

# Factors Effecting The Rural Women Labour Supply in Agriculture Sector: A Case Study of District Rajanpur-Pakistan

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## Abstract

This paper is an attempt to find out factors affecting the rural women labour supply in agriculture sector in District Rajanpur. Out of 44 Union councils (UCs), 06 UCs have been selected randomly for this study. Out of each UC two villages are selected and from each village 25 women above 18 years have been selected randomly. The collected data then analyzed using multiple regressions. Variables women age, family type, family size, husband health status, purdah observed, source of income and number of children are found statistically significant. The results can be concluded that economic constraints due to number of factors forced the women in the study area to work outside home. However, due to religious nature of the area, mostly women are not allowed to participate in economic activities outside their homes.

**Keywords:** labour supply, agriculture sector, Rajanpur, multiple regression, union council.

## INTRODUCTION

In Pakistan natural resources are land and water. About 25% of Pakistan's total land area is under cultivation and is watered by one of the largest irrigation systems in the world. Pakistan irrigates three times more acres than Russia. Agriculture accounts for about 21% of GDP and employs about 44% of the labor force.

Rajanpur District is famous for Cotton and Sugarcane Crop, despite of the fact that wheat and rice crops are also being sown in the district. Due to improper sources of income and poor economic condition, people have no enough purchasing power to buy the agriculture inputs (seeds and fertilizers) from market to cultivate the crops.

Labor is one of the primary factors of production. Agricultural labor is mostly landless and constitutes the poorest segment of Pakistan's rural population. They belong to the economically backward and oppressed section of the society. They mainly belong to the schedule cast and other backward communities. They are basically unskilled and unorganized (Padhi, 2007).

According to Labor Survey of Pakistan (2006-07), 70% of female labor force are engaged in agriculture and its allied fields and perform very tough role like milking, feed and watch of the livestock. Their fragile bodies uproot rice crop in the burning month of May/ July.

Majority of the rural women are uneducated, unskilled and tradition-bounded, therefore their productive capacities are also low, and counted as unskilled labor. Though rural women also help to produce the staple crops like rice, wheat, and maize, but her contribution is secondary in staple crop production.

Women ply a most important role in agricultural production, livestock rising and Pakistani cottage industries. Women often allocate more time to these tasks than men do. They participate in all process related to crop production such as sowing, transplanting, weeding and harvesting, as well as in post-harvest operations such as threshing, winnowing, drying, grinding, husking and storage (including making mud bins for storage). Rural Women in Pakistan carry out these tasks in addition to their normal domestic responsibilities of cooking, taking care of children, elderly and disabled, fetching water and fuel, cleaning and maintaining the house as well as some of its construction.

Rural women have been intensively involved in agriculture and its related fields. She performs numerous labor intensive jobs such as weeding, hoeing, grass cutting, picking, cotton stick collections, separation of seeds from fiber. Women are also expected to collect wood from fields. This wood is being used as a major fuel source for cooking. Because of the increasing population pressure, over grazing and desertification, women face difficulties in searching of fire wood.

## LITERATURE REVIEW

Shah et al. (1976) have investigated the special effects of chosen demographic and socio-economic variables on FLFP in the four provinces of Pakistan. The outcome point out that contribution of female as a worker is negatively related with child-women ratio and single type of family. Marital status, dependency ratio and literacy condition are cause to be strong relation with female labour force participation.

Malik et al. (1994) has explored the major factors, which manipulate female labor force contribution in financial activities. Calculated data define that women's age, education and the number of dependents do not considerably determine market time. Women labor supply is directly and positively affected by women wage rate and calculated male wage rate.

Aly and Quisi (1996) examined the socio-economic factors that effect the decision of Kuwaiti women in economic contribution. It was examined that women's wage rate and educational ability are strongly correlated with LFP rate, while the marital status, number of children and age of women is uncooperatively correlated with LFP rate.

Azid, Aslam and Omer (2001) stated that there are numerous social and demographic factors are responsible to effect the female worker in business of embroidery like in Multan city. Finding indicates that some social factors like family system (nuclear, joint) purdah (veil) and distance from the market have also their own impact on female labour force participation.

Rahman et al.(2003) explained in their study that there are several factors such as low level of education, lack of business institutions, incomplete skill gender discrimination and lack opportunities to access the formal education of women are answerable for their low involvement in financial activities.

Kimhi (2004) analyzed the function and significance of agriculture sector in the development of rural areas. OLS method was employed for the evaluation of study. The study revealed the result and suggested that the collision of significance of agriculture or rural development was varied.

Faridi et al, (2009) revealed that Female's labour force contribution grow with growing level of education. Number of children in early age groups decreases the female labour force sharing. The results of the study concluded that female's education is necessary for better employment opportunities.

Ijaz and tasnim (2009) examined the different factors which affect the married women to participate in economic activities in case of Punjab Pakistan). The study used primary source data conducted through field survey by using the logit regression model. Furthermore, the researcher also examined that burden of poverty is main factor which move forward the married women into labour force participation.

Faridi et al, (2010) investigated the impact of health and education on FLFP. Study defines the impact of health, education and vocational training have direct relation with the women work performance but financial assets, formal employment, and marital status have negative and insignificant impact on women earning. It is recommended that government should promote the health and educational facilities to females.

Ambreen and Asma (2012) have focused to define the factors which become hurdle in the decision of married women to participate in the LF. This study used the primary source data based on field survey. They analyzed that with growing level of education and wage rate the rate of female labour force participation become high.

In addition to above the following studies also tried to find out the various factors that influence the women labor supply in Pakistan.

For example Mincer, J. (1962), Shakila et al, (2002), Zareen and shahnaz (2002), Ejaz (2007), Hafeez and Ahmed (2002), Naqvi and Shahnaz(2002), Faridi et al. (2011), Shaheen et al. (2011) explored the determinants of labour force participation regarding as the some socio-economic and demographic factors.

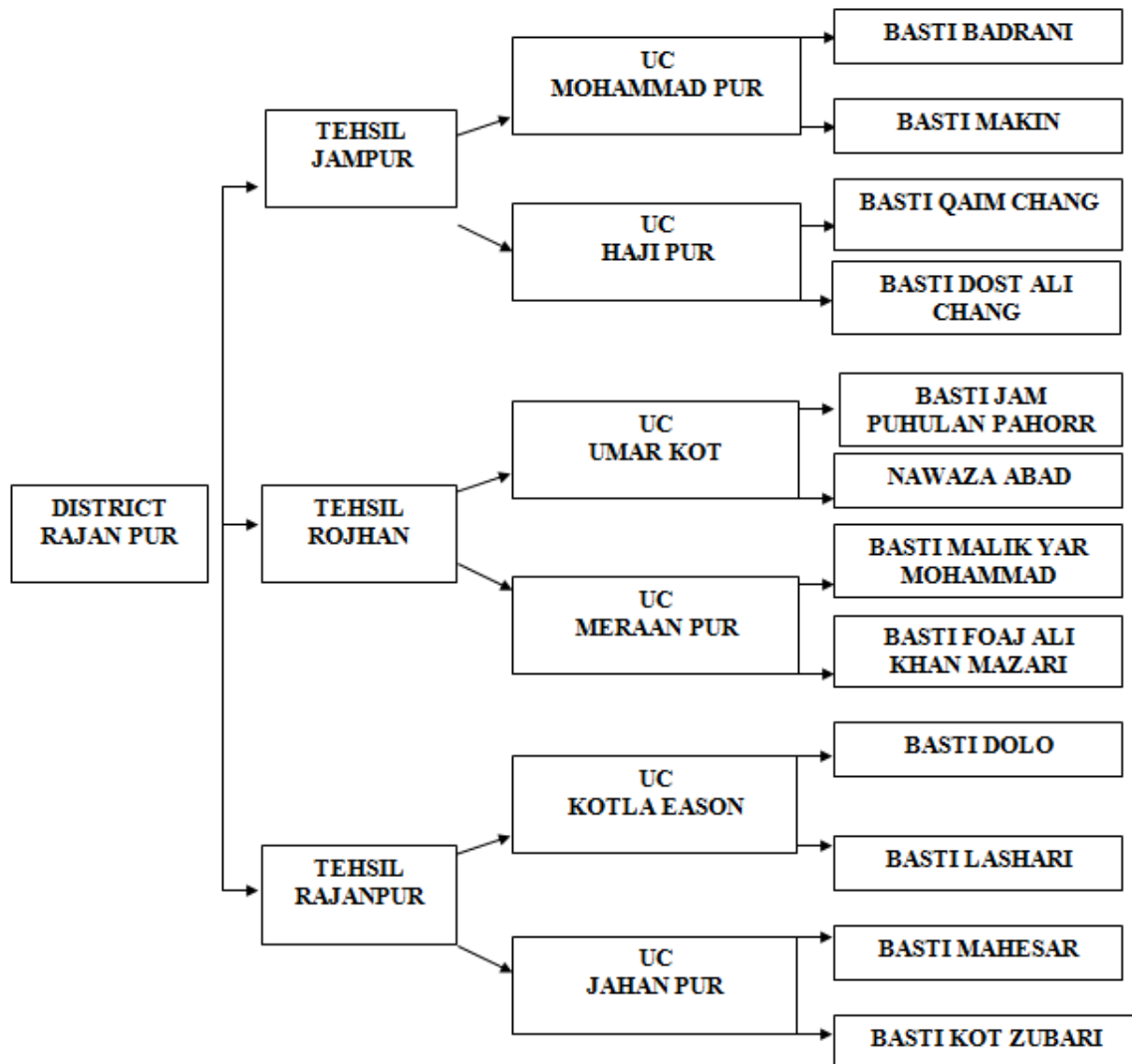
## Objectives

- To find out the factors affecting the rural women labour supply in agriculture sector in District Rajanpur.
- To give policy recommendations.

## DATA AND METHODOLOGY

Out of 44 union councils (UCs) 6 UCs are selected randomly. Later on from each UC 12 villages and 25 women of age above 18 years from each village are selected randomly. Our sample consists of 298 rural women aging from 18 to 70 in the district of Rajanpur (Punjab, Pakistan). The study uses both quantitative and qualitative data, collected through well-structured questionnaire. The dependent variable is rural women labor force participation of district Rajanpur. The explanatory variables are family size, female headed, women health status, family type, husband health status, husband income, purdah observed, women empowerment, source of income, number of children, age, husband income and land ownership.

SAMPLING FRAMEWORK



**Estimation Technique**

Ordinary least square (OLS) regression technique is used by employing Log-Log linear model to examine the effect of different variables on the decision of rural women labour force participation. Detail of variables and estimated model is as under;

$$\ln WLF = (b_0 + b_1 \ln FS + b_2 FH + b_3 WHS + b_4 FT + b_5 HHS + b_6 HO + b_7 PO + b_8 WEMP + b_9 SOI + b_{10} \ln NOC + b_{11} \ln AGE + b_{12} \ln HI + b_{13} LO + u)$$

**Table 1: Definitions of Dependent and Independent Variables**

Dependent Variable	Definition	Value
LnWLF	Natural log of Women labour force participation	
<b>Explanatory variables</b>	<b>Definitions</b>	<b>Values</b>
<b>Ln FS</b>	<b>Natural log of family size</b>	
<b>FH</b>	Women head of the house	1= if women is head of the house 0=if women is not head of the house
<b>WHS</b>	Health status of women	1= if women's health is good 0=if women's health is poor
<b>FT</b>	Type of family	1=if family is nuclear 0=otherwise
<b>HHS</b>	Husband Health Status	1=if health is good 0=otherwise
<b>HO</b>	Husband Occupation	1=if farming only 0=multiple jobs
<b>PO</b>	Parada Observed	1=if parada observed 0=otherwise
<b>WEMP</b>	Women Empowerment	1=if empowered in decision making 0=otherwise
<b>SOI</b>	Source of Income	1=if single source 0=multiple sources
<b>Ln NOC</b>	Natural log of Number of Children	
<b>Ln Age</b>	Natural log of Age of Women	
<b>Ln HI</b>	Natural log of Husband income	
<b>LO</b>	Land Holding	1=if ownership of land 0=otherwise

**RESULTS AND DISCUSSION  
ECONOMETRIC ANALYSIS**

In this part econometric analysis of the regression model are presented.

<b>Linear Regression</b>	<b>Number of observation</b>	<b>=</b>	<b>298</b>
	<b>F( 13, 284)</b>	<b>=</b>	<b>6.70</b>
	<b>Prob&gt; F</b>	<b>=</b>	<b>0.0000</b>
	<b>R.Squared</b>	<b>=</b>	<b>0.2793</b>
	<b>Root MSE</b>	<b>=</b>	<b>.09255</b>

LWLFP	Coefficient	Rubust Standard Error	T Values	Prob.
<b>LFS</b>	.091807	.0397814	2.31	0.022
<b>FH</b>	-.0033633	.0156666	-0.21	0.830
<b>WHS</b>	.005652	.0130902	0.43	0.666
<b>FT</b>	-.0635588	.0196579	-3.23	0.001
<b>HHS</b>	-.0215241	.0145502	-1.48	0.140
<b>HO</b>	-.0079956	.133391	-0.60	0.549
<b>PO</b>	-.0267578	.0132894	-2.01	0.045
<b>WEMP</b>	-.0127862	.0123938	-1.03	0.303
<b>SOI</b>	.351457	.0136139	2.58	0.01
<b>LNOC</b>	-.045409	.025298	-1.72	0.086
<b>LAGE</b>	-.0147933	.0227753	-0.65	0.517
<b>LHI</b>	.004342	.078477	0.24	0.808
<b>LO</b>	.0060403	.0115011	0.53	0.500
<b>-CONS</b>	3.925401	.1702343	23.06	0.000

Jarque-Bera normality test: 217.9 Chi(2) 4.9e-48

Jarque-Bera test for Ho: normality:

Mean VIF: 1.87 and Mean Tolerance: 0.67

White Test :  $\chi^2(95) = 89.39$  while probability is 0.643.

In this study it is analyzed that the family size and rural women labour supply in the agriculture sector are directly related with one another. The coefficient of family size is found positive and statistically significant at 2% level of significance. The value of coefficient is .092 which can be describe as if family size is increased by 1% then female labour supply shall increase by 0.092 percent.

The variable female headed is taken in this study as dummy variable. Result of this variable show that the impact of the female headed in the house is negative and statistically insignificant with t-value (-0.21) in the research. In most of the rural areas like Rojhan, District Rajanpur women were living their life as suppressed way. Due to the male dominant society in Rajanpur district the women who have an extra responsibility of handling their house but not give them any kind of the authority to their women. So it is clear that impact of the female headed in Rajanpur district have no significant role in the participation of labour supply.

In the above results show that the impact of the women health on rural women labour force participation is found to be positive but statistically insignificant. In the above table the variable women health status is taken as a dummy variable. Though health is positively related to dependent variable but their participation as labour force relates to the permission of their husbands and other cultural values.

Result show that the impact of family type is turned to be negative on the women labour force participation. T value shows that the variable is statistically significant with negative sign. It means that single family has less participation as compared to joint or extended family types. The results are obvious and as per economic theory.

The above calculations show that the relationship between the rural women labour participation and husband health find out to be statistically significant at 14% level of significance. Therefore, it can be describes as good health of husband will reduce the labour force supply.

Findings of the study display that variable purdha has a negative and statistically significant relationship with regressand. It explains that the families where purda is observed strictly, the women's participation in labour force is less as compare to the families where purda is not strictly observed.

Finding shows variable women empowerment is statistically insignificant and negatively related with regressand. It explains that role of empowerment has negative impact on the rural women labour force participation in District Rajanpur. Results indicate that most of the rural women do not participate due to social as well as religious factors such as strong financial position, superior cast, purda etc. So due to the above factors women's are not empowered to participate not only in labour supply but also in other social activities.

Variable source of income is found to be statistically significant and positively related with dependent variable. The variable is significant at 1% level of significance and its coefficient value is 0.351 which elaborates that the families having only one source of income, their participation is significantly high as compare to those who have more than one source of income. The reason is that in rural area of District Rajanpur the ratio of the dependents are high so, the single earner in the family is not enough to meet the daily expenditures. High expenditures, rate of inflation and, low income are the main factors which force the others family members to participate in the labour activities.

Results of variable total number of children reveals that it significant at 8% level of significance. The sign of the variable is negative which illustrates that one percent increase in number of children, women's labour supply decreases 0.045 percent. One of the reasons is that as the number of children increases, they have to spend more time to take care their children in addition to other household works. Variables age, husband income and land ownership are all statistically insignificant.

Some diagnostic tests have been used to test the normality of residual distribution, multicollinearity and heteroscedasticity.

The value of JB test indicates that residuals are distributed normally. In order to check the problem of multicollinearity two tests are used; the variance inflating factor and other is tolerance. Value of VIF and Tolerance are found 1.87 and 6.67 which shows that there is no problem of the multicollinearity.

White test was used to test the problem of heteroscedasticity. Value of  $\chi^2(95)$  is 89.39 while probability is 0.643. Therefore, null hypothesis of homoscedasticity cannot be rejected at 0.5% level of significance.

## CONCLUSION AND RECOMMENDATION

In this study we have examined all the factors, which cause rural women of the district Rajanpur to participate in productive activities in agriculture sector. The factors which have been found significantly affecting on dependent variable are family size, family type, husband health status, purda observed, source of income and number of children. The sign of the variables family type, husband health status, purda observed and number of children is negative which can be interpreted that they are affecting the regressand negatively. While the rest of variables have positive impact on women labour supply in agriculture sector in district Rajanpur.

The women living in large and joint families are more likely to participate in the agriculture sector than

those women who are living in Small as well as nuclear families. Also in the large families, pressure on the financial resources of the household is high which induce rural women to participate in the agriculture sector. Joint families are also assumed to be large in size. Similarly, there are some other which is used as a dummy variables like female headed, health status of the women, husband occupation, women empowerment, source of the income and family type all these dummies variables have different effect on the role of rural women labour supply. In these variables some of these have positive and some appear insignificant and have negative role with the participation of rural women in agriculture sector.

Study shows that one of the major reasons for the women labor supply is financial constraint as indicated by variable source of income. Family size and husband health are also main sources of labor supply. In order to fulfill the various requirements of the family, women have to work in agriculture sector. Moreover, in district Rajanpur many peoples are religious and they do not let their women to go outside home especially for work purpose. However, women work at home and home base economic activities. Therefore, in order to make women economically empowered and to make them socioeconomically sound, interest free microfinance along with free training of various economic activities such as poultry farming, rearing of small animals, making of pickles, marmalades etc. be given so that they could be able to contribute towards family income as well as country's development.

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