

Structural Transformation in Female Labor Force and its Impact on GDP per Capita: A Comparative Study of Emerging Economies with respect to the U-Shaped Hypothesis

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Abstract

Many studies show that as countries move on the road to economic development, female labour force participation falls in the initial stages and then rises. This study explores different reasons for this trend across many regions on one hand, and on the other undertakes the case of five emerging economies- India, Bangladesh, Turkey, Indonesia, and Pakistan- and determines whether FLFP adds more to GDP per capita when it undergoes a sectoral shift. Using a dataset for these countries across 32 years (1992 to 2023), the fixed-effect panel regression model is applied to analyse the relationship between female employment and economic growth, particularly when the female labor force moves from the agriculture sector to the industry or services sector. And here is the research gap that the paper addresses; where past studies anchor on growth followed by the initial fall and the eventual rise of FLFP, this study instead determines whether FLFP accelerates economic growth. The findings reveal that FLFP is in fact a significant contributor to economic growth and a shift from agriculture into industry and services sectors - highlighting a 'structural transformation' - plays an important role in increasing GDP per capita. Therefore, the paper concludes that for emerging economies to improve long run economic performance, policies that encourage FLFP - such as the provision of safe childcare facilities, flexible working hours, education, vocational training, and the formalisation of women's employment - should be introduced, allowing female laborforce's economic contributions to be reflected more accurately in official labour statistics and national income accounts.

Keywords: Female Labour; Economic Growth; U-shaped Hypothesis; Structural Transformation; GDP per Capita; Emerging Economies; Services Sector

Introduction

An economic growth engine needs capital which expands when people save and then savings are invested (Smith, 1776). But physical capital is useless unless a skilled labor force is there to operate and make optimum use of physical capital, and this skilled labor force is called human capital (Shultz, 1961; Becker, 1964). Human capital in turn has two components, male and

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female, and if the female labour force is ignored, then economic activity is restricted and long term growth is compromised (Galor & Weil, 1996; Klassen, 2000).

This paper explores two dimensions of female labor force participation: one, through existing literature, and two, through empirical analysis. Based on previous studies, this paper brings out a research gap that developing countries may or may not follow the popular and most cited U-shaped hypothesis which says that as countries undergo economic growth, FLFP first declines and later on rises due to sector shift of the labor force from agriculture to industry and services. If they do follow this pattern, this study argues that the factors leading to that pattern are not uniform due to regional, historical, cultural, and structural differences. Secondly, this paper also identifies another gap; while previous studies focus on the effect of economic growth on FLFP, what remains unexplored is whether this relationship can be inverse. Through empirical analysis of five developing countries - India, Bangladesh, Turkey, Indonesia, and Pakistan- which are on the path to development in their own way with their independent growth strategies, it is proved that FLFP has a positive impact on GDP per capita, and this impact is much greater when structural transformation is taken into account (OECD, 2025).

For simplification, the study is restricted to five countries and the basis of their comparison is formed because of various similar socio-political and economic histories. Pakistan, India and Bangladesh were geographically one territory under colonial rule and got independence from Imperial rule in 1947. Bangladesh, again, had been part of Pakistan before 1971 and after separation has been striving for a strong economic and political footing (The National Archives, 2024). Turkey offers an interesting blend of European and Asian culture, however, unlike most European countries, it struggles economically and faces many of the challenges of the other developing countries mentioned above (OECD, 2025). Indonesia, the most populous Muslim majority country is being compared on grounds of liberty that is granted to women for their active participation in the economy (Hackett et al., 2026). India's case is unique because a high level of education attainment should have promoted FLFP but the government policies have restricted their optimum level of employment (Klasen & Pieters 2015).

Pakistan is the fifth largest country in terms of population, but its female workforce stands at 24.2% and it ranks 148th out of 148 countries in terms of gender parity (World Economic Forum, 2024). The global average of female participation is 48.9% and Pakistan is half the way through it, whereas Indonesia stands at 53%, Bangladesh at 38.67%, Turkey at 37.1% and India at 35% (World Bank, 2026). However, simply increasing the participation rate in the labour work force of these countries is not the solution; the sectoral distribution of labour is equally essential.

This study employs a sectoral analysis to see the composition of the female workforce across three primary areas: Agriculture, Industry, and Services. In Pakistan, female agricultural labour constitutes 66.4% of the total female labour force (World Bank, 2026). In contrast, Indonesia and Turkey have shifted their female work force to the services sector, while Bangladesh's female labour force is heavily concentrated in the industry sector (ILO, 2026). This gives a clearer understanding of how sectoral shift serves as a primary engine for increasing GDP per capita.

The importance of this shift lies in the productivity gap between sectors: a worker generates far more economic value in industry or services than in agriculture, so moving female labour up this

ladder raises output per worker and, in turn, GDP per capita (Herrendorf et al, 2014). This is precisely the path developed economies have already completed. In the United States and the United Kingdom, female agricultural employment has fallen to roughly 1% and 0.6% of the female workforce respectively, with women concentrated overwhelmingly in services (World Bank, 2026). Hence, the structural transformation - meaning movement of female labour force from agriculture to services or industry - helps in decreasing the productivity gap (Herrendorf et al, 2014). This frames the central concern of this paper: the five countries studied sit mid-transition, and it is the reallocation of female labour across sectors, not merely a rise in participation, that drives economic growth.

Literature Review

One of the main themes in developmental economics is the "U-shaped" relationship between economic growth and female labour force participation, discussed in almost all the papers that talk about FLFP regardless of the degree to which the authors agree with this phenomenon. According to Goldin's (1995) view, as countries undergo economic growth, FLFP goes through three stages which give rise to a U-shaped female labour force. Stage one is when women are engaged in farming, stage two begins with early industrialization resulting in income effect, and at stage three with economic development female education increases which helps women join clerical jobs and other white-collar jobs, raising women's participation. Goldin also points out that married women working outside their homes are attached with the stigma that their husbands are unable to provide for them, so society views agricultural labour, manufacturing jobs, transportation jobs, and factory work not suitable for women.

As countries undergo development, women's labour force participation first declines and then rises as early industrialization improves men's economic opportunities before women's, and as household income rises, women withdraw from paid work (Goldin, 1995). However, as women's own income starts rising, it draws them back into the labour force and this mechanism explains that in developing countries, labour markets - especially for women - often don't function competitively and the U-shape isn't purely a function of income but of the market frictions specific to female labour (Mammen & Paxson, 2000). Therefore, this forms the basis of our claim that the U-shaped hypothesis is not followed uniformly by all developing countries.

Other studies further solidify this idea of different developing nations' FLFP following the U-Shaped curve for different reasons and sometimes not following the pattern at all. For example, the most cited work on female labour force participation is by (Tsani, 2013), which analyses the South Mediterranean countries and confirms that female labour force participation follows a U-shaped function in relation to economic development. The study recognises that female labour force participation in South Mediterranean countries is the lowest among developing countries and young female entrants face unemployment rates of up to 50% which discourage women from exploring the labour market and even when employed, leave the skills of educated women underutilised. Through simulation, it is found that during 2015–2030 there is a downward trend in female labour force participation when income levels change, though female labour force participation rises when region-specific barriers are removed. The non-uniformity of trend is further highlighted when samples are taken from both developed and developing countries to check the robust dynamics of the U-shape mechanism and it is found that one set of countries has

the substitution effect as the dominant force whereas the other set has the income effect as the dominant force (Tam, 2011).

Central Asian states -Uzbekistan, Kazakhstan, Kyrgyz Republic, Tajikistan and Turkmenistan - also experience a downward trend in FLFP due to old traditions and urbanisation after 1991 when they are decolonised from the Soviet Union (Kuldasheva & Ahmad, 2025). Brainerd (2000) has also studied the labour markets in Eastern Europe and Central Asian economies sharing a post-Soviet legacy and finds that women experienced disproportionate employment losses during the transition from centrally planned economies to market economies.

European countries see an initial decline in female labour force participation due to traditional structural reasons but in the long run decline is also experienced due to unique features of advanced economies like higher education attainment makes women find jobs according to their academic credentials and they would rather sit at home than take jobs below their qualifications. Fertility decisions, unfriendly labour markets, unpopular institutional policies such as late working hours, expensive day care or unpaid maternity and paternity leave lead women to stay home (Altuzarra et al, 2019).

The U-shaped hypothesis also holds true in Turkey, which recently reached the turning point of the U in 2008 and its FLFP has been rising since then. The driver behind Turkey's conformity to the hypothesis is also unique: younger women amongst the least-educated cohort are more likely to join the labour force, contrary to the belief that cultural norms stand in the way- in fact, the sway of the 'culture' factor has decreased, also leading to greater FLFP (Tunali et al, 2021).

It is interesting to note that when data was taken from six South Asian countries- Pakistan, India, Bangladesh, Nepal, Maldives and Bhutan- from 2002 to 2019 and the U shaped hypothesis was tested empirically, the results indicated that as economic growth increases, female labour force participation does not necessarily always follow the U-shape. Only Pakistan conforms to the U-shaped relationship, while Bangladesh, India, and Nepal show an inverse U-shaped relationship, and Maldives and Bhutan show an insignificant relationship between economic growth and female labour force participation (Shah and Haq, 2022). In some parts of south Asia female participation actually decreases despite having good jobs due to the double burden of domestic work (Klasen, 2019).

Lahoti and Swaminathan (2016) further reinforce that India's female labour force does not conform to the traditional U-shaped pattern. The authors observe that FLFP has declined in different time periods despite economic growth, and attribute this trend to limited employment opportunities and social norms. In Indonesia, despite drastic changes in the economy in the last twenty years, FLFP has remained majorly low and stagnant due to low female enrollment in higher education and household responsibilities, especially after marriage (Cameron et al, 2018).

While the relationship between education and FLFP is often U-shaped, structural barriers and social stigma prevent women from joining the formal labour market. Verick (2018) argues that the availability of quality jobs leads to a rise in FLFP; however, in Pakistan, as men move from agriculture to industry, their female co-workers stay at home, and productivity in agriculture drops. He also points out that urbanization leads to a drop in women's labour force participation, which relates exactly to countries like Pakistan.

Across developing countries of Latin America, FLFP responds differently due to initial conditions, structural divisions, and historical differences; where a fall in fertility rate and a rise in female education would be expected to lead to higher FLFP, the trends have been non-uniform due to varying intensity of Catholicism and machismo norms in different regions (Klasen, 2019).

The economic growth in Middle Eastern and North African countries from 1990 to 2012 did not automatically result in higher female employment; institutional factors, social norms, and labour market structures shaped the trend of women's participation and contribution, and these factors were country-specific (Chapman, 2015).

When an upward trend of FLFP was seen during 1980s and 1990s in most developing countries due to massive expansions in female education, effective family planning and weakened traditional norms, Middle Eastern countries showed very slow results because of oil wealth and self-imposed religious restrictions on female participation outside homes (Klasen 2019).

Gender parity is also widely cited as a reason for the dip in the U-shaped curve, and every country experiences this issue in different ways. Oostendorp (2009) points out that gender segregation exists in various sectors and occupations across developing countries on account of labour market segregation such as male-dominated heavy industry, differences in skill sets, and safety and security reasons in relocation to new and remote places. In a comprehensive cross-study, he evaluates that FDIs have a positive effect on narrowing the wage gap, as they encourage women to be part of the process, but in the long run, though the number of women in employment increases, the income gap is widened in the highly skilled labour market. The paper, seen in the context of Bangladesh, explains why women are stuck in the garment sector, which absorbs a good number of female labour force but restricts their entry to managerial positions.

In India the female labour force declines despite education and skill attainment due to a number of constraints such as the limited availability of suitable jobs for women, strict labour laws, skills mismatch, economic uncertainty, low consumer demand, and technological substitution. Klasen and Pieters (2015). Many countries at similar levels of economic development show large differences in female employment levels due to socio-cultural norms (Jayachandran, 2021).

Taken together, the studies above share a common direction of causality, where economic growth drives FLFP- this is the defining characteristic of the U-shaped hypothesis. What remains relatively unexplored is whether this relationship can also be inverted, whether FLFP can also drive economic growth rather than simply be a byproduct of it; this gap serves as the basis of this study's empirical analysis.

Narrowing gender gaps bring a positive impact on GDP, indicating that women's participation in the labour market is a significant factor of economic growth (Aguirre et al., 2012). Klasen and Lamanna (2009) focus on gender gaps in education and find that the larger this gap, the lesser the female employment, and that countries with larger gender gaps in labour force experience slower economic growth.

Cuberes and Teignier (2016) also build an occupational choice general equilibrium model to show how much a country loses in aggregate income if women are excluded from the workforce. When highly talented women are restricted from working, less talented men may end up filling the positions, and the resulting misallocation of human capital would lower total factor

productivity (TFP); if women are excluded from the workforce, a country's income per capita is predicted to fall by almost 40%. Their refined model on Mexico, considering the endogenous female labour supply and the household production sector, proves that total market output massively increases when women move from the household sector to the formal market sector.

Although these studies claim that reduced gender parity do affect economic growth, what this study aims to find is whether FLFP in particular impacts economic growth. However, FLFP alone is not the only factor being explored- structural transformation is another important factor to consider.

Apart from the U-shaped hypothesis, which claims economic growth to be the main driver of FLFP, literature also emphasizes the importance of structural transformation in driving FLFP. Herrendorf et al. (2014) define structural transformation as the reallocation of economic activity across three broad sectors: agriculture, manufacturing, and services. There are two drivers of structural transformation- the income effect and the price effect- and as countries develop, their reliance on agriculture falls, the share of manufacturing rises and then falls, while the services sector continues to grow. Women have been entering the labour force at an almost constant rate since World War II, yet the acceleration in their participation was witnessed during the 1980s and it is observed that women opt for occupations with fewer brawn requirements and that women have shifted to jobs requiring more brain and those have given them higher returns (Rendall, 2017).

Gaddis and Klasen (2014) use large panel data encompassing 80–100 developing countries from 1980 to 2005 to investigate how female participation is impacted when labour moves from agriculture to services. The results show that this is the major driver of increasing female participation, though a classical U-shape is not as robust as earlier studies suggest, and it is not only a rise in GDP that leads to FLFP change but structural transformation that is the main key to its development. The study further finds that as agriculture's share declines, FLFP drops, and as the services sector expands, FLFP rises, though all transformations across countries depend on each country's education quality and institutions that protect and facilitate female labour, labour markets, and social norms.

In the case of Bangladesh, structural transformation is seen to have long term benefits on FLFP, when garment factories were established near villages and many women gained access to this sector. With high absorptive capacity in the garment industry, two things took place to promote FLFP: firstly, late marriages followed by delayed child birth; secondly, unprecedented high rate of girls enrollment in schools which could not be seen even with the government's large scale conditional cash transfer program (Heath & Mobarak, 2015).

The endogenous and exogenous growth theories both point towards the importance of women's participation in the economy as the skilled human capital is the driver of growth and various studies have shown that women do better in the services sector (Galor & Weil, 1996; Goldin 1995; Olivetti & Petrongolo, 2016). The endogenous factor of growth (Romer, 1986) focuses on education and the transition of the female labour force from agriculture into other sectors, since human capital investment is the internal driver of this shift. Exogenous growth (Solow, 1956), by contrast, points to externally driven technological change, such as the global spread of internet

access and digital platforms, that creates new employment opportunities for women in developing nations without requiring domestic innovation to produce them

While these studies claim that structural transformation drives FLFP, and the U-Shaped hypothesis claims that economic growth drives FLFP, the gap that this study aims to fill is to determine whether the combination of rising FLFP and female labour undergoing structural transformation impacts economic growth and if it does then to what extent.

Methodology

To empirically test the relationships highlighted above, this study uses quantitative panel data for the five countries and runs a multiple linear regression model to isolate the extent to which female labor force participation and its sectoral division impact economic growth.

Data and Sample Selection

This research uses a panel dataset extracted from the World Bank Open Data for five developing countries - Pakistan, India, Indonesia, Bangladesh, and Turkey - across the period 1992-2023, covering a total of 160 observations. This allows a robust analysis of how shifting labour trends affect economic growth.

These countries were chosen because of their similar economic characteristics. All five countries are classified as ‘developing’ or ‘emerging’ economies and are therefore often grouped together in the economic literature. They face similar issues such as high population density, rapid urbanisation, and ongoing structural transformation from agrarian to industrial and service-based economies. Moreover, these countries share similar cultural contexts due to their geographical proximity (India, Pakistan, and Bangladesh in South Asia) and religious composition (all countries except India have Muslim-majority populations) positioning. Collectively, these countries provide a holistic representation of how female employment impacts economic growth in regions where female labour force participation has been historically low but is now rising.

Model Specifications

To measure the extent to which female employment contributes to Gross Domestic Product (GDP) in the selected countries, multiple linear regression was chosen as the method of analysis. The following shows the mathematical model used:

$$\ln(\text{GDPPC}) = \text{B0} + \text{B1 FLFPR} + \text{B2 IND} + \text{B3 SERV} + \text{a} + \text{E}$$

Where:

FLFPR: Female Labour Force Participation (% of female population ages 15+)

This is the primary independent variable and is included to test the hypothesis that increasing total labour supply through greater female participation drives higher output. This hypothesis is based on the Solow Growth Model, which argues that:

Output (GDP) = F (Labour, Capital, Technology)

IND: Employment in Industry, female (% of female employment)

SERV: Employment in Services, female (% of female employment)

IND and SERV are also independent variables and measure the percentage of female employment in each sector and are used as control variables in the model to account for the structural transformation of these countries' economies from agriculture to industry and services. Employment in agriculture, industry, and services constitutes total female employment ($AGR + IND + SERV = 100\%$), therefore Employment in Agriculture is omitted from the model to serve as a reference category and avoid perfect multicollinearity. A Variance Inflation Factor (VIF) test is run on the remaining variables- Employment in Industry, Employment in Services, and FLFP rate- to confirm that no problematic multicollinearity remains, with all values comfortably below the standard threshold. Accordingly, the purpose of these variables in the model is to determine how a shift in female employment from agriculture to industry or services affects output.

GDPPC: GDP per Capita (Current US\$)

This serves as the dependent variable because it is a standard metric of a country's economic development. In this model, natural logarithm has been applied to allow us the measurement of the percentage change in GDP per capita relative to changes in the independent variables, since GDP per capita is right-skewed across the sample and the log transformation makes the variable better suited to linear regression.

a: Fixed Effects

This accounts for the specific and unique characteristics of each country - such as cultural history or institutional policies - that may affect the model's results.

E: Error Term

This is accounted for automatically in Stata when the regression is run.

Choice of Fixed Effects over Random Effects

A pooled OLS regression was initially estimated as a baseline, but since it does not account for the panel structure of the data, it was not used for inference. Instead, the main choice became between a Fixed Effects or Random Effects model, and a Hausman test was conducted to compare the two. The test did not reject the null hypothesis ($p = 0.33$), nominally favouring Random Effects; however, the test flagged that its underlying variance matrix was not well-behaved, which is a known issue when the number of panels is small (in this case, only five countries). Given this, the test result alone was not treated as conclusive. Fixed Effects were instead chosen on theoretical grounds: the five countries in this sample were deliberately selected rather than randomly drawn, so the core assumption of the Random Effects' model - that each country's unobserved characteristics are uncorrelated with the regressors - is difficult to justify here regardless of the statistical test.

Results and Analysis

Given the diagnostic tests outlined in the methodology, these Fixed Effects estimates are reported as the model's primary results:

Statistic	Value
Estimation Method	Fixed Effects (Within) Regression
Number of Observations	160
Number of Groups	5
Observations per Group	Min = 32, Avg = 32.0, Max = 32
Within R ²	0.6077
Between R ²	0.2329
Overall R ²	0.3232
F-statistic	78.48
Prob > F	0.0000
Corr(u _i , X _b)	-0.5042
Sigma_u	0.9699
Sigma_e	0.4187
Rho	0.8429
F-test (all u _i = 0)	52.46
Prob > F (F-test)	0.0000

Variable	Coefficient	Std. Error	t-statistic	p-value	95% Confidence Interval
FLFPR	0.0479	0.0092	5.20	0.000	0.0297 – 0.0660
Services (serv)	0.0360	0.0051	7.09	0.000	0.0259 – 0.0460
Industry (ind)	0.0747	0.0130	5.74	0.000	0.0490 – 0.1004
Constant	3.6099	0.3134	11.52	0.000	2.9908 – 4.2290

This regression model demonstrates a good fit because the overall value of R- square (coefficient of determination) is 0.3232, which connoted that 32% of the countries' changes in economic growth (measured by GDP per Capita) over the 32 years are explained by this model, specifically by the independent variables. Similarly, the within R- square value of 0.6077 proves that 60.77% of the variations in wealth within these individual nations are actively driven by the time-variant shifts in their domestic labor force dynamics and structural transformation

The p value tests the 'null hypothesis', which is the idea that there is no relationship between the dependent and independent variable. Since the p value of all variables is 0.000 (p<0.01), it indicates that the 'null hypothesis' can be rejected with almost 100% confidence. Hence, all variables are statistically significant and their coefficient values are important.

The Beta Coefficients show the 'slope' or magnitude of each variable's effect on the dependent variable. Our primary independent variable, female labour force participation rate, has a coefficient value of 0.048, indicating that a 1% increase in female participation results in a 4.8% increase in GDP per Capita, which is very significant. This result mirrors Solow's model- since output is a function of labour, capital, and technology, an expansion of labour through increased

female participation translates into a rise in output. It also confirms the gap that this paper set out to test: economic growth is not only a driver of FLFP but can also be driven *by* it.

The coefficient values of service and industry have a comparatively different meaning. Industry's coefficient being 0.075 indicates that a 1 % shift of female labour away from agriculture and into industry would result in 7.5% increase in GDP per capita, *ceteris paribus*. This is the highest coefficient value, hence, this variable has the greatest effect on the dependent variable. Shifting from agriculture to services also has a positive relationship with GDP per capita because its coefficient is 0.036 (3.6% increase).

This finding does not fully align with Herrendorf et al.'s (2014) and Rendall's (2017) brain-versus-brawn framework, which would predict services - being brain-intensive - to show the stronger relationship with GDP per capita, given women's comparative advantage in that sector. A likely explanation lies in the composition of the sample itself: countries such as Bangladesh have industrialised largely through female-intensive, export-oriented manufacturing (particularly ready-made garments), meaning industry in this context has absorbed a large share of female labour in a way that is not necessarily 'brawn-intensive' in the traditional sense. This suggests that the brain-versus-brawn mechanism may hold less consistently in economies where industrialisation itself has been female-led, rather than male-dominated as the original theory assumes.

The value of rho being 0.84 shows that 84% of the variance in GDP per capita across the panel is attributable to fixed differences between countries rather than to the regressors included in the model - underlining just how distinct these five economies are from one another, beyond what labour force participation and sectoral shifts alone capture. This reinforces the importance of using Fixed Effects in the regression equation because it takes into account these differences and ensures more significant regression results.

This high rho value also supports arguments made by Klasen (2019) and Chapman (2015), who found that the relationship between FLFP and economic growth is highly non-uniform across developing countries, shaped by country-specific institutions, norms, and historical trajectories rather than a single universal pattern. The size of rho in this model is, in effect, a quantitative confirmation of what those studies argue qualitatively.

Discussion

The paper proves that the female workforce is a significant contributor to the economic growth of developing countries such as Pakistan, Bangladesh, India, Turkey and Indonesia by showing that 1% increase in female participation leads to 4.8 % increase in GDP per capita. The paper also confirms that the female workforce in developing countries undergoing a structural transformation from agrarian to industrial and services based economies accelerates economic growth. Hence, policies should be centered around encouraging greater FLFP, especially in the industry and services sector.

Role of education and training in improving FLFP

First and foremost, female education needs to be ensured. In Pakistan, where the number of out of school children is second highest in the world of which 53% are girls between 5 years and 16

years (UNICEF, 2025), the first step is compulsory primary education, free and accessible, to all. Policies should be made to ensure the quality of women's employment by narrowing down the education gaps and income gaps. Indonesia has set a very good example in this respect by making nine years of education free and compulsory for all (Government of Indonesia, 1994; World Bank, 2020). Pakistan needs to step forward to provide safe and secure infrastructure to students, especially girls to carry on with their secondary and higher education.

Additionally, financial aids and scholarship programs always prove to be great incentives to promote female higher education as according to social norms in developing countries men are the bread winners so investing in their education remains the priority. However, some private universities in Pakistan have taken a great initiative by offering scholarships to girls; LUMS offers a 50% scholarship across the board to all female graduate students in addition to merit based scholarships, FC College University and IBA Karachi also offer scholarships to their female graduate students, University of Lahore offers merit based scholarships to undergraduate female students also.

This paper finds that industry has the highest impact on GDP per capita which calls for creating opportunities for women in this particular sector by providing them vocational training and concentrating on skills development. In Bangladesh, mass employment of female workers in garment factories is followed by a decrease in the number of early marriages and childbirths and increase in girls' enrollment in schools (Heath & Mobarak, 2015).

Addressing the Childcare Concerns

In developing countries, childcare is one of the dominating factors due to which women choose to stay at home. In Indonesia, enrollment in public preschools is seen as raising women employment (Halim et al, 2019). In Bangladesh, BRAC has recently launched its pilot project of training women in low income areas for community-bound childcare and though it is still in the feasibility stage, it aims to encourage mothers' participation in the labor market (BRAC, 2026). Similarly, Pakistan Women's Economic Empowerment Reports also point out that childcare is one of the key constraints to FLFP (World Bank, 2024). Hence, policies centered around childcare, such as the provision of safe and reliable child care services, flexible work hours, option of working from home and incentive of paid maternity and paternity leave can reduce the need for women to leave work and stay at home for longer periods. An OECD economic survey of Turkey (2025) finds that flexible work models introduced through 2016 reforms could not bring the full extent of desired results due to deeply rooted societal attitudes and the most important policy recommended to fix the gap is the affordable and reliable childcare.

Ensuring safety and security through laws and policies

The paper shows the strongest relationship between female employment in industry and GDP per capita and to encourage female participation in this sector, developing countries need to implement policies which encourage females to join the industry. Crime against women significantly reduces female labour force participation and its strongest evidence comes from India (Bhattacharya et al, 2021). Safe transportation is very crucial for women to commute to factories which usually are located in the outskirts of the main cities so facilities like free shuttle service or official pick and drop would encourage females to join the industry sector.

In Pakistan, the women have been facing the issues of harassment at work places for which the government of Pakistan has enacted 'Protection Against Harassment of Women at the Workplace Act, 2010' but to improve the female employment rate, its strict implementation is needed. Indonesia has been able to eliminate gender based violence on factory floors through Better Work Indonesia - an ILO-IFC partnership training program (ILO, 2026).

Women Participation in Services Sector

The study indicates that the coefficient of the services sector is smaller than industry yet it is significant and if women are trained according to the demand in this sector along with the latest tools available to them, the impact can be much larger. For example in Pakistan female participation in the growing IT sector remains restricted due to gender digital divide and it can be easily addressed through government initiatives like Digiskills accompanied by investment in remote work infrastructure such as high speed internet connections and uninterrupted mobile networks.

A study published in the Journal of Digital Economy (Memon et al., 2025) says that, with reference to freelancing, rural Pakistani women can do better in content writing, graphic designing and online teaching yet due to barriers like hiring biases, lack of awareness of gig opportunities and security concerns, their capabilities are underutilised.

A report by Team Lease Digital indicates that FLFP in India's IT services sector has shown a continuous upward trend growing from 7.8% in 2020 to 21.2% in 2024 and female representation in Global Capability Centres (GCCs) rising from 31.4% in 2020 to 38.3% in 2024. This is mainly attributed to remote work expansion, DEI (Diversity, Equity, Inclusion) initiatives and policies aiming at structural transformation (Business Standard, 2025).

Formalising the Informal Sector

A significant portion of female work in developing nations is "invisible." The ILO estimates that in Pakistan and India, over 90% of female workers are in the informal sector, including home-based workers and unpaid contributing family workers in agriculture, leading to an underestimation of women's true economic contribution. Studies by the Pakistan Bureau of Statistics suggest that if "care work" and informal cottage industries were formalized, the recorded GDP of Pakistan would see a substantial increase, and a 2018 World Bank report finds that over 83% of non-working Pakistani women cite household duties as their primary reason for staying home.

Implementing a simplified registration process and social security benefits for home-based workers would make their "invisible" work visible, providing women with legal protections and the state with a wider tax base. The World Bank's SHIFT program aims to protect home-based workers in Pakistan especially in KP and Balochistan (World Bank, 2022). UN Women Pakistan's recently enacted provincial home-based workers laws have set a precedent in extending legal and social security to women labor force in the informal sector (UN Women Protection, 2024). Formalising the employment of women engaged in the informal sector would not only give them economic and social protection, their contributions would also be reflected clearly in GDP accounts.

Governments of developing countries need to invest extensively in labor force surveys to include informal and home-based female employment (ILO, 2023). Once that is done, the unpaid work can be measured using ILO-recommended methodologies which in turn can become part of GDP using satellite accounts (UN, 2018).

Conclusion

This paper set out to determine whether female labour force participation drives economic growth rather than simply resulting from it, and the empirical analysis proves that it does. Using a panel of five emerging economies from 1992 to 2023, it is found that an increase in female participation raises GDP per capita, and that this effect strengthens when female labour undergoes a structural transformation. Hence, the study confirms the gap it set out to fill: economic growth is not only a driver of FLFP but can also be driven by it, and where women work matters as much as whether they work. Therefore, for emerging economies such as Pakistan, India, Bangladesh, Turkey and Indonesia to improve long run economic performance, policies must be centered not merely on raising female participation but on channelling it towards the higher-productivity industry and services sectors so that female labour's true economic contribution is both realised and accurately captured in official statistics.

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