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and Women's Paid Work Participation in  
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# Missing from the Market: *Purdah* Norm and Women's Paid Work Participation in Bangladesh

**M Niaz Asadullah**

*University of Malaya, University of Reading,  
SKOPE, University of Oxford and IZA*

**Zaki Wahhaj**

*University of Kent*

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## ABSTRACT

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# Missing from the Market: *Purdah* Norm and Women's Paid Work Participation in Bangladesh\*

Despite significant improvement in female schooling over the last two decades, only a small proportion of women in South Asia are in wage employment. We revisit this puzzle using a nationally representative data set from Bangladesh. Probit regression results show that even after accounting for human capital endowments, women are systematically less likely to participate in paid work than men. Oaxaca decomposition of the gender gap confirms that most of it (i.e. 95%) is unexplained by endowment differences. Instead, community norms such as the practice of *purdah* (i.e. female seclusion) have a statistically significant and negative effect on women's participation in paid work. We do not find any evidence that *purdah* norm variable affect paid work participation indirectly, via determining the labor force participation decision. The correlation between current work participation and *purdah* norm in natal household is insignificant confirming that the result is not driven by omitted individual-specific socio-economic factors. We also use data on past *purdah* practice of the current community to estimate an instrumental variable Probit regression model and rule out the possibility of reverse causality. Detailed decomposition analysis reveals that community *purdah* norm accounts for a quarter of the total unexplained gap. The findings are robust to controls for the influence of co-resident in-laws, household structure, marital status, and a wide range of community characteristics such as ecological factors, presence of NGOs, provision of public infrastructure, remoteness and local labor market conditions including the norm of unacceptability of unmarried women's outside work in the community.

**JEL Classification:** I26, I28, J12, J16, O12

**Keywords:** *Purdah* norm, gender inequality, labor market participation, poverty, Bangladesh

**Corresponding author:**

M Niaz Asadullah  
Faculty of Economics and Administration  
University of Malaya  
Kuala Lumpur 50603  
Malaysia  
E-mail: m.niaz@um.edu.my

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## 1. Introduction

Increased access to paid jobs is widely reported to have a positive impact on women in terms of outcomes such as fertility, age at first marriage, female autonomy and career aspirations (Anderson and Eswaran, 2009; Jensen 2012; Majlesi 2016). Yet women's labor force participation (LFP) remains low in developing countries around the world. Over the last two decades, significant progress in female education has not translated into a comparable improvement in women's position at work -- gender gaps in labor force participation and employment rates declined only marginally (ILO 2016). Between 1995 and 2015, the global female labour force participation rate decreased from 52.4 to 49.6 percent. The male-female gap in LFP has also widened in Southern and Eastern Asia. The problem of low LFP aside, women are over-represented in informal unpaid employment, particularly in South Asian countries.<sup>1</sup>

While in most parts of Asia, the rate of female LFP has increased in the past decades, the progress is rather modest. There is evidence of decline in China and India in recent years despite sustained economic growth and fall in poverty in the preceding decades (Rangarajan, Iyer and Kaul 2011; Chi and Li 2014; Chatterjee, Murgai and Rama 2015).<sup>2</sup> In high income countries, women's employment status is shaped by industry structure and the presence of family policies and child care provisions that help maintain work-life balance (Blau and Lawrence, 2013; Gehringer and Klasen 2015; Olivetti and Petrongolo 2016). However, in low income countries, lack of schooling and skills is likely to hold women back from market work.<sup>3</sup> In Bangladesh, for instance, the adoption of free market policies and trade liberalization since the 1990s have led to greater integration with the global economy, steady macroeconomic growth and new employment opportunities for women.<sup>4</sup> Popular media commentaries have praised NGO-led interventions and gender-targeted government social protection schemes for improving education and health indicators for girls (O'Malley, 2013; Ridout and Tisdall, 2015). Yet women's overall labor force participation (LFP) rate has improved only modestly and remains low by international standards.

This is particularly puzzling given the hypothesis of female labor force function being U-shaped vis-a-vis a country's level of economic development (Verick 2014). Studies using cross-country data confirms a U-shaped relationship between female labour force participation and GDP per capita over time (e.g. Goldin 1995; Tam; 2011). Similar conclusions are reached using micro data from India and Thailand (Mammen and Paxson 2000).<sup>5</sup> Recent empirical evidence on the

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<sup>1</sup> According to ILO (2016), globally a total of 586 million women were own-account or contributing family workers in 2015. Although the gender gap in the share of contributing family workers has decreased significantly from 19.5 percentage points in 1995, it is still sizable (i.e. 10.6 percentage points) in 2015. Moreover, in Southern Asia, 31.8% women work as contributing family workers (47.7 per cent as own-account workers).

<sup>2</sup> In China, female employment rate declined during 1988 to 2009 by 20 percentage points compared to only 12 percentage points decrease in male employment rate (Chi and Li 2014). In case of India, female labor force participation rate in urban India between 1987 and 2009 stagnated around 18% despite fall in fertility, rising wages and education levels (Klasen and Pieters 2015).

<sup>3</sup> For Azerbaijan, for instance, Pastore, Sattar, Sinha and Tiongson (2015) found evidence of women's self-selection into employment based on skills. Cross country analysis also identifies improved access to secondary and higher education as important for raising women's labor force participation rate (Verick 2014).

<sup>4</sup> For studies on the impact of globalization induced changes to female LFP in developing countries, see Luke and Munshi (2011) and Jensen (2012).

<sup>5</sup> The pattern also prevails at the individual level, among married women (Goldin 1995).

declining portion of the feminization U-hypothesis is weak (Gaddis and Klasen 2014).<sup>6</sup> On the other hand, the rising part of the U-pattern is expected to follow from improvements in female education and fertility decline, two areas in which Bangladesh has seen significant progress.

It is plausible that rising household incomes and prevailing stigma against employment of educated women in menial work on the one hand and the slow growth of employment in sectors appropriate for educated women on the other have limited the overall growth of female employment in Bangladesh.<sup>7</sup> Socially defined gender roles and the gender division of labor within marriage may have additionally constrained women in significant ways. Concerns over safety in public spaces and informal nature of women's work (e.g. lack of access to paid leave or provident fund) restrict women's entry into the labor force in South Asia (Sudarshan and Bhattacharya 2009). A number of studies have also highlighted the importance of family attitudes towards married women's work (proxied by employment status of the mother-in-law) as a determinant of female labor supply (Del Boca et al. 2000; Fernández, Fogli and Olivetti, 2004). In patriarchal South Asia, the household context within which female labor market decisions are made is important. Women act as primary caregivers such that their labor supply is a function of the preferences of the marital household (Sudarshan and Bhattacharya 2009). Cultural and religious norms also affect the gender gap in LFP negatively by imposing legal restrictions on women's right to inheritance and property (Cameron, Dowling, and Worswick 2001; Gonzales et al 2015) as well as outside mobility (Kabeer 1990; Amin 1997; World Bank 2011; Klugman, Hanmer, Twigg, Hasan, and McCleary-Sills 2014). Given the influence of social norms, woman's participation in work in South Asia may be limited in spite of increases in education and household income (Srivastava and Srivastava 2010; Neff, Sen and Kling 2012).

In sum, the relationship between women's participation in the labor market and economic development is complex and reflects, among other factors, changes in economic activity, educational attainment, fertility rates, and social norms (Verick 2014). The literature has identified a range of different factors as the determinants of female LFP. Both push and pull factors induce women's labor force participation decisions (Sabarwal, Sinha, and Buvinic. 2010). Women can be pushed into labor force participation during economic crises and work longer hours relative to men (Lim 2000).<sup>8</sup> Pull factors include trade liberalization and greater demand for female labor in the industrial sector (Gaddis and Pieters 2012). By contrast, very little research exists on the role of aggregate factors such as social customs, gender stereotypes and

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<sup>6</sup> Gaddis and Klasen show that the estimated function describing female labor force participation with respect to GDP being u-shaped is highly sensitive to data and measurement issues. Evidence supporting the effect of structural change (e.g. the shift in economy from family based subsistence farming to formal non-agricultural activities) on LFP is particularly weak. Similar conclusion is also reached by Lahoti and Swaminathan (2016) who test for the u-shape relationship using state level data from India.

<sup>7</sup> The social stigma towards the outside work participation of wives historically (i.e. prior to the 1920s) also restricted married women's workforce participation in the US. The stigma was largely owing to the nature of the work i.e. factory jobs being dirty and involving long hours per day (Goldin 2006).

<sup>8</sup> Economic crises can impact female labour force participation in two ways (Sabarwal, Sinha, and Buvinic, 2010). First, women are pushed into the labour force in order to compensate for loss of household income because of the crisis (the "added workers hypothesis"). The second possibility is that of the "discouraged workers hypothesis" -- scarcity of jobs push women out of the labour force altogether. For more on the latter, see Leslie, Lycette, and Buvinic, 1988; Cerutti (2000); Lee and Cho (2005).

mobility norms.<sup>9</sup> In this paper, we investigate the role of gender norms as determinants of women's paid work participation decision using data from Bangladesh.

For reasons explained earlier, Bangladesh provides an interesting context in which to examine the determinants of women's LFP. Given the informality surrounding the type of work in which women engage, employment status can be under- or over-stated.<sup>10</sup> We overcome some of the measurement issues using data from a uniquely designed survey, the 2014 WiLCAS (Women's Life Choices and Attitudes Survey), that has rich information on work participation collected directly from the women. The WiLCAS dataset also contains detailed data on community norms and physical facilities as well as competing measures of women's work participation. Since women's paid work status is determined by a confluence of supply and demand factors, we study the impact of community gender norms on the probability of paid work participation in a Probit regression model, controlling for the usual socio-demographic and community factors.

In addition, we decompose the gender LFP differential into a component that can be explained by differences in endowment (i.e. productive characteristics) and a component that remains unexplained by observable productive differences (i.e. structure effect). The latter unexplained component is popularly considered as a proxy for market discrimination. A novelty of our study is that we attempt to explain the discrimination component by accounting for gender norm indicators that have been ignored in the extant literature. Social norms associated with *pardah* practice among women are themselves likely to be influenced by the extent to which women engage in outside work. Working women are likely to enjoy greater autonomy and be less constrained by social norms imposed on them by the household. Increases in economic empowerment because of access to market earnings can also help challenge traditional gender norms and stereotypes that limit women's work participation in the first place (Seguino 2007). Therefore, we use data on past community *pardah* practice to test for reverse causality bias by estimating an instrumental variable probit model. In addition, to rule out concern over individual specific omitted variables bias, we use a lagged measure of the *pardah* norm (i.e. *before* a woman begins work) in the natal household to perform a placebo test. In doing so, we contribute to the literature on the importance of social norms, customs and attitudes as determinants of women's labor supply decisions (Fafchamps and Quisumbing 2003; Munshi and Rosenzweig 2006; Sudarshan and Bhattacharya 2009; Bridges, Lawson and Begum 2011; World Bank 2012; Tolciu and Zierahn 2012; Cerise et al 2013; Alesina, Giuliano & Nunn 2013; De Giusti and Kambhampati 2016; Ge and Chen 2016<sup>11</sup>).

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<sup>9</sup> Some exceptions are Das et al (2015) on community infrastructure, Carranza (2014) on geographic/ecological factors and Elborgh-Woytek et al (2013) on labor market conditions. Burda, Hamermesh and Weil (2007) offer a theory of social norms to explain gender differences in total time spent at work. Lastly, in their analysis of the determinants of female labor force participation in Chile, Contreras and Gonzalo (2010) examine the role of masculinity and other related cultural values. The authors conclude that women who internalize conservative cultural values are less likely to participate in the labor market.

<sup>10</sup> For studies that examine the definition and measurement of unemployment and/or female labor force participation, see Jones and Riddell (1999).

<sup>11</sup> Ge and Chen (2016) find that Chinese men raised by non-working mothers are more likely to support traditional gender roles and are less supportive of wives' outside employment. Therefore they attribute low labor force participation among married women in urban China to inter-generationally transmitted social norms in terms of men's gender role preferences.

The rest of the paper is organized as follows. Section 2 provides an overview of the context, with a focus on women's work participation and gender norms in Bangladesh. Section 3 discusses the survey design and descriptive statistics from the survey data. The methodological framework is presented in Section 4. Section 5 presents the main results and Section 6 concludes.

## **2. Study Context: Women's Work Participation and Gender Norms in Bangladesh**

In patriarchal societies such as Bangladesh, social barriers to female employment can be significant. Women's employment activities appear to be constrained by two sets of social norms. First is the practice of *purdah* which restricts the presence of women in public spaces (Paul 1992, White 1992). Second, the traditional division of labor by gender assigns men the role of breadwinner, and women responsibility for domestic work (Amin 1997, Kabeer 2001). Cain et al. (1979) argued that patriarchal constraints were the primary reason for the lack of income-earning opportunities for women in rural Bangladesh. Between the late 1970's and mid-1990's, Bangladesh experienced a sharp decline in fertility (NIPORT 2013). Although this translated into reduced childcare responsibilities for women in the home, Kabeer (1990) observed that patriarchal rules, in particular social restrictions imposed on the movement of women outside of the home, continued to regulate women's participation in paid work. Evidence from the poor northern districts in Bangladesh indicates that women's LFP did not change despite high contraceptive use rates because of the dominant influence of *purdah* on women's lives (Amin 1997).

In the last two decades, Bangladesh has seen a number of further transformations to its economy and society. The most notable is the industrial boom that led to rapid expansion of the export oriented readymade garments (RMG) sector. The RMG sector has given many women access to formal, salaried jobs for the first time. Similar to the experience of other countries that have recently industrialized through trade liberalization, female employment in the export sector in urban areas rose dramatically between 2000 and 2010 from around 1.8 million to 3.6 million workers. At the same time, the non-state sector delivering a variety of social services have expanded and created additional opportunities for millions of women as community-level service providers throughout rural Bangladesh. NGOs like Grameen Bank and BRAC have nationwide presence employing millions of women as frontline health workers, community leaders and teachers. Expansion of microfinance programs in rural areas has significantly increased women's employment opportunities, particularly through engagements in poultry and livestock based microenterprises (Khandker, Samad, & Khan, 1998).

These changes have provided Bangladeshi women the opportunity to move out of traditional activities that have limited links with the modern economy. The female-centric service delivery model adopted by NGOs has potentially shaped mobility norms making it more acceptable for women to venture outside of the home (Mahmud et al 2013). These demand side changes have also coincided with important supply-side interventions that have, arguably, better prepared women for the labour market. During the 1990s, a nationwide scholarship scheme facilitated secondary school participation, particularly in rural Bangladesh. In doing so, it potentially influenced norms regarding the outside movement of adolescent girls in rural locations. Alongside the creation of new socio-economic opportunities for women in the economy, there has been significant progress in pre-market inputs and outcomes. The gender gap in female

schooling had closed by the mid-1990s and the gender inequality in infant and child mortality was eliminated (Asadullah et al 2014).

Yet, these changes did not translate into higher female LFP rates. The precise reasons for Bangladesh's low LFP are unclear. It is possible that the informal nature of women's economic activities is not recognized in government surveys on labor market outcomes, leading to a downward bias in government statistics on female LFP rates. Indeed, estimates of the female labor force participation rate vary across surveys. However, recent studies confirm that this is not just a measurement problem (Mahmud and Tasneem 2011; Jolliffe et al. 2013).<sup>12</sup> A number of researchers have, therefore, examined the determinants (Cain et al., 1979; Bridges, Lawson and Begum 2011; Jolliffe et al. 2013; Rahman and Islam 2013). Evidence indicates a U-shaped pattern in female LFP with respect to education: work participation is higher among illiterate women. A positive relationship is observed between extreme poverty and women's LFP in Bangladesh (Bridges, Lawson and Begum 2011). The gender-differentiated burden of unpaid household and care work in Bangladesh's patriarchal society reduces hours women can devote to paid work (Cain et al. 1979; Chowdhury 2010). Unsurprisingly, studies also identify marriage and reproductive responsibilities with lower female LFP (Mahmud, 2003; Jolliffe et al. 2013).

Given the strong negative link between marriage and work participation, postponing marriage is identified as a pathway to increase women's LFP (e.g. Jolliffe et al. 2013). However, this ignores the fact that norms relating to marriage timing are closely related to the norms that govern women's outside mobility and work. Recent evidence also indicates that working women face greater risk of domestic violence when they have low schooling and marry young (Heath 2014).<sup>13</sup> This implies that for many women, paid participation could be an outcome of social insecurity and vulnerability.

Turning to the supply side, informal employment is also the dominant form of employment for Bangladeshi women. While opportunities for paid work in the formal sector remains limited, new jobs have been created following the rapid expansion of the country's export-oriented readymade garments sector. Evidence indicates that locations with high RMG factory density experienced increases in female LFP (Kagy 2014). The RMG sector remains the largest source of female jobs in the urban sector. Yet these jobs are low in social status; less schooled workers are hired with minimum on-the-job-training and often without a formal contract (Kabeer and Mahmud, 2004). Evidence indicates that Bangladeshi women are discriminated against in the labor market and paid less than men particularly at the lower end of the wage distribution (Ahmed and McGillivray 2015). These factors together with rigid socio-cultural norms are likely

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<sup>12</sup> For instance, when calculated using the last three rounds of the Labor Force Survey (LFS), it is about 15 percentage points higher than the rate obtained using the HIES data. Female LFP rate increased from 25 percent to about 35 percent between 2000 and 2010 (Jolliffe et al. 2013). An independent verification of LFS and HIES estimates is Mahmud and Tasneem (2011) who used different definitions of economic activity (work) used to estimate women's LFP rate for women aged 15 and above in 69 villages of eight districts of Bangladesh. They find that the female LFP rate ranges between 4% and 16 % when economic activity is defined narrowly, in terms of outside paid work in last 12 months. A much higher figure is obtained when market work inside the home is accounted for along with the paid work.

<sup>13</sup> According to a nationwide survey, 77% married women experienced some form of violence in the last 12 months while 65% were physically abused by the husband at some point during their current marriage (Bangladesh Bureau of Statistics 2013).



to discourage rural women from well-off social backgrounds from entering/remaining in the labor market while those from marginalized social backgrounds dominate. In this context, we are interested in understanding the factors that predict female LFP rate. We do so by revisiting the debate on low female LFP in Bangladesh with a specific focus on patriarchal norms on female outside mobility.

### 3. Survey Design and Descriptive Statistics

There are a number of existing surveys with information on women's labor force participation decisions in Bangladesh. However, for various reasons,<sup>14</sup> none are suitable for studying the effects of gender norms on female work participation. Moreover, available surveys mostly rely on male respondents to gather data on female household members. While a woman may be available for work, she could be excluded from unemployment statistics because of inaccurate information on whether she is actively searching for work. There may also be considerable variation among the non-employed women in terms of what they do in their day-to-day life.

Therefore, we designed a nationally representative survey to study outcomes related to employment, migration, marriage, childbirth and investment in children, which we refer to, henceforth, as the 2014 WiLCAS.<sup>15</sup> In the first phase of the survey, the enumeration team visited, between May and July 2014, all households in the rural sample of the 2010 Bangladesh Household Income and Expenditures Survey (HIES) that included at least one woman aged between 16 and 35 in 2010, and a random 50% of households in the rural sample without any women in this age group. In addition, the enumeration team conducted a census of 87 urban primary sampling units (PSU) in Bangladesh, and 20 households were randomly chosen from each to be included in the survey. This procedure yielded a sample of 7,974 households (1,436 in urban areas) and 6,293 individual interviews with women in the age-group 20-39 years (1,557 in urban areas).

[Table 1 about here]

The 2014 WiLCAS is suitable for our analysis for a number of reasons. First, the detailed labor market module has been adapted from the 2010 HIES survey questionnaire. Second, since surveys disagree on the extent of female LFP based on definition, we employ two measures of LFP, based on a seven-day and a twelve-month reference period. Labor market data is collected for the main respondent as well as for all members of her household. Third, for each person, we record information on the primary as well as the secondary occupation. Therefore, the WILCAS data is able to capture the full range of market and non-market activities in which women engage. Fourth, the survey has detailed information on community facilities and social norms

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<sup>14</sup> The Labor Force Survey (LFS) is the official source of labor market statistics. However it does not contain community level factors that constraint women's LFP. While the Household Income and Expenditure Survey (HIES) has detailed community modules, there's no information on gender norms and attitudes. Among others, the Demographic and Household Survey (DHS) doesn't have comparable information for both genders and is, therefore, unsuitable for studying gender inequality in the labor market.

<sup>15</sup> The official name of the survey is the 2014 Bangladesh Women's Life Choices and Attitudes Survey (WiLCAS), funded by an ADRAS (Australian Development Research Awards Scheme) grant on female education. The survey was conducted by the University of Kent and the University of Malaya in collaboration with DATA, Bangladesh (Data Analysis and Technical Assistance).

related to female mobility and work participation, including the norms to which female respondents were exposed in their natal household.

**Table 1** presents the summary statistics by gender and work participation status. In terms of employment status over the past 12 months, 10% of respondents report being in paid work (daily wage or monthly salary) and another 43% are self-employed. The remaining 47% are not in employment or the labor force. When disaggregated by gender, 42% women report being in the labor force (38% in unpaid and 3% in paid work) (see Appendix Table 1). These figures are consistent with national level estimates of LFP. According to LFS 2010 data, 36% women were in the labor force while the estimate based on the 2010 HIES data is 15.6% (Inchauste et al 2014). Our figure of 10% paid work participation for the full sample is also consistent with sample estimates of paid employment share reported in Mahmud and Tasneem (2011). The authors find 9% (3% salaried and 6% daily wage) to be in paid work while 22% are reported to be economically inactive (out of the labor force).<sup>16</sup>

For respondents in paid work, the distance to the nearest bus stop is less (4.96) than for those not in employment (5.52). Similarly, respondents in the former sample are closer to the sub-district HQ compared to those not in employment. The sample of employed (paid work) also live in communities with less restrictive *purdah* norms compared to those who are in unpaid work or are outside of the labor force (Table 1). Gender-wise breakdown of summary statistics show that the sample women have on average 4.5 years of schooling; among them, 63% report being able to read and write (Appendix Table 1). There is no significant gender difference in terms of schooling and literacy in our data. While the majority of the women are married (96%), 6% are either widowed or separated.

As per the discussion in Section 2, we focus in this paper on two types of social norms that may restrict women's work participation vis-à-vis men: *purdah* norms that limit women's access to public spaces and the traditional division of labour by gender, which assigns men to the role of breadwinner and give women primary responsibility for domestic work. The relevant variables are constructed on the basis of answers by female respondents in individual interviews to the following two questions: "Are girls/women from this household required to use *purdah* when they go out?" and "Is it appropriate for a woman to take up employment outside of the household before marriage?"<sup>17</sup> We aggregate responses to these two questions to capture, respectively, the community-wide norm regarding the practice of *purdah* and attitudes in the community towards female employment outside of the home.<sup>18</sup> The community average values of norm variables are constructed net of the respondent's assessment to avoid possible simultaneity bias.

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<sup>16</sup> Our figures are also comparable to data from Bangladesh DHS. For instance, Kagy (2014) using DHS 2004 data on married women aged 18-40 years report less than a third of the women in work at the time of the survey and less than 10 percent in semi-skilled occupation.

<sup>17</sup> For other studies that also use data on attitudes towards gender norms to study the determinants of women's employment status, see Tolciu and Zierahn (2012).

<sup>18</sup> For a similar approach, see Seguino (2007) who use the World Values Survey gender questions to study the trends and determinants of gender norms and stereotypes over time and across countries. However, our study is different in that we study the reverse relationship i.e. gender equitable norms and stereotypes as a correlate of women's paid employment. Also see the cross-country study by Burda, Hamermesh and Weil (2007) who reports a negative relationship between real GDP per capita and the female-male difference in total work time per day, pay and work at home combined. They explain this in terms of social norm over allocation of jobs by gender. Using the World

### [Figures 1-3 about here]

Turning to the *purdah* norm variable, 76.8% women report being in households where *purdah* norm is practiced. However, there is considerable variation in *purdah* norm across Bangladesh. Figure 1 shows the prevalence of *purdah* norm at the district level. On average, the more prosperous and geographically integrated eastern districts appear more progressive. At the same time, non-poor districts such as Sylhet, Comilla and Chandpur belong to the highly conservative belt in terms of *purdah* practice. On the other hand, Rangpur, the poorest of all divisions, show the least conservative attitude. At the same time, neighboring northern districts such as Rajshahi and Bogra appear to have high prevalence of *purdah*. Poorer southern districts (e.g. Barguna and Patuakhali) also have high prevalence of *purdah*. These findings contrast with recent research on spatial variation in employment data in Bangladesh. Northern and south-western districts of Bangladesh remain separated from major eastern growth centres by large rivers. This limits market interaction and urban influence in the former and in turn scope for wage employment (Deichmann, Shilpi & Vakis, 2009). Yet we don't find a similar north-south divide in Figure 1 implying that *purdah* practice is not necessarily a simple proxy for household poverty or economic underdevelopment.

**Figures 2 and 3** report paid work employment probabilities by current and past community *purdah* norm respectively and by gender. Female paid work participation drops steadily from 4.7% to 2.2% as we move from communities where the *purdah* norm is not enforced (less than 25% respondents reporting that households require them to use *purdah* when going out) to those where it is practiced by the majority (more than 75% respondents reporting that households require them to use *purdah* when going out). This correlation is weak in case of *purdah* norm when respondents were 12 years old (Figure 3).<sup>19</sup> In the next section, we discuss how we model community gender norms as the determinants of paid work participation using the 2014 WiLCAS data.

#### 4. Methodology

As discussed earlier, existing studies have considered a number of factors as the determinants of women's paid work and/or labor force participation in Bangladesh. These include the influence of infrastructure (Chowdhury 2010), access to factory jobs (Kagy 2014; Heath and Mobarak 2015) and social customs (Cain et al. 1979; Bridges, Lawson and Begum 2011). In the larger literature on developing countries, additional factors have been taken into account such as expectation of higher wage (Klasen and Pieters 2015). In patriarchal South Asia, women also act as the primary care giver so that their labor supply is a function of the preferences of the marital home (Sudarshan and Bhattacharya 2009). Moreover, married women's labor supply may be affected by the need to spend time and provide care to older parents in laws which can trade-off time spent in market work (Wolf and Soldo 1994). Therefore, the household context within

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Values Surveys, the authors find that “female total work is relatively greater than men's where both men and women believe that scarce jobs should be offered to men first”.

<sup>19</sup> In case of past *purdah* norm variable, female paid work participation drops steadily from 3.3% to 2.8% as we move from communities where less than 25% respondents reporting that households require them to use *purdah* when going out to those where more than 75% respondents report *purdah* practice.

which female labour market decisions are made is also important. In order to partly account for the influence of kinship structures to on women's work-life choices, we include a dummy for co-resident parent-in-law.<sup>20</sup>

$$P_{iju}(PW=1|X) = F(b_0 + b_1X_{iju} + b_2Z_{ju} + b_3C_u + b_4PNORM_u) \quad \dots\dots\dots (1)$$

where  $P_{iju}$  is the probability that the respondent  $i$  in household  $j$  in sub-district  $u$  is in paid work (PW);  $X_{iju}$  and  $Z_{ju}$  are exogenous variables specific to respondent  $i$  and household  $j$  respectively; and  $PNORM_u$  and  $C_u$  represent norms and other community variables specific to village  $u$  respectively. The  $X_{iju}$  variables include age, age squared, gender, religion<sup>21</sup>, years of schooling completed and its square, literacy status, number of children in different age groups and marital status dummies (whether currently single, divorced, widowed or separated); and the  $Z_{ju}$  variables are household's urban location and presence of in-laws.<sup>22</sup> Our primary social norm measure of interest,  $PNORM_u$ , is community-level prevalence of *pardah* practice. Lastly,  $C_u$  variables are average male and female wage in the village<sup>23</sup> and an additional norm variable – community-level support for women's outside employment. Despite detailed controls for community factors,  $PNORM_u$  variable could be proxying for omitted village-level factors that also affect paid work and/or LFP rate. To explore whether this may be the case, we re-estimate equation (1) replacing  $PNORM_u$  with  $PNORM_{laggedu}$ , an individual level measure of *pardah* norm in the female respondent's household where she lived at age 12 as follows:

$$P_{iju}(PW=1|X) = F(a_0 + a_1X_{iju} + a_2Z_{ju} + a_3C_u + a_4PNORM_{laggedu}) \quad \dots\dots\dots (2)$$

The lagged *pardah* variable will be associated with socio-economic backgrounds of the respondent but uncorrelated with the *pardah* norm of the community where the respondent currently resides. Even if the current measure of  $PNORM$  is only capturing background characteristics, the estimated coefficient  $a_4$  may be significant if these characteristics have a direct effect on paid work participation. Therefore equation (2) serves as a placebo test to rule out the possible that the *pardah* norm variable in equation (1) is picking up the direct effects of the respondents' socio-economic background. While this approach addresses the concern over potential endogeneity bias, it doesn't deal with the problem of reverse causality. To this end, we take advantage of the fact that some women in our study sample were raised in the same location during the adolescent years. Therefore we take the average of responses to past *pardah* practices among these women to construct an instrument for the current community *pardah* norm and re-estimate equation (1) as an instrumental variable Probit regression model.

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<sup>20</sup> Some studies additionally take into account the effect of employment status of spouse (e.g. see Del Boca et al. 2000). We don't study this issue because we have data on husband's occupational status only for a sub-sample of women.

<sup>21</sup> Religious membership may affect female LFP because faith groups differ in terms of gender attitudes which often leads to gendered patterns of division of labor within the household (Lehrer 1995).

<sup>22</sup> Not accounting for the respondent's spousal background can bias the estimated effects (Matysiak and Vignoli 2006). However, we ignore husband's characteristics as they're an outcome of marriage decision and hence endogenous.

<sup>23</sup> Given the relatively small size of our data set and low rate of employment in paid work, we could not adopt the strategy followed in Heim (2007) and Klasen and Pieters (2015) where the authors used predicted individual wage data to construct a variable capturing the expected wage in the community. Klasen and Pieters additionally followed Mroz (1987) and used Heckman 2 step procedure to obtain the selection corrected wage and the wage predicted from that model was used in the next step.

In addition to using the regression that pools data across men and women, we're additionally interested in the role gender norm variables play in explaining the gender gap in paid work. To this end, we implement the Blinder-Oaxaca (1973) decomposition method that breaks down the male-female gap in the probability of paid work,  $P_{ijum}(PW_{im}|X_{im}) - P_{ijuf}(PW_{if}|X_{if})$ , a part that can be explained by differences in observed characteristics and a part that is attributable to differences in the returns to these characteristics. For a linear (e.g. OLS) regression, the Blinder-Oaxaca decomposition of the male-female gap in the mean paid work rate PW can be expressed as:

$$\bar{P}_m - \bar{P}_f = (\bar{X}_m - \bar{X}_f) \hat{\beta}_m + \bar{X}_f(\hat{\beta}_m - \hat{\beta}_f) \dots\dots\dots (3)$$

The subscript  $m$  denotes male ( $f$  is female). The first part of equation (3) corresponds to the explained gap while the second captures the gap owing to differences in coefficients. However, in the case of discrete or limited dependent variables, the conditional expectations  $E(PW|X)$  differs from  $\bar{X}\hat{\beta}$ ; linear regression yields inconsistent parameter estimates so that decomposition results based on standard Oaxaca formulation can be misleading. For non-linear models (e.g. Probit), Bauer and Sinning (2008) has therefore developed and applied modified Blinder-Oaxaca decompositions. Bauer and Sinning decompose the mean gender difference in PW using conditional expectations evaluated at different coefficient estimates and re-writing equation (3) as follows:

$$\bar{P}_m - \bar{P}_f = [E\beta_m(PW_m|X_m) - E\beta_m(PW_f|X_f)] + [E\beta_m(PW_f|X_f) - E\beta_f(PW_f|X_f)] \dots\dots\dots (4)$$

where  $E\beta_m(PW_m|X_m)$  and  $E\beta_m(PW_f|X_f)$  refer to the conditional expectation of paid work participation among men and women evaluated at the parameter vector  $\beta_m$  respectively. The first term on the right-hand side displays the part of the differential in the outcome variable between the two groups that is due to differences in the covariates  $X$ , and the second term the part of the differential in PW that is due to differences in the coefficients  $\beta_m$  and  $\beta_f$ . Although the approach proposed by Bauer and Sinning (2008) can provide a decomposition of the mean PW differential in Probit regression models, this does not separate out the contribution of individual covariates. To overcome this problem, a detailed nonlinear decomposition approach has been developed by Powers, Yoshioka and Yun (2011) which we follow in this paper. We will focus only on the detailed decomposition of the unexplained part given our focus on community gender norms.<sup>24</sup>

#### 4. Main Results

**Table 2** presents the Probit regression estimates of the determinants of paid work participation in the WiLCAS data. The coefficient on female dummy is negative in the pooled regression confirming a sizable gender gap in paid work participation event after accounting for differences in personal and demographic characteristics, community facilities and location factors. A number of findings are worth noting when we look at gender-specific regression estimates presented in

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<sup>24</sup> The unexplained gap can also capture the effect of omitted observable as well as unobservable characteristics instead of being entirely an outcome of discrimination. While we cannot control for unobservable, we employ detailed controls for observed covariates as is explained earlier in this section.

columns 2 and 3. First, non-muslim respondents have a higher probability of paid work participation. This is true for women as well as men. Second, paid work participation is systematically and significantly higher among “women not currently married” irrespective of their past marital status -- currently single, divorced or widowed.<sup>25</sup> Third, paid work participation follows an inverted u-shaped pattern with respect to age which is much stronger for women. This captures the fact that women withdraw themselves from the labor market following marriage and/or during childrearing. Fourth, co-residence with parent-in-laws negatively influence paid work participation though not significantly so among women. Fifth, the schooling-work profile is u-shaped i.e. paid work participation falls initially with education but rises beyond secondary level. This is consistent with earlier studies on Bangladesh (Khandker 1987; Jolliffe et al 2013) that reports a relationship between education and female LFP.<sup>26</sup> Consistent with the result, the coefficient on being literate is also significant and negative among women.<sup>27</sup> These results indicate that well-educated women rarely seek employment in wage labor against which is a strong social stigma, thereby leaving these jobs to less educated or illiterate women. Sixth, women from wealthier households participate less in paid work which is consistent with the available evidence on the negative income effect on female labor supply (Klasen and Pieters 2015).

Turning to the main variable of interest, the coefficient on *purdah* norm is negative and significant. Moreover, the coefficient on the community variable showing support for women’s outside work is positive and significant. It should be noted that our models extensively control for various other community-level factors, the omission of which could potentially confound the effects of *purdah* and female employment norms.<sup>28</sup> Moreover, the norm variables do not proxy for the effect of urban areas or location in rapidly industrializing urban pockets with large presence of readymade garments sectors since our models control for both location factors. Consistent with existing studies (e.g. Heath and Mobarak 2015), we do find strong positive correlation between residency in RMG neighborhoods and paid work participation. A similar statistically significant labor market effect also prevails in case of urban residents though this is significant for women instead of men.

Overall, the finding that women who are less educated and divorced, widowed or separated, are more likely to take up paid employment compared to men suggests that women’s work participation in Bangladesh is primarily driven by economic necessity rather than expanding opportunities in the labor market. On the other hand, social factors such as the stigma of menial work and/or restrictions on outside mobility can restrain market work participation among those from better educated and well-off families despite the high opportunity cost. In other words,

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<sup>25</sup> This is also consistent with estimates based on Labor Force Survey 2010 in which the LFP probability falls by 22 percent when she is married (Jolliffe et al. 2013).

<sup>26</sup> Another possible reason for this pattern is that more women in recent years may be pursuing higher education and hence not available for work (Neff, Sen and Kling 2012). This does not apply to our data as only a very small proportion of women report continuing in education.

<sup>27</sup> Jolliffe et al. (2013) note that women with some primary education are less likely to participate in the labor force than those who are illiterate. On the other hand, women with more than 12 years of education are most likely to participate. As shown later in the chapter, lower wages (relative to men) partially explain women’s low rates of participation.”

<sup>28</sup> Among these factors, only women’s average wage in the village and presence of BRAC program significantly and positively affects female paid work probability.

economic push factors dominate pull factors as the determinants of female paid employment. In this setting, the gender gap in paid work gap is likely to be driven by gender-specific barriers to outside engagement.

[Table 2 about here]

However, it may be argued that what we describe as community gender norms are specific to certain religious faiths and/or come into effect only for certain sub-group of women (e.g. married vs unmarried). Women in conservative communities practicing the *purdah* norm may do so primarily for religious reasons. In other words, our measure of social norm reflects group-specific norm. If so, this should not affect market choice of women who are from other faith groups. In order to test for some of these possibilities, **Table 3** reports additional results where we interact the *purdah* variable with the respondent's current marital status, religion, residence in integrated regions and household wealth. There is no significant *purdah* effect on work participation decision among married women and those from wealthier households. Women in eastern integrated regions appear to have significantly higher probability of paid work participation compared to regions separated by large rivers. At the same time, the negative *purdah* effect is significantly larger for women residing in the integrated districts once again confirming that the estimated effect is not just a proxy for poverty. Turning to *purdah* specific to religious membership, indeed Muslim women reside in communities where *purdah* practice is more prevalent than Hindus (80% vs 52% respectively).<sup>29</sup> Non-Muslim women also have higher paid work participation. Yet, the *purdah* norm significantly lowers paid work participation among non-Muslims. In regression models estimated separately for non-Muslim women, the coefficient on the *purdah* variable is -0.071, twice that for Muslim women. Therefore, the evidence does not suggest that our results merely proxy for norms that are specific to Islam. The fact that the *purdah* effect observed in our data varies vis-à-vis non-religious factors and is not specific to Muslims confirms that it is not simply capturing religious norms.

It may also be argued that our measure of *purdah* norm is endogenous for it is capturing omitted individual-specific factors that also affect paid work. For instance, the *purdah* norm may proxy for the social environment in which a woman was born and raised during adolescence. We address this concern in two ways. First, we repeat the analysis in **Table 4** using an alternative measure based on the *purdah* practice in the respondent's household at age 12. This lagged measure may be correlated with the respondent's labor market attitude but should not reflect the *purdah* norm in the community where the woman currently resides. As expected, the coefficient on the *purdah* variable is insignificant (**model a**). When we additionally control for the *purdah* norm in the current community (**model b**), the coefficient on the lagged *purdah* variable remains insignificant while the contemporaneous measure is highly significant. In an alternative test, we purge the sample of women who were born in the sample village and repeat the regression analysis restricting observations to women who migrated there from other locations.<sup>30</sup> As before, the coefficient on the lagged *purdah* variable is not significant when we exclude women whose

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<sup>29</sup> A similar gap is observed in the average attitude towards outside employment of female, the figure being 70% and 67% for Hindu and Muslim respondents.

<sup>30</sup> For all sample women aged 20-39 years (N=5,996), we have complete information on their migration history. Of these, 83.12% were not born in the sample village. Therefore, we repeated the regression analysis restricting data to these 4984 women.

natal home is in the sample village, with (**model d**) or without (**model c**) the aggregate measure of current *purdah* norm. The coefficient on the current community *purdah* norm remains highly significant even when the model is estimated on the restricted sample without the lagged *purdah* variable (**model e**). While these results are reassuring, an additional concern remains over omitted individual correlates of female LFP decision. Early life (pre-marriage) exposure to non-traditional gender role models (e.g. being raised by an employed mother) can influence employment and domestic outcomes among adults (McGinn, Castro, and Lingo 2016).<sup>31</sup> Therefore, we control for mother's education as well as her occupation when the respondent was 12 years old using data on the sub-sample of women for whom we have detailed family background data. However, our results remained unchanged even when controlling for parental background (**model f**).

[Table 3 about here]

[Table 4 about here]

[Table 5 about here]

Our regression estimates of the determinants of paid work participation can also suffer from sample selection bias since we only observe paid work employment among women who have chosen to participate in the labor market. In order to address this concern, we estimate Heckman's two-step Probit regression model (see **Appendix Table 2**). We don't find any evidence that the norm variables affect paid work participation indirectly, via determining the labor force participation decision. When norm variables are used to jointly estimate the probability of LFP and paid employment, they appear insignificant in the participation model. For the female sample, the chi-square statistic was 1.85 (p-value 0.17) while this was 0.30 (p-value 0.58) for the male sample. Unsurprisingly, the likelihood ratio test for independence of paid work and LFP equations shows that we cannot reject the null hypothesis that the two equations are independent i.e. the regression of paid work can be estimated as a separate probit model as we did in **Tables 2-4**.

Lastly, while we are able to rule out the possibility of endogeneity and sample selection biases, it is still possible that the community level *purdah* norm variable is affected by the individual decisions in the community to participate in paid work. To deal with this potential reverse causality problem, Table 5 reports IV-Probit estimates. The excluded instrument is community level average *purdah* practice in the past (when respondents were 12 years old). Reassuringly, instrumenting the current community *purdah* norm variable doesn't change our earlier finding. If anything, it doubles the estimated effect of *purdah* (i.e. the marginal effect is -0.04). The coefficient on the excluded instrument is also very large and significant in the first stage regression (F-test value is 76.00) ruling out the possibility of weak instrument problem. This implies that estimates reported in Table 2 provide at least a conservative estimate of the true effect of *purdah* norm on paid work participation.

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<sup>31</sup> Using nationally representative survey data on samples of men and women in 24 countries, McGinn et al. finds that adult daughters of employed mothers are more likely to be employed and earn higher wages than women whose mothers stayed home full time. But this result doesn't hold for adult sons. This finding, according to the authors, supports the proposition that mothers employed outside home transmit non-traditional gender norms to their children. For a similar analysis on urban China, see Ge and Chen (2016).



## 4.2 Oaxaca decomposition analysis: How much can be explained by gender norms?

[Table 6 about here]

**Table 6** reports decomposition results based on the Oaxaca analysis. Altogether, 4 sets of estimates are reported. When using regression estimates without controls for community attributes (except gender norm variables), we find that endowment differences account for only 4.72% of the overall gender gap (0.14) in paid work (estimates 1 in Table 6). With additional controls for community attributes, the explained proportion increases only marginally to 5.05%.<sup>32</sup> In other words, irrespective of the underlying regression specification employed, most of the gender paid work remains unexplained by differences in productive endowment.<sup>33</sup> Therefore, we additionally conduct detailed decomposition analysis of the unexplained component to identify the relative contribution of individual covariates. Based on the parsimonious specification (estimates 1), *purdah* norm accounts for 26% of the unexplained portion of the gender paid work participation gap (46.92% together with the female employment norms). When further controls for community characteristics are added (estimates 2), the share of *purdah* norm variable is 27% (though the combined share with employment norm reduces to 47.16% together with the female employment norms).<sup>34</sup> Overall, the results of our decomposition analysis confirm the significance of social norms as key determinants of women's paid work participation. According to the estimates presented in this section, norms specific to women explain nearly half of the male-female gap in paid work participation in Bangladesh.

## 5. Conclusion

Bangladesh not only has one of the lowest female LFP participation rates in the developing world and only a small fraction of the women in labor force are in paid work. Although public investment in girls' schooling has led to closure in primary and secondary school participation gender gaps in the past two decades, market-based work participation has not improved significantly among women. Therefore this paper examined the issue using data from a purposefully designed nationwide household survey. We modelled paid work choice of women as a function of their education, literacy, demographic and household characteristics as well as the influence of a wide range of community-level factors including and the acceptability of outside employment of women in the community. Our main focus was on a specific norm variable ---the practice of *purdah* by women in the community -- as a determinant of women's participation in paid work.

We find that paid employment is higher at lower levels of education, among illiterates, poorer households and women out of wedlock. This confirms that female labor force participation in Bangladesh (including that in the readymade garments sector) is driven by poverty (push factor) rather than economic opportunities (pull factors). The boom in readymade garments sector aside,

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<sup>32</sup> The finding that the unexplained percentage is very high is similar to other developing country study estimates e.g. see Abdulloev, Gang and Yu (2014).

<sup>33</sup> This is similar to other developing country studies in the literature. For India, Hare (2016) finds that changes in covariates only explain a small portion of the decline in female labor force participation.

<sup>34</sup> These findings are not very sensitive to the choice of weights or the choice of non-discrimination basis e.g. whether we use male or the average of male-female coefficients.

two decades of steady economic growth in Bangladesh have not significantly improved overall labor market conditions for women. As a matter of fact, the regression results on the determinants of labour force participation additionally show that even after accounting for human capital endowments and household wealth, women are systematically less likely to participate in paid work than men. Oaxaca decomposition of the gender paid work participation gap confirms that most of it (i.e. 95%) is unexplained by endowment differences. Instead, community norms such as the practice of *purdah* and unacceptability of unmarried women's outside work have a statistically significant and negative effect on women's participation in paid work.

We don't find any evidence that norm variables affect paid work participation indirectly, via determining the labor force participation decision. When the *purdah* norm variable along with a measure of acceptability of outside employment of women are used to jointly estimate the probability of LFP and paid employment, they appear insignificant in the participation model. Detailed decomposition analysis reveals that community *purdah* accounts for a quarter of the total unexplained gap and a half of it when the contribution of female employment norm is accounted for). The findings are robust to controlling for the influence of co-resident in-laws, household structure, marital status, and a wide range of community characteristics such as ecological factors, presence of NGOs, provisions of public infrastructure, remoteness and local labor market conditions.

The finding that women of all religious communities face non-market constraints in the form of social customs such as *purdah* provides an important explanation for the observed gender gap in market work participation in South Asia. It is also significant given the emerging evidence on the insignificance of economic conditions relative to factors such as gender ideologies and religion in explaining cross-country differences in female LFP rates (Besamusca, Tijdens, Keune, & Steinmetz, 2015). Institutions based on traditional gender roles (e.g. providing care to household members) and the custom of early marriage inhibits labour market participation of women as is evident from the negative correlation between marriage and paid work employment in our data. Therefore policy initiatives that help shift social norms governing women's outside mobility will be critical to improving women's paid work participation.

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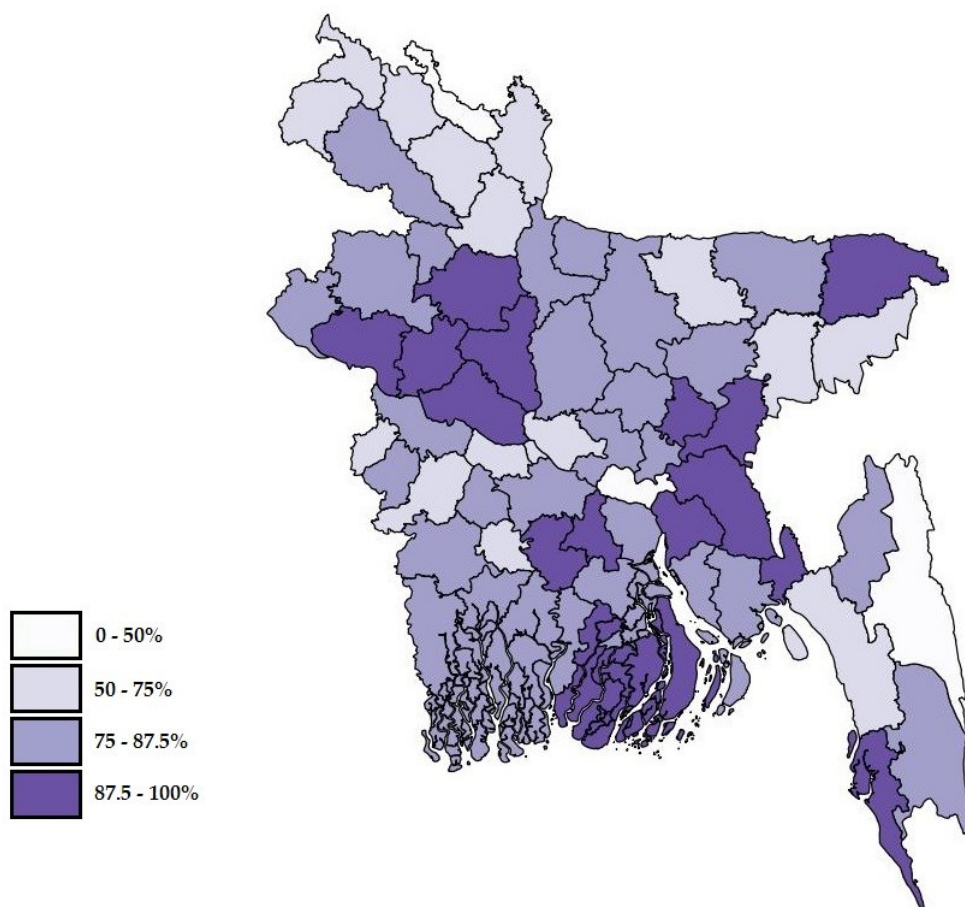
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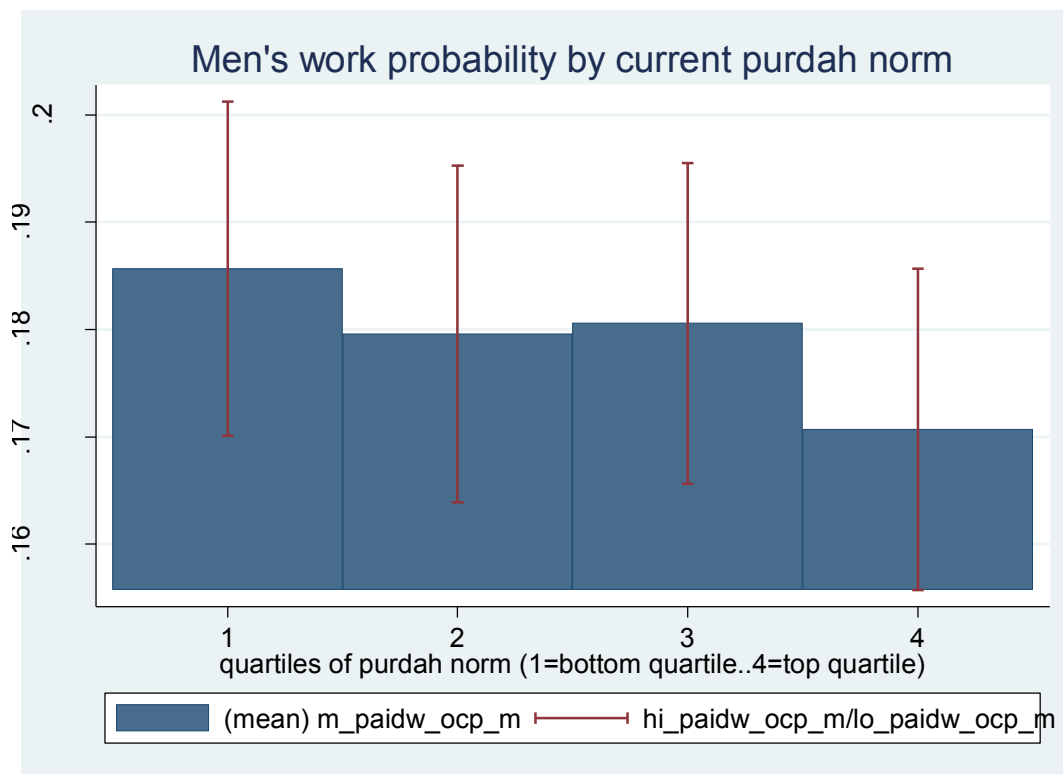
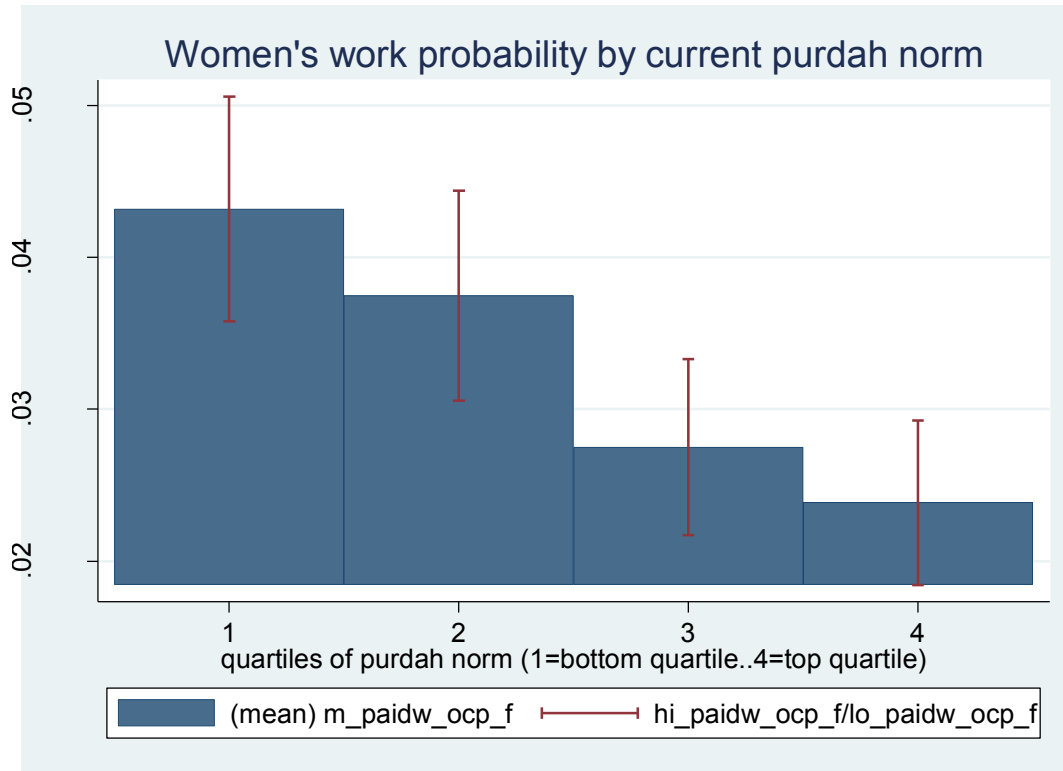
**Figure 1:** District-wise distribution of *pardah* practice in Bangladesh



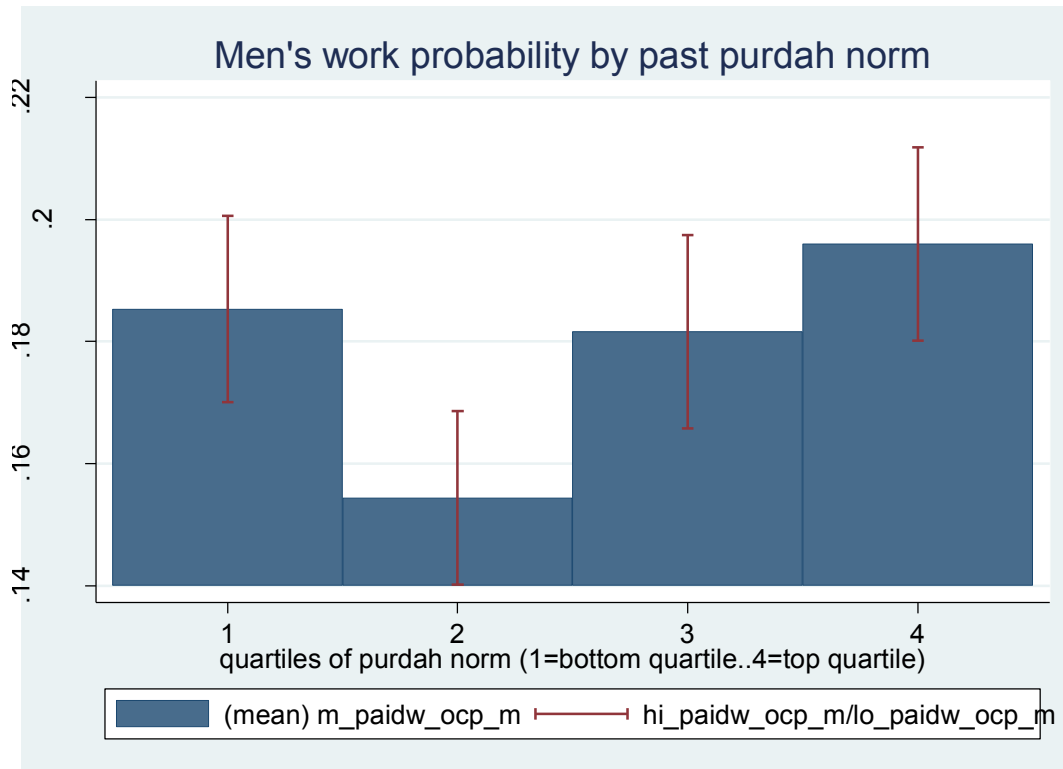
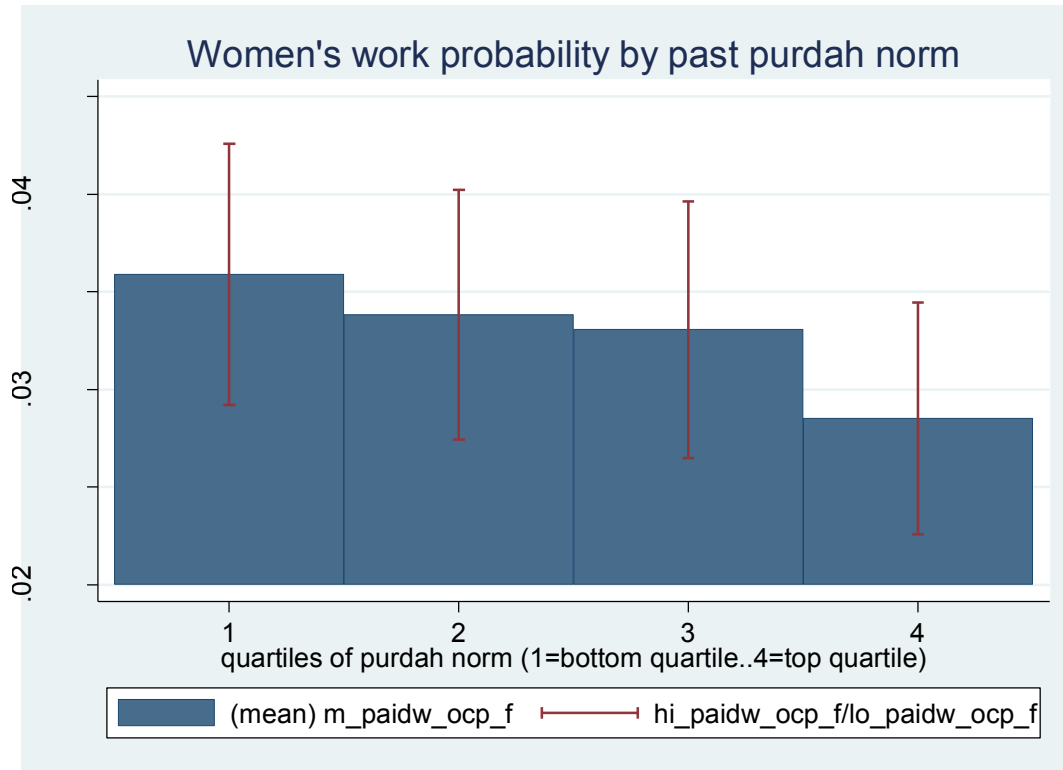
**Note:** Map shows proportion of women living in households where *pardah* practice is required. Figures are based on responses by 6,293 women to the female respondent questionnaire of the 2014 WiLCAS.



**Figure 2:** Paid work probability by current community purdah norm



**Figure 3: Paid work probability by past community purdah norm**



**Table 1: Summary Statistics by Employment Status, 20-60 years old**

	Full sample		Employed in paid work		Self-employed/unpaid work		Not in employment	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
<b>Employment status</b>								
Employed	0.53	0.50	1.00	0.00	1.00	0.00	0.00	0.00
Employed in paid work	0.10	0.30	1.00	0.00	0.00	0.00	0.00	0.00
Employed in unpaid work	0.43	0.50	0.00	0.00	1.00	0.00		
Not in employment	0.47	0.50	0.00	0.00	0.00	0.00	1.00	0.00
<b>Personal background characteristics</b>								
Female	0.55	0.50	0.18	0.39	0.49	0.50	0.68	0.47
Age	34.86	10.72	36.60	9.93	37.27	10.37	32.29	10.61
Non-muslim	0.12	0.32	0.16	0.36	0.12	0.32	0.11	0.31
Marital status: single	0.10	0.30	0.11	0.31	0.06	0.24	0.13	0.34
Marital status: widow	0.03	0.17	0.03	0.16	0.03	0.17	0.04	0.18
Marital status: divorced	0.01	0.09	0.01	0.12	0.01	0.08	0.01	0.10
Literate: can read and write	0.64	0.48	0.57	0.50	0.59	0.49	0.70	0.46
Years of schooling completed	4.57	3.86	4.36	4.12	4.04	3.70	5.09	3.87
<b>Household characteristics</b>								
Location: urban	0.11	0.31	0.14	0.34	0.12	0.33	0.08	0.27
Location: industrial (RMG)	0.01	0.07	0.03	0.18	0.00	0.05	0.00	0.06
No. of children aged 0-5 yrs	0.31	0.58	0.43	0.64	0.39	0.63	0.21	0.50
No. of children aged 6-10 yrs	0.39	0.64	0.51	0.68	0.52	0.69	0.24	0.54
No. of children aged 11-16 yrs	0.56	0.79	0.60	0.83	0.68	0.82	0.44	0.74
Co-resident in-laws	0.31	0.46	0.21	0.41	0.24	0.42	0.40	0.49
<b>Community norms</b>								
<i>Purdah</i> norm	0.77	0.22	0.75	0.23	0.77	0.21	0.78	0.22
Female employment norm	0.67	0.21	0.68	0.20	0.67	0.21	0.67	0.21
<b>Community attributes</b>								
Distance to nearest bus stop	5.18	6.49	4.96	6.65	4.85	5.95	5.52	6.91
Has telephone connection	0.13	0.33	0.16	0.37	0.11	0.31	0.13	0.34

Has internet connection	0.14	0.35	0.16	0.37	0.13	0.34	0.14	0.34
Frequent flooding	0.35	0.48	0.33	0.47	0.34	0.47	0.37	0.48
Frequent drought	0.34	0.47	0.32	0.47	0.36	0.48	0.32	0.47
Has BRAC office	0.29	0.18	0.30	0.19	0.30	0.18	0.28	0.17
Has Grameen Bank office	0.21	0.15	0.21	0.15	0.21	0.15	0.22	0.15
Has cinema hall	0.03	0.18	0.04	0.19	0.03	0.18	0.03	0.18
Beauty parlour present	0.09	0.28	0.13	0.33	0.07	0.26	0.09	0.29
Travel time to the capital city	9.24	7.28	9.32	7.41	9.17	7.31	9.28	7.22
Distance to sub-district HQ	8.56	6.96	8.04	6.81	8.38	6.70	8.84	7.22
Average male wage	323.69	153.67	329.18	178.17	311.11	143.20	334.03	156.54
Average female wage	68.61	103.87	87.14	120.08	69.23	100.75	64.17	102.58
N	21605		2126		9298		10181	

Note: Community *purdah* norm is defined as the average of the individual response to the following statement: “girls/women from this household are required to use *purdah* when they go out”. Female employment is similarly defined as the community average of the cases where the individual respondent agreed to the following statement: “it is appropriate for a woman to take up employment outside of the household”.

**Table 2:** Probit estimates of the determinants of paid work participation among 20-60 years old

	Pooled	Female	Male
Female	-0.14 (29.86)**		
Non-muslim	0.021 (2.73)**	0.009 (2.14)*	0.035 (2.25)*
Age	0.008 (6.78)**	0.006 (6.75)**	0.006 (1.97)*
Age, sq/100	-0.01 (6.75)**	-0.007 (6.40)**	-0.008 (2.13)*
Marital status: single	0.001 (0.14)	0.055 (6.06)**	-0.046 (3.17)**
Marital status: widow	0.065 (4.83)**	0.044 (6.21)**	-0.117 (2.44)*
Marital status: divorced	0.159 (5.37)**	0.117 (6.37)**	0.015 -0.17
literate	-0.016 (1.30)	-0.021 (1.94)+	-0.027 (0.97)
Years of schooling completed	-0.009 (2.42)*	-0.005 (1.66)+	-0.009 (1.01)
Schooling, sq	0.001 (3.91)**	0.001 (3.20)**	0.001 (1.95)+
No. of children aged 0-5 yrs	0.014 (4.71)**	-0.003 (1.36)	0.045 (6.54)**
No. of children aged 6-10 yrs	0.012 (3.93)**	0.003 (1.59)	0.028 (4.14)**
No. of children aged 11-16 yrs	0.004 (1.57)	-0.001 (0.75)	0.013 (2.43)*
Co-resident in-laws	-0.013 (2.73)**	0 (0.11)	-0.037 (3.45)**
Wealth quintile: 21%-40%	-0.014 (2.81)**	-0.005 (1.57)	-0.028 (2.40)*
Wealth quintile: 41%-60%	-0.017 (3.37)**	-0.007 (2.09)*	-0.034 (2.63)**
Wealth quintile: 61%-80%	-0.029 (5.78)**	-0.012 (3.62)**	-0.056 (4.51)**
Wealth quintile: 81%-100%	-0.026 (4.36)**	-0.011 (3.29)**	-0.046 (3.17)**
<b>Location factors</b>			
Urban area	0.017 (1.96)*	0.016 (2.86)**	0.015 (0.90)
Urban with high presence of RMG factories	0.359 (8.97)**	0.227 (3.72)**	0.472 (6.42)**
<b>Community gender norms</b>			
<i>Purdah</i> norm	-0.025 (1.92)+	-0.022 (3.19)**	-0.019 (0.70)
Female employment norm	0.02 (1.65)+	0.018 (2.34)*	0.016 (0.62)
<b>Other community attributes</b>			
average male wage	0 (0.99)	0 (0.06)	0 (1.08)
average female wage	0 (3.04)**	0 (3.33)**	0 (2.06)*
distance to nearest bus stop	0 (0.62)	0 (0.81)	0 (0.32)

has telephone connection	0.007 (0.96)	0.003 (0.66)	0.012 (0.77)
has internet connection	0.008 (1.06)	0.007 (1.60)	0.01 (0.65)
frequent flooding	-0.002 (0.45)	-0.002 (0.70)	-0.002 (0.20)
frequent drought	-0.003 (0.58)	-0.005 (1.61)	0.002 (0.17)
has BRAC office	0.02 (1.59)	0.016 (2.16)*	0.024 (0.84)
has Grameen Bank office	-0.001 (0.07)	-0.001 (0.07)	0.004 (0.12)
has cinema hall	0.002 (0.16)	0.007 (0.84)	-0.009 (0.36)
Beauty parlor present	0.01 (0.94)	0 (0.06)	0.029 (1.30)
Travel time to the capital city	0 (0.72)	0 (1.09)	0 (0.15)
Distance to sub-district HQ	-0.001 (1.69)+	0 (2.28)*	-0.001 (0.98)
N	21564	11898	9666
Pseudo R <sup>2</sup>	0.14	0.14	0.04

Note: (1) \*\*, \* and + indicate statistical significant at 1%, 5% and 10% respectively. (2) Marginal effects are reported instead of coefficients. (3) Standard errors are corrected for clustering at the community level.

**Table 3:** Heterogeneous effects of *pardah* norm among 20-60 years old women, Probit estimates

	(1)	(2)	(3)	(4)
<i>Purdah</i> norm	-0.023 (2.20)**	-0.01 (1.13)	-0.013 (1.91)*	-0.021 (3.57)**
Marital status (currently married)	-0.059 (3.60)**			
<i>Purdah</i> norm*marital status	0.002 (0.22)			
Integrated (eastern) districts		0.016 (2.00)*		
<i>Purdah</i> norm*integrated sub-districts		-0.02 (1.95)+		
Non-Muslims			0.038 (3.12)**	
<i>Purdah</i> norm*non-Muslims			-0.029 (2.32)**	
Household wealth index				-0.016 (2.41)**
<i>Purdah</i> norm*Wealth				0.007 (1.38)
N	11898	11898	11898	11898
Pseudo R <sup>2</sup>	0.138	0.138	0.139	0.137

Note: (1) All regressions additionally control for the full set of covariates used in Table 1. (2) \*\*, \* and + indicate statistical significant at 1%, 5% and 10% respectively. (3) Marginal effects are reported instead of coefficients. (4) Standard errors are corrected for clustering at the community level. (4) Integrated districts are eastern districts of Dhaka, Chittagong and Sylhet divisions (excluding Faridpur district).

**Table 4:** Probit estimates of *pardah* norms effect on women’s paid work participation: falsification test and accounting for omitted parental backgrounds

	<i>All females</i>	<i>All females</i>	<i>Excluding native women</i>	<i>Excluding native women</i>	<i>All females</i>	<i>All females</i>
	(a)	(b)	(c)	(d)	(e)	(f)
<i>Purdah</i> practice (when 12 years old)	-0.000 (1.10)	-0.003 (0.77)	-0.002 (0.56)	-0.005 (1.21)		
<i>Purdah</i> norm (current measure)		-0.011 (1.79)+		-0.033 (2.74)**	-0.033 (3.02)**	-0.033 (3.08)**
Mother was employed						0.008 (1.21)
Mother completed primary schooling						0.002 (0.47)
N	5142	5142	4255	4255	5142	5142
Pseudo R <sup>2</sup>	0.15	0.16	0.17	0.18	0.17	0.17

Note: (1) All regressions control for the full set of covariates used in Table 1 except *pardah* norm variable. (2) \*\*, \* and + indicate statistical significant at 1%, 5% and 10% respectively. (3) Marginal effects are reported instead of coefficients. (4) Standard errors are corrected for clustering at the community level.



**Table 5:** IV-Probit estimates of the determinants of paid work participation among 20-60 years women

	2 <sup>nd</sup> Stage		1 <sup>st</sup> Stage
	<i>coefficients</i>	<i>marginal effects</i>	
Purdah	-0.738 (2.27)*	-0.049	-- --
Non-muslim	0.066 (0.51)	0.004	-0.263 (9.62)**
Age	0.119 (6.59)**	0.007	0.00 (0.33)
Age, sq	-0.149 (6.36)**	-0.008	0.00 (0.17)
Marital status: single	0.622 (6.09)**	0.059	-0.002 (0.16)
Marital status: widow	0.57 (6.34)**	0.051	-0.01 (1.10)
Marital status: divorced	0.874 (5.85)**	0.106	0.03 (1.86)+
literate	-0.173 (0.93)	-0.010	-0.008 (0.65)
Years of schooling completed	-0.141 (2.32)*	-0.008	0.009 (2.35)*
Schooling, sq	0.017 (3.42)**	0.001	-0.001 (2.00)*
Location: urban	0.357 (4.13)**	0.026	-0.011 (0.47)
Location: rmg	0.894 (2.92)**	0.112	0.015 (0.18)
No. of children aged 0-5 yrs	-0.013 (0.31)	-0.001	-0.004 (0.75)
No. of children aged 6-10 yrs	0.024 (0.56)	0.001	0.001 (0.24)
No. of children aged 11-16 yrs	-0.066 (2.09)*	-0.004	-0.002 (0.52)
Co-resident in-laws	-0.06 (0.90)	-0.003	-0.002 (0.26)
Female employment	0.564 (3.04)**	0.031	0.067 (1.33)
Wealth quintile: 21%-40%	-0.117 (1.54)	-0.006	-0.003 (0.32)
Wealth quintile: 41%-60%	-0.167 (2.01)*	-0.008	-0.011 (1.00)
Wealth quintile: 61%-80%	-0.269 (3.30)**	-0.013	0.001 (0.14)
Wealth quintile: 81%-100%	-0.193 (2.24)*	-0.010	0 (0.03)
lagged_purdahF			0.228 (9.60)**
Constant	-4.026 (8.54)**		0.58 (12.25)**
Observations	10085		--
Pseudo-R2	0.356		--
F-test on excluded IV	--		74.68

**Table 6:** Oaxaca Decomposition of Gender Gap in Employment Probability Among 20-60 Years Old

	Mean	In %
<b>Estimates 1: no additional control for community attributes</b>		
Endowment differences (explained variation)	0.006	4.72
Returns to characteristics differences (unexplained variation)	0.138	95.28
Mean gender gap in employment probability	0.145	100.00
<i>Contribution of gender norm variables to "unexplained differences"</i>		
<i>pardah</i> norm variable		26.01
employment norm variable		20.91
<b>Estimates 2: additional control for community attributes</b>		
Endowment differences (explained variation)	0.002	5.04
Returns to characteristics differences (unexplained variation)	0.149	94.95
Mean gender gap in employment probability	0.152	100.00
<i>Contribution of gender norm variables to "unexplained differences"</i>		
<i>pardah</i> norm variable		27.36
employment norm variable		18.37

**Note: (1)** Results based on regression specifications used in Tables 2 and 3. **(2)** Estimates are based on procedure described in Powers, Yoshioka and Yun (2011). **(3)** Male characteristics are used as weights.

**Appendix Table 1: Employment Status, Gender Norms and Selected Background Characteristics by Respondent Gender (among 20-60 years old)**

	Female		Male	
	Mean	Std. Dev.	Mean	Std. Dev.
<b>Employment status</b>				
Employed	0.42	0.49	0.67	0.47
Employed in unpaid work	0.38	0.49	0.49	0.50
Employed in paid work	0.03	0.18	0.18	0.38
Not in employment	0.58	0.49	0.33	0.47
<b>Background characteristics</b>				
Female	1.00	0.00	0.00	0.00
Age	33.78	10.59	36.19	10.73
Non-muslim	0.11	0.32	0.12	0.33
Marital status: single	0.04	0.19	0.18	0.38
Marital status: widow	0.05	0.22	0.01	0.07
Marital status: divorced	0.01	0.11	0.00	0.06
Literate: can read and write	0.63	0.48	0.64	0.48
Years of schooling completed	4.47	3.77	4.69	3.96
Location: urban	0.10	0.30	0.11	0.31
Location: industrial (RMG)	0.01	0.07	0.01	0.08
No. of children aged 0-5 yrs	0.30	0.57	0.33	0.59
No. of children aged 6-10 yrs	0.37	0.63	0.40	0.65
No. of children aged 11-16 yrs	0.55	0.79	0.56	0.79
Co-resident in-laws	0.32	0.47	0.30	0.46
<b>Community norms</b>				
<i>Purdah</i> norm	0.78	0.21	0.77	0.22
Employment norm	0.67	0.21	0.67	0.21
<b>Community attributes</b>				
Distance to nearest bus stop	5.16	6.57	5.20	6.40
Has telephone connection	0.13	0.33	0.13	0.33
Has internet connection	0.14	0.34	0.14	0.35
Frequent flooding	0.35	0.48	0.36	0.48
Frequent drought	0.34	0.47	0.34	0.47
Has BRAC office	0.29	0.18	0.29	0.18
Has Grameen Bank office	0.21	0.15	0.22	0.15
Has cinema hall	0.03	0.18	0.03	0.18
Beauty parlor present	0.09	0.28	0.09	0.28
Travel time to the capital city	9.24	7.28	9.23	7.28
Distance to sub-district HQ	8.56	6.96	8.57	6.97
Average male wage	324.02	153.59	323.29	153.79
Average female wage	67.31	103.09	70.21	104.80

**Appendix Table 2:** Selection Corrected Probit estimates of the determinants of paid work participation among 20-60 years old

	Female Sample		Male Sample	
	Paid work	LF participation	Paid work	LF participation
Non-muslim	0.255 (1.24)	0.021 (0.33)	0.083 (1.12)	0.278 (4.61)**
Age	-0.037 (0.40)	0.151 (16.13)**	0.009 (0.61)	0.037 (2.83)**
Age, sq	0.026 (0.23)	-0.166 (13.67)**	-0.026 (1.44)	-0.017 (1.03)
Marital status: single	0.604 (1.46)	0.077 (0.96)	-0.03 (0.31)	-0.294 (5.06)**
Marital status: widow	0.5 (2.42)*	-0.082 (1.22)	-0.593 (1.84)+	-0.571 (2.78)**
Marital status: divorced	0.697 (1.54)	0.161 (1.37)	-0.061 (0.16)	0.16 (0.71)
literate	0.107 (0.29)	-0.48 (5.58)**	0.044 (0.34)	-0.468 (3.87)**
Years of schooling completed	-0.257 (3.89)**	0.17 (6.12)**	-0.126 (2.65)**	0.216 (5.42)**
Schooling, sq	0.028 (3.93)**	-0.014 (6.52)**	0.014 (3.65)**	-0.02 (6.62)**
No. of children aged 0-5 yrs	-0.241 (3.68)**	0.244 (8.75)**	0.014 (0.21)	0.515 (13.37)**
No. of children aged 6-10 yrs	-0.178 (1.60)	0.274 (12.13)**	-0.027 (0.48)	0.44 (11.28)**
No. of children aged 11-16 yrs	-0.128 (3.68)**	0.119 (6.06)**	-0.014 (0.39)	0.234 (9.53)**
Co-resident in-laws	0.262 (3.30)**	-0.258 (7.84)**	-0.117 (1.83)+	-0.147 (3.42)**
Wealth quintile: 21%-40%	-0.182 (2.39)*	0.077 (1.87)+	-0.183 (3.32)**	0.138 (2.32)*
Wealth quintile: 41%-60%	-0.3 (3.81)**	0.189 (4.38)**	-0.246 (3.91)**	0.224 (3.65)**
Wealth quintile: 61%-80%	-0.528 (5.08)**	0.288 (6.02)**	-0.427 (5.84)**	0.412 (6.26)**
Wealth quintile: 81%-100%	-0.299 (2.09)*	0.062 (1.23)	-0.379 (4.82)**	0.392 (5.82)**
<b>Location factors</b>				
Urban	0.128 (0.86)	0.066 (0.81)	-0.139 (1.40)	0.676 (9.50)**
Industrial (RMG)	0.763 (0.89)	0.813 (2.37)*	0.92 (3.32)**	1.73 (3.72)**
<b>Community attributes</b>				
average male wage	0.001 (1.28)	-0.001 (1.39)	0 (1.45)	0 (0.92)
average female wage	0 (0.55)	0.001 (2.36)*	0 (2.00)*	0 (0.90)
distance to nearest bus stop	0.01 (1.78)+	-0.008 (2.21)*	0.003 (1.06)	-0.008 (2.36)*
has telephone connection	0.242 (2.28)*	-0.169 (2.54)*	0.104 (1.62)	-0.163 (2.41)*

has internet connection	0.144 (1.30)	-0.041 (0.54)	0.037 (0.60)	0.051 (0.79)
frequent flooding	-0.032 (0.30)	-0.092 (1.71)+	-0.014 (0.31)	-0.045 (1.04)
frequent drought	-0.202 (2.98)**	0.146 (3.08)**	-0.032 (0.69)	0.111 (2.63)**
has BRAC office	0.127 (0.51)	0.197 (1.52)	0.065 (0.53)	0.176 (1.68)+
has Grameen Bank office	0.385 (1.47)	-0.439 (2.51)*	0.074 (0.45)	-0.058 (0.45)
has cinema hall	-0.106 (0.39)	0.161 (0.86)	-0.066 (0.60)	-0.03 (0.32)
Beauty parlor present	0.378 (1.98)*	-0.352 (2.90)**	0.115 (1.22)	0.055 (0.80)
Travel time to the capital city	0.009 (1.77)+	-0.003 (1.20)	0.001 (0.28)	-0.001 (0.39)
Distance to sub-district HQ	-0.005 (0.70)	-0.003 (0.85)	-0.002 (0.54)	-0.005 (1.90)+
<b>Community norms</b>				
<i>Purdah</i>		-0.158 (1.24)		0.066 (0.66)
Female employment		0.032 (0.22)		-0.02 (0.19)
Constant	0.329 (0.13)	-2.998 (10.52)**	-0.359 (0.77)	-1.189 (4.20)**
N	11919	11919	9686	9686
Censored	6941		3240	
Uncensored	4978		6446	
Wald chi2(28)	520.01		231.12	
Wald test of independent eqns. (rho = 0)				
Chi2(1)	1.85		0.30	
(p-value)	0.17		0.58	

Note: Robust standard errors used.