
RESEARCH ARTICLE

Factors Affecting Labor Force Participation Decision in Bangladesh: An Empirical Study Using Microdata

Wasik Sajid Khan

Department of Economics, Faculty of Arts and Social Sciences, Bangladesh University of Professionals

Corresponding Author: Wasik Sajid Khan, **E-mail:** wasik.sajid@bup.edu.bd

ABSTRACT

Labor force participation rate is often used to keep an eye on the progress in the labor market. Using the labor force survey-2016, this study tries to identify the socioeconomic factors affecting a person's decision to join the labor force. A probit model has been used to understand the significance and respective marginal effects of each of the factors. The study has found higher chances of joining the labor force among the rural population. Attainment of higher education and training facilities can play vital roles in labor force participation decisions. The presence of elderly members and a high dependency ratio decreases the probability of participating in the labor force. Based on the findings, this study argues that prompt comprehensive actions are needed to reap off the benefit of demographic dividend.

KEYWORDS

Labor force participation, binary outcome, non-linear model, probit model

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1. Introduction

Despite being affected by the COVID-19 pandemic and related shutdown of economic activities, the economy of Bangladesh has shown resilience in terms of all the indicators. The country has been able to maintain sustained economic growth since the structural shift of the 1990s, cashing in on the growing population and subsequent cheap labor force, besides many other factors that have worked in favor. The GDP growth rate, one of the most commonly used and widely accepted indicators, has roamed around an impressive figure of 6% in most of the years since the early 2000s. Even in the face of the pandemic, the south Asian economy has performed better than most of the neighboring and developing countries.

The size of the labor force and its dimensions have always been key players in the country's economy. But the population growth rate is gradually coming down over the globe, and Bangladesh is not an exception. According to the most recent census of 2022, the population growth rate in the country is 1.22 percent, lower than at any time post its liberation in 1971. Demographic dividend, a limited window of opportunity which opened up for the country in the mid-1990s, is estimated to last until 2037 (Farid & Mostari, 2022). The size of the labor force compared to the dependent age group will fall gradually. To reap off the benefit of this window, labor force participation across genders and all age groups should be maximized.

The labor force participation rate (LFPR) indicates the relative size of the labor supply readily available for the production process. The rate is often used to keep track of progress in the corresponding labor market. Labor force participation rate is defined as the number of people in the labor force (both employed and unemployed) expressed as a percentage of the total working age population. (LFS, 2016)

$$LFPR = \frac{\text{Employed} + \text{unemployed persons}}{\text{Total working age population}} \times 100$$

The trend of labor force participation trend is not that satisfactory in Bangladesh. While the rate grew fast among females in this millennium, that of their male counterparts has shown very slow growth. The most recent Labor Force Survey showed a fall in the female labor force participation rate, which drew the attention of policymakers at home and abroad. People's decision to participate in the labor force depends on a number of socioeconomic factors. Labor force participation decision varies by age, educational attainment, region etc. Factors that affect the decision also differ across genders.

| Age Group | Male | Female | Total |
|-----------|------|--------|-------|
| 15-29 | 66.7 | 32.3 | 48.7 |
| 30-64 | 94.7 | 42.3 | 68.4 |
| 65+ | 47.1 | 8.7 | 31.0 |
| Total | 80.5 | 36.3 | 58.2 |

Table1: Labor force participation rate by age group and sex
Source: Labor Force Survey, 2016

This study aims at determining the factors that affect labor force participation decision among people and their respective effects within the limitations. This will facilitate the policymakers to plan for the future to take up the challenges of the fourth industrial revolution and the potential risk of job loss.

2. Literature Review

Literature on labor force participation is scattered in nature. Researchers have worked on determining the labor market participation for the specific economic classes from different countries or have seen the effect of a specific variable on the labor force participation decision across genders.

Data from 32 European countries were used in a study trying to show the effect of education on labor market outcomes. They defined access to education by the investment in education and assessed labor market outcomes by using employment, unemployment rate and elements of earning (Ionescu & Cuza, 2012). With the help of principal component analysis (RCA) and analysis of correlation, they concluded that an increase in participation in education leads to a decrease in the unemployment rate. A strong positive relationship between participation in education and employment was also found in the study.

Another study showed that poverty is the principal factor behind participation in the labor force for married women in the Punjab province of Pakistan. With the help of the probit regression model and using 39911 observations of women, they concluded that husband's unemployment, age, rural locality, education etc., have a positive impact on the labor force participation for married women (Khan & Khan, 2009). One important finding of their work is that women with an unemployed husband have a 13% higher chance of participating in the labor force. In other words, poverty in the household pushes married women to participate in the labor force in large numbers.

Empirical results from another study suggest that age, education level and marital status have a positive impact on labor force participation decisions of the female in Pakistan (Ejaz, 2007). Women from nuclear families who have access to vehicles have been found to be more likely to join economic activities. On the contrary, the number of children has a negative impact on labor force participation.

In one study, it has been found that a part of the growth in female labor force participation in Bangladesh can be explained by the presence of extreme poverty. Evidence shows a positive relationship between extreme poverty and women's labor force participation decision. Moreover, an increasing number of young single women have been found to join the labor market. In spite of all these, predominant rigid social, cultural and religious norms still influence women, more in rural areas (Bridges, Lawson & Begum, 2011).

The effects of the Bangladeshi stipend program have been found to be positive on female education levels, earnings and employment, and labor force participation in another study (Shamsuddin, 2015). 5 years of the program has associated an increase in female labor force participation by six percentage points.

Another study aiming at finding the long-term effects of stipend programs on female education, marriage, fertility, and labor market participation concluded that stipends increased years of schooling for girls significantly. They were more likely to join the labor force, that too in the formal sector when compared to the informal or agricultural sector. Child marriage and uncontrolled childbearing were less likely to be found among them (Hahn, Islam, Nuzhat, Smyth & Yang, 2018).

Researchers tried to understand the impact of the education level of women in Nigeria on the labor force participation decision. They used the General Household Survey of 2013 and then used the logit model to measure the marginal effect of independent

variables. They found out that labor force participation increases up to high school but then decreases with higher education attainment. They reasoned that the fall in female labor force participation with a higher educational degree could be attributed to the fact that a higher education degree may increase the reservation wage for participation (Nagac & Nuhu, 2016).

In another study on the Chinese labor force, the effect of changes in housing value on labor force participation was estimated. With the aid of instrumental variables for the housing capital gains, it was found that increased housing value leads to decreased probability of participating in the labor force among female homeowners and an increased probability of them becoming housewives. Young women with children are even more influenced by the change in housing value. But the effect was found to be little on male labor force participation (Fu, Liang & Zhang, 2016).

3. Methodology

3.1 Data

The data used in this study is from labor force survey 2016, prepared by the Bangladesh Bureau of Statistics and financed by the World Bank. The questionnaire has been designed in such a way that information on different factors like household information, household Roaster, education, training status, current activity status, secondary work, occupational safety and health, income status, underemployment, migration etc., are clearly mentioned in the survey report.

The labor force participation data was collected under the criterion that if the person is either employed or unemployed in the reference week prior to the survey, that person will be included in the labor force. As this study is focused on labor force participation, the data set has been restricted to those aged 15 or above.

3.2 Model Specification

The regression model includes the dependent variable, labor force participation and a set of independent variables. The dependent variable is a binary one, which can take values of 0 and 1. A linear probability model is inappropriate in this case as the conditional expectation of that will not be within the close interval of 0 and 1.

A nonlinear probit model has been used here to examine the marginal effects of various independent variables on the binary dependent variable, labor force participation, in this particular case. A generalized probit function can be written as,

$$\Pr (Y=1 | X) = G (\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \dots \beta_kX_k),$$

where $G(\bullet)$ is the standard normal cumulative distribution function while Y is the dependent binary variable and X 's are independent variables. Independent variables can be binary or non-binary. For example, information related to gender, level of education, training, presence of an elderly member in the household, location of residence, and religion have been included as binary variables, whereas age, household land holding, number of dependents in the household, household size etc. have entered the model as non-binary variables.

4. Results and Discussion

The probit regression has been performed on 335,945 observations. Estimates of the table-2 show the marginal effects of the factors, i.e., independent variables, on a person's decision regarding labor force participation based on the probit model. The results are explained here with the rationales for choosing the variables.

Age: From Table-1, it can be said that labor force participation rate is the highest in the age group of 30-64. As age increases after 65, the general trend is a fall in participation in work. It is lower in the age group 15-29 as a large portion of the population continues their studies and training until they reach their mid 30s. On the other hand, most people start enjoying retirement days at around the 60s. In our probit model, the age variable has a negligible negative marginal effect, which is statistically significant.

Gender: Gender plays a vital role in labor force participation trend in Bangladesh. From Table-1, it is clear that the rate is higher in males compared to their female counterparts. The male dummy variable also comes with a positive coefficient and is statistically significant at 1% level.

Marital Status: Most of the people in the labor force have been found to be currently married. The rate is more than 80%. In our econometric model, the marital status dummy variable shows a positive effect on labor force participation, which increases the probability by 15% and is statistically significant at a 1% level.

Rural or Urban: Labor force participation has been found to be higher in rural areas compared to urban areas. This positive relation between the rural dummy and the labor force is supported by the probit model. This marginal effect has an expected positive sign and is statistically significant at a 1% level.

| Variable | Coefficient | dy/dx |
|----------------------------------|-------------|----------|
| Age | -.005** | -.001** |
| Gender dummy | 1.165*** | .317*** |
| Rural dummy | .205** | .055** |
| Marital state dummy | .567*** | .154*** |
| Household land | -.258** | -.070** |
| Household head dummy | .807*** | .220*** |
| Household size | .005** | .001** |
| Household head male | .041*** | .011*** |
| Elderly member dummy | -.986*** | -.268*** |
| Number of dependents | -.281*** | -.077*** |
| Religion (Islam) dummy | -.138*** | -.037*** |
| Primary education dummy | .019 | .005 |
| Secondary education dummy | -.332** | -.090** |
| Higher secondary education dummy | -.275** | -.086** |
| Tertiary education dummy | .289*** | .078*** |
| Training dummy | .967*** | .263*** |
| ICT dummy | .325*** | .088*** |

Table 2: Probit model results

Education: Several dummy variables for different levels of education have been used in the econometric analysis. The primary education dummy has a positive marginal effect, whereas the secondary and higher secondary education dummy variables show negative marginal effects. Obtaining education beyond higher secondary level increases the chances of labor force participation by more than 7% which is expected as educated persons are likely to work or actively look for work outside. Here, all the variables are statistically significant.

Land Ownership: It is often found in rural areas that people with ample land tend to lease their land to others for cultivation and get a portion of what has been produced there. Many decide not to work themselves, especially the women from these households show less probability of joining the labor force. But people from households owning no or less land do not sit idle. They tend to work for payment for the betterment of themselves and their households. So, household land ownership is negatively related to labor force participation. The econometric analysis through probit and model also shows the same phenomenon. This variable is statistically significant at a 1% level of significance.

Household Head: Irrespective of their gender, household heads are found to be participating in the labor force. The probit model also supports this fact. The household head dummy variable has a positive marginal effect of 0.22 on labor force participation. Besides this, people from households with male heads show more tendency to join the labor force. Both of the variables are statistically significant.

Training: In general, training develops an individual’s ability to work. Any kind of training helps a person to get a better job and do something more efficiently than before. It is very much logical to expect that a trained person will do some sort of decent job. So, as people get trained, they tend to join the labor force. The probit model shows the same result as expected. Training dummy has a positive marginal effect on labor force participation decisions, which increases the chances by 26%.

Household Size: The number of members in the household has a positive impact on labor force participation. Feeding more members of the household often become a burden for those who are already earning, and new members come forward to mitigate it.

Presence of Dependents: Families with one or elderly members have to take care of them as the concept of paid caregivers is still novel and often looked down upon due to social norms. According to our econometric analysis, the presence of elderly members in the household reduces the chances of joining the labor force. The same goes for the presence of children who are aged below 5. The number of dependents has a negative marginal effect of -0.07 on the binary dependent variable.

Religion: Around 90% people of the total population of Bangladesh belongs to one single religion, Islam. It is often said that in Islam, women are restricted when it comes to working outside. So, this Islam religion dummy variable is taken into account in the econometric model. From priory expectations, it can be said that this dummy should have a negative effect. The marginal effect based on the probit model is negative and statistically significant.

ICT: Access to ICT increases the probability of joining the labor force, and the coefficient is significant at 1% level. Ownership of ICT tools raises the chances of participation by more than 8% among people.

5. Conclusion

Based on the discussion of this paper, one can conclude that there are several economic and socio-economic factors that work as determinants in the decision of a person on whether to join the labor force or not. There are some factors that create strong hindrances in participation in the mainstream job market. So, a significant proportion of the total labor force is bound to remain outside the labor force.

Contrary to the common idea, the econometric estimation of this paper indicates that labor force participation has higher chances in a rural area compared to an urban region. Members from households with male heads have more chances to join the labor force, which is also contradictory to the conception that male heads are dominant and restrict their female members from joining the workforce.

Attainment of higher education and training increase the probability of labor force participation for both male and female. These should be made accessible to a larger portion of the population from both urban and rural areas.

Labor force participation has been on the rise in Bangladesh in recent years. Moreover, female labor force participation has risen by a notable amount. Still, females lag behind males in terms of the percentage of people in the labor force. To capitalize on the limited window called the demographic dividend, the introduction of comprehensive policies as well as relevant implementation tools are needs of the hour. The sooner things are taken care of, the better for the economy.

To what extent the country follows the footsteps of East Asian Tigers and reaps off the maximum benefit of the favorable economic support ratio largely depends on the size of the labor force and their productivity. Bangladesh's government has taken many policies to address these issues, but more need to be done.

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