Global Social Sciences Review (GSSR) URL: http://dx.doi.org/10.31703/gssr.2018(III-III).14
p-ISSN 2520-0348, e-ISSN 2616-793X DOI: 10.31703/gssr.2018(III-III).14
Vol. III, No. III (Summer 2018) Page: 237 – 264

Low Female Labor Force Participation in Pakistan: Causes and Factors

Zubaria Andlib* Aliya H Khan†

Abstract *Pakistan has the lowest Female Labour Force Participation (FLFP) rate in the South Asian region. The study has used the latest round of Labor Force Survey 2014-15 and analyzed the individual and household factors that are associated with low FLFP in Pakistan. This study finds that there is less probability for urban women to take part in labor force activities. At national and regional level higher secondary and above levels of education have positive and significant relationship with FLFP whereas the situation is different for the four provinces of Pakistan. In case of Punjab province graduation and above levels of education are positively affiliated with FLFP, in Sind province higher secondary and above levels of education are positively associated with FLFP, in KPK province, matric and above levels of education are positively influencing FLFP decisions and in Baluchistan province primary and above levels of education are positively influencing women's decisions to participate in labor force activities. Women living in joint family systems, non-migrated, recipient of technical or vocational trainings are also more likely to participate in labor force activities. The study provides useful insights for policy makers to formulate appropriate policies to increase FLFP rate in Pakistan.*

Key Words:
Low FLFP ,
Probit Model

Introduction

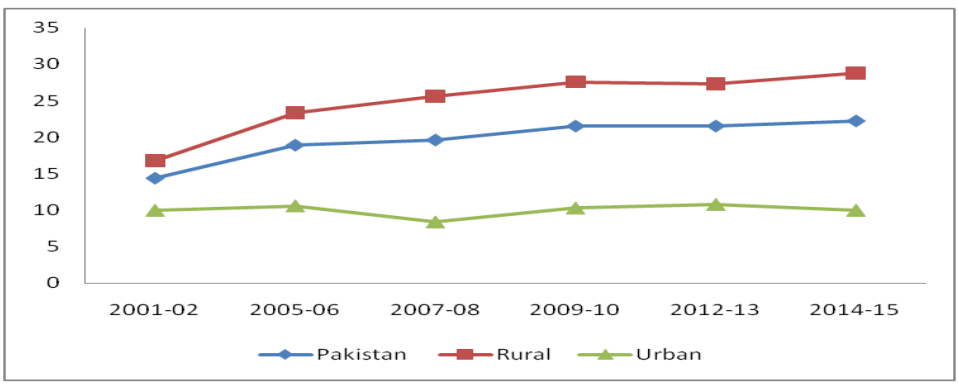
Female Labor Force Participation (FLFP) rate is an important indicator for the socioeconomic development of a country (Lechman & Kaur, 2015). Generally, high FLFP rate indicates advancement in the social and economic position of a nation, leading to the empowerment of women which in turn encourages equity and increases utilization of human potential and helps to foster economic growth and poverty reduction (International Labour Organization, 2016). Women's economic participation is connected with many other positive outcomes for example improved nutrition, educational attainment and increased involvement in

* Ph.D Scholar, School of Economics, Quaid-i-Azam University, Islamabad, Pakistan.
Email: economist243@gmail.com
† Prof. (R), School of Economics, Faculty of Social Sciences, Quaid-i-Azam University, Islamabad, Pakistan.

household decision making. However, there are a large number of contextual factors which affect women's entry into the workforce, such as mobility, segregation, gender norms around fertility and reproductive labor (Zaidi & Farooq, 2016).

The distribution of the working age population between the labor force and not in the labor force is 68% and 32% for males and 22%: 78% for females, whereas out of the total labor force of 61.04 million, 76% (46.4 million) are males and only 24% (14.7 million) are females. Out of the total employed persons in the labor force, 77% are males and 23% are females. The male labor force participation rate is 68% and the FLFP rate is 22%. The unemployment rate for males is 5% and for females it is 9% (Pakistan Bureau of Statistics, 2015). FLFP in Pakistan is lower as compared to other countries in the South Asian region (World Development Indicators, 2015; World Economic Forum, 2017), though it has increased from 14 % in 2001-02 to 22 % in 2014-15. Beyond the national level there is substantial rural-urban regional and provincial variation. At regional level, FLFP rate is lower in urban areas as compared to rural areas whereas at provincial level it ranges from 14% in Sind province to 29 % in Punjab province (Pakistan Bureau of Statistics, 2015). These statistics clearly show women's inadequate access to the labor force opportunities, and also point out that there is a huge gap between policies that acknowledge woman's role as a labor market contributor but are unable to remove barriers for women to indulge in labor market activities.

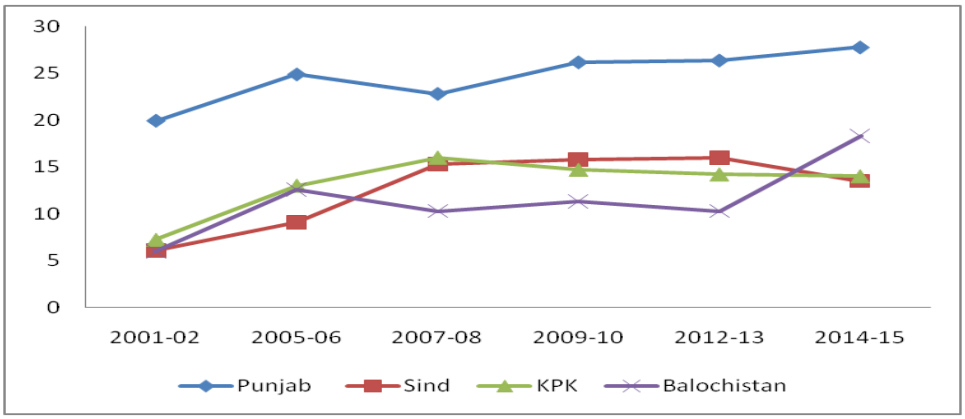
Figure 1.1: Overall and Region Wise Trends in FLFP Rate by LFS Survey Years



The Figure 1.1 presents the overall and regional picture of FLFP rate in Pakistan. We observe that overall FLFP rate is following an upward trend through it is not too steep rather the Figure 1.1 is showing a sluggish and steady increase in FLFP rate in Pakistan during the time period 2001-02 to 2014-15. It was 14.4 % in 2001-02 and it is 22.2 % in 2014-15. The rural FLFP rate was 16.8 % in 2001-02 and it is 28.8 % in 2014-15 but in case of urban FLFP rate, it is almost constant

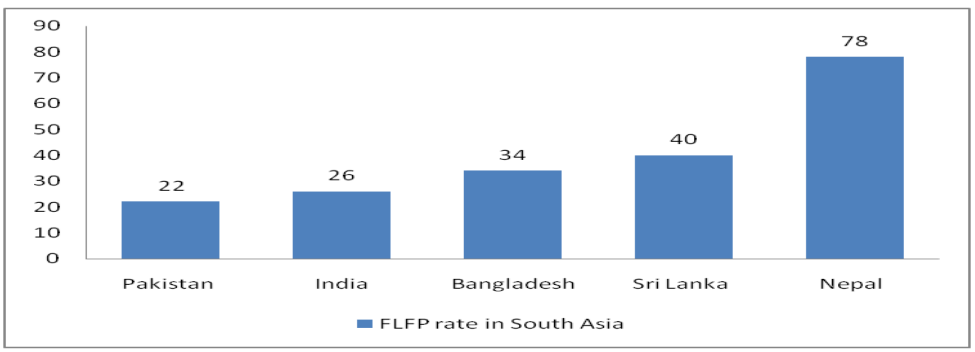
with very little variations from 10 % in 2001-02 to 10% in 2014-15. The rural FLFP is overstated due to the inclusion of unpaid/contributing family workers that is almost 55% of the total women's employment in Pakistan.

Figure 1.2: Province Wise Trends in FLFP Rate by LFS Survey Years



In Figure 1.2 we present the FLFP rate for four provinces of Pakistan from different LFS survey years. The situation is much better in case of Punjab province as compared to the other provinces, the FLFP rate for Punjab province was 19.9 % in 2001-02 and it is 27.8 % in 2014-15. KPK province follows a relatively smooth trend in FLFP rate as compared to other provinces, Sindh and Baluchistan. Along with rural-urban regional and provincial variations, Pakistan has the lowest FLFP rate as compared to other developed and developing countries in the world including those in South Asian region. This is depicted in Figure 1.3.

Figure 1.3: FLFP Rate in South Asian Region:



Source: WDI 2015.

Understanding the causes of low FLFP is important for several reasons. Low and stagnating FLFP has different implications for the degree to which women benefit from economic growth. Women empowerment is also strongly associated with their employment status and earnings (Qian, 2008). If women have to face different economic, structural or cultural barriers in a society then obviously they are unable to participate fully in labor force activities. This study is envisioned as a modest contribution to the still evolving empirical work on causes of low FLFP in Pakistan. The objectives of the present study is to address different individual and household level factors that are restricting women to take part in labor force activities at regional and provincial level and thus serving as a reason of low FLFP rate in Pakistan. The layout of the study as is follows. Section 2 briefly discusses the existing literature on the issue of FLFP. Section 3 presents the methodology, section 4 discusses the data source and variables construction, section 5 highlights the individual and household level factors that are associated with low FLFP in Pakistan. Section 6 concludes the study and provides policy implications.

Literature Review

The seminal contributions of Mincer (1962) and Becker (1957) have highlighted the issue of female labor force participation decision in economic theory. Their pioneering work has invited the attention of other researchers to further explore the issue of female labor force supply empirically for different countries around the globe, by using different explanatory variables. These empirical studies have applied different econometrics techniques; time series, cross section and panel data sets and consequently we have a vast literature on the issue of female labor force participation.

Aly and Quisi (1996) have investigated different individual and household factors that are affecting FLFP decisions in Kuwait. The study has concluded that women's education and wage rate are positively affecting their choice to join labor market activities whereas marital status, number of young children at home and age of the selected woman are those factors that are negatively affecting the woman's decision to participate in labor market activities in Kuwait. According to Hafeez & Ahmad (2002) age, levels of education and household size have a positive and significant relationship with FLFP. However head of the household's income, financial assets and number of other earners in the household have a negative relationship with women's decisions to participate in labor market activities.

Assaad and Zouri (2003) are of the view that marriage serves as a constraint for women to engage in paid employment. Young and school going children are negatively associated with their decisions to participate in labor force. Women's own and their fathers' education exert a positive influence on their labor force status. Bradbury and Katz (2005) have pointed out a decline in FLFP among

educated married women belonging to the age group 25-54 years for the time period 1994 to 2004 in US. The most important factors behind this decline in FLFP include presence of young children at home, increase in husbands' income, and discrimination in terms of (lower) wages as compared to their males counterparts with same levels of education, cost of child care, cultural norms and cultural constraints like "men should earn money and women have to stay home and take care of children" and women's own career breaks due to child bearing and child rearing activities in the peak years of their youth. Ntuli (2007) analyzes the factors that are affecting females' labor force participation decisions in South Africa. The results indicate that education levels are positively associated with FLFP decisions of South African women, whereas non labor income, no of children at home, being married and geographical variations in economic development have negatively influenced FLFP. Ejaz (2007) examines the household factors that are affecting FLFP decisions in Pakistan. The study concludes that educational attainment, age and marital status are significantly and positively related to FLFP. There are more chances for women to participate in labor market activities if they belong to nuclear families. The presence of young children of age group 0 to 4 years at home negatively affect women's decisions to participate in labor force activities.

Lee, Jang and Sarkar (2008) have observed the association between marital status and FLFP in Korea. According to their study there are two major hurdles for women to participate in labor market activities, i.e. being married and being involved in childbearing activities. Majority of the women are not taking part in labor market activities due to lack of day care facilities at their work places. Husband's employment status is one of the most significant factors in determining woman's employment choices. As compared to a paid employee husband there are more chances for a woman to participate in labor market activities if her husband is working either as an unpaid family worker or is self-employed or is an employer. The study elaborated that the low FLFP among married women is explained by demand side factors whereas high FLFP among middle aged women are attributed to the supply side factors. Faridi, Malik, & Basit (2009) concluded that education is the most significant factor to determine FLFP whereas other factors including presence of children belonging to age groups 0 to 6 years, household assets and husband's employment status are negatively associated with FLFP decisions. Sajid, Maqsood, Maqsood, & Afzal (2011) also observed that area of residence, family set up and family size, husbands' education and women' own education are the most important factors affecting women' employment decisions.

Papps (2010) elaborates the relationship between husbands' education and wives' labor supply in USA. According to the study this relationship follows an inverse U shape pattern. The evidence suggests that the wives of well-educated husbands work longer hours at the time of marriage, but after few years of marriage they withdraw themselves from labor market more rapidly as compared to other women who are married with not well educated men. Bridges, Lawson, and Begum

(2011) analyze the role of poverty and gender norms on labor market outcomes in Bangladesh. It is observed that married women are less likely to indulge in labor market activities as compared to never married and divorced or widowed women. It is also observed that urban resident women have a higher probability to participate in labor market as compared to those women who are residing in rural areas. Karaoglan and Okten (2012) highlights that presence of children constrained married women to indulge in labor market activities whereas number of other adults at home have a positive association with married women' decisions to take part in labor market activities, because extended family members mostly help married women in child rearing activities.

Bhalla and Kaur (2011) investigate different aspects of low FLFP in India. The study finds few very important conclusions for policy makers such as increase in income has a positive effect on FLFP, thus the study supports an inverted U shape relationship between income and FLFP. Education is also positively associated with FLFP decisions. However, education of male spouse exerts a negative influence on FLFP. Women normally do not prefer to work if they are married to highly educated males who earn well. Klasen and Pieters (2015) investigate the reasons behind low level of FLFP rates in urban India and observe that there is a combination of demand and supply side factors behind this low level of FLFP rate. The supply side factors include rise in husbands' incomes and education, stigma against educated women to be engaged in blue collar jobs and falling selectivity of highly educated women (it means that women are investing in higher education for finding a good match instead of entering in labor market activities). The study concludes that on the demand side, job opportunities in those sectors where women are able to get appropriate jobs are expanding very slowly thus causing a majority of women to stay out of labor force in urban India.

Saha and Kalita (2015) find the important factors that are affecting women's employment decisions in Taripura, India. The study highlighted that monthly income of the other earners in the household have a negative effect on women' labor supply decisions whereas marital status and large household size have a positive effect on women' decisions to participate in labor market activities. Pignatti, Torosyan, and Chitanava (2016) analyze the evolution of FLFP for young women (15-20 and 20-25 years) in Georgia from 2003 to 2015. The study shows that the marital status has a small and mixed impact on FLFP status of women. Education and vocational training both are positively associated with FLFP decisions. As compared to the non-migrant women, there is less probability for migrants to be engaged in labor market activities. Non labor market income of the head of the household and labor income of the other family members have a negative effect on FLFP decisions. Large household size and number of children significantly lower female labor participation. Hussain, Anwar and Haung (2016) explore the socio economic factors that directly or indirectly affect male and female labor force participation decisions in Pakistan. The study concludes that

age, region, level of education, training and being male have a positive impact on the labor force participation decisions in Pakistan. Fika and Sokeng (2016) find out the important factors that are affecting women's labor market participation decisions in Cameroon. The important factors that are positively affecting women' labor market participation include: age of the woman, levels of education, areas of residence i.e. residing in rural areas, female headed household, financial instability and marital status – being divorced or widowed. There are other factors like ethnicity and religion, large household size, and women whose husbands have primary level of education have fewer chances to participate in labor market activities. Kanjilal-Bhaduri and Pastore (2017) explore the relationship between different levels of education attainment and FLFP in India. The study found this relationship is U shaped with paid employment. It means the probability to participate in paid employment increases after a certain required level of schooling. At lower level of schooling the rate of returns are lower and insignificant but after certain required level of schooling, the rate of returns to schooling increase significantly. Accordingly it is important that women should be encouraged to get education above secondary level to become more visible in labor market activities.

Theoretical Framework

The economic literature on female labor force participation decisions has originated from Becker's (1965) household production model. According to the model an individual utilize his or her time, either in the labor market activities and earn a wage rate or can enjoy leisure time. An increase in wage rate affects an individual preference in two ways, increase his or her labor supply, known as substitution effect or decrease his or her labor supply that is known as income effect. The overall response in labor supply is depending upon the magnitude of the income or substitution effect. If income effect dominates the substitution effect then as a result a decrease in labor supply will be observed, in this case leisure is assumed as a normal good. In his pioneer work of determinants of female labor force participation of married women Mincer (1962) observed that husband income is negatively affecting wives labor market supply, thus providing an evidence for the dominance of income effect over substitution effect. The time allocation model of Becker (1965) predicts an inverse relationship between labor market activities and home production activities. The more time women spend in the labor market, the lesser time is available for home production activities and vice versa. Additionally the availability of modern technologies (such as microwave ovens, washing machines) help women spare more time to invest in labor market activities. Becker (1957) put forward the human capital theory and explained the link between education and labor force participation decision of women. Often education and training expenditures are considered to be an investment in human capital and helps individuals to get better occupational and

earning opportunities. Women are considered to be less productive than men in labor market because they have to take career breaks due to child bearing and child rearing activities. In a nutshell female labor force participation decisions are influenced by various factors i.e. economic (labor market structure) individual (marital status, skills, career expectations) and household characteristics (domestic workload, presence and number of children).

The Binary Probit Model

The general function is given below:

$$y_i = f\ (x_1, \dots\dots\dots\dots, x_n) \qquad (1)$$

Where y_i symbolizes FLFP, y_i is equal to 1 if a woman is either currently working or looking for work in the past one week and it is equal to zero if she is neither currently working nor looking for work during the reference period, $x_1, \dots\dots\dots\dots, x_n$ describe various individual and household factors that affect female labor force participation decision.

The Probit model is based on the cumulative normal probability distribution function. The standard Probit model will take the following form:

$$\hat{y} = \acute{x}\beta + \varepsilon \qquad (2)$$

Here x and β are standard variables and parameters matrices whereas ε is also a vector matrix of normally distributed error terms.

The probability P_i of participating in the labor force compared to not participating in the labor force can be shown in the following expression, whereas $\emptyset$ is representing the cumulative standard normal distribution function.

$$P_i = prob(\ y_i = 1 \mid x) = \int_{-\infty}^{\acute{x}_\iota\beta} (2\pi)^{-1/2}\ \ \text{Exp}\ (-\frac{t^2}{2})\ dt \qquad (3)$$

$$= \emptyset\ (\acute{x}_\iota\beta) \qquad (4)$$

The relationship between a selected variable and the outcome of the probability is expressed through marginal effects (MEs), which represents the partial change in probability.

We can express the ME for a continuous explanatory variable x_k on the probability$p(\ y_i = 1 \mid x)$, while keeping all other variables constant as:

$$\frac{\partial p_i}{\partial x_{ik}} = \varphi\ (\acute{x}_\iota\beta)\beta_k \qquad (5)$$

While φ is PDF (probability density function) of a standard normal distribution.

The calculation of ME for a qualitative dummy variable is different from that of continuous variables.

$$\Delta = \emptyset\,(\,\overline{x}\,\beta, d = 1) - \emptyset\,(\,\overline{x}\,\beta, d = 0) \qquad (6)$$

Here the MEs explain how explanatory variables shift the probability of labor force participation. We calculate MEs for every variable while keeping all other variables constant at their sample mean values.
The general form of the model is:

$$y_i = \alpha + \beta X + \varepsilon \qquad (7)$$

Whereas y_i is 1 when a woman is either working or seeking for work and it is 0 if she is not participating in labor force. X is the vector represents different household and regional characteristics, those are influencing a woman to participate in labor force whereas ε is the error term.

Data Source and Variables Construction

Data Source

The data on dependent and explanatory variables is obtained from LFS 2014-15. In 2014-15 the LFS data was collected from a nationally representative sample of 42,108 households consisting of 264,134 individuals stratified by urban and rural residence and by province, out of which, 135,452 are male and 128,682 are females. Our prime objective is to analyze the causes of low tendency of labor force participation among women of age group 15 to 65 years in Pakistan. We excluded those women who are currently attending any school, college or university. Our sample consists of 65,649 women for the analysis of low female labor force participation in Pakistan.

Variables Construction

A person, who is in labor force, is somehow engaged in economic activity in two ways: either working or looking for work, thus labor force is the sum of employment and unemployment. Labor force is regarded as the productive potential of the people in a country, as the employed segment represents the utilized labor and unemployed segment represents the underutilized labor. As opposite to the labor force, an out of labor force or inactive person is the person who is neither working nor looking for work. In nutshell labor force participation rate is the share of productive potential in the working age population. We begin by defining our dependent variable, female labor force participation decision, which has been used throughout this section. A woman is classified as being in the labor force if she worked for pay, profit or family gain during last week, at least

for one hour on any day or if she was looking for work in the reference period. Our definition of FLFP is consistent with that of the International Labor Organization (ILO). The dependent and explanatory variables are explained in the Table 1.

Table 1. Definitions of Dependent & Explanatory Variables Used in FLFP Analysis

Variable name	Definition
Dependent Variable	
FLFP	=1 if a woman worked for pay, profit or family gain during last week, at least for one hour on any day or was actively seeking work; 0 otherwise. (if a woman did not work for pay, profit or family gain during last week, at least for one hour on any day or was not actively seeking for work)
Key independent Variables	
Woman's Characteristics	
Age	Age of the woman in completed years (15 to 65 years).
Age squared	Square of the age of the woman in completed years.
Ever married	=1 if a woman is ever married (currently married, divorced or widowed); 0 otherwise. (Woman never married is the base category)
Primary	= 1 if a woman's highest level of completed education is primary 0 otherwise.
Middle	= 1 if a woman's highest level of completed education is middle; 0 otherwise.
Matric	= 1 if a woman's highest level of completed education is matric; 0 otherwise.
Higher secondary	= 1 if a woman's highest level of completed education is higher secondary; 0 otherwise.
Graduation	= 1 if a woman's highest level of completed education is graduation; 0 otherwise.
Higher	= 1 if a woman's highest level of completed education is above graduation; 0 otherwise. (No formal education is the reference category).
Technical/ Vocational Training	= 1 if a woman ever received any technical/vocational training; 0 otherwise.

Native	= 1 if a woman is native in a province; 0 otherwise.
Head of the Household Characteristics	
HH Fem	= 1 if head of the household is a female; 0 otherwise. (Male is the reference category)
HH Age	Age of the head of the household in completed years.
HH Primary	=1 if household head completed class 0-5; 0 otherwise
HH Matric	=1 if household head completed class 6-10; 0 otherwise
HH Graduation	=1 if household head completed class 11-14; 0 otherwise
HH Higher Edu	=1 if household head completed class MA/M.Sc/M.Phil/Ph.D ; 0 otherwise (Household head with no formal education is the reference category)
HH Employer	=1 if the head of the household employment status is employer; 0 otherwise.
HH Paid employed	=1 if the head of the household employment status is paid employee; 0 otherwise.
HH Self employed	=1 if the head of the household employment status is self-employed; 0 otherwise.
HH Contributing Worker	=1 if the head of the household employment status is contributing family worker; 0 otherwise. (Head of the household neither working nor seeking for work is the reference category).
Family Characteristics	
HH size	Household size
Children	Total number of children 0-5 years of age at home.
Joint family	= 1 if a woman lives in a joint family; 0 otherwise. (Nuclear family is the reference category).
Region	
Urban	= 1 if a woman resides in an urban area; 0 otherwise. (Rural area is the reference category).
Punjab	= 1 if a woman resides in province of Punjab; 0 otherwise.
Sindh	= 1 if a woman resides in province of Sindh; 0 otherwise.
KPK	= 1 if a woman resides in province of KPK; 0 otherwise. (Baluchistan is the reference category)

Source: LFS 2014-15.

Results

Descriptive Statistics

The summery statistics for the analysis of causes of low female labor force participation for overall sample and for urban and rural subsamples are given in Table 2.

The descriptive statistics presented in Table 2 shows some interesting facts about the household characteristics for the selected women in Pakistan. The mean age of the selected women is 33 years for overall and provincial sample, whereas it is a slightly higher i.e. 34 years for our selected urban sample. Our sample comprises 21 % never married women for overall Pakistan whereas this proportion is 19 % for our urban sample as compared to 17% in our rural sample. As compared to other provinces highest number of ever married women are residing in Balochistan province.

In our selected sample 34 % women are residing in urban areas whereas rest of the women are residing in rural areas. As far as provincial distribution is concerned, in our analysis bulk of the women (50 %) reside in Punjab province, whereas 23 % women reside in Sind province, and 16 % and 11 % women reside in KPK province and Balochistan province respectively. In our urban and rural samples highest number of women are also residing in Punjab province.

In our selected sample for Pakistan 62% women have no formal education, thus leading to an increase in the presence of vulnerable employment in the country and only 2 % women have MA/M.Sc or higher levels of education. The same pattern we can see when we segregated our overall sample into urban and rural subsamples. In our urban subsample 43 % women have no formal education whereas this proportion is 72 % in our rural subsample, 3% women have higher level of education in urban areas whereas only 1 % rural women have highest degrees and are in labor force. We observe that highest number of women with no formal education are residing in Baluchistan province whereas comparatively the lowest number of women with no formal education are residing in Punjab province.

A sizeable share of 85 % women is residing in the same province since birth and only 11 % are migrated from other provinces. In case of urban subsample, 23 % women are migrated from other provinces to the province where they are currently residing and thus either working or looking for work. We observe from statistics that the highest number of migrated women (20%) who are participating in labor force are residing in Punjab province whereas comparatively the lowest number of migrated women (only 2 %) are residing in Baluchistan.

Almost 14 % women have ever received any kind of technical/vocational training in our selected sample. This proportion remains almost same when we segregated our sample for rural and urban areas. The provincial descriptive

statistics reveals that 18% women residing in Punjab have ever received any kind of technical/vocational training whereas only 7 % women who are residing in Sind province have ever received any kind of technical/vocational training.

In our selected sample 93 % heads of the households are males whereas only 7 % of the heads of the households are females and surprisingly this proportion is same for our urban and rural subsamples. If we compare the male headed household in all provinces then results indicates that the highest number of women with male headed household are residing in Baluchistan province.

The average age of the head of the household is 46 years for overall sample whereas it is slightly higher i.e. 47 years in our urban subsample. The average age of the head of the household is 48 years in Punjab province and KPK province whereas the average age of head is slightly lower in Baluchistan province i.e. 43 years.

In order to see the impact of the head of the household education on FLFP we included head's education level in our analysis. The descriptive statistics reveal that 44 % of the heads of the households have no formal education and only 2 % have above graduation level of education. In our urban subsample 30 % heads have no formal education and 4 % heads have higher level of education whereas in our rural subsample 50 % heads have no formal education and only 1 % heads have higher level of education. For provincial analysis we have seen that majority of the heads of the household have no formal education and only 2 % to 4% heads of the household have the highest level of education.

Household heads' employment status reflects the socio economic condition of a household. In our selected samples majority of the heads are working as own account workers. On average household size is 7 individuals per household whereas this number is slightly higher i.e. 8 in KPK province. In our selected sample 61 % rural women have at least one child of age ≤ 5 years at home as compared to 56 % urban women who have the youngest children belong to the age group ≤ 5 years at home. In our overall sample almost 44 % women belong to nuclear family systems whereas rest of the women are living in joint family systems. Majority of the women who are participating in labor market activities are living in joint family system; are residing in Sind province.

Table 2. Descriptive Statistics of the variables used in FLFP analysis

Explanatory Variables	Pakistan	Urban	Rural	Punjab	Sindh	KPK	Balochistan
Woman's Characteristics							
Age	33.73	34.58	33.30	34.22	33.17	33.20	33.33

Agesq	1297.67	1348.35	1272.11	1339.78	1251.17	1265.69	1242.97
Never married	0.81	0.83	0.81	0.80	0.82	0.82	0.85
Ever married	0.19	0.17	0.19	0.20	0.18	0.18	0.15
No formal education	0.62	0.43	0.72	0.52	0.69	0.68	0.85
Primary	0.13	0.15	0.13	0.17	0.11	0.11	0.05
Middle	0.07	0.10	0.06	0.09	0.05	0.05	0.03
Matric	0.09	0.15	0.05	0.11	0.06	0.07	0.03
Higher Secondary	0.04	0.08	0.02	0.05	0.04	0.03	0.01
Graduation	0.03	0.07	0.02	0.04	0.03	0.03	0.01
Higher Edu	0.02	0.03	0.01	0.02	0.01	0.02	0.01
Ever received technical/ vocational training	0.14	0.15	0.14	0.18	0.07	0.13	0.13
Never received technical/ vocational training	0.86	0.85	0.86	0.82	0.93	0.87	0.87
Native (province)	0.85	0.77	0.89	0.80	0.90	0.86	0.98
Migrated (inter/intra province)	0.15	0.23	0.11	0.20	0.10	0.14	0.02
Head of the Household Characteristics							
HH Male	0.93	0.93	0.93	0.90	0.98	0.88	0.99
HH Female	0.07	0.07	0.07	0.10	0.02	0.12	0.01
HH Age	46.79	47.39	46.49	48.29	44.15	48.18	43.46
HH No formal education	0.44	0.30	0.50	0.44	0.40	0.47	0.46
HH Primary	0.19	0.16	0.20	0.18	0.22	0.15	0.18

HH Matric	0.25	0.31	0.21	0.28	0.20	0.24	0.22
HH Graduation	0.11	0.18	0.07	0.08	0.14	0.11	0.12
HH Higher	0.02	0.05	0.01	0.02	0.03	0.04	0.02
HH Employer	0.02	0.04	0.01	0.02	0.01	0.02	0.01
HH Paid employed	0.31	0.39	0.27	0.29	0.35	0.30	0.33
HH Own account	0.50	0.35	0.58	0.50	0.56	0.40	0.59
HH Unpaid/Contributing worker	0.01	0.01	0.01	0.01	0.00	0.00	0.00
HH Not working nor seeking for work	0.16	0.21	0.14	0.18	0.08	0.28	0.06
Family Characteristics							
Hh size	7.4	7.4	7.4	7.1	6.8	8.7	7.8
Children (0 – 5 years)	0.59	0.56	0.61	0.55	0.57	0.68	0.71
Nuclear	0.44	0.46	0.44	0.47	0.34	0.51	0.43
Joint	0.56	0.54	0.56	0.53	0.66	0.49	0.57
Region							
Urban	0.34	-	-	0.33	0.28	0.43	0.32
Rural	0.66	-	-	0.67	0.72	0.57	0.68
Punjab	0.50	0.49	0.50	-	-	-	-
Sindh	0.23	0.19	0.25	-	-	-	-
KPK	0.16	0.20	0.13	-	-	-	-
Balochistan	0.11	0.11	0.11	-	-	-	-

Source: LFS 2014-15.

***, **,* significant at 1%, 5% and 10% respectively.

The Estimation Results of Binary Probit Model

For an in depth analysis of FLFP we divided our total sample into subsamples of rural-urban regions and four provinces, Punjab, Sind, Khyber Pakhtunkhwa (KPK) and Balochistan. The result for FLFP is quite interesting in case of regional and provincial distribution, there is less probability for those women who belong to urban areas to take part in labor market activities as compared to their rural

counterparts which is in line with Khan & Khan (2009) and Sefiddashti, Rad, Arab, & Bordbar (2016). This is depicting the true picture of country's female employment scenario. At the same time it is telling us about the nature of employment trends and patterns in Pakistan. At this time country is suffering from the issue of urban unemployment (according to Labor Force Survey Report 2014-15, total unemployment rate among women is 9 %, unemployment rate among rural women is 7 % and among urban women it is 20%). Educated young women, residing in urban areas are not able to find suitable jobs. Whereas majority of the employed women who belong to rural areas are engaged in agriculture sector, that somehow exaggerated their participation rates. This is the prime reason that we segregated our sample into subsamples of rural and urban areas for an in depth analysis of FLFP decisions in Pakistan. Our results for provincial analysis are not different from overall analysis for Pakistan. In every province urban women are less likely to take part in labor force as compared to their rural counter parts.

Age is an important variable to influence women's decision to participate in labor market activities (Faridi & Rashid, 2014). In our analysis age is following an inverse "U shape" pattern. The results are valid for the urban and rural samples too. Our results are in accordance with the previous studies for Pakistan and other countries around the globe (compare: Naqvi & Shahnaz, 2002; Hafeez & Ahmad, 2002; Ejaz, 2011; Usman & Sanusi, 2016; Varol, 2017).We divided marital status of women into two categories, never married women, and ever married women (ever married category includes currently married, widowed and divorced women). As compared to never married women belonging to age group 15 to 65 years, in our analysis there is less probability that ever married women participate in labor force activities. The result is supported by the previous studies for example: Robinson (2005), Arango and Posada (2007), Lee et al., (2008), Ejaz (2011), Sefiddashti et al., (2016) and Varol (2017).

Education is a significant factor in explaining the FLFP decisions of women. Literature also widely supports the positive impact of education on FLFP (Faridi & Rashid, 2014). In our present analysis as compared to women with no formal education; women with primary, middle and matric level of education have less probability to be the part of labor force activities. Only higher secondary and above levels of education are positively associated with female labor force participation (Khan & Khan, 2009; Sudarshan, 2014; Klasen & Pieters, 2015; Sefiddashti et al., 2016; Kanjilal-Bhaduri & Rastore, 2017). This fact is again depicting the true picture of Pakistani labor market at recent times and also it is serving as one of the major reasons of low female labor force participation rates of Pakistan. Only those women who possess graduation or higher degrees are able to find jobs. Rest of the women are unable to absorb themselves into labor market. Klasen & Pieters (2015) illustrated the same fact that women with lower level of education have to face double dilemma of unemployment or working in low end jobs and also trapped in poverty. According to labor force survey 2014-15, almost 56 % women are

working as unpaid/contributing family workers; this could be another reason that women with no formal education have more probability to be employed as compared to their counterpart with primary, middle, matric and secondary level of education.

However the impact of different levels of education on FLFP is providing an interesting insight in all provinces. As far as the case of Punjab province is concerned it is not much different from overall analysis in the previous section. We have seen that as compared to women with no formal education women having primary, middle, matric and higher secondary levels of education have less probability to take part in labor force activities. Only women having graduation and higher levels of education are more likely to be the part of labor force. In case of KPK province, as compared to women with no formal education, women who possess matric, higher secondary, graduation and higher levels of education are more likely to be the part of labor force activities. In case of Balochistan province, the situation is totally different, as compared to women with no formal education; women having any other level of education are more likely to be the part of labor force activities whereas in case of Sind province women with post higher secondary levels of education are more likely to be the part of labor force activities as compared to women with no formal education in the same province. In every province the threshold level of education that is positively associated with FLFP is different, in Punjab province it is graduation level of education, whereas in Sind province it is higher secondary level of education, in case of KPK province it is matric level of education and in Balochistan province it is the primary level of education. Thus the results indicate that in Punjab province the threshold level of education that is positively associated with FLFP is the highest among all other provinces i.e graduation level of education and in Balochistan province it is primary level of education that is the lowest as compared to other provinces. The study is supporting a U shape pattern with respect to education and FLFP decisions (Kanjilal-Bhaduri & Pastore, 2016) but as mentioned previously the threshold level is different for every province.

In traditional societies like Pakistan, head of the household has a dominant role and position at home. We also examine the impact of head of the household education on female labor force participation decision. Our analysis suggests that as the education level of the head of the household increases then there is a less probability for a woman to participate in labor market activities. Our results are also supported by the literature for example Blau & Kahn, 2007; Faridi & Rashid, 2014; Klasen & Pieters, 2015. Here we use education of the heads of the households as a proxy for income. It is evident from the previous studies that as the income of the head of the household increases then there are fewer chances for a woman to take part in labor market activities. This is called income effect in neoclassical theory that an individual prefers to reduce labor supply if non labor income increases and vice versa.

Female headed household are considered to be more vulnerable as compared to male headed households. We included the gender of the head of the household in our provincial analysis; our results reveal that women from female headed household are more likely to take part in labor force activities in all provinces.

The employment status of the heads of the households plays an important role in determining the females' labor force participation decisions. It reflects the socio economic conditions of the households. As compared to not working heads of the households, if heads of the households are working as paid employees, own account workers and unpaid/contributing family workers then there is more probability that women are engaged in labor market activities. We have seen that in Punjab province as compared to the not working neither looking for work head, if the head is working in any other employment status then there are more chances that the woman is participating in labor force activities. In case of Sind province as compared to not working neither looking for work heads if the head is working either as an employer or a paid employees then there is less probability that a woman is participating in labor force. In KPK province as compared to not working neither looking for work head if a head of the household is either working as a paid employee or as an own account worker then there is more probability that a woman is taking part in labor force activities. In Balochistan province if a head is working as an own account worker only then there is more probability that a woman is participating in labor force.

Household size is another important factor that affects the FLFP decision (Khan & Hafeez, 2017). There are two kinds of possibilities related with this variable for employed women. First the presence of elderly members pose financial burden on the rest of the family members, thus women have to participate in labor market. Second, the presence of young children at home increases women' responsibilities at home. It mostly decreases women labor force participation (Lokshin et al., 2002; Naqvi & Shahnaz, 2002; Khan & Khan, 2009; Iweagu et al., 2015). In our study household size is negatively associated with women's decision to participate in labor force activities in our urban sample. Household size is positively associated with FLFP in Punjab province but it is negatively associated with FLFP in Sind province and in KPK province.

Since we included married and unmarried women in our analysis that is why we included the presence of children at home in our selected samples. In Pakistan due to joint/extended family system, unmarried women also have to help their sisters in laws in taking care of children. The variable total number of children of age equal to or less than 5 years present at home is negatively associated with female labor force participation. Most of time mothers of young children are bound to stay at home due to child rearing activities (Assad & Zouari, 2002; Ejaz, 2011; He & Zhu, 2013; Sefiddashti et al., 2016; Varol, 2017). Our analysis for urban areas also depicting the same fact that in presence of at least one child at home with age less than or equal to 5 years, women have 1 % less probability to

be the part of labor market activities. Number of children of age 5 years or below are less likely to be associated with FLFP in Balochistan province only.
Family set up is another important variable to influence the female labor force participation decision. Women living in joint families are more likely to be participating in labor market activities in our analysis. The reason could be that they are able to share their children care responsibilities with other members of the family (Naqvi & Shahnaz, 2002). It is more likely for women to engage themselves in labor market activities if they are living in an area since birth as compared to those women who are migrated from other provinces. Our findings are supported from previous literature for example, Funkhouser, 2006; Jadotte, 2009; Kemal & Naci, 2009; Fuchs, Kubis, & Schneider, 2016 and Sefiddashti et al., 2016.

Technical/vocational trainings is most often perceived to increase the labor market opportunities for youth (Malamud & Pop-Eleches; 2010) and marginalized groups including less educated women. The found impact of training is to be positive on labor market activities, (Aslam & Rawal, 2013; Torun & Tumen, 2017). Our study also supports this notion. In our present analysis as compared to those women who have never received any technical/ vocational training if women have ever received any technical/ vocational training then there is a 25 % more probability that they are participating in labor market activities. It is 6 % more probability for women to reside in Punjab province since birth and take part in labor force activities, whereas in case of KPK province this probability of being a native women and taking part in labor force activities is 5%.

Table 3. Binary Probit estimates of FLFP analysis for females aged 15 to 65

Explanatory Variables	Pakistan	Urban	Rural	Punjab	Sindh	KPK	Balochistan
Woman's Characteristics							
Age	0.018***	0.007***	0.022***	0.022***	0.017***	0.016***	0.034***
Agesq	-0.001***	-0.001***	-0.001***	-0.000***	-0.000***	-0.000***	-0.000***
Ever married	-0.144***	-0.201***	-0.098***	-0.189***	-0.093***	-0.084***	-0.225***

Primary	-0.094***	-0.015**	-0.132***	-0.156***	-0.065***	0.001	0.122***
Middle	-0.094***	0.012	-0.163***	-0.185***	0.033*	0.007	0.176***
Matric	-0.096***	-0.008***	-0.155***	-0.199***	-0.037***	0.106***	0.477***
Higher Secondary	0.075***	0.058***	0.121***	-0.092***	0.227***	0.436***	0.667***
Graduation	0.340***	0.300***	0.335***	0.252***	0.355***	0.637***	0.755***
Higher Edu	0.536***	0.528***	0.479***	0.401***	0.720***	0.796***	0.748***
Ever received technical/ vocational training	0.259***	0.218***	0.265***	0.215***	0.219***	0.147***	0.831***
Native (province)	0.058***	0.018***	0.082***	0.066***	0.001	0.058***	-0.010
Head of the Household Characteristics							
HH Female	0.078***	0.069***	0.072***	0.081***	0.266***	0.104***	0.271***
HH Age	-0.001***	0.000**	-0.001***	0.001***	-0.003***	0.000	-0.008***
HH Primary	-0.041***	-0.017***	-0.050***	-0.058***	-0.029***	-0.010	-0.005
HH Matric	-0.099***	-0.057***	-0.115***	-0.131***	-0.062***	-0.043***	-0.107***

HH Graduation	-0.114***	-0.068***	-0.121***	-0.145***	-0.125***	-0.066***	-0.082***
HH Higher	-0.080	-0.052***	-0.084***	-0.136***	-0.092***	-0.034**	-0.119***
HH Employer	0.000***	-0.013	-0.023	0.060**	-0.086***	0.006	-0.019
HH Paid employed	0.138***	0.063***	0.179***	0.204***	-0.075***	0.139***	-0.029
HH Own account	0.208***	0.041***	0.293***	0.261***	0.074***	0.175***	0.116***
HH Unpaid/Contributing worker	0.212***	0.126	0.269***	0.194***	0.144	0.413**	0.110
Family Characteristics							
Hh size	0.000	-0.001*	0.001	0.002***	-0.008***	-0.001	0.003
Children (0 – 5 years)	-0.007	-0.010**	-0.006	-0.004	0.002	0.012	-0.071***
Joint	0.019*	-0.001	0.026***	0.003	-0.001	0.004	0.057***
Region							
Urban	-0.203***	-	-	-0.240***	-0.146***	-0.134***	-0.229***
Punjab	0.124***	0.016**	0.182***	-	-	-	-
Sindh	-0.034***	-0.026***	-0.046***	-	-	-	-
KPK	-0.039***	-0.023***	-0.053***	-	-	-	-

Source: LFS 2014-15.

****, **,* significant at 1%, 5% and 10% respectively.*

Concluding Remarks

This study explores the important factors that are associated with low FLFP in Pakistan. For an in depth analysis we extended our analysis on rural-urban regional and provincial level. The study found few important insights into the issue of low FLFP in Pakistan. Age is following an invested U shape pattern for overall, regional and provincial analysis. Marriage is also serving as a constraint for women to participate in labor force activities. Education plays an important role in FLFP, we have seen from the analysis that post secondary levels of education are positively associated with FLFP in overall, rural, urban and Sind province, whereas in Punjab province graduation and higher levels of education are positively associated with FLFP. In case of Sind province matric and above levels of education are positively associated with FLFP, though the situation for Balochistan province is quite different as we have observed that as compared to no formal education primary and above levels of education are positively associated with FLFP. Technical/vocational training is also positively influencing women's decisions to participate in labor force activities. Being native in a province is more likely to be associated with FLFP in our analysis except for Sind province. Women who belong to the female headed households are more likely to be the part of labor force. Age and education of the head of the household is negatively associated with FLFP. As compared to neither working nor looking for work heads, if heads are working as paid employed, own account workers or unpaid/contributing family workers, then there is more probability that women are taking part in labor force activities. Joint family system is positively associated with FLFP in overall, rural and in Balochistan province analysis whereas household size is negatively influencing women to take part in labor force activities in our analysis for urban women and in Sind province, on the similar lines number of children of age 5 years or below is also negatively influencing women's labor force status in Punjab province and Balochistan province along with our overall, rural and urban analysis. Urban women are less likely to take part in labor force activities as compared to rural women in our analysis.

Policy Implications

It is necessary to create new job opportunities for women who are residing in urban areas so that they can utilize their potential properly.Our analysis also reveals that technical/vocational training is positively associated with labor market outcomes thus there is a need to create more training opportunities and skill development programs for less educated women so that they can participate productively in labor market activities.

Our analysis also supports that women who are living in nuclear families are less likely to the part of labor force activities, thus there is a need for day care services

at the workplaces, so that women from nuclear families should not worry about child care and take part in labor force activities.

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