenges of the construction industry followed by the challenges of childcare needs and resources and the challenges of sexual harassment that contribute to the rate of women's involvement in the site construction. Additionally the findings collected from G7 contractor respondents can find out the current practice position of women in construction is Increased Participation, increased participation of women in the construction sector can increase opportunities and space for women's careers to get involved in the construction industry, especially on construction sites. Increasing participation and breaking stereotypes got first place for collecting the same mean which is 4.06. However, based on the standard deviation value, Increasing Participation is a challenge in the first ranking which is 0.38395 because the standard deviation value is the smallest, this shows that they are close to each other, and that the measurement is accurate. According the Zhao,(2021) increasing participation future opportunities may lie in encouraging more women to work in the construction industry. For the breaking stereotypes according to Powell and Graves (2003), manager stereotypes are crucial since they help to categorise managers as either excellent or bad. Furthermore, the findings collected from G7 contractor respondents can find out the current practice position of women in construction is Increased Participation, increased participation of women in the construction sector can increase opportunities and space for women's careers to get involved in the construction industry, especially on construction sites. Increasing participation and breaking stereotypes got first place for collecting the same mean which is 4.06. However, based on the standard deviation value, Increasing Participation is a challenge in the first ranking which is 0.38395 because the standard deviation value is the smallest, this shows that they are close to each other, and that the measurement is accurate. According the Zhao,(2021) increasing participation future opportunities may lie in encouraging more women to work in the construction industry. For the breaking stereotypes according to Powell and Graves (2003), manager stereotypes are crucial since they help to categorise managers as either excellent or bad.

Finally the outcomes reveals that among the findings collected from G7 contractor respondents, the proposal for promoting women's well-being and working conditions on construction sites, specifically through training and education, received the highest ranking. This is attributed to the belief that, with adequate training and education, women can enhance their skills and confidence while working in the construction industry. "Promote Training and Education" secured the top position, garnering the highest mean score of 4.08. However, a closer examination of the standard deviation values indicates that "Promote Training and Education" is not only the suggestion with the highest mean but also exhibits a low standard deviation of 0.39051. A smaller standard deviation implies that the responses are closely clustered around the mean, suggesting a higher level of agreement among respondents. This precision in measurement enhances the credibility of the findings. In essence, advocating for the training and education of women in the construction industry extends beyond a mere pursuit of equality; it is a strategic initiative that stands to benefit the industry holistically. This approach fosters a workforce that is not only diverse but also skilled and empowered. Such empowerment contributes significantly to the growth and success of the construction sector.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Author Contributions

Nur Ain Najwa Abdullah contributed significantly to this study through data collection, statistical analysis, and drafting of the manuscript. Mohd Hilmi Izwan Abd Rahim provided guidance on the research design, supervised the overall study, and conducted the final review of the article.

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