CHAPTER 4

WAGE DIFFERENTIAL ANALYSIS

4.1 INTRODUCTION

Adam Smith suggests that "wage differentials will be primarily determined by differences in occupations". Wages is the primary tool in ensuring labour market equilibrium by its adjustment. Unpleasant occupations would therefore require a higher wage differential to induce labour in taking up the job. Becker subsequently developed the Human Capital Theory which state that investment in human capital, such as education and training to improve the skills of oneself, would ensure a higher positive wage differential as it is deemed that productivity increases with the increase in investment of human capital.

In the literature of trade union, wages of union members should be higher than that of non-union members. Trade unions employ a number of methods in negotiating for wage increase for its members. Some of the methods are as follows :-

- Increase the productivity of a worker by providing training, specialisation and encouraging management to invest in technological change
- Reduce the supply of workers
- Exercise a minimum wage policy, which may increase the unemployment rate
- Through collective bargaining.

This study have used the traditional method of wage differential analysis which is the calculation by comparing the union wage in an industry with the in-house union and non-union wage in the same industry to capture the direct product market competition of union, in-house union and non-union firms in the same industry.

4.2 Differential Between National Union, In-House Union and Non Union Workers

The wage differentials between national vis-à-vis in house unions on wages are presented in Table 9.

Table 9 : Wage Differential Ratio Between National Union, In-House Union and Non Union Workers in the Food Manufacturing Industry : 1990 – 1994 and 1996

National union vis-à-vis non-union worker wages		
Year	**Male**	**Female**
1990	0.77	0.27
1991	0.69	0.58
1992	0.72	0.42
1993	0.73	0.78
1994	0.68	0.42
1996	0.77	0.40

In-house union vis-à-vis non-union worker wages		
Year	**Male**	**Female**
1990	0.73	0.60
1991	0.44	0.17
1992	0.42	0.25
1993	0.34	0.20
1994	0.52	0.10
1996	0.40	0.32

National union vis-à-vis in-house union worker wages		
Year	**Male**	**Female**
1990	0.03	-0.21
1991	0.18	0.35
1992	0.21	0.13
1993	0.29	0.48
1994	0.10	0.28
1996	0.26	0.06

Source : Computed from information obtained from the Department of Statistics, Kuala Lumpur, 1990-1994, 1996.

Our data from Table 9 suggests that the wage differential between national union and non-union, and in-house union and non union to be much greater than the estimate by Guy Standing on the 1988 Malaysian manufacturing sector of 21.8 per cent and 20.4 per cent respectively. This could be due to the period of study by Guy Standing, which is during the recovery period from the severe recession of 1986 - 1987, whilst our data is for a period of

robust economic growth and full employment.

From Table 9, a wage differential ratio ranging from 0.68 to 0.77 is found between national union and non-union male workers. This ratio is greater than the ratio found between in-house and non-union male workers, which ranges from 0.34 to 0.73. Similarly, a positive but smaller variance is found between male national union and in-house union workers.

For female workers, except for the unexplained negative wage differential for the year 1990 between national and in-house union workers, similar observations were noted as compared to that of male workers. The ratio, however, is smaller, ranging from 0.27 to 0.78 (for national union vs non-union workers) and 0.10 to 0.60 (for in-house union vs non-union workers).

All the results support our original expectation that national unions, being the most independent, would negotiate for the highest wage for its members. In-house unions, being representatives of management, may not be as aggressive whilst non-union workers, having no representation, earn the least wages. It should be cautioned that the results of this study may have overstated the wage differential as the skill level, experience, education and size of establishment have not been taken into account. To further understand this differential, an analysis of the skill level composition of workers and the wage growth in each category is necessary.

4.2.1 Skill Level Composition Effect on Wage Differential

The wage differential ratio should be read in conjunction with the skill level composition of national union, in-house union and non-union firms. A category which have more skilled workers would naturally have a higher wage compared to the less skilled categories as the labour supply curve of skilled worker is more inelastic. Table 10 presents this skill intensity ratios.

Table 10 : Ratio of skilled, semi-skilled and unskilled to total workers in the Food Manufacturing Industry : 1990 – 1994 and 1996

National union workers – Male				
Year	**Skilled**	**Semi-skilled**	**Unskilled**	**Total**
1990	0.48	0.14	0.38	1.00
1991	0.52	0.16	0.32	1.00
1992	0.49	0.16	0.35	1.00
1993	0.43	0.17	0.40	1.00
1994	0.35	0.32	0.33	1.00
1996	0.42	0.19	0.39	1.00

In-house union workers – Male				
Year	**Skilled**	**Semi-skilled**	**Unskilled**	**Total**
1990	0.48	0.07	0.45	1.00
1991	0.64	0.27	0.09	1.00
1992	0.64	0.04	0.32	1.00
1993	0.53	0.21	0.26	1.00
1994	0.57	0.20	0.23	1.00
1996	0.37	0.27	0.36	1.00

Non-union workers – Male				
Year	Skilled	Semi-skilled	Unskilled	Total
1990	0.31	0.25	0.44	1.00
1991	0.30	0.25	0.45	1.00
1992	0.29	0.24	0.47	1.00
1993	0.29	0.25	0.46	1.00
1994	0.30	0.27	0.43	1.00
1996	0.25	0.30	0.45	1.00

National union workers – Female				
Year	Skilled	Semi-skilled	Unskilled	Total
1990	0.35	0.13	0.52	1.00
1991	0.52	0.13	0.35	1.00
1992	0.48	0.12	0.40	1.00
1993	0.42	0.12	0.46	1.00
1994	0.34	0.35	0.31	1.00
1996	0.20	0.08	0.72	1.00

In-house union workers – Female				
Year	Skilled	Semi-skilled	Unskilled	Total
1990	0.12	0.17	0.71	1.00
1991	0.10	0.09	0.81	1.00
1992	0.05	0.08	0.87	1.00
1993	0.05	0.46	0.49	1.00
1994	0.03	0.57	0.40	1.00
1996	0.09	0.75	0.16	1.00

Non-union workers – Female				
Year	**Skilled**	**Semi-skilled**	**Unskilled**	**Total**
1990	0.19	0.22	0.59	1.00
1991	0.18	0.26	0.56	1.00
1992	0.19	0.25	0.56	1.00
1993	0.19	0.25	0.56	1.00
1994	0.22	0.21	0.57	1.00
1996	0.20	0.35	0.45	1.00

Source : Computed from information obtained from the Department of Statistics, Kuala Lumpur, 1990 – 1994, 1996.

Although the skilled ratio of male in-house union worker is consistently higher than their national union counterpart (except for 1990 and 1996), the wage differential ratio is consistently higher for national union male workers. This reinforces the fact that national union representatives are always better than in-house union representatives during negotiations for wage increases, because with even a lower skill level composition, a national union worker still earn higher wages than an in-house union worker.

The skill composition in non-union male workers shows a consistently lower level than that of unionized firms probably explains part of the wage differential suffered by the non-union group. Thus after taking into account the skill level difference, the wage differential ratio due to unionization may be lower than our estimate of 0.68 to 0.77 (national union) or 0.34 to 0.73 (in-house union).

Female national union workers wage advantage, on the other hand, is partly attributable to the skill intensity. For all the years under study, the skilled ratio for national union female workers is significantly higher than that of either in-house union or non-union female workers.

Lower wage differential between in-house union and non-union female workers are observed during the six years under study. This is partly caused by the in-house skill ratio which is less than 0.10 on average, as compared to the non-union female skill ratio of about 0.20. After taking into account skill differences, our original wage differential due to unionization should be even lower than 0.10 to 0.60 (in-house union).

The ratios also point toward a deterioration in the skill level composition, where except for non-union female workers, all the other categories of workers reported less skilled worker ratios in 1996 compared to 1990. This disturbing trend shows that the decline in skill level of Malaysian workers have now permeated into the food manufacturing industry. Incidentally, the World Bank in its 1995 study of the Malaysian manufacturing sector have found that the food manufacturing industry recorded a 13.8 per cent increase in the ratio of skilled to total workers, from 0.271 (1985) to 0.308 (1991). The decline in the ratio of skilled to total workers is not a healthy sign for the economy, especially when the country is striving to achieve a developed nation status by the year 2020. More training should be given to workers to build up their skills and more incentives need to be devised to encourage employers into investing in human capital rather than just fixed assets in the company alone.

4.2.2 WAGE GROWTH IN THE FOOD MANUFACTURING INDUSTRY (%)

Table 11 : Wage Growth in the Food Manufacturing Industry (%) : 1990 – 1994 and 1996

National union workers		
Year	**Male**	**Female**
1991	-3	30
1992	13	2
1993	8	34
1994	4	-12
1996	21	16

In-House union workers		
Year	**Male**	**Female**
1991	2	8
1992	11	12
1993	8	11
1994	8	8
1996	13	16

Non-union workers		
Year	**Male**	**Female**
1991	2	5
1992	11	14
1993	7	6
1994	7	11
1996	15	17

Source : Computed from information obtained from the Department of Statistics, Kuala Lumpur, 1990-1994, 1996.

Male workers of all categories achieved the same annualised growth rate of approximately 8 per cent from 1990 to 1996. The wage premium of national and in-house union over the non-union workers are therefore because of higher base wage which the union workers are earning when compared to the non-union workers. It should thus be incorrect to say that unions force management into paying higher increment percentages to its members as compared to the industry norm.

National union female workers achieved 14 per cent annualised wage growth over the 1990 to 1996 period whilst their in-house union counterpart achieved 11 per cent wage growth during the same period. Non-unionised female workers obtain the lowest wage growth over the 1990 to 1996 period of 10.6 per cent.

Thus we could see that the actual "union negotiated" wage premium is only applicable to the female category. This could be due to greater female participation in the labour union movement and also the growing importance of female workers in the manufacturing industry.

As the country strives toward being a developed nation by 2020, it is imperative that investment into human capital be seen as an important development tool. Other than the tax incentives for example Double Deduction in Training, and the Human Resource Development Fund schemes, further enhancements to these may be in order. The application for refunds of the Human Resource Development Fund schemes, for one, could be made easier to encourage employers in sending their employees for courses.

4.3 Male-female wage differential

Male-female wage differential is positive even in developed countries such as the United States and the United Kingdom. Unionization, however, should reduce this differential as unions would fight for its members irrespective of gender. Our data supports only the first but not the second view. As shown by Table 12, which gives an analysis of male-female wage differential in the food manufacturing industry.

Table 12 : Male-Female Wage Differential in the Food Manufacturing Industry : 1990 – 1994 and 1996

National Union Workers	
Year	**Ratio**
1990	1.13
1991	0.59
1992	0.76
1993	0.43
1994	0.68
1996	0.77

In-House Union Workers	
Year	**Ratio**
1990	0.65
1991	0.82
1992	0.65
1993	0.64
1994	0.96
1996	0.48

Non-Union Workers	
Year	**Ratio**
1990	0.52
1991	0.49
1992	0.45
1993	0.47
1994	0.42
1996	0.40

Food Manufacturing Industry Workers	
Year	**Ratio**
1990	0.64
1991	0.54
1992	0.54
1993	0.50
1994	0.50
1996	0.47

Source : Computed from information obtained from the Department of Statistics, Kuala Lumpur, 1990 - 1994, 1996

There is a positive wage differential between male and female workers in all the years under study. The results however, show that the wage differential between national union male-female have the largest variance, with the ratio ranging from 0.43 to 1.13. This is followed by the in-house union workers ratios of between 0.48 and 0.96. Non-union category showed the least

ıge differential, with ratios ranging from 0.40 to 0.52.

Although it is espoused that unions generally negotiate for better entitlement for its embers irrespective of gender, the human capital endowment should also be taken into account. s shown by the skill intensity ratios in Table 10, female workers, irrespective of union status, ıve a consistently lower skill ratio compared to male workers. They may also be less willing to ork overtime or perform shift work. Household responsibilities may result in decrease in the nount of "marketable" effort. The Asian culture may have an influence on their outlook with spect to their career. More pressure is imposed on the female to look after the needs of their hildren and taking care of the family, whilst a male is looked upon as a breadwinner of the amily and therefore devote more time and energy towards his work. There is also the break vhich a female worker have to take to give birth. Hence they may also have less experience ompared to their male counterpart.

Further, employers who employ women are also subjected to the following restrictions:

- Women cannot be employed for underground work;
- Women cannot be required to work without special exemption in industrial or agricultural work, between 10 p.m. and 5 a.m.;
- Women cannot be required to commence work for the day without having had 11 consecutive hours free from such work.

Underground work may carry a wage premium. By disallowing women from performing work, certain wage gains from this may be lost. The second condition may also have an effect in the current period, as round the clock production in manufacturing firms are common, especially in large plants. Large plant size is incidentally associated with higher wages (See Brown and Medoff, 1989; Main and Reilly, 1993; and for Australia, Hatton and Chapman, 1987 cited from Miller and Mulvey, 1996). The third condition may also reduce the opportunity for women working overtime, which again carries a wage premium.

One major non-wage benefit which may have greatly hindered female workers' wages lies in the Employment Act 1955 provision which provides for 60 days maternity leave, and employers may have factored this into account of money wages. Our study did not take into account non-wage benefits.

Looking at the food manufacturing industry as a whole, we can conclude that male workers earn approximately 50 per cent more than female workers do. This level is lower than the finding noted by a study conducted by the World Bank (1995) on wage differentials in Malaysia, which finds that male workers earn twice as much as the female workers. Differences in human capital endowment and hours worked apart, discrimination may have also contributed part of the lower wages, as noted by Joni Hersch where, using original data collected in the Eugene, Oregon area in 1986, employed a survey with more complete information and found that "based on a fairly comprehensive set of productivity related factors and working conditions included in the estimates.....yet a large component of the wage gap is still left unexplained".

Other explanation of this differential could be attributable to the maternity benefits
d by law of 60 days paid leave which, as noted by the World Bank report, "makes it
t to determine whether higher labour force participation by women is constrained by the
costs of employing women relative to men, or whether the constraints lie elsewhere"
Bank, 1995).

To reduce this male-female wage differential, more efforts should be directed toward
ing the female skill level by investment in training and education. The Human Resource
opment Fund could be channelled to more vocational course which are relevant for female
rs and can help to raise their skill level. In addition, more public childcare centres
lized by the government should be set up in industrial areas to enable female to continue
heir career even after giving birth.

1 Female-male wage ratio

Researchers have also presented the wage differential in terms of female to male wage o. Table 13 shows that the female-male ratio for all categories of workers.

Table 13 : Female-male wage ratio in the Food Manufacturing Industry : 1990 – 1994 and 1996

National Union Workers	
Year	**Ratio**
1990	0.47
1991	0.63
1992	0.57
1993	0.70
1994	0.59
1996	0.57

In-House Union Workers	
Year	**Ratio**
1990	0.61
1991	0.55
1992	0.61
1993	0.61
1994	0.51
1996	0.68

Non-Union Workers	
Year	**Ratio**
1990	0.66
1991	0.67
1992	0.69
1993	0.68
1994	0.71
1996	0.72

Food Manufacturing Industry Workers	
Year	**Ratio**
1990	0.61
1991	0.65
1992	0.65
1993	0.67
1994	0.67
1996	0.68

Source: Computed from information obtained from the Department of Statistics, Kuala Lumpur, 1990 - 1994, 1996

The female-male ratio ranges from 0.47 to 0.70 (national union), 0.51 to 0.68 (in-house union) and 0.66 to 0.72 (non-union). This range falls within the range of Katherine Terrell's study on female-male wage ratios where "in Latin American and Caribbean countries, the average female to male earnings ratio in the late 1980s ranged from 0.55 in Jamaica to 0.97 in Paraguay, with most falling in the 0.6 to 0.8 range". Even in the United

States manufacturing industry, the ratio of female to male earnings (unadjusted for hours worked) in 1970 was 0.56 (Goldin, 1990).

The results also indicate that the female-male wage ratio have increased for the food manufacturing industry as a whole, from 0.61 in 1990 to 0.68 in 1996. This could be due to female putting more effort into their work due to the higher level of education attained, or employers have discriminated less against female workers.

We have expected the female-male wage ratio for union workers to be close to unity. This is not the case in the food manufacturing industry. Although in absolute terms, national and in-house union female workers command higher wages compared to non-union female workers, the lower female-male wage ratios in the unionized group point to a larger wage gap between male and female earnings in this group. One of the main reason is that women are over-represented in the lower end of the occupational hierarchy, for example they form the majority of production workers as operators, which tend to require nimble fingers and dexterity, a trait normally associated with female. Men have generally dominated as production supervisors.

Another reason could be due to the lack of legislation regulating equal pay for both the sexes. As pointed out by the Council of Economic Advisers in the United States, since President Kennedy signed the Equal Pay legislation in 1963, the female-male wage ratio has risen from about 70 per cent in 1990 to over 75 per cent in 1997. It should be cautioned, however, that the passing of an equal pay legislation might result in increased unemployment of female workers.

This is both undesirable and detrimental to the economy of a developing nation such as Malaysia.

Human capital differences such as education or experience may account for some of this wage gap. It is noted that the wage gap for skilled and unskilled worker is especially pronounced in the national union group, signifying that firms with unionized workers are paying higher wages and therefore tend to be more selective in their employees. The idea that male workers are not subjected to maternity leave and able to handle heavier tasks may also have raised their relative wage level as compared to the female workers.

To further encourage female workers into putting more effort into their work, the concept of discrimination should be abolished. The linking of wages to performance is hereby proposed. Incentives such as variable performance bonus based on individual performance and firm profitability should be taken into account. Perhaps steps could be taken to emulate Singapore, which set up the National Wages Council, identified the rigidities found in implementing flexi-wages and rectified them immediately, and succeeded in implementing some form of flexible wage system in more than 90 per cent of unionized companies and more than 70 per cent of non-unionized companies (National Wages Council, 1998).

4.4 Differential by Skill Level

Unions are generally seen to reduce the wage differential between skilled and unskilled workers as they strive for an egalitarian wage structure for its members. Table 14(a), (b) and (c)

present the wage differential ratio between skilled vs semi-skilled and unskilled workers whilst Table 14(d), (e) and (f) present the wage differential ratio between semi-skilled and unskilled workers.

Table 14(a) : Wage Differential Ratios Between Skilled vs Semi-Skilled and Unskilled Workers (National Union) in the Food Manufacturing Industry : 1990 – 1994 and 1996

Year	Male		Female	
	Semi-skilled	Unskilled	Semi-skilled	Unskilled
1990	0.04	0.64	0.21	0.15
1991	0.05	0.17	0.15	0.25
1992	0.05	0.43	0.15	0.10
1993	0.26	0.80	0.20	0.28
1994	0.63	0.91	0.13	0.19
1996	0.19	1.00	0.73	1.10
Average	0.20	0.66	0.26	0.35

Table 14(b) : Wage Differential Ratios Between Skilled vs Semi-Skilled and Unskilled Workers (In-House Union) in the Food Manufacturing Industry : 1990 – 1994 and 1996

Year	Male		Female	
	Semi-skilled	Unskilled	Semi-skilled	Unskilled
1990	0.68	2.57	1.06	1.70
1991	2.11	0.99	0.60	2.15
1992	0.14	1.34	3.79	4.54
1993	1.69	1.80	1.63	1.45
1994	1.07	2.37	4.68	3.60
1996	3.42	3.44	2.25	1.38
Average	1.52	2.09	2.34	2.47

'able 14(c) : Wage Differential Ratios Between Skilled vs Semi-Skilled and Unskilled Workers Non Union) in the Food Manufacturing Industry : 1990 – 1994 and 1996

Year	Male		Female	
	Semi-skilled	Unskilled	Semi-skilled	Unskilled
1990	0.46	0.72	0.60	0.95
1991	0.46	0.85	0.57	0.97
1992	0.55	0.76	0.63	0.78
1993	0.48	0.86	0.51	0.58
1994	0.54	0.95	0.48	0.77
1996	0.52	0.75	0.44	0.63
Average	0.50	0.82	0.54	0.78

Table 14(d) : Wage Differential Ratios Between Semi-Skilled vs Unskilled Workers (National Union) in the Food Manufacturing Industry : 1990 – 1994 and 1996

Year	Male	Female
1990	0.57	0.05
1991	0.11	0.35
1992	0.37	0.22
1993	0.43	0.07
1994	0.17	0.28
1996	0.68	0.21
Average	0.39	0.20

Table 14(e) : Wage Differential Ratios Between Semi-Skilled vs Unskilled Workers (In-House Union) in the Food Manufacturing Industry : 1990 – 1994 and 1996

Year	Male	Female
1990	1.13	0.31
1991	0.36	0.97
1992	1.06	0.16
1993	0.04	0.07
1994	0.63	0.19
1996	0.00	0.27
Average	0.54	0.33

Table 14(f) : Wage Differential Ratios Between Semi-Skilled vs Unskilled Workers (Non Union) for the Food Manufacturing Industry : 1990 – 1994 and 1996

Year	Male	Female
1990	0.18	0.22
1991	0.27	0.26
1992	0.14	0.09
1993	0.26	0.04
1994	0.27	0.20
1996	0.16	0.14
Average	0.21	0.16

Source : Computed from information obtained from the Department of Statistics, Kuala Lumpur, 1990 - 1994, 1996

From the data above, we find that for male and female workers affiliated with national nions, the fact that unions reduce the skill level wage differential is indeed true. On average, the vage differential between national union skilled and semi-skilled / unskilled workers are 20 per :ent and 66 percent respectively. For national union female workers, the differential is 26 and 35 per cent respectively. Compare this with the wage differential of non-union workers of 50 and 82 per cent (male skilled worker vs semi-skilled and unskilled worker) and 54 and 78 per cent (female skilled worker vs semi-skilled and unskilled worker).

In-house unions, however, show a much greater differential between skilled and semi-skilled workers, and between skilled and unskilled workers. The average differential between male skilled and semi-skilled / unskilled worker is 152 / 209 per cent, whilst that of female is 234 per cent (skilled vs semi-skilled) and 247 per cent (skilled vs unskilled). Enterprise union officials, being representatives of management, may not have much influence over the wage setting and thus the presence of skill level differential.

The higher wage differential between skilled and semi-skilled and unskilled worker could also be due to the low supply elasticity of skilled workers in Malaysia. This is in part due to human capital development such as education and training only became popular in the early 1990s when there is a serious shortage of labour and the government moved from labour intensive activities to the more capital intensive industries.

The wage differential ratio between semi-skilled and unskilled workers in our analysis does not show any consistent pattern to allow us to comment upon. In-house union skill level wage differential is the highest, followed by national union. Non-union workers show the least skill level wage differential, with 21 and 16 per cent for male and female respectively. This could be due to different interpretation by the establishments when submitting their manufacturing survey to the Department of Statistics, as there is just a fine line between the definition of semi-skilled and unskilled workers.

An interesting finding from this study is that in-house union skilled labour has a wage advantage as compared to the national union skilled labourer. This could be due to management of firms with in-house unions are willing to pay higher wages to deter its employees from getting affiliated with national unions or to prevent workers from seeking better employment elsewhere. Some researchers have also found that management prefer enterprise unions because they feel that workers have more loyalty to their enterprise representatives than to a national union leadership.

In summary, the finding of Rosen (1970), Freeman (1980; 1982) and Lewis (1983) where unionism reduces wage differentials between skilled and unskilled workers is only true for national unions in the food manufacturing industry in Malaysia.