DETERMINANTS OF SELF EMPLOYMENT IN RURAL PAKISTAN

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ABSTRACT: *This paper examines the characteristics and determinants of self-employment in rural regions of Pakistan. Self-employment is the main source of employment in the developing world since few avenues for wage /salary employment are available. Primary data from Household Integrated Economic Survey (HIES) conducted by Pakistan Bureau of Statistics in the year 2010-11 is used. The model used presents employment decision as binary choice between wage employment and self-employment. Reduced form Probit equation is used to model the effects of personal and regional characteristics on this decision. Gender, marital status, and age were all seen to impact the self-employment. In general being married, being male, and being older all led to a higher probability of self-employment. Education is another important variable. Household size (easy availability of labour) and assets (proxy for capital) were significant in only some of the regions.*

Key Words: Self Employment, Wage Employment, Rural

INTRODUCTION

Providing employment opportunities for the country's increasing labor force is imperative if we are to ensure economic growth and prosperity in the country. The unemployment rate in Pakistan is quoted at 6% by the Labor Force Survey, (2012-13) while that in rural areas it stands at 3.9%. However, it is suspected that the unemployment rate in rural areas may be much greater than this value since there is a tendency to under report due to disguised unemployment which is a feature of agricultural economies.

The proportion of Pakistan's population in the dependent and young age group is one of the largest in the world with 55.7 percent of the population under 24, making our youth bulge immense. The new entrants into the labor force must be provided with productive employment since this youth bulge is an opportunity for development if the potential is tapped but conversely, also is a threat if it is not properly harnessed.

International Labor Organization (ILO) follows the resolution adopted by the Fifteenth International Conference of Labor Statisticians concerning the International Classification of Status in Employment (ICSE), known as ICSE-93 for defining self-employment [1]. As per this, self-employers can be categorized into three categories. Those who are employers, independent workers and lastly members of a family that work part time in some informal enterprise.

Furthermore, labor economists make an important distinction between the types of self-employment in the Developing countries, which they classify into two major types. Those workers who are forced to seek self-employment jobs due to the unavailability of alternative wage employment while those who prefer this type of employment even if opportunities of wage employment are present. Banerjee and Duflo [2] suggest that the many businesses of the poor are more of a proof of the failure of their economic environment than a proof of their entrepreneurship.

The self-employed within Pakistan's rural labor force similarly make up a sizable proportion. As Table 1 illustrates, though wage employment was the major type of employment for the rural work force at 45.12 percent, self-employment was the next major source employing 27.6 percent. In addition, it can be seen that while the wage employment sector grew over the period under study, the self-employment did not. This may be an indicator of the constraints that the labor force faces for entry into this sector.

Table 1: Household Earners by Employment Status (Data from Punjab Bureau of Statistics)

Employment Status	Rural (2007-08)	Rural (2010-11)
Employer	0.43	0.28
Self-employed	27.98	27.6
Unpaid	26.6	25.53
Paid employee	42.57	45.12
Not economically active	2.43	1.48

The self-employed thus, make an important area of study for researchers and policy makers who are attempting to find viable avenues of employment for the labor force. In order to shift those from unemployed category to self-employed, what is needed is an evaluation of the factors that may be affecting the chances of being employed in the self-employment sector. If these variables are known, they can be used to tailor the labor force to adopt the characteristics that may increase their chances of employment in the self-employed sector via lowered entry barriers.

The determinants of self-employment can be broadly classified into personal characteristics of the worker such as age, education, gender, attitude towards risk, or entrepreneurship; community characteristics such as the development of the region, market conditions, or the development of infrastructure; the wage differential and the availability of alternative wage employment. This study emphasizes on the personal characteristics of the worker and how they determine the choice of employment between wage and self-employment.

MATERIALS AND METHODS

The population included data collected from all provinces by the Pakistan Bureau of Statistics in the year 2010-11. There were 9,752 rural households which were sampled using a sampling framework specified for rural areas by the Pakistan Bureau of Statistics.

Table2:Punjab

	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Education	-0.01952	0.004765	-4.1	0	-0.02886	-0.01019
Gender	0.485237	0.07495	6.47	0	0.338337	0.632136
Age	-0.01739	0.001983	-8.77	0	-0.02127	-0.0135
Married	-0.12278	0.058178	-2.11	0.035	-0.23681	-0.00876
Household Size	-0.00461	0.007585	-0.61	0.543	-0.01948	0.010256
Asset	-1.22E-09	4.84E-09	-0.25	0.802	-1.07E-08	8.27E-09
Landholding Size	-0.00101	0.004197	-0.24	0.809	-0.00924	0.007213
Irrigation Ratio	-0.16679	0.062195	-2.68	0.007	-0.28869	-0.04489
Constant	1.600669	0.095434	16.77	0	1.413622	1.787717

Table 3: Punjab

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Education	-0.00555	0.001353	-4.1	0	5.27767	-0.00821	-0.0029
Gender	0.118303	0.015143	6.47	0	0.150726	0.088624	0.147982
Age	-0.00494	0.000561	-8.77	0	34.6342	-0.00605	-0.00384
Married	-0.03433	0.015968	-2.11	0.035	0.664497	-0.06563	-0.00303
Household Size	-0.00131	0.002157	-0.61	0.543	6.97897	-0.00554	0.002917
Asset	-3.46E-10	1.38E-09	-0.25	0.802	1.40E+06	-3.00E-09	2.40E-09
Landholding Size	-0.00029	0.001194	-0.24	0.809	0.921897	-0.00263	0.002051
Irrigation Ratio	-0.04743	0.017673	-2.68	0.007	0.176836	-0.08207	-0.0128

Table 4 Sindh

	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Education	-0.0246	0.007581	-3.25	0.001	-0.03946	-0.00974
Gender	0.317325	0.153847	2.06	0.039	0.015791	0.61886
Age	-0.01222	0.003455	-3.54	0	-0.01899	-0.00545
Married	-0.09838	0.102205	-0.96	0.336	-0.2987	0.101942
Household Size	-0.00499	0.009806	-0.51	0.611	-0.02421	0.01423
Asset	-5.30E-09	2.11E-08	-0.25	0.801	-4.66E-08	3.60E-08
Landholding Size	-0.00659	0.020742	-0.32	0.751	-0.04725	0.034064
Irrigation Ratio	-0.31821	0.122417	-2.6	0.009	-0.55814	-0.07828
Constant	2.248284	0.151072	14.88	0	1.952189	2.544379

Table 5 Sindh

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Education	-0.00267	0.000816	-3.25	0.001	4.76619	-0.00427	-0.00107
Gender	0.02839	0.011006	2.06	0.039	0.118306	0.006819	0.049962
Age	-0.00133	0.000372	-3.54	0	33.6206	-0.00206	-0.0006
Married	-0.01037	0.010438	-0.96	0.336	0.691985	-0.03083	0.010085
Household Size	-0.00054	0.001065	-0.51	0.611	7.51418	-0.00263	0.001545
Asset	-5.76E-10	2.29E-09	-0.25	0.801	476542	-5.10E-09	3.90E-09
Landholding Size	-0.00072	0.002255	-0.32	0.751	0.265838	-0.00514	0.003703
Irrigation Ratio	-0.03458	0.013233	-2.6	0.009	0.109921	-0.06051	-0.00864

Table 6: Khyber Pukhtunkhwa

	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Education	-0.00235	0.006575	-0.36	0.721	-0.01523	0.010541
Gender	-0.1031	0.139559	-0.74	0.46	-0.37663	0.170435
Age	-0.01188	0.003114	-3.82	0	-0.01798	-0.00578
Married	-0.19732	0.09282	-2.13	0.034	-0.37924	-0.01539
Household Size	-0.01081	0.008668	-1.25	0.213	-0.02779	0.006182
Asset	1.06E-09	3.12E-09	0.34	0.735	-5.07E-09	7.18E-09
Landholding Size	-0.03062	0.012801	-2.39	0.017	-0.05571	-0.00553
Irrigation Ratio	-0.1829	0.097467	-1.88	0.061	-0.37394	0.008129
Constant	1.576259	0.136257	11.57	0	1.3092	1.843319

Table 7 Khyber Pukhtunkhwa

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Education	-0.00064	0.001781	-0.36	0.721	6.29327	-0.00413	0.002855
Gender	-0.02903	0.040766	-0.74	0.46	0.060092	-0.10893	0.050869
Age	-0.00322	0.000842	-3.82	0	34.7786	-0.00487	-0.00157
Married	-0.05167	0.023409	-2.13	0.034	0.689266	-0.09756	-0.00579
Household Size	-0.00293	0.002347	-1.25	0.213	8.39599	-0.00753	0.001673
Asset	2.87E-10	8.47E-10	0.34	0.735	2.30E+06	-1.40E-09	1.90E-09
Landholding Size	-0.0083	0.003474	-2.39	0.017	0.456371	-0.0151	-0.00149
Irrigation Ratio	-0.04955	0.026377	-1.88	0.061	0.130978	-0.10125	0.002151

Table 8 Balochistan

	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Education	0.001159	0.008927	0.13	0.897	-0.01634	0.018655
Age	-0.01104	0.004352	-2.54	0.011	-0.01957	-0.00251
Married	-0.65315	0.161284	-4.05	0	-0.96926	-0.33703
Household Size	-0.00871	0.012516	-0.7	0.486	-0.03325	0.015817
Asset	-1.09E-07	6.73E-08	-1.62	0.105	-2.41E-07	2.27E-08
Landholding Size	-0.00826	0.015107	-0.55	0.584	-0.03787	0.021346
Irrigation Ratio	0.084312	0.236594	0.36	0.722	-0.3794	0.548027
Constant	2.432875	0.204345	11.91	0	2.032366	2.833385

Table 9 Balochistan

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Education	0.000161	0.001239	0.13	0.897	4.02329	-0.00227	0.002588
Age	-0.00153	0.000602	-2.54	0.011	34.8586	-0.00271	-0.00035
Married	-0.07255	0.01339	-4.05	0	0.749307	-0.0988	-0.04631
Household Size	-0.00121	0.001737	-0.7	0.486	8.00887	-0.00461	0.002195
Asset	-1.52E-08	9.38E-09	-1.62	0.105	369205	-3.40E-08	3.20E-09
Landholding Size	-0.00115	0.002094	-0.55	0.584	0.427898	-0.00525	0.002958
Irrigation Ratio	0.011696	0.032826	0.36	0.722	0.044238	-0.05264	0.076033

The self-employment model used presumes employment decision as a binary choice between wage employment and self-employment. Reduced form of the probit equation is used to model the effects of personal and regional characteristics on this decision. Two regressions are run. The reduced equation used for modeling the employment decision is given as:

$$E^* = \beta Z_i + \mu_i \begin{cases} \geq 0 \text{ if self} - \text{employed} \\ < 0 \text{ if wage employment} \end{cases}$$

where E^* is a binary variable and if it is ≥ 0 the individual is self-employed while if it is less than 0 the individual is employed in wage labour. Z_i is the vector of explanatory variables and μ_i is the error term normally distributed with mean zero and constant variance $N(0, \sigma^2)$.

The probit regression equation for rural areas is:

$$E^* = \beta_1 \text{Age} + \beta_2 \text{ Education} + \beta_3 \text{Gender} + \beta_4 \text{Marital Status} + \beta_5 \text{Household Size} + \beta_6 \text{Landholding} + \beta_7 \text{HouseholdNetWorth} + \beta_8 \text{Punjab} + \beta_9 \text{Sindh} + \beta_{10} \text{KPK} + \beta_{11} \text{IrrigatedRatio} + \beta_0 + \mu_i$$

Pseudo R^2 is used as the main goodness of fit measure.

RESULTS

Determinants of Self-Employment across Rural Regions

In rural Punjab, education is found to be statistically significant with each extra year of education increasing the likelihood of participation by 0.55% (Table 2 and 3). Being male increases the probability of participation of self-employment by 11.83%, being married by 3.43%, and each extra year of age by 0.494%. Household size, asset, and landholding size are not statistically significant. Irrigation ratio (the ratio of irrigated to total farmland) increases the probability of 4.7% is also statistically significant at 0.01%.

In rural Sindh, the likelihood of self-employment increased 0.267% with each year of education statistically significant at 1% (Table 4 and 5). Being male raises the likelihood of self-employment by 2.84% (significant at 5%) while each extra year of age raises the probability of self-employment by 0.133% (significant at 0.1%). Being married, household size, assets, and landholding size are not statistically significant. Irrigation ratio also positively impacts self-employment.

In Khyber Pukhtunkhwa, age is significant at 0.1% with each incremental year increasing the probability of participation with 0.33% (Table 6 and 7). Being married also has a positive impact on self-employment improving the likelihood of participation by 5.2% (significant at 5%). The two land variables, landholding size (each extra acre makes self-employment more likely by 0.83%) and irrigation ratio also have a positive impact on self-employment; they are both significant at 5%.Household size, gender, and assets are not statistically significant.

In Balochistan, age is significant at 1% with each extra year increasing the likelihood of participation by 0.15% while being married by 7.255% (significant at 0.1%) (Table 8 and 9). Household size, education, landholding size, irrigation ratio and assets are not statistically significant. Gender had to be excluded for this regression.

DISCUSSION

The present paper investigates the determinants of self-employment in rural Pakistan. It is seen that those considering self-employment as an employment opportunity face a different set of economic constraints and opportunities therefore determining which workers choose this mode of employment is important for understanding their wellbeing. Gender, marital status, and age were all seen to impact the self-employment. In general being married, being male, and being older all led to a higher probability of self-employment. Education is another important variable. Household size (easy availability of labour) and assets (proxy for capital) were significant in only some of the regions.

In rural Pakistan, the following variables were regressed and found significant. (see Table 10) Education was statistically significant in rural areas indicating the importance of education for seeking salaried employment.

Table 10

Variables	Rural Pakistan
Gender	Significant
Education	Significant
Age	Significant
Marital Status	Significant
Household size	Significant
Asset	Not Significant
Punjab	Significant
Sindh	Significant
KPK	Significant
Landholding Size	Significant
Irrigation Ratio	Significant

CONCLUSION

It is noted that certain characteristics of the work force increased the likelihood of their being self-employed. Among the significant personal characteristics were the education level of the individual, the marital status, the gender and age. The assets owned were seen to be insignificant, however, the size of land holding and the irrigation ratio were significant variables. It is suggested that those variables seen to be significant, such as the education level, be stressed upon and access to them improved. Education is an entry barrier for entry into self-employment and access to it may increase the percentage of self-employed in rural areas and bring many of the unemployed into employment. Furthermore, age was also a significant variable and we used age as a proxy for experience. Thus training workshops and imparting technical; skills to individuals would help them gain entry to the self-employment sector

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