CPD

Working Paper 124

Women in Bangladesh Labour Market

Determinants of Participation, Gender Wage Gap and Returns to Schooling

Mustafizur Rahman
Md. Al-Hasan

CENTRE FOR POLICY DIALOGUE

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The present paper titled **Women in Bangladesh Labour Market: Determinants of Participation, Gender Wage Gap and Returns to Schooling** has been prepared by *Professor Mustafizur Rahman*, Distinguished Fellow, CPD <mustafiz@cpd.org.bd> and *Mr Md. Al-Hasan*, Research Associate, CPD <al.hasan@cpd.org.bd>

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Abstract

This paper examines four issues concerning the labour market scenario in Bangladesh, from the particular perspective of female labour force participation: (a) trends and characteristics of female participation; (b) determinants of female labour force participation; (c) male–female wage gap and wage discrimination; and (d) returns to schooling for women. Mean wage decomposition analysis carried out by the authors shows that, on average, woman earns 12.2 per cent less than man, with about half the gap explained by labour market discrimination. Quantile counterfactual decomposition shows that women are subject to higher wage penalty at the lower deciles of the wage distribution. The paper finds that women's returns to schooling tends to be underestimated, but average returns for female is found to be higher than that of male. The report recommends several strategies, based on findings of econometric analyses, to incentivise formalisation of female labour, reduce the wage gap and occupational segregation in the labour market and promote skill-endowed education for women in view of emerging labour market challenges in Bangladesh.

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Acronyms

BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
CPI	Consumer Price Index
FLFP	Female Labour Force Participation
GDP	Gross Domestic Product
GMM	Generalized Method of Moment
GNI	Gross National Income
HIES	Household Income and Expenditure Survey
IT	Information Technology
IV	Instrumental Variable
IVQR	Instrumental Variable Quantile Regression
LDV	Limited Dependent Variable
LFS	Labour Force Survey
LPM	Linear Probability Model
MSME	Micro, Small and Medium Enterprise
NEET	Not in Education, Employment or Training
NLSY	National Longitudinal Survey of Youth
OLS	Ordinary Least Squares
PSID	Panel Study of Income Dynamics
QCD	Quantile Counterfactual Decomposition
QR	Quantile Regression
QTE	Quantile Treatment Effect
RMG	Readymade Garments
SDG	Sustainable Development Goal
VNR	Voluntary National Report
WDI	World Development Indicators
7FYP	Seventh Five Year Plan

1. INTRODUCTION

Bangladesh has maintained a reasonably stable economic growth over the last two decades (with annual gross domestic product (GDP) growth rate of 6 per cent plus). At the same time the country is experiencing rapid demographic transition, with persistent decline in both fertility and mortality rates. The country's labour force (aged 15 years and above) has risen from 40.7 million to 63.5 million between 2000 and 2016-17 (56 per cent growth); the total population increased from 127.5 million to 161.3 million (26.5 per cent growth) over the corresponding period. The working-age population has increased from 74.2 million to 109.1 million over the same period (a rise of 47 per cent) (BBS, 2001; 2018). The increase in the working-age population in the backdrop of the decrease in dependency ratio suggests that Bangladesh has got into the phase of demographic dividend—a phase of relatively larger youth labour force than dependent population (Hayes and Jones, 2015). However, the benefits to be accrued from demographic dividend are never automatic. One potential source in this connection relates to the female labour force participation (FLFP) which has largely remained untapped in Bangladesh.

As is well-known, the structure of Bangladesh economy has undergone a notable transformation over the past decades. A significant shift has taken from agriculture to manufacturing and the services sectors. As would be expected, the nature of labour force participation has also changed in tandem with this. However, two key concerns remain in this connection. Firstly, the shift in the economy has taken place predominantly towards the lower end of the sectoral value chain. Secondly, women of working age have not been able to catch up with these important changes, at least to the extent that was required to realise the demographic dividends. It is in this context that issues related to women's participation in the economy of Bangladesh ought to be given renewed importance and demands closer attention. The need to design appropriate policies to enable women to take advantage of the emerging opportunities in the labour market, and thus enhance their economic and social empowerment, cannot be overemphasised.

In the context of the Sustainable Development Goals (SDGs), gender issues (Goal 5) have been accorded particular attention in the Agenda 2030 (UN, 2016). Consequently, Bangladesh has an added aspiration to address gender-related issues in line with goals and targets of SDG 5. The national Seventh Five Year Plan (7FYP) indicates that the employment elasticity in Bangladesh currently stands at about 0.45. If the government-projected average annual GDP growth rate of 7–8 per cent in 2016–2020 is considered, additional employment opportunities generated in the economy will exceed the number of new entrants to the labour market. Many in the workforce currently belonging to the unemployed or underemployed categories should move to productive jobs. A part of those will be employed in the formal sector, others in the informal sector. It was estimated that 12.9 million additional jobs would be available during the five years of the 7FYP, including about 2 million overseas jobs. The number of workers that is likely join the workforce in the course of the 7FYP, is up to 9.9 million (GED, 2015). Bangladesh's women should be considered an important part of the job-equation of the future. However, if the projected growth is materialised and the economy creates the estimated additional jobs than these opportunities should be developed in such a manner that women get more access to these jobs.

Globally, only 50 per cent of working-age women are in the labour force compared to 77 per cent of men. The gender disparity remains most acute in North Africa, West Asia and South Asia (ILO, n.d.; Rahman and Islam, 2013). In Bangladesh, while the FLFP rate has been on a secular rise since 2000 (albeit there was a 2.5 per cent fall between 2010 and 2013), there is a significant gap between female and male participation rates—for male the rate is 80.5 per cent against the female participation rate of 36.3 per cent (BBS, 2001; 2018). In the context of 'reaping the benefits of demographic dividend', this gap is both an opportunity and a formidable challenge.

1.1 Motivation for the research

The dynamics of labour force participation in Bangladesh bears out that there has been a notable increase in FLFP over the past decades, in particular for the age cohort of 20–49 years. A key contributing factor has been the rapid growth of the export-oriented and labour-intensive readymade garments (RMG) and textiles sector (ADB and ILO, 2016). Studies, including Klasen and Lamanna (2009), have found that rise of FLFP contributes to economic growth in a tangible way. Young (1995) found that the growth miracle in South Korea owed significantly to the considerable increase of FLFP. Sinha (2017) estimates that if in the course of five years there is 11 per cent increase of FLFP, then, on an average, this will add one percentage point to Bangladesh's GDP growth for each subsequent year. Indeed, the targets set out in Bangladesh's Vision 2021 document which aims at accelerating the GDP growth rate and transforming Bangladesh into a developed country by 2041 will critically hinge on her ability to bring more women to the labour market, by providing them with more productive and remunerative employment opportunities. In Rahman, Bhattacharya and Al-Hasan (2018) it is argued that there is a strong correlation between reduction in job creation and inequality, both for male and female, and this is true for both formal and informal employments. The message is that higher FLFP will contribute to an equalising and inclusive development process in Bangladesh.

A World Bank report on jobless growth in South Asia (Beyer, 2018) projects that in case of Pakistan and Sri Lanka one percentage point of economic growth would raise employment rate roughly by only 0.16 percentage points. Falling employment elasticities of GDP growth is widely seen in developing countries in recent times which is predicted to decline from 0.55 to 0.45 between the period 2005–2010 and 2016–2020 (ADB, 2016). This would mean that it will be challenging to increase FLFP in an environment where overall rate of new employment creation is expected to be shrinking.

1.2 Research objectives and approach

Given the situation of women employment and labour market conditions in Bangladesh, this study seeks to review the available information and data to identify the challenges in increasing FLFP. Particular focus of this study is to contribute to policy design for greater and more meaningful FLFP in the Bangladesh labour market which is critically important for its journey from a lower middle-income to an upper middle-income country over the coming decade. Specifically, this study will cover the following issues:

- Examination of status and trends with regard to women's participation in Bangladesh's labour force, by (a) looking at sectoral composition; (b) taking cognisance of the spatial dimensions of labour force participation; and (c) examining the formal and informal nature of women's labour force participation.
- Identification of the determinants that contribute positively and those that act as barriers to FLFP. Limited Dependent Variable (LDV) models will be employed in this connection. Additionally, the study has also examined the 'U-shaped hypothesis' as regards the relationship between economic development and FLFP.
- Analysis of occupational segregation and male–female wage differential in the Bangladesh labour market. A widely used tool to estimate occupation segregation is the Duncan and Duncan (1955) Dissimilarity Index which will be used in the study. Oaxaca-Blinder and Quantile Decomposition will be used to calculate wage differentials and wage discrimination against female persisting in the Bangladesh labour market.
- The study will also analyse returns to schooling which is a critically important factor from the point of view of employability and employment of both male and female participants in the labour market. The Instrumental Variable Quantile Regression (IVQR) model will be used for this. Literature reveals

that education is endogenous with the unobserved ability and cause inconsistency and biasedness in classical estimators such as the Ordinary Least Squares (OLS) (Griliches, 1976). Thus, the present study has used Instrumental Variable (IV) regression models proposed by Griliches (1976), Card and Krueger (1994), and Ashenfelter and Zimmerman (1997) to arrive at more robust results. It has used father's education as an instrument as proposed by Ashenfelter and Zimmerman (1997).

- The study also estimates returns to training (on matching sample) by using the Quantile Treatment Effect (QTE). The estimation methodology of returns to training is based on Firpo, Fortin and Lemieux (2009).
- The study also briefly analyses the challenges of self-employment in Bangladesh which is an important component of FLFP in Bangladesh, and the different between the returns in this context. Hourly wage differentials between self-employment and formal paid employees were estimated by using Oaxaca-Blinder and Quantile Decomposition. It also explores the relationship between economic development and the reduction of self-employment using cross-county data in order to draw insights for the particular country case of Bangladesh.
- Based on the findings, relevant policy recommendations will be made to address the barriers facing FLFP and improving the situation of the women in the labour market of Bangladesh.

1.3 Data and information source

The study uses data from the Labour Force Surveys (LFSs) of 1999-2000, 2002-2003, 2005-2006, 2010, 2013, 2015-16 and 2016-17. These are cross-section datasets and have several important and unique features. First, the datasets include information on the various demographic features and relevant personal characteristics concerning FLFP. The sample size of the data is adequate to be nationally representative. The data is representative at the divisional level and is suitable for sectoral-level analysis. It contains about 30 thousand households or about 126 thousand individuals. Consequently, the insights drawn from the various econometric exercises are robust. The study also uses data from the World Development Indicators (WDI). An expert group meeting was held to discuss the concept note of the study. A national dialogue was organised on 9 May 2018, where an earlier version of the paper was presented to generate insights and to validate findings.

1.4 Outline of the study

The remainder of the study is organised as follows. Section 2 provides a review of the literature concerning various aspects of FLFP, occupational segregation, gender wage gap and returns to schooling, along with various techniques that are employed to derive insights as regards different aspects of FLFP. Section 3 presents some stylised facts of Bangladesh labour market from gender perspectives. Section 4 presents, with the help of U-shaped hypothesis and econometric analysis, an exercise to identify determinants of FLFP and policy implications arising from this. Section 5 provides a detailed analysis of occupational segregation and gender wage gap in Bangladesh. Section 6 presents the findings from exercises on returns to schooling, the effect of training on earnings, and challenges facing self-employment. Section 7 discusses a number of policy recommendations based on the findings of the study.

2. LITERATURE REVIEW ON FEMALE LABOUR FORCE PARTICIPATION

The relationship between gender equality and economic development has been widely investigated in relevant literature. It is now well-established that gender equality contributes to higher pace of economic development. It is also true that economic development promotes the cause of gender equality. Among the many useful indicators of women's economic status, including women's educational attainment, health, role in politics and legal rights, labour force participation arguably plays the most fundamental role in the evolution of gender roles in economies and societies (Olivetti, Patacchini and

Zenou, 2013). In the early stages of economic development, female participation in the labour market tends to be lower; as countries start to develop female employment rate also tends to go up. For this reason, Goldin (1994) points out that the positive relationship between women's status and economic development could be camouflaged and the opposing views on whether economic growth enhances gender equality may arise.[1]

Women's labour supply function specifies two key ingredients to determine a woman's labour supply decision. The first ingredient is the opportunity cost of her time, which with competitive labour markets will equal the prevailing wage for women with her education level, experience and skills level. A higher wage has a substitution effect that makes working, and working longer hours more attractive; but it also has an offsetting income effect that depresses work hours. The second ingredient is income that is 'unearned', or at least not earned by the woman. This includes the earnings of her husband if she is married, and other profits or transfer income of her family. Increases in women's unearned income impacts only through income effects on women's labour supply, resulting in reduced work hours and possible withdrawal from the labour force.

Apart from micro determinants, a relevant question is in what ways economic development affects labour force participation of women. Increases in income not earned by women, due, for example, to rising male productivity and earnings will reduce women's labour force participation. However, if women's wages rise along with men's wages, or perhaps even faster, then that may result in greater levels of FLFP, depending on the relative strength of income and substitution effects (Mammen and Paxson, 2000). For women who are initially not in the labour force, increases in the female wage can exert only substitution effects, causing labour force participation to increase. Mammen and Paxson (2000) show how opportunities for men improve relative to women's also plays an important role in how women's labour force participation changes with development. The authors have argued, improvements in men's opportunities without corresponding improvements in women's wages may reduce labour force participation of the women. However, with development and rise in women's wages they may be drawn back into the labour force. Some economists have argued that development will bring about an initial decline in women's labour force participation. Men move into new blue-collar jobs that increase family income, exerting income effects that reduce women's participation. As men move out of agriculture and into paid employment, and the pace of urbanisation increases, there may be fewer family farms or family enterprises in which women could work and the opportunities for women could come down in absolute terms (Goldin, 1994; Mammen and Paxson, 2000). Schultz (1988, 604) points out that "until women can acquire the requisite schooling and transferable skills to find suitable employment in firms in expanding sectors of the modern economy, the opportunity value of women's time relative to men's time may decline."

If the above be the case and at the initial phase of industrialisation countries do experience withdrawal of women from the labour force, then the logical questions that follows is—how the rising FLFP in more developed economies can be explained. Some have argued that as economic development progresses, the nature of jobs available to women may change. Goldin (1994) presents evidence of the rise in female labour force participation in the twentieth century United States was because of the growth of 'white collar' jobs, largely in the clerical sector which was an acceptable form of employment for women. In addition, gains in female education, both in absolute terms and relative to male education level, made these white-collar jobs attainable for women and increased the incentives of women to work away from home.

[1] Indeed, this has led to the questions of U-shaped female labour supply function.

A large part of relevant literature subscribes to the U-shaped relationship between women's labour force participation and economic development. The arguments are the followings. For very poor countries, FLFP tends to be high; women work mainly in farm or non-farm family-owned enterprises. At early stages of economic development women move out of the labour force, partly because of the rise in men's market opportunities and partly because of social barriers against women entering the paid labour market. But other factors set in as countries continue to develop, women's education levels rise, and women move back into the labour force as paid employees mainly in the white-collar segment of the job market. The U-shape is not necessarily the form it takes as an inevitable outcome of the textbook labour supply model. However, the U-shape has been discussed and documented in a wide set of papers for both developed and developing countries (see, Durand, 1975; Goldin, 1994; Mammen and Paxson, 2000; Mincer, 1985; Pampel and Tanaka, 1986; Schultz, 1991). While cross-country studies have found evidence of the U-shape hypothesis, other studies that include panel data analysis have come up with mixed results (Gaddis and Klasen, 2014; Luci, 2009; Mahmud, 2003). Indeed, the U-shaped hypothesis is not robust to different data sets and econometric methodologies (Cazes and Verick, 2013; Verme, 2014).

The idea that social norms prevent women from accepting blue-collar jobs plays a central role in discussions about declines in FLFP in the course of development. To the extent these norms exist, they appear to apply to wives but not necessarily to unmarried women. One way of looking at this is to question the assumption that social norms dictate that white-collar jobs are 'acceptable' for married women, whereas blue-collar jobs are not. One explanation is that women dislike factory work and avoid it if they can. This would mean that norms may simply reflect women's own preferences (Kung, 1976). Another explanation, put forwarded by Goldin (1994, 9), is that societies stigmatise the husbands of women who do blue-collar work. In the view of the prevailing culture, "only a husband who is lazy, indolent and entirely negligent of his family would allow his wife to do such labour" (Goldin, 1994). A final explanation of why married women avoid blue-collar jobs is that factory work does not pay wives enough to compensate for the fixed costs of working away from home. Mammen and Paxson (2000) argue that until female education levels rise (increasing market wages) and fertility declines (reducing costs of working away from home), it does not make sense for wives to move into formal sector employment in large numbers. Heintz, Kabeer and Mahmud (2018) have examined the relationship between cultural norms and women labour market behaviour in the context of Bangladesh and their findings corroborate the observations made by others.

One of the most salient features of women's participation in the labour market was the tendency to work in a fairly small number of relatively low-paying, predominantly female-oriented jobs (Blau and Kahn, 2000). There is considerable evidence to support the belief that gender differences in preferences play some role in gender differences in occupations (Gunderson, 1989). Some evidence of the importance of discrimination emanates from institutional barriers that have either traditionally excluded women from particular pursuits or have obstructed their upward progression (National Research Council, 1986). In addition, a number of studies have found that women are less likely to be promoted, other things remaining the same (see, for example, Cobb-Clark and Dunlop, 1999; Hersch and Viscusi, 1996; McCue, 1996). Many have raised the question as to whether there is a glass ceiling impeding women's occupational advancement. Although the veracity of the occupational segregation argument cannot be denied, the reasons driving those are difficult to pin-down. One explanation that has been forwarded by some is that entry of women in different occupations takes place at a relatively later stage and it takes time to move up the ladder (Blau and Kahn, 2000). However, that there does exist a glass ceiling has been strongly argued by many authors, with concrete evidence.

The gender wage gap has been an extensively investigated subject for a number of decades and remains an active and innovative area of research. A number of important theoretical and empirical research

has been carried out to explore various dimensions of the involved issues concerning gender wage gap starting from Mincer Earning Function (Mincer, 1958) to more recent developments that include Quantile Counterfactual Decomposition (QCD) (by Chernozhukov, Fernandez-Val and Melly, 2013). An important tool to study the gender wage gap, the Oaxaca-Blinder Decomposition, was developed by Oaxaca (1973) and Blinder (1973) which has made seminal contribution to enable in-depth analysis in related fields.

In the global literature gender wage gap is a well-examined issue. Sanborn (1964) using US census data 1950 found that male–female wage differential (as a proportion of female wage) is 0.72. More recently, Blau and Kahn (2017), using the US Panel Study of Income Dynamics (PSID) data of 2010, found that the mean gender wage gap is 23.1 per cent and this gap is higher at the lower level of wage distribution (about 16.5 per cent in the 1st decile) and tends to be narrower at the top of the wage distribution (about 12.5 per cent at the 9th decile). The topic has been receiving growing attention in the recent past years and the resultant global literature is quite extensive (Melly (2005) on Germany; Machado and Mata (2005) on Portugal; García, Hernández and López-Nicolás (2001) on Spain; Jann (2008) on Switzerland). Researchers tend to agree that: a) gender wage gap exists in developed as also developing country contexts; and b) gender wage gap is higher at the bottom of the wage distribution curve and tends to be narrower at the top. There are some exceptions to the last point, but only in some limited cases (see, for instance, Tromp, 2016).

Gender wage gap remains an interesting area of study in the Bangladesh context. A number of studies have been carried out earlier in this area. One such study is Rahman and Islam (2003) which uses LFS 2000 data and found that rural women earn 45 per cent less as wages than men and urban women earn 31 per cent less than men. Using the Household Income and Expenditure Survey (HIES) 2000 and 2005 data Al-Samarrai (2007) finds that women in Bangladesh have made notable inroads in the labour market of the country. The study concludes that the wage gap among the salaried workers in 2000, which was 52 per cent, had come down to 32 per cent in 2005. Further decomposition by Al-Samarrai (2007) shows that in 2000, 31 per cent of the wage gap was due to characteristics effect and the rest was due to coefficient (in labour economics literature this was referred to as wage discrimination). Kapsos (2008), using Occupational Wage Survey 2007 and applying Oaxaca-Blinder Decomposition technique found the wage gap in Bangladesh to be to the tune of 22.5 per cent. More recently, to have more in-depth understanding of the gender wage gap, some studies have put emphasis on the gender wage gap across the distribution of the wage using conditional quantile regression. Using the LFS 1999-2000 Ahmed and Maitra (2015) found that gender wage gap is 50.3 per cent at the 1st decile of the wage distribution while the gap is 45.4 per cent at 9th decile of the wage distribution. A notable finding of the Ahmed and Maitra (2015) study is that the coefficient (discrimination) effect contributes to most of the wage gap against women in the Bangladesh labour market. Ahmed and McGillivray (2015) applying Oaxaca-Blinder Decomposition and distributional decomposition techniques and using the data from LFS 1999-2000 and LFS 2009-2010 found that over the period 1999 to 2010 the average gap has come down by 31 per cent. The authors found that the differences in observed wage was 20.6 per cent in 2010 while it was 57.8 per cent in 2000.

Schooling has important implications for improving human productivity and earnings capabilities in later life and this nexus has been well-established and documented in the relevant global literature. On the other hand, only a few studies have attempted to estimate the returns to schooling in the context of the Bangladeshi labour market. However, these have two important limitations which undermine the veracity and robustness of the results. These relate to the following: (i) earlier studies have not addressed the endogeneity problem concerning schooling and ability to earn; (ii) these studies have focused exclusively on average returns and did not deal with distributional aspects of returns to schooling at different quantiles of the wage distribution. A widely cited study which estimates returns

to schooling for the Bangladesh labour market is Asadullah (2006). The study makes the following observation (p. 455): "in the absence of credible instruments for the schooling variable in our data set, we have eschewed the IV strategy." More recently, Sen and Rahman (2014) observed that OLS tends to underestimate the returns to schooling due to the presence of endogeneity bias. In this article the authors make an attempt to address the endogeneity issue by using credible instrument and has tried to estimate the returns to schooling for the different quantiles of the wage distribution by deploying Quantile Regression (QR) tool developed by Koenker and Bassett (1978) and IVQR method developed by Chernozhukov and Hansen (2008) and Powell (2017).

Estimation of returns to schooling is a critically important subject particularly because schooling impacts on the level of human productivity which consequently leads to higher efficiency in economic activities, resulting in higher wages and earnings (Psacharopoulos, 1985). It is evident from the relevant literature that individuals with higher educational attainment earn higher wages than their less educated cohorts and schooling has a positive causal relationship with economic development (de Meulemeester and Rochat, 1995). To estimate returns to schooling, studies have traditionally used Mincer's (1974) human capital earnings function. However, the model's fundamental problem is the existence of a correlation between innate ability and regression disturbance in the earnings function. According to the signalling theory, more educated individuals receive higher wages because schooling acts as a signal for higher ability. Although schooling does not increase the individual's earnings capacity, there is a correlation between wage and schooling because both variables are influenced by unobserved ability. Schooling provides a more reliable signal to the employers in absence of complete information about individual's ability to perform a task in a competitive labour market. This is one of the key reasons why higher educational attainment yields a higher return (Borjas and Bronars, 1989; Spence, 1973; Wolpin, 1977).

It is argued that, studies that did not address the issue of ability and regression disturbance have been subjected to measurement errors in estimating returns to schooling because of model/functional form misspecification. Card (1999) and Heckman and Polachek (1974) have argued that, though the Mincerian model specification has a seminal contribution to the literature it also has serious shortcomings. The model fails to address endogeneity, omitted variable bias, sample selection bias and non-linearity in the relationship between wages and schooling. Various methodologies have been developed and used to address the aforementioned limitations. To address the endogeneity problem Harmon, Oosterbeek and Walker (2003) and Belzil and Hansen (2002) have suggested inclusion of explanatory variables such as IQ test or Armed Forces qualification tests that can capture innate ability of an individual. However, this approach did not gain much popularity as data on the relevant variables is not easily available. Instead, IV is more widely used to deal with the endogeneity problem. A distinctive feature of IV is that it correlates with the years of schooling variable but is uncorrelated with regression disturbance (i.e. ability).

A number of studies have used the IV method and introduced different instruments to estimate returns to schooling. For instances, Griliches (1976) has used the IQ score; Angrist and Krueger (1991) have used the instrument of the quarter of birth; Kane and Rouse (1995) have used college tuition; Card and Krueger (1994) have used schooling of parents while Card (1999) has used college proximity; Ashenfelter and Zimmerman (1997) have used brother's schooling and/or father's schooling as an instrument. A more recent study by Angrist, Bettinger and Kremer (2006) used quantile regression to capture the distributional aspects of returns to schooling. In assessing different studies, Card (1999) observes that results by using the father's education as an instrument were remarkably consistent in Ashenfelter and Zimmerman (1997) study. Use of family background in wage equation as an instrument for schooling has also been widely prevalent among social scientists (see, for instance, Ashenfelter and Rouse, 1998; Ashenfelter and Zimmerman, 1997; Card, 1999; Card and Krueger, 1994; Miller, Mulvey

and Martin, 1995). A comprehensive review of the literature on returns to schooling can be found in Card (1999). Taking cue from global literature, the authors in this study have used father's schooling as the instrument for measuring returns to schooling.

Studies have also found that social norms can influence views on women's safety and presence in public spaces, limiting mobility and inhibiting available education and work opportunities (Sivasankaran, 2014). Women may face greater employment challenges than men; for example, for longer job search times because of small network and information (Tanaka and Muzones, 2016).

In view of the insights drawn from relevant literature and in light of the evolving features of Bangladesh labour market, this study makes an attempt to capture the dynamics of female labour market in Bangladesh and the drivers of FLFP. By taking cue from the insights gleaned from the literature review, the study has made an attempt to identify the key factors that influence and determine FLFP in the Bangladesh context, and in doing so has developed one of the analytical tools which has gained prominence in the relevant frontier discourse.

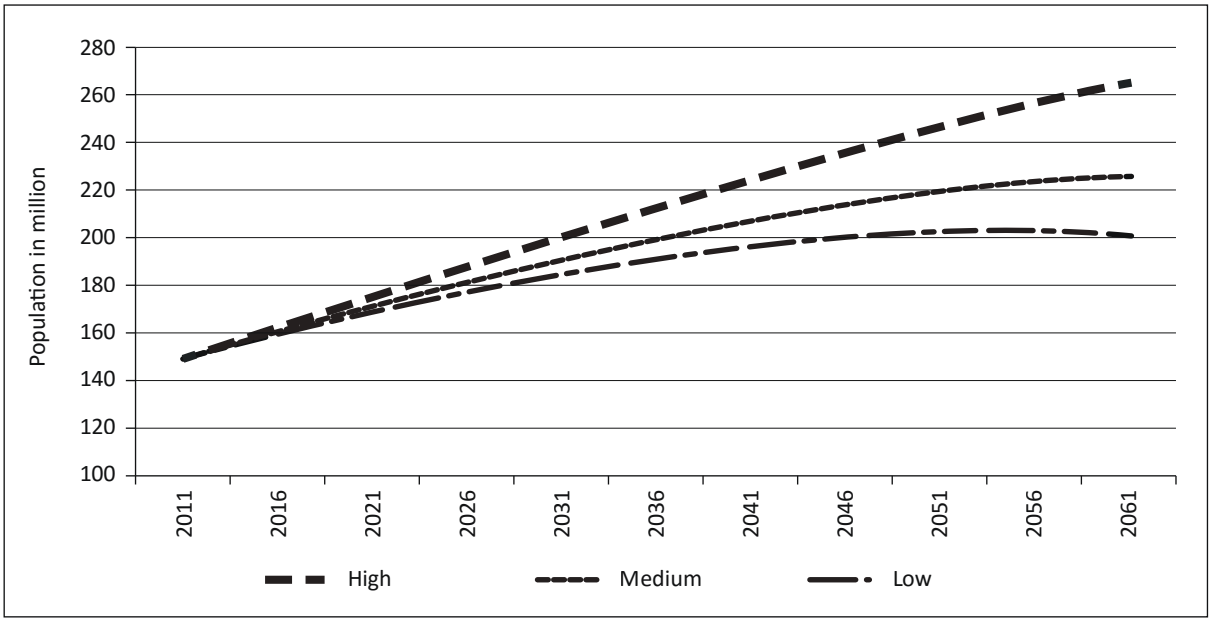
3. FEMALE LABOUR FORCE PARTICIPATION IN BANGLADESH: SELECTED STYLISED FACTS

This section reviews the movement of key correlates concerning FLFP in Bangladesh. The purpose here is to analyse the dynamics of FLFP from the perspective of occupation, gender-divide, wages and earnings and the informality–formality divide.

3.1 Projected population and contribution of women in GDP

According to the 7FYP of Bangladesh, the core labour force age group in Bangladesh, belonging to between 15–59 years of age cohort, will increase significantly by 2061 (Figure 1). The increase will be from 86.7 million in 2011 (benchmark year) to 152.3 million under the high growth scenario; 130.8 million under the medium growth scenario; and 117.1 million under the low growth scenario (end-year of 2061). The population is expected to stabilise at this level, then it will start to decline. Availability of a large number of young, healthy and educated workers ought to be seen as a significant advantage

Figure 1: Projected population in Bangladesh under different growth scenarios



Source: GED (2015).

that awaits Bangladesh as she moves forward in the twenty-first century. Female employment will play an important role in realising the benefits accruing from this potential demographic dividend. Over the next three to four decades, Bangladesh will enjoy the benefits of the demographic dividend, with low dependency ratio and high levels of participation in the workforce. Consequently, issues related to reaping the benefits of demographic dividend is of heightened policy and practical importance as Bangladesh embarks upon her middle-income journey.

Contribution of women to GDP is more than 36 per cent globally. Women's contribution to GDP in China, Thailand, Vietnam and Singapore is higher compared to that of the world average. However, for Bangladesh (19 per cent), India (18 per cent) and Pakistan (11 per cent), their contribution to the GDP is significantly lower (The Economist, 2018). Improving the current situation of low FLFP must be seen as an integral component of the jobs agenda in the Bangladesh context. The issue of current practices of accounting for women's contribution to GDP in Bangladesh is also a point to be kept in mind. Indeed, the value of women's unaccounted for labour was estimated to be equivalent to about 77–87 per cent of Bangladesh GDP, according to the findings of a CPD study (Khatun et al., 2015).

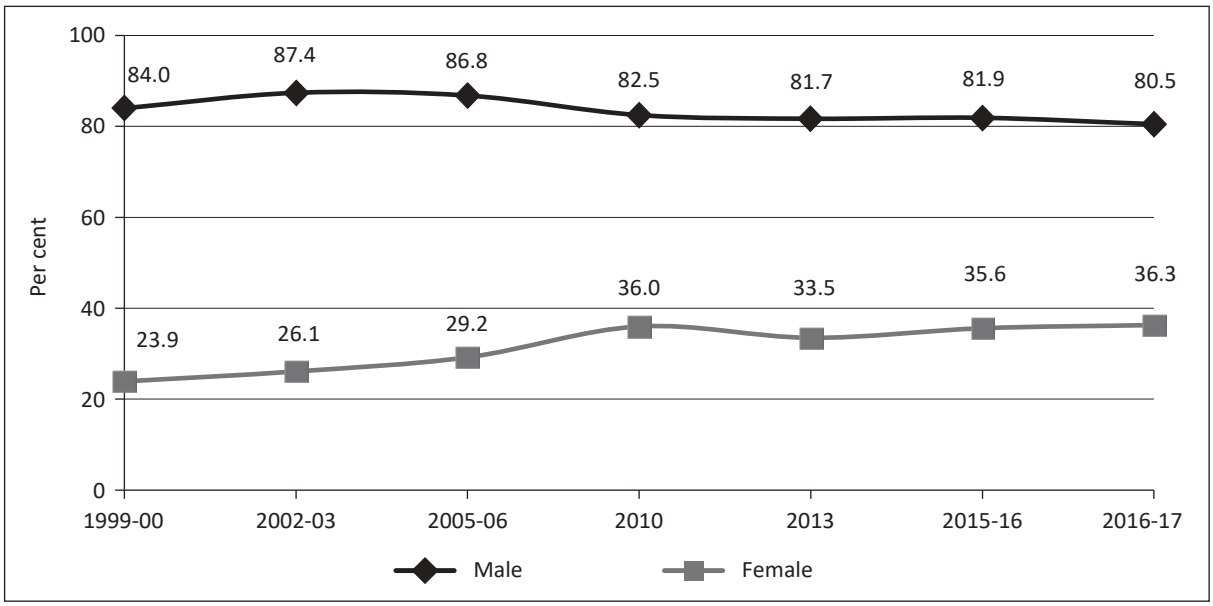
3.2 Trends in male–female labour force participation and NEET people

FLFP being lower compared to the male is a pervasive scene observed around the world. Figure 2 displays the trends of FLFP in Bangladesh from 2000 to 2016-17; Figure 3 presents the global scenario in this context.

FLFP has experienced a secular increase between 2000 and 2010 following which there was a moderate decline between 2010 and 2013 with some rise thereafter. On the other hand, male labour force participation has experienced some decline since 2002-03 excepting insignificant deviations at certain points in time as seen in Figure 2. The gap in labour force participation between men and women in Bangladesh has somewhat narrowed over time, however no significant change is observed between 2010 and 2016-17. The overall labour force participation increased steadily.

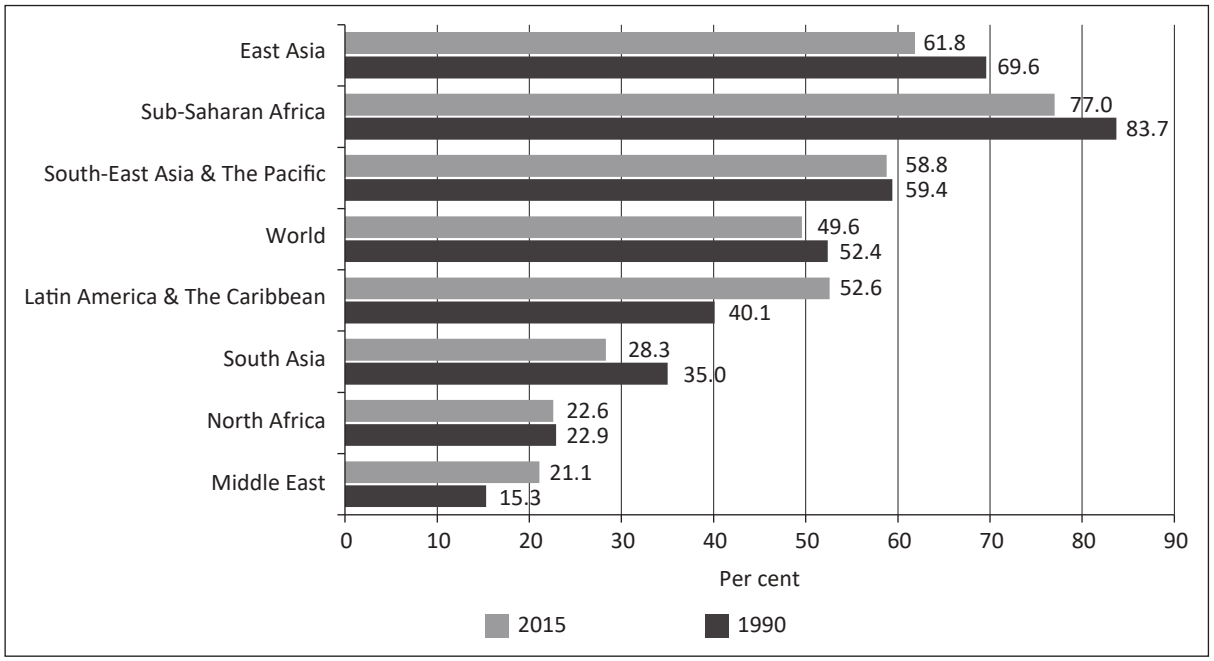
If the global trends are taken into cognisance, it is seen that women's labour force participation has fallen somewhat from 52.4 per cent in 1990 to 49.6 per cent in 2015 (Figure 3). In 2015, regional

Figure 2: Trends in labour force participation rates by sex: 2000–2016



Source: Labour Force Surveys (LFSs) (various years), Bangladesh Bureau of Statistics (BBS).

Figure 3: Female labour force participation in selected regions



Source: ILO (n.d.) [accessed: 19 May 2018].

differences in FLFP rates varied from 21.1 per cent in the Middle East to 77 per cent in Sub-Saharan Africa. The Middle East and North Africa have the lowest participation rates. Women's participation rate in South Asia has declined from 35 per cent in 1990 to 28.3 per cent in 2015. In contrast, women's participation in Latin America and the Caribbean has increased the most from 40.1 per cent in 1990 to 52.6 per cent in 2015. The decline in the FLFP in South Asia is driven by the fact that FLFP has experienced a decline in India over the corresponding period.

As Table 1 shows, about 56.9 per cent of working-age women belong to not in education, employment or training (NEET) category. As the Table indicates, for female the shares are high for both the categories of 15–29 years and 30–64 years, which is significantly different for male where the share is very low for the 15–29 years of age category. This corroborates the earlier observations about women being largely left out of the Bangladesh job market.

Table 1: NEET by gender and age

(% of working-age people)

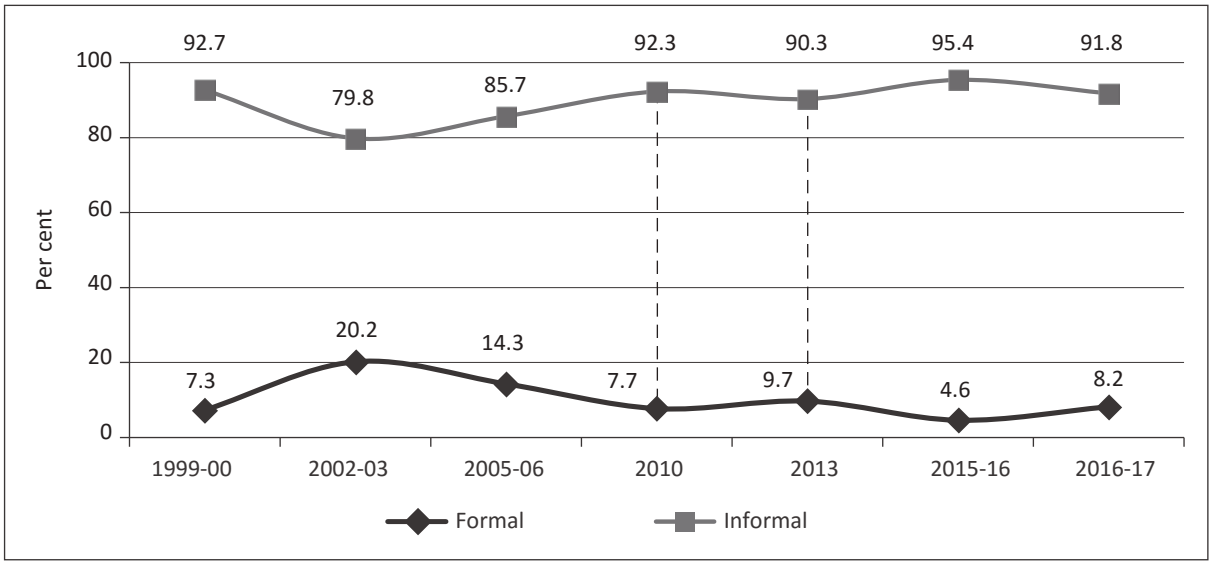
Category	Age groups			Total
	15–29	30–64	65+	
Male	8.1	6.1	52.9	10.8
Female	49.4	58.4	91.2	56.9
Total	29.8	32.4	69.0	34.0

Source: BBS (2018).

3.3 Trends in formal and informal employment

In 2016-17 about 92 per cent of women were engaged in informal employment. Informal employment market is characterised by low-productive jobs and this type of employment are features of both rural and urban labour market (Rahman and Islam, 2013). Female informal employment constituted 92.7 per cent of female labour force as against formal employment of 7.3 per cent, in 2000. In 2016-17, the respective shares stood at 91.8 per cent and 8.2 per cent (Figure 4).

Figure 4: Proportion of formal–informal employment for women



Source: Labour Force Surveys (LFSs) (various years), Bangladesh Bureau of Statistics (BBS).

Move towards formalisation remains a major challenge in the context of Bangladesh labour market. The definition of formal–informal employment was changed in 2010 (demarcated by the dotted line in Figure 4); this was revised in 2013 to make the definition more in line with the standard definitions of formality and informality in the Bangladesh labour market.[2]

3.4 Sector composition and status of employment in Bangladesh labour market

Rising employment in manufacturing sector is a phenomenon seen in early stages of industrialisation. Its decline could be a sign of premature deindustrialisation (Rodrik, 2016). In this backdrop it is disquieting to see that between 2013 and 2016-17 female employment in the industrial sector has come down by about 850 thousand (Table 2). In 2016-17, about 44 per cent workers in Bangladesh were self-employed and about 39 per cent of the workers were paid employees; the remaining 16.6 per cent were either employers' unpaid family helpers, or belonged to the group of uncategorised workers (Table 3). Majority of female workers (about 68 per cent) are either self-employed or contributing family members. They belong to the groups that are 'working hard but working poor'.

Women's share was lower than male for all the categories—except as 'contributing family members'. Women's share in the labour market was relatively low in the labour force both in the rural and the urban areas (Table 4).

Table 2: Employed female aged 15 years and above, by economic sectors

(in Million)

Sector	2013	2015-16	2016-17
Agriculture	9.01	11.21	11.13
Industries	3.99	2.86	3.15
Services	3.85	3.70	4.37
Total	16.85	17.77	18.65

Source: BBS (2018).

[2]The definition to categorise formality–informality was discussed in detail in Rahman, Bhattacharya and Al-Hasan (2018).

Table 3: Status of employment by sex

(in Per cent)

Status in employment	Male	Female	Share in labour force	Male	Female
Employer	95.6	4.4	4.4	6.1	0.6
Own account worker	72.8	27.2	44.3	46.5	39.3
Contributing family member	24.4	75.6	11.5	4.0	28.4
Employee	75.5	24.5	39.1	42.6	31.2
Others	78.1	21.9	0.7	0.7	0.5
Total	69.3	30.7	100.0	100.0	100.0

Source: BBS (2018).

Table 4: Distribution of employed population

(in Per cent)

Occupation	Male			Female		
	Rural	Urban	Total	Rural	Urban	Total
Managers	1.1	4.6	2.1	0.2	1.6	0.6
Professionals	3.6	6.7	4.5	3.6	11.4	5.5
Technicians and associates professionals	1.6	3.8	2.3	0.6	1.8	0.9
Clerical support workers	1.3	2.9	1.8	0.4	1.7	0.8
Service and sales workers	18.1	30.0	21.6	3.8	8.4	4.9
Skilled agricultural, forestry and fisheries	30.8	6.8	23.8	63.0	16.9	51.7
Crafts and related trades workers	15.0	21.5	16.9	12.4	33.0	17.5
Plant and machine operators, and assembles	8.2	10.6	8.9	1.7	3.8	2.2
Elementary occupations	20.1	12.5	17.9	14.1	21.1	15.8
Others occupations	0.3	0.4	0.9	0.0	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: BBS (2018).

3.5 Falling real wages in Bangladesh labour market

Between 2015-16 and 2016-17 the national average wages fell by 2.5 per cent. The average fall in wages for male was 1.9 per cent whereas for female this was by 3.8 per cent (Table 5). The decrease in real wages can be seen as a disincentive with important consequences for labour force participation, particularly for the female.

Table 5: Trends in real wages by areas, and sex

(in BDT, adjusted for 2016-17 CPI)

Category	2013	2015-16	Change (%)	2016-17	Change (%)
National					
Male	14309	13844	-3.2	13583	-1.9
Female	13712	12732	-7.1	12254	-3.8
Total	14152	13602	-3.9	13258	-2.5

(Table 5 contd.)

(Table 5 contd.)

Category	2013	2015-16	Change (%)	2016-17	Change (%)
Urban					
Male	17930	16957	-5.4	17106	0.9
Female	15558	13847	-11.0	13321	-3.8
Total	17192	16022	-6.8	15912	-0.7
Rural					
Male	12512	12211	-2.4	11708	-4.1
Female	12464	11532	-7.5	11206	-2.8
Total	12500	12098	-3.2	11608	-4.0

Source: Labour Force Surveys (LFSs) (various years), Bangladesh Bureau of Statistics (BBS).
Note: BDT: Bangladeshi Taka; CPI: Consumer Price Index.

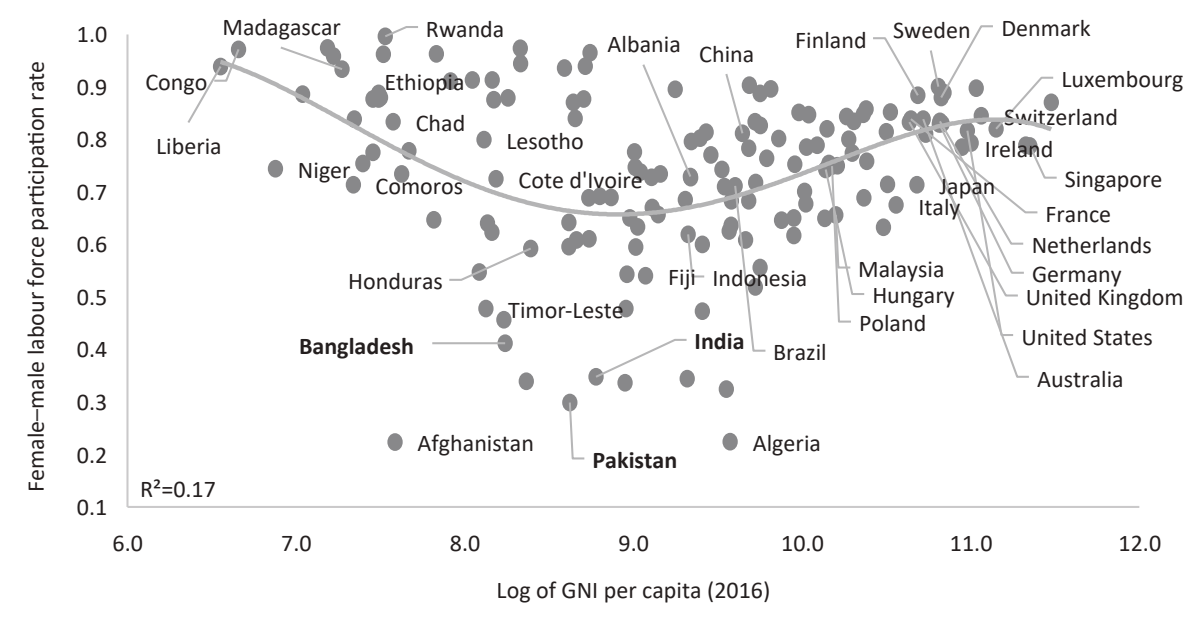
4. DETERMINANTS OF FEMALE LABOUR FORCE PARTICIPATION IN THE CONTEXT OF BANGLADESH

In the following discussion, Section 4.1 discusses the much-debated 'U-shaped feminisation hypothesis'; Section 4.2 assesses the U-shaped relationship between education and FLFP for married women; and finally, Section 4.3 presents analysis of the determinants of the FLFP.

4.1 Myth or inevitable reality of U-shaped hypothesis: Where does Bangladesh stand?

One of the most-discussed hypotheses in FLFP literature is the one that relates to the existence of a U-shaped relationship between economic development and women's participation in the labour force (Goldin, 1994; Mammen and Paxson, 2000). Data presented in Figure 5 shows the evidence of a U-shaped relationship between the log of GNI (gross national income) per capita (in 2016 international dollars; a proxy for economic development) and the female labour force participation rate, through the non-linear trend line. Despite the apparent U-shaped relationship found, there is a debate as regards the validity of the hypothesis (Verick, 2014). The statistical evidence of non-linear U-shaped hypothesis shows that the F=7.3 with associated P-value is 0.000 for the joint hypothesis test. This evidence suggests the significant relationship between economic development and FLFP. However, in case of Bangladesh the FLFP rate is about 30 points below countries with the same level of GNI per

Figure 5: U-shaped hypothesis of female labour force participation



Source: Authors' calculations from the data of World Bank (n.d.) [accessed: 29 October 2018].

capita. Further, LFS data of the Bangladesh Bureau of Statistics (BBS) shows that FLFP declined from 36.5 per cent to 33 per cent between 2010 and 2013 but reached to 36 per cent in 2016-17. Despite the feeble evidence to support the U-shaped hypothesis, what should serve as an important insight is that the FLFP of Bangladesh could be raised by about 30 percentage points (inferred from the global trend mentioned above).

4.2 U-shape relationship between education and female labour force participation

Based on insights from global literature landscaping, the present study has identified education as a key driving force in explaining FLFP. One of the strongest determinants of labour market outcomes in both developed and developing countries is educational attainment (Cazes and Verick, 2013). Recent studies which focused on the relationship between FLFP and education in the South Asian context found the presence of a U-shaped relationship between education and FLFP (see, Kanjilal-Bhaduri and Pastore (2018) and Mehrotra and Parida (2017) for the Indian labour market; and Field and Vyborny (2016) for the Pakistan labour market).

Table 6 shows that about 33 per cent of women with no education, about 28 per cent women with primary education, about 29 per cent women with secondary education, about 32 per cent women with higher secondary education and about 53 per cent women with tertiary education participate in the labour force. Labour force participation rate by educational attainment clearly portrays a U-shaped pattern (graphical presentation is given in Figure 6). Results shown in Table 6 are also consistent with

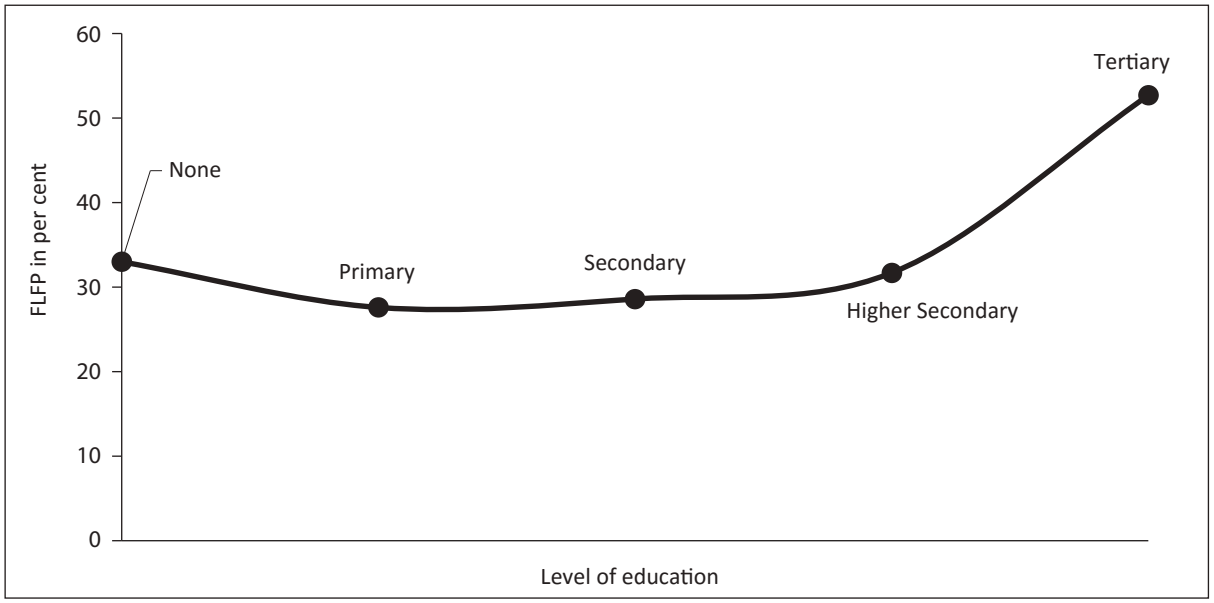
Table 6: Educational attainment and female labour force participation

(in Per cent)

Education	Labour force	Not in labour force	Total	Share in labour force
None	33.0	67.0	100.0	33.3
Primary	27.6	72.4	100.0	27.3
Secondary	28.6	71.4	100.0	32.3
Higher Secondary	31.7	68.3	100.0	4.8
Tertiary	52.7	47.3	100.0	2.2
Total	**30.5**	**69.5**	**100.0**	**100.0**

Source: Authors' calculations from the data of BBS (2017).

Figure 6: U-shaped relationship between educational attainment and female labour force participation



Source: Authors' calculations from the data of BBS (2017).

the probabilistic approach of regression estimates and with Kanjilal-Bhaduri and Pastore (2018) and Mehrotra and Parida (2017). Section 4.3 elaborates the causes of the U-shaped relationship between educational attainment and the FLFP.

4.3 Empirical estimates of female labour force participation: From barriers to drivers

Table 7 shows the regression estimates involving the FLFP. The estimates based on Linear Probability Model (LPM), Logit and Probit models are presented in the Table. The marginal effect is discussed from the Probit model. More details are provided in Annex Table 2.

Table 7: Determinants of labour force participation of married women (age 18–40 years)

Dependent variable: Labour force participation

Variables	**LPM**	**Marginal Effect**	
		Probit	**Logit**
No education (base group)	--	--	--
Primary	-0.036*** (0.004)	-0.036*** (0.004)	-0.035*** (0.004)
Secondary	-0.089*** (0.004)	-0.089*** (0.003)	-0.088*** (0.003)
Higher Secondary	-0.107*** (0.006)	-0.107*** (0.006)	-0.108*** (0.006)
Tertiary	0.062*** (0.008)	0.069*** (0.008)	0.068*** (0.008)
Training	0.471*** (0.009)	0.496*** (0.013)	0.510*** (0.014)
Other variables included?	Yes	Yes	Yes
Obs.	18130	18130	18130
R-squared	0.11	0.08	0.08

Source: Authors' calculations.

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Regression estimates yield identical U-shaped relationship between educational attainment and FLFP in line with what is suggested by relevant literature as mentioned above. Educational attainment of an individual has a significant impact on FLFP but its relationship is U-shaped. Regression results show that women with primary, secondary and higher secondary education have negative relationship in view of labour force participation compared to women with no formal education (base group). In contrast, women with tertiary education have positive relationship in this connection compared to women with all other levels of education. The results of the exercise clearly demonstrate the statistically significant presence of the U-shaped hypothesis for married women in Bangladesh.

The U-shape relationship between educational status and women's labour force participation at a given point in time emphasises the fact that poorly educated women are forced to work to survive by combining work with domestic duties. Heintz, Kabeer and Mahmud (2018), using primary survey results, show that in Bangladesh women with no formal education are more likely to be engaged in employment, more particularly in informal employment. Their findings show that 53 per cent of less educated women prefer to do informal jobs such as livestock and poultry rearing. Among women with comparatively higher education, high wages induce women to work; social stigma relating to employment tends to disappear with higher education (Mammen and Paxson, 2000). Women who belong to the middle ground between these two groups, may face barriers to labour force participation. This may arise from absence of acute needs, as experienced by women with no or less education (the income effect), and also due to the presence of social stigma associated with female employment

(Kanjilal-Bhaduri and Pastore, 2018; Klasen and Pieters, 2015). It is highly likely that women with some schooling will be able to get risk-prone, low-paid jobs that involve hard work in factories or enterprises. Explanations offered by Mammen and Paxson (2000) state that women may dislike factory work and, if possible, avoid it. Factory work often does not pay enough to compensate the cost of working away from home. Goldin (1994, 9) has argued that social stigma makes people believe that "only a husband who is lazy, indolent and entirely negligent of his family would allow his wife to do such labour." Mehrotra and Parida (2017) argue that in rural India an increasing number of women enrollment in schools has led to lower FLFP. This argument is also found to be similar to that of Bangladesh where women enrollment in primary, secondary and higher secondary levels has increased significantly during the last decades. Heintz, Kabeer and Mahmud (2018) confirm that, in Bangladesh, cultural norms restrict female mobility in the public domain and this consequently reduces FLFP.

Goldin (1994) argues that social stigma does not tend to be attached with white-collar jobs since the women in this type of jobs typically have a more educated husband who is an adequate provider. When the women education level rises to the tertiary level their market wages increase and together with the observed falling fertility the cost of participating in outside jobs decline. The benefits accruing from combination of such factors induce them to work (Mammen and Paxson, 2000). Finally, the importance and emphasis put on human capital development often motivates women to participate in the labour force (Mehrotra and Parida, 2017).

5. OCCUPATIONAL SEGREGATION AND GENDER WAGE GAP IN BANGLADESH LABOUR MARKET

This section offers insights as regards occupational segregation and presence of gender discrimination in the Bangladesh labour market. On the one hand, the study finds that there is a presence of gender segregation in terms of occupation which tends to be higher in the urban labour market and somewhat lower in the rural labour market. Also, an overall 12.2 per cent gender wage gap is found in the labour market. Further, the study establishes that a major cause of the existence of the gender wage gap is due to the large presence of informal employment in the economy.

5.1 Dissimilarity in occupation

The Dissimilarity Index developed by Duncan and Duncan (1955) in Table 8 shows the evenness of the distribution of occupation in Bangladesh labour market from 2002-03 to 2015-16. This index was calculated for the overall economy as well as for urban and rural labour markets.

Table 8 shows for the 2002-03 period, in the urban labour market there was a moderate level of occupational segregation [DI=29.3]. In the rural labour market occupation of women was more evenly distributed indicating lower occupational segregation. In case of the overall economy (DI=17.6), lower than moderate level of occupational segregation was discernible.

It is surprising, however, to find that within three years (2005-06) the occupational segregation scenario in Bangladesh had changed (increased) and that also quite significantly. Indeed, this trend

Table 8: Dissimilarity Index in Bangladesh labour market from 2002-03 to 2016-17

Year	Rural	Urban	Overall
2002-03	12.9	29.3	17.6
2005-06	27.4	33.9	28.6
2010	24.8	41.9	28.7
2015-16	29.6	32.3	29.1
2016-17	32.4	34.9	29.6

Source: Authors' calculations from the data of Labour Force Surveys (LFSs) (various years), Bangladesh Bureau of Statistics (BBS).

has continued both in urban and rural areas till the year 2010. In 2010 DI rose sharply to 41.9 per cent in the urban areas indicating a strong presence in occupational segregation. In the rural labour market, DI was equal to 24.8 which indicates a moderate occupational segregation. However, some progress has been made as regards the evenness in occupation by gender. However, the evenness in occupation has improved in 2015-16.

5.2 Introducing informal employment as a source of gender discrimination: Insights from quantile estimates[3]

Regression results as regards gender wage gap and wage discrimination have been presented in Tables 9, 10 and 11. Results of quantile regression estimates, where the hypothesis concerning the origination of gender wage gap coming from informal employment is tested, are presented in Tables 12 and 13.

The standard Oaxaca-Blinder decomposition result is presented in Table 9 (along with QCD result). The analysis shows that on an average, woman earns 12.2 per cent lower wage than man. In the Oaxaca-Blinder wage decomposition, the characteristics effect of 6.5 per cent implies that mean wage of women's would rise by this extent if they had the same characteristics as men. The coefficient effect, which is labour market discrimination against women, is found to be 5.7 per cent.[4]

QCD result in Table 9 also shows that at the bottom of the wage distribution (1st decile) the gender wage gap is about 11.7 per cent. In the 2nd decile the gender wage gap is 14.7 per cent following which wage gap tends to decline. Wage gap in the 5th decile is estimated to be 8 per cent. This gap is triggered by unobserved coefficient effect except in the 4th decile, where wage gap is 12.2 per cent and characteristics effect is 8 per cent. In the 6th decile, the wage gap is 15.9 per cent; for the 7th and 8th deciles the respective gaps are found to be 19.4 per cent and 16.3 per cent. On the other hand, at the top of the wage distribution (9th decile) the gender wage gap is found to be 8.3 per cent. Overall, a blend of coefficient and characteristics effects is observed throughout the wage distribution.

Table 9: Oaxaca-Blinder and quantile decomposition of male–female wage

Dependent variable: Log of monthly wages

Component	Quantile									Oaxaca-Blinder
	τ (10)	τ (20)	τ (30)	τ (40)	τ (50)	τ (60)	τ (70)	τ (80)	τ (90)	
Total effect	0.117 (0.009)	0.147 (0.023)	0.133 (0.023)	0.122 (0.015)	0.080 (0.00)	0.159 (0.022)	0.194 (0.031)	0.163 (0.024)	0.083 (0.029)	0.122 (0.011)
Char. effect	0.000 (0.013)	0.000 (0.000)	0.000 (0.000)	0.080 (0.015)	0.000 (0.000)	0.143 (0.015)	0.125 (0.028)	0.105 (0.015)	0.083 (0.036)	0.065 (0.008)
Coeff. effect	0.117 (0.016)	0.147 (0.024)	0.133 (0.023)	0.042 (0.019)	0.080 (0.000)	0.016 (0.017)	0.069 (0.033)	0.057 (0.023)	0.000 (0.06)	0.057 (0.009)

Source: Authors' calculations from the data of BBS (2017).

Note: Probit distribution model was used. Bootstrap standard error with 100 repetitions are given in parentheses. The following explanatory variables are included in each group: age, education, training, informal employment, ownership, permanent, occupation dummy, rural dummy and divisional dummy.

Drawing attention to the large presence of informal employment in developing countries, Perry et al. (2007) characterises this as unregulated, unrecognised, unprotected and unrecorded. The gap in wage between formal and informal employment is a penalty incurred on account of informality (see, for instance, Bargain and Kwenda, 2014; Funkhouser, 1997; Gong and van Soest, 2002). Using the quantile regression framework, the contribution of informal employment attributes to male–female gender wage gap has been attempted to quantify under the present study.

[3]More technical and detail analysis of market segmentation and gender discrimination can be found in Rahman and Al-Hasan (2019).

[4]Results are statistically significant at 1 per cent level.

Table 10: Oaxaca-Blinder and quantile decomposition of gender wage gap in formal employment

Dependent variable: Log of monthly wages

Component	Quantile									Oaxaca-Blinder
	τ (10)	τ (20)	τ (30)	τ (40)	τ (50)	τ (60)	τ (70)	τ (80)	τ (90)	
Total effect	-0.080 (0.071)	-0.061 (0.038)	0.000 (0.022)	0.027 (0.027)	0.000 (0.011)	0.000 (0.019)	0.000 (0.026)	0.036 (0.039)	0.089 (0.036)	0.016 (0.022)
Char. effect	0.000 (0.031)	0.000 (0.029)	0.000 (0.029)	0.000 (0.029)	0.000 (0.021)	0.000 (0.017)	-0.040 (0.024)	-0.069 (0.028)	0.000 (0.035)	-0.009 (0.015)
Coeff. effect	-0.080 (0.064)	-0.061 (0.026)	0.000 (0.025)	0.027 (0.030)	0.000 (0.022)	0.000 (0.024)	0.041 (0.022)	0.105 0.031)	0.089 (0.047)	0.026 (0.018)

Source: Authors' calculations from the data of BBS (2017).

Note: The Probit distribution model has been applied. Bootstrap standard error with 100 repetitions are given in parentheses. The following explanatory variables are included in each group: age, education, training, ownership, permanent, occupation dummy, rural dummy and divisional dummy.

From Table 10 it is found that the average wage gap between men and women is insignificant, at 1.6 per cent. In the 1st decile of the wage distribution, formally employed women earn 8 per cent higher than male; for the 2nd decile women are found to earn 6.1 per cent higher wage than male. For the 3rd, 4th, 5th, 6th and 7th deciles, no significant difference between male and female wages is observed. However, in the 8th decile male employees earn 3.6 per cent higher wage than the female cohort. In the 9th decile male employees earn 8.9 per cent more wage than female. However, in the 8th and 9th deciles characteristics favour the women but labour market discrimination causes a wage gap favouring the men.

The average wage gap between informally employed male and female is 14.3 per cent where 8.4 per cent is labour market discrimination against women. Throughout the wage distribution, higher wage gap is observed than what is observed for the full sample. At the bottom of the wage distribution (up to 4th decile), the study finds there is a wage gap due to labour market discrimination against women. But beyond this a large part of the wage gap is found to be on account of differences in endowments between men and women. Table 11 makes clear that the observed wage gap between male and female originates from the unregulated informal employment.

To support and establish the above mentioned claim, and to link the results presented in Tables 10 and 11 the interaction between *female* and *informal employment* is taken as dummy. This allows one to have a deeper understanding as regards the effects of informal employment for specific groups at conditional quantiles. The results of quantile regression estimates are given in Tables 12 and 13.

Table 11: Oaxaca-Blinder and quantile decomposition of gender wage gap in informal employment

Dependent variable: Log of monthly wages

Component	Quantile									Oaxaca-Blinder
	τ (10)	τ (20)	τ (30)	τ (40)	τ (50)	τ (60)	τ (70)	τ (80)	τ (90)	
Total effect	0.182 (0.034)	0.154 (0.025)	0.182 (0.000)	0.087 (0.004)	0.123 (0.021)	0.080 (0.000)	0.113 (0.019)	0.169 (0.038)	0.223 (0.018)	0.143 (0.010)
Char. effect	0.000 (0.005)	-0.047 (0.022)	0.000 (0.000)	0.000 (0.004)	0.039 (0.011)	0.000 (0.000)	0.074 (0.017)	0.134 (0.029)	0.163 (0.031)	0.059 (0.006)
Coeff. effect	0.182 (0.034)	0.201 (0.011)	0.182 (0.000)	0.087 (0.000)	0.083 (0.022)	0.080 (0.000)	0.039 (0.009)	0.036 (0.022)	0.061 (0.027)	0.084 (0.009)

Source: Authors' calculations from the data of BBS (2017).

Note: The Probit distribution model has been used. Bootstrap standard error with 100 repetitions are given in parentheses. The following explanatory variables are included in each group: age, education, training, ownership, permanent, occupation dummy, rural dummy and divisional dummy.

Table 12: Quantile regression of log of monthly wages

Dependent variable: Log of monthly wages

Variable	Quantile									OLS
	τ (10)	τ (20)	τ (30)	τ (40)	τ (50)	τ (60)	τ (70)	τ (80)	τ (90)	
Female	-0.102*** (0.018)	-0.072*** (0.011)	-0.058*** (0.008)	-0.044*** (0.007)	-0.039*** (0.006)	-0.035*** (0.006)	-0.035*** (0.007)	-0.035*** (0.007)	-0.044*** (0.012)	-0.039*** (0.009)
Other variables included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9256	9256	9256	9256	9256	9256	9256	9256	9256	9256
R-squared	0.13	0.18	0.21	0.24	0.28	0.33	0.35	0.36	0.37	0.41

Source: Authors' calculations from the data of BBS (2017).

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. The following explanatory variables are included in each group: age, education, training, informal employment, ownership, permanent, occupation dummy, rural dummy and divisional dummy. The full results were suppressed for the sake of brevity.

Table 13: Quantile regression of log of monthly wages with interaction

Dependent variable: Log of monthly wages

Variable	Quantile									OLS
	τ (10)	τ (20)	τ (30)	τ (40)	τ (50)	τ (60)	τ (70)	τ (80)	τ (90)	
Female	0.085** (0.041)	0.017 (0.015)	0.003 (0.019)	-0.023* (0.012)	-0.038** (0.017)	-0.029 (0.018)	-0.041* (0.021)	-0.065*** (0.016)	-0.076** (0.037)	-0.014 (0.019)
Informal emp X Female	-0.227*** (0.047)	-0.131*** (0.020)	-0.074*** (0.021)	-0.028* (0.015)	-0.001 (0.019)	-0.005 (0.019)	0.006 (0.022)	0.032* (0.017)	0.034 (0.040)	-0.031 (0.021)
Other variables included?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9256	9256	9256	9256	9256	9256	9256	9256	9256	9256
R-squared	0.14	0.19	0.21	0.24	0.28	0.33	0.35	0.36	0.37	0.41

Source: Authors' calculations from the data of BBS (2017).

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. The following explanatory variables are included in each group: age, education, training, informal employment, ownership, permanent, occupation dummy, rural dummy and divisional dummy. The full results were suppressed for the sake of brevity.

Results in Table 12, where quantile regression results are presented, also shows that gender wage gap tends to be higher in the lower deciles of the wage distribution; women earn about 10.2 per cent less wage than men at the 1st decile. The gender wage gap narrows down as one moves along the higher deciles of the wage distribution; e.g. the wage gap is about 3.5 per cent in the 8th decile.

In Table 13 the test is carried out on whether the large presence of informal employment (about 86.2 per cent nationally and 79.1 per cent in this sub-sample) is a major source of gender wage gap in Bangladesh. The study takes the interaction of female workers and informal sector workers to test the hypothesis concerning 'origination of wage gap from informal sector'. It is found that when the interaction term is included in the analysis, there is a dramatic change in the regression results. For the 1st decile, this interaction term accounts for all the gender wage gap (statistically significant at 1 per cent level) while the gender variable (female) becomes positive (statistically significant at 5 per cent level). The noteworthy result is that given the men and women characteristics at the 1st decile of the wage distribution, formally employed women earn 8.5 per cent more wage compared to men. As a matter of fact, centile of male–female wage distribution shows that at the 1st decile log of female monthly wage is 9.47 and male monthly wage is 9.39. The results show that the study's hypothesis holds in the above mentioned context and proves that informality is the major cause of the existing gender wage gap in Bangladesh. To a large extent, this result holds for 1st, 2nd, 3rd and 4th deciles. In 4th, 5th, 7th, 8th and 9th deciles the presence of gender wage gap is observed even after inclusion of the interaction term in the analysis. In sum, the informal employment contribution to gender wage gap is higher in the lower decile of the wage distribution and tends to be lower in the higher decile of the wage distribution. This is from the fact that those who are informally employed but earn a higher wage in the market are very competitive and discrimination against them is very difficult due to their bargaining power over wage. This is, however, not to say that gender is not a factor in the gender wage gap. Rather, the exercise indicates that in the Bangladesh context an important strategy to narrow down gender wage gap will be to pursue a strategy of reducing informality in a consistent manner.

In the rural areas, the average wage for men is found to be BDT 9,931 and for women this was BDT 9,150. The difference is only 8 per cent and the explained and the unexplained differences are (-) 2 per cent and 10 per cent respectively. All coefficients are statistically significant at 1 per cent level. In the urban areas the average monthly wage is higher compared to the rural areas but wage gap is relatively high in the urban areas. The average wage for men is BDT 12,790 and for women the corresponding figure is BDT 11,166. Table 14 shows that the gap is 14 per cent and the explained and the unexplained

Table 14: Oaxaca-Blinder decomposition of gender wage gap in urban and rural divide and different economic sectors

Dependent variable: Log of monthly wages

Component	Rural	Urban	Agriculture	Industries	Services
Male	9931 (0.000)	12790 (0.000)	8227 (0.000)	11195 (0.000)	13304 (0.000)
Female	9150 (0.000)	11166 (0.000)	7013 (0.000)	10135 (0.000)	11820 (0.000)
Difference (%)	8.0 (0.000)	14.0 (0.000)	17.3 (0.000)	9.9 (0.000)	11.6 (0.000)
Explained (%)	-2.0 (0.000)	7.00 (0.000)	2.5 (0.070)	-0.2 (0.78)	10.1 (0.000)
Unexplained (%)	10.0 (0.000)	7.00 (0.000)	14.5 (0.000)	10.7 (0.000)	2.2 (0.040)

Source: Authors' calculations from the data of BBS (2017).

Note: P-values in parentheses. The following explanatory variables are included in each group: age, education, training, informal employment, ownership, permanent, occupation dummy, rural dummy and divisional dummy. The full results were suppressed for the sake of brevity.

gaps are 7 per cent for both. Higher gender wage gap in urban areas is explained by the higher degree of gender segregation in occupation in the urban labour market.

Table 14 shows that in the agriculture sector mean wage for men is BDT 8,227 and that for women is BDT 7,013. The difference in wage is 17.3 per cent, where 2.5 per cent is accounted for by the difference in endowments (explained variation) and 14.5 per cent by factors which are not controlled in the model (unexplained part). This unexplained part can be interpreted as wage discrimination against women. Explained wage is statistically significant at 5 per cent level and the unexplained wage gap is statistically significant at 1 per cent level.

The Oaxaca-Blinder decomposition concerning the industries sector shows that the mean wage for men and women are BDT 11,195 and BDT 10,135 respectively. The overall wage gap is 9.9 per cent and the discrimination effect is 10.7 per cent. What needs to be noted in reference to the industries sector wage gap is that the coefficient of explained variation is negative. This implies that if the women had the same level of endowments then they would be in an advantageous position compared to men. However, the explained variation in industries sector is not statistically significant at 5 per cent level.[5]

Compared to agriculture and industries, services sector workers earn more wages. The mean wage for men is BDT 13,304 while that for women is BDT 11,820. The overall wage gap between men and women is 11.6 per cent which is statistically significant at 1 per cent level. In this case the explained variation is 10.1 per cent (statistically significant at 1 per cent level) and the unexplained variation is 2.2 per cent (significant at 5 per cent level).

6. RETURNS TO SCHOOLING, TRAINING AND SELF-EMPLOYMENT

This section discusses the returns to schooling, the impact of training on earnings, and prospects and challenges of self-employment in Bangladesh.[6] Section 6.1 presents the returns to schooling. Section 6.2 estimate the returns to training on matching sample, and finally, Section 6.3 discusses the returns to self-employment in Bangladesh.

6.1 Returns to schooling revisited: An Instrumental Variable Quantile Regression approach[7]

Average returns to schooling is presented in Table 15. Table 16 presents the QR and IVQR estimates of returns to schooling, both for male and female.

Table 15 shows that, ceteris paribus, the average rate of returns to schooling for male is 2.7 per cent. However, the OLS estimates suffer from the well-known endogeneity problem. To address this, the IVGMM (Generalized Method of Moment) techniques have been applied in this study and was found that the average returns to schooling is 7.3 per cent. For female, this average is found to be 2.5 per cent as is seen from the OLS exercise. In case of female, IVGMM shows the returns to schooling to be 8.1 per cent which is about one percentage point higher than that of male. That the returns to schooling tends to be higher for the female is not new. For instance, Dougherty (2005), using the US National Longitudinal Survey of Youth (NLSY) data, found that the returns to schooling for female was 1.96 percentage points higher than that of the male. Using the HIES 2000 data, Asadullah (2006) had earlier found that returns to schooling for female was 13.2 per cent while that for male was 6.2 per cent. However, the magnitude of this for the female (7 percentage points higher than that of male)

[5]For a more detailed interpretation of negative coefficient please see Blinder (1973).

[6]Rahman and Al-Hasan (2018) presents some detailed explanation as regards returns to schooling in the Bangladesh labour market.

[7]First stage IV regression is associated with F-value, which is 204.45 for male and 107.25 for female. The associate p-value is 0.000 for both male and female. Sargen statistics show exact identification and validity of the instrument.

Table 15: Average returns to schooling by gender

Dependent variable: Log of hourly wage

Variables	Male		Female	
	OLS (1)	IVGMM (2)	OLS (3)	IVGMM (4)
Schooling	0.027*** (0.003)	0.073*** (0.0101)	0.025*** (0.00674)	0.081*** (0.0305)
Other variables included?	Yes	Yes	Yes	Yes
Instrument:				
Father's schooling	No	Yes	No	Yes
Constant	3.94*** (0.153)	3.92*** (0.157)	3.86*** (0.258)	3.74*** (0.608)
Obs.	3954	3954	565	565
R-squared	0.29	0.29	0.28	0.11

Source: Adapted from Rahman and Al-Hasan (2018, 33).

Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1**.** Other variables include: age and age square, economic sector, rural dummy, regional dummy, marital status and occupational dummy.

found in the study is significantly higher than what appears to be the average case. As may be gleaned from a review of relevant literature, this difference tends to be, on average, less than two percentage points.[8] Whilst women earn less than that of men, the double impacts of schooling raises skills and productivity for women as well as for men and leads to reduction in discrimination against women (which improves the overall situation of women in society) explain the high returns to schooling for women (Dougherty, 2005).

However, the averages portray the returns to schooling only partially; estimates are likely to be significantly different across the quantiles of the wage distribution. The present study addresses the issue of distributional effects by applying the IVQR estimates both for male and female. This is presented in Table 16.

The joint significance test validates the point that returns to schooling may change significantly at different quantiles of the wage distribution.[9]

Table 16: QR and IVQR of returns to schooling by gender

Dependent Variable: Log of hourly wage

Quantiles	Male		Female	
	QR (1)	IVQR (2)	QR (3)	IVQR (4)
τ (15)	0.029*** (0.003)	0.029*** (0.009)	0.014** (0.006)	0.027 (0.017)
τ (25)	0.029*** (0.002)	0.055*** (0.009)	0.017*** (0.005)	0.030*** (0.009)
τ (50)	0.033*** (0.002)	0.052*** (0.007)	0.044*** (0.004)	0.069*** (0.014)
τ (75)	0.040*** (0.002)	0.057*** (0.005)	0.042*** (0.006)	0.069*** (0.010)
τ (85)	0.040*** (0.00313)	0.071*** (0.003)	0.045*** (0.009)	0.071*** (0.004)

(Table 16 contd.)

[8]See Dougherty (2005, 981), Appendix 1, for a summary of 27 studies.

[9]Both for male and female the study rejects the null hypothesis of coefficient equality at a level of 0.01 (F=6.68 with associated P-value is 0.0000, and F=4.72 with associated p-value is 0.0009 for male and female respectively).

(Table 16 contd.)

Quantiles	Male		Female	
	QR (1)	IVQR (2)	QR (3)	IVQR (4)
Other variables included?	Yes	Yes	Yes	Yes
Instrument:				
Father's schooling	No	Yes	No	Yes
Obs.	3953	3953	565	565

Source: Adapted from Rahman and Al-Hasan (2018, 27–42).

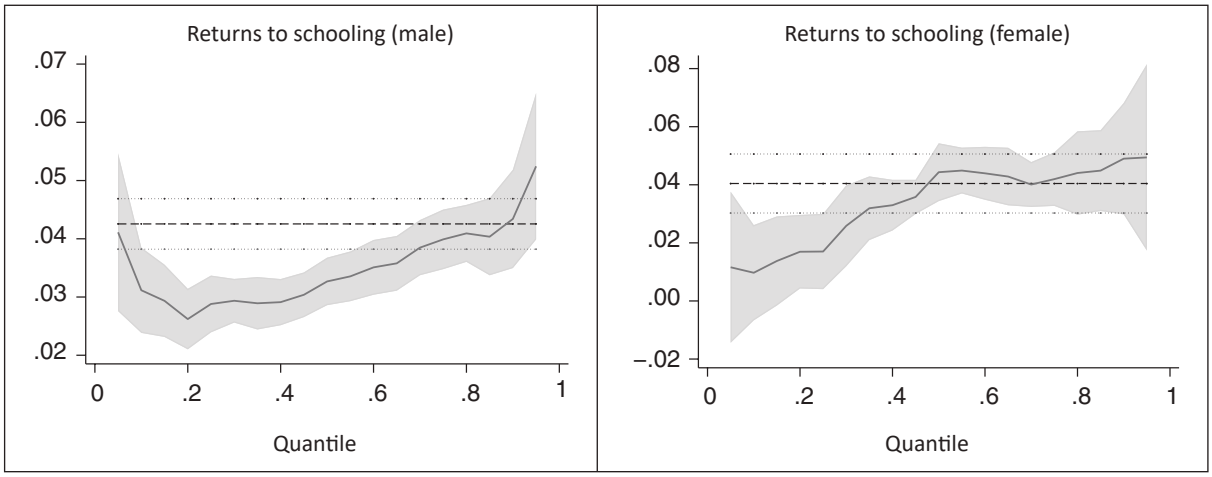
Note: Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. Other variables include: age and age square, economic sector, rural dummy, regional dummy, marital status and occupational dummy. IVQR results based on 10,000 replications.

IVQR shows that, at 15 percentile, the returns to schooling is 2.9 per cent (same as QR) for male and for female the returns to schooling is 2.7 per cent (but statistically insignificant as shown in the 4th column in Table 16). The returns for male (female) are 5.5 (3) per cent at 25th percentile, 5.2 (6.9) per cent at 50th percentile, 5.7 (6.9) per cent at 75th percentile, and 7.1 (7.1) per cent at 85th percentile (shown in 2nd and 4th columns in Table 16).

While the average returns to schooling is higher for female, mixed results of the returns are observed by using quantile estimates. Comparing the IVQR results only, at the 15th percentile, the returns to schooling for male is 2.9 per cent whilst that for female this is statistically insignificant. A female earns 2.5 percentage points lower than that of male at the 25th percentile. On the contrary, returns to schooling for female are 1.7 and 1.2 percentage points higher at 50th and 75th percentile respectively. At the 85th percentile returns to schooling for both male and female are observed to be similar. This shows that previous studies relating to the Bangladesh labour market which have relied exclusively on average returns to schooling provide only a partial picture.

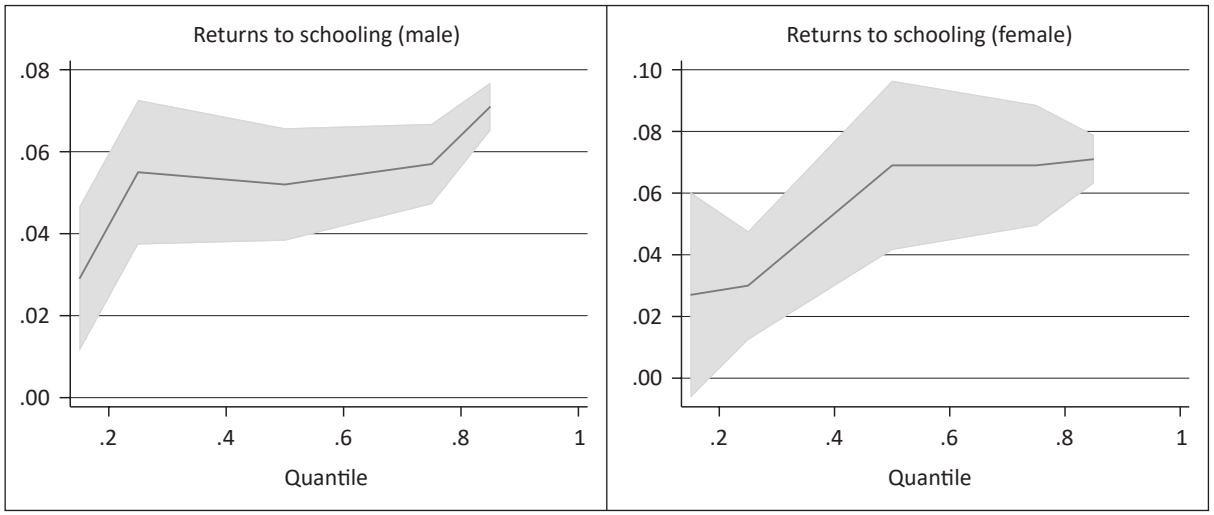
Despite the changed slope of schooling along the wage distribution, in absence of IV, both the OLS and QR underestimate the returns to schooling. For instance, for the male (female) using OLS it is found that the average returns to schooling is 2.7 (2.5) per cent. In contrast, IVGMM estimates show returns to schooling to be 7.3 (8.1) per cent. Graphical presentation of QR and OLS coefficients and their confidence intervals are presented in Figure 7; IVQR coefficients and their confidence intervals are given in Figure 8.

Figure 7: QR and OLS coefficients and confidence intervals for schooling



Source: Adapted from Rahman and Al-Hasan (2018, 36).

Figure 8: IVQR coefficients and confidence intervals for schooling



Source: Adapted from Rahman and Al-Hasan (2018, 36).

The returns to schooling, both for the urban and rural labour markets, can be found in (Rahman and Al-Hasan, 2018). It is found that, on average, returns to schooling in the urban labour market is 9.8 per cent for male (compared to 7.3 per cent for the male full sample). In the rural labour market, the rate is found to be 4.9 per cent (only IV results are considered). Female returns to schooling is found to be 13 per cent in the rural labour market (compared to 8.1 per cent for the full sample for female). The figure is 7.2 per cent in the urban labour market. It is found that women earn more in rural areas compared to the urban areas, but male earns relatively more in the urban areas. The QR and IVQR also show similar results conditional at different quantiles (Rahman and Al-Hasan, 2018). One possible explanation for this could be the higher gender segregation in various occupations observed in the urban labour market of Bangladesh (see, Rahman, Bhattacharya and Al-Hasan, 2018).

6.2 Training: Pathways to increase labour force participation?

The regression analysis undertaken for this study shows that skills training has a positive impact on labour force participation rate. Training in the last year increases the rate by 49 per cent (Table 7). As Table 17 shows, about 83 per cent of individuals who received training participate in the labour force.

Positive impact of training in raising the FLFP is reinforced by the positive effect on earnings. The impact of training on female earnings is presented in Table 18.

Table 17: Training status and labour force participation

(in Per cent)

Training institute	Labour force	Not in labour force	Share in training
Government	55.1	44.9	9.8
Non-government institute	87.7	12.3	75.9
NGO	83.4	16.6	5.8
Foreign	83.0	17.0	0.5
Joint venture	70.6	29.0	2.9
Others	72.3	27.7	5.1
Total	83.0	17.1	100.0

Source: BBS (2018).

Table 18: Quantile treatment effect of training on earnings for female

Dependent variable: Log of monthly wage

Quantile	Quantile treatment effect (1)	Quantile treatment effect (2)
τ (15)	0.371 (0.254)	0.065 (0.035)
τ (25)	0.382 (0.201)	0.057 (0.037)
τ (50)	0.405 (0.020)	0.069 (0.025)
τ (75)	0.431 (0.025)	0.052 (0.029)
τ (90)	0.405 (0.027)	-0.049 (0.034)
Other controls included?	No	Yes

Source: Authors' calculations from the data of BBS (2017).

Note: Robust standard errors in parentheses. Other controls include: education, age and rural dummy. Propensity score was estimated with help of logit regression.

Table 18 shows that, individuals earning wages and belonging to the first 15th decile group in terms of wage, enjoy a 6.5 per cent rise in wage if s/he receives training. However, the effect of training on wage tends to be lower as one moves to the top of the wage distribution (for instance, training increase the wage by 5.2 per cent at the 75th percentile; statistically, it has no effect on the wage at 90th percentile). Although the effect of training is not uniform throughout the wage distribution, the insights that are gained from the findings are important. First, training has an important role in increasing the FLFP. Secondly, for those who are outside of the labour force, training could induce them to join the labour force. Thirdly, training has a significant impact on wage increase particularly for the low-paid individuals. Based on empirical findings it is safe to conclude that training could be a significant policy instrument to raise the FLFP.

6.3 Prospect and challenges in self-employment

Self-employment is a ubiquitous mode of employment in Bangladesh. It includes individuals working for their own household farm or non-farm enterprises.[10] Such employees do not receive any wages or salary for the work performed, but earns profit. Self-employment as a category has attracted a lot of attention because of its pervasiveness in the developing countries, as well as for the low levels of earnings it generates that does not allow one to escape from the poverty trap. Often, these self-employed belong to the category of 'working hard but working poor' (Banerjee and Duflo, 2007; Fields, 2012; 2019). There are others who view self-employment as untapped entrepreneurship energy; by reducing entry regulation and improving property rights this could fuel economic growth and development (Soto, 1989; 2000). Bangladesh has taken the target of training about two million youths, of which about 0.6 million will be involved in self-employment (GED, 2015). It is important that policymakers understand the transition dynamics between paid jobs and self-employment, particularly for those countries which aim to promote self-employment through government support and policy measures. However, this study has focused only on the wage differential between formal paid and informal self-employed. More research is needed in this area.

Table 19 shows the conditional wage gap between formal paid and informal self-employed workers. The average gap is found to be 225 per cent, of this 144 per cent is wage premium in the formal paid

[10]This definition has been adopted by the BBS, the government agency that carries out the LFSs.

Table 19: Wage gap between formal paid employment and informal self-employment

Dependent variable: Log of hourly wages

Quantile	Formal paid vs Informal self-employed		
	Total effect	**Char. effect**	**Coeff. effect**
τ (10)	2.449 (0.079)	0.559 (0.062)	1.889 (0.102)
τ (20)	2.380 (0.044)	0.656 (0.023)	1.724 (0.049)
τ (30)	2.369 (0.034)	0.727 (0.035)	1.642 (0.046)
τ (40)	2.301 (0.036)	0.731 (0.029)	1.569 (0.045)
τ (50)	2.261 (0.043)	0.757 (0.043)	1.480 (0.034)
τ (60)	2.213 (0.031)	0.733 (0.020)	1.480 (0.034)
τ (70)	2.128 (0.044)	0.742 (0.030)	1.386 (0.049)
τ (80)	1.998 (0.043)	0.742 (0.024)	1.256 (0.048)
τ (90)	1.936 (0.520)	0.791 (0.025)	0.145 (0.052)
Oaxaca-Blinder	2.254 (0.029)	0.802 (0.057)	1.443 (0.061)

Source: Authors' calculations from the data of BBS (2017).

Table 20: Sources of wage differentials

Dependent variable: Log of hourly wages

Wage differentials and its sources	Formal paid vs Informal self-employed
Total differentials	2.254 (0.029)
Formal employment wage premium	1.443 (0.061)
Endowment Effects	
: Education	0.324 (0.019)
: Age	0.009 (0.005)
: Total	0.802 (0.057)

Source: Authors' calculations from the data of BBS (2017).

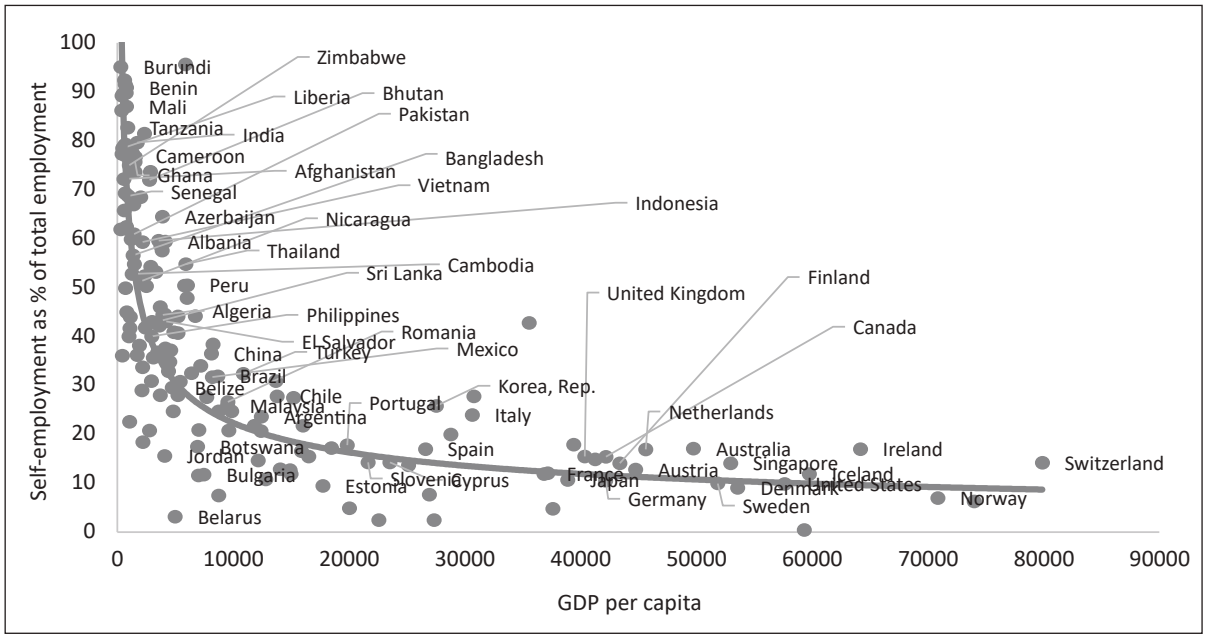
Note: Robust standard errors in parentheses.

jobs. The wage gap is highest (245 per cent) at the first decile and tends to narrow down at the top (194 per cent). The sources of the wage difference at mean is given in Table 20.

The analysis concerning formal paid and informal self-employed people brings out a number of messages. The average hourly wage for informal self-employed people is found to be BDT 10.18 which comes to be a monthly earning of BDT 3,323 or about USD 1.3 per day. This is even below the level of poverty line in Bangladesh. This income is replenished by longer hours of work (self-employed workers work about 62 hours a week whereas formal paid workers work about 47 hours a week) (BBS, 2018). Informal self-employed workers on average earn 225.4 per cent less than formal paid workers. Observable productivity characteristics account for 80.2 per cent of the wage gap and the

remaining 144.3 per cent is on account of wage premium in formal employment. The highest gap is 245 per cent for the first decile; the gap is somewhat reduced narrow at the top decile (194 per cent). As regards poor earnings of the self-employed workers, Fields (2019, 2) states: "although they work, they are poor because there are not adequate opportunities for them to earn enough to escape from the poverty. They are working hard but working poor." However, although self-employment in most cases does not allow people to work out of poverty, in all likelihood, self-employment will continue to be there in the developing economies for a prolonged period of time (Porta and Shleifer, 2014). As the descriptive analysis has shown, the self-employed sector is dominated by less educated individuals. On the other hand, it is also seen that education accounts for 32 per cent of the wage gap. It is also found that returns to skills endowments is higher in informally self-employed workers compared to the day-workers. The country average for self-employment was estimated to be about 43 per cent in 2016-17; among the working women this share is 27.2. The rate shows a secular rise from 18.5 per cent found for 2010. The relationship between GDP per capita (as an indicator for economic development) and self-employment is given in Figure 9.

Figure 9: Relationship between economic development and self-employment



Source: Authors' calculations from the data of World Bank (n.d.) [accessed: 17 October 2018].

7. TAKING ADVANTAGE OF HIGHER FEMALE LABOUR FORCE PARTICIPATION: POLICY PERSPECTIVES

The changing nature of women's participation in the labour force has been an important dimension of the development process since the industrial revolution. However, the relationship between participation of women in workforce and economic progress is far from straightforward. In the final analysis, it is obvious that, women's employment is driven by a range of multifaceted factors, including education, fertility rates, social norms and the nature of the job creation (Diagram 1).

Beyond standard labour force participation rates, policymakers should be concerned with whether women are being adequately equipped to access better jobs and are being able to take advantage of new labour market opportunities. Such opportunities will definitely emerge as Bangladesh continues to develop and makes the transition from a lower middle-income country to a higher middle-income country. Policies will need to consider both supply-side and demand-side dimensions. Access to better education and training programmes are key. However, access to childcare, supportive institutional and legal measures to ease the burden of domestic duties, safety and security at the workplace are now

Diagram 1: Governance challenges concerning female labour force participation: A diagrammatic visualisation

Source: Prepared by the authors.

more important both for inclusion and retention of female workers in the labour market. Encouraging private sector development in industries that have the potential to enhance job opportunities for women will also be important. Particular emphasis should be put on retaining girls in school and ensuring that they get good and quality education. It is also important to ensure that more girls get into secondary level of education, and are able to take advantage of training opportunities that address demands of the job market. All these measures will serve the cause of FLFP.

Job-centric macroeconomic policies

A lot will hinge on the overall macroeconomic policies pursued by Bangladesh in support of job-centric growth. Recent LFSs point to the disquieting trend of jobless growth in Bangladesh, particularly in the manufacturing sector. This is likely to have adverse implications particularly for the FLFP, especially because Bangladesh is one of the few developing countries where women's presence in the manufacturing sector job market is quite prominent. Bangladesh's future macroeconomic policies will need to be calibrated towards a job-centric growth trajectory that keeps the demands of both domestic and overseas job markets. Policies should support job-inducing infrastructure, promotion of labour-intensive sectors, productivity-enhancing interventions, appropriate incentives, and targetted programmes to facilitate women's entry into sectors concerned with the 'new economy' as against the 'traditional economy'. Greater integration with global job market will be required towards attaining higher FLFP in Bangladesh and for drawing the benefits of the potential demographic dividend.

Education with skills endowment

Analysis in the present study has shown that returns to education for female tend to be limited up to higher secondary level. On the other hand, premium for training and skills endowments is found to be very high. In view of this, if the potential benefits of the demographic dividend is to be realised, there is a need to blend vocational training with female education, to enable greater and gainful labour force participation of women in the job markets of the future. Targetted programmes are needed for skills development through on-the-job training and apprenticeships by creating opportunities for female workers to move up the skills/employment/grades ladder. As was found, tertiary education has a significant impact on the FLFP. Consequently, ensuring female education beyond the high school level should be seen as an important job market strategy, particularly in view of the opportunities of higher female employment in the emerging 'new economy', a large part of which is based on e-commerce and information technology (IT)-based activities.

Ensuring evenness of occupation

The present study revealed significant labour market segmentation with an accompanying wage penalty for women. This was found to be more visible in the urban labour market. Targetted programmes will need to be taken for women to have the skills to enter into the emerging urban job market opportunities. In the rural economy, in the backdrop of a falling share of agriculture, male employment is becoming more prominent. Special efforts will need to be taken for incentivising female employment in the emerging rural non-farm sectors and gradual transition to the urban manufacturing and services sector job markets.

Reduce informality in female labour force participation

The analysis in this paper shows that, as in many developing countries, there is a predominance of informality in the FLFP of Bangladesh. The analysis also revealed the high wage penalty on account of this. Both carrots (in the form of reforms and actions which reduce the costs and increase the benefits of formalisation, e.g. fiscal incentives, access to credit and financial services) and sticks (enforcement of improved laws and regulations relating to minimum wage provisions, labour rights) will need to be deployed to encourage and incentivise transition from informality to formality. It is important to identify barriers (fiscal, regulatory) to formalisation and take gradual steps (simplification of tax laws, facilitation of compliance, easing of entry as a formal entity, a supportive regulatory regime) to promote formal employment and formal sectors in the economy.

Labour market reforms

Labour laws in Bangladesh speak of securing and safeguarding the rights and entitlements of workers in enterprises, business units and clusters. However, to be eligible, the units need to have a threshold number of employees (e.g. 20 as per Article No. 183 in 2013 Amended Labour Law). The overwhelming majority of informal female workers are in micro and home-based enterprises where the vicious cycle of 'low-productivity–low-income' remains pervasive. Labour laws and related institutions must safeguard the interests and rights of women in micro, small and medium enterprises (MSMEs). A large number of informally employed female workers are engaged in various hazardous activities. Special targetted programmes need to be undertaken in support of these female informal workers. Particular attention ought to be given to the task of eliminating child female labour.

Encourage women entrepreneurship

About one-fourth of women in Bangladesh are engaged in self-employment; this share has been on the rise in the recent past. However, majority of these are low-paying jobs. It was found that self-employment in Bangladesh comes with significant earnings penalty. Scaling-up and entrepreneurship development will need to be supported through appropriate financial and fiscal instruments. Special programmes for women such as creation of dedicated credit funds and putting in place skills programme to encourage women entrepreneurship will be needed. Efforts should be taken to connect women entrepreneurs to regional and global markets.

Data needs

In recent times the BBS had taken initiative to generate high-frequency data on labour force participation in Bangladesh. Quarterly LFSs were being prepared to this end. However, regrettably this has been discontinued later. There should be more detailed high-frequency data and information on labour force participation of women, particularly focusing on barriers to women's participation in labour force, on reasons why women leave jobs, information on job duration, data as regards job-shifting, reasons for preferring self-employment, etc. Enterprise-level surveys are required to help identify factors contributing to enhancement of productivity and raising of earnings of female workers at the enterprise level. Skills and training programmes should be calibrated in view of these findings.

Issues concerning FLFP has remained a relatively understudied area of investigation in Bangladesh. In view of Bangladesh's aspiration to be a more inclusive society and from the perspective of attaining the SDGs, particularly the Goals 4, 5, 8 and 10 and to be able to realise the potentials of the demographic dividend, an in-depth understanding of the underlying dynamics and driving forces concerning FLFP in Bangladesh labour market is urgently needed. Generation of more extensive data concerning those women who are working as well as those who are in NEET will be needed. FLFP should be accorded more prominence in the upcoming Eighth Five Year Plan, Vision 2041 document and the SDGs implementation plan of Bangladesh. Bangladesh's voluntary national reports (VNRs) in the context of the SDGs should monitor progress with regard to various dimensions of FLFP in light of the relevant SDG targets and indicators. FLFP in the particular context of the overseas job market is emerging area of opportunity for Bangladesh. The FLFP agenda should be pursued by Bangladesh by keeping the needs of both domestic and global job market opportunities.

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ANNEX

A number of government policies are in existence with the aim to generate employment exclusively for women, and to enhance the FLFP. Annex Table 1 presents these projects along with funds allocated and coverage. In addition, in FY2018-19 the Government of Bangladesh proposed a special allocation of BDT 100 crore for the Women Entrepreneurship Fund and BDT 25 crore for Women Development Special Fund for the advancement of women. There are also a few programmes geared to generating employment opportunities for women. However, adequate information and data as regards the beneficiaries, impacts and benefits, etc. are not readily available.

Annex Table 1: Selected programmes in support of female labour force participation

Srl.	Programme	Coverage (Person in lakh/man-month)	Budget (FY2017-18) (Crore BDT)
1.	Microcredit for women self-employment	0.22	4.00
2.	Joyeeta Foundation	0.06	1.25
3.	Women's skill-based training for livelihood	0.00	4.48
4.	Integrated rural employment support for the poor women	0.13	28.00
5.	Increase productivity and opportunity for employment of women (SWAPNO)	0.03	17.00
6.	Urban-based women development project (new)	0.53	21.33
7.	Establishment of 20 child daycare centres project (new)	0.06	12.10
8.	Income-generating activities (IGAs) for women at upzila level (new)	2.05	85.95

Source: MoF (n.d.).

Annex Table 2: Determinants of labour force participation of married women (age 18–40 years)

Variable	LPM	Marginal Effect	
		Probit	Logit
No education (base group)	--	--	--
Primary	-0.036*** (0.004)	-0.036*** (0.004)	-0.035*** (0.004)
Secondary	-0.089*** (0.004)	-0.089*** (0.003)	-0.088*** (0.003)
Higher Secondary	-0.107*** (0.006)	-0.107*** (0.006)	-0.108*** (0.006)
Tertiary	0.062*** (0.008)	0.069*** (0.008)	0.068*** (0.008)
Age	0.024*** (0.001)	0.024*** (0.001)	0.024*** (0.001)
Age square	-0.0003*** (1.08e-05)	-0.0003*** (1.12e-05)	-0.0003*** (1.13e-05)
Log (family income)	0.028*** (0.003)	0.027*** (0.003)	0.027*** (0.003)
Log (family income) square	-0.003*** (0.0003)	-0.003*** (0.0003)	-0.003*** (0.0003)
Female head	0.141*** (0.005)	0.136*** (0.004)	0.135*** (0.004)
Kids' age under six	-0.009*** (0.003)	-0.009*** (0.003)	-0.008** (0.003)

(Annex Table 2 contd.)

(Annex Table 2 contd.)

Variable	LPM	Marginal Effect	
		Probit	Logit
Household size	-0.007*** (0.001)	-0.007*** (0.001)	-0.007*** (0.001)
Rural	0.129*** (0.003)	0.129*** (0.003)	0.129*** (0.003)
Training	0.471*** (0.009)	0.496*** (0.013)	0.510*** (0.014)
Rural-urban migration	0.073*** (0.004)	0.073*** (0.004)	0.072*** (0.004)
Barishal (base group)	--	--	--
Chattogram	0.007 (0.005)	0.006 (0.006)	0.007 (0.006)
Dhaka	-0.036*** (0.005)	-0.035*** (0.005)	-0.034*** (0.005)
Khulna	0.100*** (0.006)	0.099*** (0.006)	0.100*** (0.006)
Rajshahi	0.155*** (0.006)	0.153*** (0.006)	0.154*** (0.006)
Rangpur	0.086*** (0.006)	0.085*** (0.006)	0.085*** (0.006)
Sylhet	-0.125*** (0.006)	-0.129*** (0.006)	-0.128*** (0.005)
Islam (base group)	--	--	--
Hinduism	0.024*** (0.005)	0.023*** (0.005)	0.023*** (0.005)
Buddhism	0.456*** (0.009)	0.441*** (0.009)	0.440*** (0.009)
Christianity	0.101*** (0.024)	0.099*** (0.024)	0.098*** (0.024)
Other	0.320*** (0.053)	0.330*** (0.066)	0.335*** (0.068)
Observation	128286	128286	128286
R-squared	0.11	0.08	0.08

Source: Authors' calculations.

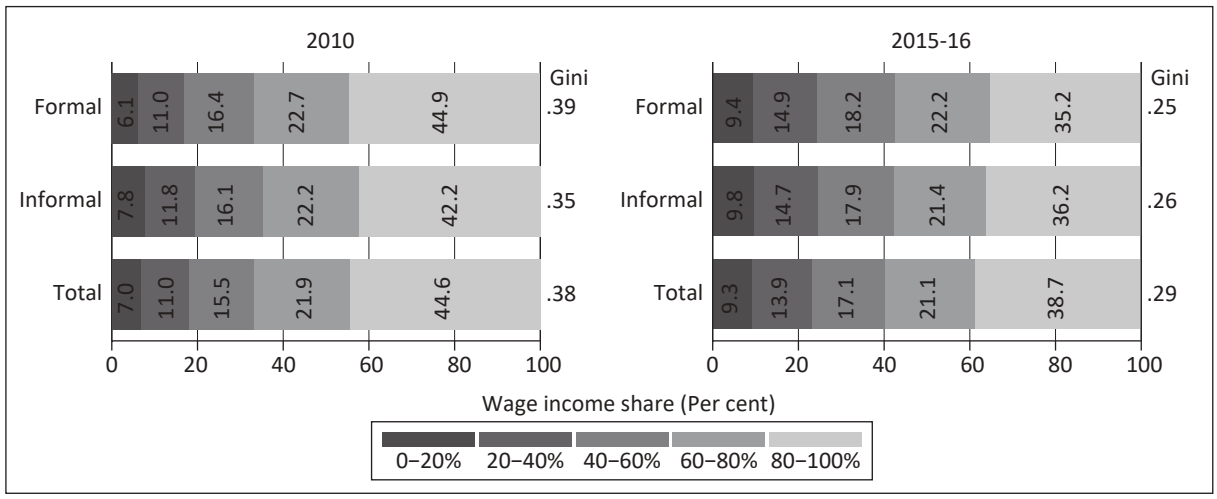
Annex Figure 1 indicates that more participation of women in the labour market will also help reduce inequality in Bangladesh. Annex Figure 2 reinforces the argument of reducing inequality through creation of jobs for both male and female job-seekers. Accordingly, the female jobs agenda must be seen as an integral part of the inclusive growth agenda in Bangladesh.

Additionally, the clear message that emerges from this study is that higher FLFP, for both formal and informal employment, can play a crucial role towards an inclusive development process in Bangladesh.

Annex Figure 1: Percentage share and Gini coefficient based on wage income: 2010 vs 2015-16

Source: Authors' calculations based on BBS (2011, 2017).

Annex Figure 2: Percentage share and Gini coefficient based on female wage income: 2010 vs 2015-16



Source: Authors' calculations based on BBS (2011, 2017).

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