Educational Attainment, Occupational Choice and Poverty: A Gender Perspective from Pakistan

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Abstract

Education is the most important factor which plays a leading role in human development. Gender disparity in education is an obstacle for sustainable growth and poverty reduction. It is empirically established fact that provision of education to female can make them socially dynamic and economically productive. The dualism in education is one of the causes of wage differential and income inequality. Educational inequality, in Pakistan, though declined but remained a far reaching goal to meet the MDG target for 2015. Available estimates indicated the high incidence of inequality in Pakistan and very little is known of the causative factors. The changes in the earning structure of the labor force occur due to income distortions which arise from education patterns as well as from the way the labor market compensates education within a country. Another important determinant, which adds to persistent inequality, is gender disparity. The paper aims at demonstrating how increased education helps to choose better profession and narrow the income gap, by using gender disaggregated data from the household surveys of Pakistan. In order to find out the effect of different factors on earning inequality, this study used earning function and occupational choice model. The estimated Mincerian earning equation showed that extra year of schooling increased the income for male and female population, while it is stronger for the latter bringing a reduction in income inequality between males and females. Education also helps people choose 'better earning' occupation, and for most provides the chance to be employers and self employed.

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Introduction

Development should in general reflect on the quality of people's lives, creating opportunities and options for shaping their own future. In such a perspective, growth seems irrelevant if it is not pro-poor. Moreover, the trickledown effect must not be just in the form of reduction in the population below the poverty line drawn on the basis of caloric intake, but it must also ensure that essential capabilities of life viz., long healthy life, education and participation in the lives of community are enhanced (Kemal, 2003). There is a strong positive effect of economic growth on enabling environment for poverty reduction through enhanced provision of direct and indirect employment opportunities, social welfare, and infrastructure development that can potentially benefit the poor. However, there is dominant view that economic growth increases the labor demand and reduces poverty. But poverty is also reduced by increasing the productivity of the poor, either by increased access to education or to physical and financial capital.

The analysis of the various factors that affect the income distribution in Pakistan is long overdue. Available estimates indicate that inequality in Pakistan is high and very little is known of the causative factors. The changes in the structure of earnings in the labor force occur due to a number of reasons. Income distortions arise from education patterns as well as the way the labor market compensates educated class. Another important determinant, which adds to income inequality, is the gender disparity. It is common observation that the female labor force earns significantly less than males; which is generally justified by the argument that women tend to work in low-paying occupations. Moreover, women are not allowed to pursue higher or professional

education and discrimination can also cause women to drop out of school or to abstain from participating in the workforce.

Situation in the workplace also contributes towards gender disparity and income inequality. In most of the countries, rural areas exhibit higher inequality as compared to urban areas. The tidy logic once again is the lower educational level of the rural workers as well as lack of infrastructure coupled with large family size. The aforementioned determinants of income differential are mere assertions which need to be verified by empirical evidence. This paper discusses the changes in the income distribution using household data disaggregated by education, gender and location. It focused on several aspects that affect the distribution of income across households.

The increasing return to education implies a widening wage gap between workers with different level of education. The wage differential, in turn, implies a more unequal distribution of earnings at individual and household level. The occupational choices also have an important bearing on the way income is distributed. It is commonly believed that an important determinant of earning differential is differences in human capital (that is educational attainment). Therefore, it is a researchable question to trace out the level of education which gives greater returns and to which segment of the society. Even if the innate ability of the students is randomly distributed, children from richer backgrounds tend to get further through education. These distributional effects are often compounded by the skewed allocation of resources between basic and higher education. In order to find the level of education that provides better returns to the household, this study has focused on estimation of the earning function. Moreover, occupational choices depict how much skill and education will augment the earnings of a household and which

category of earners can be made more productive. This in turn, will be instrumental in lowering the inequality and hence reducing poverty. Thus, it seems imperative to estimate the earning functions for the whole range of earners, self-employed, employers and unpaid family workers. This study estimates the gender wage differentials in the labor market and also estimated the determinants of the probability of being poor to provide econometric evidence on the importance of key socio-economic factors that determine the relative welfare of the individuals and households. The balance of this paper is as follows. Section 2 discusses theoretical framework, section 3 describes the data and methodology, results are discussed in section 4, and section 5 is conclusion and policy recommendation.

Theoretical Framework

The Human Capital model in this study is the extension of Becker (1962) and Mincer (1974) models in order to quantify the returns to investment in education. Since education is the main source of human capital development, large number of studies have estimated the returns to education for different countries [(Psacharopoulos, 1980, 1985, and1994); (Psacharopoulos and Chu Ng, 1992)]. These studies mostly used binary variables instead of continuous variables. There were only few studies available in Pakistan that used the Mincerian Earnings Function approach to examine the returns to education (e.g. Shabbir and Khan, 1991), (Shabbir, 1994), (Nasir and Nazli, 2000). The previous studies estimated the earning function only for wage earners, whereas this study provides estimates for earning functions of all employed groups (employers, self-employed, wage earners, unpaid family workers) by using most recent data sets available in Pakistan. Mincerian earning

function was based on the assumption of uniform rates of return for all schooling.

Occupational choice determines the current earnings as well as the future earnings of individuals which are closely linked with household consumption, health, and general status in the society [Harper and Haq (1997) and Freeman (1971)]. The major factors which can affect the decision of occupational choices are educational levels, experience of particular field and Training.

Data and Methodology

We have used the PIHS 1998-99 and 2001-02 in this study. The sample size for the 1998-99 PIHS was 16,305 households, approximately one third of which was urban. A total of 1,150 PSUs were selected. The survey covered all the four provinces, including Azad Jammu and Kashmir, Northern Areas and FATA.

The sample size of the 1998-99 PIHS survey was large enough to obtain estimates for each province and region (urban/rural). A two-stage, stratified random sampling strategy was adopted for each of the surveys. At the first sampling stage, a number of Primary Sampling Units (PSUs) were selected from the different strata. The enumerators then compiled lists of all households residing in the selected PSUs. At the second sampling stage, these lists were used to select a sample of households from each PSU randomly, in all twelve households were selected in each urban PSU, and sixteen in each rural PSU.

PIHS 2000-01

A sample size of 16,400 households was taken to provide reliable estimates of key characteristics. The entire sample of households (SSUs) was drawn from 1150 Primary Sampling Units (PSUs) out of

which 500 were urban and 650 were rural. In this survey 90 sample households were not covered due to non-response/closed/non-contact and non-cooperation from the respondents in this Survey.

Table 1.1: Profile of the 1998-99 and 2001-02 PIHS samples.

Province	1998-99 PIHS			2001-02 PIHS		
	Urban	Rural	Overall	Urban	Rural	Overall
PSU'S						
Punjab	220	238	458	220	238	458
Sindh	128	136	264	128	136	264
NWFP	72	116	188	72	116	188
Balochistan	52	88	140	52	88	140
AJK	16	28	44	16	28	44
Northern	12	20	32	12	20	32
FATA	-------	24	24	-------	16	16
Overall	500	650	1150	500	642	1142
HOUSEHOLDS						
Punjab	2590	3791	6381	2599	3796	6395
Sindh	1536	2176	3712	1534	2174	3708
NWFP	859	1852	2711	857	1842	2699
Balochistan	612	1404	2016	623	1406	2029
AJK	192	448	640	192	443	635
Northern	143	319	462	144	317	461
FATA	--------	383	383	-------	255	255
Overall	5932	10373	16305	5949	10233	16182
INDIVIDUALS						
Punjab	16758	24619	41377	17143	24636	41779
Sindh	10052	15099	25151	11048	17200	28248
NWFP	6610	14923	21533	6504	14545	21049
Balochistan	5045	10875	15920	5056	10487	15543
AJK	1298	2939	4237	1361	3004	4365
Northern	1188	2453	3641	1089	2482	3571
FATA	-------	3137	3137	-------	2169	2169
Overall	40951	74045	114996	42201	74523	116724

Source: PIHS 1998-99 & 2001-02

A multinomial logit regression analysis was applied for occupational choices. The rationale was, to highlight how investment in education transformed a less productive worker into a more productive worker and thus lead towards more equal distribution of income.

Most econometric analyses do not test if the underlying data permit the pooling over time and across gender, province and region. These analyses therefore, violate a basic assumption for their analysis that the underlying disaggregated function is similar. Pooling dissimilar disaggregated functions violates the econometric requirements necessary to obtain generalized and hence unbiased results from the data. These results lead to the 'one size fits all' type of policy prescriptions that more often than not fail because these are not based on a realistic representation of the real life.

Hence, in view of the above, statistical tests for similarity of function across time, regions, province, and gender is conducted. These tests confirmed that the functions were dissimilar in all the cases tested. It is therefore, incorrect to run regressions at the aggregate level without taking these differences into account explicitly. We had two choices. One was to run the regressions using dummy variables and obtain the required estimates at the disaggregated level or as in this case where degrees of freedom is not really a binding constraint to run the estimations separately for the disaggregate categories. Hence regressions were run separately by time and gender.

In order to find out the effect of different forces on distribution of income this study used earning functions and occupational choice model. Let Y_{mt} represent the income of household m at time t. Where $t = (t_1, t_2)$. Household income is the sum of labor earnings in wage

employment, in self-employment, and other income, summed over all members, all at time t:

$$Y_{mt} = \sum_{i \varepsilon m} Y_{it} \qquad (1)$$

The income function of household m observed at time t may be expressed as

$$Y_{mt} = Y(X_{mt}^{SD}, X_{mt}^{PA}, Y_{mt}^{O}, E_{mt}; \alpha_t, \beta_t) \qquad (2)$$

Where Y_{mt} and Y_{mt}^{O} is the income and other income received by the household and *m* at time *t*. while X_{mt}^{SD} and X_{mt}^{PA} *are v*ectors of socio-demographic characteristics (such as education, experience, experience square, and location etc) and productive assets owned by household *m* at time *t*. E_{mt} is equal to $\left[\left(U_i^w\right), \left(U_i^{Se}\right), \left(V_i^w\right), \left(V_i^{Se}\right)\right]$ which is the error terms in earning equations and occupational choice equations, $\alpha_t = \left(\alpha_t^w, \alpha_t^{Se}\right)$ are the regression coefficients in earning equations and $\beta_t = \left(\beta_t^w, \beta_t^{Se}\right)$ is the multinomial logit coefficient in the occupational choice equations.

For the overall distribution of household income at time *t* we can write equation *2* as follows;

$$Dt = D\left[X_t^{SD}, X_t^{PA}, Y_t^{O}, E_t; \alpha_t, \beta_t\right] \qquad (3)$$

X_t^{SD} and X_t^{PA} factors are regrouped into two overlapping sets that determine labor earnings *(X_t)* and occupational positions *(Z_t).*

Thus, the distribution of household income at time *t* may be rewritten as follows:

$$Dt = D\left[X_t, Z_t, Y_t^O, E_t; \alpha_t; \beta_t\right] \quad (4)$$

In order to parameterize these relationships we use two basic equations; system of occupational-choice equation and earning equation.

System of occupational-choice equation

At time *t*, each individual is classified into only one occupational position that is; employer, wage employee, self-employed workers, or unpaid family workers. Multinomial logit equation used is of the following form;

$$Prob\ (i = Employer)_t = \Delta\ (\ \beta_{j=Et} Z_{ijt} + V_{ijt}\ ) \quad (5)$$

$$Prob\ (i = self\ employed\ worker)_t = \Delta(\beta_{j=set} Z_{ijt} + V_{ijt}) \quad (6)$$

$$Prob\ (i = wage\ employee)_t = \Delta(\beta_{j=wt} Z_{ijt} + V_{ijt}) \quad (7)$$

In each year, occupational position equations are estimated separately for men and women.

Earning Equation

Let lnY_{ijt} denote the log earnings of individual *i* if he or she works in sector *j* at time *t*. Mincerian earning functions will be used separately for each sex and occupational position in each year.

$$\ln Y_{ijt} = \alpha_{jt} X_{ijt} + U_{ijt} \quad (8)$$

Where as X_{ijt} includes, for each individual, an education splines, experience, square of experience, and the occupation.

The estimation method will be least square weighted by survey sampling weights. In addition to this we also find out the impact of different levels of education on poverty reduction by using logit model and for that purpose we have used probability of being poor as dependent variable, and we used experience and different levels of education such as middle, matric etc as independent variables.

3. Results and Discussion

3.1 Earning Function

The Gender analysis is considered as predominant theme for any development policy while the elaborative analysis of gender earnings is often missing in the policy framework. In this study comprehensive analysis of Gender Earning Function was obtained in a developing country (Pakistan) context where gender plays an important role in deciding profession. The explanatory variables of the earning function comprised of year of schooling (education), experience (age minus year of education minus school starting age), experience square, and a dummy variable for gender (male = one, zero otherwise).

The regression results were obtained in Table 1 for overall sample, male and female respectively for the year 1998 and 2001. All the coefficients were having expected sign, significant ($p > 0.05$) and consistent with prevailing economic wisdom. The coefficient of the education (0.105) showed that 10.5 percent increase in earnings resulted from one extra year of school in year 1998-99 whereas in 2001-02 it was (0.093) which showed the 9.3 percent increase in earnings accompanied a one year increase in schooling. The coefficient of experience was positive as expected, however the parameter of $(Exp)^2$ indicated negative coefficient implying concavity of the earning function and at some threshold level, the impact of experience starts to be negative.

Table 1: Regression results of earning function for Pakistan (overall, Male and Female) for the year 1998-99 and 2001-02

	Over all Pakistan		Male		Female	
Parameters	**1998-99**	**2001-02**	**1998-99**	**2001-02**	**1998-99**	**2001-02**
	Coefficient	**Coefficient**	**Coefficient**	**Coefficient**	**Coefficient**	**Coefficient**
Constant	4.713*** (188.915)	5.320*** (186.681)	6.400*** (294.558)	6.646*** (260.237)	4.616*** (55.179)	5.451*** (64.423)
Experience	0.065*** (54.173)	0.069*** (50.197)	0.069*** (59.064)	0.073*** (52.515)	0.065*** (13.182)	0.063*** (12.073)
(Experience)^2	-0.001*** (-35.572)	-0.001*** (-35.227)	-0.001*** (-39.461)	-0.001*** (-37.225)	-0.001*** (-9.810)	-0.001*** (-9.740)
Education	0.105*** (75.265)	0.093*** (60.374)	0.093*** (68.426)	0.087*** (57.139)	0.181*** (33.569)	0.132*** (25.397)
Dummy (Male)	1.699*** (104.094)	1.363*** (72.966)	-	-	-	-
Adj R^2	0.49	0.36	0.27	0.21	0.29	0.20
F-statistics	5312.993	2994.104	2394.012	1641.805	390.362	219.622

***** *Showed that the coefficient is significantly different from zero at 0.01 probability level and t-ratios are in parenthesis.*

The positive coefficient on the gender dummy (Male) in overall sample was indicative of gender gap in labor market earnings Being male increases income by 169.9% than being female. Male earned significantly more relative to their female counterparts. But the separate analysis for male and female showed that females enjoyed a higher return of 18.1 percent and 13.2 percent to education due to narrow base of income in 1998 and 2001 respectively. These results were consistent

with the results of Atlas and Bourguignon (2004) in case of Indonesia as well as that of Fields and Soares (2004) for Malaysia and Asadullah (2005) for Bangladesh. The coefficient of experience showed substantial increase in wages with each additional year spent in the labor market for both male and female workers. The results for the year 1998 showed that five years of experience earned 35 percent higher wages for male workers and 32 percent higher wages for female workers as compared to those with no experience.

Similar results were revealed for the year 2001 where five years of experience earned 37.9 percent higher wages for male workers and 32.5 percent higher wages for female workers compared to male and female counterparts with no experience respectively. These results were consistent with prior studies in Pakistan (see for example; Khan and Irfan, 1985; Shabbir, 1991; Ashraf and Ashraf, 1993 and Nasir, 1999).

3.2 Earning Function with various level of Education by Gender

Many studies indicated substantial differences in earnings across school levels in various countries. Van der Gaag and Vijverberg (1989) noted that an increase of one year in elementary, high, and university education showed an increase of 12 percent, 20 percent, and 22 percent in earnings respectively. Nasir & Hina (1999) showed that an increase of one year in education at middle level increased the earning by 9.8 percent for Male workers and 2.9 percent for female workers.

Table 2: Regression results of earning function equation with level of education in Pakistan (Overall, Male and Female)

Parameters	Over all Pakistan		Male		Female	
	1998-99	2001-02	1998-99	2001-02	1998-99	2001-02
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Constant	4.987	5.537***	6.729***	6.936***	5.046***	5.675***
	(183.933)	(183.338)	(290.227)	(257.273)	(56.189)	(63.359)
Experience	0.059***	0.065***	0.065***	0.069***	0.043***	0.049***
	(48.805)	(47.034)	(54.986)	(49.651)	(9.119)	(9.609)
(Experience)^2	-0.001***	-0.001***	-0.001***	-0.001***	0.000***	-0.001***
	(-33.148)	(-34.464)	(-38.074)	(-36.586)	(-6.743)	(-8.071)
urban	0.032**	-0.161	-0.034**	-0.204	0.366***	0.049
	(2.462)	(-11.238)	(-2.645)	(-13.900)	(7.548)	(1.011)
Punjab	-0.066***	0.015	-0.075***	-0.004	0.006	0.127**
	(-4.698)	(1.021)	(-5.441)	(-0.247)	(0.120)	(2.645)
NWFP	-0.204***	0.097***	-0.236***	0.055**	-0.061	0.382***
	(-9.960)	(4.052)	(-11.575)	(2.297)	(-0.703)	(3.678)
Balochistan	0.183***	-0.061	0.181***	-0.113***	0.006	0.372**
	(6.431)	(-1.733)	(6.663)	(-3.235)	(0.004)	(2.077)
Male	1.783***	1.436***	--------	-------	--------	--------
	(107.585)	(76.246)				
Middle	0.506***	0.442***	0.487***	0.429***	0.886***	0.574***
	(24.892)	(20.176)	(25.488)	(19.880)	(7.806)	(5.212)
Matric	0.759***	0.727***	0.705***	0.713***	1.331***	0.890**
	(39.928)	(34.459)	(38.883)	(33.895)	(15.121)	(9.799)
Intermediate	1.035***	1.006***	0.925***	0.950***	1.768***	1.396***
	(35.188)	(31.200)	(32.304)	(29.058)	(15.632)	(11.857)
BA	1.337***	1.264***	1.210***	1.146***	2.215***	1.736***
	(40.727)	(35.291)	(37.853)	(30.829)	(17.526)	(15.502)
Professional	1.758***	1.653***	1.560***	1.500***	2.713***	2.414***
	(43.232)	(40.152)	(38.849)	(35.162)	(18.859)	(18.685)
Adj R^2	0.48	0.36	0.26	0.21	0.28	0.22
F-statistics	1690.036	982.230	612.262	438.885	102.424	65.925

********* *Showed that the coefficient is significantly different from zero at 0.01 probability level and t-ratios are in parenthesis.*

The results obtained in Table 2 above revealed that returns to each year of education for Male workers at Matric level were 1.4 times; 1.9 times for inter, 2.5 times for BA & 3.2 times and higher for professionals as compared to the middle. Similarly for female workers the results at matric level were 1.5 times, 2 times for inter, 2.5 times for BA & 3.1 times higher for professionals as compared to the worker with middle class qualification. These results were similar with the previous studies (see for example; Hamadani, 1977; Haque, 1977; Khan and Irfan, 1985 and Shabbir, 1991) but these results were relatively lower than the results of Nasir and Hina, 2000). The author showed that returns to each year of education for male workers at matric level were three times, six time for degree education and approximately seven times higher for professional education than those of middle school years. Likewise for females' workers the results were four times higher for matric, eight times higher for inter, thirteen times higher for BA and twenty times higher for professional degree holders as compared to the return for middle class. It can safely be said that as workers with increased number of educational years equipped with skills will definitely add to their earnings, as a person with more professional education and training is more likely to produce innovative ideas hence get promotion and increased income. The difference was perhaps due to dependent variable (only wage earners). In the year 2001, returns to each year of education for Male workers at Matric level were 1.66 times, 2.2 times for inter, 2.67 times for BA and 3.5 times higher for professional as compared to the returns of worker with middle class schooling. The analysis showed that those who have professional degree, received highest returns followed by BA. These results were again in line with other studies in Pakistan mentioned earlier.

This study analyzed different dimensions of labor income inequality and discussed education's central role in explaining these differences. Overall analysis showed that females were getting lesser rewards as compared to their male counterparts. Experience has also appeared as major contributor towards wage differential and showed substantial increase in wages with each additional year of work experience. However, returns to experience was more for men than for women. Estimates showed that each year of schooling augments the earnings of individuals almost from one to three percent.

3.3 Probability of being poor

A logistic regression model was estimated for 'probability of being poor' on experience and different levels of education. The results are reported in Table 3.The multivariable logistic regression model were estimated to determine the statistical association of probability of being poor and the independent variables were: gender (male=1, Female=0), experience (in years), experience square, Middle, Matric, Inter, BA, and Professional were introduced as dummies for different levels of education.

Table 3: Logistic regression model of being poor with different level of education (over all Pakistan)

Parameters	Over all				Male				Female			
	1998-99		2001-02		1998-99		2001-02		1998-99		2001-02	
	β	Odds ratio	β	Odds ratio	β	Odds ratio	β	Odds ratio	β	Odds ratio	β	Odds ratio
Constant	3.86	47.75	2.92	18.51	1.12	3.05	0.13	1.14	4.25	70.20	2.35	10.51
Experience	-0.05	0.96	-0.05	0.95	-0.05	0.95	-0.06	0.94	-0.04	0.96	-0.03	0.97
Middle	-0.86	0.45	-0.79	0.45	-0.85	0.42	-0.81	0.44	-1.04	0.35	-0.81	0.44
Matric	-1.60	0.20	-1.53	0.21	-1.48	0.23	-1.48	0.23	-3.34	0.04	-1.77	0.17
Intermediate	-2.23	0.11	-2.20	0.11	-1.97	0.139	-1.95	0.14	-3.82	0.02	-2.46	0.09
BA/B.Sc	-3.38	0.03	-3.51	0.03	-2.99	0.05	-3.23	0.04	-4.51	0.01	-3.32	0.04
Professional	-5.12	0.01	-4.7	0.01	-4.28	0.01	-3.87	0.02	-6.31	0.002	-4.93	0.007
Male	-2.77	0.1	-2.92	0.05	-	-	-	-	-	-	-	-

The odds ratio were defined as just two odds that are compared to determine whether one group has higher or lower odd ratios of binary outcome. A number greater than one, indicates a positive association between an independent and the dependent variable. While a number between zero and one, indicates a negative association. (John P. Hoffmann, 2004) The odds ratio of high chance of being poor among female was about 0.054 times the odd ratios of being poor among males. The results depicted that there was a negative relationship between probability of being poor and different level of education. It means that higher levels of education reduce the probability of being poor gradually. Hence, education level has important bearing in reducing poverty in the country.

3.4 Occupational Choices

In order to find out the factors determining the occupational choices, multinomial logit regression model was applied. The results of the regression were presented in table 4 below.

The analysis of the model for the year 1998-99 showed that males were more likely than female to work as employer, self-employed & wage earners relative to the unpaid family workers. The odd ratios of males working as employer relative to unpaid family worker were about 2.950 times (or 195 percent higher) than the odd ratios of females reporting employers relative to the unpaid family workers.

The odds ratio of males working as self-employed relative to unpaid family worker estimated to be 2.25 times (or 125.4 percent higher) than the odds ratio of females reporting self-employed relative to the unpaid family workers. The odds ratio of males working as wage earner relative to unpaid family worker was about 1.850 times (or 85

percent higher) than the odds ratios of females reporting wage earners relative to the unpaid family workers.

Table 4: Multinomial logit model for different employment categories for Pakistan (over all, male and female)

Employment status /Parameters		Over all				Male				Female			
		1998-99		2001-02		1998-99		2001-02		1998-99		2001-02	
		ß	Odds Ratio	ß	Odds Ratio	ß	Odds Ratio	ß	Odds Ratio	ß	Odds Ratio	ß	Odds Ratio
Employer	**Constant**	-2.08		-4.98		-1.56		-3.56		-0.57		-4.37	
	Education	0.23	1.26	0.24	1.27	0.25	1.279	0.23	1.25	0.22	1.247	0.37	1.45
	Experience	0.05	1.06	0.06	1.06	0.07	1.078	0.08	1.08	0.01	1.01	0.03	1.03
	Male	1.08	2.96	1.81	6.09	--	--	--	--	--	--	--	--
Self-employed	**Constant**	0.13	--	-2.63	--	0.35	--	-0.68	--	1.634	--	-1.32	--
	Education	0.14	1.15	0.19	1.22	0.16	1.17	0.18	1.20	0.161	1.18	0.31	1.36
	Experience	0.05	1.05	0.08	1.08	0.07	1.08	0.10	1.11	0.002	1.002	0.03	1.03
	Male	0.81	2.25	2.39	10.87	--	--	--	--	--	--	--	--
Wage-earners	**Constant**	1.52		0.29		1.36		1.00		1.66		0.557	
	Education	0.20	1.21	0.19	1.21	0.20	1.23	0.18	1.19	0.29	1.33	0.34	1.40
	Experience	0.02	1.02	0.04	1.04	0.04	1.04	0.06	1.06	0.02	1.002	0.02	1.02
	Male	0.62	1.85	1.07	2.91	--	--	--	--	--	--	--	--

Reference Category: Unpaid Family Workers

Thus, one unit increase in education was associated with a 25.7 percent increase in the odd ratios of working as employer relative to unpaid family workers. There was 15.3 percent increase in the odd ratios of working as self-employed relative to working as unpaid family workers. The increase in the odd ratios of 21.8 percent wage earners was indicated relative to working as unpaid family workers.

The results revealed that one unit increase in experience showed 5.6 percent increase in the odds of working as employers, relative to the odds of working as unpaid family workers. Similar increase was observed in the odd ratios of self-employed workers corresponding to the odd ratios of unpaid family workers. Likewise one unit increase in the

experience showed 2.4 percent increase in the odd ratios of working as wage earner relative to the odd ratios of unpaid family workers.

The results implied that more education provides opportunity to people move out from unpaid family workers category to employer, self-employed and wage earners status by adding to their skills as well as to their innovative capabilities. Similarly experience offers people to come out of the unpaid family workers status to employer, self-employed and wage earners categories.

The results, for year 2001, also revealed that males were more likely than female to work as employer, self-employed & wage earners relative to the unpaid family workers.

Thus, one unit increase in education showed, 27 percent increase in the odd ratios of working as employer relative to unpaid family workers. Similarly, there was an increase of 21.5 percent in the odd ratios of working as self-employed relative to working as unpaid family workers. Hence, one unit increase in experience depicted 6 percent increase in the odd ratios of working as employers relative to the odds of working as unpaid family workers.

In concrete, the results revealed that the odd ratios of employers, self-employed and wage earners were significantly higher than unpaid family workers. The country's labor force comprised of unpaid family workers and their earnings are much below the other categories of workers. This not only adds to income inequality and hence poverty but also to low level of living. Therefore, the education policy must put a thrust in scaling up the education of these unpaid family workers to reduce inequality in earning. The education should include vocational training especially of the female labor force.

Conclusions and Recommendations

Policy formulation is a continuous process and need to be revisited in order to take account of evolving differences over time. Moreover, this analysis indicates a clear gender disparity in earnings and in the contribution of different attributes of the earnings functions. This fact reiterates the need for gender specific policy initiatives for maximizing impact of earnings disparities and overall income and expenditure inequality.

This study highlighted that investment in human capital especially amongst women by providing them better education and skills at all levels adds significantly to earnings and helps in reducing inequality. There is no tool for making development more effective than the empowerment of women through better education and skills. To raise economic productivity the investment in women labor force is a policy option in front of policy makers. This study also re-enforces the existing findings.

Women are the major part of unpaid family worker category and by providing them, with the education and training, this major segment of labor force can be converted into active labor force and this will also serve a dual purpose of poverty reduction and inequality reduction. The more technical training available to women, the more likely they are to get higher paying jobs, so investment in these avenues will empower our women and will be instrumental in achieving speedy growth and sustainable development. In this regard development of labor markets especially for female labor will greatly facilitate income growth and reduce gender inequality.

Future research implication emerges from the analysis is regarding the availability of good data for effective policy analysis. Good

quality research requires convenient access to accurate, timely data for analysis. Such data and analysis should serve to inform discussion about policy alternatives, to monitor progress toward strategic goals. Better and more recent data can greatly facilitate effective research and helps to formulate better policies for income growth, inequality mitigation and poverty reduction.

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