



## Women Labor Force Participation and Governance in Developing Economies: A Panel Analysis

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### ARTICLE INFO

#### Article History:

Received: August 31, 2019  
 Revised: October 27, 2019  
 Accepted: November 24, 2019  
 Available Online: December 31, 2019

#### Keywords:

Labor force participation  
 Governance  
 Education  
 GDP per capita  
 Globalization

#### JEL Classification Codes:

F02, F43, G34, I21, J21

#### Funding:

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

### ABSTRACT

The current study empirically investigates the relationship among female labor force participation and governance in developing nations, using panel data of 62 developing countries, from the year 1996 to 2016. The two variables taken as dependent variables are women labor force participation and governance. Results of GMM estimation showed that there is a positive association between women's labor force participation and governance. Education, GDP per capita, and globalization have positive, while income inequality harms governance. Similarly, education, fertility rate, and the rural population have negative, and globalization has a positive impact on female labor force participation. So, it is concluded that the importance of governance and women labor force participation cannot be refused in terms of growth enhancement, which will consequently improve the social and economic conditions of developing countries.



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**Citation:** Altaf, M. (2019). Women Labor Force Participation and Governance in Developing Economies: A Panel Analysis. *iRASD Journal of Economics*, 1(2), 89-102.

<https://doi.org/10.52131/joe.2019.0101.0008>

### 1. Introduction

Women constitute half of our society. Their participation is key to the national and international activities of social life. Societies cannot achieve development goals due to gender bias. Therefore, the participation of women is essential in the case of the social and economic development of a state. Decentralization gives better chances for the contribution of citizens in governance at the local level and good choice policy thus proof to strengthen the political participation of females at the local level (KHAN, KHAN, & AHMAD, 2017).

The economic position of women in a society can be enhanced by their participation in the labor force which increases the overall efficiency of the country. The different sectors of the economy can be improved by increasing the share of women in the labor force i.e. it increases maternal health and reduces the gender inequalities in education. In the agricultural sector, the invisible contribution of unpaid family workers can also be highlighted by the increasing rate of women participation in the labor force (Mujahid & uz Zafar, 2012).

The empowerment and decision making power of women, within and outside the household can also be increased by the participation of women in the labor force. The exercise of economic, political, and administrative authority to manage a country's affairs at all levels is known as governance. It comprises a mechanism or a process, through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations, and mediate their differences.

This paper considers an overall association of women labor force participation (WLFP) and governance in developing economies. There can be less gender discrimination in the labor market by the participation of women in political and non-political areas. Welfare gains can be achieved by a better understanding of the determinants of WLFP to the mutable extent or also the policies can be designed to mitigate their effects. According to (Michael, 1985) the opportunities to work in formal labor markets can be increased by an increase in investment in women's health and education. Lundberg and Pollak (1993); Mahony (1996) also suggested that the income generated by women outside the home increases their bargaining power inside the home. The lower productivity and output can be due to misallocation of resources and gender discrimination which in turn lowers the WLFP in the society. The higher rates of gender discrimination in education and income could lead to lower labor force participation rates and lower economic growth in Latin American and Islamic countries (Clark, Ramsbey, & Adler, 1991; Marshall, 1984; Pampel & Tanaka, 1986). The current study empirically explored the association among governance and women labor force participation (WLFP) by using a cross-country, panel data set of 62 developing countries, from the year 1996 to 2016.

### **1.1 Objectives of the Study**

The objective of the present research work is twofold:

- To check the influence of women labor force participation on governance
- To check the influence of governance on women labor force participation

### **1.2 Significance of the Study**

To estimate the relationship between women's labor force participation and governance is the main aim of the current research work. In literature, several studies can be seen discussing the impact of women's employment on governance in different countries. Some studies worked only on governance and some worked only on participation of women in the labor force but the current research considers the overall relationship between women labor force participation and governance in the same study and took the panel data of 62 developing countries in the world. The time-series data is taken from WDI i.e. World Development Indicator and WGI i.e. Worldwide Governance Indicators for the years 1996-2016. We want to find out:

- Can women's economic activity increase the quality of governance in developing countries? Or women participation in the labor force is positively affecting the level of governance?
- Is the women's labor force participation positively affected by governance?

The next step is to suggest policy recommendations based on the empirical pieces of evidence, to solve the problems in the way of women's employment activity.

### **1.3 Scope of the Study**

The current study aims to investigate the relationship between women labor force participation and governance in developing economies only i.e. not included the developed economies. The research sample is composed of 1,302 observations restricted to only 62 developing economies. Data is considered only for 21 year-period of 1996-2016. The panel data analysis is used to see the association between women's labor force participation and governance by using GMM estimation.

### **1.4. Hypothesis of the study**

The null and alternative hypothesis is given as:

$H_0$  = women labor force participation and governance are negatively associated with each other in developing countries.

$H_1$  = women labor force participation and governance are positively associated with each other in developing countries.

## **1.5. Scheme of the Study**

The first chapter is an introduction. In this chapter importance of women's participation in the labor force and the importance of governance is discussed. The second chapter is related to the review of the literature. The third chapter is a theoretical framework. In this chapter theories related to women's employment are discussed. The fourth chapter is related to the methodology and data source. The fifth chapter is based on empirical evidence and discussion of empirical evidence. The sixth chapter is about conclusion and policy recommendation.

## **2. Review of Literature**

Many studies can be observed in the literature relating to women's employment and governance. In the available literature, it has been examined that in developing countries women have to face many problems due to time and resource constraints. Women's employment has a positive as well as a negative effect on governance. Many studies are presented concerning women's employment and governance in developing countries. Below is presented a review of the literature of some relevant studies.

By expanding the tradeable sector, economic growth can be restored by targeting the real exchange rate, stated by the recent studies. Erten and Metzger (2019) explored that, whether improving labor market opportunities for women reduces gender discrimination in labor force participation, by using cross-country data from 1960-2015 for 103 countries. The empirical evidence showed that female labor force participation increased in developing countries by maintaining the undervalued real exchange rate. It is also found from the study that women's employment increased by operating channels in the manufacturing and industrial sectors. For the countries of an earlier stage of development, the study also recommended the policies. In the end, it is concluded that the female labor force is positively affected by undervaluation in developing countries.

Sarkar, Sahoo, and Klasen (2019) analyzed the employment transition of women in India. Observing the dynamics of employment in terms of labor force entry and exit is the main focus of the current study. An endogenous model is used to investigate the determinants of women's entry into employment. The results of panel dataset analysis showed that there is less proportion of women, participating in the labor force and this rate is declining to the alarming rate. It is further found that lower entry and higher exit probabilities of women are caused by an increase in the wealth and income of other members of the households. The cultural and economic factors showed low workforce participation of women in India. It is suggested that women's exit from the labor force significantly reduce by public workfare programs and also to consider the inter-temporal dependence of labor supply decisions for future work.

Lv and Yang (2018) analyzed the participation of women in politics i.e. whether their participation increased or decreased the labor force, by using the panel data set from the year 1991-2012. The main focus of the study was to explore the effect of women's participation in politics. Results showed that countries characterized by more females' participation in politics are associated with a higher level of female labor force participation. Moreover, a U-shaped relationship also found between economic development and female labor force participation.

Globalization has been intensively examined in the literature in various theoretical and empirical dimensions. OKŞAK and Koyuncu (2017) empirically evaluated the impact of globalization on female labor force participation by using panel data analysis. To conduct empirical analysis by using unbalanced data for 101 countries, from the years 1990 to 2014 is the main objective of the present study. Four types of globalization indices; 1; "economic globalization index", 2; "political globalization index", 3; "social globalization index", and 4; "overall globalization index" used by the study to examine the globalization impact. The results suggested that there is a positive and significant relationship between economic, social, and overall globalization and female labor force participation, while the negative and significant relationship between political globalization and female labor force participation. It is concluded that all the covariates used in the analysis are empirically significant and took the expected signs in all models.

For sustainable economic growth and development, it is necessary to increase in women's labor force participation, especially for highly educated women and aging population countries. For contributing to economic growth and development, the participation of women in economic activities is necessary and also their inclusion in the development process. Pignatti (2016) overlooked the enhancement of participation of women in the labor force in transition countries. Due to traditional views of gender discrimination and less support from government to caregivers, the participation of women varies across transition countries due to such economic and social factors. All countries have aimed at implementing the policies to increase women's labor force participation. It is found from the study that for the countries with the high educational attainment of women, there is a need to implement the policy in favor of high work experience and better life balances.

Besamusca, Tijdens, Keune, and Steinmetz (2015) examined the impact of economic conditions, families, and education and gender ideologies on female labor force participation in eleven age groups in 117 countries. The effect of variables on women of different ages in developing countries is the main goal of the study. It is found from the shreds of evidence that, female labor force participation rate increases with early age and then starts to decrease at a later age of retirement. It is further found that the participation rate of young and older women is explained by sector sizes and the level of economic development. In the end, it is concluded that there is a need to study the gender ideologies to explain the labor force participation rate of women between ages 25 to 55 years. And also that, when paid maternity leave schemes survive and higher enrollment exist in primary education in less religious countries, women are likely to participate more.

The participation of women in community-level water governance has been emphasized by making efforts to design gender-sensitive projects by international development agencies. Das (2014) explored the community-managed water supply projects of women participation in urban India. To find the gap between women's enthusiasm to participate and their ability to do so for the urban poor in India is the main objective of the current study. Results showed that, in some cases, women's self-confidence has been enhanced by such goals, and also despite having a negligible impact on project outcomes, their skills have been improved. They have simply reduced to tokenism in some other cases. How this gap could be pivotal in increasing the power of women's role in water governance is concluded from the current study.

The association among female labor force participation and democracy is estimated by (Bayanpourtehrani & Sylwester, 2013) by using a cross-country time-series data set from 1980-2005. Statistical results showed that democracy negatively affects the female labor force and dictatorship positively affects female labor force participation above the traditional norms. Hence female labor force participation can be decreased by greater freedom to go along with customs. Results also showed that under both types of regimes, the ratio of female labor force participation to male labor force participation is the same, and further; democracies negatively affect the male labor force participation. Hence, which men or women freely withdraw from the labor force with greater freedom with possibility is concluded from the study.

The gender diversity of the board is the main theme of governance reform efforts throughout the world. Adams and Ferreira (2009) identified women in the boardroom and their impact on governance and performance. To show that the female directors act differently than male directors, and also have a significant positive impact on board inputs and firms outcomes is the main aim of the study. Female directors have a better attendance record than male directors, found from the empirical estimation having the data taken from US firms, and also, monitoring committees are more likely to join by women. The results showed a positive impact on governance and the performance of the board that gender discrimination boards allocate more effort to monitoring. Moreover, it is found from the study that directors receive more compensation with a more gender-diverse board in firms, and chief executive officer turnover is more sensitive. Also, a firm's performance is negatively affected by the average effect of gender discrimination which is due to the companies with fewer takeover defenses. Finally, it is concluded from the study that by mandating gender quotas for directors can reduce firm value for well-governed firms.

Kaufmann, Kraay, and Mastruzzi (2003) analyzed the governance indicators for the year 1996 to 2002. The current study estimates the six dimensions of governance covering 199 countries and territories for the time period of four years: 1996, 1998, 2000, and 2002. The hundred individual measures of governance are based on six dimensions of governance which are drawn from 25 sources and from 18 different organizations. The purpose of the study was to categorize the measures of governance that capture the key dimension of governance. The study used an unobserved component model to construct six aggregate governance indicators in four time periods. Point estimates as well as margin of error for the dimension of governance are used for each country for four time periods. In the end, the study also addressed various methodological issues including the test for potential biases and the interpretation and uses of the data given the estimated margin of errors for six dimensions of governance.

Per capita income and governance and positively correlated across countries. Kaufmann et al. (2003) investigated the evidence of causality between governance and growth for the world. Six governance indicators are used to adjust the variations in purchasing power against real per capita across counties for the years 1997-98 and 2000-01. To see the interaction between governance and per capita income is the main focus of the study. These "control of corruption", "the protection of property rights or rule of law", "voice and accountability", "government effectiveness", "regulatory quality" and "political stability" are the six measures of governance. The six dimensions of governance covered up to 170 countries which are drawn from 190 measures of perception of governance compiled by 17 organizations. The study explained better and positive governance through; per capita incomes positively affected by better governance; governance increases the incomes; and also countries become richer with better governance due to other factors.

The dynamics of tradition with women's labor force participation are explored by (Hazan & Maoz, 2002). To highlight the observed features of married women labor force participation by the role of tradition is the main focus of the current study. Two assumptions are made to explain the model of traditions which affect the individual labor decisions. The first assumption; household's utility negatively affected by the women's employment outside the home and the second assumption; as the level of women labor force participation increases, the preceding period of this effect decreases. It is concluded, there are different norms for men and women labor force participation, and the models that study the role of tradition in fields of fertility, religion, and racial discrimination can be applied by these techniques.

The right to vote to women is the resulting growth of governments examined by (Lott & Kenny, 1999). The current study aims to focus on government spending and receiving as voting by the US, the house and Senate state delegations, and a wide range of different state laws. By using the cross-sectional time-series data for 1870-1940 it is found from the evidence that government income and expenditure coincided with suffrage and more liberal voting patterns for federal representatives. It is further found that as more women took advantage of the franchise, these effects continued to grow over time. Finally, it is concluded that why the American government started growing after it died, is explained by the gender gap which arises since the 1970s.

## **2.1 The Research Gap**

In the literature, many studies can be seen discussing women's labor force participation and governance in different countries. Some studies worked only on governance and some worked only on women's labor force participation but the present research estimates the impact of women's labor force participation on governance by using panel data of 62 developing economies in the world, for the time period 1996 to 2016 and at the same time, the effect of governance on the participation of women in the labor force.

## **3. Methodology and Data Source**

In this chapter, we discuss the sources of data and methodology on women labor force participation and governance. This topic deals with the formulation of the structure of the study to observe the consequences of women's employment and governance in developing economies.

### 3.1. The Generalized Method of Moments (GMM) Estimation

A method for estimating parameters in the statistical models is called the Generalized Method of Moments. Model parameters and the data true values i.e. their expectation is zero at the parameter are used by the moment conditions of the Generalized Method of Moment. Generalized Method of Moment is also a dynamic panel data estimator.

#### 3.1.1. Panel Data

A longitudinal data is another name of panel data. The panel data involves measurement over time and is also called a multidimensional data. Because panel data includes the observations of the same units i.e. firms, households and countries obtain in different time periods.

#### 3.1.2. Panel Data Analysis

A statistical method widely used to analyze two-dimensional data. The data are usually collected over time and the same cross-section and then a regression is run over these two dimensions. We use the GMM model for the following reasons:

- GMM is a good estimator for the powerful panel data
- When there is an error term in the model or when there is a *correlation* between the independent variables (in the panel data), GMM is used to control the endogeneity of the lagged dependent variable.
- When there is an error of omitted variables, GMM is also used to control it.
- It also controls the unobserved panel heterogeneity.
- It also controls for measurement errors.

#### 3.1.3. Case for GMM

With an *endogenous* regressor, a linear regression model is assumed as follows:

$$Y = X'\beta + \mu$$

Where

The  $k \times 1$  vector of unobserved parameters is  $\beta$  and,  $N \times 1$  vectors are  $Y$  and  $\mu$ .

The matrix of the independent variable in the form of  $N \times K$  is,  $X$ .

We need to assume another matrix  $Z$  that is  $N \times L$  because of the assumption of endogeneity and where  $L > K$ . A set of valid instruments such as a set of variables that are highly correlated with  $X$  but orthogonal to  $\mu$  is assumed to comprise in this case for example, the  $Z$  matrix is not correlated with the error term in this case.

#### 3.1.4. GMM Specifics

- $N > T$  which means that the number of groups ( $N$ ) must be greater than  $T$  (time period).
- Instrumental Variable (IV) Estimation technique is used by the GMM.
- $E(Z' \mu) = 0$  which means Instruments ( $Z$ ) must be determined outside the model (exogenous).
- $Z \leq N$  which means that the number of instruments ( $Z$ ) should be lower than/equal to the number of groups ( $N$ ).

#### 3.1.5. GMM Estimators

The two main estimators of GMM are

- Difference GMM
- System GMM

The situations in which can be applied:

1. GMM is applied for Panel dataset
2. GMM is applied for the cases where time span T is small and the number of groups N are large
3. In case of independent variables, which may be correlated with past or may possibly be related to current error term i.e. not strictly exogenous, the GMM is applied.
4. Arbitrarily Distributed Fixed Effects.
5. Heteroscedasticity
6. The groups and panels related to the problem of autocorrelation, the GMM is applied. There are two categories of instruments in the Generalized Method of Moments.
  - Internal Instruments
  - External Instruments

**Table 1**  
**Differentiate between Difference and System GMM**

Difference GMM	System GMM
<ul style="list-style-type: none"> <li>➤ Proposed by Arellano and Bond 1991</li> <li>➤ By transforming all the independent variables through differencing, the endogeneity problem can be corrected through difference GMM. It also removes the fixed effects in that process.</li> <li>➤ However this first difference transformation has a weakness because it subtracts the last observations from the contemporaneous one thereby magnifies gaps in an unbalanced panel</li> </ul> <p>So, the difference GMM may weak your results up to some extent, if you have an unbalanced panel data.</p>	<ul style="list-style-type: none"> <li>➤ Proposed by Arellano and Boover 1995 &amp; Blundell and Bond 1998</li> <li>➤ By introducing more instruments to conclusively improve the efficiency of the estimators, the endogeneity problem can be corrected through system GMM which transforms the instruments to make them uncorrelated (exogenous) with the fixed effects.</li> <li>➤ A system of two equations: original and transformed can be built through system GMM.</li> <li>➤ System GMM subtracts the average of all future available observations of a variable instead of subtracting the last observations from the contemporaneous which is called orthogonal deviations.</li> </ul>

### 3.2. GMM Model Specification

#### 3.2.1. Difference GMM model specification

Initial Model

$$\ln Y_{it} = \phi \ln Y_{it-1} + \beta X_{it} + (\eta_i + \varepsilon_{it}) \tag{1}$$

Transformed model

$$\Delta \ln Y_{it} = \phi \Delta \ln Y_{it} - 1 + \beta \Delta X_{it} + \Delta \varepsilon_{it} \tag{2}$$

The fixed effect is removed by transforming the regressors through first differencing as it does not vary with time but the problem of endogeneity remains. From (2) the model becomes:

$$\Delta \mu_{it} = \Delta \eta_i + \Delta \varepsilon_{it} \tag{3}$$

Or

$$\mu_{it} - \mu_{it-1} = (\eta_i - \eta_i) + (\varepsilon_{it} - \varepsilon_{it-1}) = \varepsilon_{it} - \varepsilon_{it-1} \tag{4}$$

By assumption, the equations are constant between periods so unobserved fixed effects no longer enter. The changes in the dependent variable are assumed to be shown by equation (2), due to the first-differenced lagged dependent variable is instrumented with its past levels. Due to the lagged dependent variable, the model shows an endogeneity, correlated with the error term as shown by the equation (4).

#### 3.2.2. System GMM model specification

Initial model

$$\ln Y_{it} = \phi \ln Y_{it-1} + \beta X_{it} + (\eta_i + \varepsilon_{it}) \tag{5}$$

Assume equation (5) is a random walk model and Y (dependent variable) is persistent. Assume the case that by applying difference GMM, estimators yield both biased and inefficient estimates of  $\phi$  (parameter to be estimated for lagged dependent variable) in finite samples and this is particularly acute when T is short. According to Blundell & Bond 1998, the poor performance in difference GMM is attributed to the use of poor instruments. The system GMM is applicable in this case due to the following reasons:

- First, One equation is expressed with level form by GMM, with first differences as instruments.
- Second, the second equation is expressed in the first differenced form with levels as instruments.

The greater number of moment conditions are used in this approach, but when T is short and the control variable is persistent, there are gains in precisions, according to Monte Carlo estimation. And by applying the system GMM a small sample bias is reduced.

A two-step system GMM estimator should be used, in the presence of heteroscedasticity and serial correlation by exploiting a weighting matrix using residuals from the first step. However, in finite samples, such standard errors tend to be downward biased and the conventional approach by practitioners in such circumstances is to use what is known as *Windmeijer* adjustment to correct for such small sample bias.

### 3.2.3. A rule of thumb for Difference or System GMM Specification

Initial model

$$\ln Y_{it} = \phi \ln Y_{it-1} + \beta X_{it} + (\eta_i + \varepsilon_{it}) \quad (6)$$

Bond's Rule of Thumb (2001):

1. The pooled OLS and LSDV approach should be initially used for dynamic model
2. *Upper-bound* estimates should be considered for the pooled OLS estimate of  $\phi$ , and the corresponding *lower-bound* estimate should be considered for fixed effects estimates.
3. When the estimate obtained is below the fixed effect estimate, the system GMM estimator should be preferred while the difference GMM suggests that the former estimate is downward biased because of weak instrumentation.
4. For the random walk variables, the system GMM is also suggested.

### 3.2.4. GMM Diagnostics

- The first diagnostic test is: two tests for instruments validity i.e.
- Test the null hypothesis of the overall validity of the instruments by Hansen (1982) J test and Sargan (1985) test.
- The choice of instruments can be supported by accepting the null hypothesis.
- Test for autocorrelation is the second diagnostic test of error term:
- To check the first and second-order autocorrelation of the error term, test the null hypothesis.
- The moment conditions are correctly specified and the original error term is autocorrelated shows that there is no second-order autocorrelation and the null hypothesis is accepted (i.e. value of  $AR(2) > 0.05$ )

There is needed to be suspicious of the Hansen statistics in testing for the validity of over-identifying restrictions. If the p-values look like they are too good to be true, that's because they are too good to be true.

- p-values between 0.2 and 0.4: be cautious
- p-values between 0.4 and 0.6: be wary
- p-values between 0.6 and 0.9: be treated with great skepticism
- p-values between 0.2 and 0.4: be cautious
- p-values over 0.9: be ignored



Because of risks, do not take comfort in a Hanson test *p*-value below 0.1. View higher values such as 0.25, as potential signs of trouble.

### 3.3. Model Specification

The GMM model is used to estimate women's labor force participation and governance. In our model, we want to see the positive association by taking women labor force and governance variables as the dependent variables one by one with several explanatory variables. Governance is taken as a continuous variable taken as Index (PCA) of six governance indicators. Similarly, women labor force participation is also a continuous variable taken as a labor force participation rate, female (% of female population ages 15-64).

Two models are used to estimate the governance and women labor force participation. The first model includes the observations of governance as a dependent variable and the second model includes the observations of women labor force participation as a dependent variable.

Model for governance are given in equation 7 and 8

$$GOV = f(WLFP + GDP + EDU + GLOB + INCINEQ) \tag{7}$$

$$GOV = a_0 + a_1WLFP + a_2GDP + a_3EDU + a_4GLOB + a_5INCINEQ \tag{8}$$

Model for women labor force participation are given in equation 9 and 10

$$WLFP = f(GOV + EDU + GLOB + FER + RPOP) \tag{9}$$

$$WLFP = \beta_0 + \beta_1GOV + \beta_2EDU + \beta_3GLOB + \beta_4FER + \beta_5RPOP \tag{10}$$

Where

*GOV*= Governance

*WLFP*= Women Labor Force Participation

*GDP* = GDP per capita growth

*EDU*= Education

*GLOB* = Globalization

*INCINEQ* = Income Inequality

*FER* = Fertility Rate

*RPOP*= Rural Population

### 3.4. Operational Definition of Variables

The operational definition of eight variables used in the model is given in the tabular and descriptive form in the following lines

**Table 2**

***Operational definitions of Variables Used in the Model***

<b>Variables</b>	<b>Operational Definitions</b>
GOV(Governance)	Taken as Index of six governance indicators. (voice and accountability, political stability and absence of violence, government effectiveness regulatory quality, control of corruption, rule of law)
WLFP (Women Labor Force Participation)	Labor force participation rate, female (% of female population ages 15-64)
GDP (GDP per capita)	GDP per capita growth (annual %)
EDU (Education)	HDI (Human Development Index) is taken as a proxy of education. The Human Development Index is a measure of average achievement in the key dimension of human development: a long and healthy life, being knowledgeable, and have a decent standard of living.
GLOB (Globalization)	KOF Index is used for globalization. The KOF globalization index measures the economic, social, political dimensions of globalization.

INCINEQ(Income Inequality)	Income Inequality (GINI Index)
FER (Fertility Rate)	Fertility rate, total (births per woman)
RPOP (Rural Population)	Rural population (% of the total population)

### 3.5. Data Source and Variables Description

The study used the panel data of 62 developing countries in the world. The WGI (Worldwide Governance Indicators) is used for the data of quality of governance. According to the WGI (Worldwide Governance Indicators), there are six aspects to measure the quality of governance indicators: 1) voice and accountability, 2) political stability and absence of violence, 3) government effectiveness, 4) regularity quality, 5) rule of law, and 6) control of corruption. The sample of 1,302 observations, including all dependent and independent variables are used in the current study

## 4. Empirical Results

To see the association between female labor force participation and governance, the empirical shreds of evidence are shown in tables 5.1 and 5.2. The significance level shows the p-value and the analysis is obtained by using Stata. The majority of the results are consistent with the theoretical implications of governance.

### 4.1 Panel Estimation for Governance

The following table shows the results of the two-step system GMM for dynamic panel estimation, in which we have group variables as id and time variables as years. The output also shows the number of instruments 214, number of observations 1140, number of groups 60, and the probability value.

**Table 3**  
**Panel Data Analysis for Governance**

Model 1		Dependent variable = GOV		
Variables	Coefficients	Standard Error	Z-value	P-value
WLFP (women labor forceparticipation)	.0519681	.0126243	4.12	0.000*
GDP (gdp per capita)	.0819624	.0062527	13.11	0.000*
Education	.066993	.007826	8.56	0.000*
Globalization	.1185704	.0061079	19.41	0.000*
Income Inequality	-.0458015	.006815	-6.72	0.000*

Number of obs = 1140  
 Number of instruments = 214  
 Number of groups = 60  
 Wald chi2(7) = 13677.44  
 prob > chi2 = 0.0000

\* represent 1% level of significance

### 4.2 Panel Estimation for Women Labor Force Participation

The results of the two-step system GMM for dynamic panel estimation are shown in the following table, in which we have group variables as id and time variables as years. The output

also shows the number of instruments 195, number of observations 1080, number of groups 60 and the probability value.

**Table 4**  
**Panel Data Analysis for Women Labor Force Participation**

Model 2		Dependent variable = WLFP		
Variables	Coefficients	Standard Error	Z-Value	P-Value
GOV	.0138928	.0016736	8.30	0.000*
Education	-.0174545	.0015829	-11.03	0.000*
Globalization	.0034359	.00122	2.82	0.005*
Fertility rate	-.1914195	.0583041	-3.28	0.001*
Rural population	-.0067453	.000997	-6.77	0.000*
Number of obs = 1080				
Number of instruments = 195				
Number of groups = 60				
Wald chi2(7) = 409515.68				
Prob > chi2 = 0.0000				

\*represent 1% level of significance

### 4.3. Discussion

Women's labor force participation and governance are positively related and have a significant relation at the 1% level. From table 5.1, it is shown that governance increases with an increase in the participation of females in the labor force. These findings are similar with the findings of (Mazelliu, 2015). The participation of women in the labor force is reflected in the growth of high inputs of labor as well as economic growth in developing countries. But, female labor force participation with a lower level of education will cause less effective government.

There is a strong link between GDP per capita and governance. Per capita incomes and the quality of governance are strongly positively correlated across countries (Kaufmann et al., 2003). The six governance measures i.e. "control of corruption, the protection of property rights or rule of law, voice and accountability, government effectiveness, regulatory quality, and political stability" are positively related to GDP per capita. As the purchasing power (per capita income) increases, the quality of governance also increases.

Governance is also influenced by education. It is evident that education exerts a negative relation to governance. Education, as an essential component of human capital development, is necessary for achieving sustainable economic growth. The lack of sound economic planning and education policy and lack of consistency in policy implementation will not lead to effective governance and economic growth.

Globalization is also an important parameter for governance. Results showed that governance is positively affected by globalization at a 1% level of significance (Ezcurra, 2012). The quality of domestic institutions affect by trade openness can be explained by globalization, governance, and economic growth that are strongly correlated with each other in their distinctive ways. A country's corruption level, affected by trade openness, can be explained by three challenging techniques, according to microeconomics theory; 1) trade policy i.e. foreign or international investors' opposition 2) distinction among institutions related to trade openness and 3) expense and income. (Bonaglia, Braga de Macedo, & Bussolo, 2001; Dutta & Mukherjee, 2015).

There is also a parallel association between governance and the workforce of women. Governance increases with the increase in the participation of women in the labor force i.e. shown in Table 5.2. The positive relationship between governance and female labor force participation exists at a 1% level of significance.

Education harms women labor force participation. A U-shaped relationship exists between women's education and paid work participation. The education level of women, higher than compulsory secondary schooling, shows the probability to participate in the paid labor

market with an increasing trend. On the other hand, the lower levels of education show lower labor market return to education. As the education level increases, the return also increases significantly. However, in rural and urban labor markets, females have a significantly lower rate of return for each year of education as compared to men. One of the reasons for the recent decline in female labor force participation is an increase in female enrolment in schooling, but our study shows that the low returns to education are another reason for their less participation. Therefore, women need to be educated above the secondary level to become visible in the labor market (Kanjilal-Bhaduri & Pastore, 2018).

Globalization is also an important framework for women in labor force participation. The results are similar to the results of (OKŞAK & Koyuncu, 2017). Globalization and the working force of women are positively related to each other and globalization includes i.e. economic globalization, social globalization, and overall globalization.

The women's labor force is also affected by the fertility rate. There is a negative association between fertility rate and female labor force participation i.e. as the fertility rate increases, the women employment decreases. The lowest rate of women labor force participation is due to a high rate of fertility because fertility stands as a critical factor in females' efforts to improve their labor force (Lee & Chung, 2008).

The rural population and women's labor force are oppositely related to each other. It is found from the evidence that in addition to the rural population, the participation rate of women's labor force will decrease. The result is significant at 1% level. In economic terms, a rapid increase in population growth creates pressure on resources, employment opportunities, income distribution, poverty, and social protection projects. The proportion of population growth is very high in less developed countries. Due to a high proportion, these countries are facing challenges in job creation which causes a high rate of unemployment. Different factors cause a high rate of unemployment including; migration from rural and urban areas, government policies which are unaffected, urban prejudice, high population growth, low level of expertise, high level of corruption, and less entrepreneurial skills (Imoisi, Olatunji, & Ubi-Abai, 2013).

## **5. Conclusion and Policy Recommendations**

This study empirically estimated the impact of women's employment on governance, and at the same time, the impact of governance on women's employment, by using the Generalized Method of Moments (GMM) estimation. The current research work is based on panel data of 62 developing countries for the years from 1996-2016. The working and governance are taken as dependent variables, and the exogenous variables are per capita GDP, education, globalization, income inequality, fertility rate, and rural population. In developing nations, to see the impact of governance on women labor force participation and the impact of women labor force participation on governance, GMM estimation is applied. A positive relationship exists among governance and women labor force participation shown by empirical pieces of evidence. There is bidirectional causality which means the positive impact of governance on women labor force participation, and also the positive impact of women labor force participation on governance. It is concluded based on our results that there is a positive association between women labor force participation and governance in developing countries because the participation of women in the labor force is reflected in the growth of high inputs of labor as well to economic growth in developing countries but this growth is associated with levels of education for female. Hence, less educated working women will less affect the level of governance. Often females are not treated equally as the men in some countries which are also the reason for negative relations. In the case of developing countries, the structural changes of economies from agriculture to industrial and services sectors reduce the proportion of women participating in the labor force.

There is a positive association between GDP per capita and governance across countries shown from the results; as per capita incomes increase, the quality of governance also increases. Further, it is found that education has a significant and positive impact on governance as education is necessary for achieving sustainable economic growth. Governance is strongly and positively affected by the globalization found from evidences. The quality of

domestic institutions affected by trade openness can be explained by three factors globalization, governance, and economic performance which are strongly correlated with each other.

Income inequality has also negative and significant impact on governance. The women's employment negatively affects the fertility rate and rural population and globalization are positively related to women's employment at a 1% level of significance, found from the results.

The following are the policies recommended for future consideration:

- There is bidirectional causality between women's employment and governance, according to our research. The participation of women in the labor force is reflected in the growth of high inputs of labor as well to economic growth in developing countries but this growth is associated with levels of education for females. So, there is a need to plan policy to enhance the contribution of women in income generation and in out of home economic activities.
- Often females are not treated equally as the men in some countries which are also the reason for negative relations. By considering the high degree of occupational skills in developing countries, the quality and relevance of vocational training for women can be improved.
- Women are considering getting involved in more crime, by getting into leadership positions. This system should be revived to keep women reservations in that system by providing them security and justice.

### **Conflict of Interests/Disclosures**

The authors declared no potential conflicts of interest w.r.t the research, authorship and/or publication of this article.

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