Journal of World Economic Research
2016; 5(5): 59-64
http://www.sciencepublishinggroup.com/j/jwer
doi: 10.11648/j.jwer.20160505.12
ISSN: 2328-773X (Print); ISSN: 2328-7748 (Online)

Female Employment: A Way to National Wellbeing

Towfika Sultana[1], Iftekhar Uddin Ahmed Chowdhury[2, *]

[1]Department of Economics, Asian University for Women, Chittagong, Bangladesh

[2]Access Academy, Asian University for Women, Chittagong, Bangladesh

Email address:

towfika.sultana@auw.edu.bd (T. Sultana), iftekhar.chowdhury@auw.edu.bd (I. U. A. Chowdhury)

[*]Corresponding author

To cite this article:

Towfika Sultana, Iftekhar Uddin Ahmed Chowdhury. Female Employment: A Way to National Wellbeing. *Journal of World Economic Research.* Vol. 5, No. 5, 2016, pp. 59-64. doi: 10.11648/j.jwer.20160505.12

Received: August 22, 2016; **Accepted**: September 19, 2016; **Published**: September 28, 2016

Abstract: 'Gender equality' is a term which can be found almost in each and every sector of our modern lives. Female labor force participation is one of the most integral parts of development which should be brought into the limelight so that policymakers take the necessary actions to improve women's situation all over the world. Increasing participation of female population contributes immensely in a nation's development process. To explore more about this contribution, the paper aims to study the impact of female labor force participation rate on the overall national wellbeing of a country. To achieve this objective, World Bank databank is used as pioneer data source and panel econometric models are estimated for a sample of 58 countries over a 10 year period (2004-2013). In addition, this paper uses a dynamic model as an extension of the analysis to establish whether such an effect exists or not. While the results show the evidence of robust and significant pull effects, that is the positive impact on the national wellbeing of the female labor force participation rate in the host country. The paper also provides some policy recommendations in order to enhance the active participation of female labor force in the economy.

Keywords: Female Employment, Fixed Effects, National Wellbeing, Panel Data

1. Introduction

In today's globalized world if there is one thing almost each development agenda vouches for that will be 'Gender Equality'. Thousands of development organization and governments are working towards achieving greater equality for women in this world. Famous economist Amartya Sen in a now classic article in the New York Review of Books has used a term "missing women" [9]. He used this term to refer to the estimated number of female population in this world in a scenario in case girls and women would have born and died at the same rate as boys. This term 'missing women' is the representation of inequality and suffering women kind has gone through over generations. If we interpret in another way, this missing women term can also be referred to the missing proportion of female population from the labor market of the world. This lack of female participation can be the result of the inadequate importance given to the female labor force participation while making policies for development. That's why this paper explores the effect of female labor force participation rate on overall national wellbeing.

This paper is going to base its research on a hypothesis stating *"female labor force participation rate positively affects the national wellbeing of a country*". The study will also focus on finding a positive correlation between female labor force participation and the indicators of national wellbeing. Moreover, the study will go forward and include other factors that contribute to women empowerment and try to find out the relationship between those variables and national wellbeing. Upon finding satisfactory result this paper can deliver constructive and useful policy recommendation in order to expedite the development procedure. Moreover, this paper can serve as a way to make female participation in the labor market as an important prerequisite for development.

2. Literature Review

The paper titled "*Economic Growth and Female Labour Force Participation in India*" by Rahul Lahoti and Hema Swaminathan studies the effect of economic growth on

female labor force participation rate in India [5]. The research compares between different states of India by taking a sample of women of age 25-59 years to avoid the effect of increasing enrolment among the younger cohort. From their data, it is found that by increasing economic growth female participation in agricultural sector decreases whereas the participation in other sectors especially in the construction sector increases rapidly. Though a similar pattern among men is also seen, the ranges of the percentages are hugely different between men and women. By running different regressions on the available data the study comes up with a result that shows that female participation in labor force decreases with economic growth. Initially the study had a hypothesis of finding a U-shaped result which meant that due to transferring between jobs there will be a downward trend in female employment, but eventually, this will be picked up with continuous economic growth. However, the result of this study shows an inverted U-trend which is statistically significant. This result holds even when controlled for types of employment, area or time. Different examinations for the different state show a mixed result. Some state show U-shaped result and some don't. The possible reason can be the lack of economic opportunities for women in India. Also, the cultural context of India and women having low levels of skill is considered to be one of the reasons behind this sort of result. Unlike this paper, the thesis is focused on 58 countries all over the world. The thesis does not look at different professional sector rather focuses on general female labor force participation.

The paper named "Investment Dependence, Economic Development, And Female Employment Opportunities In Less Developed Countries" by Moshe Semyonov and Yehouda Shenhav study the data of 53 less developed countries which had available data on women economic activity [8]. The first part of the paper studies on how foreign investment dependency affects female labor force participation. The results indicate that female labor force participation declines with increasing dependency on investment. The researchers conclude that dependency on foreign investment puts restraints on the domestic economy which changes the labor force structure of a country. This change in structure causes the women labor force to be the victim of increasing gender inequality which eventually causes lesser participation in the economic sector. On the contrary, the effect of economic development has a positive effect on female employment. The economic development gives rise to industrialization in a country which inspires the employer to hire more and more female labor force, as female labor force are reliable, cheap cost, and easily replaceable option as an employee. Also with industrialization, there are increasing trends of high education, less fertility, and more manufacturing and service sector which drives the female labor force participation to rise. The thesis does not focus on foreign investment; however, it does link women's economic participation with national economic development similarly to this paper.

Another author Esther Duflo who has studied on the similar topic in his paper "Women's Empowerment and Economic Development" talks about the correlation between women empowerment and economic development [2]. Duflo tries to examine the two-way relationship of women empowerment and economic development by analyzing case studies of different countries. According to the paper, development of a country elevates the situation of people living there, as a result, it causes a rise to women empowerment. Development brings along more work opportunity, less inequality, less fertility, and more education which boosts the situation of women living in the country. On the contrary, an increase in female labor force participation elevates the national economy as well as the living standard of a country. More female participation means more female empowerment which leads to less inequality, more access to resources, reduced infant mortality, increasing education and overall national development. Women empowerment directly affects decision-making structure thus resulting in economic development. However, neither economic development nor women empowerment is enough to achieve development. Only "continuing policy actions" favoring equal rights can bring about sustainable development [2]. Only focusing on economic development or women empowerment may result in short term success, but it will not be a solution for the long going problem of development and inequality. Policies that serves the interest of both economic development and women empowerment are the best possible way to eradicate inequality and improve a country's overall development situation.

The article named "The U-Shaped Female Labor Force Function in Economic Development and Economic History" by Claudia Goldin studies more than 100 countries to find out about the hypothesis which says that the relationship between female labor force participation and economic development is a U-shaped curve [4]. The initial downward trend of female employment can be described by low substitution effect, strong income effect, and the change of production from home to the factories. However, in greater economic development stage women are more prone to having higher education and acquiring white collar jobs. This changes of pace make the substitution effect stronger and the income effect weaker. However, there are variations in results in some countries. For countries like Singapore and Hong Kong, women are advancing fast with the respective economic development for their country. On the contrary, countries like Korea and Philippines show very little advancement and still show patterns of gender discrimination in spite of experiencing economic development.

The research paper mostly focuses on the variables and the relationship among them rather than focusing on specific countries like some of the papers discussed above. The research tries to draw a general conclusion based on the available data in order to prove the hypothesis it is based on through simple regression and analysis.

3. Methodology

3.1. Data Sources and Description

To test the viability of the objective of the study, this paper uses a panel data structure of fifty-eight countries for the time period 2004-2013. Country wise data on the variables specified below are obtained from the World Development Indicators (WDI) hosted on the World Bank database [12]. Table 1 shows the countries considered in the analysis.

The variable of interest in the research, female labor force participation rate and its effect on national wellbeing, is an area seldom discussed in the literature, and one that has been approached from different perspectives. As there is no specific variable which measures national wellbeing as a whole in the World Bank database, three variables such as GDP per capita, GINI index, and Urbanization is considered as indicators of national wellbeing. GDP per capita is widely used to measure economic wellbeing of the population of a nation. Besides, GINI index is used here to measure the inequality of resource distribution across nations. This variable gives an idea of the distribution of resources thus acts as an important factor of national wellbeing. Lastly, the urban population is utilized in this study in order to capture urbanization of a country. As we know with growing development more industrialization will take place which will result in more people moving to urban areas. Development brings industrialization and industrialization brings urbanization. That's why urban population could be considered as an important indicator of national wellbeing. These three variables are kept as dependent variables in separate regressions. For independent variables, the female labor force participation rate has been taken as the major controlling variable along with life expectancy at birth, adult literacy rate, fertility rate, self-employed female, female employer, and the number of female-headed households. Variables details and sources have been provided in table 2. The female labor force participation relates directly to the research topic of this paper and accounts for the percentage of female actively participating in the labor market. Besides this fertility rate and life expectancy at birth have been taken into account to look at the effect of population growth on the dependent variables representing national wellbeing. It is assumed that "family duties are greatest when fertility is high" [7]. This variable puts in the effect of family structure and equation in the regression. Also the number of female employers and self-employed women have been included as independent variables to represent the growth of women empowerment in a country. Moreover, the adult literacy rate of a country is mentioned in the equations to measure the education level of the countries. These control variables help to explain the results of the regressions in a more detailed way. These variables make sure that the research and the regression are not dropping any necessary variables which might be explaining our dependent variable.

Table 1. *The highlighted counties below correspond to the sample of 58 countries.*

Afghanistan	Bhutan	Egypt, Arab Rep.	Kyrgyz Republic	Panama	Thailand
Albania	Bolivia	France	Liberia	Peru	Togo
Algeria	Brazil	Georgia	Malaysia	Portugal	Tunisia
Angola	Cambodia	Guinea	Mauritius	Romania	Uganda
Argentina	Canada	Honduras	Moldova	Russia	United Kingdom
Armenia	Chile	Iceland	Mongolia	Senegal	United States
Australia	China	India	Morocco	South Africa	Uruguay
Azerbaijan	Colombia	Indonesia	Nicaragua	Spain	Yemen, Rep.
Bangladesh	Costa Rica	Jordan	Norway	Sweden	
Belgium	Czech Republic	Korea, Dem. Rep.	Pakistan	Tanzania	

Table 2. *Description of the variables used in the model.*

Abbreviation	Variables	Data Source
$GDPpc_{it}$	*Real GDP Per Capita (constant prices 2005 US$)*	WDI
$GINI_{it}$	*GINI index*	WDI
$Upop_{it}$	*Urban Population (% of total population)*	WDI
$flfpr_{it}$	*Female labour Force Participation Rate (% of total labour force)*	WDI
$frate_{it}$	*Total Fertility Rate (births per women)*	WDI
$femp_{it}$	*Female Employers (% of employment)*	WDI
$fhead_{it}$	*Female Headed Households (% of households with a female head)*	WDI
$flbirth_{it}$	*Female Life Expectancy at Birth (in years)*	WDI
$selfef_{it}$	*Self-employed Female (% of female employed)*	WDI
$adlit_{it}$	*Adult Literacy Rate (% of females ages 15 and above)*	WDI

3.2. Model Specification

Upon choosing the variables, panel data analysis is used in this study, taking into account the transversal information and the time period of ten years (2004-2013), in order to determine whether the variable of interest has an effect on the national wellbeing of a country [11]. With the sorted data several necessary regressions (using pooled OLS method) were run using statistical software package STATA [6]. This paper is going to explain the results of all the relevant regressions and draw conclusions based on those. This methodology has the advantage of being able to take into account the individual characteristics of each country [3]. Basic three models of the determinants of national wellbeing, which is our dependent variable, are as follows:

$$GDPpc_{it} = \beta_0 + \beta_1 X_{it} + u_{it} \quad (1)$$

$$GINI_{it} = \beta_0 + \beta_1 X_{it} + \omega_{it} \quad (2)$$

$$Upop_{it} = \beta_0 + \beta_1 X_{it} + \psi_{it} \quad (3)$$

Where,

$GDPpc_{it}$ = GDP per capita (constant prices 2005 US$) in country "i" in the time period "t".

$GINI_{it}$ = GINI index in country "i" in the time period "t".

$Upop_{it}$ = Urban population (% of total population) in country "i" in the time period "t".

X_{it} = Is the vector of all controls variables such as female. labor force participation rate, fertility rate, percentage of female employers, life expectancy at birth, adult literacy rate, and self-employed female population.

$u_{it}, \omega_{it}, \psi_{it}$ = *Terms of random disturbance.*

These models has a balanced panel data, in that it enables the observation of all the individual units in all the periods of time ($Ti = T$ for all i), and it is considered short. The error terms are undertaken as an independent. The individual effects are incorporated into the general models in order to capture the characteristics of each country, which are assumed as fixed on the time:

$$GDPpc_{it} = \alpha_i + X_{it}\beta + v_{it} \quad (4)$$

$$GINI_{it} = \alpha_i + X_{it}\beta + \varepsilon_{it} \quad (5)$$

$$Upop_{it} = \alpha_i + X_{it}\beta + \varphi_{it} \quad (6)$$

Where,

α_i = individual specific effects

At this stage of the analysis, the model is subjected to the Hausman test in order to determine the most appropriate method, out of the fixed or random effects [10]. This test takes as a null hypothesis that if the individual effects are random, the estimators should be similar because they are consistent. On the other hand, in the alternative hypothesis, the estimators differ. The test concludes that there are no random effects, i.e., the developing countries included in the panel do not bear individual-specific heterogeneity.

4. Results and Discussion

In table 3, we can see the results of the econometric analysis carried out on the database of the three different models. In order to give a better picture of the effect of the female labor force participation rate on national wellbeing, we start with Model 1, which is the general model for the group of 58 countries, for which, according to the Hausman test, the appropriate method is fixed effects (RE). The coefficient associated with the variable of interest (the female labor force participation rate) has a positive sign and is statistically significant at one percent.

On the other hand, almost all the control variables taken into account by this study have the expected effect. From Model-1, we can see that the R-square value is 0.698 which means that 69.8% variation of the dependent variable GDP per capita is explained by the independent variables. Among the independent variable, we can see that the slope coefficient for female labor force participation rate is quite big, 56.66. This means that for 1% change in female labor force participation, GDP per capita will change by 56.66%. It indicates the huge effect of female participation in a nation's economy. Along with the female labor force participation rate number of female-employers also has a huge positive effect (21.03) on GDP per capita. Moreover, self-employed female and adult literacy rate also found to be significant and have a direct effect on GDP per capita. Unlike these variables, fertility rate negatively affects GDP per capita. It can be inferred from this result that an increase in the fertility rate will increase the population size which eventually will decrease GDP per capita. However, life expectancy at birth seems to have an insignificant effect on GDP per capita of the nation.

Moving to the estimated results of Model 2, where the R-square value is 0.523 which means that 52.3% variation of the dependent variable GINI index is explained by the independent variables. Among the independent variables we can see that the female labor force participation rate of the citizens of each country has a positive effect and its coefficient is 15.95, as expected, statistically significant to the usual levels. Besides this, the number of female employers also has a more significant positive effect on GINI index with a coefficient of 14.19. Moreover, self-employed female and adult literacy also have a positive effect on GINI index. Unlike these variables, fertility rate negatively affects GINI index with coefficient -0.606. It can be inferred from this result that an increase in the fertility rate will increase the population size which eventually will hindrance the distribution of resources. Life expectancy at birth also has a negative relationship with the dependent variable GINI index.

Finally, the Model 3 in table 3, shows that the R-square

value is 0.647 which means that 64.7% variation of the dependent variable, (i.e., urban population) is explained by the explanatory variables. Among the independent variables we can see that the coefficient for female labor force participation rate is positive, 28.99 and significant. This means that for 1% change in female labor force participation rate will change urban population by 28.99%. This indicates towards a strong relationship between the two variables. Besides female labor force participation rate, the number of female-employer in total population also has a more significant positive effect on the urban population with a coefficient of 5.795. Moreover, adult literacy rate also has a positive effect on urbanization. However, life expectancy at birth and fertility rate has negative effects on urban population respectively -0.0410 and -0.601. These coefficients infer that with more population living a longer life and with a greater population increase urbanization decrease. Although, a bigger population boosts the migration of people from the rural area to urban areas in search of living. However, the number of self-employed women has a positive relationship with urbanization for obvious reasons. With urbanization there will be industrialization and more and more population will move out of their domestic profession to service sectors and manufacturing occupations. As most self-employed women are involved domestic profession, with growing urbanization these groups of people will be inspired to join the formal economic sector.

To compare the significance of the independent variables into the regression models, we can see that fertility rate has 1% significance in all three regression models. The number of female-employer has 1% significance for regression model 1 and model 2 and again 10% significance for regression model 3. Life expectancy at birth has 1% significance both regression models 2 and 3. The number of self-employed females has 1% significance for both regression models 1 and 3 and 10% significance for regression model 2. Lastly, adult literacy rate has 1% significance for model 1.

Table 3. *Estimation Results.*

VARIABLES	Model 1 Dependent Variable ***GDPpc***	Model 2 Dependent Variable ***GINI index***	Model 3 Dependent Variable ***Upop***
flfpr	*56.66**** *(5.427)*	*15.95**** *(0.541)*	*28.99**** *(9.167)*
frate	*-1.160**** *(0.172)*	*-0.606**** *(0.00821)*	*-0.601**** *(0.00860)*
femp	*21.03**** *(2.999)*	*14.19** *(8.214)*	*5.795**** *(2.010)*
fhead	*0.755**** *(0.00333)*	*0.0690**** *(0.0147)*	*0.0143* *(0.0137)*
flbirth	*0.00423* *(0.0701)*	*-0.0433**** *(0.00347)*	*-0.0293**** *(0.00815)*
selfef	*0.0281*** *(0.0117)*	*0.0367* *(0.0697)*	*0.0467**** *(0.0696)*
adlit	*0.416**** *(0.0563)*	*0.0393**** *(0.00339)*	*0.0410**** *(0.00520)*
Fixed Effects	Yes	Yes	Yes
Constant	*-520.90**** *(48.943)*	*-140.70**** *(5.095)*	*-154.71**** *(6.956)*
R-squared	0.698	0.523	0.647
Observations	376	321	376
Number of Countries	58	58	58

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Source: Output from STATA.

5. Conclusion and Recommendation

This paper puts forth a decent study which focuses on the impact of female labor force participation rate on national wellbeing. In this study, three variables such as GDP per capita, GINI index, and urban population were taken as a proxy of national wellbeing. The research also considered more independent variables other than female labor force participation rate, such as fertility rate, adult literacy rate, female employers number, self-employed female, and life expectancy at birth. After running regressions and analysing the results, it can be safe to say that female empowerment is a crucial factor for national wellbeing and development. The analysis carried out in this study covered a total of fifty-eight countries and the period between 2004 and 2013. The study's principal findings can be summarized as follows:

This study focused on the female labor force participation rate, which seems to have a significant and positive effect on national wellbeing. This reaffirms, therefore, that female labor force has an important role in economic development of the country, particularly when considering labor markets. It also has the highest influence on GDP per capita and also on urbanization. However, according to the data used in this paper, the female labor force participation rate has a positive impact on GINI index which means as more female participate in the labor market there will be more inequality

in the distribution of resources. This unexpected result can be attributed to shifts of professional sectors where many women might shift to the formal economic sector with open opportunity and many can't because of lack of skills and accessibility. Otherwise, the regression results give out the expected outcome for the most part. We can infer from the regression that female participation in the labor market is definitely an important aspect of national wellbeing. However, more data is needed to have a more accurate result. This study has a limitation of data availability. If the study took data from more countries with less missing values, the result would give out a more significant pattern and explanation.

Based on this study it can be recommended to make active female participation in the labor market a top priority for any development initiative. For this, governments and development agencies need to start at the very bottom to prepare the female population for their active participation in the economy. Education is the best way to prepare women to contribute to the economy. Moreover, there should be more working opportunities for female labor force so that no skilled female has to sit at home being unemployed for lack of opportunities. Besides this, the formal professional environment has to be made more female-friendly where female labor will be equally treated as male labor in terms of position, wage, facilities etc. To encourage women with children to join the economy, there should be facilities like standard day care centers. There has to be more representation of women in the parliament. To cover up for the unequal position of female and male generation, there should be reserved quotas for female employees. By following these types of the policy reforms female population can be a part of a nation's economy with equal or more contribution as men.

References

[1] Beck, N., and J. N. Katz. "What to do (and not to do) with time-series cross-section data". *American Political Science Review* 89 (1995): 634–647.

[2] Duflo, Esther. "Women's empowerment and economic development". No. w17702. *National Bureau of Economic Research*, 2011.

[3] Greene, W. H. "Econometric Analysis", New Jersey 07458 (Third edition) (1997).

[4] Goldin, Claudia. The U-shaped female labor force function in economic development and economic history. No. w4707. *National Bureau of Economic Research*, 1994.

[5] Lahoti, Rahul, and Hema Swaminathan. "Economic growth and female labour force participation in India." *IIM Bangalore Research Paper* 414 (2013).

[6] Mundlak, Y. On the pooling of time series and cross section data, *Econometrica*, 46 (1978), 69-85.

[7] Pampel, Fred C., and Kazuko Tanaka. "Economic development and female labor force participation: A reconsideration." *Social forces* 64.3 (1986): 599-619.

[8] Semyonov, Moshe, and Yehouda Shenhav. "Investment dependence, economic development, and female employment opportunities in less developed countries." *Social Science Quarterly* 69.4 (1988): 961.

[9] Sen A. "More Than 100 Million Women Are Missing*". The New York Review of Books*, 1990.

[10] Wooldridge, J. M. Econometric Analysis of Cross Section and Panel Data. *Cambridge, MA*: The MIT Press (2002).

[11] Wooldridge, J., "Introductory Econometrics: A modern Approach", ed. South-Western, 2nd edition (2003).

[12] World Development Indicators (2015). *World Data Bank*. <data.worldbank.org>.