

Gender Inequality in Labour Force Participation: An Empirical Investigation

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1. INTRODUCTION

Economic growth and development of the nations largely depend on the quantity and quality of their labour force. In Pakistan, a sizeable segment of population is considered as out of labour force. For instance, the overall labour force participation rate for the age 15 years and above remained roughly in the range of 49 percent to 53 percent during 1974-75 to 2012-13. This means that of the total population in 2012-13, aged 15 years and above, 53 percent is economically active or part of labour force whereas 47 percent is economically inactive or out of labour force. And more than 75 percent of the women population is considered as economically in-active. In addition, the labour market statistics show that a smaller proportion of women than men, age 15 years and above, are employed. The unemployment rate among women is higher than men. One of the possible explanations of this gender gap is gender discrimination in the labour market.

In this context, this paper aims to analyse the behaviour of female and male in labour force participation by empirically investigating the determinants of labour force participation, and access to paid job for both female and male. It also shed light on occupational gender inequalities. It is believed that these types of analyses help designing better policies to increase employment opportunities for both females and males. They also facilitate suggesting various practical measures that can be incorporated in gender sensitised employment policies that in turn could lead towards greater labour force participation.

The rest of the paper is as follows: Section 2 presents the trend in labour force of Pakistan; Section 3 gives the both the theoretical and empirical review of literature on gender discrimination in the labour market; Section 4 describes the empirical strategy employed in the paper; Section 5 gives the estimated results and Section 7 concludes the paper by mentioning some relevant policy implications.

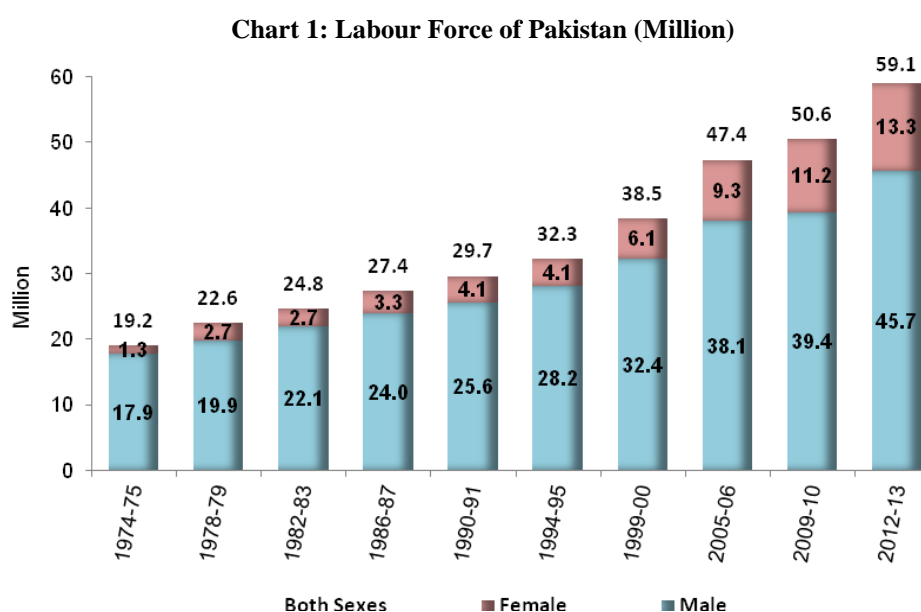
2. TREND IN LABOUR FORCE

The section presents sex disaggregated trend in labour force of Pakistan for the period 1974-75 to 2012-13.

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2.1. Magnitude of Labour Force

Total labour force of Pakistan, aged 15 years and above, constitutes 19.2 million in 1974-75 of which 1.3 million were women and 17.9 million were men. In 2012-13 it increased to 59.1 million of which 13.3 million were women and 45.7 million were men (Chart 1). This indicates that male labour force dominates over the female labour force. However, it is worth mentioning that in 1974-75 women labour force constitutes less than one-tenth of men labour force whereas in 2012-13 this proportion gone up to more than one-fourth.



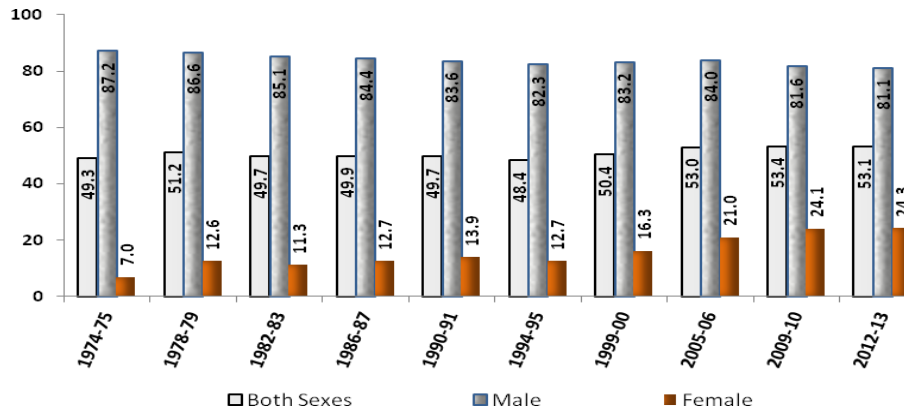
Source: Estimates based on Labour Force Survey (various issues).

2.2. Labour Force Participation Rate

The refined Labour Force Participation rate (LFP) is the ratio of labour force (employed and unemployed but seeking work) to the population of respective age cohort. It is therefore, a key determinant of the currently active population or an indicator of the magnitude of the supply of labour in the economy and a crucial component of long term economic growth.¹ The LFP rate can be used as an essential tool in designing employment policies as well as of human resource development and training policies.

In Pakistan, the overall LFP rate remained roughly in the range of 49 percent to 53 percent during 1974-75 to 2012-13. This means that of the total population in 2007-08, aged 15 years and above, 53.1 percent was economically active or part of labour force whereas 47.5 percent was economically inactive or out of labour force.

¹The employed include those who are in paid employment as well as those who are unpaid family helpers.

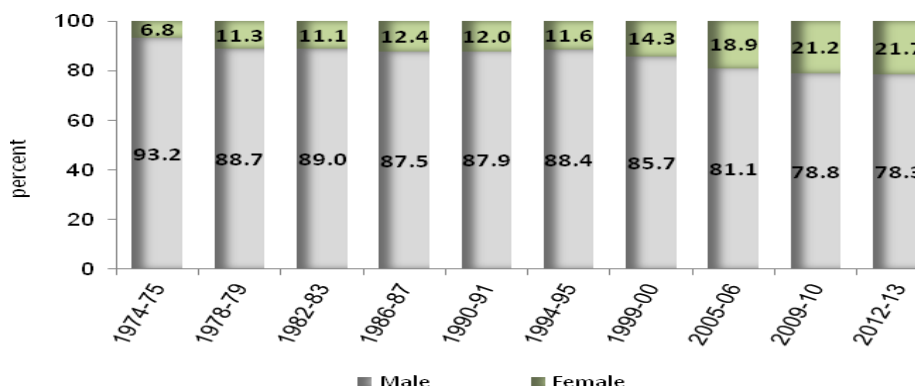
Chart 2: Labour Force Participation Rate (percent)

Source: Federal Bureau of Statistics, Labour Force Survey.

As for the LFP rate by gender, the participation rate of men declined from 87.2 percent in the 1974-75 to 83.6 percent in 1990-91 while remained more than 80 percent during the 1990s, in the 2000s and 2010s. As against, the LFP rate of women persistently rose from 7 percent in 1974-75 to 24.3 percent 2012-13. Apparently, this indicates that the overall gender gap in labour force participation rates has tended to reduce in Pakistan. However, it is still distressing that of the total female population 15 years and above only 24 percent is part of labour force compared to 81 percent of their male counterpart.

2.3. Employed Labour Force

Chart 3 gives the share of male and female in the employed labour force of Pakistan. According to this Chart, 93.2 percent of the total employed persons were male and only 6.8 percent were female in 1974-75. With time, the share of women in employed labour force has increased while that of male has declined. In 2012-13, female constitute 21.7 percent and male constitute 78.3 percent of the total employed persons in Pakistan.

Chart 3: Share of Female and Male in Employed Labour Force (percent)

Source: Federal Bureau of Statistics, Labour Force Survey.

3. GENDER GAPS IN LABOUR MARKET: A REVIEW OF LITERATURE

Gender discrimination in the labor market is a complex subject and theories explaining this discrimination can be classified into two broad categories: feminist theories largely directed towards the “Devaluation Hypothesis” and neo-classical human capital theories leading towards “The Specialised Human Capital Hypothesis.”

3.1. Feminist Theories and the Devaluation Hypothesis

Feminist theories emphasise that women's disadvantaged position in the labor market is caused by, and is a reflection of patriarchy as well as the subordinate position of women in society and in the family. In other words, the role of gender stereotypes held by employers and societies at large affect differential occupational attainment of men and women. These theories predict that women gravitate towards occupations that are most consistent with their “female” characteristics e.g. caring, nurture [Anker (1998)]. Moreover, feminists argue that occupations classified as “female occupations” tend to receive substantially lower wages than male occupations. This wage penalty on female occupations is thought to be a form of sex discrimination. The assignment of lower wages to occupations done mostly by women may also reflect a culture of discrimination against women's work. Feminists tend to believe that occupations with more female workers, on average, command lower wages than comparable occupations with more male participants. This theory is referred to as the Devaluation Hypothesis [Ruijter and Huffman (2003); Cohen and Huffman (2003) and Tam (1997)].

3.2. Neo-Classical Theories and the Specialised Human Capital Hypothesis

Emergence of non-competing groups in the labor market in the 1880s set the theme for occupational specialisation while creating gender segmentation in the economic system. The Specialised Human Capital Hypothesis based on two basic ideas of human capital theory can be used to explain gender inequality in the market [Becker (1975)]. First, investment in any human capital is costly and thus has to be compensated to ensure its adequate supply. Just as employers have to compensate for workers' investments in general human capital is required for their work. They also have to compensate for workers' investments in specialised human capital. Second, the wage premium for specialised human capital depends on the supply and demand for that particular kind of specialised human capital. The supply and demand for a skill are contingent on a wide range of factors. The investment cost of a skill is often an important factor [Tam (1997)].

3.3. Empirical Findings of Earlier Research

Tam (1997) examines the Devaluation and the Specialised Human Capital Hypotheses to explain the wage effects of occupational sex composition in the United State by using data of Population Survey. His findings entails that differences in the length of specialised training across occupations and industries, together with a few demographic and human capital attributes, were able to completely explain most of the sex composition effects among women and men and whites and blacks. The central results are difficult to reconcile with the Devaluation Hypothesis but are consistent with the Specialised Human Capital Hypothesis. However, the issue turns to access to education and training opportunities by women.

Semyonov and Frank (1998) in their analysis of data on 56 countries show that measures of nominal segregation are not equivalent to measures of hierarchical inequality. They further argue that occupational segregation should not be equated with occupational inequality. Findings are illustrated by means of two summary indices - SEGR (nominal segregation) and ORDI (ordinal status inequality).

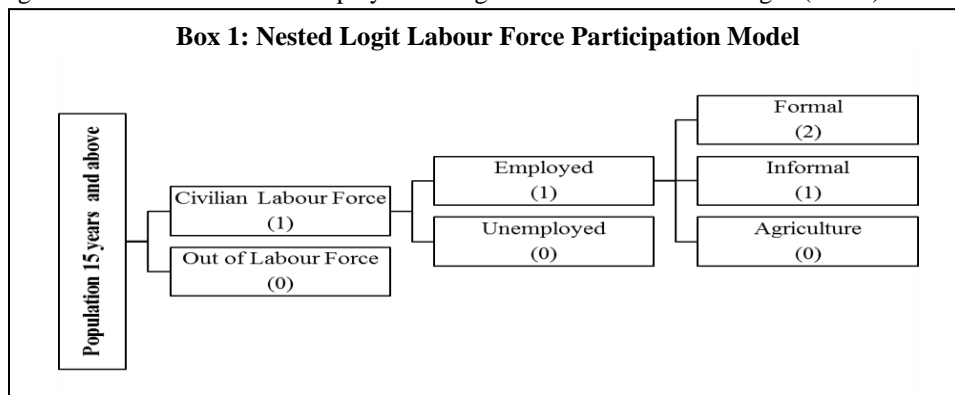
Manpower Research and Statistics Department, Singapore (2000) conducted a study of occupational segregation to determine the extent to which women and men are employed in different occupations and changed over time in Singapore. Moreover, they examined the degree to which women have entered traditionally “male” occupations and vice versa. They also discussed causes for occupation segregation and computed two summary statistics to highlight gender disaggregation i.e. the Index of Dissimilarity (ID) and the Marginal Matching (MM) Index.

Blackburn, Brooks, and Jarman (2005) discussed the effect of standardisation on the measurement of segregation in 16 developed countries with different occupational sample sizes. They established an inverse relation between horizontal and vertical segregation illustrating that increases (decreases) in vertical segregation bring decreases (increases) in horizontal segregation.

Chzhen (2006) explores the role of labor market discrimination in determining occupational distributions of men and women in Europe. Using data from the eighth wave (2001) of the European Community Household Panel (ECHP), the paper documents the degree of occupational segregation in a sample of three Western European countries with different occupational sex segregation regimes namely Denmark, Germany and the United Kingdom (UK). The result shows that labor market discrimination appears to play the largest role in Germany, though the overall degree of discrimination does not vary substantially across the three countries.

4. EMPIRICAL STRATEGY

The empirical strategy adopted in this study consists of estimating a nested logit model of labour market participation. In this model, the labour market outcomes can be divided into a three-level possibility framework. The first level consists of the possibilities of whether or not a person is part of the labour force. The second level is a possibility of employed and unemployed for those who decide to participate in labour market and leaves the non-participants as they are. The third level possibilities distinguish between formal, informal and agriculture for those who are employed leaving the other branches unchanged (Box 1).



The computation of above mentioned possibility framework requires the following three distinct steps. In the first step a logit model for labour force participation is estimated by using a dichotomous variable having value 1 for either employed or unemployed and zero for all others. In the second step, another logit model for employed is estimated by using a dichotomous variable having value 1 for employed and zero for unemployed. Finally, a multi-logit model for occupational choices is estimated by using a variable having value zero for agriculture, 1 for informal and 2 for formal sector. This three step estimation is applied separately for all male and female aged 15 years and above in 2012-13. Heckman procedure is used to avoid selectivity bias.

In line with economic theory, a set of explanatory variables are used in the estimation of above mentioned empirical framework. These include a set of educational dummies indicating various highest level of educational attainments. It also includes demographic variables like age and square of age, marital status and family size together with regional dummies. In order to get an idea of reservation wage family income is also included in the analysis (complete list of variable is available in Appendix).

Micro-dataset of Pakistan Labor Force Surveys 2012-13 is employed for empirical investigation. The survey collects comprehensive information on various activities of workers. The information about employment status and distribution of employed labour force by occupation categories, gender and regions is particularly important for this study. A comparison of LFS with other data sources shows the superiority of LFS because of greater internal and external consistencies [Zeeuw (1996)]. For the purpose of our analysis we restrict our sample to persons of 15 to 65 years of age in both years.

5. ESTIMATED RESULTS

This section presents the results of the estimated three step nested logit framework discussed in empirical strategy. These logit equations were regressed on a set of independent variables like age (a proxy for experience), education level, household size, marital status, urban etc by using micro-datasets of Labour Force Survey (LFS) 2012-13. Based on these estimated equations, three sets of probabilities including labour force participation, employment and formal, informal and agriculture were estimated each with respect to education levels by gender. Almost all variables included in the analysis are statically significant and have expected signs (Table A2).

The aim of estimation of three step nested logit framework is to compute the probabilities of various outcome with respect to educational attainment, therefore, the regression estimates, using the logit and multi-logit modes, are provided in the Appendix.

5.1. Probabilities of Labour Force Participation

Table 1 shows the resulting probabilities of LFP and Not Economically Active (NEA) women and men (15 years and above) with respect to level of education for 2012-13. These probabilities show three patterns: (1) probabilities of LFP are increasing with the level of education in women and U-shaped (decreasing till intermediate and then increasing) in men, (2) technical education plays a vital role in LFP, reflected through higher probabilities both in male and female, and (3) there are significant differences in probabilities among men and women with same level of education.

It is ten times more likely that a woman with primary education would be NEA as compared to a primary pass man. Similarly, it is less likely that a woman primary education find a place in labour market compared to a woman with graduate or post graduate levels of education (Table 1). For instance, in the case of a woman having only primary education, the chances of being NEA is more than 90 percent. For women with postgraduate degrees however it declines to around 50 percent. This is indicative that investing in female education has a positive impact on labour force participation.

Table 1

Probabilities of Labour Force Participation by Level of Education and Gender based on Logit Regression – 2012-13

Level of Education	Female Sample		Male Sample	
	LFP	NEA	LFP	NEA
Primary	0.0938	0.9062	0.9022	0.0978
Matric	0.0912	0.9088	0.8498	0.1502
Intermediate	0.1164	0.8836	0.7350	0.2650
Graduate	0.1968	0.8032	0.8110	0.1890
Post Graduate	0.4871	0.5129	0.8877	0.1123
Technical Training	0.2605	0.7395	0.9806	0.0194

This trend is not pronounced in men as in women. In men, probability of labour force participation is 0.90 at primary level, which is relatively higher and then it declined to 0.73 at intermediate and then subsequently increased to 0.88 at post graduate level. This trend shows that primary, matric and post graduate are terminal education levels where large number of men dropout from education and join labour force, while intermediate and graduate level of educations are not terminal level where a sizeable portion of educated men prefer to continue their education.

Moreover, the probability of a woman or man with technical training being part of the labour force holds more significance than the probability of education levels in both men and women. For example, the probability of a woman with technical education being a part of the labour force is almost one-third, while for males it is more than 98 percent. This is greater than the rest of the education categories combined except post graduation in case of women. Finally, the probability of a man being part of the labour force as compared to a woman with same level of education is higher in all education levels. In case of women with only primary or matric education, the chances of being NEA is more than 90 percent, while for men with only primary education the chances of being NEA is slightly less than 10 percent.

5.2. Probabilities of Access to Paid Jobs

Table 2 gives the gender disaggregated probabilities of being employed and unemployed with respect to level of education in 2012-13. These probabilities reveal two important messages: (1) the probabilities for being employed are higher for men as compared to women at every level of education, (2) unemployment in both male and

female increased with increasing levels of education and peaked at post graduate level in men and at graduate level in women afterward it decline. Moreover, chances of being unemployed with technical education is low in both men and women. Moreover, probability of being employed is highest at post graduate and technical education in women while for men at primary and technical education level.

Table 2

*Probabilities of Access to Paid Jobs by Level of Education and Gender
based on Logit Regression – 2012-13*

Level of Education	Female Sample		Male Sample	
	Employed	Unemployed	Employed	Unemployed
Primary	0.8711	0.1289	0.9621	0.0379
Matric	0.7938	0.2062	0.9452	0.0548
Intermediate	0.7757	0.2243	0.9256	0.0744
Graduate	0.7754	0.2246	0.9133	0.0867
Post Graduate	0.8553	0.1447	0.9070	0.0930
Technical Training	0.9156	0.0844	0.9735	0.0265

What explains the differences in probabilities of employment? There are three possible explanations: (1) vertical segmentation in labour market, (2) different reservation wages for men and women, and (3) higher demand for low skilled labour force.

The argument of vertical segmentation in labour market explains that men and women are working in different occupations, which require different level of education attainment and skills. It can be said from the pattern of probabilities that labour market in Pakistan creates greater job opportunities for women in elementary occupations or occupations with higher level of education. As a consequence, there are higher probabilities of getting job for women with primary level of education or post graduate level of education. This also explains the low LFP at mid-level of education. The relatively high unemployment at mid-level education discouraged other women to enter in the labour force.

The reservation wage argument explains that women with graduate and post graduate level of education might have higher reservation wage—the lowest wage rate at which a worker would be willing to accept a particular type of job—as compared to men with same level of education. This argument is based on the assumption that women's reservation wage depends on her marital status and family earnings. This implies that reservation wage of a woman belonging from a family having low income would be low as compared to the reservation wages of a woman belonging from a family having high income.

The third explanation is linked to macroeconomic environment. With low economic growth and decline private investment as a percentage of GDP created less opportunities for highly qualified and skilled men and women. Consequently, the probabilities are higher at either primary level or with technical education.

5.3. Probabilities of Gender Inequalities in Formal Job

Table 3 shows the computed probabilities for women and men by three broad categories: namely agriculture, informal and formal sectors with their associated levels of education in 2012-13. The probabilities that women work in agriculture sector is higher compare to men at all level of education. Moreover, among women probability of being working in agriculture sector is high with primary and matric educational levels and it further increases with technical education. In contrast, probabilities of being in agriculture is lower compared to other sectors within male sample and it declining with increase in level of education. There is less than five percent chances that an employed man with graduate or postgraduate level of education working in agriculture sector.

Another striking finding is that probability of a man working is informal sector is high compared to women at all level of education. However, probabilities of working in informal sector decline with increase in education level both in women and men. Finally, there is mixed pattern in probabilities working in formal sector. These probabilities vary among both men and women depending on their levels of education, for instance, chances of women working in formal sectors increase with levels of education and are highest among women with post graduate degrees and professional education. Moreover, the probability that a woman would be working in a formal sector is high for intermediate and postgraduate levels compared to men with similar qualifications. This is largely because women with intermediate and postgraduate levels of education are generally employed in education institutions.

Table 3

*Probabilities of Economic Sectors by Level of Education and Gender
based on Multi-Logit Regression – 2012-13*

Level of Education	Agriculture	Informal	Formal	Sum
For Female Sample				
Primary	0.5743	0.3478	0.0779	1.0000
Matric	0.3901	0.2910	0.3189	1.0000
Intermediate	0.1789	0.1278	0.6933	1.0000
Graduate	0.3644	0.1305	0.5051	1.0000
Post Graduate and Professional	0.1499	0.0395	0.8106	1.0000
Technical Training	0.5852	0.3860	0.0288	1.0000
For Male Sample				
Primary	0.1296	0.6387	0.2317	1.0000
Matric	0.0862	0.5472	0.3666	1.0000
Intermediate	0.0590	0.4054	0.5356	1.0000
Graduate	0.0310	0.2931	0.6759	1.0000
Post Graduate and Professional	0.0162	0.1780	0.8058	1.0000
Technical Training	0.0293	0.7899	0.1808	1.0000
Difference (Female - Male)				
Primary	0.4447	-0.2909	-0.1538	0.0000
Matric	0.3039	-0.2562	-0.0477	0.0000
Intermediate	0.1199	-0.2776	0.1577	0.0000
Graduate	0.3334	-0.1626	-0.1708	0.0000
Post Graduate and Professional	0.1337	-0.1385	0.0048	0.0000
Technical Training	0.5559	-0.4039	-0.1520	0.0000

6. CONCLUSION AND RECOMMENDATIONS

The role of labour market in attracting both female and male workers and providing decent jobs to them is a complex matter and requires empirical investigation in both developed and developing countries including Pakistan. An attempt is made in this paper to investigate this issue in a comprehensive manner by focusing on three aspects including labour force participation, access to paid jobs and inequality in accessing formal jobs for 2012-13 by applying a nested logit model. The result shows that women are highly disadvantaged in labour force participation reflected through estimated probabilities. This is attributed not to less human capital among women as compared to men but to unobservable factors called discriminatory factors. It is hypothesised that once these unobservable factors are eliminated from society, women labour force participation as well as overall labour force participation will increase in Pakistan.

A prime reason of less participation of women in labour force is their less chances of being employed and has higher chances of unemployment if participating in labour force activities. This discourages women to actively participate in labour market. Moreover, they have fewer chances to get into jobs in formal sector with less than postgraduate level of education as compared to men.

In order to improve labour force participation in Pakistan, the following policy measures are recommended.

- Increase in female and male education which plays a positive role in attracting both sexes into labour force. Therefore, greater investment in education is needed, with other gender friendly measures and through gender responsive budgeting.
- In order to provide more opportunities to women in formal sector, a tax credit can be provided to women employees.
- There should be an equal-employment opportunities policy aimed at tackling direct or indirect gender discrimination, equal opportunities policy aimed at encouraging women to have continuous employment patterns, without discouraging men, and de-segregating employment by gender; and wage policies aiming at reducing wage inequality and improving the remuneration of low-paid and/or female-dominated jobs.

APPENDIX

Table A1

Definitions of Variables

Variable	Description
Dependent Variables	
LFP	value 1 for those who are either employed or unemployed otherwise 0
Employed	value 1 for employed otherwise 0
Economic Sectors	value 0 for working in agriculture, 1 for working in informal sectors and 2 for working in formal sector
Explanatory Variables	
age	Age in years
Age ²	Square of Age
Never Married	value 1 for never married otherwise 0
Married	value 1 for married otherwise 0
Widowd	value 1 for widowed otherwise 0
num_infant	Number of infant in a household
fhh	value 1 for female headed household otherwise 0
hh_size	Number of person in a household
Urban	value 1 if living in urban area, otherwise 0
Punjab	value 1 for all household in Punjab otherwise 0
Sindh	value 1 for all household in Sindh otherwise 0
KP	value 1 for all household in Khyber Pakhtunkhwa otherwise 0
Primary	value 1 if the highest level of education is primary, otherwise 0
Matric	value 1 if the highest level of education is matric, otherwise 0
Intermed	value 1 if the highest level of education is intermediate, otherwise 0
Graduate	value 1 if the highest level of education is graduation, otherwise 0
Post_pro	value 1 if the highest level of education is either post graduation or professional education, otherwise 0
tech_train	value 1 for the person having technical trainings otherwise 0
hhinc_fem	Total household earnings excluding female earnings
Female	value 1 for female otherwise 0

Table A2

Estimated Results of Logit Models for Labour Force Participation: 2012-13

	Female Sample		Male Sample	
	Coefficient	Std. Error	Coefficient	Std. Error
age	0.1108	0.008	0.3977	0.012
age2	-0.0013	0.000	-0.0052	0.000
married	0.1979	0.093	0.8467	0.135
never_married	0.6842	0.110	-0.6200	0.160
num_infant	-0.1472	0.028	-0.0668	0.033
fhh	0.0655	0.094		
urban	1.2140	0.044	0.2711	0.049
punjab	1.6344	0.074	0.0975	0.077
sindh	1.0805	0.078	0.2511	0.084
kp	0.5784	0.079	-0.5060	0.079
primarym	-0.6467	0.054	-0.8130	0.065
matric	-0.6173	0.075	-1.2526	0.074
intermed	-0.3032	0.102	-1.8949	0.090
graduate	0.3383	0.101	-1.3841	0.122
post_pro	1.7079	0.121	-0.7302	0.181
tech_train	0.7489	0.058	1.3348	0.103
_cons	-5.3787	0.198	-3.6407	0.285
Pseudo R2		0.112		0.391
Number of obs		64,964		68433

Table A3

Estimated Results of Logit Models for Employed: 2012-13

	Female Sample		Male Sample	
	Coefficient	Std. Error	Coefficient	Std. Error
age	-0.0838	0.047	0.088996	0.008411
age2	0.0006	0.001	-0.00117	9.57E-05
never_married	-1.3258	0.227		
married			1.438457	0.059815
fhh	0.5893	0.333		
urban	-1.0473	0.440	0.434404	0.041824
punjab	-2.8976	0.660	-0.18918	0.06346
sindh	-2.1741	0.513	0.191841	0.068633
kp	-2.1591	0.376	-0.5487	0.068329
primarym	0.1861	0.278	-0.07686	0.054006
matric	-0.3521	0.287	-0.52204	0.059816
intermed	-1.0597	0.249	-0.82258	0.07392
graduate	-2.4064	0.234	-0.98627	0.080718
post_pro	-3.3983	0.579	-1.04945	0.091313
tech_train	-1.4422	0.295	0.372889	0.060923
mills	-1.9574	0.425		
_cons	11.6216	2.303	0.940695	0.150813
Pseudo R2		0.170		0.105
Number of obs		12573		54,740

Table A4

Estimated Results of Multi-Logit Models for Economic Sector 2012-13

Variables	Female Sample		Male Sample	
	Coefficient	Std. Error	Coefficient	Std. Error
	Informal		Agriculture	
age	-0.1647	0.0320	-0.0677	0.0046
age2	0.0020	0.0004	0.0011	0.0001
fhh	0.5863	0.2371		
urban	-4.3144	0.3906	2.9317	0.0358
punjab	-3.8497	0.5400	-0.5978	0.0363
sindh	-3.6143	0.4148	-0.0160	0.0384
kp	-2.1651	0.3020	-1.1075	0.0431
primarym	1.5689	0.2365	-0.4034	0.0284
matric	1.6628	0.2756	-0.5589	0.0394
intermed	1.5771	0.3622	-0.6566	0.0639
graduate	0.8703	0.3379	-0.9785	0.0957
post_pro	0.5613	0.7336	-1.0067	0.1471
tech_train	1.6474	0.2389	-2.1721	0.0585
mills	-1.9917	0.3596		
_cons	10.5645	1.7137	-0.9371	0.0928
	Formal		Formal	
age	0.1090	0.0676	0.1097	0.0061
age2	-0.0011	0.0009	-0.0012	0.0001
fhh	0.5744	0.3976		
urban	-3.2811	0.5869	0.0989	0.0271
punjab	-3.7676	0.8584	-0.6741	0.0382
sindh	-3.7413	0.6784	-0.4597	0.0398
kp	-1.7608	0.5014	-0.8873	0.0448
primarym	2.1598	0.4540	0.2864	0.0365
matric	3.8740	0.4171	1.0040	0.0385
intermed	5.3714	0.3829	1.6245	0.0465
graduate	4.3237	0.4024	2.2116	0.0506
post_pro	5.7700	0.8386	2.9020	0.0635
tech_train	0.9909	0.4052	-0.2047	0.0336
mills	-1.4444	0.5583		
_cons	1.0239	2.7794	-3.3941	0.1179
Pseudo R2	0.4151		0.2524	
Number of obs	11,184		51,863	

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Comments

Paper dedicated a significant part to literature review, which is definitely a good thing. All most all the literature review revolve around the two popular hypotheses of sociological literature i.e., “Devaluation Hypothesis” and “The Specialised Human Capital Hypothesis” the devaluation hypothesis asserts that no economic factors can fully explain the sex composition effects because cultural bias against women’s labour overrides market considerations. By contrast, the specialised human capital hypothesis asserts that the same worker is expected to receive different wages because of their gender. However, the empirical strategy doesn’t include cultural factors as suggested by devaluation hypothesis or wage differentials as recommended by the specialised human capital hypothesis.

Further I have few minor comments on empirical specification:

Overall wage income of other household members is used as proxy for reservation wage. Here my concern is this proxy do not take account the skill level of women, unless we consider the skill level this seems a very weak proxy.

Table 3, 4 and 5 provide the gender based difference of probabilities to get a job, and to get a job in particular occupation etc. The difference of coefficient is not enough to draw any conclusion, I feel you should also provide the statistical significance of differences.

The nine major occupational categories are further categorised as low, mid and high occupations, the criteria is not clear in the text.

Why inverse mills are included in only female equation and not in male equation. I think unobservable factors effect both male and female as suggested by Heckman (1979).

Finally, in female participation equations a variable female headed household is dropped, if this is for purpose like identification, this is an important variable and shouldn’t be dropped in participation equation.

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