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FACTORS INFLUENCING FEMALES' WORK IN THE CONSTRUCTION COMPANIES

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ABSTRACT

Literature has shown that the percentage of females working in the construction industry is less compared to the males. For this reason, issues relating to gender in construction industry have attracted the attention of scholars in recent time. This paper aims to identify the factors influencing females' work in the construction companies operating in Kedah State, Malaysia. Using simple random sampling technique, copies of a structured questionnaire were distributed to 30 female construction workers. The collected data were analyzed using Statistical Package for Social Science (SPSS) version 20. It was found that both internal and external factors have significant relationship with females' choice of career in the construction company. The factors identified in this study can be useful to the policy makers regarding employment of females in Malaysia.

Keywords: Female workers, Construction Industry, Career Choice, Northern Malaysia.

INTRODUCTION

Although construction is a non-traditional industry for females in Malaysia, the number of females employed has increased over time. Besides, construction sector is the world's largest industrial employer, having seven percent of the total world employment and 28 percent of industrial employment. In the last decade, less than 7 percent of the full-time construction industry workers in Britain are females and over 80 percent of these females are estimated to have been employed in traditionally "females' jobs" such as clerical and secretarial works (Gale, 1994).Construction site requires the participation of skilled and unskilled labour. In addition, the actual construction activities require so much energy and activeness that might not be expected from a woman. Nonetheless, few females still work in the construction companies. Literature has shown that the number of females working in the construction industry is less compared to the males (Dainty and Lingard 2006). Although a recent research by Shah Alam, *et al.* (2010) examined Female Entrepreneurs in Southern Malaysia, their study did not examined the factors influencing females working in the construction companies operating in Malaysia. Hence, this study seeks to focus on the gap identified in the literature so as to throw more light on gender issues in the construction industry.

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LITERATURE REVIEW

Females have increasingly moved into the paid workforce over 20 years. They have been into jobs that were traditionally held by females (e.g. education, healthcare, and retail) as well as into non-traditional jobs (e.g. technology and engineering). There is some evidence, however, that female's recent movement into non-traditional jobs has been slow (Kerka, 1999). Efforts have been made to increase the numbers of females working in non-traditional jobs (Gale, 1994). These jobs typically pay more as compared to traditional job (Hughes, 1995). For example, only 10 percent of females work in non-traditional occupations (NTOs) despite the fact that they can earn 25-30 percent more than those working in traditional occupations (Kerka, 1999). The size and market(s) of a construction firm may strongly influence the level of professionalism and working practices. These are the factors that influence gender and its division of labour in the construction industry (Gale, 1994).World War 2 saw a massive increase in the participation of females in the labour market. The universally applied "marriage bar" in "better job" (i.e. administrative, professional, technical and clerical) prior to World War 2 was dropped during the war to enable married females to work; this situation had significant effect on gender relations (Walby, 1986).

Females in the Construction Industry

The construction industry in Malaysia covers a large sector of the economy. The size and market(s) of the construction firm may strongly influence the level of professionalism and practices. These factors influenced female's career choice in the construction industry. Many factors are thought to limit females' entry into construction occupations (Thurairajah, *et al.* 2007); they include the industry's poor image, lack of role models, knowledge and career counselling; gender-biased recruitment; peer pressure and poor educational experiences. The perceptions of both gender about the construction industry was found to militate against the entry of females into the construction industry. In fact, females had worse perception of the construction industry than males. However, they also need to compete with the male counterparts because it was found that both sexes have the same level of awareness about the construction industry. Empirical study on two groups of students showed that both sexes had poor perceptions of the construction industry (Gale, 1994). There is also no evidence that more knowledge of the industry discourages or encourages either sex from entering into the industry.

The Canadian Apprenticeship Forum identified that unwelcoming workplaces and training environments pose a major barrier to females' participation in the construction sector. Discrimination, harassment and isolation are experiences being reported by females in the construction workplace. Harassment and discrimination in the form of sexual harassment, use of sexiest languages and teasing, as well as other forms of unfair treatments are reported (Scullen, 2008). The Canadian Apprentices Forum reported that females faced challenges such as working in unsafe conditions and in remote locations or cramps. The lack of facilities to accommodate females in these settings further exacerbates the challenges (Government of Canada's Sector Council Program, 2010).

The male dominant nature of the industry and gender-based discrimination experienced by the employed females in the industry are challenges that need to be overcome in order to increase the number of females in the construction industry (Madikizela, *et al*., 2010). Moreover, there is an inherent gender bias against females, and there is a general belief that female construction workers are unfit to be trained informally like men in the construction sector even though they have the necessary skills, capability and desire to become masons (Barbanas, *et al*., 2009).

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The perceptions of females' abilities also become a barrier for females to work on construction site. This is because the biases in hiring females limit them females particularly in displaying their skills in the construction industry. Many industry informants agreed that most females are suited to the lighter trades based on physical demands and on working conditions. In addition, they suggested that females have unique abilities that make them good fit with construction management and occupations like safety inspection. This research will establish whether this is limiting the hiring and retention of females or causing them to be promoted more often than their male counterparts or both (Government of Canada's Sector Council Program, 2010). Residential and commercial construction sites are workplaces that are more suitable for females and provide better training opportunities for females.

RESEARCH METHODOLOGY

This research adopted a quantitative approach, using questionnaire as an instrument for data collection. The factors influencing females working in the construction industry were obtained from related literature and were presented in the questionnaire. A simple random sampling approach was adopted to select respondents. Construction companies and professional females working in the construction industry were surveyed using self-administered questionnaire. Data was coded and analyzed using Statistical Package for Social Science (SPSS) to run descriptive statistics, correlation and regression analyses.

RESEARCH FINDINGS

The factors influencing females working in the construction industry were measured using two dimensions: internal and external factors; their perceptions were measured using five point scale, ranging from 1= "Not at all"; 2= "Slightly true"; 3= "Moderately true"; 4= "True"; and 5= "Mostly true". Descriptive analysis was used to determine the level of perceptions towards each variables and dimensions. So, the mean were computed and the middle point was used to separate the different levels from low, moderate and high as mentioned by Healey (2005).Mean score was divided into three levels as follows: less important = 1.00 to 2.25; moderately important= 2.26 to 3.75; highly important = 3.76 to 5.00.

A total of 50 female respondents were selected for this study. The background of the respondents is presented in Table 1. Half of the respondents were married (50.0%). 42.0 percent of them had child. 6.0 percent of the respondents were project managers, manager (10.0%), supervisor (26.0%) estimator (2.0%) and quantity surveyor (10.0%). Others were engineer (16.0%) and were working in other positions (30.0%). 50.0 percent of them also worked for less than 5 years, compared to 5 to 10 years (36.0%) and more than 10 years (14.0%). Majority of them had bachelor degree (50.0%) and high school diploma (24.0%).

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Table 1: Background of the Respondents

	Frequency	Percentage
Age		
20-24	9	18.0
25-29	21	42.0
30-34	12	24.0
35-39	4	8.0
40-44	3	6.0
45-49	1	2.0
Marital Status		
Single	24	48.0
Married	25	50.0
Divorce	1	2.0
Child Responsibility		
Yes	21	42.0
No	29	58.0
Position		
Project Manager	3	6.0
Manager	5	10.0
Supervisor	13	26.0
Estimator	1	2.0
Quantity Surveyor	5	10.0
Engineer	8	16.0
Others	15	30.0
Working Experience		
Less than 5 years	25	50.0
5-10 years	18	36.0
more than 10 years	7	14.0
Level of Education		
High school Diploma or equivalent	12	24.0
Some college or University courses	7	14.0
public or private community college	2	4.0
University-Bachelor's Degree	25	50.0
Master's Degree	3	6.0
Others	1	2.0

Descriptive Analysis

Respondents were asked to indicate their perceptions of factors influencing them while working in the construction site. The factors influencing them were measured using two dimensions: internal and external factors; their perceptions were measured using five point scale, ranging from 1= “Not at all”; 2= “Slightly true”; 3= “Moderately true”; 4= “True”; and 5= “Mostly true”. Descriptive analysis was used to determine the level of perceptions towards each of the variables and dimensions. To determine the perception level of these factors, the mean was computed and the middle point was used to separate the different levels from low, moderate and high as mentioned by Healey (2005). Mean score is divided into three levels as follows: less important = 1.00 to 2.25; moderately important = 2.26 to 3.75; highly important = 3.76 to 5.00.

External Factor

The descriptive analysis used to examine the level of external factors influencing females’ choice of career in the construction company is presented in Table 2. Overall, the perception level of external factors by the respondents were moderate (mean=3.55, sd=0.45). Further

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analysis to examine the level of external factors influencing choice of career for each statement showed high degree of perceptions for five factors. The career matched with skill and aptitude showed the highest mean score (mean=3.98, sd=0.65), followed by benefit (mean=3.902, sd=0.74), salary (mean=3.82, sd=0.83), prestige of the career (mean=3.80, sd= 0.76) and job security (mean=3.66, sd=0.87). The other factors indicated the moderate level of perception (refer Table 2).

Table 2: Descriptive Analysis of External Factors

	Variable/Dimension	Mean	Sd	Level	Rank
1	The career matches my skills or aptitudes	3.98	0.65	High	1
2	Benefits	3.90	0.74	High	2
3	Salary	3.82	0.83	High	3
4	Prestige of the career	3.80	0.76	High	4
5	Job security	3.66	0.87	High	5
6	Opportunity to be a role model	3.52	0.79	Moderate	6
7	Hardship of life	3.38	0.81	Moderate	7
8	Lack of alternative employment	3.36	0.96	Moderate	8
9	Enjoyment of daily work tasks	3.36	0.88	Moderate	9
10	Gender equality	3.36	0.72	Moderate	10
11	Lots of jobs opportunity	3.28	0.73	Moderate	11
12	Supplementing Spouse income	3.16	1.02	Moderate	12
	Overall External Factors	***3.55***	***0.45***	***Moderate***	

Internal Factor

The descriptive analysis used to examine the level of internal factors influencing females' choice of career in construction company is summarized in Table 3. Overall, the perception level of external factors by the respondents were moderate (mean=3.39, sd=0.68). Further analysis to examine the level of internal factor influencing choice of career for each statement showed high degree of perceptions for only one factor that was studied: the construction related course in college or university (mean=4.00, sd=1.12). The other factors indicated moderate level of perception: that they were offered a job or training in construction (mean=3.52, sd=1.39), followed by family member (mean=3.48, sd=1.01), friend (mean=3.00, sd=1.03) and spouse (mean=2.94, sd=1.25).

Table 3: Descriptive Analysis of Internal Factors

	Variable/Dimension	Mean	Sd	Level	Rank
1	Studied construction related course	4.00	1.12	High	1
2	Job or training opportunity in construction	3.52	1.39	Moderate	2
3	Family member	3.48	1.01	Moderate	3
4	Friends	3.00	1.03	Moderate	4
5	Spouse	2.94	1.25	Moderate	5
	Overall Internal Factors	***3.39***	***0.68***	***Moderate***	

Differences in Factor Influencing Females and Demographic Variables

Table 4 presents the results of the one-way ANOVA analysis which examines the differences in the perceived factors influencing females working in construction companies by their age

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groups. Overall, participants by age groups perceived no significant differences in external and internal factors. Further analysis for each items indicate that the respondents perceived the significant differences in supplementing spouse income ($F=2.628$, $p<0.05$), prestige of the career ($F=3.869$, $p<0.01$) and the career matched their skills and aptitudes ($F=2.614$, $p<0.05$). As for internal factors, participants, based on their age group, only perceived the differences in spouse ($F=2.877$, $p<0.05$).

Table 4: Differences in Perceived of Internal and External Factors by Age Groups

	Age Groups (mean)						F	Sig.
	20-24	25-29	30-34	35-39	40-44	45-49		
External	3.31	3.76	3.36	3.63	3.42	3.67	2.168	.075
Hardship of life	3.11	3.67	2.92	4.00	3.00	4.00	2.628	.037
Supplementing Spouse income	2.78	3.14	3.33	3.50	3.00	4.00	.539	.746
Job security	3.33	3.90	3.42	4.25	3.00	4.00	1.606	.178
Lack of alternative employment	3.44	3.57	3.50	3.00	2.00	2.00	2.215	.070
Prestige of the career	3.44	4.24	3.33	3.75	4.00	3.00	3.869	.005
Benefits	3.67	4.10	3.75	3.50	4.33	4.00	1.029	.413
The career matches my skills or aptitudes	3.56	4.29	3.75	3.75	4.33	4.00	2.614	.037
Opportunity to be a role model	3.33	3.81	3.17	3.25	4.00	3.00	1.655	.166
Enjoyment of daily work tasks	3.22	3.48	3.17	3.50	3.33	4.00	.339	.886
Salary	3.44	4.00	3.75	4.00	3.67	4.00	.633	.675
Gender equality	3.11	3.57	3.17	3.50	3.00	4.00	1.094	.377
Lots of jobs opportunity for females in construction	3.22	3.33	3.08	3.50	3.33	4.00	.452	.809
Internal	3.42	3.44	3.23	3.05	3.73	4.20	.776	.572
Family member	3.89	3.52	2.75	3.50	4.33	5.00	2.877	.025
Spouse	3.00	2.62	2.92	3.25	4.00	5.00	1.347	.263
Friends	3.44	3.00	3.00	3.00	2.33	1.00	1.394	.245
I studied construction related course in the college/ university	3.67	4.24	3.92	3.25	4.33	5.00	.918	.478
I was offered a job or training opportunity in construction	3.11	3.81	3.58	2.25	3.67	5.00	1.283	.289

Further examination also revealed that there was no significant difference in external and internal factors according to marital status (Table 5). However, participants gave the different perspectives in some external and internal factors such as supplementing spouse income ($F=5.232$, $p<0.01$), prestige of the career ($F=3.221$, $p<0.05$), enjoyment ($F=5.258$, $p<0.01$) and job opportunity ($F=6.397$, $p<0.01$). Furthermore, the participants perceived the differences in two internal factors: spouse ($F=3.416$, $p<0.05$) and friends ($F=3.853$, $p<0.05$).

Table 5: Differences in Perception of Internal and External Factors by marital Status

Table 5: Differences in Perception of Internal and External Factors by marital Status	Age Groups (mean)			F	Sig.
	Single	Married	Divorced		
External	3.50	3.63	2.83	1.862	.167
Hardship of life	3.42	3.44	1.00	5.232	.009
Supplementing Spouse income	2.83	3.48	3.00	2.654	.081
Job security	3.58	3.72	4.00	.221	.803
Lack of alternative employment	3.46	3.28	3.00	.272	.763
Prestige of the career	3.88	3.80	2.00	3.221	.049
Benefits	3.88	3.88	5.00	1.149	.326
The career matches my skills or aptitudes	3.88	4.12	3.00	2.092	.135
Opportunity to be a role model	3.67	3.44	2.00	2.553	.089
Enjoyment of daily work tasks	3.25	3.56	1.00	5.258	.009

Salary	3.67	3.92	5.00	1.663	.200
Gender equality	3.21	3.48	4.00	1.284	.287
Lots of jobs opportunity for females in construction	3.25	3.40	1.00	6.397	.003
Internal	3.32	3.47	3.00	.478	.623
Family member	3.58	3.48	1.00	3.416	.041
Spouse	2.50	3.40	2.00	3.853	.028
Friends	3.08	2.92	3.00	.149	.862
I studied construction related course in the college/ university	3.88	4.12	4.00	.282	.756
I was offered a job or training opportunity in construction	3.54	3.44	5.00	.602	.552

Relationship between External and Internal Factors with Choice of Career

Correlation analysis was carried out to examine the relationship between the external and internal factors with the choice of career. The results in Table 6 indicate that there was no significant relationship between external factor and choice of career in construction company ($r=0.102$, $p>0.05$). The results also indicate that internal factors were also not significantly associated with the choice of career in construction ($r=-0.015$, $p>0.05$).

Table 6: Relationship between External and Internal Factors with Choice of Career in Construction Company

	External		**Internal**	
	R	**Sig.**	**r**	**Sig.**
Choice of Career	0.102	0.480	-0.015	0.919

Effect of Internal and External Factors on Choice of Career in Construction Company

Table 7 presents the result of multiple regression on the effect of external and internal factors on choice of career in construction companies. It was interesting to find out that both factors failed to give significant influence on choice of career ($R2=0.014$, $F=0.324$, $p>0.05$). External ($B=0.031$, $t=0.799$, $p>0.05$) and internal ($B=-0.010$, $t=-0.387$, $p>0.05$) also failed to predict choice of career in construction company.

Table 7: Effect of External and Internal Factors on Choice of Career

	B	**t**	**Sig.**
External	.031	.799	.428
Internal	-.010	-.387	.700
R^2	*0.014*		
F	*0.324*		
Sig.	*0.725*		

DISCUSSION

The descriptive statistics shows that career matches with skills or aptitudes, and that the study of construction related courses ranked first with mean score of 3.98 and 4.0 respectively. This suggests that these two factors are perceived to be very important while making decision to work in the construction companies. However, correlation and regression analysis show no significant relationship or significant influence on the females' choice of work in the construction companies. Nonetheless, it is interesting to note that this finding complements

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previous researches (e.g. Gale, 1994; De Pater *et al.* 2007; Barnabas, *et al*. 2009; Tunji-Olayeni, *et al*. 2017). Overall, the internal and external factors did explain only 14% variance in the choice of carrier among females working in the construction companies. The findings from this research might have been influenced by the small number of sample and the limited number of construction sites available at the time of conducting the survey.

CONCLUSION

The findings in this paper complement the existing body of knowledge on females working in the construction industry. The findings in this paper suggest that the internal factors and external factors may have no significant influence on females' decision to work in the construction companies. Besides, the male dominant nature of the industry and gender-based discrimination experienced by females employed in the industry are challenges that need to be overcome if the current number of females working in the construction industry is to be increased. A major limitation to this study is the small sample size of the surveyed respondents. This was due to the limited number of construction sites available at the time of conducting the research. Future research should adopt a qualitative approach to examine the factors that could influence females to work in the construction companies.

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