PN-AAX-038
IDN = 49976

LABOR MARKET DISCRIMINATION AGAINST WOMEN IN INDIA

by

Usha Sambamoorthi
Institute for Social and Economic Change
Bangalore, India

May 1984

Working Paper #58

Abstract: This paper attempts to measure the magnitude of discrimination against women employees in an urban labor market. The data for the study come from a sample survey conducted by the author in an urban area of India. The findings show that the average earnings of women are lower than those of men, even when women are equally qualified and efficient, and that wage differences are due to deliberate discrimination against women in the labor market. The findings also indicate that deliberate wage discrimination against women is not entirely responsible for differences in earnings between males and females; unequal distribution of education and other economic characteristics which influence earnings cause substantial wage differences between the sexes.

About the Author: Usha Sambamoorthi received her Ph.D. in Economics from the University of Madras in 1981 and currently is living in the United States. The present article is based on her dissertation research which focused on male-female wage differences in the Madras labor market.

LABOR MARKET DISCRIMINATION AGAINST WOMEN IN INDIA[1]

Introduction

In almost all countries of the world, whatever the level of development and whatever the form of government, women's earnings on average are lower than men's.[2] In India this difference has been substantiated by occupational wage surveys conducted by the government in 1953-1954 and 1963-1965 and by the Committee on the Status of Women in India in 1975. The existence of such a wage difference by itself does not prove discrimination against women. Employers and others might argue that women are less skilled and less productive relative to men and thus justify the prevailing wage differences.[3] The extent to which existing wage differences are justified can be assessed only if there are some objective or scientific procedures developed for an objective appraisal of them. This article attempts to develop a procedure to analyze sex differentials in earnings and measure the magnitude of discrimination against women in the Indian labor market.

Writings on the subject, referred to as "theories of discrimination," are diverse and numerous. Since Chipline and Sloane[4] ably summarize these theories, I begin with a description of the methods of the present study. Then I present and analyze the results. In a final section I discuss some conclusions.

The Method

Discrimination in the labor market occurs, I would argue, whenever individuals with equal productivity receive different wages and the difference is systematically correlated with certain non-economic characteristics such as sex. In this paper, therefore, the term "discrimination" always refers to wage discrimination unless stated otherwise. Following Becker[5], I measure the effects of discrimination by a Market Discrimination Co-efficient (MDC). If we assume men and women to be equally productive, then MDC is nothing but the difference between the mean wages of males and that of females. To calculate a MDC, we compare the mean earnings of men and women holding identical jobs within the same establishment and having identical qualifications and performances. This method of measuring discrimination is conceptually appropriate, but operationally unfeasible because homogeneous groups are extremely difficult to locate. In other words, in the real world men and women are imperfect substitutes and may receive different wages even in the absence of wage discrimination due to past discrimination in other areas or due to differences in personal characteristics. Given this difficulty, MDC is simply the difference between the ratio of male to female earnings with and without discrimination. Stated more formally, the gross wage difference between males and females can be written as:

$$G = \frac{\bar{Y}_m - \bar{Y}_f}{\bar{Y}_f} = \frac{\bar{Y}_m}{\bar{Y}_f} - 1$$

in logarithmic terms,

$$\ln (G + 1) = \ln \bar{Y}_m - \ln \bar{Y}_f \qquad (1)$$

where $\bar{Y}_m$ and $\bar{Y}_f$ are the average income of men and women, respectively. Nevertheless, since men and women differ in their productivities, we cannot attribute all of this difference in wages to discrimination. Therefore, we define discrimination as follows:

$$D = \frac{(\bar{Y}_m / \bar{Y}_f) - (\bar{Y}_m / \bar{Y}_f)^o}{(\bar{Y}_m / \bar{Y}_f)^o} = (D + 1) = \frac{(\bar{Y}_m / \bar{Y}_f)}{(\bar{Y}_m / \bar{Y}_f)^o}$$

where (Y_m/Y_f) is the existing wage ratio of males to females and $(Y_m/Y_f)^o$ is the income ratio which would exist in the absence of discrimination.

In terms of logarithms, this is stated as:

$$\ln (D + 1) = \ln (\bar{Y}_m / \bar{Y}_f) - \ln (\bar{Y}_m / \bar{Y}_f)^o \qquad (2)$$

Substitution of equation (1) into equation (2) yields:

$$\ln (D + 1) = \ln (G + 1) - \ln (\bar{Y}_m - \bar{Y}_f)^o \qquad (3)$$

Equation (3) states that discrimination is the difference between the existing earnings ratio of males to females and the earnings ratio which would exist in the absence of discrimination. Since we do not know the earnings of males and females in the absence of discrimination, the second term on the right hand side of the equation is an unknown and has to be estimated. In the absence of discrimination we assume that individuals are paid according to their respective productivity. Then, discrimination against women can be estimated in either of two ways.

(i) Males are paid equivalent to their productivity, and females are paid less than their productivity. In this case we assume the current wage rates of males to be applicable to females in a non-discriminatory labor market.

(ii) Females are paid commensurate with their productivity and males are paid more than their productivity. This implies that the existing wage rates of females would prevail even in the absence of discrimination. Becker[6] prefers to call this condition "nepotism" in favor of males rather than discrimination against females. Since the social and economic implications of nepotism are similar to that of discrimination, I try to assess the extent of discrimination using both assumptions.

Wages are influenced by a complex number of factors, and thus an understanding of various determinants of earnings is necessary. Human capital theory as developed by Becker[7] and Mincer[8] provides the theoretical basis to identify the variables which influence the wages of individuals. The relationship between earnings and the host of other factors is often called the "earnings function" and is estimated using multiple regression[9]. In other words, using regression techniques, the wage structure estimated from the wage data can be used to predict the wage rate of individuals with given characteristics.

Accordingly, the current wages of males and females are computed using separate regression equations. Based on these estimates, the incomes of males and females in the absence of discrimination are calculated. Symbolically, the regression equations are:

$$\ln \bar{Y}_m = a_m + \sum_{i=1}^{n} b_{im}\bar{X}_{im} \quad \text{and} \quad \ln \bar{Y}_f = a_f + \sum_{i=1}^{n} b_{if}\bar{X}_{if}$$

where the subscripts m and f refer to males and females, respectively; ln Y_m and ln Y_f are the natural logarithms of earnings from employment; a_m and a_f are the intercept or constant terms; X_i's are the independent variables which influence earnings; and b_i's are their respective regression co-efficients. Therefore, the gross differential in wages becomes:

$$\ln \bar{Y}_m - \ln \bar{Y}_f = (a_m - a_f) + \sum_{i=1}^{n} b_{im}\bar{X}_{im} - \sum_{i=1}^{n} b_{if}\bar{X}_{if} \tag{4}$$

If we adopt the first method of measuring discrimination, then the incomes of females in the absence of discrimination is found by multiplying the mean values of females' economic characteristics with the corresponding regression co-efficients from the equation estimated for males.[10] The difference between these estimated earnings and the existing average earnings of females is the magnitude of discrimination against women.

Since we are also interested in the sources of the wage differentials, we split the total gross difference into two components, one due to wage discrimination and the other due to productivity differences between the sexes according to the following procedure. Let us define

$$\Delta\bar{X}_i = \bar{X}_{im} - \bar{X}_{if} \quad \text{and} \quad \Delta b_i = b_{im} - b_{if}$$

Substituting these terms into equation (4) we get

$$\ln \bar{Y}_m - \ln \bar{Y}_f = (a_m - a_f) + \Sigma b_{im}\Delta\bar{X}_i - \Sigma\Delta b_i\bar{X}_{if} \tag{5}$$

The second term on the right hand side of equation (5) is the difference in productivity characteristics between the sexes ($\Delta \bar{X}_i$) evaluated according to the male wage structure (b_{im}) and the third term is the difference in pay structure of males and females (Δb_i) evaluated by the average characteristics of females ($\bar{X}_{if}$).

The earnings differential due to differences in economic characteristics is a "legitimate" differential since it reflects differences in skills between males and females. The latter differential arising from differences in the wage structure of males and females, in contrast, is due to discrimination. This is an intuitively plausible result because the sex difference in the pay structure regression co-efficients represents differences in rates of pecuniary returns for the same personal characteristics of men and women. It is reasonable, therefore, that the amount of discrimination in income would be indicated by the size of the difference in co-efficients weighted by the average values of respective personal characteristics. In sum, a justifiable wage differential between the sexes results from differences in skills, while a discriminatory differential arises from unequal returns to equal skills. Symbolically,

$$\Sigma b_{im}\Delta\bar{X}_i = \ln (\bar{Y}_m / \bar{Y}_f)^o \quad \text{and} \quad (a_m - a_f) + (-\Sigma\Delta b_i \bar{X}_{if}) = \ln (D + 1)$$

If we follow the second approach of measuring discrimination or nepotism, the mean income of males, in the absence of discrimination, is found by multiplying the mean values of males' economic characteristics with the respective regression co-efficients of females. The difference between the existing earnings of males and the estimated average earnings of males is discrimination against women. The resulting equation in this case is

$$\ln \bar{Y}_m - \ln \bar{Y}_f = (a_m - a_f) + \Sigma b_{if}\Delta\bar{X}_i + \Sigma\Delta b_i \bar{X}_{im} \tag{6}$$

where

$$\Sigma b_{if}\Delta\bar{X}_i = \ln (\bar{Y}_m / \bar{Y}_f)^o \quad \text{and} \quad (a_m - a_f) + (\Sigma\Delta b_i \bar{X}_{im}) = \ln (D + 1)$$

Thus, we will have two estimates of discrimination and they may be interpreted to indicate the lower and upper limits of discrimination against women. We refer to these alternative ways of evaluating the wage differentials (equations 5 and 6) as "male regression weights" and "female regression weights," respectively.

This method has several limitations.[11] First, the magnitude of discrimination is critically dependent on a researcher's choice of control or explanatory variables for the wage regressions. If it were possible to control for virtually all sources of variations in wages, discriminatory differences in wages might be eliminated or at least reduced and whatever wage differential was observed may be justified on grounds of productivity differences between the sexes.

Second, the part of the wage difference attributed to discrimination need not be the result of wage discrimination alone. In fact, two persons with identical personal characteristics may receive different wages as a result of their own personal options or preferences.

Another difficulty is that neither approach takes into account the effects of the feedback from labor market discrimination on male-female differences in the selected individual characteristics. For example, some of the differences in characteristics might be the result of past discrimination; less may have been invested in women's education because the rate of return on education for females (in the form of higher monetary earnings) is less than for males. Yet under the present approach, all differences in characteristics are treated as contributing to justifiable wage differences. The larger question is how much of the observed differences in individual characteristics would exist in the long run if there were no wage discrimination.

These difficult problems have not been dealt with in this study; they should be kept in mind, however, when one attempts estimation of sex differences in earnings and interprets them for policy purposes. Given the current state of the art in the identification and measurement of sex discrimination, there seems to be no better alternative to a method based upon earnings function. Hence I use the above technique and interpret the results bearing in mind the limitations discussed.

Results and Discussion

Following the statistical methods developed earlier, separate wage regressions are run for men and women. The dependent variable is the natural logarithm of monthly salary from employment and the independent variables are the "human capital" variables, such as education, experience, ability (as indicated by division obtained in examinations), marital status, and labor market variables such as occupation, sector of employment, union status, and type of industry. The two sets of estimated wage equations are reported in Table 1.1. The co-efficients are, in general, significant. As judged from the values of R^2, the model explains nearly 80% of the variation in earnings for males and 82% for females. Comparison of male and female regression co-efficients in both sets of equations indicates that for most of the characteristics, the rates of pay (as indicated by the absolute value of the regression co-efficients) are greater for females than for males. But the rates of monetary returns to certain characteristic groupings, such as unmarried, illiterates, nursing, unionized firm, and public sector (the influence of which is contained in the constant term) are greater for males than for females.

To decide whether the wage structures of male and females are really different, we conduct an "F" test of all the coefficients simultaneously. The significant "F" statistic reveals that the differences between intercept and slope co-efficients for male and female regressions are statistically significant.[12]

To find the magnitude of discrimination, we need to know the current average earnings of males and females. These values are computed by multiplying the mean values of the explanatory variables given in Table 1.2 by their corresponding regression co-efficients presented in Table 1.1. The estimated average income in logarithmic terms is 6.5487 for males and 6.0248 for females. This positive difference of 0.5239 in logarithmic terms can be interpreted to mean that male workers are earning more than female workers. The whole of this difference, however, cannot be attributed to discrimination; a part of the difference may be due to productivity differences between the sexes.

Table 1.3 contains the overall wage gains of males (0.5239 in logarithmic terms) decomposed in the manner implied by the statistical technique described above. It can be seen that the income difference due to differences in economic characteristics such as education, favors males. The income difference due to rate of pay differences between males and females favors females. This difference is shown by the negative contribution of the coefficients of the explanatory variables to the overall difference (-42.9%). Nevertheless, the difference in constant terms or the co-efficients of the omitted groups (of the dummy variables) favors males as illustrated by the positive contribution of the constant term to the gross wage differential (79.3%).[13] Following Blinder[14] and Oaxaca[15] we relate the combined sum of the portion of the gross difference in income attributable to sex differences in rates of pay and the unexplained differences in constant terms to discrimination. Accordingly, discrimination accounts for 36.4% of the overall gross wage differential between men and women when "male regression weights" are used.[16]

Allocating the gross differential to the different explanatory variables, we find that the variable placing men at a distinct advantage is occupation. It accounts for nearly 82.5% of the explained male-female earnings differentials (Table 1.3). Thus, the distribution of workers across occupations, at least at this relatively coarse level of disaggregation, contributes greatly to the sex differentials in earnings.

When we compare the proportion of males and females across occupations, women seem to be concentrated in primary and middle school teaching and semi-skilled and un-skilled jobs which also are remunerated at relatively low levels as seen in Table 1.4. Other variables favoring males are tenure and sector of employment; these factors, however, contribute only negligibly to the wage advantage of males. A closer examination of the results suggests occupational distribution accounts for only 13.2% of the total difference while 69.4% is contributed by the sex differences in pay structure.

It is widely held that the main way in which women are discriminated against in the labor market is not in rates of pay but in their relegation to lower positions on the occupational ladder than their qualifications would merit. In most studies on this subject, a significant source of wage

difference is the differing occupational distribution. But in our case the difference in occupational distribution accounts for only 13.2% while 69.4% is contributed by the differences in pay structure.

The factors significantly favoring females and narrowing down sex differentials in earnings are type of industry, ability, and union. In each case, the sexes barely differ in their endowments and most of the advantage for females, as compared with men's wage equation, comes from relatively higher rates of return, rather than from differences in economic characteristics.

The estimated average income for males and females in logarithmic terms (6.5487 and 6.0248, respectively) when translated into rupee values yields a monthly income of Rs.698 for males and Rs.413 for females, giving an income difference of Rs.285 between the sexes. If we accept the first assumption that in a discriminatory market females are paid less than their productivity, then the regression estimates imply that in the absence of discrimination, females, on average, would earn Rs.501. Therefore, the remaining earnings differential of nearly Rs.197 which will persist even in a non-discriminatory labor market may be due to productivity differences between the sexes (perhaps the result of past discrimination).

If we accept the second assumption that males are paid more than their productivity in a non-discriminatory market, then the regression estimates reveal that in a non-discriminatory market females would, on average, earn only Rs.435 and a differential of Rs.263 would be due to skill variations between men and women workers.

Summary and Conclusions

Thus far we have examined the various factors influencing the earnings of men and women employees from a sample survey conducted in an urban area of India. Analysis of the results indicate that, on average, women earn less than men, even when they are equally productive. In addition, women, on average, possess less education and other characteristics which determine earnings. A significant feature is that the rates of renumeration for most of the individual traits are higher for women than for men with similar wage generating endowments.

The method of estimation used here involves an index number problem. A set of possible values of discrimination is obtained from the separate values calculated using male and female regression weights, which range from 10.2% to 39.4%. Therefore, to obtain a single estimate, the effect of discrimination is computed as a simple average of the two independent estimates. If the discrimination co-efficient is taken as the mid point of the range of values estimated (which are 0.06 and 0.21, respectively) then the discrimination co-efficient equals 0.14. Given a gross difference (g) equal to 0.68, discrimination accounts for approximately 21% of the male-female wage differential. The difference between the gross difference in wages and the discrimination co-efficient yields the estimate of the wage

differential that would exist in the absence of discrimination, 0.54 in this study. These figures imply that in the absence of sex discrimination, as I have defined it, the average female wage as a percentage of the average male wage would be 72%. The remaining wage differential of approximately 28% can be attributed to the effects of differences in other factors which determine earnings.

Further analysis of the difference in average monthly income earned by men and women demonstrates that only about one-third of the difference is attributable to sex differences in wage structure, while the remaining two-thirds is due to unequal distribution of wage generating endowments. The latter is accepted as a "legitimate" differential while the former is interpreted as discrimination against women in the labor market. This finding is strikingly different from Oaxaca's[17], Malkiel and Malkiel's[18], and Combe's[19] who found that wage discrimination accounts for a greater percentage of the gross wage difference between males and females and that only a negligible percentage is due to differences in economic characteristics. This difference in findings may be a function of the sample chosen for this study; the sample individuals are from educational institutions, banks, and medical institutions where rates of pay for specific occupations are stipulated by law. In the private manufacturing sector, such detailed regulations do not exist, but a minimum salary must be paid to employees.

Several policy implications derive from the results of this study. If the aim of public policy is to eliminate discrimination, as I have defined it, then the study confirms the necessity for anti-discrimination laws. While equal pay and equal opportunity legislation may benefit women to some extent, there is at least one reason why they may not have any substantial effect. In practice much of the discrimination may have become institutionalized as a result of the stereotyping of women's roles within society. Such stereotyping is accepted from childhood and is a result of the interaction of complex, social, economic, and historical forces. Therefore, radical change in social behavior and, in particular, sex roles within the family, will be necessary before it is possible to even up the imbalances in the earnings and occupational structure of males and females.

NOTES

1. I acknowledge with thanks the guidance of Dr. A.M. Nallagoundan and the assistance of Mr. N. Sambamoorthi in the processing of data.

2. See B. Chipline and P.J. Sloane, Sex Discrimination in Labour Market, MacMillan Press, (London, 1976), for the extent of discrimination against women in various countries.

3. Throughout this paper, earnings, income, wages, pay, and salary are used synonymously to mean the earnings from employment alone.

4. For a detailed review of literature on sex discrimination see Sex Discrimination in Labor Market. op cit.

5. Gary S. Becker, The Economics of Discrimination, (2nd Ed.), University of Chicago Press, (Chicago, 1971).

6. Ibid.

7. Gary S. Becker, Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education, (2nd Ed.), New York: National Bureau of Economic Research. 1974.

8 Jacob Mincer, Schooling, Experience and Earnings, New York: National Bureau of Economic Research. 1974.

9. For a detailed exposition on earnings function see K.V. Eswara Prasad, "Determinants of Earnings of Professional Workers," Indian Journal of Industrial Relations, 17: 39-53, July, 1981.

10. The regression co-efficients of the estimated equations can be taken as naive indicators of the productivity of males and females.

11. Soloman W. Polacheck, "Potential Biases in Measuring Male-Female Discrimination, Journal of Human Resources, 10: 205-229. (Winter, 1975).

12. The calculated value of "F" statistic is 4.72 which is greater than the table "F" value of 1.79 both at the 5% and 1% level of significance, leading to the rejection of null hypothesis that both sets of equations have the same slope and intercept.

13. These percentages are calculated by dividing each item in Table 1.3 by the gross wage differential (i.e., 0.5239) and multiplying the resultant quotient by 100. For example, Education is (-0.0400 divided by 0.5239) x 100.

14. Alan S. Blinder, Wage Discrimination: Reduced Form and Structural Estimates, Journal of Human Resources, 8: 436-455 (Fall, 1973).

15. Ronald L. Oaxaca, "Male-Female Wage Differentials in an Urban Labour Market," International Economic Review, 14: 693-709 (October, 1973).

16. This is calculated in the following manner: 79.3 - 42.9 = 36.4. When female regression weights are used the discriminatory part of the wage differential is reduced from 36.4% to 10.2% (79.3 - 69.1 = 10.2).

17. op-cit

18. B.G. Malkiel and J.A. Malkiel, "Male-Female Pay Differentials in Professional Employment," American Economic Review, 63: 693-705 (September, 1973).

19. Roberta E. Combe, "Earnings Differentials Between Males and Females in Ontario, 1971," Canadian Journal of Economics, 11: 350-359 (May, 1979).

Table 1.1 Ordinary Least Squares Estimates of Monthly Income Equation

Explanatory Variables	Males	Females
Education		
Primary School	-0.00587	0.04371
Secondary/Middle	0.15161	0.11603
High School	0.05576	0.31634**
Under graduates (a)	0.22350*	0.45810**
Post graduates (b)	0.41667**	0.65070**
Under graduates (o)	0.35231**	0.96677**
Post graudates (o)	0.68121**	--
Diploma holders	0.19556	0.22483*
Doctorates and others	0.46551**	0.83161**
Experience	0.02907**	0.03841**
Experience Squared	-0.00040**	-0.00051**
Marital Status		
Married	0.03627	0.10675**
Widowed/Separated	0.07031	0.13683*
Ability		
Division I	-0.03000	0.09493
Division II	-0.04457	0.06077
Others	-0.06936	-0.02377
Occupation		
Professional Technical and Related	-0.07142	-0.29655
Physicians and Surgeons	0.22922**	0.02622
Accountants/Auditors	0.15092	-0.18422
University Teachers	0.36922**	-0.29015*
Primary Middle Teachers	0.04816**	-0.71520**
Administrative Executive Officials	0.40341**	-0.18251
Clerical Workers	-0.29329**	-0.43012**
Typists	-0.05966	-0.41117**
Skilled	-0.27682**	-0.42429**
Semiskilled	-0.49886**	-0.43083**
Unskilled	-0.46817**	-0.46930**
Tenure of Employment		
Probationary	0.31765**	0.45046**
Permanent	0.49381**	0.52663**

Cont/

Table 1.1 Ordinary Least Squares Estimates of Monthly Income Equation (continued)

Explanatory Variables	Males	Females
Sector		
Private	-0.09755*	-0.09761**
Type of Industry		
Chemicals	0.43375**	0.67481**
Electricals	0.13663*	0.13641**
Banks	0.72490**	0.88800**
Educational Institutions	0.25754**	0.71642**
Medical Institutions	0.53018**	0.49224**
Union		
Unionized	0.13009**	0.19797**
Constant	5.20781	4.79237
R^2	0.80	0.83

** : Significant at 1% level of significance

* : Significant at 5% level of significance

Table 1.2 Mean Values of Explanatory Variables*

Explanatory Variables	Males	Females
Education:		
(Illiterates)		
Primary School	0.1043	0.1354
Secondary School	0.1286	0.2866
High School	0.0440	0.0326
Under graduates (G)	0.2735	0.2124
Post graduates (G)	0.2399	0.1423
Under graduates (o)	0.0997	0.0039
Post graduates (o)	0.0046	--
Diploma	0.0232	0.1453
Doctorates and others	0.0475	0.0138
Experience	8.9009	7.4466
Experience Squared	135.6681	110.4458
Marital Status		
(Unmarried)		
Married	0.6780	0.6047
Widowed/Separated	0.0080	0.0375
Ability		
Division I	0.1958	0.9980
Division II	0.3279	0.1976
(Division III)		
Others	0.3557	0.0215
Occupation		
Professional, Technical and Related	0.0197	0.0019
Physicians and Surgeons (Nurses)	0.1147	0.0059
Accountants/Auditors	0.0313	0.0059
University Teachers	0.1669	0.1136
Primary Middle School Teachers	0.1344	0.3162
Administrative and Executive Officials	0.0857	0.0108
Clerical Workers	0.2016	0.1038
Typists	0.0192	0.2047
Skilled	0.0915	0.1285
Semi-skilled	0.0313	0.6800
Unskilled	0.0776	0.6652

Cont/

Table 1.2 Mean Values of Explanatory Variables* (Continued)

Explanatory Variables	Males	Females
Tenure of Employment		
Probationary	0.0533	0.0514
Permanent	0.8795	0.7893
(Temporary)		
Sector		
Private	0.5597	0.6661
(Public)		
Type of Industry		
(Textiles)		
Chemicals	0.0985	0.0593
Electricals	0.0811	0.0849
Banks	0.2236	0.0859
Educational Institutions	0.3291	0.4536
Medical Institutions	0.1854	0.1611
Union		
(Non Unionized)		
Unionized	0.9131	0.8379

*Variables within brackets are the categories omitted in the regression equations.

Table 1.3 Relative Contribution of Variables to Earnings Differentials

Variables	Raw Differentials $\bar{Y}_m - \bar{Y}_f$		Male Regression Weights: Portion Attributable to Economic Characteristics $\Sigma b_{im} (\bar{X}_{im} - \bar{X}_{if})$		Male Regression Weights: Portion Attributable to Wage Differences $\Sigma \bar{X}_{if} (b_{im} - b_{if})$		Female Regression Weights: Portion Attributable to Economic Characteristics $\Sigma b_{if} (\bar{X}_{im} - \bar{X}_{if})$		Female Regression Weights: Portion Attributable to Wage Differences $\Sigma \bar{X}_{im} (b_{im} - b_{if})$	
Education	-0.400	(-7.6)	0.0598	(11.4)	-0.0998	(-19.0)	0.1715	(32.7)	-0.2115	(-40.4)
Experience	-0.252	(-4.8)	0.0322	(6.1)	-0.0574	(-10.9)	0.0430	(8.2)	0.0682	(-13.1)
Marital Status	-0.0445	(-8.5)	0.0006	(0.01)	-0.0451	(-8.6)	0.0039	(0.8)	-0.0484	(-9.2)
Division (Ability)	-0.0519	(-9.9)	0.0097	(1.9)	-0.0616	(-11.8)	0.0233	(4.4)	-0.0752	(-14.4)
Occupation	0.4323	(82.5)	0.0689	(13.2)	0.3634	(69.4)	0.0851	(16.2)	0.3472	(66.3)
Tenure of Employment	0.0124	(2.4)	0.0451	(8.6)	-0.0327	(-6.2)	0.0485	(9.3)	-0.0359	(-6.9)
Sector	0.0099	(1.9)	0.0099	(1.9)	0.0000		0.0098	(1.9)	0.0001	(0.02)
Industry	-0.1374	(-26.2)	0.0971	(18.5)	-0.2345	(-44.8)	0.0707	(13.5)	-0.2081	(-39.7)
Union	-0.0471	(-9.0)	0.0097	(1.9)	-0.0568	(-10.8)	0.0148	(2.8)	-0.0619	(-11.8)
SUB TOTAL	0.1085	(20.7)	0.3330	(63.6)	-0.2245	(-42.9)	0.4706	(89.8)	-0.3619	(-69.1)
Constant $(a_m - a_f)$	0.4154	(79.3)								
TOTAL										
In (G + 1)	0.5239									
In (D + 1)			0.1909	(36.4)					0.0505	(10.2)
D			0.21						0.06	

NOTES: A (+) sign indicates an advantage for males, a (-) sign indicates an advantage for females; Numbers may not add to totals due to rounding of figures. The contribution of the variables as a percentage of total differential is given in parentheses. (See footnote 12.)

Table 1.4 Earnings Ratio and the Proportion of Men and Women in Various Occupations (1980)

Occupations	Men	Women	Mean earnings ratio (F/M)
Professional, Technical and Related	0.0197	0.0019	0.97
Physicians and Surgeons	0.1147	0.0059	0.92
Accountants and Auditors	0.0313	0.0059	0.90
University and College Teachers	0.1669	0.1136	0.92
Primary and Middle School Teachers	0.1344	0.3162	0.92
Administrative Executive Officials	0.8857	0.0108	0.73
Clerical Workers	0.2016	0.1038	0.76
Typists	0.0197	0.0247	0.92
Skilled Workers	0.0915	0.1285	0.53
Semi-skilled Workers	0.0313	0.6800	0.74
Unskilled Workers	0.0776	0.6652	0.93

M I C H I G A N S T A T E U N I V E R S I T Y

WORKING PAPERS ON WOMEN IN INTERNATIONAL DEVELOPMENT

Published by the Office of Women in International Development at Michigan State University and partially funded by the Ford Foundation and a Title XII Strengthening Grant

EDITOR: Rita S. Gallin, Office of Women in International Development and College of Nursing

EDITORIAL BOARD: Marilyn Aronoff, Department of Sociology
Ada Finifter, Political Science
Peter Gladhart, Departments of Family and Child Ecology and Resource Development
John Hinnant, Department of Anthropology
Susan Irwin, Department of Anthropology
Akbar Mahdi, Department of Sociology
Nalini Malhotra, Department of Sociology
Anne Meyering, Department of History
Ann Millard, Department of Anthropology
Barbara Rylko-Bauer, Department of Anthropology
Judith Stallmann, Department of Agricultural Economics
Paul Strassmann, Department of Economics
Diane Turner, Department of Anthropology

MANAGING EDITOR: Margaret Graham, Office of Women in International Development

EDITORIAL POLICY: The series of Working Papers on Women in International Development publishes reports of empirical studies, theoretical analyses, and projects that are concerned with development issues affecting women in relation to social, political, and economic change. Its scope includes studies of women's historical and changing participation in political, economic, and religious spheres, traditional roles within and outside the family, gender identity, relations between the sexes, and alterations in the sexual division of labor.

MANUSCRIPTS (in duplicate) should be submitted to the editor, Rita S. Gallin, Ph.D., WID Publication Series, Office of WID, 202 International Center, Michigan State University, East Lansing, Michigan 48824. They should be double-spaced and include the following: (1) title page bearing the name, address, and institutional affiliation of the author(s); (2) one-paragraph abstract; (3) text; (4) notes; (5) references cited; and (6) tables and figures. To further the rapid dissemination of information, a timely schedule of manuscript review and publication is followed.

TO ORDER PUBLICATIONS OR RECEIVE A LISTING OF WORKING PAPERS, write to the Office of WID, 202 International Center, Michigan State University, East Lansing, MI 48824.

MSU is an Affirmative Action/Equal Opportunity Institution