A motivational framework for women to work in the construction industry: An Indonesian case study

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ABSTRACT

The poor level of women's participation in the construction industry has been a concern for many years. In fact, women represent less than 3% of the total workers in the Indonesian construction industry. On the other hand, the industry is experiencing a worker shortage causing it to innovatively attract construction workers by increasing women's participation in the industry. Thus, this paper aims to understand the motivating factors for women to work in the construction industry. It adopts multi-sequence research techniques including integrative literature review, expert interviews and questionnaire surveys to collect data for the study. The data was then analysed using relative importance index and factor analysis. The findings were discussed and synthesised to develop a motivational framework for women to work in the construction industry. While this framework was developed based on the Indonesian context, it can serve as a theoretical foundation for further research regarding women's participation in the construction industry.

KEYWORDS: Construction, Factor analysis, Motivating factors, Motivational framework, Women's participation.

INTRODUCTION

Construction industry has long been regarded as a male dominated sector. In Indonesia, women represent only 2.2% of the total construction workforce (Harrison, 2020). This reflects the actual condition of women's participation in the construction industry which still needs to be encouraged. Such encouragement will provide space for women to participate so as to help realize gender equality in the construction industry. Similarly, Gyasi (2012) argued that although there are various obstacles for women to work in the construction industry, women have great potential to resolve the problem of worker shortages in the construction industry. Thus, the purpose of this study is to understand the motivating factors for women to work in this industry. Furthermore, this study has three specific objectives as follows:

(1) To identify the motivating factors for women to work in the construction industry;
(2) To investigate the relationships between these motivating factors; and
(3) To develop a motivational framework for women to work in the construction industry.

Following the introduction section, a review of relevant literature is presented to put this study into a proper perspective. Next, a methodology section which describes the measures and techniques adopted to achieve the stated aim and objectives is presented. This is followed by

the findings and discussion section which provides results and discussion that emanate from the analysis. Then, a motivational framework is proposed and described in detail. Finally, conclusions and recommendations are presented at the end of the paper.

LITERATURE REVIEW

Indonesian Construction Industry

The construction industry is the third largest contributor to Indonesia's economy by providing USD 117M to the GDP (Andriani, Sarah & Rahmasari, 2018). Its growth is the second largest in Asia with an increase of 9% annually. In 2020, the Ministry of Public Works and Housing obtained a budget of IDR 120T allocated for infrastructure development in Indonesia. According to calculations carried out by the ministry, each increase in infrastructure budget of IDR 1T will require an additional 14,000 workers (Datin, 2019).

On the other hand, the industry plays a crucial role for national development in Indonesia. It can be seen from the level of employment, investment, number of construction projects, and the interrelationship of the construction industry with other sectors. This makes the development of the construction industry (especially infrastructure) one of the development priorities in Indonesia. In the end, the construction industry development will also help in realising equitable development in all other sectors including food security, availability of electricity and national energy, improvement of education and health facilities, availability of adequate transportation access, and improvement of tourism attractiveness in Indonesia (Andriani, Sarah & Rahmasari, 2018).

Nevertheless, the 2018 statistics showed that of 8,300,297 total workers in the Indonesian construction industry, there were only 176,551 female workers making women representation less than 3% in the industry. This percentage presents a huge difference when compared to the overall number of female workers at 47,945,498 (38.66%) and the overall number of male workers at 76,059,452 (61.34%) (Andriani, Sarah & Rahmasari, 2018). It shows that the level of women's participation in the construction industry is very low (only 0.37%) compared to the level of women's participation in other industries.

Women's participation in Construction Industry

The Indonesian construction industry has long been characterised as an industry that is full of conflict, crises and male dominated (Abdullah, Arshad & Ariffin, 2013). It is also a very fragmented industry as seen in the various professions and the sub-sectors that exist within the industry (Dainty, Grugulis & Langford, 2007). Therefore, research on the role and participation of women in the construction industry is interesting to be conducted.

Previous research has focused a lot on barriers and other issues which may challenge women's participation in the industry. For example, Lips (2000) found that gender discrimination such as lower salaries than men is one of the problems in the construction industry. In addition, inflexible work influences women's decision to start a career in this industry (Worrall *et al*., 2010). Peus and Traut-Mattausch (2008) have indicated that women continue to take responsibility for housework and take care of children while working outside the home. This

can lead to other problems related to work-life balance and mental health for female construction workers.

Another issue that becomes a challenge for women is related to perceptions that have grown so far in the industry. Women are seen as not meeting the skills needed to undertake construction work such as decision making as a project manager, assertiveness as a site supervisor, as well as energy and stamina as a project worker. Kaewsri and Tongthong (2011) stated that women's participation in the construction industry is generally placed in offices rather than on project sites. Construction sectors that are traditionally dominated by men do not support women play the role of project workers or unskilled laborers such as masons (Baruah, 2008).

Issues related to women retention in this industry have also become topical. A study in Singapore found that 33% of women engineers left the construction industry and another 29% were thinking of leaving their careers in the industry (Leow & Yean, 2008). Studies in the UK showed that even though recruitment strategies have provided equal opportunities, women still have difficulties in occupying top management positions (Watts, 2009). While in fact, the performance of female project managers is not much different from the performance of male project managers (Arditi & Balci, 2009).

Furthermore, women's participation in this industry can also be assessed from the ratio of women's participation in various sub-sectors such as road construction, building construction and railway construction. Munyoki (2018) used a multinomial logistic regression analysis to assess the ratios of women's participation within the various sub-sectors of the construction industry and found three motivating factors for women to work in civil works (i.e. social networks, work culture and personal traits), while education served as a strong motivating factor in railway construction.

Gyasi (2012) found that low level of motivation could influence their retention in the industry. That is why it is important to identify and understand the factors that motivate women's participation in the construction industry. Efforts to eliminate gender discriminations by increasing equality in the process of recruitment, retention and career progress are recommended by Sasser, Lineberry and Scheff (2004). English, Haupt and Smallwood (2006) argued that women's participation can actually enhance the positive image of the construction industry.

This paper contributes by providing a gender-based study related to women's participation in the Indonesian construction industry which is underrepresented in the academic literature. This study can be regarded as an effort to increase awareness of gender equality in the construction industry in order to minimise gender discrimination and increase women's participation in this industry.

METHODOLOGY

This study adopts multi sequence research techniques consisting of integrative literature review, expert interviews, and questionnaire survey distribution as means to collect both qualitative and quantitative data (presented in Figure 1). The first sequence was to conduct an integrative literature review, to identify motivating factors for women to work in construction industry. Integrative literature review was used to review, critique, and synthesise all relevant literature

in an integrated and systematic procedure as described by Hansen, Too and Le (2018) which includes (1) searching for target sources, (2) searching for related literature using keywords, (3) selecting relevant literature by reading the abstracts and skimming the contents, (4) analysing the content of selected literature, and (5) report the findings in a table format.

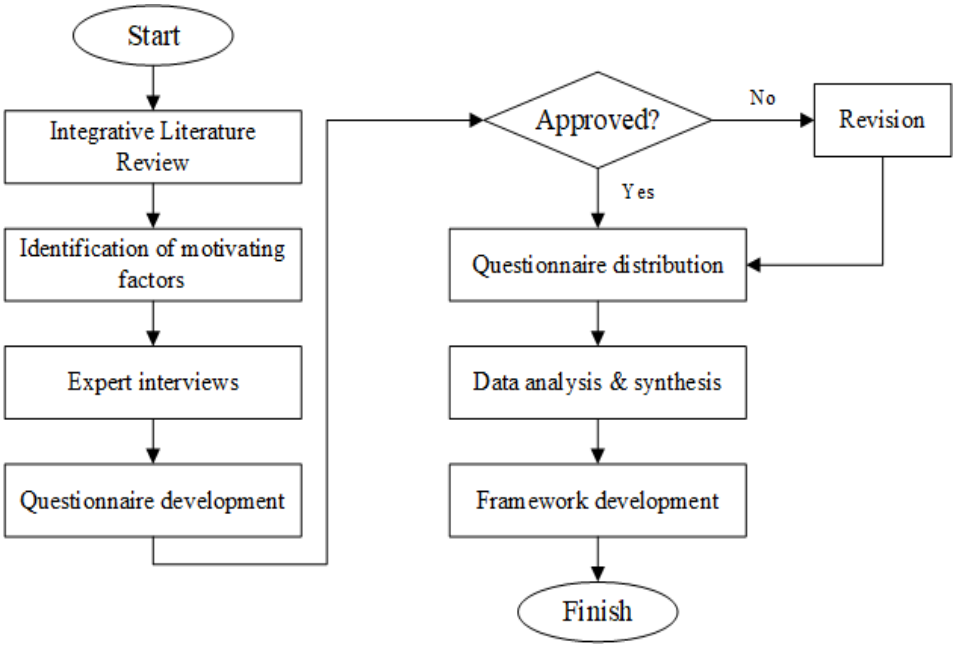

Figure 1: Multi sequence techniques adopted in this study

The first sequence produced a list of motivating factors for women to work in the construction industry found in the relevant literature. Next, two expert interviews were conducted to validate these factors as a basis for designing a questionnaire survey. The experts were those who meet the following criteria: (1) women professionals working in the construction industry, (2) work as a project manager, site engineering manager, site operational manager, or expert engineering staff in construction projects, and (3) at least five years of working experience.

In the third sequence, a questionnaire survey was developed and distributed to gain quantitative data from a larger group of respondents. The likert scale was used to measure the respondents' opinion regarding the research topic. In this study, a six-point likert scale was adopted with 1 representing 'very insignificant' and 6 representing 'very significant'. Questionnaires were distributed from February to April 2020 by online and offline means to potential Indonesian women respondents with a minimum two years of working experience in the construction industry. The sample size was calculated based on Hosmer-Lemeshow's formula (Lemeshow & Leny, 2009) as presented in Equation 1.

Equation 1: Hosmer-Lemeshow's Formula - $$n = \frac{z_{1-\alpha/2}{}^2 * p * (1-p)}{d^2}$$

where, n is the sample number, p is proportion estimate (in this case p is 0.047), Z represents the number of standard errors away from the mean (in this case Z is chosen to be 1.960) and d is the precision (in this case d equals to 0.05). Based on this equation, the required sample size for this study is 69 respondents. However, due to limited resources and time, this study has

gathered 66 valid responses as presented in Table 1. Thus, the response rate of this questionnaire was 95.65%.

Table 1: Questionnaire respondents' profiles

Profiles	Total	%	Profiles	Total	%
Educational Background			**Company Category**		
Diploma degree	2	3.0	Private	60	75.8
Bachelor degree	49	74.3	State-Owned/Ministry	16	24.2
Master degree	15	22.7	Total	66	100
Total	66	100	**Profession**		
Job Position			Contract & administration	5	7.6
Junior level	22	33.3	Designer	23	34.9
Senior level	26	39.4	Supplier	2	3.0
Executive	10	15.2	QS	20	30.3
Owner	7	10.6	Project Manager & supervisor	9	13.6
No response	1	1.5	Others	7	10.6
Total	66	100	Total	66	100

The data obtained was then analysed using relative importance index (RII) and factor analysis. RII was used to rank the importance of these motivating factors, while factor analysis was employed to establish the latent clusters from these factors. The RII formula is presented in Equation 2. Finally, all findings were synthesised to develop a motivational framework.

Equation 2: RII formula - $$\mathrm{RII} = \frac{\sum \mathrm{W}}{\mathrm{A\,N}}$$

where, RII represents Relative Importance Index, W represents the weighting given to each factor (ranging from 1 to 6), A represents the highest weight (in this case is 6) and N indicates the total number of respondents. The higher the RII value, the more important was the motivating factors compared to others.

FINDINGS AND DISCUSSION

The following sub-sections discuss the identification of motivating factors for women to work in the construction industry, the investigation of the relationships between these motivating factors, and the development of a motivational framework as the final goal in this study.

Identification of Motivating Factors for Women to Work in the Construction Industry

The identification of motivating factors consisted of two sequences. First, integrative literature review was conducted to identify motivating factors from relevant literature. This has resulted in 19 variables as a preliminary set of motivating factors for women to work in the construction

Table 2: Final set of motivating factors for women to work in the construction industry

No.	Factors	Sources
1	Work performance appreciation	(Dabke *et al*., 2008; Dainty, Neale, & Bagilhole, 2000; Naoum et al. 2019);)
2	Appreciation for the successful completion of projects in the past	(Dabke *et al*., 2008; Dainty, Neale & Bagilhole, 2000)
3	Personal and family supports	(Barreto *et al*., 2017, Dainty & Lingard, 2006 English & Jeune, 2012; Morello, Issa, & Franz, 2018)
4	Project prestige	(Gilbert & Walker, 2001)
5	Good relationship with male team members	(Dabke et al., 2008; Dainty, Neale, & Bagilhole, 2000)
6	Good relationship with superiors	(Dabke et al., 2008; Dainty, Neale, & Bagilhole, 2000; Gilbert & Walker, 2001)
7	Good relationship with other people outside the team members	(Dainty, Neale, & Bagilhole, 2000)
8	The availability of skill development programs	(English & Jeune, 2012; Morello, Issa, & Franz, 2018; Naoum et al., 2019)
9	Good organization management by the company	(Dainty & Lingard, 2006; Dainty, Neale, & Bagilhole, 2000; English & Jeune, 2012; Naoum et al., 2019)
10	Flexibility in working hours	(Dainty & Lingard, 2006; Dainty, Neale, & Bagilhole, 2000)
11	Maternity leave entitlement benefits	(Dabke *et al.*, 2008; Dainty & Lingard, 2006; Naoum *et al.*, 2019)
12	Recognition of work done by women	(Dainty, Neale, & Bagilhole, 2000)
13	The amount of remunerations/rewards	Feedback from expert interviews
14	Equal comparison of remunerations/rewards with male co-workers	(English & Jeune, 2012)
15	The availability of women inclusion programs	(Morello, Issa, & Franz, 2018)
16	Hygienic sanitation facilities separation between men and women at the construction project site	(Dabke, Salem, Genaidy, & Daraiseh, 2008)
17	Workplace security on site	(Dabke et al., 2008)
18	Clothing that supports women's work performance	(Dabke et al., 2008; Wagner, Kim, & Gordon, 2013)
19	Work mobilisation in construction	(Barreto *et al*., 2017Dainty & Lingard, 2006; Dainty, Neale, & Bagilhole, 2000); English & Jeune, 2012)
20	Company policies for women privilege	Feedback from expert interviews
21	Pleasant working environment	(Dainty, Neale, & Bagilhole, 2000)

industry. In the second sequence, two expert interviews were conducted to validate these factors as a basis for questionnaire development. The experts were two professional women who have been working for more than ten years in the construction industry. According to these experts, the factors identified

from the literature have been quite sharp and clear. They provided two additional factors related to their personal experiences during their careers in the construction industry so that there are a total of 21 motivating factors used in this study. Table 2 summarised the final set of these motivating factors.

Establishment of the Relationships of Motivating Factors

Relative importance index (RII) and factor analysis were conducted to establish the relationships between the motivating factors for women to work in the construction industry. Table 3 presents the results of RII analysis in which factors with higher RII scores mean they are more important than factors with lower RII scores. In this study, the top five important motivating factors are 'pleasant working environment' with 0.92, 'personal and family supports' with 0.89, 'workplace security on site' with 0.88, 'good management by the company' with 0.87, and 'good relationship with superiors' with 0.87.

Table 3: RII analysis

No.	Motivating factors	Likert Scale						Total	RII
		1	2	3	4	5	6		
1	Work performance appreciation	3	2	2	8	17	34	66	0.84
2	Appreciation for the successful completion of projects in the past	1	2	3	15	17	28	66	0.83
3	Personal and family supports	2	1	0	5	19	39	66	0.89
4	Project prestige	3	1	9	12	19	22	66	0.78
5	Good relationship with male team members	2	2	5	19	16	22	66	0.78
6	Good relationship with superiors	1	1	1	7	24	32	66	0.87
7	Good relationship with other people outside the team members	1	4	7	22	14	18	66	0.75
8	The availability of skill development programs	0	1	8	17	18	22	66	0.80
9	Good organization management by the company	0	1	1	9	27	28	66	0.87
10	Flexibility in working hours	3	4	10	17	15	17	66	0.72
11	Maternity leave entitlement benefits	1	5	10	9	13	28	66	0.78
12	Recognition of work done by women	0	5	4	16	16	25	66	0.80
13	The amount of remunerations/rewards	0	2	4	17	21	22	66	0.81
14	Equal comparison of remunerations/rewards with male co-workers	4	8	14	12	14	14	66	0.67
15	The availability of women inclusion programs	2	4	16	16	14	14	66	0.70
16	Hygienic sanitation facilities separation between men and women at the construction project site	1	3	6	10	20	26	66	0.81
17	Workplace security on site	0	1	3	8	17	37	66	0.88
18	Clothing that supports women's work performance	5	9	18	14	9	11	66	0.62
19	Work mobilisation in construction	1	6	17	18	14	10	66	0.67
20	Company policies for women privilege	1	5	10	20	14	15	65	0.72
21	Pleasant working environment	0	0	0	5	20	40	65	0.92

Next, factor analysis was first done by checking the suitability of the data. Here, the KMO and Bartlett's test of sphericity can be used to evaluate the effectiveness of the available data to be analysed. The output from SPSS software is presented in Figure 2. The analysis obtained the KMO value of 0.775 which is greater than the required 0.5, while the Bartlett's test value indicated that the available data is significant and can be used for further analysis. To see how many component factors are formed, it can be seen from the eigenvalue that is greater than 1 (one) in the scree plot diagram. Figure 3 shows that there are six clusters formed from these motivating factors. This study applied *direct oblimin* as the rotation since all motivating factors were deemed to be correlated theoretically.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.775
Bartlett's Test of Sphericity	Approx. Chi-Square	647.930
	df	210
	Sig.	0.000

Figure 2: KMO and Bartlett's test for data suitability

The results of the analysis produced two outputs, namely structure and pattern matrices that can be used to see the grouping of factors in each cluster. Based on comparisons, the pattern matrix showed better correlation and made it easier for grouping so that it is chosen to interpret the relationships of these factors. Table 4 presents the grouping of motivational factors into six clusters that are formed.

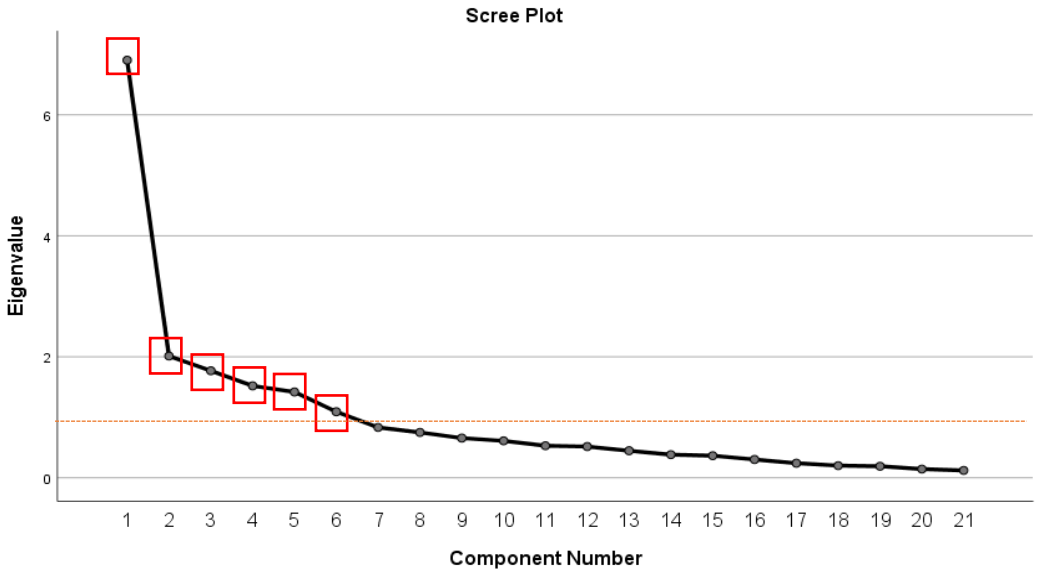

Figure 3: Scree plot of the factor analysis

Table 4: Six clusters of motivating factors

No.	Clusters	Motivating factors
1	Working conditions	• Work performance appreciation • Maternity leave entitlement benefits • Separation of hygienic sanitation facilities between men and women at the construction project site • Work mobilisation in construction
2	Interpersonal relationship factors	• Personal and family supports • Appreciation for the successful completion of projects in the past • Project prestige • Good relationship with superiors • Good relationship with other people outside the team members
3	Gender equality	• Good relationship with male team members • Recognition of work done by women • Equal comparison of remunerations/rewards with male co-workers • The availability of women inclusion programs • Clothing that supports women's work performance
4	Management aspects	• The availability of skill development programs • Good organization management by the company • Flexibility in working hours
5	Working environments	• Company policies for women privilege • Pleasant working environment
6	General expectations	• The amount of remunerations/rewards • Workplace security on site

The motivating factors in the first cluster were grouped as 'working conditions' factors that motivate women to work in the construction industry. It includes four factors, namely work performance appreciation, maternity leave entitlement, hygienic sanitation facilities for women, and work mobilisation. Construction industry is a very competitive industry. Nevertheless, equal appreciation for the performance that someone has done must be assessed objectively so that workers, especially women can remain enthusiastic and improve their performance (Morello, Issa & Franz, 2018). In addition, other working conditions that influence women's consideration for a career in the construction industry include consideration of sanitation facilities and maternity leave opportunities (Hewage, 2007; Madikizela & Haupt, 2010; Saksena, Ophiyandri & Hidayat, 2020). On the other hand, it has become a characteristic of construction works as temporary projects marked by high mobility. The opportunity to work the entire period of a project before moving to a new one has become a motivating factor for people who like challenges and short duration projects (Barg *et al*., 2014).

Cluster 2 is related to 'interpersonal relationships' which includes personal and family supports, appreciation for the successful project completions, project prestige, close relationship with superiors, and good relationship with non-team members. Personal and family supports play a

crucial role in the consideration of women working in the construction industry (Fahirah, Fadjar, & Wahliana, 2017). In addition, good relations with superiors and other people outside the team members are other motivating factors. Direct superiors are considered to be able to help their career development (Barg *et al.*, 2014) while relationships with outsiders can help expand their networks. On the other hand, the construction industry provides opportunities for people to be involved in monumental mega projects so that project prestige becomes one of the motivations for them to work in this industry (Fielden *et al*., 2001; Barg *et al*., 2014). Hewage (2007) stated that chances to accomplish something valuable such as successfully completing a mega project is a prioritised motivating factor in the construction industry.

Cluster 3 is related to 'gender equality' which includes five motivating factors, namely good relationships with male team members, recognition of women's work, equal comparison of incentives, availability of women inclusion programs, and availability of proper clothing that supports women's work performance on site. In general, the implementation of a construction project requires solid cooperation from its team members. The attitude of friendliness and helpfulness of the co-workers can be a motivating factor for someone to work in this industry (Barg *et al*., 2014). Equal recognition of the work that has been done well by women also becomes a motivating factor for them. On the other hand, Madikizela and Haupt's (2010) research highlighted the equality of remunerations/rewards with male co-workers. Considering women's participation in the construction industry must be encouraged, programs for women inclusion need to be expanded. Courses and training programs specifically designed to improve women capabilities are recommended as a useful method to counter the male-dominated industry (Fielden *et al*., 2001). Recruitment programs that promote equal opportunities regardless of gender must be opened wider as a means of attracting more women into the industry (Fielden *et al*., 2001). In addition, the issue of clothing also influences women's motivation because they often complain that the size of clothing available in the construction sites affects their movements and performance (Wagner, Kim, & Gordon, 2013).

Factors related to ‘management aspects’ are grouped in the fourth cluster. This study shows that good and proper company management motivates women to work in the construction industry. This aspect consists of three factors. First, the company's management policy to provide training programs and develop skills both formally and informally. Women see the opportunity to develop their skills and abilities as a motivational factor (Barg *et al*., 2014). For this reason, development training must be supported by company management (Adogbo, Ibrahim & Ibrahim, 2015). In addition, good management organisations are also reflected in company policies that are non-discriminatory and simple yet clear communication of gender equality policies (Madikizela & Haupt, 2010). Regarding the length of working hours, previous research has shown that long working hours have a negative effect on well-being (Ganster, Rosen, & Fisher, 2016). Thus, flexible working hours would increase opportunities for women’s participation in the industry (Fielden *et al*., 2001).

Cluster 5 talks about the ‘working environment’ in the construction industry. There are two motivational factors for women to work in this industry, namely company policies for women privilege and pleasant working environments. In fact, women still face challenges relating the current situation where the Indonesian construction industry is still very much dominated by male workers. To increase the level of women’s participation in this industry, company policies are needed that provide privileges to women. An example is the establishment of written gender equity policies and providing funding for improving the status and qualifications of female

employees (Madikizela & Haupt, 2010). On the other hand, Mohamed's (2002) research confirmed that the working environment in a construction project should be maintained to be conducive. Pleasant working environment is a condition where workers can feel accepted by their team in a solid manner (Nursetyo, 2012). Madikizela & Haupt (2010) argued that if the working environment were more desirable for women, it may increase the number of women participating in construction.

The last cluster consisting of two 'general expectations' of women when they would like to work in the construction industry. First is the number of remunerations/rewards that they may receive in the construction industry. The magnitude of incentives also motivates women to work in construction projects (Adogbo, Ibrahim & Ibrahim, 2015). The second is related to workplace security on site. Considering the potential risk of hazards in construction projects, aspects of work safety is one of the motivating factors for women to work in the construction industry. This is also confirmed by Barg *et al*. (2014) related to the importance of implementing safety procedures on site. In addition, Moir (2016) argued that aspects of work safety would work well, and workers' motivation would increase if a pleasant working environment has been successfully established.

Development of a Motivational Framework for Women in Construction Industry

This study aims to investigate the motivating factors for women to work in the construction industry by developing a motivational framework that serves as a foundation to understand these motivating factors. It seeks to embed the motivating factors for women to work in the construction industry in a more specific context. While previous studies have focused on identifying the motivating factors for women to work in the construction industry, this study narrows the factors by contextualizing it for a specific society i.e. the Indonesian construction industry.

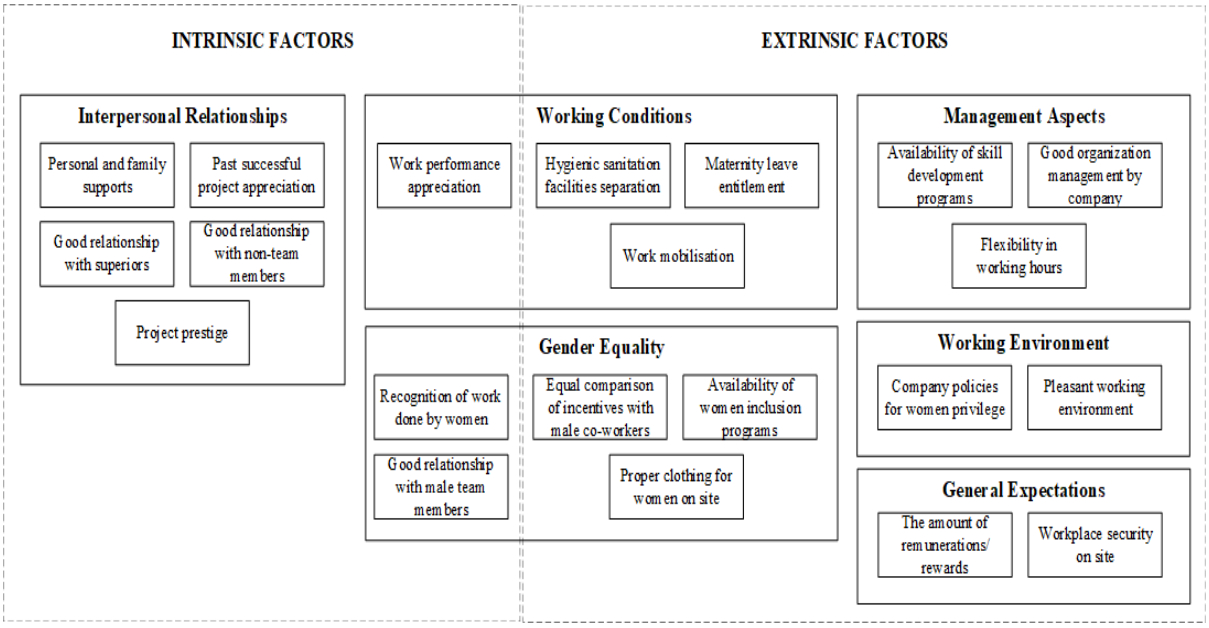

Figure 4: Graphical representation of motivating factors for women to work in the construction industry

The developed framework consists of two inseparable elements, namely the motivating factors and the power of these motivating factors. The first element is a graphical representation of motivating factors for women to work in the construction industry which is illustrated in Figure 4. There are six clusters of motivating factors as found from the factor analysis. Furthermore, these factors were grouped into two big categories, namely intrinsic factors and extrinsic factors. In this study context, intrinsic factors are those factors that motivate a person to work in the construction industry for his/her own sake in accordance with his/her feelings, values and/or principles. Meanwhile, extrinsic factors are those factors that motivate a person with considerations of external conditions and not for the sake of inner fulfilment.

Since motivation influences the workers' performance, a radar graph illustrating the importance power of each motivating factors is presented as the second element of this framework. It was assessed based on the RII analysis that has been done previously. As shown in Figure 5, from the six clusters it can be seen that 'general expectations' followed by 'interpersonal relationships' are the two most important clusters with an average importance scale above 0.8. Thus, it provides a radar graph to map which clusters have strong importance power and should receive more attention from the management.

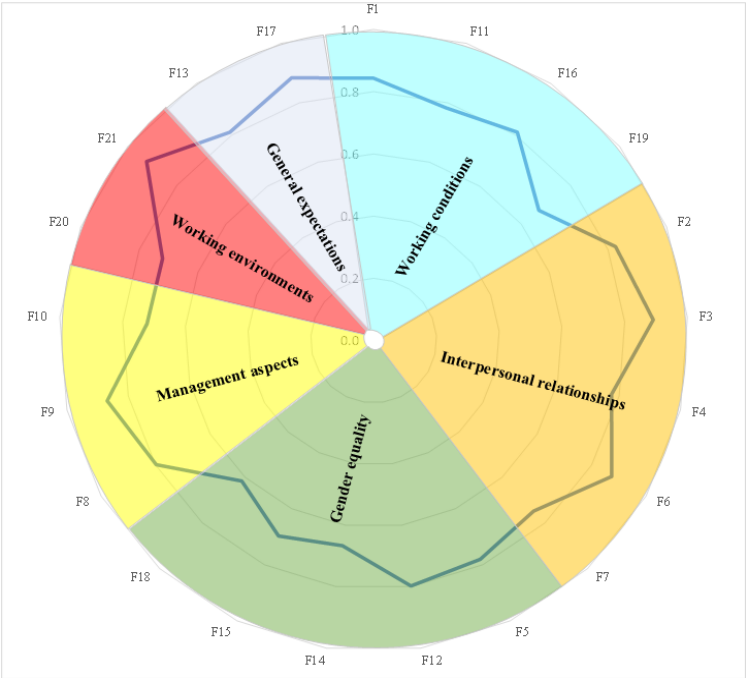

Figure 5: Importance power of the motivating factors

CONCLUSION

The developed motivational framework provides a foundation for facilitating understanding of motivating factors for women to work in the construction industry. It proposes a link between the identification of motivating factors and the relationships of the identified factors. First, it has successfully identified the key factors in explaining women's motivation to work in the construction industry. The authors proposed examination of motivating factors through multi sequence techniques which employed both qualitative and quantitative methods. Next, the relationships between these factors were established by grouping these factors into six clusters,

classifying these factors based on their elements of intrinsic or extrinsic, and displaying the importance power of the motivating factors in each cluster.

The strengths of this motivational framework lie in its simplicity to understand the motivating factors for women to work in the construction industry, and its flexibility to identify specific factors and establish relationships of these factors in accordance with changing research contexts. However, during this research there were limitations mainly related to data collection process. This research began at the end of 2019 and encountered difficulties in data collection due to the Covid-19 outbreak so it is expected that similar studies with more quantitative data can be conducted in the future. Additionally, the developed motivational framework presents abundant research possibilities. Since motivating factors can be developed and progressed over human lifetime, this framework can be further developed by considering the development stages of women's motivation. For instance, identification of motivating factors from female students in related disciplines, identification of motivating factors when they are new to their careers, and identification of motivating factors when they are well-established in the construction industry. On the other hand, the development of the framework can be seen from the context of its constituents such as internal factors, behavioral factors, institutional factors, etc.

In addition, future research can also be done by examining aspects of equal opportunities for women in the Indonesian construction industry, the impact of low women's participation in the industry, the cultural and historical influences towards women's participation in the industry, initiatives as well as recommendations to improve women's participation in the construction industry. Finally, this study contributes by providing a gender-based study related to women's participation in the Indonesian construction industry which is underexposed in previous literature. Considering the large number of women and their potentials, allowing women equal opportunities to work can help overcome the problem of worker shortages in the construction industry. This study is an effort to increase the awareness of gender equality and opportunities by understanding the motivating factors of women to work in the construction industry.

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