The Gender Wage Gap in Urban Areas of Bangladesh:

Using Blinder-Oaxaca Decomposition and Quantile Regression Approaches

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Introduction

- Labor market **transmit benefits** of economic growth to male and female labor groups in the society.

- Today women become **significant part** of the labor market and thus play **significant role** in growth trajectories.

- Across the globe, **women's share** in the labor market is increasing at a **faster rate** than that of the men.

- This is termed as **'feminization'** of labor force (Standing, 1989; Cagatay and Ozler, 1995).

Reasons of trending women employment

- Deterioration of real income;

- Lack of familial support;

- Cheaper compared to their counterpart;

- Unassuming by nature;

- Not unionized and

- Flexibility in hiring.

- All these result in an increasing share of women in the labor market of Bangladesh.

Why urban labor market?

- **Significant rise** in women employment is in the **garment industries** of Bangladesh (which usually located in the urban areas).

- **Gender-based wage inequality** is rampant in urban labor markets.

Global context

- Across the globe, **gender wage gap** is an oft-cited indicator of gender-based inequality in labor markets.

- The average 'global' gender pay gap is **16.5**% whereas it is **21.1**% in Asian countries (Kapos, 2008).

- Women, in general, lag behind men in many spheres in developing countries and thus gender differences are noticeable in several domains in terms of **access to and control over resources, work opportunities, participation and rewards**.

- Male-female wage differential is either country (or region specific) or context (rural-urban) specific.

- In the context of labor market opportunities, women, on an average, earn less than men for a similar work and the gap varies across and within countries.

- Europe, Oceania and Latin America are far better when compared with Asia and Africa, where usual female economic participation is low and there are large informal economies (ibid).

Labor Market In Bangladesh

- Segregated by gender as many women are involved either in **non-market** activities at home or in the informal sector.

- Among those who work in the formal sector are generally employed in the '**female labor intensive industry**' like readymade garment, shrimp processing and pharmaceuticals (Ahmed and Maitra, 2010).

- Women face **upward mobility constraints** in most of the workplace.

- All these result in discrimination against women in the labor markets of Bangladesh.

- Though **rural female wage rates** remain constant at 44% of that of males in 2000 over 1996, **urban female wage rates** decline to 46% from 50% over the same time period (LFS, 2000 & 1995-96).

Research Gap

- Relatively little is known about wage differences in the urban labor market and

- The extent to which any **gender-based wage gap** that can be explained by the men's and women's relative endowments in their productive and personal characteristics versus outright labor market discrimination.

Objective of the study

- To measure the extent of gender wage gap in Bangladesh urban labor market at different quantiles of a wage distribution and also decompose this gap as per their productive components.

Data and methodology

- Data from Labor Force Survey 2010

- First of all, descriptive statistics

- Secondly, **Mincerian** regression model for the estimation of economic returns to various productive factors such as education as well as the estimation of gender earnings gap after controlling for the differences in age, working hours, education, occupation, industry, and location.

- Blinder-oxaca decomposition

- Quantile regression and quantile decomposition approaches

Summary statistics

- 10,764 urban workers for which weekly wage data are available.

- 83.71% is male

- This implies low labor force participation and employment rates among the female labor force in urban Bangladesh.

- The average weekly wage of the male workers in the sample is approximately BDT **2,105** whereas it is BDT **1,563** for female workers.

- This represents **34.7**% lower weekly wage for women workers.

- On the contrary, men work on an average of **54.07** hours per week compared to **51.80** hours for women.

- Thus the **net lower weekly wage for women** workers is approximately 30% in the urban setting of Bangladesh.

Summary statistics

- The average age for women in the sample is **31.7** years versus **36.9** years for men.

- This reflects **lower participation rates of older female workers** in the country.

- However, the **promising feature** is that an increasing numbers of younger female labor force are entering into the workforce – particularly in formal wage-based occupations.

- It is evidenced in this study that **38.3**% percent of the sample of women is aged **15-25** whereas it is **29.7**% percent for men.

Summary statistics

- With regard to LFP by literacy and education, **40.6**% women are **illiterate** whereas it is only **29.1**% for men.

- Up to class viii, there are no significant differences in the participation between male and female.

- Similar results are obtained in cases of Bachelor, Masters, medical, engineering and technical education, where the differences are not significant at 5% level.

- From class ix to HSC, male labor force participation is higher than that of the female.

Summary statistics

- This study finds no female labor force in armed forces.

- Moreover, there are no significant differences are observed for technician & associated professional and crafts & related trade workers.

- In cases of professionals and plant, machine operators and assembling, women's participation is significantly higher than the male.

- Female labor force participation is significantly higher in the manufacturing and education industries.

Summary statistics

- As per geographical proximity, no significant differences in the labor force participation are observed in Chittagong and Rajshahi division though women participates more compared to men.

- In Dhaka, women's participation rate is significantly higher than that of the males.

- The reverse picture is true in favor of men in Barishal and Khulna division.

Summary statistics

- Exploring wage differentials across ages, this study finds no significant wage differentials at the early stage of ages entering into the jobs.

- However, wage differential increases as age increases and the result goes in favor of male labor force.

- Similarly, there is a positive association between education and wage differential.

- However, there are no significant wage differentials for medical and engineering & technical and vocational education.

- Of the 10 occupational categories, 50% cases men earn significantly more than female.

Summary statistics

- These categories include legislators, senior officials and managers; professionals; technicians and associated professionals; service workers, shops and market sales; and plant, machine operators and assembling.

- Though female participation is more in the manufacturing and education industry, men are earning significantly more than their counterpart.

- No significant wage differences are observed for agriculture and transport industries.

- Wage differentials are visible only in Dhaka and Chittagong divisions, where urbanization is more rapid than that of the others.

Estimation of raw gender wage gap

- This study uses weekly hours worked and earnings of the male and female workers.

- Women are likely to work fewer hours than men and this makes a gap in weekly earnings between the two groups substantial even if their hourly wages are the same.

- Therefore, it is important to observe how much efforts women provide and how much they receive compared to their counterpart.

- This helps us identifying raw wage gaps across different characteristics.

Raw gender wage-gap by age categories

Age category	%
15-25	1.2
26-35	-17.2
36-45	-19.3
46-55	-21.4
55+	-29.2

Raw gender wage-gap by literacy and education

Literacy and education	%
Literacy	-23.9
no education	0.03
class i-v	-14.8
class vi-viii	-20.9
class ix-x	-12.0
ssc/equivalent	-14.6
hsc/equivalent	-22.1
bachelor degree/equivalent	-25.2
master degree/equivalent	-34.3
medical/engineering degree	-45.7
technical/vocational education	-7.7

Raw gender wage-gap by occupation

Occupation	%
legislators, senior officials and managers	-38.8394
Professionals	-33.1744
technicians and associated professional	-13.3661
Clerks	0.88411
service workers and shop and market sales	-31.7875
skilled agricultural and fishery worker	1.81954
craft and related trade workers	19.24551
plant and machine operators and assembling	-32.6765
elementary occupations	-1.5739

Raw gender wage-gap by industry (contd.)

Industrial classification	%
Agriculture, forestry and fishing	7.5
Mining and quarrying	-10.8
Manufacturing	-33.2
Electricity, gas, steam and air conditioning	-0.2
water supply; sewerage, waste management	-28.6
Construction	-36.2
wholesale and retail trade; repair of motor vehicles	-25.8
transportation and storage	-12.3

Raw gender wage-gap by industry

Industry	%
professional, scientific and technical	-39.4
administrative and support service acti	-11.5
public administration and defence; comp	-2.3
Education	-28.4
human health and social work activities	-17.6
arts, entertainment and recreation	-6.2
other service activities	-6.9
activities of households as employers;	-11.3
activities of extraterritorial organiza	-

Raw gender wage-gap by industry

Division	%
Barisal	12.5
Chittagong	-27.4
Dhaka	-37.4
Khulna	11.9
Rajshahi	12.9
Sylhet	-0.5

Mincer regressions of 5 different specifications

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Female	**-0.192*** (0.016)**	**-0.125*** (0.0170)**	**-0.126*** (0.0171)**	**-0.0812*** (0.0158)**	**-0.0773*** (0.0167)**
Age	No	Yes	Yes	Yes	Yes
Hours/week	No	No	Yes	Yes	Yes
Education dummies	No	No	No	Yes	Yes
Occupation dummies	No	No	No	No	Yes
Industry dummies	No	No	No	No	Yes
Division	No	Ni	No	No	Yes

Blinder-Oxaca decomposition

Dependent variable: log of wage	(1) Coefficients (robust standard errors)	(2) Exponentiated coefficients (robust standard error)	(3) Coefficients from survey estimation
Panel A: Overall			
Men	7.352602***	1560.252***	7.373685***
	(.0073195)	(11.40011)	(.0078732)
Women	7.160741***	1287.865***	7.154836***
	(.0154434)	(19.70256)	(.0159734)
Difference	.1918613***	1.211503***	.2188486***
	(.0170902)	(.0205397)	(.0178083)
Explained	.1145751***	1.121397***	.1287129***
	(.0117313)	(.0131554)	(.0124581)
Unexplained	.0772863***	1.080351***	.0901357***
	(.01657)	(.0179015)	(.0174328)
Panel B: Endowments			
Age	.0517534***	1.053116***	.0423566***
	(.0042483)	(.0044739)	(.0038823)
Hours worked/week	.0055674***	1.005583***	.0049276***
	(.0014354)	(.0014434)	(.0014058)
Education	.0377798***	1.038503***	.0495825***
	(.0062747)	(.0065163)	(.006861)
Occupation	.0350294***	1.03565***	.0440479***
	(.0062697)	(.0064933)	(.00704)
Industry	-.0090611	.9909798	-.0043627
	(.0081012)	(.0080282)	(.0089999)
Division	-.0064938**	.9935272**	-.007839**
	(.0031946)	(.003174)	(.0031203)

Explanation

- It shows that the mean wages are BDT 1560.25 and 1287.87 for men and women respectively.

- Thus the wage gap is 21.2%.

- Adjusting women's endowments levels to the levels of men increase women's wage by 12.1%. A gap of 8% remains unexplained.

- From panel B, it is obvious that the differences in age, education and occupation each account for 5.3%, 3.9% and 3.6% of the explained part of the outcome differential.

- Moreover, though the differences in hours worked per week and the division play significant role, the magnitudes are the not large enough. Finally, industrial segregation based on 21 major groups of the international standard classification of basic industries in Bangladesh does not seem to matter much.

Gender wage gap: Quantile Regression Approach

Variables	Q10	Q25	Q50	Q75	Q90
Female	-0.201*** (.0237504)	-0.176*** (.0246827)	-0.0409 (.0228797)	0.0262 (.0186914)	-0.0339 (.0292352)
Age	Yes	Yes	Yes	Yes	Yes
Hours/week	Yes	Yes	Yes	Yes	Yes
Education dummies	Yes	Yes	Yes	Yes	Yes
Occupation dummies	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes
Division dummies	Yes	Yes	Yes	Yes	Yes

Decomposition of gender wage gap by quantiles

Quantile	Total gap	% gap	Endowment	Discrimination	Proportion due to discrimination
0.10	.26389	30.20	.080569	.18332	0.694683
0.25	.251279	28.57	.098766	.152513	0.606947
0.50	.05591	5.75	.085264	-.029354	-0.52502
0.75	.096209	10.10	-.017873	.112481	1.169132
0.90	.278532	32.12	.114082	.166051	0.596165

Conclusion

- We find that the estimated total gender wage gap is higher at lower end of the wage distribution compared to the higher end.

- Thus the gender wage gap in the urban workers ranges from 6% to 32%.

- Notice that the gender wage gap is lower at 50th quantile of the wage distribution compared to anywhere else on the distribution.

- For this empirical data, discrimination accounts for the majority of the gender wage gap except for the 50th quantile.