

**MENTOR | The Journal of Business Studies**

Faculty of Commerce and Management, Eastern University, Sri Lanka

**JBS**

## The factors affecting Female Labour Force Participation Rate in Sri Lanka

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### ABSTRACT

Female participation in the labour force has an impact on society and the economy. Despite the fact that women contribute to a little more than the men population of Sri Lanka, the female labour force participation rate (FLFPR) has consistently lagged behind that of men over the past two decades. Since 1960 the presence of females' participation in the labour force has been a persistent issue. This paper aims to look at the variables influencing FLFPR in Sri Lanka. For the period 1990 to 2020, statistics on all pertinent variables were compiled from World Bank data, UNESCO Institution for Statistics, World Development Indicators, Department of Census and Statistics of Sri Lanka. To achieve the objectives, descriptive statistics and regression analysis were performed. The study revealed that while GDP per capita and female youth employment has a significant negative influence on female workforce engagement rates, they also enhance women's propensity to stay at home. Meanwhile, female literacy rate, adult female mortality rate, fertility rate, and old age dependency ratio have positive significant impacts. It would be better to economically and holistically empower women by fostering an atmosphere that affords them the freedom and opportunities to carry out respectable, lawful activities.

**Keywords:** Correlation, Determinant factors of female labour force, Regression analysis, World Development Indicators, Sri Lanka.

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### 1. Introduction

Despite the fact that women make up more than half of the world's population, only 47% of women of working age were underemployed globally in 2020, compared to 74% of men (The World's Women Report, 2020). Moreover, labour supply is essential for women's growth in order to minimize discrimination against individuals based on their gender (Lisaniler and Bhatti, 2005). According to Tiegner and David's (2014) research, gender inequality in emerging nations lowers average earnings by 16% and 17.5% over the short and long terms, respectively. Consequently, having a greater proportion of women in the workforce has a very favorable impact on a nation's economy (Esteve -Volart, 2004).

With a population of 21.2 million and a GDP per capita of US\$3,835 in 2016, Sri Lanka is categorized as a Lower Middle-Income country. After the 30-year civil war ended in 2009, the Sri Lankan economy grew an average of 6.2% from 2010 to 2016, with the services sector accounting for 60% of the country's GDP in 2016 (Central Bank Report, 2017). However, during the previous 20 years, female labor force participation in has decreased from 30% to 35% despite making up slightly more than half of Sri Lanka's population (ILO, 2017).

According to the IMF staff study 2015, Sri Lanka's economy will suffer an average 20% loss due to women's lower labour involvement rates (FLFPR). It is surprising that the economic and well-being contributions of women in Sri Lanka remain far below compared to what they could achieve given the continued higher levels of educational attainment and other different social indices for women (ILO, 2016).

Since women work force affects the entire growth of the nation, research on the factors influencing women's decisions regarding their labor supply is required in order to better establish policy to boost female labor force participation (FLFP) in Sri Lanka. Even though there are research that discuss individual FLFP drivers, the literature doesn't seem to address the macro aspects that may affect FLFP. Therefore, this paper intends to examine the macroeconomic determinants in Sri Lanka that would impact female participation in the labour force and contribute to the existing literature.

## 2. Literature Review

### Female Labour Force Participation (FLFP): Definition and Significance

The labour force is known as the percentage of people aged 15 years and above who are economically engaged, people of working age as compared to the total population (DCS, 2020). Working-age people can be categorized into two: those who are economically active and those who are not. The current economically active population, which is the total number of people who are employed and unemployed in a country or region given the reference period are also referred to as the labour force. When calculating the FLFPR, the proportion of women in the labor force is divided by the proportion of women in the population of working age (Gaddis and Stephan, 2012; Semasinghe, 2017).

This rate represents the amount of female labour that is readily accessible in order to produce goods and services throughout a given time frame. Since women are productive workers with productivity on par with men, a greater FLFPR is indicative of improved status for women in society and the economy and ultimately promotes equity and more effective utilization of human potential (Fatima and Sultana, 2009; Kapsos et al., 2014; Mujahid, 2014).

Both developed and developing countries have battled harder to achieve a higher FLFPR which is one of their long-term goals (Ozsoy and Atlama, 2009; Fatima and Sultana, 2012). This is not just because of the fact that it can directly lead to improvements in growth and stability as well as the fact that a higher workforce participation rate raises the labour pool, productivity, and standard of living.

Since this affects household welfare and income, female employment involvement is essential for reducing extreme poverty (Fatima and Sultana, 2009). As a result, the low FLFP constitutes an important opportunity wasted to boost many countries' economic growth and welfare (Psacharopoulos and Tzannatos, 1989; Ozsoy and Atlama, 2009).

### **Determinants Women's Participation in the Labor Force**

Neoclassical theory of allocation of time has been one of the eminent theories explaining the labour supply decisions of the individuals. Analyzing the effects of particular economic and demographic characteristics that they thought would have an influence on women's propensity to join or quit the labour force allowed them to determine how likely it was that women would make a particular choice over another. In order to decide whether or not to engage in a particular activity and maximize their utility, their preferences weigh the values of the time she spends on the job market and nonmarket activities (Lisaniler and Bhatti, 2005).

The woman decides to participate once the worth of their time spent engaging in market-related activities surpasses the worth of her time engaged in activities related to non-market, or vice versa. Market activities are valued according to market wages, whereas nonmarket activities are valued according to an individual's preferences and tastes. The demands placed on their time allocation in non-market activities include the number of dependents and children in the household as well as the women's non-market income (Heckman, 2014; Lisaniler and Bhatti, 2005).

In addition to the neoclassical theory of time allocation, patriarchal institutions, peculiarities of female and male labor supply, and incentives and disincentives provided by national employment systems can explain the factors influencing women's labor supply decisions.

Numerous studies on the factors influencing female labor force participation have been done globally. The FLFP in Turkey has many facets, according to the World Bank (2010), and is influenced by socioeconomic and cultural elements such household duties, eldercare responsibilities, childcare responsibilities, urbanization, etc. Samanasinghe (2017) recognized that FLFPR can be influenced by the GDP growth rate. When Karshenas and Moghadam (2021) looked into how GDP per capita affected female labour force involvement, they discovered that higher GDP per capita in Middle East/North Africa (MENA) countries encouraged women to stay at home.

According to a Pakistani study by Azid et al. (2001), FLFPR is positively associated with literacy rates. The more educated an individual is, the more likely they are to be willing to join the labour market (Cameron et al., 2001; Lincove, 2005). Studies on women's labour force participation indicate that education is an important personal factor impacting FLFPR (Lincove, 2005; Mammen and Paxson, 2000; Mujahid, 2014; Sackey, 2005).

Numerous research discovered a connection between FLFP and fertility rates (Brewster and Rindfuss, 2000; Samanasinghe, 2017). According to research by Bloom et al. (2009), an antagonistic connection exists between FLFP and fertility rates. Studies also have shown that fertility could either positively or negatively affect FLFP (Aguero and Marks, 2008; Khadim and Akram 2013; Mujahid 2014).

The model was estimated by Faridi et al. (2009), who came to the conclusion that Pakistan's mortality rate affects the percentage of working women. Esfahani and Shajari (2010) found FLFP has a link to population growth. Zaheer and Quaiser (2016) discovered the unemployment rate and the FLFP are inversely correlated. Chamlou et al. (2011) explored the contradictory correlation between FLFP and unemployment in MENA countries.

Married women are typically seen as having entire responsibility for household tasks in developing countries, which lowers the likelihood that they will enter the workforce (Gunatilaka, 2013; Khadim and Akram 2013). However, in developed countries, such a detrimental effect on FLFP is extremely rare, with the exception of marriages that result in children (Psacharopoulos and Tzannatos 1989).

Mallawarachchi and Pieris (2020) used a binary logistic model to find that race, marital status, relation to the Head of the Household (HHH), education attainment, and literacy in English were significant on Female Labour Force Participation (FLFP) in Sri Lanka.

### **3. Research Methodology**

Secondary data were collected from 1990 to 2020 from the World Bank data source, UNESCO Institution for Statistics, World Development Indicators, and the Department of Census and Statistics Sri Lanka. The female workforce participation rate (age 15 and above) was considered as dependent variable and the following variables were chosen for independent variables such as female literacy rate, % gross tertiary school enrolment of females, % gross secondary school enrolment of females, % of annual rural population growth, % of annual urban population growth, youth female unemployment rate (% of female labour force ages 15-24), female population ages 15 - 64, adult female mortality rate (per 1,000 female adults), GDP (Constant LCU), GDP per capita (Constant LCU), net foreign direct investment, fertility rate (births per woman), age dependency ratio and young and old age dependency ratio (% of working-age population). Descriptive statistics, correlation analysis and regression were run to achieve the objectives of this study.

### **4. Analysis and Discussion**

#### **Female Engagement in the Labour Market: Factual Outlook**

The summary statistics of labour force characteristics for 2020 are depicted in Table 01. Based on the data in 2020 even though the female population is higher the male population FLFPR is 32% only which is less

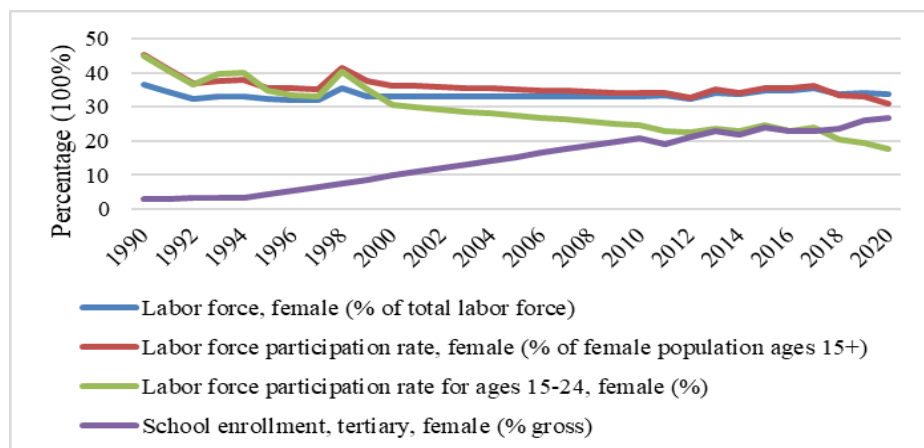
than half of the male participation rate. Consequently, the unemployment rate for the female population is higher (8.5) than it is for men (4).

**Table 1: Sri Lanka labour force statistic, 2020**

Indicators	Total	Male	Female
Population (15 years & over)	16,739,396	7,788,634	8,950,763
Economically active	8,466,606	5,598,004	2,868,602
Economically inactive	8,272,790	2,190,629	6,082,161
Labour force	8,466,606	5,598,004	2,868,602
Labour force participation rate	50.6	71.9	32.0
Employed population	7,999,093	5,372,947	2,626,146
Employment rate	94.5	96.0	91.5

(Source: Department of Census and Statistics, 2020)

Figure 01 depicts the enrollment in tertiary education and the FLFP in Sri Lanka from 1990 to 2020. The graph shows that while FLFP has been declining over time, there was a modest uptick in 1998. When considering the youth FLFPR, which decreased steadily from 41.27 to 30.78 between 1998 and 2020. In the meantime, tertiary enrollment is rising. Also, from 1990 to 2020, the number of students enrolled in tertiary institutions in Sri Lanka climbed steadily, from 3.13% to 26.67.

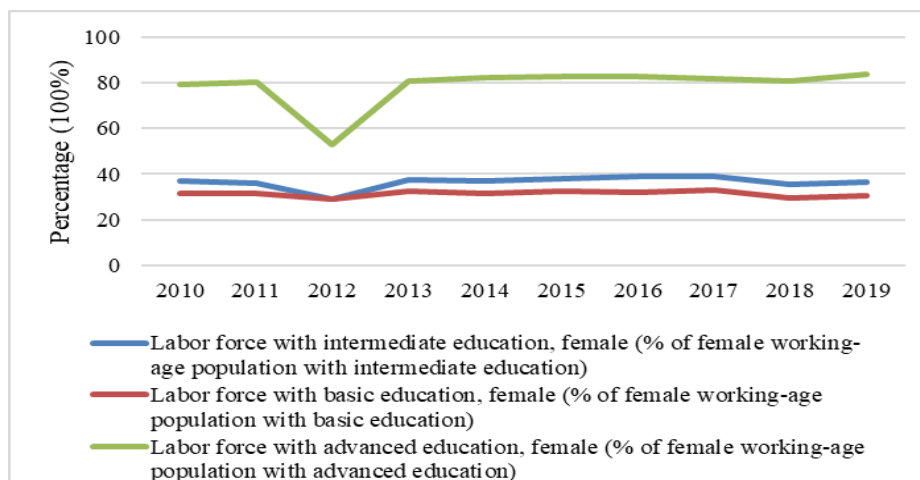


**Figure 01: Female labour force participation and tertiary school enrollment during 1990-2020**

(Source: Department of Census and Statistics, 2020)

Figure 02 shows the FLFP with different educational levels, including primary, intermediate, and advanced education. As shown in the figure, there has been little change in FLFPR over time in relation to educational

background. All the while FLFPR with all three educational levels declined in 2012 and 2018, it grew once more in 2019.



**Figure 02: Female labour force participation with education level Correlation Analysis**

The Pearson correlation approach was utilized to identify the strength and trend of the association between the aforementioned dependent and independent variables for the period of 1990 - 2020 (Table 02). Source: Department of Census and Statistics, 2020.

**Table 2: Correlations**

	<b>Labour force participation rate, female (% of female population ages 15+)</b>
Labour force participation rate, female (% of female population ages 15+)	1
Female literacy rate	-0.659**
School enrollment, tertiary, female (% gross)	-0.694**
School enrollment, secondary, female (% gross)	-0.726**
Rural population growth (annual %)	0.365*
Urban population growth (annual %)	0.013
Unemployment, youth female (% of female labour force ages 15-24)	0.555**
Population ages 15-64, female	-0.714**
Mortality rate, adult, female (per 1,000 female adults)	0.686**
GDP per capita (Constant LCU)	-0.625**
GDP (Constant LCU)	-0.619**
Net foreign direct investment	0.552**
Fertility rate, total (births per woman)	0.577**
Age dependency ratio, young (% of working-age population)	0.672**
Age dependency ratio, old (% of working-age population)	-0.518**
Age dependency ratio (% of working-age population)	0.464**

(Source: SPSS Output)

\*\* p < 0.05, \* p < 0.01

The calculated value of the correlation coefficient of FLFPR with female literacy rate, GDP per capita in constant LCU, % of gross female tertiary school enrollment, % of gross female secondary school enrollment, female population ages between 15 to 64, GDP in constant LCU, and old age dependency ratio are as follow -0.659, -0.694, -0.726, -0.714, -0.625, -0.619 and -0.518. At a 95% level of confidence, a significant negative correlation exists between FLFPR and female literacy rate, GDP per capita, % of gross female tertiary school enrollment, % of gross female secondary school enrollment, female population ages 15-64, GDP, and old age dependency ratio.

The correlation coefficient of FLFPR with rural population growth, female youth unemployment, adult female mortality rate, net foreign direct investment, total fertility rate, young age dependency ratio, and age dependency ratio are as follow 0.365, 0.555, 0.686, 0.552, 0.577, 0.672 and 0.464. The findings indicate a significant positive correlation between FLFPR and the following variable: female youth unemployment, adult female mortality rate, net foreign direct investment, total fertility rate, young age dependency ratio, and age dependency ratio at 95% confidence level. Additionally, at a 90% confidence level, female labour force has a substantial positive link to the % annual rural population growth.

## Regression Analysis

The dependent and independent variables relationship was examined using regression. Some independent variables that did not show any significance in the correlation analysis were left out of the regression. The model was fit using stepwise regression (Table 3). Variance Inflation Factors (VIF) can be used to check for multicollinearity. Neter et al. (1996) argue that a maximum Variance Inflation Factor larger than 10 is an indication of influential multicollinearity therefore there is no multicollinearity exist between independent variable. The Durbin-Watson statistic was used to identify the autocorrelation. The value was 1.95460 which is greater than the upper bound value of 1.707 so there is no evidence to say positive autocorrelation exists at a 1% level of significance. (According to the Savin and White printed bounds are  $dL = 0.812$  and  $dU = 1.707$  at 1% significant level).

The adjusted R square value is 71.7% in the model; it indicates that the female literacy rate, female youth unemployment, adult female mortality rate, fertility rate, old-age dependency ratio, and GDP per capita combined account for around 71.7% of the variation in FLFPR in Sri Lanka. Identified model is adequately stated as well as all independent variables are significant at a 95% confidence level in explaining variation in the dependent variable ( $F = 12.836$ ,  $p = 0.000 < 0.05$ ). Table 5: Descriptive Statistics.

The findings of Rami (2018), who found that FLFPR are positively connected with literacy rates, are supported by the conclusion that, when other variables are held constant, an increase in the female literacy rate boosts FLFPR by 3.024 units. The FLFPR is reduced by -0.250 units for every unit increase in female youth unemployment, which is consistent with the findings of Zaheer and Quaiser (2016) that the FLFPR is decreased by the female unemployment rate. In contrast to Zaheer and Quaiser's (2016) result that the adult

female mortality rate lowers the FLFPR, a one-unit increase in adult female mortality increases the FLFPR by 0.129 units while holding other factors constant. Additionally, the FLFPR rises by 63.358 units for every unit increase in fertility rate contradicts the findings of Brewster & Rindfuss (2000), Samanasinghe (2017) and Zaheer and Quaiser (2016). Additionally, the FLFPR is increased by the old age dependency ratio. The FLFPR is reduced by 0.006 units for every unit rise in GDP per capita, which is consistent with the findings of Karshenas and Moghadam (2011) that a higher GDP per capita lower the FLFPR.

**Table 3: Results of regression analysis**

Model	Coefficient	Std.Error	t	P value	VIF
Constant	-382.222*	132.414	-2.887	0.009	
Female literacy rate	3.024*	1.134	2.666	0.014	7.22
Female youth unemployment	-0.250*	0.094	-2.666	0.014	7.94
Adult female mortality rate	0.129*	0.048	2.702	0.013	1.81
Fertility rate	63.358*	14.066	4.504	0.000	5.09
Old age dependency ratio	1.680*	0.629	2.671	0.014	7.15

(Source: SPSS Output) \* P < 0.05

## 5. Conclusion

This study has explored various determinants' impact on the participation rate of females in the workforce of Sri Lanka. It concludes that female literacy rate, adult female mortality rate, fertility rate and old age dependency ratio have a significant positive impact while female youth unemployment and GDP per capita influence the female involvement in the labour force significantly negatively.

The research aims to empower women economically and holistically by creating an environment that gives them the freedom and chances to engage in decent, honorable work. This aim goes beyond simply raising the proportion of females in the workforce. To boost the proportion of the female labour force a comprehensive approach is needed. It is recommended that policymakers should take action to lower youth unemployment rates because doing so will help enhance the female labor force participation of Sri Lanka. Additionally, to enhance FLFPR, the government also should support rising female literacy rates.

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