

Year 2004 Employment Survey of Engineers

By: *Standing Committee on Welfare and Service Matters*

GENERAL FINDINGS

Results of the 2004 Employment Survey show that the average annual salary of engineers increased by 7.5% from the 2002 survey. Going by employment sector, respondents from the oil & gas sector reported the highest annual salaries followed by the power and the manufacturing sectors. Based on job function, respondents in the management positions reported the highest annual salaries, followed by those in sales/marketing and contracting. The graduates' average starting monthly salary remains relatively unchanged compared with that in the 2002 survey. The percentage of unemployed respondents is about 1%.

SURVEY SAMPLE

Up to the cut-off date of March 1, 2004, 3,470 responses were received from about 15,000 survey forms sent, representing a return rate of about 23%, significantly higher than the 12.5% for the 2002 survey. 127 respondents reported employment overseas. Their salaries are analysed and presented in this report for the first time.

Figures 1 to 3 show the distribution of responses by categories of discipline, IEM membership grade, and sex. Comparison with IEM membership shows a reasonable match between sample and population. Figures 4 to 10 show the responses by categories of age, academic qualification, employment status, sector, job description, where qualification is obtained, and employment location.

Key profiles of the survey respondents are as follows:

- 54% belong to the civil engineering discipline
- 93% are male and 7% female
- 51% are 40 years old or under
- 79% are in full employment, 18% self-employed, and 1% unemployed
- 40% are employed in the construction/properties sector
- 34% are engaged in consultancy work, and 19% in management positions
- Over 50% of those aged 35 years or under graduated locally
- 4% are in overseas employment

ANNUAL SALARY

The annual salaries reported by all respondents are plotted in Figure 11 according to years of experience and employment location, i.e. local or overseas employment.

For the purpose of analysis by various categories, we have excluded the "outliers" defined as individuals earning annual salaries of more than RM300,000 for local employment, and RM500,000 for overseas employment.

Average annual salaries according to years of experience by local and overseas employments, excluding the "outliers", are summarised in Table 1.

ANALYSES BY CATEGORIES

For local employments only, annual salaries are analysed according to years of experience by categories of employment sector, job description, employment status, sex, academic qualification, and where qualification is obtained. The results are shown in Figures 12 to 17.

Survey results (Table 1) indicate that the average annual salary (RM92,597) increased by 7.5% compared with that in the 2002 survey (RM86,134). The improvement in income reported by respondents is consistent with the economic growth experienced by the nation over the period between the two surveys.

Top-paying employment sectors

Analysis of annual salaries by employment sector shows the three top-paying sectors are oil & gas, power, and manufacturing (Figure 12). There is a significant spread of annual salaries between the highest and the lowest paying sectors. In the 1 to 5 years of experience range, the spread is about 1.3. It increases to 1.9 for 6 to 10 years, and 2.5 for 11 to 15 years of experience. The spread is maintained at about 2.0 beyond more than 15 years of experience.

Management is top-paying job

Analysis of annual salary by job description shows that management is being paid the highest among all job

positions, followed by sales/marketing and contracting. As shown in Figure 13, those in management positions are able to sustain their earning power as their years of experience increase.

Do self-employed earn more than fully employed?

Figure 14 shows the annual salary trend according to years of experience by employment status. While self-employed respondents reported higher income initially, the quantum is not sustained. Their salaries dip beyond 25 years of experience. The salaries of those fully employed show a steady increase with years of experience and overtake those of the self-employed beyond more than 20 years of experience.

Comparison of male and female engineers

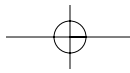
Figure 15 plots the annual salary trend according to years of experience by sex based on results tabulated in Table 2. It shows that female engineers earn less for the 1 to 15 years of experience range. However, survey results reveal that a small group of female engineers in the 26 to 30 years of experience range has a significantly higher average salary than their male counterparts.

Academic qualifications do make a difference

Figure 16 shows the annual salaries according to years of experience by academic qualification. It reveals some interesting trends. While respondents with PhDs reported higher salaries initially, their income tends to level off after 15 years of experience. Respondents with MBA reported higher salaries than those with Masters or Bachelor's degrees, as well as higher quantum of salary increase with years of experience, resulting in their salaries overtaking those with PhD beyond 20 years of experience.

Does it matter where you graduated?

Figure 17 shows the annual salaries according to years experience by where qualifications are obtained. Survey results show that there is little difference between the salaries of those who graduated locally



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and those from overseas. As discussed earlier, variance in salaries is attributable to employment sector, job description, employment status, sex, and academic qualification.

COMPARISON OF OVERSEAS AND LOCAL EMPLOYMENTS

4% of survey respondents reported employment overseas. This percentage figure matches the IEM membership statistics which also shows about 4% of members residing overseas; two-thirds in Singapore/Brunei. Salaries of overseas respondents are captured in equivalent of Malaysian Ringgit in the survey form.

Figure 18 plots the salary trends of local and overseas employments based on results tabulated in Table 1. The salaries of overseas employment are apparently high, being about 2.2 times that of local employment. However, for the majority of those employed in Singapore/Brunei, their average salary figures, after factoring currency exchange rate, are similar to those for local employments.

NUMBER OF COMPANIES SERVED SINCE GRADUATION

Figure 19 shows the number of companies served since graduation according to years of experience for all respondents. Respondents reported employment with two companies on the average for the first five working years. The number of companies shows a plateau at about 3.5 beyond 10 years of experience.

GRADUATES' STARTING MONTHLY SALARIES

Altogether 37 respondents who graduated recently reported their starting monthly salaries. The results are analysed by

Table 1: Average Starting Salary of Graduates

Employment Sector	Count	Avg. Starting Salary
All	37	1,969
ICT	2	2,550
University/College	3	2,400
Oil & Gas	4	2,175
Manufacturing	7	2,164
Infrastructure Projects	6	1,900
Others	1	1,900
Construction/Properties	12	1,704
Govt/Local Authority	1	1,657
Trading/Services	1	1,300

employment sectors and summarised in Table 1. The average starting monthly salary of about RM1,970 shows little change from that in the 2002 survey.

PERCEPTION OF REMUNERATION, JOB SATISFACTION AND JOB CHARACTERISTICS

The survey on respondents' perception on remuneration and job satisfaction has yielded a consistent result since it began. In this survey, it is found that the majority of the respondents (71%) perceive their remuneration as satisfactory, good, or excellent; they are also satisfied or very satisfied with their jobs.

Respondents were also asked to describe their jobs on a 5-point scale as challenging, rewarding, stressful, and competitive. Figure 20 shows the results of analyses of perception of job characteristics. The findings are summarised below:

- About 91% respondents perceive their jobs as very challenging or challenging
- 86% perceive their jobs as very stressful or stressful
- 84% perceive their jobs as very competitive or competitive, and
- 76% perceive their jobs as very rewarding or rewarding.

SURVEY ON FEMALE ENGINEERS

As part of the 2004 Employment Survey, the Women Engineers Committee included several questions aimed to assess female engineers' perception on several issues. Responses to each question are analysed and the results summarised in Figure 21.

With regards to self-confidence, 85% respondents responded in the affirmative to the question "Do you have the confidence to make decisions at meetings or to be able to give instructions at project sites?" With regards to opportunity given, 64% respondents responded in the affirmative to the question "Are you given the opportunity to handle high profile projects?"

It is found that those who responded in the negative to these questions generally have fewer years experience, suggesting that the levels of self-confidence and opportunity given are probably influenced by the seniority of the respondents.

With regards to sexual discrimination, 26% respondents responded to the question "Have you ever experienced sexual discrimination?" in the affirmative. 11% responded to the question "Have you ever experienced sexual harassment in the office and/or at site?" in the affirmative. The results suggest that there are more occurrences of sexual discrimination outside the workplace. In the workplace, most respondents perceive the nature of discrimination to be low wages and/or by-passed promotion. ■

ACKNOWLEDGEMENT

IEM acknowledges the valued contribution of Ir. Chew Hai Hong, who is responsible for the analyses of survey data and the preparation of this report. Ir. Chew is based in Abu Dhabi, United Arab Emirates

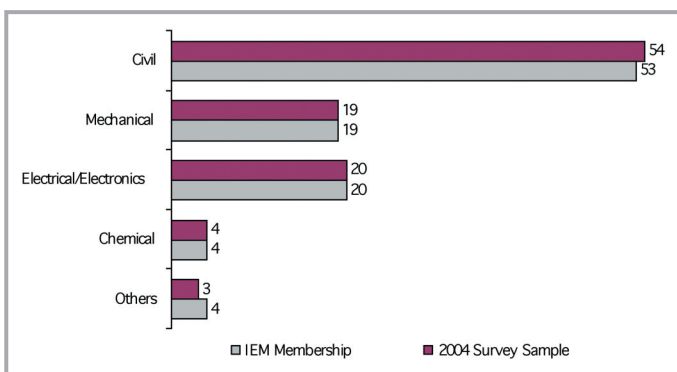


Figure 1: Response (%) by discipline

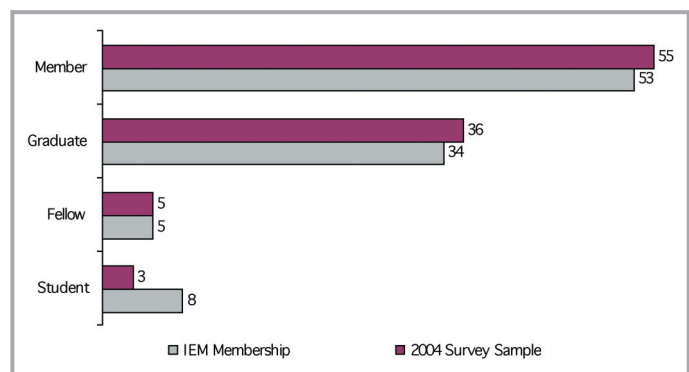
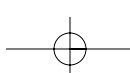
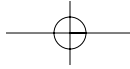


Figure 2: Response (%) by IEM membership grade





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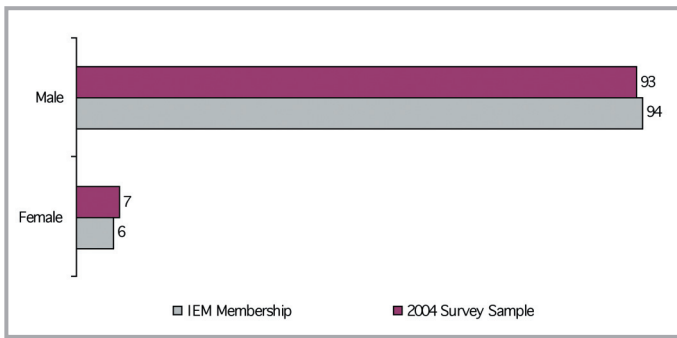


Figure 3: Response (%) by sex

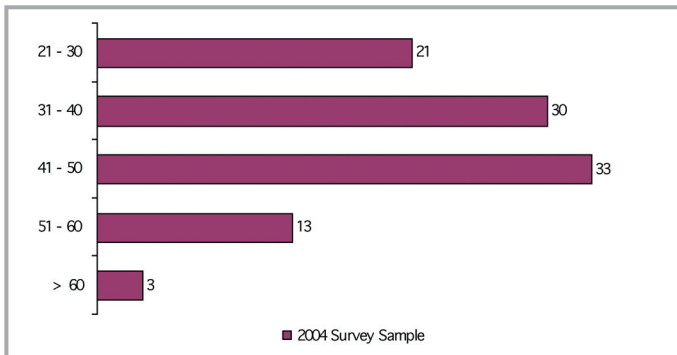


Figure 4: Response (%) by age (years)

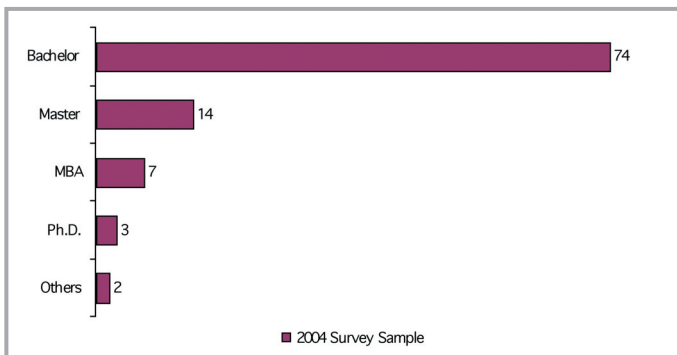


Figure 5: Response (%) by academic qualification

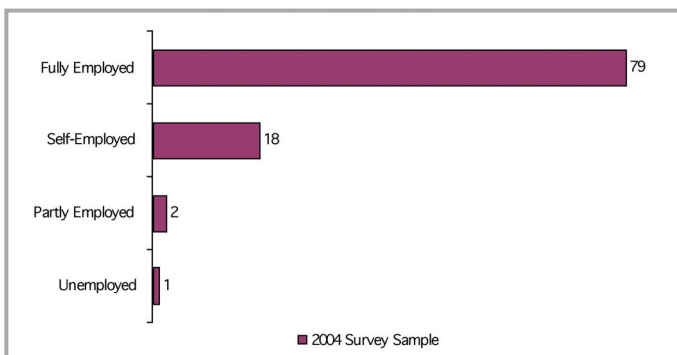


Figure 6: Response (%) by employment status

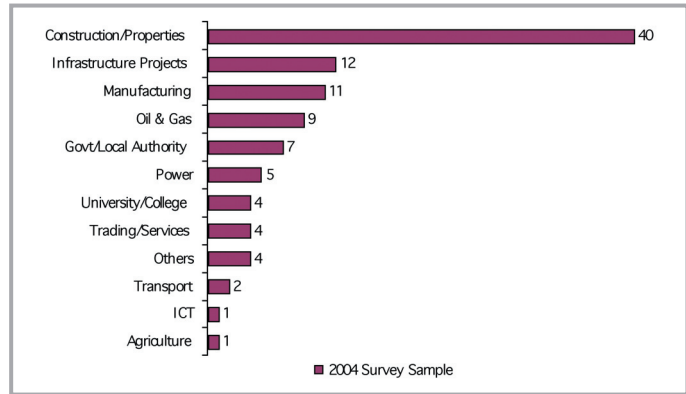


Figure 7: Response (%) by employment sector

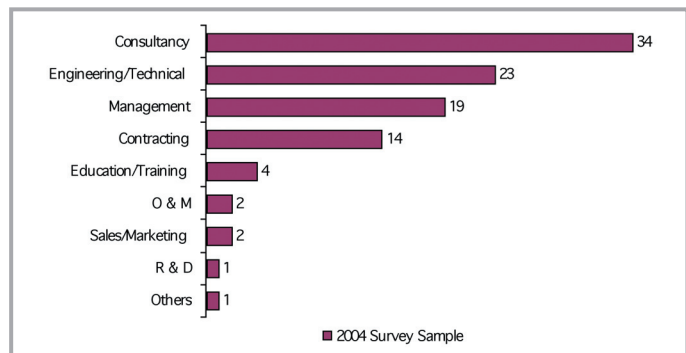


Figure 8: Response (%) by job description

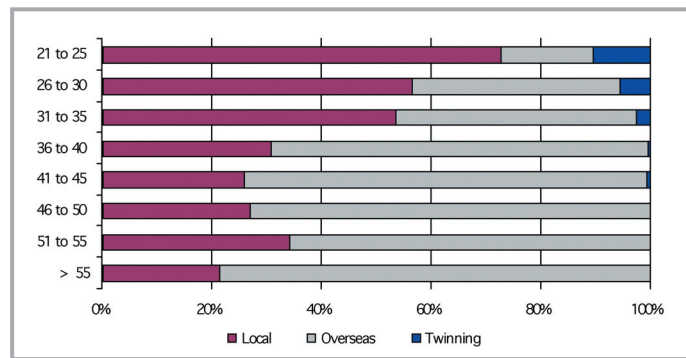


Figure 9: Response (%) by where basic qualification is obtained according to age

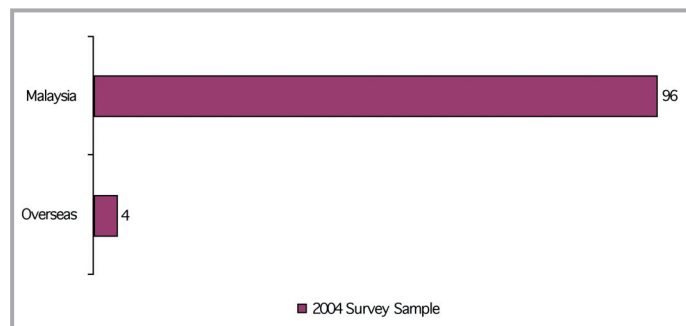


Figure 10: Response (%) by employment location

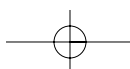




Figure 11: Annual salary according to years of experience by employment location

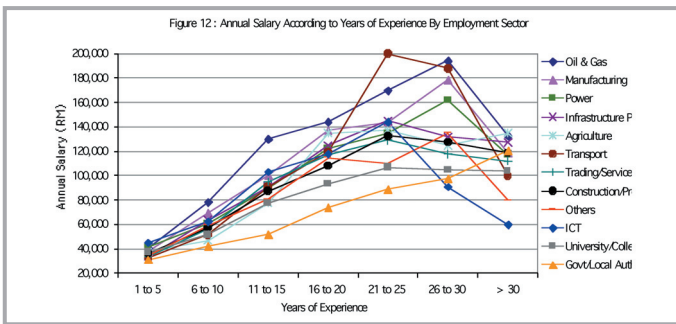


Figure 12: Annual salary according to years of experience by employment sector

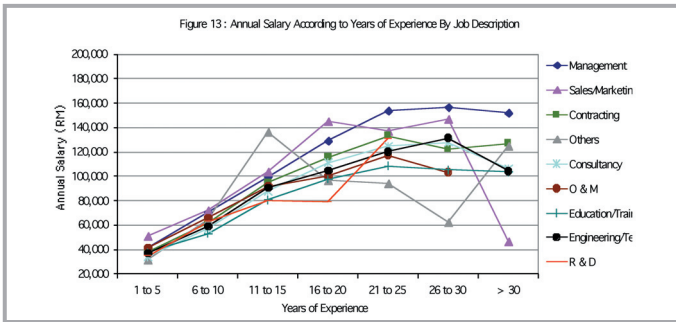


Figure 13: Annual salary according to years of experience by job description

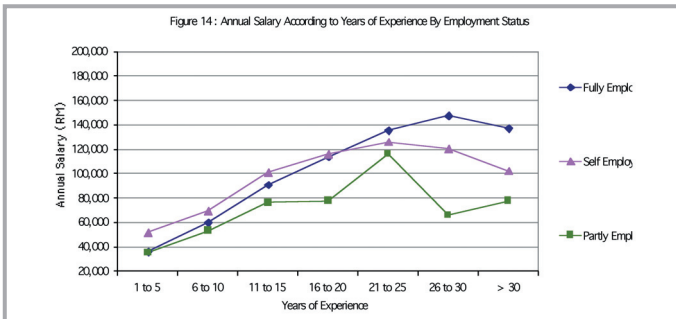


Figure 14: Annual salary according to years of experience by employment status

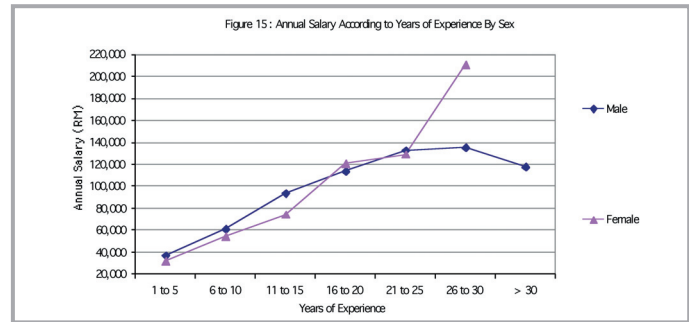


Figure 15: Annual salary according to years of experience by sex

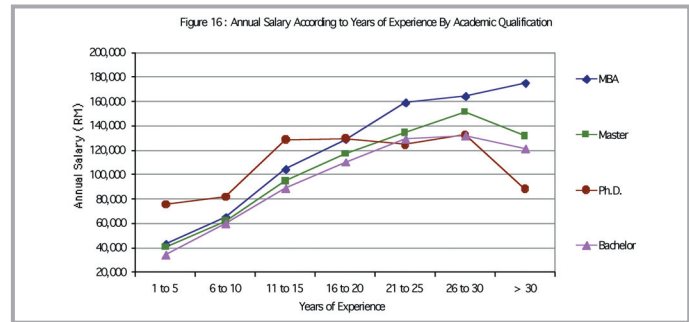


Figure 16: Annual salary according to years of experience by academic qualification

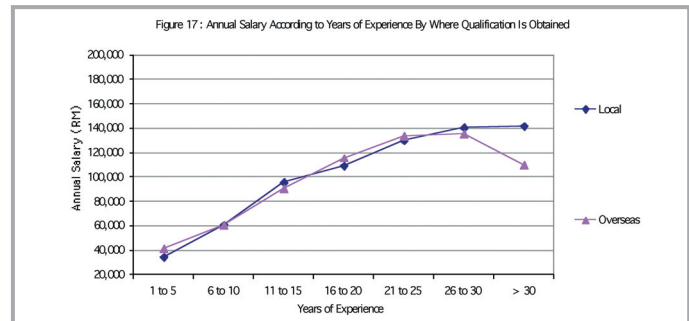


Figure 17: Annual salary according to years of experience by where qualification is obtained

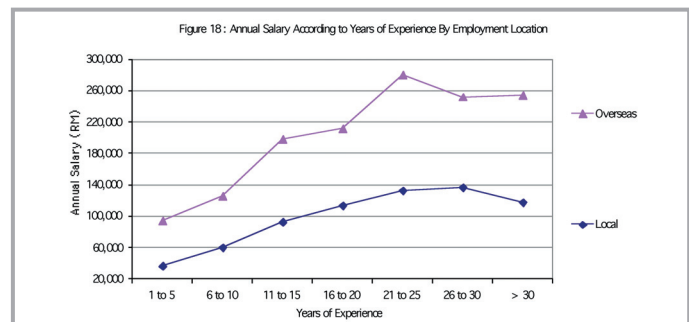
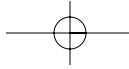


Figure 18: Annual salary according to years of experience by employment location



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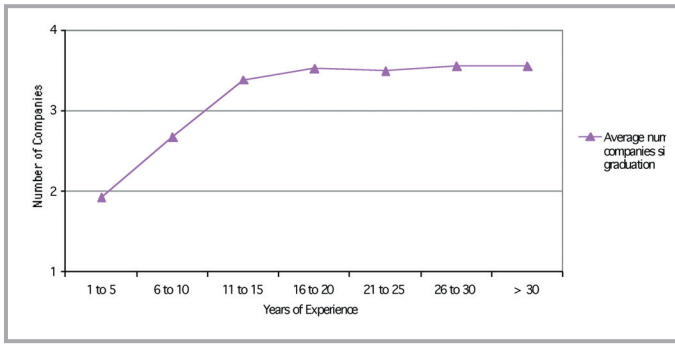


Figure 19: Number of companies since graduation according to years of experience

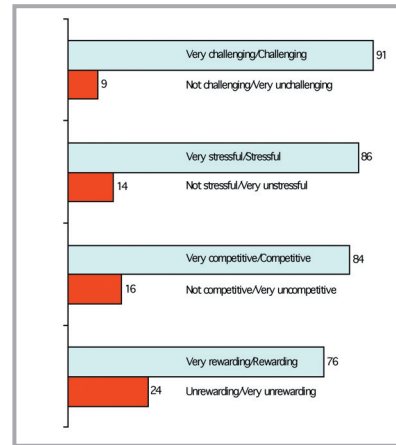


Figure 20: Perception of job characteristics (%)

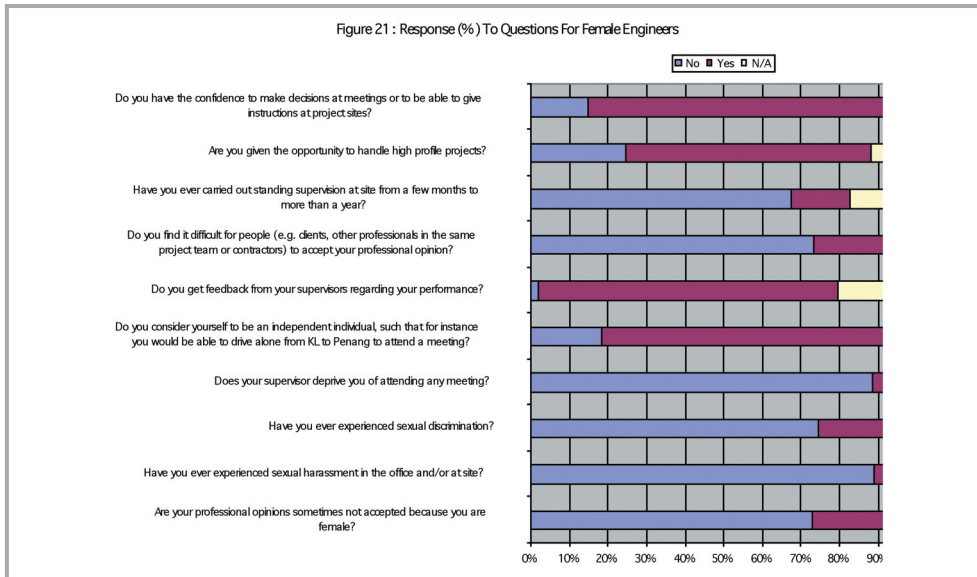


Figure 21: Response (%) to questions for female engineers

Table 2: Average annual salary according to years of experience by employment location

Yrs Exp.	Local Employment				Overseas Employment			
	Count	Min. salary	Max. salary	Avg. salary	Count	Min Salary	Max. salary	Avg. salary
All years	3,079	10,000	300,000	92,597	107	60,000	500,000	206,107
1 to 5	559	16,800	240,000	36,346	13	60,000	168,000	93,911
6 to 10	521	20,000	209,000	60,603	11	70,000	240,000	126,229
11 to 15	528	18,514	300,000	92,328	21	100,000	500,000	197,893
16 to 20	534	10,000	300,000	113,921	22	100,000	400,000	212,045
21 to 25	514	36,000	300,000	132,960	18	100,000	500,000	280,667
26 to 30	288	18,000	300,000	136,800	10	170,300	500,000	252,130
> 30	135	10,000	300,000	117,722	12	100,000	400,000	254,167

Table 3: Average annual salary according to years of experience by sex

Yrs Exp.	Local Employment							
	Male Engineers				Female Engineers			
	Count	Min. salary	Max. salary	Avg. salary	Count	Min Salary	Max. salary	Avg. salary
All years	2,869	10,000	300,000	92,8097	210	16,800	280,000	62,381
1 to 5	472	18,000	240,000	37,142	87	16,800	53,000	32,052
6 to 10	473	22,200	180,000	61,237	48	20,000	209,000	54,357
11 to 15	487	18,514	300,000	93,831	41	24,000	140,000	74,476
16 to 20	516	10,000	300,000	113,680	18	50,000	280,000	120,833
21 to 25	503	36,000	300,000	133,042	11	79,200	220,000	129,200
26 to 30	283	18,000	300,000	135,489	5	125,000	250,000	211,000
> 30	135	10,000	300,000	117,722				

