

REMOTE WORK FOR FEMALE PROFESSIONALS IN SRI LANKAN CONSTRUCTION INDUSTRY: CHALLENGES AND EXPECTATIONS

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ABSTRACT

The construction industry is still male-dominated, and female professionals have to face challenges related to work–life balance, organizational culture, and flexibility in work arrangements. The necessity of remote working was accelerated during the COVID-19 pandemic, creating the opportunities to address these challenges. However, the adoption of remote working in Sri Lankan construction is still limited and underexplored. This study examines the challenges faced by female professionals in remote work and evaluates their expectations regarding organizational support to facilitate effective and sustainable remote working arrangements. A quantitative research approach was adopted, and a questionnaire was administered to collect the data from female architects, engineers, and quantity surveyors who are working in Sri Lankan construction industry. In data analysis, one sample t test was utilized to identify the critical challenges and expectations. The results revealed that workload increases and expectations to be “always available online” and “Lack of resources and facilities (Proper technical tools, network, etc.)” are the critical challenges, and “create scheduled virtual “check-ins” for all team members to share updates” and “Promote digital wellness practices (scheduled break times, no-meeting hours)” are the most critical expectations of female professionals in the Sri Lankan construction industry regarding remote working. These study findings provide a better understanding for the top-level managers in Sri Lankan construction industry to implement effective remote working facilities for the professionals.

Keywords: Construction Industry; Female Professionals; Remote Working; Sri Lanka.

1. INTRODUCTION

The construction industry is usually male dominated, with women contributing up less than 10% of the workforce (Senaratne et al., 2025). The construction industry's reputation for macho attitudes, hostile work environments, and long hours can lead to burnout and psychological disorders among women, resulting in lower job satisfaction, difficulty

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balancing work and personal life, and intention to leave the profession (Pamidimukkala & Kermanshachi 2022).

In the Sri Lankan construction industry, female workers face some challenges related to family, social, cultural, educational, and industrial barriers (Srivishagan & Thalpage, 2021). Significantly, work-life balance has been a major challenge for Asian women because they have more family obligations than their Western counterparts, which also includes a greater emphasis on caring for aging parents (Cheng & Yang, 2021).

During the Covid-19 period, the remote work concept is more trending in the world. However, this pandemic and the subsequent lockdown measures have expedited the trend of enabling employees to work remotely (Battisti et al., 2022). Various terms are used to describe this phenomenon, such as telework, remote work, e-work, virtual work, distance work, home office, mobile working, remote office work, work from anywhere (WFA), home-based work, and work from home (WFH) (Shirmohammadi et al., 2022). Prior to the COVID-19 pandemic, remote working was recognized but not widely practiced (Battisti et al., 2022). However, many women prefer work-from-home opportunities for their independence and flexibility, allowing them to balance their work and family responsibilities (Loezar-Hernández et al., 2023).

During the COVID-19 pandemic, the Sri Lankan construction industry temporarily shifted to remote work but reverted to on-site operations post-pandemic (Adikaram & Naotunna, 2023). This sector still faces significant challenges in adopting novel technologies, which limits the integration of remote working practices. Despite discussions in other industries regarding remote work strategies (Usman, 2024), there is a lack of specific studies addressing these issues within the Sri Lankan construction sector. Furthermore, while existing research highlights the need for investment in technological infrastructure (Gunawardana & Bandaranayake, 2024), it has not adequately examined gender-specific challenges associated with remote work in this industry. However, there is a lack of studies that assess the remote work for female professionals in Sri Lankan construction industry. Therefore, this study aims to investigate the critical challenges of remote working and the expectations for overcoming them among female professionals in the Sri Lankan construction industry, focusing on the following objectives:

1. Identify challenges and expectations of female professionals on remote working environments in the Sri Lankan construction industry.
2. Examine the variations in perception among the different female professional groups regarding the remote working mode in the Sri Lankan construction industry.
3. Identify the critical challenges and expectations for female professionals under remote working in the Sri Lankan construction industry.

2. LITERATURE REVIEW

2.1 FEMALE ENGAGEMENT IN CONSTRUCTION INDUSTRY

The construction industry, employing around 220 million people, is a significant economic contributor, but employs less than 10% of female workers compared to 90% of male workers, despite females accounting for 50% of the global workforce (Senaratne et al., 2025). Furthermore, women may leave the industry after their education due to a lack

of familiarity with its culture and the challenges of working in a male-dominated environment (Afolabi et al., 2019). Thus, the remote working concept was trendier during the COVID-19 pandemic among female professionals. As the example, In the consulting sector of the Australian construction industry, females have reported higher overall satisfaction with working from home (WFH) and a greater preference for WFH post-pandemic compared to males (Oo et al., 2023).

In Sri Lankan construction industry, A lack of female representation in construction sector due to various barriers to entry. These challenges are related to family, social, cultural, educational, and industrial barriers (Srivishagan & Thalpage, 2021). Additionally, affecting promotions and work-life balance, unequal recruitment practices, and limited knowledge of available opportunities also affect for the women participation and their future in Sri Lankan construction industry (Vijayaragunathan & Rasanthi, 2019).

2.2 REMOTE WORKING MODE

Remote working, also known as flexible working, is becoming a trend as a result of many countries' government-imposed lockdowns or movement restrictions caused by the COVID-19 pandemic (Battisti et al., 2022). Furthermore, COVID-19 pandemic has accelerated the adoption of remote work, changing traditional work structures and employee behaviours (Orzel & Wolniak, 2022). In the construction industry, remote working refers to flexible arrangements that allow professionals to work from places other than traditional workplaces (Azizi et al., 2023). The study from Poland indicates that construction professionals' preference for remote work due to its flexibility, time savings, comfort, environmental sustainability through reduced electricity consumption and emissions and safety benefits accelerated digitization trends during the pandemic (Orzel & Wolniak, 2022). In Sri Lankan construction sector, remote working followed as a short-term crisis response rather than a long-term solution (Adikaram & Naotunna, 2023).

There are two types of remote working arrangements, which are classified as hybrid work models and fully remote conditions (Safira et al., 2023). Full remote working allows employees to work from anywhere without needing to go to the workplace, while hybrid working involves going to the office for a few days and working remotely on other days (Pinheiro & Palma-Moreira, 2025). There are different hybrid working arrangements that are employed in the construction sector such as "at will model," "split week model," "shift work model," and "week by week model" (Devinda et al., 2023).

2.3 CHALLENGES OF REMOTE WORKING ENVIRONMENT

According to the culture of the construction industry with long working hours, the remote working options are significantly low among construction workers, and the remote workability ratio for construction occupations is less than the other industries, such as agriculture, manufacturing, and retail trades (Dingel & Neiman, 2020).

The challenges faced by remote workers in their working environment, identified from literature reviews, are presented in Table 1.

Table1: Challenges faced by remote workers in their working environment

Challenges	Code	Authors
Gender bias and stereotypes in promotions/opportunities	C1	[1]
Lack of mentorship and role models	C2	[2]
Difficulty balancing family responsibilities with demanding work schedules	C3	[3],[4],[5]
Limited visibility and recognition when working remotely	C4	[6]
Exclusion from informal discussions/decision-making networks	C5	[2],[7]
Limited opportunities for leadership roles in remote mode	C6	[8]
Lack of organizational support for career development of remote workers	C7	[2]
Technology access gap (hardware, internet, software)	C8	[7], [9]
Psychological stress/isolation in remote work	C9	[2]
Unfair performance evaluations for remote workers	C10	[10],[11]
Workload increases (expectation to be "always available" online)	C11	[12]
[1] Holdsworth et al., (2023); [2] Dilipkumar et al., (2024); [3] Pamidimukkala & Kermanshachi (2022); [4] Irawanto et al., (2021); [5] Loezar-Hernández et al., (2023); [6] Wong et al., (2021); [7] Žvirelienė & Lipinskienė, 2023); [8] Rodrigo et al., (2024); [9] Onyekwere, (2024); [10] Pinheiro & Palma-Moreira, (2025); [11] Gong et al., (2022); [12] Suratkon & Azlan, (2021)		

Table 1 presents the remote working challenges faced by employees that were identified from the literature. In the Australian construction industry, the recruitment of females is much lower than that of males (C1) (Holdsworth et al., 2023). Under remote working, lack of interaction with supervisors lowers the mentorship and guidance (C2) (Dilipkumar et al., 2024). Remote working frequently causes workers to have no clear boundaries between work and personal life. It may result in work overload, and difficult to balance work family responsibilities (C3) (Irawanto et al., 2021). Moreover, it is unclear to remote workers how they can demonstrate their dedication, proficiency, and performance in the absence of in-person interactions (C4) (Wong et al., 2021). The physical isolation under remote working reduces organizational visibility, colleague connections, and networking (C5). This lack of social capital may hinder employees' upward mobility because professional advancement is linked to visibility and advocacy from networked relationships within an organization (Dilipkumar et al., 2024). Apart from that, remote workers struggle for access for the advancement opportunities (C6) (Bell, 2012). In some studies, remote workers are considered as having lower employer support than in-office workers for career development (C7) (Dilipkumar et al., 2024). In contrast, remote workers have to face network issues such as limited internet connectivity and access to reliable devices (C8) (Onyekwere, 2024). However, remote working limits the social interactions, and physical isolation reduces organizational visibility, colleague connections, and networking (C9) (Dilipkumar et al., 2024). Another challenge of remote working is assessing employee performance due to the limited scope for traditional supervision and direct observation (C10) (Pinheiro & Palma-Moreira, 2025). Sometime there are higher pressure with more calls and expectations to be always available online (C11) (Suratkon & Azlan, 2021).

2.4 CURRENT SITUATION OF FEMALE PROFESSIONALS ENGAGED IN REMOTE WORK IN THE SRI LANKAN CONSTRUCTION INDUSTRY

During the covid pandemic, the Sri Lankan construction industry implemented remote working arrangements as the emergency solution. But many companies planned to follow on-site work after the pandemic situation was settled (Adikaram & Naotunna, 2023). In the Sri Lankan context, female engagement for remote working exhibits a lower level due to their inadequate technical skills, low confidence in digital technologies, and social organizational barriers. In addition, poor professional networking, low interest in ICT skills, and insufficient risk assessment further hinder women's engagement with digital platforms (Kodithuwakku & De Silva, 2025). Furthermore, the use of advanced digital technologies for virtual reality, is also lower in the Sri Lankan construction industry (Perera et al., 2023). Thus, the facilities for remote working arrangements are poor in the Sri Lankan construction industry. Thus, identifying challenges and expectations of employees to work remote working arrangements is significant to further implement in the Sri Lankan construction industry. Moreover, identifying challenges faced by female professionals with the cultural and social environment is most helpful to implement long-term remote working arrangements in the Sri Lankan context without considering gender inequalities.

3. RESEARCH METHODOLOGY

The aim of the study is investigating remote working challenges and expectations of female professionals in the Sri Lankan construction industry. The study adapts the quantitative method, which involves the collection and analysis of numerical data (Rana et al., 2021). Figure 1 shows the developed research design of this study.

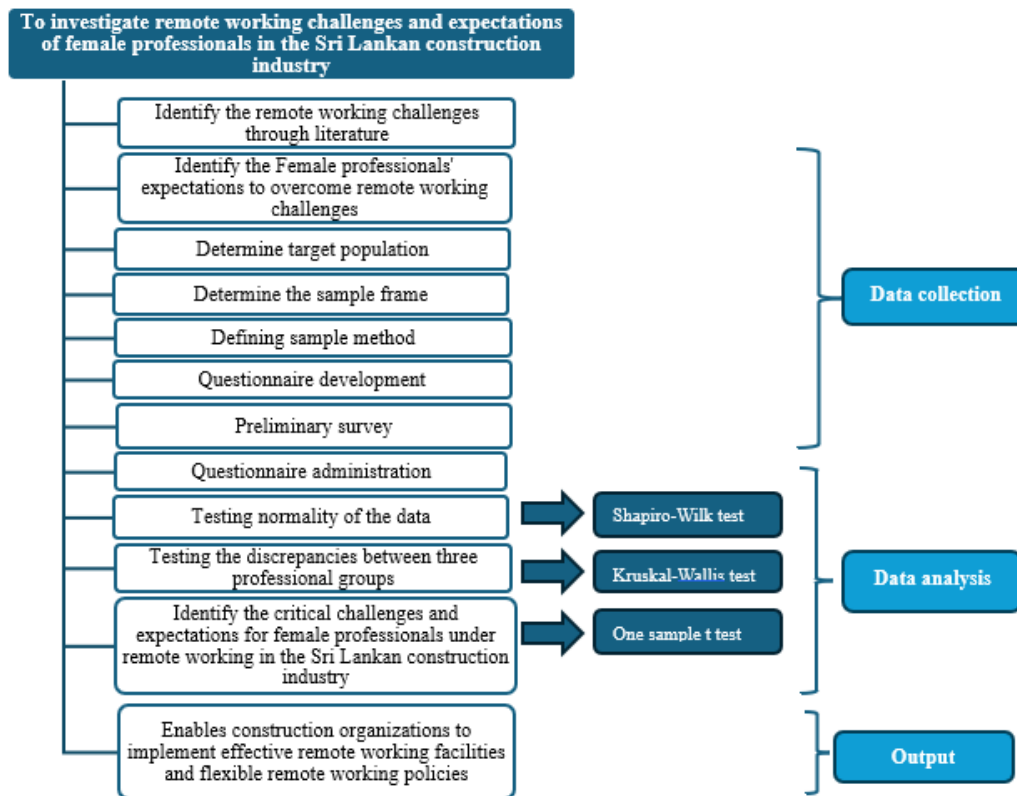


Figure 1: Research design

Initially, a literature review was conducted to identify challenges of remote working. Furthermore, it helped to identify current situation of remote working in Sri Lankan construction industry. The target population of this study consist of construction female professionals namely architects, engineers and quantity surveyors working in Sri Lankan construction industry. The sample frame is female professionals in category of engineer, architect and quantity surveying who are working in Sri Lankan construction industry and having experience more than 3 years. Further, purposive sample was used to get views only from female professionals who have knowledge or experience in remote or hybrid working arrangements (Huwaee et al., 2024).

A questionnaire was used as a data collection tool because data was to be collected from a larger number of respondents within a shorter time (Ahmed et al., 2018).

According to Hertzog (2008), the recommended sample size for a preliminary survey is in the 10-40 range. Thus, following the identification of remote working challenges through the literature review, to validate their relevance to the Sri Lankan construction industry, a preliminary survey was conducted among the 20 female construction professionals who are aligned with the sample frame. Accordingly, selected female professionals have more than 15 years of overall industry experience and over 5 years of remote working experience in the Sri Lankan construction industry. Respondents were asked to indicate whether each challenge was applicable to the Sri Lankan construction industry, using a “Yes” or “No” response. Challenges that received more than 30% “Yes” responses were retained for the development of the questionnaire. This threshold exceeds the minimum response rate of 27.8% recommended by Lund (2021), for selecting critical factors in questionnaire surveys. Moreover, the expectations of female professionals for overcoming remote working challenges were derived from respondents’ opinions provided through an open-ended question in the preliminary survey.

After the preliminary survey, a questionnaire survey was distributed to 75 construction industry female professionals to collect data, as it is sufficient to obtain a moderate response rate of 30–50% (Faleiros et al., 2016). The questionnaires were distributed via Email, LinkedIn, and WhatsApp to enhance accessibility and encourage participation.

After the data collection, a normality test was conducted to check the normality of the data. Shapiro-Wilk test was conducted to check the normality of the data as the sample size (n) < 50 (Avram & Mărușteri, 2022) Hypotheses of the Shapiro-Wilk test are as follows:

- Null hypothesis (H_0): Data follows a normal distribution.
- Alternative hypothesis (H_1): Data does not follow a normal distribution.

If $p > 0.05$ the null hypothesis is accepted. Otherwise, the null hypothesis is rejected.

To achieve objective 2, Kruskal Wallis test, a nonparametric test was conducted to compare the means of three specific groups: female quantity surveyors, architects and engineers. Hypotheses of the Kruskal-Wallis test are as follows:

- Null Hypothesis (H_0): There is no statistically significant difference between the ideas of the groups.
- Alternative Hypothesis (H_1): There is a statistically significant difference between the ideas of the groups.

If $p > 0.05$ the null hypothesis is accepted. Otherwise, the null hypothesis is rejected.

According to Ghasemi and Zahediasl (2012), the Central Limit Theorem ensures that the sampling distribution of the mean approaches normality when the sample size exceeds 30. Thus, parametric tests, such as the t-test, are considered robust to violations of normality in large samples. Furthermore, according to, Carifio & Perla (2007), such aggregated scales can be treated as approximate intervals, allowing parametric tests to be applied.

Thus, to achieve objective 3, a one-sample t-test was selected due to its ability to compare the mean score of each challenge and expectation to a predetermined threshold value and ease of use (Waswa & Al-kassab, 2023). Thus, Standardized mean difference is used for variable importance ranking through SPSS software (Kabakova & Panov, 2025).

Ahadzie et al. (2008), highlighted that success criterion was considered critical or important if it had a mean score of 3.5 or higher on the five-point Likert scale. Consequently, this study used 3.5 as the test value in a one-sample t-test.

4. RESULTS AND DISCUSSION

4.1 RESPONDENT'S DEMOGRAPHIC INFORMATION

In preliminary survey, 20 preliminary questionnaires were distributed, and 15 were returned with valid responses, resulting in a response rate of 75%. Subsequently, the questionnaire survey was distributed to 75 female professionals, of which 40 were returned with valid responses, achieving a response rate of 53.33%. According to Faleiros et al. (2016), the moderate response rate for online surveys is 30–50%. Thus, both surveys have obtained sufficient response rates.

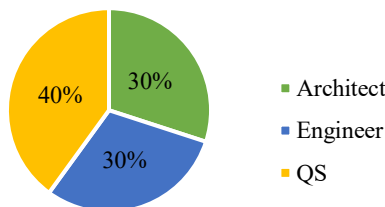


Figure 2: Respondent's profession

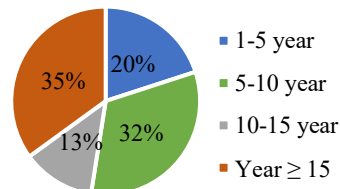


Figure 3: Respondent's experience:

As shown in Figure 2, the data collected from three categories of female professionals specifically architects (30%), engineers (30%) and quantity surveyors (40%) who are working in Sri Lankan construction industry. Further, Figure 3 illustrates the years of experience of the respondents participated in questionnaire survey. The average years of experience of the respondents was 12 years. All the respondents had a degree in a relevant field as the minimum educational qualification. As per the demographic analysis of the questionnaire, the average years of experience and minimum qualifications indicate a sufficient level of expertise and knowledge, which ensures the respondents' ability to accurately understand and respond to the questionnaire.

4.2 CHALLENGES FACED BY FEMALE PROFESSIONALS UNDER REMOTE WORKING IN SRI LANKAN CONSTRUCTION INDUSTRY

The 11 challenges of remote working were identified from the literature review. Then based on the preliminary survey responses, 4 challenges were excluded as their responses rate was less than 30%. Accordingly, C1, C4, C8 and C10 are the excluded challenges. In the Sri Lankan construction sector, female professionals may not perceive existing

gender norms as a distinct "remote working" challenge, partly due to the prevalence of hybrid or site-based work which reduces issues of visibility and recognition. Many remote workers benefit from basic digital infrastructure provided by their organizations or have adapted independently, making technology access less critical compared to workload and work-life balance issues. Additionally, performance evaluations in Sri Lankan construction organizations often rely on traditional methods, thereby obscuring the visibility of remote work-related challenges. Therefore 7 challenges were included in the questionnaire. The questionnaire was then administered to female professionals in Sri Lankan construction industry, and the data were collected. After data collection, the normality of the data was tested using the Shapiro-Wilk test.

To identify the challenges faced by female professionals under remote working within the Sri Lankan Construction Industry, an assessment was carried out one sample t test to identify the critical challenges based on their experience and knowledge by industry female professionals. The results of the Shapiro-Wilk test, Kruskal Wallis test and One sample t test are presented in Table 2.

Table 2: Remote working challenges faced by female professionals in Sri Lankan construction industry

Code	Challenges	Mean	Std. deviation	Rank	Shapiro-Wilk test Sig.	Kruskal-Wallis test Asymp. Sig.
C11	Workload increases and expects to be "always available online"	3.70	0.758	1	< 0.001	0.691
C7	Lack of resources and facilities (Proper technical tools, network, etc.)	3.50	0.751	2	< 0.001	0.980
C2	Difficult to take guidance and mentorship from supervisors to achieve my career goals	3.48	0.784	3	< 0.001	0.624
C5	Less involvement for the informal discussion and decision-making network	3.40	0.955	4	< 0.001	0.362
C9	Psychological stress/ loneliness	3.35	1.001	5	0.001	0.496
C3	Difficulty balancing family responsibilities with stressful work schedules	3.25	0.981	6	< 0.001	0.295
C6	Limited opportunities for managerial positions	3.23	0.891	7	< 0.001	0.709

As shown in table 2, all significance (Sig.) values from the Shapiro-Wilk test are less than 0.05 ($p < 0.05$). Thus, the null hypothesis is rejected, indicating that the data does not follow a normal distribution.

Subsequently, to achieve objective 2, Kruskal-Wallis test was applied to determine whether there are differences in perceptions among the professional groups. Consequently, all the challenges had $p > 0.05$. This indicates that there is no statistically significant difference in perceptions among the groups regarding C2, C3, C5, C6, C7, C9,

C11. This may be because these challenges are common and experienced equally among these professions, which means they impact all the industry professionals as a whole rather than being specific to any one profession.

According to table 2, to achieve objective 3, the mean score of each challenge was compared to a predetermined threshold value (3.5). Moreover, challenges were ranked based on their mean values, with higher mean values assigned higher ranks. In cases where challenges had the same mean value, the standard deviation was used as a secondary criterion, with lower standard deviation indicating a higher rank. Thus, the blue-highlighted rows in Table 2 indicate that both C11 and C7 were critical challenges, as they had a mean score of 3.5 or higher, ranking 1st and 2nd, respectively. Hamour et al. (2023), highlighted that remote workers have to stay online more time to demonstrate they are not avoiding their work responsibilities. In the Sri Lankan construction industry, female professionals face a significant challenge regarding their availability online under remote working. The improper working schedule followed by their organizations may be the reason for that. The second critical challenge in the Sri Lankan context is lack of resources and facilities, such as proper technical tools, networks, etc. Onyekwere (2024), noted that some employees who are engaging in remote working are facing challenges such as limited internet connectivity and access to reliable devices. The lack of resources and facilities for remote working in the Sri Lankan construction industry may be mainly caused by high technology and software costs, inadequate ICT and internet infrastructure, economic and foreign exchange constraints, data security concerns, and weak government and industry-level support.

4.3 FEMALE PROFESSIONALS' EXPECTATIONS TO OVERCOME THE REMOTE WORKING CHALLENGES IN THE SRI LANKAN CONSTRUCTION INDUSTRY

To successfully implement remote work, organizations must reorganize work processes and provide support to employees. For effective remote work and enhanced employee job satisfaction, proper motivations, qualifications, technological advancements, and organizational support are necessary (Žvirelienė & Lipinskienė, 2023).

According to the preliminary survey, the identified expectations regarding remote working from female professionals in the Sri Lankan construction industry are presented in Table 3.

Table 3: Expectations regarding remote working from female professionals

Expectations	Code
Implement flexible working hours instead of strict 8–5 schedules	E1
Create scheduled virtual “check-ins” for all team members to share updates	E2
Use digital collaboration tools (Miro, shared dashboards) to ensure visibility of contributions. (These tools facilitate engaging virtual meetings, visual thinking, project management, etc.)	E3
Promote digital wellness practices (scheduled break times, no-meeting hours)	E4
Create clear remote work policies (defining expected online hours, response times, and after-hours boundaries)	E5

Some companies use performance monitoring systems, flexible work schedules (E1), and virtual collaboration tools to improve attraction for remote working (E2) (Al-dahabi et al., 2024). Furthermore, video conferencing, messaging applications, project management software, and virtual whiteboards have become essential tools to support virtual meetings, team collaboration, and project management (E3) (Žvirelienė & Lipinskienė, 2023). As an example, the United Arab Emirates uses the advanced digital technologies to work remotely in the construction industry (Elrefaey et al., 2022). Moreover, organizations should communicate clearly issues such as breaks and availability on online platforms for maintaining work-life balance (E4). It is important to set rules and boundaries about how (communication platforms) and when it is okay to contact employees so there won't be a conflict between their personal life and work life (Žvirelienė & Lipinskienė, 2023). Sometimes employees difficult to separate personal and work life during remote work. Hence, organizations may reduce these problems and encourage a healthier work environment by implementing clear policies and providing emotional support (E5) (Pinheiro & Palma-Moreira, 2025).

Following the preliminary survey, respondents were requested to rate the expectation in questionnaire survey. The results of the one sample t test for the identification of the critical expectations are presented in Table 4.

Table 4: Female professional's expectations on organization to overcome their remote working challenges

Code	Expectations	Mean	Std. deviation	Rank
E2	Create scheduled virtual “check-ins” for all team members to share updates	3.95	0.552	1
E4	Promote digital wellness practices (scheduled break times, no-meeting hours)	3.95	0.597	2
E5	Create clear remote work policies (defining expected online hours, response times, and after-hours boundaries)	3.90	0.591	3
E1	Implement flexible working hours instead of strict 8–5 schedules	3.90	0.810	4
E3	Use digital collaboration tools (Miro, shared dashboards) to ensure visibility of contributions. (These tools facilitate engaging virtual meetings, visual thinking, project management, etc.)	3.78	0.660	5

Similar to the remote working challenges, to achieve object 3, the mean score of each expectation was compared to a predetermined threshold value (3.5). Thus, the blue highlighted rows in Table 2 indicate that all the expectations (E2, E4, E5, E1 and E3) are critical due to having a mean score of 3.5 or higher. Furthermore, expectations were also ranked based on their mean values, with higher mean values assigned higher ranks and standard deviation used as a secondary criterion in cases of equal mean values. Thus, E2 and E4 are the most critical expectations of female professionals working in the Sri Lankan construction industry, ranking 1st and 2nd, respectively.

Gong et al. (2022), noted that the organizations should provide social support resources, including virtual networking opportunities. Thus, female professionals in Sri Lankan

construction industry also highly expect to create scheduled virtual “check-ins” (E2) for all team members to share updates. It may be more helpful for remote working to daily office interaction, ensuring communication, clarity, accountability, and a smooth workflow. The second highest ranked expectation is promoting digital wellness practices, such as scheduled break times, no-meeting hours, etc. (E4). Studies that have focused on women's remote work experiences indicate that schedule flexibility enables mothers to keep up full-time employment upon childbirth and under remote working, there should be flexibility to accommodate employee work-life balance in various situations, with hours per week distributed to accommodate both work and family essential needs (Shirmohammadi et al., 2022). Thus, in the Sri Lankan context also, female professionals may expect to promote digital wellness practices under remote working to reduce burnout, improve mental well-being, enhance productivity, and support sustainable work–life balance. Moreover, Pinheiro and Palma-Moreira (2025) noted that the effective remote work policies support the remote workers in balancing their work and personal responsibilities with reducing stress and increasing job satisfaction. In the Sri Lankan context, a female-dominated culture can be seen in household works. Hence, “Create clear remote work policies (E5)” may allow women to rest and care about their family while balancing work responsibilities. According to Žvirelienė and Lipinskienė (2023), job satisfaction, enthusiasm, and employee engagement are increased by flexible working hours. Thus, instead of following the traditional working schedule of 8-5 working hours in Sri Lanka, most female professionals expect a flexible working schedule (E1) through a remote working arrangement. It may also be important for female professionals to maintain a healthy balance between home and work life. In addition to that, using digital collaboration tools (E3) is another critical expectation under remote working of female professionals in the Sri Lankan construction industry. Furthermore, video conferencing, messaging applications, project management software, and virtual whiteboards have become essential tools to support virtual meetings, team collaboration, and project management (Žvirelienė & Lipinskienė, 2023). These tools have been able to stay connected, collaborate efficiently under remote working.

This study highlights the critical challenges female professionals face under remote working, specifically” workload increases and expect to be always available online” and “lack of resources.” It may have occurred due to the absence of structured work boundaries in remote working arrangements and lower support from organizations. Thus, organizations should establish well-defined remote work policies that specify working hours, response times, and after-hours communication limits. It directly aligns with the highly ranked expectations of E4, E5, and E1. Moreover, organizations may invest in sufficient digital infrastructure, which includes reliable internet access, licensed software, and the necessary hardware with advanced technologies. It is clearly indicated by the highly suggested expectations of E2 and E3. Then, organizations can enhance communication, coordination, and efficiency in remote working environments. Furthermore, when fulfilling the above mentioned expectation, communication gaps and limited visibility in remote work can be reduced, preventing burnout and psychological stresses of female professionals. The flexible working hours or hybrid working modes also may be helpful to female professionals for balancing their family work responsibilities under remote working. Consequently, organizations may provide long-term, effective remote working facilities for female professionals in the Sri Lankan construction industry to improve their job satisfaction.

5. CONCLUSIONS

In the Sri Lankan context, the remote working engagement of female professionals is lower due to several obstacles they face during remote working mode. Thus, this study investigated the challenges encountered by female professionals under remote working arrangements in the Sri Lankan construction industry and identified their expectations to enable effective and sustainable remote work practices. Here, the professionals selected the quantity surveyors, architects, and engineers who are working in the Sri Lankan construction industry. The findings reveal that there are critical challenges under remote working and expectations from female professionals to overcome those challenges. As per one sample t test results, increased workload and the expectation to remain constantly online (C4) and Lack of resources and facilities (C7) are identified as the critical challenges regarding the remote working in Sri Lankan construction industry, securing the 1st and 2nd positions, respectively. Moreover, according to one sample t test results, all the identified expectations of Create scheduled virtual “check-ins” for all team members to share updates (E2), Promote digital wellness practices (E4), Create clear remote work policies (E5), Implement flexible working hours (E1) and Use digital collaboration tools (E3) are the critical expectations of female professionals regarding remote working in Sri Lankan construction industry. The findings show that female professionals in Sri Lanka's construction industry continue to face fundamental challenges in terms of resources and infrastructure for remote working. This contrasts with research conducted in developed countries such as Australia, where higher levels of satisfaction and preference for remote work have been reported as a result of improved digital infrastructure and organizational support (Oo et al., 2023). This disparity demonstrates the different levels of remote work readiness in developed and developing construction contexts. Further, future research can be conducted by comparing different perceptions of both male and female professionals. The study presents that remote working can become a viable and empowering work model for female professionals in Sri Lankan construction if organizations adopt proper remote working schedules and technological facilities.

6. REFERENCES

- Adikaram, A. S., & Naotunna, N. P. G. S. I. (2023). Remote working during COVID-19 in Sri Lanka: lessons learned and what the future holds. *Employee Relations: The International Journal*, 45(4), 1035–1056. <https://doi.org/10.1108/ER-06-2022-0259>
- Afolabi, A., Oyeyipo, O., Ojelabi, R., & Patience, T. O. (2019). Balancing the female identity in the construction industry. *Journal of Construction in Developing Countries*, 24(2), 83–104. <https://doi.org/10.21315/jcdc2019.24.2.4>
- Ahadzie, D. K., Proverbs, D. G., & Olomolaiye, P. O. (2008). Critical success criteria for mass house building projects in developing countries. *International Journal of Project Management*, 26(6), 675–687. <https://doi.org/10.1016/J.IJPROMAN.2007.09.006>
- Ahmed, R., Robinson, R., Elsony, A., Thomson, R., Bertel Squire, S., Malmberg, R., Burney, P., & Mortimer, K. (2018). A comparison of smartphone and paper data-collection tools in the Burden of Obstructive Lung Disease (BOLD) study in Gezira state, Sudan. *PLoS ONE*, 13(3). <https://doi.org/10.1371/journal.pone.0193917>
- Al-dahabi, Z.M.A., Al-dahabi, A., Algazo, F. A., Hajjaj, R. Y., & Abukhait, R. O. (2024). Remote work and human resource management: Challenges and solutions. *World Journal of Advanced Research and Reviews*, 24(1), 1204–1208. <https://doi.org/10.30574/WJARR.2024.24.1.3126>
- Avram, C., & Mărușter, M. (2022). Normality assessment, few paradigms and use cases. *Revista Romana de Medicina de Laborator*, 30(3), 251–260. <https://doi.org/10.2478/rrlm-2022-0030>

- Azizi, Z. M., Cochrane, J., Thurairajah, N., & Azizi, N. S. M. (2023). Remote working in construction: assessing the affordance of digitisation. *Built Environment Project and Asset Management*, 13(1), 5–19. <https://doi.org/https://doi.org/10.1108/BEPAM-12-2021-0148>
- Battisti, E., Alfiero, S., & Leonidou, E. (2022). Remote working and digital transformation during the COVID-19 pandemic: Economic–financial impacts and psychological drivers for employees. *Journal of Business Research*, 150, 38–50. <https://doi.org/10.1016/j.jbusres.2022.06.010>
- Bell, B. (2012). Remote work: Examining current trends and organizational practices. *International HR Adviser*, 49, 4–6. <https://ecommons.cornell.edu/server/api/core/bitstreams/2394d66b-881b-442a-bf92-811c9667277e/content>
- Carifio, J., & Perla, R. J. (2007). Ten common misunderstandings, misconceptions, persistent myths and urban legends about likert scales and likert response formats and their antidotes. *Journal of Social Sciences*, 3(3), 106–116. <https://doi.org/https://doi.org/10.3844/jssp.2007.106.116>
- Devinda, W. A. S. S. S., Sandanayake, T. C., & Mufitha, M. B. (2023). Evaluation of employee engagement towards work performance in a hybrid working model in the Sri Lankan construction industry. In 6th *International Conference on Business Research (ICBR 2023)*, (pp. 1–13). Business Research Unit, Faculty of Business, University of Moratuwa. <https://doi.org/10.31705/ICBR.2023.19>
- Dilipkumar, B.V., Basavaraj, K., & Indrajit, D. (2024). Navigating career paths in a remote world: the influence of work from home on employee advancement and organizational support. SSRN. <https://ssrn.com/abstract=5028999>
- Dingel, J. I., & Neiman, B. (2020). How many jobs can be done at home? *Journal of Public Economics*, 189, 26948. <http://www.nber.org/papers/w26948>
- Elrefaey, O., Ahmed, S., Ahmad, I., & El-sayegh, S. (2022). Impacts of COVID-19 on the use of digital technology in construction projects in the UAE. *Buildings*, 12(4), 489. <https://doi.org/10.3390/buildings12040489>
- Faleiros, F., Käppler, C., Pontes, F. A. R., Silva, S. S. da C., de Goes, F. dos S. N., & Cucick, C. D. (2016). Use of virtual questionnaire and dissemination as a data collection strategy in scientific studies. *Texto e Contexto Enfermagem*, 25(4). <https://doi.org/10.1590/0104-07072016003880014>
- Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology and Metabolism*, 10(2), 486–489. <https://doi.org/10.5812/ijem.3505>
- Gong, B., Tobias, P., & Young-Bristol, J. (2022). Leveraging resources to improve supervisors' vision in the remote workplace. *Management Research Review*, 46(6), 777–789. <https://doi.org/10.1108/MRR-12-2021-0916>
- Gunawardana, M. D. D., & Bandaranayake, D. (2024). Technological infrastructure for remote construction works in Western province of Sri Lanka. *Journal of Research in Technology and Engineering*, 5(4), <https://www.jrte.org/wp-content/uploads/2024/10/Technological-Infrastructure-for-Remote-Construction-Works-in-Western-Province-of-Sri-Lanka.pdf>
- Hamour, R. A., Alfouri, A., & Alshurideh, M. (2023). Remote working in the COVID-19 era. In A.E. Hassanien, A. Haqiq, A.T. Azar, K.C. Santosh, M.A. Jabbar, A. Sowik & P. Subashini (Eds.), *International Conferences on Artificial Intelligence and Computer Vision*. (pp. 459–473). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-27762-7_43
- Hertzog, M. A. (2008). Considerations in determining sample size for pilot studies. *Research in Nursing & Health*, 31(2), 180–191. <https://doi.org/10.1002/NUR.20247>
- Holdsworth, S., Turner, M., & Sandri, O. (2023). Gender bias in the Australian construction industry: Women's experience in trades and semi-skilled roles. *Social Sciences*, 12(11), 627. <https://doi.org/10.3390/socsci12110627>
- Huwaie, V. E., Tabelessy, W., Tamher, E. R., Tehuayo, E., & Lewaherilla, N. C. (2024). The effect of brand image and electronic word of mouth on Xiaomi smartphone purchasing decisions. *Khazanah Sosial*, 5(4), 700–716. <https://doi.org/10.15575/KS.V5I4.32381>
- Irawanto, D. W., Novianti, K. R., & Roz, K. (2021). Work from home: Measuring satisfaction between work–life balance and work stress during the Covid-19 pandemic in Indonesia. *Economies*, 9(3), 96. <https://doi.org/10.3390/economies9030096>

- Kabakova, E. A., & Panov, V. G. (2025). Some methods for estimating the importance of variables in statistics. I. Effect size. *Research Trajectory: Humans, Nature, Technology*, 2(14). https://doi.org/10.56564/27825264_2025_2_37
- Kodithuwakku, D. S., & De Silva, I. W. (2025). Challenges in implementing digital employment platforms for women's participation in Sri Lanka: A structural equation modeling approach. *International Journal of Advanced and Applied Sciences*, 12(3), 216–224. <https://doi.org/10.21833/ijaas.2025.03.021>
- Loezar-Hernández, M., Briones-Vozmediano, E., Ronda-Pérez, E., & Otero-García, L. (2023). Juggling during lockdown: Balancing telework and family life in pandemic times and its perceived consequences for the health and wellbeing of working women. *International Journal of Environmental Research and Public Health*, 20(6), 4781. <https://doi.org/10.3390/ijerph20064781>
- Lund, B. (2021). The questionnaire method in systems research: An overview of sample sizes, response rates and statistical approaches utilized in studies. *VINE Journal of Information and Knowledge Management Systems*, 53(1), 1–10. <https://doi.org/10.1108/VJIKMS-08-2020-0156>
- Onyekwere, L. A. (2024). Digital divide in remote work among employees and organizational effectiveness in South-South Nigeria. *South Asian Research Journal of Humanities and Social Sciences*, 6(04), 142–155. <https://doi.org/10.36346/sarjhss.2024.v06i04.002>
- Oo, B. L., Lim, B. T. H., & Kim, S. (2023). Working from home during Covid-19 and beyond: Exploring the perceptions of consultants in construction. *Buildings*, 13(1), 166. <https://doi.org/10.3390/buildings13010166>
- Orzel, B., & Wolniak, R. (2022). Digitization in the design and construction industry-remote work in the context of sustainability: A study from Poland. *Sustainability*, 14(3), 1332. <https://doi.org/10.3390/su14031332>
- Pamidimukkala, A. & Kermanshachi, S. (2022). Occupational health and safety challenges in construction industry: A gender-based analysis. In *Construction research congress 2022* (pp. 491-500). <https://ascelibrary.org/doi/abs/10.1061/9780784483985.050>
- Perera, W. S. D., Ranadewa, K. A. T. O., Parameswaran, A., & Weerasooriya, D. (2023). Status quo of digitalisation in the Sri Lankan construction industry. In Y.G. Sandanayake, K.G.A.S. Waidyasekara, T. Ramachandra, K.A.T.O. Ranadewa (Eds.), *Proceedings of the 11th World Construction Symposium*, 21-22 July 2023, (pp. 944–959). Ceylon Institute of Builders. <https://doi.org/10.31705/WCS.2023.76>
- Pinheiro, A., & Palma-Moreira, A. (2025). Job satisfaction, perceived performance and work regime: What is the relationship between these variables? *Administrative Sciences*, 15(5), 175. <https://doi.org/10.3390/admsci15050175>
- Rana, J., Gutierrez, P. L., & Oldroyd, J. C. (2021). Quantitative methods. In Farazmand, A. (Eds.) *Global Encyclopedia of Public Administration, Public Policy, and Governance* (pp. 1–6). Springer International Publishing. https://doi.org/10.1007/978-3-319-31816-5_460-1
- Rodrigo, N., Wijewickrama, M. K. C. S., Rajenthiran, N., Jayathilaka, W., & Chang, R. (2024). Challenges and solutions for women in construction industry related disciplines: a literature review. In Y.G. Sandanayake, K.G.A.S. Waidyasekara, K.A.T.O. Ranadewa & H. Chandanie (Eds.), *Proceedings of the 12th World Construction Symposium*, 9-10 August 2024, (pp. 330-340). Ceylon Institute of Builders. <https://doi.org/10.31705/WCS.2024.26>
- Safira, N.A., Hanami, Y., & Batubara, M. (2023). Multidimensional well-being of remote workers: A qualitative comparison between full-remote and hybrid workers. *Analitika*, 15(2), 89–100. <https://doi.org/10.31289/analitika.v15i2.10211>
- Senaratne, S., Jayakodi, S., Pascoe, R. D., & Atkins, A. (2025). Challenges and strategies for the retention of female construction professionals: An empirical study in Australia. *Buildings*, 15(13), 2187. <https://doi.org/10.3390/buildings15132187>
- Shirmohammadi, M., Au, W. C., & Beigi, M. (2022). Remote work and work-life balance: Lessons learned from the COVID-19 pandemic and suggestions for HRD practitioners. *Human Resource Development International*, 25(2), 163–181. <https://doi.org/10.1080/13678868.2022.2047380>
- Srivishagan, V., & Thalpage, R. (2021). Issues and challenges of women in Sri Lankan construction industry. In *International Research Symposium - 2021*, (pp. 495-500). University of Vocational Technology. https://www.researchgate.net/publication/374965346_Issues_and_Challenges_of_Women_in_Sri_Lankan_Construction_Industry

- Suratkon, A., & Azlan, A. S. (2021). Working From Home (WFH): Challenges and practicality for construction professional personnel. *International Journal of Sustainable Construction Engineering and Technology*, 12(4), 11–19. <https://doi.org/10.30880/ijscet.2021.12.04.002>
- Usman, I. (2024). HR management practices in the digital age: Challenges of remote working, digital communication, and employee wellbeing. *Proceeding of Research and Civil Society Desemination*, 2(1), 85–97. <https://doi.org/10.37476/presed.v2i1.63>
- Vijayaragunathan, S., & Rasanthi, T. (2019). An insight to women in construction for fostering female careers in Sri Lankan construction industry. *Journal of International Women's Studies*, 20(3), 14. <https://vc.bridgew.edu/jiws/vol20/iss3/14>
- Waswa, D. W., & Al-kassab, M. M. (2023). Mathematics learning challenges and difficulties: A students' perspective. In D. Zeidan, J.C. Cortés, A. Burqan, A. Qazza, J. Merker, G. Gharib, (Eds.), *Mathematics and Computation. IACMC 2022* (pp. 311-323). Springer Proceedings in Mathematics and Statistics. https://doi.org/10.1007/978-981-99-0447-1_27
- Wong, A. H. K., Cheung, J. O., & Chen, Z. (2021). Promoting effectiveness of “working from home”: Findings from Hong Kong working population under COVID-19. *Asian Education and Development Studies*, 10(2), 210–228. <https://doi.org/10.1108/AEDS-06-2020-0139>
- Cheng, K., & Yang, R. (2021). The career challenges and success factors for professional Asian women career development in New Zealand construction industry. In *2021 ASEE Midwest Section Conference*, 17 November 2021. ASEE. <https://doi.org/10.18260/1-2-1152-38318>
- Žvirelienė, R., & Lipinskienė, D. (2023). Organizational support for remote workers in extreme situations: Theoretical insights. *Applied Research in Studies and Practice*, 19(1), 129–135. <https://ojs.panko.lt/index.php/ARSP/article/view/218>