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Socioeconomic Status and Workforce Participation Barriers for Women: A Case Study of Tribal Areas in Southern Punjab

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Abstract: *The present study tried to explore the impact of socioeconomic and demographic variables on female labour force participation (FLFP). For this purpose, a well-structured questionnaire was used to collect data from 150 people drawn from three different tehsils. The data were analyzed through frequency distribution, cross-tabulation, and a logistic model. The results indicated that in Tehsils of Dera Ghazi Khan, Taunsa, and Kot Chuttah, most of the females were not contributing to commercial activities since they were facing restraints like being illiterate, having no family permission, inadequate employment opportunities, and extensive household which made their lives extremely busy. Furthermore, the logistic model results indicated that the education, experience, parents' education, and earnings of the respondent were statistically significant. However, the study concluded that female education was the most crucial factor in the FLFP in economic activities and the improvement of employment opportunities.*

Key Words: Female Labor Force Participation, Logistic Regression, Socioeconomic and Demographic variables, Survey Data

JEL Classification: E32.

Introduction

Various nations worldwide achieve economic growth because of the proper use of available resources. There are many factors, like the availability of land, labour, capital, technology, etc. Economic growth requires physical capital and human capital of equal value. Nevertheless, both men and women play a vital role in human capital. As a result, female participation is critical for economic development and growth.

According to the Labor Force Survey 2015-16 (GoP, Statistics Division, Pakistan Bureau of Statistics), female participation was 15.8% in 2014–15 and 5.8% in 2013–14. The natural participation rate dropped by 0.57% from 32.27% in 2014–15 to 31.70% in 2017–18. Moreover, 65.50 million people made up the total civilian labor force in 2017–18, 50.74 million of them were men and 14.76 million of whom were women.

It is observed that, mostly in developed countries, women have equal opportunities

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for education and FLFP. In almost all developed economies, women work side by side with men. Females in developed countries are self-sufficient in decision-making. That's why the FLFP rate is significantly high in developed countries. According to the statistical database source (Nation Master, 2019), the FLFP rate is 70% in the U.S., 73.2% in Canada, 60.6% in Japan, 58% in Europe, and more than 60% in Sweden, Norway, and Switzerland. It ranges between 50 and 60 percent in Germany, France, Austria, and Australia.

Nevertheless, the phenomenon is the opposite; in developing countries, females have great education opportunities compared to their mothers, but they still have minimal opportunities to do jobs and participate in paid labour force activities, as they are not independent in decision-making. In developing countries, females must face many constraints like society's behavior towards working women, patriarchal ideology, security issues, religious beliefs, etc.

According to Kazi and Raza (1986), most females are pushed into work only when their families are poor. The primary reason for working in these economies is that more females are in the home compared to their male counterparts. In developing countries, women have a minimal role in paid labour force activities.

According to Sorsa, P., et al (2015) in most Asian countries, females do not participate in labour force activities due to patriarchal ideology and the harsh mindset of society in relation to working women. So, primarily, females engaged in unpaid labour force activities spend lots of time taking care of one's children. According to Etzaz and Amtal, (2010), women's labour force participation is crucial for the living standards, saving rates, and dependency burden among households. Education is an extremely crucial factor that affects female labour force participation. If females have a higher level of education, they have more chances to enter labour force activities. They may have more liberty to do jobs because they feel independent with a high education. As a result, education is the

most important factor in encouraging females to engage in wage-earning activities that benefit the economy.

Due to social, historic, and cultural conventions, Pakistani women, like those in many other emerging nations, trail males in many areas. Women in Pakistan generally have low literacy rates, large birth rates, and a lack of appreciation for their domestic labor. The current study's goal is to investigate the various social, economic, and demographic aspects that significantly affect women's decisions on whether to enter the workforce.

Numerous studies are available on the subject. However, issues including the respondent's mother's education, how society treats working women, and job limitations imposed by the family's head of household have been disregarded. Therefore, the main goal of this study is to ascertain how the aforementioned elements affect women's decisions to join the paid workforce. Two factors or levels typically influence a woman's decision to engage in economic activity. To begin with, considerations like employment availability, her educational background, and any skills she may have influenced her decision to work. The second is at the collective level; in this case, her choice is influenced by the socioeconomic and demographic characteristics of the place or region in which she resides.

According to neoclassical economists, education is a key factor in determining whether women will enter the workforce. Women's participation in the job force is more noteworthy the better educated they are (Becker 1965; Mincer 1980). It is also true that there are more jobs accessible to them as their education increases. Women's production will increase with increased investment in human resources, including education, training workshops, and skills.

The present study is being conducted in the provisionally administrative tribal areas of southern Punjab (PATA). The tribal areas cover a large area. So, for our concern, we take only D.G. Khan from the provisionally administrative tribal areas of southern Punjab. Further, D.G. Khan has four tehsils, including

D.G. Khan, Taunsa, Kot chuttah, and Koh-e-Sulaiman. Due to the unavailability of relevant data, Tehsil Koh-e-Suleman is excluded from the study area. Our research study identified the significant determinants of female labour force participation (FLFP) and the constraints females face in the study area. The binary logistic model determines the factors that affect the FLFP. This model is widely used in literature, not only at the national level but also in international studies. Some of them are Faridi et al. (2009), Umbreen and Kokab (2017), Che and Sundjo (2018), Sorsa et al. (2015), and Ayferam (2015).

Sharma, A., Saha, S., (2015) investigated female employment trends in India and concluded that the share of rural women in the workforce was much higher than urban women. However, women in rural India were inferior in the labour market vis-à-vis their urban counterparts. Moreover, most rural women were predominantly engaged in agriculture, with low-earning opportunities. The wage differential between rural and urban women was also striking. Therefore, the results suggested appropriate government intervention and policy formulation for addressing the issue.

The studies mentioned above demonstrated that determinants of FLFP exist in various countries. These studies also define the different socioeconomic and demographic factors and constraints females face during their labour force participation. These studies also discovered how females' socioeconomic and demographic factors and constraints affected the FLFP. In most studies, the researchers explore different factors such as the education of the female, marital status, number of females in the household, age of the respondent, income level of the family, and constraints faced by women like patriarchal ideology, purdah, religious beliefs, society's behavior towards working women, security issues, etc. The above studies also described how higher education for women leads to higher labour force participation. In the literature mentioned above, most studies used probit-logit or logistic regression to explain the determinants of FLFP. In the present study, we have attempted to investigate the role of

education, location, education of the father, mother, and husband, parent's income, husband's income, family size, number of children, number of earners, and earnings of the respondent in detail.

Methodology

The study was based on cross-sectional data collected through a field survey. The study used a questionnaire as a tool for data collection. A well-structured questionnaire was organized for collecting data. The survey data were collected during the year 2019. Random samples of 150 respondents were taken from district Dera Ghazi Khan, and then 150 samples were equally divided between the three tehsils of district Dera Ghazi Khan (D.G. Khan): Tehsil D.G. Khan, Taunsa, and Kot Chuttah, respectively. The empirical study used multistage and purposive sampling techniques as sampling designs.

The recent study was conducted in tribal areas of southern Punjab. The area of tribal lands is very vast. As a result, the study focuses solely on District Dera Ghazi Khan (D.G. Khan) in the tribal areas of southern Punjab. Further, D.G. Khan has four tehsils, including D.G. Khan, Taunsa, Kot Chuttah, and Koh-e-Suleman.

Model Specification

The theoretical model of FLFP contains so many variables, like location, marital status, age, education experience, parents' education, husband's education, parent's income, husband's income, number of children, family status, nature of work, number of earners in a family, earning, nature of the work, monthly income of a family, family size, and monthly expenditure of respondent's family.

The dependent variable is categorical, such as whether the female participates in the labour force. Therefore, the study used the logit model to determine the impact of independent variables on the dependent variable, female labour force participation (FLFP).

Following the Hausman, J., & McFadden, D. (1984), Cramer, J. S. (2003), Demaris, A.

(1992) and Memon, M. H., et al. (2015) Khan, K, et al (2016) and (2017) The logit model is

$$\text{Logit} (P) = \ln(P/1 - P)$$

Whereas the value of “P” shows an actual number lies between 0 and 1, so the model as desired below:

$$\ln(P/1 - P) = \alpha_0 + \alpha_1x_{1i} + \alpha_2x_{2i} \dots \dots \dots + \alpha_kx_{ki}$$

If we write this model according to our female labor force participation model, then this model looks like that,

$$\ln(P/1 - P) = \alpha_0 + \alpha_1x_{1i} + \alpha_2x_{2i} + \alpha_3x_{3i} + \alpha_4x_{4i} + \alpha_5x_{5i} + \alpha_6x_{6i} + \alpha_7x_{7i} + \alpha_8x_{8i} + \alpha_9x_{9i} + \alpha_{10}x_{10i} + \alpha_{11}x_{11i} + \alpha_{12}x_{12i} + \alpha_{13}x_{13i} + \alpha_{14}x_{14i} + \alpha_{15}x_{15i} + \alpha_{16}x_{16i} + \alpha_{17}x_{17i} + \mu_t$$

Whereas: ln = natural logarithm α = constant, P= probability that female participation in labour force, $1 - P$ =probability that female does not participate in labour force, x_{1i} = education, x_{2i} = experience, x_{3i} =parents education, x_{4i} =husband education, x_{5i} =parents income, x_{6i} =husband income, x_{7i} =earning, x_{8i} = monthly income, x_{9i} =number of kids, x_{10i} = family size, x_{11i} =monthly expenditure, x_{12i} = no sources of income, x_{13i} = nature of work, x_{14i} = constraint from family, x_{15i} =unmarried, x_{16i} = widow, x_{17i} =diverse, α_0 = intercept of the estimated regression line or constant, α_i = co-efficient of the estimated regression line.

Mincer Earning Function

Named after Jacob Mincer, the Mincer

earnings function is a single equation that describes pay income as a function of education and experience. Thomas Lemieux claims that the equation is "one of the most extensively utilized models in empirical economics" after studying it on numerous datasets. The logarithm of earnings is typically represented mathematically as the product of the years spent in school and a quadratic function of the "years of prospective experience."

$$\ln W = f(S, W) = \ln w_0 + \rho s + \beta_1 x + \beta_2 x^2$$

Whereas: w is earnings, w_0 is the earnings of those without schooling, s represents years of schooling; x shows experience in the potential labour market.

Results and Discussion

The data were analyzed using the following techniques following the study's goals: frequency distribution, descriptive statistics, cross-tabulation, and a binary logistic model. Since our dependent variable was not continuous, we cannot employ a simple regression model with the ordinary least squares method. The maximum likelihood estimation method is the most effective and applicable method for discrete variables. The determinants influencing female labour force participation were estimated using a binary logistic model and the MLE (maximum likelihood estimation) method. Hence, to calculate the FLFP's parameters, we employed a binary logistic model (female labour force participation).

Table 1. Frequency Distribution of the status of the work of the respondent

	f	Percent	Valid Percent	CP
Housewife	40	26.7	26.7	26.7
Working Women	110	73.3	73.3	100.0
Total	150	100.0	100.0	

Note: Frequency (f), Cumulative Percent (CP), Source: Authors' own calculation from primary data

Table 1 summarises the details of the sample size selected from all three tehsils of D.G. Khan. It reveals that 40 of the 150 respondents

were housewives, while the rest were engaged in economic activities.

Table 2. Frequency Distribution of the constraints for FPLF

Constraints	f	Percent	Valid Percent	CP
Illiterate	110	73.3	73.3	73.3
FP	7	4.7	4.7	78.0
NEO	17	11.3	11.3	89.3
due to busy life	4	2.7	2.7	92.0
Total	12	8.0	8.0	100.0
Total	150	100.0	100.0	

Note Frequency (f), Cumulative Percent (CP), No Family Permission (NFP), No Employment Opportunities (NEO). Source: Authors' own calculation from primary data

Table 2 shows that out of 150 respondents, 110 were female and had no constraints on workforce participation. At the same time, 7 were female and were illiterate, 17 had no

family permission, 4 had no employment opportunities, and 12 were facing constraints due to a busy life.

Table 3. Nature of the work of the respondents

Constraints	0	T	D/LHV	B	SE	Total
No Constraints	0	38	11	16	45	110
Illiterate	7	0	0	0	0	7
No Family Permission	17	0	0	0	0	17
No Employment Opportunities due to busy life	4	0	0	0	0	4
Total	12	0	0	0	0	12
Total	40	38	11	16	45	150

Whereas: Teacher (T), Doctor or Lady Health visitors (D/LHVs), Banking (B), and Self-employed (SE) Source: Authors' own calculation from primary data

Table 3 shows the constraints for the workforce participation of the respondent based on the nature of the respondent's work-cross tabulation. Out of 150 respondents, 110 females had no constraints on their workforce participation, while 40 faced constraints on their workforce participation. In this situation, 7 females were illiterate, 17 had no family permission, 4 had no employment opportunities, and 12 faced constraints due to a busy life. There were four categories of the nature of the respondent's work: teacher, doctor or LHV, banker, and self-employed. Out of 150 respondents, 40 females were not

doing any job or not participating in the workforce, while 38 were teachers, 11 were doctors or LHVs, 16 were bankers, and 45 were self-employed.

Regression Analysis

Regression analysis is a powerful technique that enables us to examine the relationship between two or more relevant variables. Multivariate analysis comes in various forms, but at its heart, each one looks at how one or more independent factors affect a variable quantity.

Table 4. Mincer's Earning Function

Variables	Coefficient	T-statistics
Intercept	-18330.113	-2.986***
taunsa Sharif	-3272.685	-3.340***
Marital Status	6340.790	5.118***
Age	490.962	5.464***
Education	940.279	4.410***
Experience	1466.323	2.697***

Variables	Coefficient	T-statistics
Type of Family	-3302.465	-2.197**
Work Nature	1710.436	3.760***
R- Squared		.600
Adjusted R- Squared		.580

Dependent variable: Earning of the respondent. F-value 30.451, ***, **, and * represent the significant level at zero, five, and ten percent, respectively.

Table 4 shows Mincer's earning function, and total earning was -18330.113rs, which shows the effect of all those variables which were not included in the model.

Logistic regression is a predictive analysis, as are other regression analyses. In order to interpret data and clarify the relationship between a dependent binary variable and one or more independent nominal, ordinal,

interval, or ratio-level variables, logistic regression is used Urooj, K., et al (2022). Logistic regression is a prophetic modeling algorithmic rule used once the Y variable is binary categorical. It will take solely two values, like one or zero. The goal is to work out a mathematical equation that will be accustomed to predict the likelihood of event one.

Table 5. Logistic regression of female labor force participation (FLFP).

Variables	Coefficient	P-Value
Step 0 variables age	1.466	.226
x_{1i}	21.508	.000
x_{2i}	26.333	.000
x_{3i}	12.308	.000
x_{4i}	5.190	.023
x_{5i}	.346	.556
x_{6i}	.013	.911
x_{7i}	.470	.493
x_{8i}	81.089	.000
x_{9i}	5.850	.016
x_{10i}	.991	.320
x_{11}	2.927	.087
x_{12}	43.462	.000
x_{13}	1.589	.207
x_{14}	4.534	.033
x_{15}	76.739	.000
x_{16}	119.377	.000
x_{17}	.142	.706
x_{18}	4.317	.038
x_{19}	.426	.514
x_{20}	6.818	.009
x_{21}	5.176	.023
x_{22}	1.704	.192
joint	30.362	.000

x_{1i} = education, x_{2i} = experience, x_{3i} =parents education, x_{4i} =husband education, x_{5i} =parents income, x_{6i} =husband income, x_{7i} =earning, x_{8i} = monthly income, x_{9i} =number of kids, x_{10i} = family size, x_{11i} =monthly expenditure, x_{12i} = no sources of income, x_{13i} = nature of work, x_{14i} = constraint from family, x_{15i} =unmarried, x_{16i} = widow, x_{17i} =diverse, α_0 = intercept of the estimated regression line or constant, α_i = co-efficient of the estimated regression line.

Table 5 shows the results of the Logistic Regression Model (LRM) between significant and insignificant variables of the model. The results show that the respondent's age, husband's education, parent's income, husband's income, nature of the respondent, monthly expenditure, unmarried, taunsa, and wife were statistically insignificant. At the same time, the other variables of the model are statistically significant, like education, experience, monthly income, and the number of earners in the respondent's family, etc.

Conclusion

The study used frequency distribution, cross-tabulation, and a binary logistic model. The study's results revealed that most of the females participating in labour force activities belong to nuclear families compared to those females who belong to joint families. Most

illiterate females belong to Tehsil Kot Chuttah, where there are fewer employment opportunities compared to Tehsil Taunsa and D.G. Khan. The females facing constraints were married compared to the unmarried and widows/divorcees. The respondent's age, education, and experience are statistically significant and positively associated with Mincer's earning function. The results of the study are coherent with the outcomes of Faridi (2011), Seth, A., Tomar, S., et al (2017), Chaudhry, I. S., & Nosheen, F. (2009). and Tansel, A. (2002) which explained that age, education, and experience have a positive impact on female labour force participation (FLFP). Besides, other factors such as patriarchal ideology, social and cultural factors, the mindset of the society, and religious beliefs also affected woman's participation in the labor force.

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