

Occupational Sex Segregation and Discrimination in Peninsular Malaysia

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ABSTRACT

This paper examines the occupational effects on gender earnings differentials by examining the earnings of women in each major occupational category and comparing their labor market outcomes to those of men. Using Malaysian data, the results indicate that gender earnings differentials are found to vary within occupations, which contributes to the overall gender earnings gap in this country. The earnings of men and women are found to be lower in jobs held exclusively by women in clerical occupations than the earnings of men and women employed in predominantly male occupations in sales, which suggest that occupational earnings are significantly affected by the percentage of women in an occupation. This study also reveals that the earnings gap seems to be smallest in clerical occupations, which has the highest percentage of women, and this gap is largest in occupations with the smallest percentage of women, such as in sales. Besides differences of endowment factors, discrimination also plays an important role that affects gender earnings differentials within each occupation. Except for clerical occupations, human capital variables have a smaller contribution compared to the discrimination component in explaining gender earnings differentials for each occupational category. All of these discriminatory earnings differentials were attributable to favorable male treatment rather than unfavorable female treatment.

ABSTRAK

Kertaskerja ini menyelidik kesan pekerjaan ke atas perbezaan pendapatan di antara lelaki dan wanita. Penyelidikan ini meneliti pendapatan pekerja wanita di dalam setiap kategori pekerjaan dan membandingkan natijah pasaran buruh mereka dengan pekerja-pekerja lelaki. Dengan menggunakan data Malaysia, keputusan yang diperolehi menunjukkan bahawa perbezaan pendapatan di antara lelaki dan wanita adalah berbeza di antara pekerjaan dan ini turut menyumbang kepada keseluruhan jurang pendapatan di antara jantina di negara ini. Pendapatan pekerja lelaki dan wanita yang bekerja di dalam bidang pekerjaan yang dikendalikan oleh wanita adalah jauh lebih rendah berbanding dengan mereka yang bekerja di dalam bidang pekerjaan yang diceburi oleh lelaki. Ini menunjukkan bahawa pendapatan di dalam sesuatu pekerjaan bergantung kepada peratusan kaum wanita di dalam sesuatu bidang pekerjaan. Penemuan ini juga menunjukkan bahawa jurang

perbezaan pendapatan yang paling tinggi dan ketara adalah di dalam bidang jualan di mana peratusan kaum wanita yang terlibat di dalam pekerjaan ini adalah yang paling kecil. Sementara perbezaan pendapatan di dalam bidang perkeranian pula merupakan yang paling kecil di mana peratusan wanita yang bekerja di dalam bidang ini adalah yang paling besar. Selain dari perbezaan bakat, diskriminasi memainkan peranan penting yang mempengaruhi perbezaan pendapatan di antara lelaki dan wanita dalam setiap satu bidang pekerjaan. Kajian ini juga mendapati bahawa sumbangan komponen modal manusia ke atas perbezaan pendapatan di antara pekerja lelaki dan wanita adalah kecil, berbanding dengan komponen diskriminasi untuk setiap kategori pekerjaan. Yang dikesualikan daripada penemuan ini adalah bagi pekerjaan perkeranian. Kesemua diskriminasi pendapatan ini adalah hasil dari kesan berat sebelah yang memihak kepada pekerja lelaki bagi setiap bidang pekerjaan.

INTRODUCTION

Many economists have argued that women, on average, earn less than men and occupational segregation are directly related and responsible to this issue. Even though women's participation in the labor force has increased tremendously worldwide in almost all types of occupations, including Malaysia, occupational distribution of women and men does make an important difference in explaining their respective earnings (Latifah, 1998). Females' tendency to be crowded in low-paying occupations is regarded as one of the prime factors for their lower average wage (Chapman and Harding, 1986). These studies reveal that job segregation plays an important role in increasing the cost of being female.

A number of researchers have attempted to estimate the extent to which occupational segregation reduces women's earnings to those of men. Ferber and Lowry (1976) and England (1982) reveal that women earned between US\$1438 and US\$1682 less per year if they worked in a job that hired women exclusively instead of men. Men under similar circumstances earned between US\$3005 and US\$5008 less per year. In a study conducted by Aldrich and Buchele (1986), they found that women (men) earn 59 (69) cents less per hour if they are employed in jobs held exclusively by women rather than men. Beller (1982) finds earnings to be 30-50 percent higher in traditionally male occupations than in predominantly female occupations. Macpherson and Hirsch (1995) conclude that predominantly female jobs pay lower wages to women and men largely because of their skill-related characteristics and quality sorting on the ratio of female to total employment in the worker's occupation. Rytina (1982) also finds that men and women in the professional and managerial occupations evidence the highest earnings, but women's earnings are much lower than those of men's. In another study by Chapman

and Harding (1986) on wage differentials in Peninsular Malaysia reveals that females' tendency to be crowded in low-paying occupations is regarded as one of the prime factors for their lower average wage. In other words, the crowding of large percentage of women in a limited number of occupations has a negative effect on wages.

In this paper, the occupational effects on gender earnings differentials are examined to present the following questions: 1) are women mainly employed in low-wage occupations, and 2) does discrimination play an important role in all occupations which contributes much to the overall discrimination?

This study examines the occupational effects on gender earnings differentials by examining the earnings of women in each major occupational category and comparing their labor market outcomes to those of men. By comparing the earnings of male and female workers in each occupational category, one can determine the extent to which discrimination against women exists in each major occupational category that affects women's pay.

LITERATURE REVIEW

Some economists contend that much of the gender earnings gap can be explained by occupational differences (Oaxaca 1973; Fuchs 1971; Treiman & Hartmann, 1981; Macpherson & Hirsch, 1995). Due to the traditional division of labor in the family and their responsibility for the home and childcare, women will look for and choose those types of jobs that best fit with their family obligation. Women contemplating a relatively short working life with several departures from the labor force in order to perform jobs in the household will choose occupation that penalize them least for such breaks. Typically, these jobs occupied by women allow for part-time or intermittent employment patterns. They tend to be dead-end jobs, offering little training, low returns to experience and few opportunities for career advancement and wage raises (Polachek 1981; Blau & Ferber 1991; Schuld, Schippers & Siegers 1994). As a result, many women end up in low-paying jobs. This pattern helps to explain why women earn less than men do. On the other hand, male workers experience a more continuous wage and career development. They typically choose jobs that offer continuous employment, early training and promotional opportunities. Therefore, men and women's different expectations about employment are reflected in their different investment decisions and job choices. This gender segregation of jobs can be explained in two ways. First, a large number of women are concentrated in a narrow range of female occupations. Second, within the same occupation or profession, men tend to occupy the higher and women the lower ranks of a given occupational hierarchy.

The occupational segregation theory claims that certain limited number of low-paying occupations are set aside predominantly for women, while

men are free to choose from a larger number of higher paid occupations. One theoretical explanation for the existence of occupational segregation and lower relative earnings for women is referred to as the crowding hypothesis (Bergmann 1974). This model assumes that women and men have equal abilities and without discrimination they would be paid equally. It predicts that because of discrimination women and men are segregated into different occupations and that workers doing women's work earns less than those workers (both men and women) doing men's work even though all workers are equally well qualified for both jobs.

The existence of allocation differences between male and female workers in the labor market also explains the earnings gap between males and females. In Hartog's (1986) analysis, the presence of female workers appears to have a highly significant negative effect on job level attainment. The probability of ending up in one of the lower level jobs relative to the highest level job is significantly increased for females and the increase is strongest at the lowest job levels. In the United States, only 3 percent of all employed women held top level executive positions. In the United Kingdom, women held only 3 percent of university professorships and lectureships, 15 percent of medical consultants' posts, accounted for 4 percent of senior management posts in business and 10 percent of local government management (United Nations 1995). This indicates that part of the observed earnings gap between males and females is due to allocation differences.

THE DATA

This study uses Malaysian Family Life Survey data, MFLS-2, the latest available data set collected by RAND Corporation in 1988. This micro cross-section data set surveys a representative sample of Peninsular Malaysia. It describes the demographic, education, occupation and other important information of men and women in Peninsular Malaysia, in which this study will exploit to analyze the determinants of male-female earnings differential in this country.

The survey contains fifty-two area samplings units in Peninsular Malaysia. Forty-nine of these areas are chosen by area probability sampling methods, and three areas are purposely selected to give additional representation to Indian families and to families living in fishing areas. The MFLS-2 occurred between August 1988 and January 1989 and provides a follow-up of the families who participated in MFLS-1, the first data set collected by RAND Corporation in 1977. The survey includes all women and their spouses, and for each of their children. The sample used in this analysis includes all workers with positive income plus bonus and in-kind earnings.

The equations used to measure the effects of employment on gender earnings differentials are the standard human capital model and Wage

Decomposition Model developed by Oaxaca and Ransom (1994). The earnings equations are estimated by major occupational categories for both gender groups. Occupations from the sample are divided into five major employment categories: Professional (which includes professional and administrative jobs), Clerical, Service, Sales and Manual (which includes agriculture and production). The human capital earnings equation are estimated using the standard Ordinary Least Squares Regression, written as follows:

$$\ln Y = \beta_0 + \beta_1 \text{exper} + \beta_2 \text{exper}^2 + \beta_3 \ln \text{hr} + \beta_4 \text{ENGED} \\ + \beta_5 \text{SRP} + \beta_6 \text{SPM} + \beta_7 \text{STP} + \beta_8 \text{COLL} + \mu_i \quad (1)$$

where Y is monthly earnings; exper and exper² refer to work experience and its square, respectively; lnhr is log value of weekly working hours; and ENGED is a dummy variable equal to 1 if the respondent had English as a medium-of-instruction schooling. SRP, SPM and STP are dummy variables for different levels of education, equal to 1 if the respondent has completed 9 years, 11 years or 13 years of schooling, respectively. COLL is a dummy variable equals to 1 if the respondent obtained a college degree or higher.

The Oaxaca and Ransom's (1994) method is used for analyzing the gender earnings gap. It decomposes the mean difference in earnings between women and men into two parts: 1) that which is due to mean differences in productivity characteristics or the endowment component, and 2) that which is due to differences in estimated coefficients or the discrimination component. The following equation describes this decomposition:

$$\ln \bar{Y}_i^m - \ln \bar{Y}_i^f = \sum \beta_i^* (\bar{X}_i^m - \bar{X}_i^f) + \sum \bar{X}_i^m (\beta_i^m - \beta_i^*) + \sum \bar{X}_i^f (\beta_i^* - \beta_i^f) \quad (2)$$

where m = represents the male sample
f = represents the female sample

\bar{X}^m = is the average productivity-determining characteristics
for male sample

\bar{X}^f = is the average productivity-determining characteristics
for female sample

β_m = is the least-square regression coefficients for the male
sample.

β^f = is the least-square regression coefficients for the female
sample.

The first term on the right hand side of equation (2) is the amount of the differential due to differential "endowments" between the groups, that is the return to characteristics in the absence of discrimination. The second and

third terms are the discrimination component. The second term are estimates of that part of the treatment or discrimination component which measures male treatment advantage (MA), and the third term are estimates of that part of the treatment component which, if positive, measures the female treatment disadvantage (FD). β^* is a parameter that represents the return to the characteristics that influence the earnings differentials, in the absence of discrimination. Since it is unobserved, Oaxaca and Ransom (1994) define β^* as:

$$\beta^* = \Omega_0 \beta^m + (I - \Omega_0) \beta^f \quad (3)$$

where Ω_0 is defined as:

$$\Omega_0 = (X'X)^{-1} (X_m'X_m) \quad , \text{ and} \quad (4)$$

$$X'X = X_m'X_m + X_f'X_f \quad (5)$$

where X = is the observation matrix for the pooled sample in each occupational category

X_m = is the observation matrix for the male sample in each occupational category

X_f = is the observation matrix for the female sample in each occupational category

RESULTS

DESCRIPTIVE STATISTICS

Table 1 highlights the different pattern of male and female occupational membership in Peninsular Malaysia, and their monthly earnings in 1988. The information for monthly earnings is presented in constant Malaysian Ringgit (RM) using 1980 as the base year. As shown in this table, the main difference between male and female workers is in Clerical and Sales occupations. The figures show that 50.24 percent of the Clerical sample and 34.79 percent of the Sales sample are female, while the corresponding percentages for men are 49.76 percent and 65.21 percent, respectively. In this table, the earnings of men and women are found to be lower in jobs held exclusively by women (i.e. Clerical occupations) than the earnings of both men and women employed in predominantly male occupations (i.e. Sales). The results also reveal that, with the exception of Manual category, the female-male earnings ratio rises with increases in the proportion of women in each major occupational category. Consistent with Snyder and Hudis (1979), Treiman and Hartmann (1981), and Aldrich and Buchele's (1986) findings, occupational earnings are significantly affected by the gender composition of the occupation, which suggest workers doing "women's work", occupations which are dominated

TABLE 1. Number and percentage of male and female workers in various occupations, relative gender earnings ratio and growth

1988						
Occupation	Male Earnings	Male	Female Earnings	Female	N (%)	Y* Ratio 1988
Professional & Administration	1070.44	355,900 (60.97)	604.26	227,800 (39.03)	583,700 (100)	0.56
Clerical	588.32	287,800 (49.76)	445.38	290,600 (50.24)	578,400 (100)	0.76
Sales	622.75	478,800 (65.21)	265.72	255,400 (34.79)	734,200 (100)	0.43
Service	552.58	391,500 (53.93)	285.89	334,500 (46.07)	726,000 (100)	0.52
Manual	301.58	2,482,000 (69.85)	187.80	1,071,500 (30.15)	3,553,500 (100)	0.62

Source: International Labor Office; MFLS-2 (Malaysian Family Life Survey 1988)

Notes: 1) *Female-Male Earnings ratio; 2) Percentages in parentheses

by women, earn less than 'men's work', occupations which are dominated by men, even though all workers are equally well qualified for both jobs. The results also appear to support Rytiina's research (1982) which states that men and women in the professional occupation evidence the highest earnings, but women's earnings are still lower than those of men's.

Table 2 shows the different patterns of productivity characteristics in each major employment category in Peninsular Malaysia. In general, workers in the Professional category had the longest schooling years and highest monthly earnings compared to other major employment categories. Manual workers appeared to contribute the least work hours in this period. Workers in the Clerical job category were the youngest while Service workers had the longest work experience. Professional workers appeared to be the most English-educated workers compared to other workers in this period.

Detailed information on human capital variables for each gender group in the respective occupational category presented in Tables 3 and 4 reveal different results. While earlier findings on human capital model suggest that, in general, men had more years of education, had more labor market experience and were more 'English educated' than women, these were not true in certain job categories. Female workers were found to have longer years of schooling and were more English educated in Professional and Clerical job categories than their male counterparts. They were also found to have more work experience than men in Sales, Service and Manual occupations. Comparison of earnings ratio between the sexes indicates that

TABLE 2. Mean and standard deviation by occupation for 1988

Variables	Prof	Clerk	Sales	Service	Manual
Income Y	899.94 (918.14)	509.927 (364.21)	492.22 (647.57)	446.22 (809.17)	267.25 (238.08)
lnY	6.444 (0.883)	6.045 (0.606)	5.746 (0.942)	5.728 (0.814)	5.348 (0.719)
Age	34.72 (9.658)	30.665 (8.393)	36.45 (12.316)	34.628 (10.572)	38.946 (12.151)
Hours	44.20 (16.260)	48.35 (10.560)	49.12 (24.010)	51.92 (21.478)	40.65 (17.708)
lnhr	3.690 (0.520)	3.857 (0.228)	3.710 (0.718)	3.846 (0.530)	3.579 (0.5687)
exper	16.67 (11.303)	13.68 (9.095)	23.48 (4.880)	20.898 (12.933)	28.174 (14.060)
exper2	405.689 (513.01)	269.615 (341.75)	772.37 (809.26)	603.805 (681.61)	991.32 (830.98)
ENGED	0.578 (0.4941)	0.545 (0.4983)	0.2461 (0.4310)	0.3680 (0.4826)	0.0735 (0.2611)
School	12.05 (3.963)	10.990 (2.375)	6.976 (3.792)	7.730 (3.623)	4.773 (3.288)
N	823	629	837	845	1727

Source: MFLS-2 (Malaysian Family Life Survey 1988)

Note: Standard deviation in parentheses

the female-male earnings ratio is highest in the Clerical category and lowest in Sales category (refer Table 1).

REGRESSION ANALYSIS BY MAJOR OCCUPATIONAL CATEGORY

In Table 5, the results for male workers are consistent with a priori expectations. The pattern of coefficients on labor market experience and its square are positive and negative, respectively. Thus, labor market experience had a significant positive effect on men's earnings but at a decreasing rate, with Service workers receiving the highest returns.

The returns to different levels of educational attainment for male workers depend upon the matching between type of qualification and occupation. All levels of education were important for Clerical and Service workers but not in other occupations in this period. To obtain SPM educational level or higher was important for Professional and Manual workers, SPM and STP for Sales workers.

The results also indicate that working longer hours and English schooling had significant positive effect on male earnings in all occupations. This implies that these two factors generated higher earnings for men in all categories of employment.

TABLE 3. Mean and standard deviation of male workers for 1988,
by occupation

Variable	Male				
	Prof	Clerk	Sales	Service	Manual
Income Y	1070.44 (1035.0)	588.32 (417.69)	622.75 (719.59)	552.58 (873.01)	301.58 (266.22)
lnY	6.65 (0.819)	6.19 (0.599)	6.07 (0.814)	6.07 (0.630)	5.48 (0.689)
Age	36.89 (9.533)	33.57 (9.396)	36.75 (12.20)	34.10 (9.78)	39.02 (12.33)
Hours	47.15 (16.70)	48.66 (11.132)	52.42 (22.58)	52.48 (18.71)	40.37 (18.96)
lnhr	3.76 (0.517)	3.86 (0.271)	3.827 (0.601)	3.895 (0.406)	3.55 (0.605)
exper	19.09 (11.38)	16.87 (10.18)	23.23 (14.42)	19.19 (11.68)	27.48 (14.181)
exper2	493.72 (543.40)	387.87 (418.64)	747.23 (783.90)	504.39 (610.19)	955.82 (827.94)
ENGED	0.57 (0.496)	0.49 (0.501)	0.27 (0.442)	0.47 (0.500)	0.09 (0.284)
School	11.8 (4.191)	10.70 (2.338)	7.52 (3.55)	8.91 (3.07)	5.54 (3.07)
SRP	0.13 (0.333)	0.28 (0.4489)	0.26 (0.438)	0.28 (0.451)	0.17 (0.371)
SPM	0.31 (0.464)	0.50 (0.5009)	0.19 (0.391)	0.38 (0.487)	0.04 (0.201)
STP	0.22 (0.412)	0.11 (0.3079)	0.03 (0.181)	0.04 (0.195)	0.005 (0.070)
COLL	0.17 (0.373)	0.02 (0.1317)	0.004 (0.061)	0.002 (0.044)	0.0008 (0.029)
N	522	284	531	508	1206

Source: MFLS-2 (Malaysian Family Life Survey 1988)

Note: Standard deviation in parentheses

The results for female workers, shown in Table 5, are broadly similar to the results of male workers. As expected, work experience has a significant positive effect on women's earnings for all occupations except in Sales category. Female workers in the Clerical category receive the highest returns than all other female workers in this period. The relationship between each educational level and earnings seemed to be different for each occupational category. From the results, it is obvious that women benefit from higher education in the Professional and Clerical category. To obtain SPM educational level is only important for Service workers, college degree for Sales workers and SPM or higher for Manual workers. It is also important to point out that

TABLE 4. Mean and standard deviation of female workers for 1988, by occupation

Variable	Female				
	Prof	Clerk	Sales	Service	Manual
Income Y	604.26 (557.87)	445.38 (298.96)	265.72 (410.45)	285.89 (672.15)	187.80 (121.88)
lnY	6.08 (0.873)	5.92 (0.586)	5.18 (0.885)	5.21 (0.793)	5.04 (0.691)
Age	30.97 (8.69)	28.27 (6.57)	35.94 (12.52)	35.42 (11.64)	38.79 (11.73)
Hours	39.08 (14.10)	48.09 (10.07)	43.10 (25.28)	51.08 (25.09)	41.30 (14.37)
lnhr	3.570 (0.505)	3.856 (0.187)	3.507 (0.850)	3.772 (0.669)	3.635 (0.469)
exper	12.48 (9.88)	11.05 (7.10)	23.91 (15.66)	23.47 (14.26)	29.79 (13.65)
exper2	253.02 (414.05)	172.27 (219.04)	816.01 (851.04)	753.67 (753.48)	1073.51 (833.0)
ENGED	0.60 (0.491)	0.59 (0.493)	0.21 (0.410)	0.21 (0.406)	0.04 (0.192)
School	12.49 (3.50)	11.22 (2.383)	6.03 (4.007)	5.95 (5.95)	2.99 (3.074)
SRP	0.10 (0.304)	0.18 (0.387)	0.26 (0.442)	0.21 (0.410)	0.05 (0.222)
SPM	0.38 (0.487)	0.60 (0.490)	0.11 (0.319)	0.12 (0.320)	0.02 (0.144)
STP	0.31 (0.464)	0.13 (0.34)	0.01 (0.114)	0.006 (0.077)	0 -
COLL	0.13 (0.333)	0.03 (0.176)	0.003 (0.057)	0 -	0 -
N	301	345	306	337	521

Source: MFLS-2 (Malaysian Family Life Survey 1988)

Note: Standard deviation in parentheses

the returns to each educational category for female workers in the Professional category is higher than their male counterparts in this period.

Working longer hours had positive and significant impact on earnings for all women, while to obtain English as a medium-of-instruction schooling appeared to benefit female employees working in the Professional, Sales and Clerical occupations.

WOMEN AND DISCRIMINATION IN THE WORKPLACE

In Table 6, the predicted cost of being female in each major occupational category is measured. In rows 6 and 7 of Table 6, the results indicate a fairly

TABLE 5. OLS regression statistics explaining the natural logarithm of male and female workers' monthly earnings in each major employment category for 1988

Variables (1)	Female				Male					
	Prof (2)	Clerk (3)	Sales (4)	Service (5)	Manual (6)	Prof (7)	Clerk (8)	Sales (9)	Service (10)	Manual (11)
Constant	2.6110 (9.124)	4.7451 (9.802)	3.9798 (12.869)	3.4613 (12.118)	2.2666 (8.442)	3.5614 (14.959)	4.7493 (12.652)	4.7027 (18.957)	4.2500 (7.323)	4.3547 (29.810)
exper	0.0866 (0.091)	0.0964 (10.086)	0.0208** (1.458)	0.0308 (2.626)	0.0210* (2.154)	0.0878 (9.814)	0.0709 (7.567)	0.0720 (7.888)	0.0916 (12.195)	0.0629 (10.975)
exper2	-0.0014 (-6.095)	-0.0018 (-5.760)	-0.0005* (-2.107)	-0.0006 (-2.819)	-0.0004 (-2.572)	-0.0013 (-6.832)	-0.0009 (-3.992)	-0.0011 (-6.910)	-0.0016 (-11.202)	-0.0011 (-11.327)
SRP	0.3671 (2.071)	0.4982 (4.072)	-0.2627** (-1.637)	0.2035** (1.724)	0.1308** (-0.964)	0.1813** (1.596)	0.3215 (3.129)	0.1490** (1.542)	0.2574 (3.376)	0.0121** (0.202)
SPM	0.8329 (5.425)	0.7318 (6.275)	-0.892** (-0.428)	0.5493 (3.421)	0.3030** (1.462)	0.3711 (3.720)	0.5655 (5.706)	0.3119 (2.852)	0.5936 (7.244)	0.2333* (2.259)
STP	1.4031 (8.769)	1.1451 (8.664)	0.3915** (0.886)	0.7668** (1.447)	NA	0.7963 (7.007)	0.9860 (7.821)	0.6731 (3.504)	1.0358 (7.507)	0.6467* (2.384)
COLL	2.0174 (11.393)	1.6662 (9.643)	2.7932 (3.171)	NA	NA	1.3509 (11.149)	1.9174 (8.999)	0.5524** (1.034)	2.2922 (4.420)	1.3907* (2.140)
lnhr	0.4657 (6.891)	-0.1011** (-0.806)	0.3212 (5.529)	0.3601 (5.906)	0.7049 (12.063)	0.3781 (6.923)	0.0081** (0.088)	0.0852** (1.563)	0.1181* (2.107)	0.1034 (3.326)
ENGED	0.0656 (0.917)	0.1213 (2.484)	0.2694* (2.013)	0.0168** (0.155)	0.1689** (1.137)	0.1615 (2.480)	0.1146* (2.140)	0.2901** (3.571)	0.1020* (1.926)	0.2930 (4.219)
Adjusted R ²	0.5766	0.4894	0.1310	0.1561	0.2549	0.3971	0.5165	0.1628	0.3326	0.1256
Mean(ln Y)	6.08	5.92	5.19	5.21	5.04	6.65	6.19	6.07	6.07	5.48
N	300	344	304	336	517	521	283	530	507	1205

Source: MFELS-2 (Malaysian Family Life Survey 1988)

Note: i) t statistics in parenthesis

ii) all coefficients are statistically significant at 1 % level unless indicated otherwise;

iii) * significant at 5 % level; ** not statistically significant

wide dispersion in the female-male earnings ratio across occupations. The gross or unadjusted female-male earnings ratio was estimated at 56 percent in the Professional category, 80 percent in Clerical and 64 percent in Manual jobs. After controlling for human capital variables, this research finds that in 1988 women were predicted to earn 74 percent of men's earnings in the Professional category, 87 percent in the Clerical category and 63 percent in the Manual category. However, women working in Sales and Service occupations were worse off than their female peers in other occupations. Their unadjusted earnings ratio was estimated at 41 percent in Sales and 43 percent in Service occupations. When a vector of human capital variables are added into the regression, the earnings ratio seemed to increase marginally with women predicted to earn 47 percent and 56 percent of men's earnings in Sales and Service occupations, respectively.

TABLE 6. Decomposition of gender earnings differentials by occupation, 1988

	Prof	Clerical	Sales	Service	Manual
Difference in endowment, $\ln(E+1)$	0.2400	0.1383	0.1421	0.2242	-0.0284
%of Gross Differential	(41.91)	(51.66)	(16.09)	(26.21)	(-6.38)
Endowment Coefficient, E	0.2713	0.1483	0.1527	0.2514	-0.0280
Difference in returns to endowments, $\ln(D+1)^*$	0.3326	0.1294	0.7414	0.6310	0.4736
% of Gross Differential	(58.08)	(48.33)	(83.91)	(73.78)	(106.40)
Discrimination Coefficient, D	0.3946	0.1383	1.1027	0.8813	0.6044
Male Advantage, $\ln(MA+1)^*$	0.3299	0.1310	0.7449	0.6331	0.4714
% of Gross Differential	(57.60)	(48.93)	(84.31)	(74.02)	(105.91)
Female Disadvantage, $\ln(FD+1)^*$	0.0027	-0.0016	-0.0036	-0.0021	0.0021
% of Gross Differential	(0.5)	(-0.6)	(-0.4)	(-0.2)	(0.45)
Gross Earnings Differential, $\ln Y_m - \ln Y_f$	0.5727	0.2677	0.8835	0.8553	0.4451
Unadjusted female / male earnings ratio	0.56	0.80	0.41	0.43	0.64
Adjusted female / male earnings ratio	0.74	0.87	0.47	0.56	0.63

Source: MFLS-2

Note: $*\ln(D+1) = \ln(MA+1) + \ln(FD+1)$

Decomposing the gender earnings differential into the endowment component and the discrimination component, Table 6 documents the decomposition of the male-female earnings differentials for the five broad occupational classifications. Rows 1 and 2 report the log decomposition of the male-female earnings differentials into the measured productivity differential (E) and the total discriminatory differential (D), respectively. Rows 3 and 4 present the log of the discriminatory male earnings advantage (MA) and female earnings disadvantage (FD), respectively. Row 5 presents the log of the male-female earnings differentials in each occupational category, while rows 6 and 7 list the unadjusted and adjusted female-male earnings ratio, respectively. Overall, the results reveal that the estimated earnings differentials of all major employment categories were attributable to favoritism towards men in this period.

The gross log earnings differential in Professional jobs was 57 percent, which suggests that a female worker earned 58 percent of men's earnings in this job category, without statistically controlling for other variables. About 58 percent of this earnings differential in this job category is attributable to differences in returns to endowments while 42 percent is attributable to differences in endowments of characteristics. The scenario is different in the Clerical job category. Female Clerical workers were predicted to earn 80 percent of men's earnings in this period. This result suggests that men enjoy 15 percent productivity advantage (E) over their female peers.

The largest male-female gross log earnings differential was found in Sales occupations, with women estimated to earn only 41 percent of men's earnings. Thus, the large earnings gap in this job category may be the driving force that widened the overall gender earnings gap in this country. The results suggest that when human capital is taken into consideration, only 16 percent of the earnings differentials are attributable to the differences in the endowments of characteristics. Eighty four percent of the earnings differentials is attributable to the differences in returns to those characteristics of which a large proportion of the discrimination component is attributable to overpayment of male workers.

Another interesting finding is within service occupations. Female workers were estimated to earn 43 percent of predicted men's earnings with a huge portion of the earnings differential is due to discrimination. In this job category, it was estimated that the discrimination component made up 74 percent of the gender earnings differential, of which, the entire discrimination component was attributable to overpayment of male workers. This indicates that sex discrimination in this job category was severe in this period, which directly suggests that measures to equalize gender earnings in this job category may be difficult to achieve due to the large sex discrimination factor.

Finally, the male-female log earnings differential in Manual occupations was estimated at 44 percent, which indicates that for every Ringgit (Malaysian currency) a man earned, a woman earned only 0.64 Ringgit (or 64 sen (Malaysian currency)) in this period. A large portion of the earnings differentials was attributed to overpayment of male workers.

Overall, these results suggest the importance of gender earnings differentials within occupations, in contributing to the overall gender earnings gap in this country. This paper finds that large earnings differentials in various occupations were due to sex occupational segregation, which was responsible to widen gender earnings gap. A major part of the earnings differential was attributable to the employment of women in a variety of occupations, but deep discrimination in certain occupations, particularly in sales and service occupations, contributes significantly to the overall discrimination difference.

CONCLUSION

ACCURACY OF THE MODELS AND LIMITATIONS OF THE STUDY

The results from this study shed light on how important the difference in male-female occupational distributions are in explaining to the overall earnings differentials. Specifically, gender earnings differentials are found to vary within occupations, which contributes to the overall gender earnings gap in this country.

This study reveals that the earnings of men and women are found to be lower in jobs held exclusively by women in clerical occupations than the earnings of both men and women employed in predominantly male occupations in Sales. This is consistent with the findings of earlier research such as Snyder and Hudis (1979), Treiman and Hartmann (1981) and Aldrich and Buchele (1986) which suggest that occupational earnings are significantly affected by the gender composition of the occupation, which is measured by the percentage of women in an occupation.

The results also reveal that female-male earnings ratio rises with increases in the proportion of women in each major occupational category. The higher the proportion of women in any job category, the smaller will be the earnings gap compared to workers who work in a job category with higher proportion of men. Hence, the existence of allocation differences between male and female workers in the labor market also explains the earnings gap between males and females. Consistent with Hartog's analysis, this study also suggests that the presence of female workers appears to have a highly significant negative effect on job level attainment. The probability of ending up in one of the lower level jobs relative to the highest level job is significantly increased for females and the increase is strongest at the lowest job levels.

In general, the results that explain the returns from human capital on earnings are consistent with a priori expectations. However, the returns from human capital for each gender group vary across occupations. The results reveal that female workers employed in Professional and Clerical occupations received higher returns to education and experience than men did in 1988. This suggests that higher levels of education and an additional year of experience may be the generating forces that have narrowed the gender earnings gap in these job categories. Another important variable that may expedite the narrowing of the overall gender earnings gap is working longer hours. The results reveal that the returns to this variable were higher for women than men. Women with English educational background and work in Clerical and Sales occupations appeared to benefit more than men working in these job categories did. Hence, in the absence of discrimination, if the pattern of the returns to human capital persist, women working in the Professional and Clerical occupations may one day receive equal pay as men.

However, gender earnings differentials within each occupation did not depend on differences of endowment factors only. A major and important part of gender earnings differentials includes discrimination. The results presented in this paper indicate that female earnings were far below male earnings in each major employment category and suggest important differences in potential gender earnings discrimination between occupations. Except for Manual workers, gender earnings differentials seem to be largest in the sales occupation, which has the smallest percentage of women. The gap seems to be smallest in clerical occupation, where the percentage of women is highest in this occupational category. From these arguments, this study agrees with the findings of earlier research which conclude that the crowding of a large percentage of the female work force in a limited number of occupations, such as clerical, asserts a negative influence on wages (Bergman 1974,1989; Rytina 1982; Macpherson & Hirsch 1995).

This study also reveals that discrimination plays an important role in determining the earnings differentials in all occupations, except in clerical job category. This discriminatory component of the earnings differentials in each occupation was found to be attributable to favorable male treatment rather than unfavorable female treatment. Except for the clerical category, more than 50 percent of the difference in earnings between men and women were explained by the discriminatory factors. This implies that human capital variables had a smaller contribution in explaining gender earnings differentials in these job categories. On the other hand, discriminatory factors had a smaller contribution on gender earnings differential in clerical job category which reflect that human capital variables are more important in explaining gender earnings differences in clerical occupations. In general, these findings are, however, consistent with the results of research that finds that labor market discrimination accounts for a substantial portion of the controlled

male-female earnings differentials (Oaxaca 1973; Cotton 1988; Neumark 1988; Ashraf and Ashraf 1993).

However, I need to emphasize that this study has several limitations. To conduct a research such as this requires a survey data that is representative of the Malaysian population, which the MFLS-2 (Malaysian Family Life Survey data collected in 1988) is able to provide. However, this MFLS-2 is the most recent available data that can be utilized for this study. The information in the MFLS-2 data set may not provide current information on the Malaysian labor market. But the distribution and pattern of male and female occupational membership in Peninsular Malaysia in 1988 seems to reflect the current labor market in this country, as shown in Table 7. In this table, women are crowded in 'female occupations' (i.e. clerical), while men are dominantly employed in 'traditional male occupations' in Professional and Sales job categories, which suggest that the findings in this study are relevant to the current scenario.

TABLE 7. Number (in thousand) and percentage of male and female workers in various occupations for 1997

1997			
Occupation	Male	Female	N (%)
Professional & Administration	775.3 (63.2)	450.8 (36.8)	1226.1 (100)
Clerical	411 (42.7)	552 (57.3)	963.2 (100)
Sales	569.7 (62.0)	348.8 (38)	918.5 (100)
Service	520.3 (53)	464.8 (47)	981.5 (100)
Manual	3,381.5 (75.5)	1,094.5 (24.5)	4476.4 (100)

Source: International Labor Office

Notes: Percentages in parentheses

Measures of discrimination are imperfect since it is either a residual amount or a dummy variable, which may capture other effects. But casual experience and work of other scholars dealing with actual discriminatory practice make what is measured consistent with the world as observed.

IMPLICATIONS OF STUDY AND RECOMMENDATIONS

The fact that gender earnings differentials are largely due to labor market discrimination needs serious attention. In addition to the educational programs,

efforts should also include reforming the Peninsular Malaysian labor market structure. This study suggests that efforts should address the problem of paying males and females with similar productivity characteristics unequally. Perhaps, more important, is to ensure that females gain equal access to employment in higher paying occupations and promotion as their male counterparts, to obtain equal remuneration for work of equal value, and to get equality of opportunity and treatment in the work place in order to eliminate discrimination. In line with the emerging needs of the industrial sector, these measures should also include providing access to women for technical education and training.

The study also reveals that a great deal of earnings disparity between men and women in this country is a result of occupational sex segregation within occupations. The results indicate that sex discrimination in Professional, Sales, Service and Manual occupations played an important role in widening the overall gender earnings gap in the Peninsular Malaysian labor market. Even though women's share of the work force has increased, women tend to be clustered in 'female' occupations and low-paid jobs. Lack of skills and opportunities for training contribute to this phenomenon. The boom in the industrial sector that increases the economic growth of the country in the early 1990s has increased the participation of women in the work force. However, they are mainly employed for their cheap labor.

Current discriminatory practices constitute another possible explanation for the gender earnings gap. A part of the unexplained gap may reflect past discrimination, in terms of promotions and career opportunities. Earnings gap between men and women with identical attributes in terms of qualifications and experience might be due to discriminatory practices barring women from promotion within a particular occupational structure. The so-called 'glass ceiling', a barrier that was formed due to biased work condition, works against women's professional advancement. For example, in government employment rules, regulations and promotions seems to be gender-based. Hence, it is common that women's participation in top government decision-making positions is relatively low in Peninsular Malaysia. Measures to reduce such discrimination in the workplace should be given priority. This includes promoting equal employment opportunities, in areas such as hiring, promotion, job security, vocational training and retraining and pay. Finally, efforts to reduce the gender earnings gap should also include providing preferential treatment in the hiring of women until equal employment condition is established.

REFERENCES

- Ashraf, J., & Ashraf, B. 1993. Estimating the gender wage gap in Rawalpindi City. *The Journal of Development Studies* 29(2) : 365-376.
- Aldrich, M., & Buchele, R. 1986. *The Economics of Comparable Worth*. Cambridge, Mass.: Ballinger.
- Becker, G.S. 1962. Investment in human capital: a theoretical analysis. *Journal of Political Economy* 70 (October): 9-49.
- _____. 1964. *Human Capital*. New York: NBER.
- _____. 1971. *The Economics of Discrimination* 2nd. ed. Chicago: University of Chicago press.
- Beller, A. 1982. Occupational segregation by sex: determinants and changes. *Journal of Human Resources* 17 : 371-92.
- Bergmann, B. 1974. Occupational segregation, wages and profits when employers discriminate by race or sex. *Eastern Economic Journal* 1 (1974) : 103-10.
- _____. 1989. Does the market for women's labor need fixing? *Journal of Economic Perspectives* 3 no. 1(1989): 43-60.
- Blau, F. D., & Ferber, M. 1986. *The Economics of Women, Men and Work*. Englewood Cliffs, New Jersey: Prentice Hall.
- _____. 1991. Career plans and expectations of young women and men: the earnings gap and labor force participation. *The Journal of Human Resource* 26 no. 4 : 581-607.
- Cotton, J. 1988. On the decomposition of wage differentials. *The Review of Economics and Statistics* 70 (May): 236-43.
- Chapman, A. B. J., & Harding, H. 1986. Sex differences in earnings: an analysis of Malaysian wage data. *Journal of Developmental Studies* 21 (April): 362-76.
- England, P. 1982. The failure of human capital theory to explain occupational sex segregation. *The Journal of Human Resources* 17 no. 3 : 358-69.
- Ferber, M. & Lowry, H. 1976. The sex differential in earnings: a reappraisal. *Industrial and Labor Relations Review* 29 (April): 377-87.
- Hartog, J. & Van Ophem, H. 1986. *Allocation, Earnings and Efficiency*. Research Memorandum no. 8619. University of Amsterdam, FEE.
- Latifah Mohd. Nor. 1998. An overview of gender earnings differentials in peninsular Malaysia. *IJUM Journal of Economics and Management* 6, no. 1 :23-49.
- Macpherson, D. & Hirsch, B.T. 1995. Wages and gender composition: why do women's jobs pay less? *Journal of Labor Economics* 13 no. 3 : 426-471.
- Medoff, J. & Abraham, K. 1980. Experience, performance and earnings. *Quarterly Journal of Economics* (December): 703-36.
- Mincer, J. & Ofek, H. 1982. Interrupted work careers: depreciation and restoration of human capital. *Journal of Human Resources* 17 (Winter): 3-24.
- Neumark, D. 1988. Employers' discriminatory behavior and the estimation of wage discrimination. *Journal of Human Resources* 23(3) :279-95.
- Oaxaca, R. 1973. Male-female differentials in urban labor market. *International Economic Review* (October): 693-709.
- Oaxaca, R. & Ransom, M.R. 1994. On discrimination and the decomposition of wage differentials. *Journal of Econometrics* 61 : 5-21.
- Polachek, S. 1979. Occupational segregation among women: theory, evidence and a prognosis. in *Women in the Labor Market*. Eds. Lloyd, Andrew and Gilroy. New York: Columbia University Press.

- _____. 1981. Occupational self-selection: a human capital approach to sex differences in occupational structure. *Review of Economics and Statistics* 63 : 60-69.
- Reskin, B., and Hartmann, H. 1986. *Women's Work, Men's Work: Sex Segregation on the Job*. Washington, D.C.: National Academy Press.
- Rytina, N. F. 1982. Tenure as a factor in the male-female earnings gap. *Monthly Labor Review* 105 no. 4 : 32-34.
- Schuld, T. C. A., Schippers, J.J., & Siegers, J.J. 1994. Allocation and wage structure: differences between men and women. *Applied Economics* 26 no. 2 : 137-52.
- Schultz, T. W. 1971. *Investment in Human Capital* New York: Free Press, 1971.
- Smith, J. P. & Ward, M.P. 1984. *Women's Wages and Work in the Twentieth Century*. California: Rand Corporation.
- Snyder, D. & Hudis, P.M. The sex differentials in earnings: a further reappraisal. *Industrial and Labor Relations Review* 32 no. 3 (1979): 378-386.
- Treiman, D. & Hartmann, H. *Women, Work and Wages: Equal Pay for Jobs of Equal Value*. Washington, D.C.: National Academy of Sciences, 1981.
- United Nations. *Women: Challenges To The Year 2000*. New York: The Department of Public Information, 1991.
- United Nations. *Women: Looking Beyond 2000*. New York: The Department of Public Information, 1995.

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