

CONTRIBUTION OF FAMILY AND PERSONAL TRAITS TO THE GENDER WAGE GAP: A SOURCE OF DISCRIMINATION OR EXPLANATION

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ABSTRACT

This paper investigates whether family and personal traits contribute to the gender wage gap as a source of explanation or discrimination. The empirical investigation is executed by applying Oaxaca (1973) decomposition technique on primary data collected from 1536 respondents at aggregate level for South Punjab and at disaggregate level for comparative analysis of each division. Oaxaca decomposition findings reveal that 91.31 percent discrimination by gender exists in South Punjab. The results confirm that education and occupation are the largest contributors to explain gender earning differential in the selected divisions. This study guides economists and policy makers to identify the focal points to minimize the earning differentials between male and female workers and also instigates the policy makers to promote in-discriminated country wide education to bridging earning differentials among the country nationals.

Keywords: gender earning differential; decomposition; discrimination; family; Pakistan.

1 INTRODUCTION

Human beings are always found striving to do work and earn for their livelihood. Classical economists named this earning as wage that is defined as price or reward for the services rendered by a worker. The wage structure and its evolution over time symbolize the developmental trajectory of an economy. It is a fact that different rewards are accrued on the basis of different participation rates of the comparable workers and their composition in the labor force. Labor force constitutes 77 % males and 23 % females in Pakistan. As per International Labor Organization, by 2023, in Pakistan, male labor force participation rate is 81.03 % and of female, it is 23.18 %.

It is reported in Pakistan Labor Force Survey 2017-18 that female, on average, earn 40% less than male and this gender wage gap is consistently widening overtime. In other words, an average Pakistani female is earning 600 rupees against Pakistani male earning 1000 rupees.

According to the figures published in the Global Gender Gap report 2022, Pakistan is ranked

at second out of 142 countries which are facing gender discrimination. This discrimination is getting worsen over time in Pakistan based on the Global Gender Gap Index. This factual analysis depicts the alarming situation and urges the need to investigate the causal factors behind such a consistent low rank of Pakistan.

Social scientists have given wide currency to the research on earning differentials as it has been realized that earning differentials not only challenges social justice goals but can also have adverse economic consequences. To contribute to this chain of research and upgrading the level of society, the present study is initiated to know the nature, drivers, and implications of gender earning differentials particularly in the selected division of Southern Punjab which have diverse earning portfolios of the labor force.

2 Literature Review

A number of empirical studies have attempted to decompose the earning differential into hypothesized “skill/endowment” and “treatment/discrimination” components based on different categories. It is a multidisciplinary concept that has been addressed first by Kitagawa (1955) in demography and later in the sociology discipline by Duncan (1968) and then in economics literature Oaxaca (1973), and Blinder (1973) separately have decomposed this earning differential.

Ashraf and Ashraf (1993) analyzed the gender wage gap in urban and rural areas and its trend over the period 1979 to 1985-86 in Pakistan. It is found that female earnings are lower than that of male in all provinces except Balochistan. The same results are found by Siddiqui and Siddiqui (1998) who have examined gender wage discrimination using data from household income and expenditure survey 1993-1994. They found that area, occupational distribution, and industrial classification are significant factors of wage differential in Pakistan. Better schooling helps to reduce this wage differential. It is also found that the educated females earn more than males while experience pays off more to males. The earnings for both male and female are lower in all provinces as compared to Balochistan. Both self-employed male and female earn more than male and female employees. Yasin et al. (2010) explored the factors that cause gender wage gap in Punjab province of Pakistan by using labor force survey data 2003-2004. Empirical results reveal that marital status, regional dummies, and occupations are the main determinants of wages. They have ascribed occupational segregation by gender as the leading factor to provoke labor market discrimination against women.

Gupta et al. (2007) estimated the wage gap between married and unmarried male by using panel data of young male in Denmark. They adopted dummy variable approach and Human Capital Theory extended by cohabiting, parenthood, and child rearing variables. Empirical findings revealed that marriage is more likely to be a selective state due to more egalitarian division of time in Denmark that results in small relationship wage premium. It is also observed that fatherhood have more significant impact on male earnings than cohabitation.

Bowlus and Grogan (2009) assessed the impact of labor market behavior on gender pay differential particularly focusing part-time work in

UK by adapting general equilibrium search model. It is found that part-time and less educated female workers have low attachment to labor market. Thus, labor market behavior of individuals and firms differ across full-time and part-time groups and lead to wage differential.

Nyhus and Pons (2012) identified the role of personality traits to explain the gender pay gap. They used personality traits of personal self-efficacy and time preference in addition to Big Five personality traits. Nyhus and Pons (2012) used data on Dutch employees from DNB Household Survey 2005 and found that 11.5% of the observed wage gap are explained by personality traits. These personality traits, in addition to Human Capital Theory, lower the discrimination of female against male.

Biltagy (2014) estimated that gender wage differential is 25% in Egypt by employing Oaxaca-Blinder decomposition method. Biltagy (2014) attributed a larger fraction of this wage differential to discriminatory treatment against women while a smaller fraction to differences in human capital characteristics.

Risse et al. (2018) explored the impact of gap in personality traits by gender on the pay gaps by gender. They have taken individual's confidence as a tool of personality trait that is measured by the psychological scale. Risse et al. (2018) employed Oaxaca-Blinder decomposition method on data taken from HILDA survey held in 2013 in Australia. Empirical evidences show that men are more confident than women due to having high level of hope for success and low fear of failure and thus it results in widening gender wage gap. High level of consciousness is the only one factor on women side that led women to climb up the pay ladder and thus contributes to narrow the gender pay gap.

A surge of earlier literature draws attention toward analyzing the earning differential in developed economies and in the context of international comparisons, but a few studies have considered this issue in developing economies so far. Particularly, the decomposition of the region is a motivation to locate the earning differentials. In conclusion, the studies that analyze the impact of job characteristics, family characteristics and particularly personal traits on gender earning differential are rare.

3 Data Sources and Methodology

3.1 Data Sources

The current study is based on primary data collected through a field survey by using multistage random sampling technique in Southern Punjab. Questionnaires are used to collect information from respondents about their earnings, age, education, marital status, location, occupation, employment status, personal, and family characteristics. Target population included all employed persons (15-64 years age) of Southern Punjab. To cover this population at least one employed person from each household was selected. Total number of households in Southern Punjab is 5244597. The sample size of 1536 households is calculated at 95% confidence interval with 2.5% margin of error. Formula for calculation of sample size is following:

$$SS = Z^2 * \frac{p(1-p)}{e^2}$$

The main occupation of each respondent is identified as the occupation in which he works the most hours (Leung, 2006). Individuals without any job during the year, those residing in suburb areas, full time students any time during the year and unpaid family workers are excluded from the sample.

The multistage sampling is done in two steps. The 1st stage comprises the identification of clusters. Target population is divided into clusters. These clusters are 11 Districts in Southern Punjab. Three clusters are randomly selected from total 11 clusters. At 2nd stage, total sample (1536) is equally allocated to each district such as 512 for each District based on budget, time and access. Within these selected Districts, 512 households are randomly sampled from urban and rural areas except suburb areas.

Total sample	512
Multan district	
1536	512
Bahawalpur district	
	512
DG Khan district	

3.2 Empirical Methodology

The conventional approach uses the Mincerian's earning function to estimate wage that determines the rates of returns to the human capital and thereby identifies their effect on the wages (Mincer, 1970).

Then these estimated wages of the two agents are subtracted to find the differential in their reward such as equation (1).

$$\ln \bar{W}^M - \ln \bar{W}^F = \sum B_j^M \bar{X}_j^M - \sum B_j^F \bar{X}_j^F \quad [1]$$

(j=0,....., K implied)

In addition to this conventional method of estimating the wages of two agents using the Mincerian earning function, Oaxaca-Blinder (1973) approach decomposes the mean wage differential of two identities (male & female) into explained part this is due to the difference in endowments and unexplained part that is known as discriminatory component. This decomposition can be expressed in two ways based on the two underlying assumptions by Oaxaca (1973) about the prevailing wage in the absence of discrimination.

$$\begin{aligned} \ln \bar{W}^M - \ln \bar{W}^F &= \sum B_j^F (\bar{X}_j^M - \bar{X}_j^F) \\ &+ \sum \bar{X}_j^M (B_j^M - B_j^F) \end{aligned} \quad [2]$$

$$\begin{aligned} \ln \bar{W}^M - \ln \bar{W}^F &= \sum B_j^M (\bar{X}_j^M - \bar{X}_j^F) \\ &+ \sum \bar{X}_j^F (B_j^M - B_j^F) \end{aligned} \quad [3]$$

In equation [2] it is assumed that the wage structure currently faced by female would also apply to male and equation [3] is written on an assumption that the wage structure currently faced by male would also apply to female in the absence of discrimination. These formulations express that the wage structure that would prevail in the absence of discrimination was more likely to be close to the male identity wage function according to equation [2] and the wage structure that would prevail in the absence of discrimination was more likely to be close to the wage function of female identity according to equation [3].

3.3 Model Specification and Description of Variables

The operational economic model to estimate gender earning differential for economic analysis is specified in this sub-section. This model is basically Mincerian earning function that is augmented by occupations, employment type, family characteristics, and personal traits. These are presented below:

Model (1): Gender Earning differential in overall South Punjab

In Wage = f (Divisional dummies, Location, Marital Status, Experience, sq-Experience, Education, Health, Occupations, Employment status, Personal Traits, Family characteristics)

Model (2): Gender Earning differential foreach division of South Punjab

In Wage = f (Location, Region, Marital Status, Experience, sq-Experience, Education, Health,

Occupations, Employment status, Personal Traits, Family characteristics)

Table 1: Description of Variables

	Variables	Symbols	Description	Hypothesized relationship with earnings
	Earnings	EARN	Monthly income of individual	-
Demographic variables	Location	LCN	1 if worker lives in an urban area, otherwise 0.	Positive /Negative
	Marital Status	MAR	1 if worker is married, otherwise 0.	Positive /Negative
	Bahawalpur	BWP	1 if worker lives in Bahawalpur division, otherwise 0.	Positive /Negative
	DG Khan	DGK	1 if worker lives in D.G. Khan division, otherwise 0.	Positive /Negative
	Multan	MUL	1 if worker lives in Multan division, otherwise 0.	Positive /Negative
Human Capital Variables	Education	EDU	Education in completed years	Positive
	Health	HEH	1 if there is any govt. health center in nearby area, otherwise 0.	Positive
	Experience	EXPR	Work experience in years	Positive
	Squared Experience	sqEXPR	Square of work experience	Negative
	Career gap	CGAP	Number of months / years of out of work.	Positive/Negative
Family Characteristics	Family size	Fsize	Total number of family members.	Positive /Negative
	Family system	FSP	1 for a joint family system, otherwise 0.	Positive
	Other employed members in family	OEMF	1 if there is any other employed member in family, otherwise 0.	Positive /Negative
Employment Status	Public sector employee	PUBE	1 if worker is a public employee, otherwise 0.	Positive /Negative
	Private sector employee	PRIE	1 if worker is a private employee, otherwise 0.	Positive /Negative
	Self Employed	SE	1 if worker is self-employed, otherwise 0.	Positive /Negative
Occupations	Manager	MAN	1 if individual is a manager, otherwise 0.	Positive /Negative
	Professional	PROF	1 if individual is a professional, otherwise 0.	Positive /Negative
	Technician	TECHNI	1 if individual is a technician, otherwise 0.	Positive /Negative

	Clerical	CLER	1 if individual is a clerical worker, otherwise 0.	Positive /Negative
	Service and Sale	SER	1 if individual is a service /sales-worker, otherwise 0.	Positive /Negative
	Agriculture	AGRI	1 if individual is skilled agricultural / forestry worker, otherwise 0.	Positive /Negative
	Crafts	CRAFT	1 if individual is a craft-worker, otherwise 0.	Positive /Negative
	Operatives	OPERA	1 if individual is a plant / machine operator, otherwise 0.	Positive /Negative
	Casual Labor	CLAB	1 if individual is a casual laborer, otherwise 0.	Positive /Negative
Personal Traits	Decision Empowerment	EMPWD	1 if worker is consulted in household affairs, otherwise 0.	Positive
	Family tie	FTIE	1 if worker is bound to live with family, otherwise 0.	Positive /Negative

4 Results and Discussion

This section presents the earning functions and the decomposition of gender earning differential at aggregate level for South Punjab and disaggregate level for selected divisions of South Punjab.

4.1 Gender Earning Differential in South Punjab

Wage equations are estimated for both gender groups to explore their wage structure in Southern Punjab. It is crucial to review these wage equations due to their use to calculate the contribution of explained and unexplained components in explaining wage decomposition by gender. In these wage equations, the logarithm of monthly earning is regressed by demographic variables (location, regional dummies), human capital variables (education, health, experience), occupational dummies, career gap, decision empowerment, family tie and other family characteristics (family system, family size, other employed members in family, marital status).

4.1.1 Estimated Earning Equations by Gender in South Punjab

Table (2) exhibits the regression estimates of male and female earning functions. R² value shows that explanatory variables account for 46.7 percent variation in female regression and 28.4 percent variation in male regression. The coefficients of location and division dummies are positive and significant in both regressions. It reveals the fact that male and female residing in urban areas earn 18.3

percent and 11.8 percent more than those workers residing in rural areas respectively. Female workers in Multan and Bahawalpur division earn 41.2 percent and 47.6 percent more than female workers in DG Khan division. While male workers in Multan and Bahawalpur division earn 13.6 percent and 15 percent more than male workers in DG Khan division. Human capital variables also positively and significantly affect the earnings except health in female regression. It is because female have the lowest tendency to visit health centers for check-up as compared to male. The coefficient of private employees is negatively significant in both regressions. This indicates that being a private employee affect earning less than being a self-employed. Similarly, being a public employee affect earning less than being a self-employed in case of male insignificantly. While a female public employee affect earning more than self-employed female significantly. The coefficients of family characteristics, decision empowerment and marital status have insignificant impact on monthly earnings in both regressions. Occupational dummies are highly significant factors that affect the earnings of both gender. The regression coefficients of occupational dummies are positive and greater in magnitude for female than male. This shows that both male and female managers, professionals, clerks, service workers, craft workers, agriculture

workers, operatives, technicians earn more than casual laborers in Southern Punjab.

Table 2: Estimated Earning Equations by Gender in South Punjab

Variables		Reg Coeff		Female (Bf)	Sig (Bf)
		Male (Bm)	Sig (Bm)		
Demographic	LCN	0.183	0.000	0.118	0.006
	MUL	0.136	0.001	0.412	0.000
	BWP	0.150	0.000	0.476	0.000
	MAR	-0.050	0.319	0.094	0.067
Human Capital	EDU	0.028	0.000	0.057	0.000
	EXPR	0.032	0.000	0.033	0.000
	sqEXPR	-0.001	0.000	-0.001	0.034
	HEH	0.122	0.007	-0.052	0.489
Employment Status	PUBE	-0.005	0.903	0.114	0.059
	PRIE	-0.355	0.000	-0.415	0.000
Occupations	MAN	0.370	0.001	0.499	0.002
	PROF	0.236	0.000	0.177	0.079
	TECHNI	0.189	0.022	0.260	0.053
	CLER	0.128	0.189	0.307	0.057
	SER	0.227	0.000	0.432	0.000
	AGRI	0.222	0.001	0.421	0.000
	CRAFT	0.007	0.925	0.266	0.010
	OPERA	0.074	0.289	0.172	0.223
Personal Traits	EMPWD	0.110	0.091	0.079	0.256
	FTie	0.107	0.001	0.045	0.313
Family Characteristics	FSize	0.000	0.943	0.004	0.648
	Fsystem	0.059	0.086	-0.001	0.989
	OEMF	-0.049	0.154	-0.019	0.694
	CGAP	-0.002	0.684	0.004	0.584
Number of observations		1007		529	
R ²		0.284		0.467	
Adj R ²		0.267		0.442	

Source: Author’s own calculations from survey data.

4.1.2 Oaxaca Decomposition

Table (3) reports the adjustment for the regressors using male and female regression weights and reports this adjustment in percentage to explain the portion of total earning differential between male and female. Education and experience account for the largest portion of explained gap. Even though, occupation, employment status, and region are represented by highly aggregated categories, they

significantly narrow downs the total earning differential in both type of adjustments. Career gap account for the least portion of the explained gap in both type of adjustments. The discrimination effect is estimated by the residual left after subtracting the effects of regressors from the overall earning differential. The estimated discrimination effect is 91.09 percent and 91.53 percent by taking the male and female regression weights as reference.

Table 3: Oaxaca Decomposition by Gender in South Punjab

Variables	Explained Male as ref		Explained Female as ref	
	Bm (Xm-Xf) [adj for jth variable using male reg weights]	Male % Explain	Bf (Xm-Xf) [adj for jth variable using Female reg weights]	Female % Explain
LCN	0.011562557	5.983265	0.01	3.84082
MAR	-0.00911385	-4.71613	0.02	8.841026
EDU	-0.059454356	-30.7658	-0.12	-61.8407
HEH	-0.008882265	-4.5963	0.00	1.969253
Emp Status	0.000907	0.46926	-0.0164266	-8.50031
OCC	-0.01536	-7.9493	0.03	14.14117
Experience	0.077489	40.09812	0.0906723	46.92012
EMPWD	0.00463246	2.397154	0.00	1.713372
FSize	-0.000301368	-0.15595	0.00	1.405922
Fsystem	0.005094843	2.636423	0.00	-0.03253
FTie	0.009181815	4.751304	0.00	2.012565
OEMF	0.015639373	8.092891	0.01	3.176048
CGAP	-0.000268132	-0.13875	0.00	0.334914
Region (divisional dummies)	-0.01391	-7.20012	-0.04338119	-22.44842461
Total explained	0.017210845	8.906079	-0.02	-8.46671
Unexplained	0.1760374421878950	91.09392	0.17688651108	91.53329

Source: Author’s own calculations from survey data.

4.2 Comparative Analysis of Gender Earning Differential

Disaggregated comparative analysis is performed in order to explore the earning structure and to decompose the earning differential by gender in three divisions of South Punjab.

4.2.1 Estimated Earning Equations by Gender of each Division

The earning structure of male and female in Multan division is explored by estimating the earning equations and using 323 male and 189 female number of observations as reported in table (4). R² value shows that the regressors common to both groups account for 26.4 percent variation in male earnings and 45.4 percent variation in female earnings. The positive coefficient of location shows that male in urban area earn more than rural area significantly, but this effect is insignificant for female.

Human capital such as education, health and experience significantly affect the earnings as in Mincerian function. Private employees of both genders earn less than being self-employed significantly. Both male and female public employees earn more than self-employed except in the case of DG Khan male. The estimates of occupational dummies exhibit insignificant effects on female earnings. The positive coefficients of occupations reveal that male being casual laborer earn less than in all other occupations significantly. Being part of joint family system increases the earning and having career gap lowers the earnings of both male and female insignificantly. Family size lowers while having other employed members in family boosts the earning significantly for female and insignificantly for male. The reason is that the house chores and responsibilities of female are increased and thus working time is reduced due to increasing family size while having other employed

members in family encourages female to do more paid work.

Personal characteristics such as having decision empowerment and having strong family tie help to improve earning significantly in case of female and insignificantly in case of male. The reason is that having strong family tie makes female psychologically strong, feel secure and sharing the household responsibilities with other family members. In case of Bahawalpur division, the regression coefficients of location, education, health and experience show that both male and female workers residing in urban area and also having more human capital in form of better education, health or more experience earn higher level of earning.

Public employees earn more while private employees earn less than being a self-employed in Bahawalpur for both male and female. The coefficients of occupational dummies are positive and significant that 139 shows that both male and female in all other occupations earn more than working as casual laborer. Family characteristics, family tie, decision empowerment and career gap do not significantly affect the earning of both gender. The last two

columns present the regression estimates of male and female in DG Khan division.

Location and marital status do not significantly affect the earning of both gender. Human capital variables positively and significantly affect the earning of male while insignificantly in case of female. Family system and family tie positively and significantly affect the earning of DG Khan male. Personal and family characteristics do not affect the female earning. The coefficients of employment status dummies are highly significant for both male and female in DG Khan. This exhibits that public and private male employees earn 18.2 percent and 52.4 percent respectively less than self-employed male. Private female employees earn 93.4 percent less while public female employees earn 33 percent more than self-employed female in DG Khan. The positive estimates of occupational dummies exhibit that females earn more in all occupations than being a casual laborer. On the other hand, male working as manager, professional, technician, clerk, agriculturalist earn more and male working as craftsmen and operatives earn less than working as casual laborer.

Table 4: Estimated Earning Equations by Gender in each division of South Punjab

Variables		Multan Reg Coeff		Bahawalpur Reg Coeff		DG Khan Reg Coeff	
		Male (Bm)	Female (Bf)	Male (Bm)	Female (Bf)	Male (Bm)	Female (Bf)
Demographic	LCN	0.179	0.034	0.314	0.195	0.044	0.102
	MAR	0.081	0.097	-0.006	0.063	-0.130	0.178
Human capital	EDU	0.033	0.057	0.015	0.057	0.032	0.023
	HEH	0.111	-0.049	0.145	0.064	0.123	-0.124
	EXPR	0.030	0.038	0.033	0.040	0.034	0.034
	sqEXPR	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
Employment status	PUBE	0.002	0.161	0.175	0.088	-0.182	0.330
	PRIE	-0.244	-0.310	-0.241	-0.303	-0.524	-0.934
Occupations	MAN	0.324	-0.114	0.516	0.833	0.374	1.960
	PROF	0.413	0.002	0.306	0.564	0.241	0.230
	TECHNI	0.296	0.131	0.203	0.589	0.093	0.579
	CLER	0.045	0.031	0.242	0.722	0.194	0.285
	SER	0.289	0.143	0.336	0.782	0.095	0.815
	AGRI	0.159	0.130	0.280	0.959	0.119	0.277
	CRAFT	0.006	-0.059	0.140	0.728	-0.141	0.027
	OPERA	0.171	0.051	0.205	0.426	-0.199	0.262
Personal Traits	EMPWD	0.093	0.235	0.120	-0.048	0.198	-0.205

	FTie	0.076	0.127	-0.018	0.089	0.182	0.079
Family Characteristics	FSize	-0.006	-0.016	0.009	0.021	-0.002	0.015
	Fsystem	0.066	0.005	-0.057	-0.102	0.171	-0.005
	OEMF	0.047	0.136	-0.075	-0.051	-0.108	-0.178
	CGAP	-0.001	-0.004	-0.042	-0.045	-0.006	0.007
R²		0.264	0.454	0.381	0.456	0.334	0.660
Adj R²		0.210	0.382	0.334	0.387	0.291	0.598
Number of obs.		323	189	315	197	369	143

Source: Author’s own calculations from survey data.

4.2.2 *Oaxaca Decomposition of Gender Earning Differential at Division Level*

Table (5) reports the contribution of factors in percentage form by taking male and female regression weights respectively in order to explain earning differential by gender. In case of Multan division, occupation accounts for the largest portion to explain earning differential along with human capital variables according to both assumptions. Location and employment status are significant contributors in case of male regression weights while these are the least contributors in case of female regression weights. Decision empowerment, family tie and other employed members in family are found to be the significant contributors in case of female regression weights and the least contributors in other case.

Moreover, Career gap is the less effective factor toward earning differential in both cases. The residual left after subtracting the contribution of regressors to total earning differential ranges between 92.12 percent to 33.66 percent. As a simple average of two estimates obtained, discrimination accounts for 62.89 percent of earning differential in

Multan division. The findings reveal that location, along with occupation and education, is the most significant factor to explain overall earning differential by gender in Bahawalpur division. Family characteristics such as family size, family system and other employed members in family also play crucial role in Bahawalpur division.

Contrary to this, decision empowerment and family tie are insignificant factors to explain this differential. 58.05 percent is the average discriminatory effect in Bahawalpur division that is greater than that in Multan division. The last two columns report the decomposition results in DG Khan division. Along with human capital variables, occupation, decision empowerment, family tie and having other employed members in family are the crucial factors to explain total earning differential. Location does not play an important role as explaining factor. The discriminatory effect ranges from 97.22 percent to 91.93 percent after considering the contribution of all regressors included in the model. The decomposition results of DG Khan division are largely similar to the decomposition results of Multan division and somehow different from Bahawalpur division.

Table 5: OAXACA Decomposition of Gender Earning Differential in each division of South Punjab

Variables		Multan Explain %		Bahawalpur Explain %		D.G. Khan Explain %	
		Male ref	Female ref	Male ref	Female ref	Male ref	Female ref
Demographic	LCN	5.039586	0.962	45.19704	28.0860	-1.48479	-3.48602
	MAR	10.21452	12.18	-0.38472	3.76108	-9.83527	13.48302
Human capital	EDU	-39.9656	-68.60	-15.589	-60.066	-29.0638	-20.9002
	HEH	-2.70702	1.180	-7.86402	-3.4807	-4.20709	4.228152
	Expr	44.60481	105.6	36.89366	33.0826	24.56544	1.649746

Employment status	Emp Status	7.595768	-0.214	-4.58679	-0.2130	-2.62151	-66.6419
Occupations	OCC	-32.2651	16.73	-15.7179	-46.669	-17.2745	45.67119
Personal Traits	EMPWD	3.838399	9.681	-1.09554	0.44357	5.260359	-5.43256
	FTie	2.647212	4.406	-0.44483	2.16209	11.71757	5.08475
Family Characteristics	FSize	-0.41864	-1.182	5.261446	12.1149	-0.77848	5.229401
	Fsystem	-1.574	-0.118	-8.04933	-14.360	2.594402	-0.08301
	OEMF	-4.69854	-13.73	14.81474	9.97823	17.95471	29.72049
	CGAP	-0.19107	-0.593	-4.70644	-5.0017	0.394664	-0.45563
Endowment effect		-7.8797	66.34	43.72831	-40.162	-2.77828	8.067491
Discrimination effect		92.1203	33.65	56.27169	59.837	97.22172	91.93251
Total W diff		0.196183		0.18055435			0.263911336

Source: Author’s own calculations from survey data.

Conclusion

The central theme of this study was to investigate the driving forces behind gender earning differential and to measure the extent of discrimination at aggregate level for South Punjab and at disaggregate level of each division for comparative analysis. This theme is empirically investigated by applying Oaxaca (1973) decomposition technique by using primary data collected from 1536 employed male and female individuals through multistage random sampling technique of three divisions of South Punjab, Pakistan. The socio-economic drivers of earning differentials in this study may guide economists and policy makers to identify the focal points of discrimination and to minimize the earning differentials between male and female workers.

Aggregate analysis of South Punjab depicts that total log earning differential by gender is 0.1932 (PKR 6644.52). It is found that human capital, region, location, occupation, and employment status are the significant determinants of male and female earning structure and thus these determinants narrow the male-female earnings gap. On the other hand, family characteristics, personal trait of decision empowerment are insignificant determinants of both male and female earning structure and their differential. Decomposition of gender earning differential reports 91.31 percent discrimination in South Punjab.

Disaggregate analysis by gender for each division reveals that log earnings gap by gender is 0.1962

(PKR 7139.53) in Multan, 0.1805 (PKR 6500.5) in Bahawalpur and 0.2639 (PKR 8006.21) in DG Khan division. Decomposition results confirm that education and occupation are the largest contributors to explain gender earning differential in all divisions. Location and family characteristics such as family size and family system are significant contributors in Bahawalpur division while insignificant in other divisions. Decision empowerment and family tie play crucial role in case of Multan and DG Khan division while vice versa in case of Bahawalpur division. It is found that average gender discrimination is 62.89 percent in Multan, 58.05 percent in Bahawalpur and 94.58 percent in DG Khan.

References

Ashraf, J., & Ashraf, B. (1993). An analysis of the male-female earnings differential in Pakistan [with Comments]. *The Pakistan Development Review*, 32(4), 895-904.

Biltagy, M. (2014). Estimation of gender wage differentials using Oaxaca decomposition technique. *Topics in Middle Eastern and North African Economies*, 16(1), 17-42.

Blinder, A. S. (1973). Wage discrimination: reduced form and structural estimates. *Journal of Human Resources*, 8(4), 436-455.

Bowlus, A. J., (2008). Gender wage differentials, job search, and part-time employment in the UK. *Oxford Economic Papers*, 61(2), 275-303.

Duncan, O. D., & Duncan, B. (1955). Residential distribution and occupational stratification. *American Journal of Sociology*, 60(5), 493-503.

- Government of Pakistan. (2018). Labor Force Survey 2017-18. Federal Bureau of Statistics, Statistics Division, Islamabad, Pakistan.
- Government of Pakistan. (2012). Pakistan Economic Survey 2011-12. Islamabad, Ministry of Finance.
- Gupta, N. D., Smith, N., & Stratton, L. S. (2007). Is marriage poisonous? Are relationships taxing? An analysis of the male marital wage differential in Denmark. *Southern Economic Journal*, 74(2), 412-433.
- Kitagawa, E. M. (1955). Components of a difference between two rates. *Journal of the American Statistical Association*, 50(272), 1168-1194.
- Leung, D. (2006). The male/female earnings gap and female self-employment. *The Journal of Socio-Economics*, 35(5), 759-779.
- Mincer, J. (1970). The distribution of labor incomes: a survey with special reference to the human capital approach. *Journal of Economic Literature*, 8(1), 1-26.
- Nyhus, E. K., & Pons, E. (2012). Personality and the gender wage gap. *Applied Economics*, 44(1), 105-118.
- Oaxaca, R. (1973). Male-female wage differentials in urban labor markets. *International Economic Review*, 14(3), 693-709.
- Risse, L., Farrell, L., & Fry, T. R. L. (2018). Personality and pay: do gender gaps in confidence explain gender gaps in wages? *Oxford Economic Papers*, 70(4), 919-949.
- Siddiqui, R., & Siddiqui, R. (1998). A decomposition of male-female earnings differentials. *The Pakistan Development Review*, 37(4), 885-898.
- Yasin, G., Chaudhry, I. S., & Afzal, S. (2010). The determinants of gender wage discrimination in Pakistan: econometric evidence from Punjab Province. *Asian Social Science*, 6(11), 239.

