

Has Asia's growth been gender-inclusive? Recent panel data evidence (1990-2015) on female employment

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Abstract: The long-standing losers of economic growth have been the poor, marginalized and indigenous groups. Within the Asian spectrum, gender disparities have been a large threat to the inclusivity of growth. Gender wage gaps, difficult working conditions, child rearing responsibilities, disparities in access to school education are all very common barriers to female inclusion in economic activity. This study looks at the recent panel data evidence for Asian (South Asia, East Asia and Asia-Pacific) countries over the time period 1990-2015 in order to determine the factors affecting the growth generically and how gender-sensitive legal and financial infrastructure is related to female labour force participation in particular. As a preliminary inquiry into the statistical evidence, we utilize panel data estimation with fixed and random effects in order to determine the statistical robustness of the conventional and institutional variables as predictors of female labour force participation. We find that the country-specific unobservables correlate only with the female labour-literacy association while the associations of female labour with growth rate and equal pay legislation are not affected by country-specific unobservables.

Keywords: *Gender, Growth, Labour force participation, Asia*

INTRODUCTION

The inclusive growth literature has its own share of paradoxes. We focus on one such paradox and explore related dimensions in the context of the Asia and Pacific region considering recent data. Are women participating less in labor force when growth gets stronger? The global evidence suggests that the higher the economic growth status of the country, the higher will be the participation of women in the labour force. There may be a number of reasons why this might occur such as through stronger institutions that incorporate the concerns of female labour and compensating mechanisms that can accommodate the needs of the female labour force. It is important that we observe and analyse recent evidence from the Asia Pacific countries to see if the growth dividends of recent years have created higher participation rates. This inquiry can further elaborate on the contemporary validity of the classical explanatory variables of female labor force participation such as literacy, schooling, and gender wage gaps.

Female labor force participation has been widely studied as a national issue in many Asian countries in general and in South Asian countries in particular. A special focus on South Asia is warranted due to social inequalities that remain with respect to gender and the cultural norms that determine gender roles. We conduct the analysis for South Asia to see if the regional trends persist in the same manner in the sub-continent as in the rest of Asia.

One of the fundamental concerns of development economics is the tradeoff between growth and distribution. The former concept refers to the size of the economic activity returns and

the latter refers to how the benefits / returns of economic activity are shared within the society. Policies may have a positive effect on either or both growth and distribution. The empirical cross-country literature suggests that growth has neither a positive nor a negative effect on inequality (Dollar & Kraay, 2002), and that the impact of inequality on growth is ambiguous. For example, Perotti (1996) finds a negative relationship, Forbes (2000) finds a positive relationship, while Barro (2000) and Lopez (2004) find no relationship. However, the findings in the “Growth Report: Strategies for Sustained Growth and Inclusive Development” (Spence, 2008) note that inclusiveness – a concept that encompasses equity, equality of opportunity, and protection in market and employment transitions – is an essential ingredient of any successful growth strategy.

The dawn of the millennium provided a natural point of time to reflect. The global growth agenda had had a substantial period of existence by then and all countries and transnational institutions were taking stock of the growth achievements of 1990s. For instance, the volume “Economic Growth in the 1990s: Learning from a Decade of Reform” (Nankani, 2005) concludes that although the necessary fundamentals for growth, such as a stable macroeconomy, sound property rights, openness to trade, and effective government are key factors in the growth process, they are not the only factors. This World Bank study and the work of the Growth Commission (Spence, 2008) highlight the diverse ways in which fundamentals can interact with policies and institutional settings in different country contexts. It is around this time in recent history that the growth discourse took up the narrative of inclusiveness seriously. It is difficult to find a single episode that crystallised the importance of “inclusiveness” as a concept or a paradigm, but since 2005 most policy and strategy documents have taken the inclusiveness of development into account.

According to the Commission on Growth and Development report (2008), sustained high growth requires rapid incremental productive employment. This focus in particular is a distinct side-step from the income redistribution focus that is classically highlighted in the inequality literature. If the message is taken in its positive light, then the growth strategy should create space for the left-out sections of the society to join the labour force in such a way that both intensive margin and extensive margin of employment generation receive balanced attention. Given the heterogeneity of skills of the new entrants and new engagements of the marginally employed, there will not be significant crowding out of the demands for labour. It is logical to expect that the inclusiveness will lead to an increase in the base of the labour force rather than create transfers within sectors.

Female labor has been identified in the recent literature as a potential driver of inclusive growth (Jaumotte, 2003; Thévenon, 2013). The level of female participation in the labor force is also known to be a reliable indicator of social and cultural characteristics of given society (Anker, 1983). Both these considerations are equally important in explaining the variation of female participation across countries. The generic figure cited for low income (often called developing countries) is that nearly one third of the females participate in the labour force. For high income countries this fraction is as high as two thirds. However, the variation of social norms perhaps contributes to Sub Saharan African countries reporting female participation as high as high income countries, though conventional predictors such health and education are vastly different in the two categories. In contrast, South Asian countries report the lowest participation due to gender roles and other disparities in the workplace. East Asia reports high female participation (even though there is also criticism of underestimates (Franck & Olsson, 2014)), and the literature identifies this as a result of both better social infrastructure such as education and health and more conducive social

norms. However, the South Asian figures need a qualitative upward correction with respect to large informal and self-employment in the rural sector.

DATA

We look at the published data for a number of variables for the period 1995 to 2015. The growth rates and per capita growth statistics control for the development status of the country both in terms of efficiency and equity. The years of schooling for female population produces a measure of quality of female labour quality. The gender pay legislation is reported only after 2010 for most countries in the public data. We make the assumption that when data is not available for the years before 2010 for this variable for a particular country, the status that prevailed in 2010 is similar to that for each of the previous years. The descriptive statistics are listed in table 1.

Table 1 : Descriptive statistics of the outcome and predictor variables

| Variable | Mean | Std. Dev. | Min | Max |
|----------------------|---------|-----------|--------|----------|
| Female participation | 39.50 | 8.70 | 12.22 | 51.27 |
| Income growth rate | 4.62 | 4.66 | -14.27 | 27.50 |
| GDP pc | 5795.69 | 10509.59 | 98.03 | 96038.05 |
| Equal pay | 0.30 | 0.46 | 0 | 1 |
| Account Access | 10.87 | 12.59 | 0.20 | 37.99 |
| Life expectancy | 79.18 | 2.81 | 74.80 | 88.16 |

METHODS

In order to validate the conventional predictors of female labor force participation, between-country and between-year variation of these predictors and the female labour force participation are associated pairwise after generating the country averages in each case.

Analytical relationships are evaluated using the panel data models (Plümer & Troeger, 2007), namely the Fixed effects model and the random effects model. We use the following generic formula to represent the Fixed effects (FE) estimation:

$$FLP_{it} = \beta_i + \beta_t + \beta X_i + \beta X_{it} + \varepsilon_{it}$$

Where,

FLP_{it} : female labour participation (by country, by year)

β_i : country specific fixed effects

β_t : year specific fixed effects

X_i : time invariant predictor variables

X_{it} : time and country variant predictors

ε_{it} : random error

The random effects estimation deviates from the above in not containing country specific time-invariant parameters.

RESULTS

Illustrative overview of predictors of female labour force participation

Female participation of labour is more variable across countries and across time than that of male counterparts. Based on the data for the Asia and Asia Pacific countries for the last 20 years, we illustrate this variability in Figure 1. It is notable that male participation rates are on average higher and closely placed around the average while the female picture is scattered. In both cases, however, the between year variability is comparable.

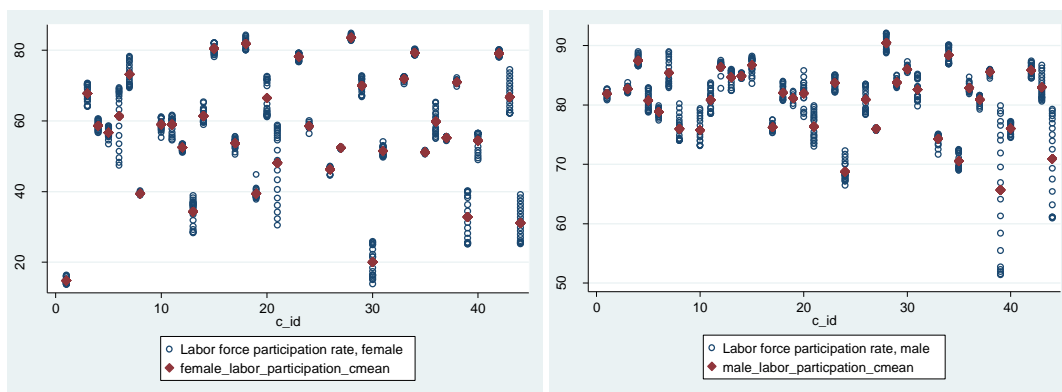


Figure 1: Female (on the left side) vs. Male labour force participation: variation across countries and time

Next, we consider a set of conventional predictors of female labour participation and observe the between-country and between-year variation of the respective relationships. In all the illustrations below, on the left side panel of each pair of graphs, the between country variation in the bivariate relationship is displayed while on the right side panel the between year variation of the bivariate relationship is included. The purpose of the illustrations is to give a summary of the key relationships using the entire variation available in a panel data set.

Annual growth rate is chosen to reflect the intensity of economic activity regardless of its relative size. It is often claimed that high growth rates have a positive correlation with female participation. However, from the scatter plot and linear fit of the cross country variation, a clear positive relationship is unobservable. The between-year variation shows a clear positive connection between the two variables for the Asia Pacific countries. (Figure 2)

A key predictor of female participation is the general health and nutrition status of the female population. We consider life expectancy as a proxy measure of this element. In figure 3 the between country and between year variation of life expectancy is correlated with female labour participation. Here again, we observe a very significant positive correlation between years but not between countries

Literacy is the proxy variable to capture the general aptitude of the labour force entrants. In figure 4, female labour participation has a clear positive relationship with literacy based on between country variations but between years, a clear direction is not observable for the Asia Pacific region.

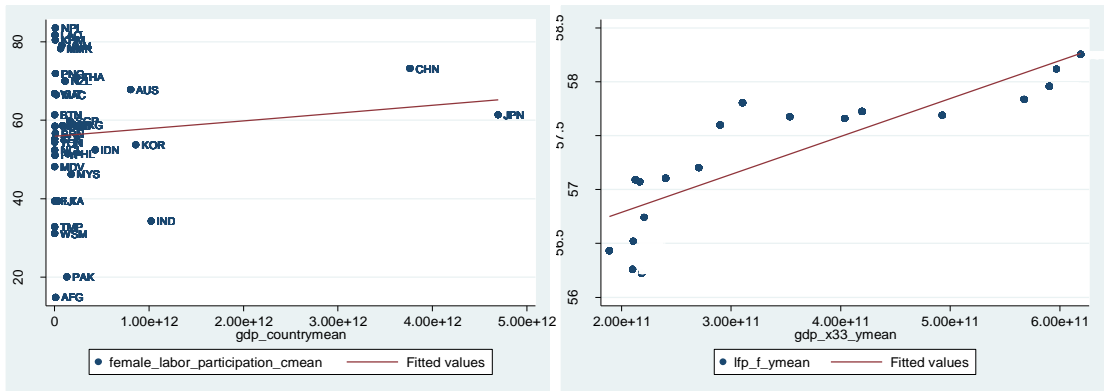


Figure 2: Economic growth and female labour force participation



Figure 3: Female labor force participation and female life expectancy

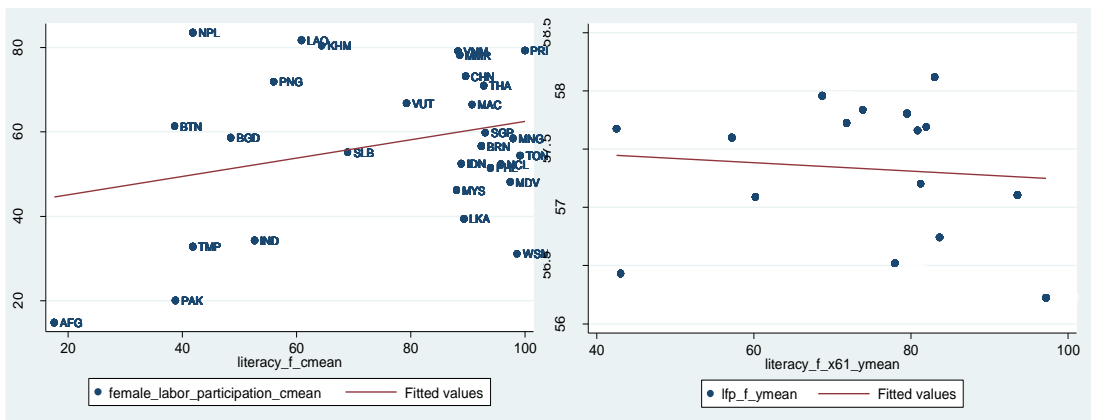


Figure 4 : Literacy (female) and labor force participation

South Asian Status

South Asia, as a region, has improved over the last 20 years. Given the focus on inclusive growth in the development discourse, we check if the post 2005 era has seen any sizeable improvement in the statistics for South Asia with respect to other relevant benchmarks. The statistics are calculated and reported in Table 2. There are no observable substantive improvements in this comparison. However, the region has displayed a slight improvement overall. The disappointing numbers come from India where female participation has declined over the period during which India opened its trade to the world. Another conclusion that we can infer from these statistics is that inclusive growth paradigm is more at the discourse level than being operational.

As a second step to see how each country in South Asia fared over the total period, we plot the time trends for each country in figure 5. These plots show that the improvements were quite gradual in the countries of Maldives and Nepal where sizeable improvements can be observed. India has had a noticeable drop from 2005. Pakistan also shows sizeable improvement starting from very low values but still remains well below the regional average.

Table 2: female percentages in labour force before 2005 and after 2005 (averages reported)

| Country/region | Female percentage before 2005 | Female percentage after 2005 |
|---------------------------|----------------------------------|---------------------------------|
| Asia pacific | 39 | 40 |
| Asia pacific _high income | 42 | 44 |
| Asia pacific _low income | 39 | 40 |
| South asia | 31 | 33 |
| China | 44 | 44 |
| India | 28 | 25 |
| Pakistan | 15 | 20 |
| Bangladesh | 38 | 39 |
| Srilanka | 32 | 33 |

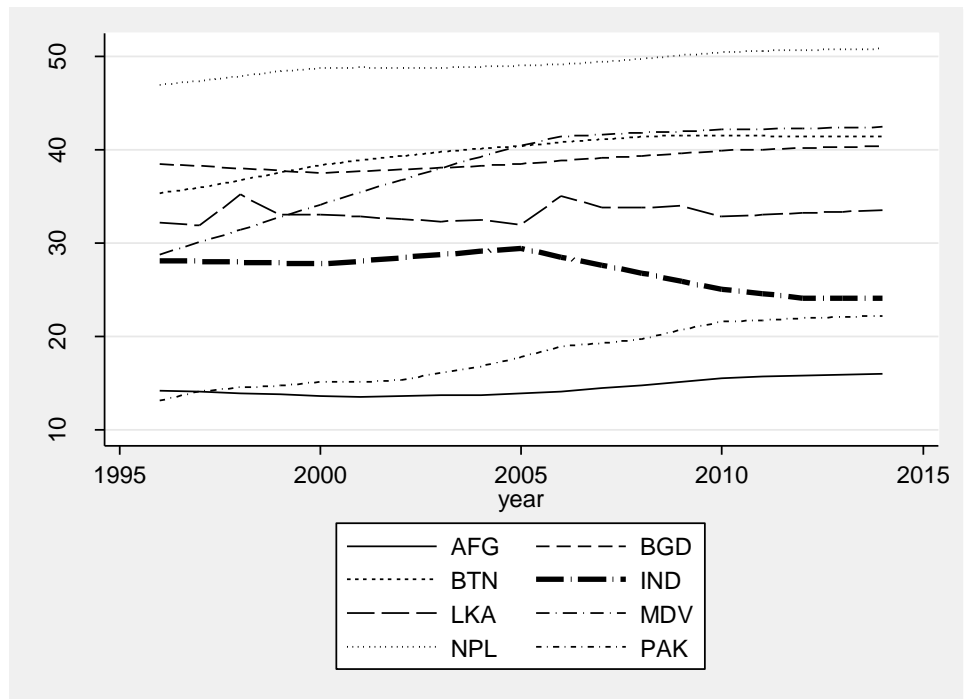


Figure 5: time trends of female labour contribution for South Asian countries

Analytical relationships: South Asia

Based on the observed higher volatility on female labour in South Asia, we focus our panel regression analysis to the South Asian countries. The purpose of this exercise is to find underlying details about the bivariate relationships observed in the previous discussion taking into consideration the significance of the role played by country specific unexplained factors. We perform a model comparison test to arrive at a conclusion whether certain bivariate relationships are complicated by the country specific unobservables or not.

We perform the model comparison for four key predictors: growth rate, literacy, equal pay for equal work legislation, and life expectancy. Based on the comparison of fixed effects and random effects alternatives in each of the above four predictors, we find that only the literacy and female labour relationship is significantly affected by correlation of country specific effects. The other three predictors do not show statistically significant connections with country specific effects.

Fixed effects model

Figure 6 displays the fixed effect model for literacy and female labour relationship. Literacy is a statistically significant predictor of the fraction of female labour (10 percent significance) with estimated coefficient of 0.271 and standard error of 0.141.

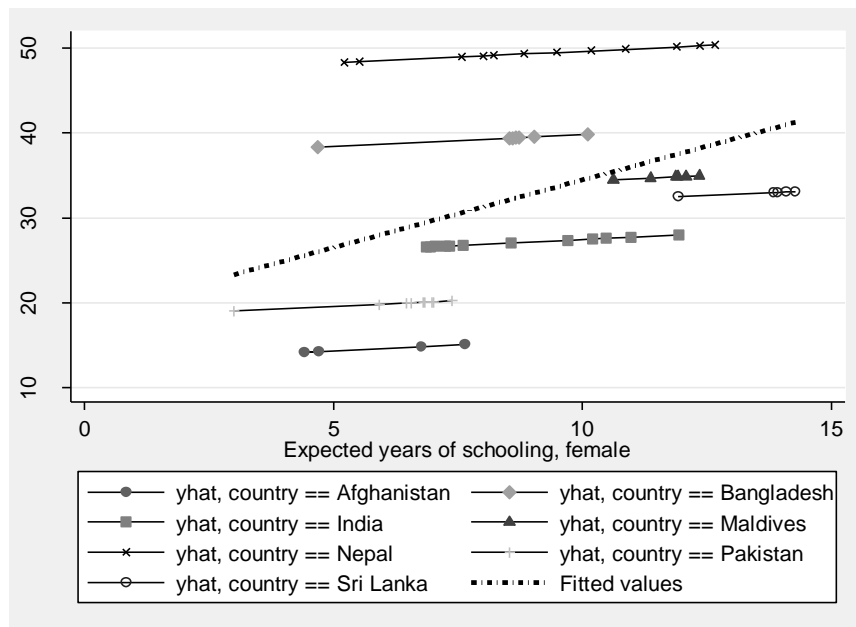


Figure 6: Fixed effect model of schooling and female labour contribution for south Asia.

Random effects model

Growth rate has a negative effect on female labour but the coefficient is not statistically significant at 10 percent level. Equal pay for equal work legislation similarly has a negative parameter which is not statistically significant. Life expectancy on the other hand has a significant positive association with female labour contribution, with a coefficient of 1.86 and standard error of 0.381.

Analytical relationships for all the Asia and Asia-Pacific countries

Random effects model predicts that years of schooling of females has a robust negative effect on labour force participation while GDP growth rates have a robust (small magnitude) positive effect on the same in the context of the above country sample. The legal requirement that both genders be paid equally for equal work and the level of financial inclusiveness of females (as percentage of total client base) both have positive partial impacts on female labour force incidence but both variables are not statistically significant.

CONCLUSION

The study revisits a crucial topic in the inclusive growth literature from a panel data perspective. In the first place, we validate the stylized predictors of female labor contribution. Subsequently, we focus on South Asia for a detailed investigation.

Few clear conclusions can be made about the analytical relationships tested in this study. Based on recent evidence from South Asian countries, we find that country specific unobservables correlate only with literacy and the association of female labour with growth rate and equal pay legislation is not affected by country specific unobservables; but these two predictors are not successful predictors of the outcome. However, health and nutrition

(proxied by life expectancy) has a highly significant association with female labour contribution. We conclude that literacy and health still remain the key statistical predictors of female inclusion in the labour force even though the mechanisms through which each associates with the outcome variable are different.

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APPENDICES

Table A1. All Asian and Asia pacific countries

| | (1) FE | (2) RE |
|---------------|--------------------------|--------------------------|
| Schooling | 0.01356 (0.05657) | 0.01289 (0.05592) |
| Growth rate | -0.01456 (0.03391) | -0.01429 (0.03355) |
| GDP pc | 0.00012*** (0.00003) | 0.00012*** (0.00003) |
| Equal pay law | -0.13697 (0.64405) | -0.06860 (0.63166) |
| _cons | 40.78166*** (0.62446) | 40.14684*** (2.07033) |
| N | 1.7e+02 | 1.7e+02 |
| L1 | -2.3e+02 | |
| r2 | 0.13426 | |

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ **Table A2.SAARC countries**

| | (1) FE | (2) RE |
|---------------|--------------------------|--------------------------|
| Schooling | 0.23120 (0.18465) | 3.57276*** (0.59587) |
| growth rate | -0.22155 (0.15197) | -1.07447* (0.61029) |
| GDP pc | 0.00002 (0.00073) | -0.01034*** (0.00197) |
| equal pay law | 0.00000 (.) | 5.03497 (3.42469) |
| _cons | 33.31305*** (1.52356) | 17.03314*** (4.96236) |
| N | 45.00000 | 45.00000 |
| L1 | -8.3e+01 | |
| r2 | 0.10307 | |

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$