

DETERMINANTS OF SELF EMPLOYMENT IN URBAN AREAS OF PAKISTAN

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ABSTRACT: This paper investigates the factors that may affect the likelihood of obtaining employment in the self-employment sector within the urban areas of Pakistan. Self-employment is a major source of employment in much of the developing world since salaried employment and wage work as an employment option is not readily available. This lack of employment opportunities in the waged employment sector makes it incumbent upon policy makers to try and find ways of absorbing the ever increasing labor force into viable employment elsewhere. The self-employment sector offers a promising alternative in this regard. In order to boost employment in the self-employed sector, the present study set out to explore the various factors that may have a bearing upon the likelihood of entry into this sector. The determinants focused upon were the personal characteristics of the individual worker, such as age, marital status, gender, assets owned and educational status. The study used 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, Urban

INTRODUCTION

Unemployment in urban areas of Pakistan measures at a high 8.8 percent and reducing this figure is a major concern for policy makers. Self-Employment is an important area of consideration while attempting to find alternate avenues of employment for the country's growing urban labor force. Self-employment has been defined by the International Labor Organization to be of three primary types, those 'employers' who employ others and derive profits from goods and services produced as a result, own account workers who are independent workers and ventures that involve family members. Another distinction that has been stressed between all those who take up self-employment is the difference in the reasons that may be motivating them to motivated by reasons other than entrepreneurship, such as the absence of other viable employment options. The self-employed within Pakistan's urban labor force similarly make up a sizable proportion. As Table 1 illustrates, though wage employment was the major type of employment for the urban work force at 70.27 percent, self-employment was the next major source employing 17.65 percent.

MATERIALS AND METHODS

Population, Sample Size and data collection:

The population included data collected from all provinces by the Pakistan Bureau of Statistics in the year 2010-11. There were 6,589 urban households which were sampled and the sampling was done by dividing the urban areas into mutually exclusive Enumeration Blocks (E.B) of 200-250 households which were identified as Primary Sampling Units (PSU). In urban regions, each city with population more than 500,000 is taken to be an independent stratum while the remaining cities and towns in a division are grouped together to form a stratum. Probability Proportional to Size method is used for the selection of PSUs from each stratum using the number of households as a measure of size. Finally, 12 to 16

households have been selected from each PSU using systematic sampling. (PBS, 2011).

Operational Definitions:

Employed:

HIES defines any individual who worked for at least one hour in the month before the interview, or anyone who had a job or an enterprise during the preceding year as employed. Individuals aged 10 or above who are employed in sectors other than agriculture are included in the sample.

Self Employed:

A self-employed person is defined as one who works for himself or herself with or without paid help and considers this employment his or her primary vocation. The self-employed and those who are employed in wage labor in agriculture are excluded because of the distinctive nature of agricultural employment for which the determinants are unique.

Self-Employment model

The 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:

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

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 urban areas is:

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

Variables

The following explanatory variables are used to explain the occupational choice between self-employment and wage employment:

Age

The variable Age is used as a proxy to capture the experience of the individual. More experienced individuals should prefer self-employment to wage employment. However, the old are also more risk averse.

Education

The number of years of education is used for educational attainment. Education can affect the occupational choice in many ways; for one, it imparts skills that make self-employment more profitable while at the same time the choice of, entry to, and the returns from wage employment also dramatically increase. It is difficult to establish the relationship a priori.

Gender

Given the traditional patriarchal society, few women opt for self-employment and this vocation is preferred by men. A dummy variable equal to 1 if male and 0 if female is used.

Marital Status

Being married in economics literature is assumed to bring stability and the individual is more willing to take risks. This is especially true if the spouse is working and can bring additional income. A dummy variable equal to 1 if married and 0 otherwise is used. The individuals who are widowed, divorced, engaged or never married all have marital status equal to 0.

Number of Workers

A larger number of workers means that the household members are less averse to risk since they have other family members who are earning to fall back on, in case of adverse circumstances.

Landholding

Landholding may affect the decision to be self-employed in two ways. On one hand, the availability of agricultural land offers an alternate employment avenue since it is the major constraint in crop cultivation. On the other hand, landholding increases the assets of a person and can also serve as collateral for loans. The net effect on self-employment is hard to establish.

Irrigation Ratio

The ratio of land irrigated to the total landholding is used to measure the productivity of the land.

Household Worth

The worth of the household is measured by a variable that includes the worth of any personal agriculture land, livestock, goats, sheep, transport animals, poultry, non-agricultural property, residential property and commercial property. The present market value of all these assets is summed up to obtain an estimate. This variable is a proxy for financial capital available to the household. Evans and Jovanovic (1989) note that credit constraints are one of the biggest bottlenecks for new startup firms. And according to Bernhardt (1994) liquidity constraints protect the less efficient workers in the self-employment field.

Region

Three dummy variables Punjab, Sindh, and Khyber Pukhtunkhwa are used to account for regional differences

with Baluchistan serving as the reference class. Punjab and Sindh are more developed and urbanized so it is expected that more self-employment opportunities are available to the workers in these provinces.

RESULTS AND DISCUSSIONS

Table 3 shows the determinants of self-employment in urban Pakistan using probit regression analysis. The log likelihood ratio chi-squared test ($LR \chi^2(8) = 1043.11$) confirms the validity of the estimation. The Probability of getting an LR as large as this, or even larger than this, under null hypothesis is $Prob > \chi^2 = 0.0000$; the null hypothesis is that all of the regression coefficients are simultaneously equal to zero. The extremely small value from the LR test indicates that at least one regressor has a statistically significant impact. In addition to the coefficients, marginal effects are also calculated at mean (Marginal Effects at Mean) to allow direct interpretation.

The dependent variable is paid employment equal to 1 if the individual is salaried and equal to 0 if the individual is self-employment. It should be noted that the agriculture sector has not been included since the determinants of employment in this sector are quite distinct. The number of observations from urban Pakistan is 9,920. Pseudo R^2 is 0.1035 which is an acceptable number for social or business sciences.

If an individual is female then she is more likely to be salaried than a male individual. The coefficient is statistically significant and equal to 0.57759. This makes sense since being self-employment requires both greater independence and mobility which women in Pakistan lack. Since coefficients for probit regression cannot be directly interpreted marginal effects are also computed. Being a female raises the probability of being in wage employment by 11.9%. Moreover, self-employed women tend to earn 37% less than men. This earnings difference was explained by Hundley (2000) as increasing with marriage, family size, and hours of household work with women's earnings decreasing with these.

The age of an individual is negatively related to paid employment. This means that as individuals grow older and presumably gather both experience and capital they are both likely to move towards self employment. This age pattern is consistent with evidence of rising self-employment rates at the end of the labor market career, which might reflect higher rates of retirement out of wage and salary work compared to self-employment as well as transitions to self-employment at older ages (Zissimopoulos and Karoly, 2007). The variable is significant at 0.01% and with each extra year the probability of being in wage sector decreases by 0.477%.

Married individuals are more likely to be self-employed because they have greater financial resources. The coefficient is statistically significant with $Z = 0.914$. Being married raises the probability of self-employment by 9.3%. Self-employment and education are positively related though the relationship is not statistically significant. Education not only improves chances of self-employment, it also opens up greater venues for paid work. Hence, it helps acquire better salaries and wages as well as income from self-employment.

Household assets are also found to have positive impact on self-employment and this variable is significant at 10%.

The province of Balochistan is taken as reference. Compared to Balochistan, individuals from Sindh are more likely to seek wage employment while those from Punjab and Khyber Pukhtunkhwa are more likely to be self-employed. In the province of Punjab (Table 4 and 5), being male, older, and employment married increase the probability of participation in self-employment. Being male increases the probability by 16.55%, each extra year of age by 0.5% and being married by 10%. The three variables are all statistically significant at 0.1%. Education, household size and assets are also positively related to self- though these three variables are not statistically significant.

As far as Sindh is concerned (table 6 and 7), being male increases the probability of self-employment by 5.27% (significant at 1%), being married by 6.85% (significant at 0.1%), and each extra year of age by 0.2% (significant at 0.1%). Education is statistically significant at 10% and each extra year of education increases the likelihood of participation in self-employment by 0.16%. Household size helps self-employment endeavors by providing reliable labour and each extra member increases the probability of self-employment by 0.6%. Household assets are also significantly and positively related to the decision to participate in self-employment indicating that lack of capital is a serious constraint.

In Khyber Pukhtunkhwa (Table 8 and 9), being male, older, and married increase the probability of participation in self-employment. Being male increases the probability by 11.538%, each extra year of age by 0.484% and being married by 10.5%. The two variables, marital status and age, are statistically significant at 0.1% while gender is significant at 1%. Education, household size and assets are

also positively related to self-employment though these three variables are not statistically significant.

As far as Balochistan is concerned (table 10 and 11), being male increases the probability of self-employment by 12% (significant at 5%), being married by 7.6% (significant at 5%), and each extra year of age by 0.4% (significant at 0.1%). Education is statistically significant at 0.1% and each extra year of education increases the likelihood of participation in self-employment by 0.5%, the most seen for any province. Household size is not statistically significant while household assets are significantly and positively related to the decision to participate in self-employment indicating that lack of capital is a serious constraint in Balochistan as well.

In urban Pakistan, the following variables were regressed and found significant. (see Table 12)

Lack of employment opportunities for the country's youth is one of the greatest predicament facing us today. This coupled with a rapid rate of population growth intensifies the problem. Thus, finding alternative employment opportunities for the unemployed population is the only way out. The present article attempted to investigate the determinants of self-employment across urban areas of the country. This is helpful for policymakers because it will equip them in removing potential bottlenecks and constraints that individuals who take up self-employment face. 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 though its impact is lesser felt in urban areas. Household size (easy availability of labour) and assets (proxy for capital) were significant in only some of the regions.

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

Employment Status	Urban (2007-08)	Urban (2010-11)
Employer	1.06	1.25
Self-employed	16.94	17.65
Unpaid	10.11	7.28
Paid employee	68.15	70.27
Not economically active	3.75	3.55

Table 2: Determinants of Self-Employment across Urban Regions of Pakistan

	Coefficient	Std. Err.	Z	P>z	[95% Conf.	Interval]
Gender	0.577959	0.059048	9.79	0	0.462228	0.693691
Education	-0.00429	0.002805	-1.53	0.126	-0.00979	0.001203
Age	-0.0184	0.001347	-13.66	0	-0.02104	-0.01576
Marital Status	-0.38373	0.041975	-9.14	0	-0.466	-0.30146
Household Size	-0.01758	0.004487	-3.92	0	-0.02637	-0.00878
Assets	-2.65E-09	1.43E-09	-1.86	0.063	-5.45E-09	1.42E-10
Punjab	-0.45776	0.049725	-9.21	0	-0.55522	-0.3603
Sindh	0.186542	0.055119	3.38	0.001	0.07851	0.294574
Kpk	-0.34968	0.05783	-6.05	0	-0.46302	-0.23633
Constant	1.536395	0.100163	15.34	0	1.34008	1.73271

Table 3: Determinants of Self-employment in Urban Pakistan

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Gender	0.1191315	0.015145	9.79	0	1.1124	0.120077	0.179445
Age	-0.00477	0.000349	-13.66	0	35.8536	-0.00545	-0.00409
Marital Status	-0.09327	0.009421	-9.14	0	0.673085	-0.11173	-0.0748
Household Size	-0.00456	0.001163	-3.92	0	7.31835	-0.00683	-0.00228
Assets	-6.88E-10	3.70E-10	-1.86	0.063	1.80E+06	-1.40E-09	3.70E-11
Punjab	-0.12139	0.013421	-9.21	0	0.440927	-0.14769	-0.09508
Sindh	0.046564	0.013211	3.38	0.001	0.289315	0.020671	0.072456
Kpk	-0.10071	0.01821	-6.05	0	0.145363	-0.1364	-0.06502
Education	-0.00111	0.000726	-1.53	0.126	7.81038	-0.00254	0.000311
obs. P		0.794355					
pred. P		0.823556	(at	x-bar)			

Table 4 Determinants of Self-Employment across Urban Regions of Punjab

	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Gender	0.637549	0.075029	8.5	0	0.490496	0.784602
Education	-0.0053	0.004054	-1.31	0.191	-0.01324	0.002648
Age	-0.01893	0.001843	-10.27	0	-0.02254	-0.01532
Marital Status	-0.36391	0.056539	-6.44	0	-0.47472	-0.2531
Household Size	-0.00574	0.007347	-0.78	0.435	-0.02014	0.008664
Asset	-2.12E-10	1.76E-09	-0.12	0.904	-3.66E-09	3.23E-09
Constant	1.611214	0.094032	17.13	0	1.426915	1.795513

Table 5 Determinants of Self-Employment across Urban Regions of Punjab

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Gender	0.165541	0.015198	8.5	0	0.13626	0.135754	0.195328
Education	-0.00166	0.001273	-1.31	0.191	7.90306	-0.00416	0.000831
Age	-0.00594	0.000578	-10.27	0	35.9529	-0.00708	-0.00481
Marital Status	-0.10902	0.015971	-6.44	0	0.66941	-0.14032	-0.07772
Household Size	-0.0018	0.002307	-0.78	0.435	6.87997	-0.00632	0.002721
Asset	-6.64E-11	5.52E-10	-0.12	0.904	2.30E+06	-1.10E-09	1.00E-09

Table 6: Determinants of Self-Employment across Urban Regions of Sindh

	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Gender	0.417757	0.139334	3	0.003	0.144668	0.690847
Education	-0.01062	0.006224	-1.71	0.088	-0.02282	0.001577
Age	-0.01779	0.003021	-5.89	0	-0.02371	-0.01186
Marital Status	-0.47082	0.097583	-4.82	0	-0.66207	-0.27956
Household Size	-0.03796	0.009917	-3.83	0	-0.0574	-0.01853
Asset	-4.87E-08	9.12E-09	-5.34	0	-6.66E-08	-3.09E-08
Constant	2.665119	0.153952	17.31	0	2.363379	2.966859

Table 7: Determinants of Self-Employment across Urban Regions of Sindh

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Gender	0.052702	0.013469	3	0.003	0.105575	0.026303	0.0791
Education	-0.00168	0.000985	-1.71	0.088	7.89233	-0.00361	0.000247
Age	-0.00282	0.000478	-5.89	0	35.6108	-0.00376	-0.00188
Marital Status	-0.06847	0.012662	-4.82	0	0.645296	-0.09328	-0.04365
Household Size	-0.00602	0.001569	-3.83	0	7.08049	-0.00909	-0.00294
Asset	-7.72E-09	1.47E-09	-5.34	0	1.20E+06	-1.10E-08	-4.80E-09

Table 8: Determinants of Self-Employment across Urban Regions of KPK

	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Gender	0.439238	0.143362	3.06	0.002	0.158254	0.720223
Education	0.000396	0.006909	0.06	0.954	-0.01314	0.013936
Age	-0.01594	0.00339	-4.7	0	-0.02259	-0.0093
Marital Status	-0.36588	0.102802	-3.56	0	-0.56737	-0.16439
Household Size	-0.01013	0.008893	-1.14	0.255	-0.02756	0.007305
Asset	-4.89E-09	4.74E-09	-1.03	0.303	-1.42E-08	4.41E-09
Constant	1.607624	0.158096	10.17	0	1.297762	1.917486

Table 9: Determinants of Self-Employment across Urban Regions of KPK

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Gender	0.115358	0.03155	3.06	0.002	0.104022	0.053521	0.177194
Education	0.00012	0.002098	0.06	0.954	8.04993	-0.00399	0.004231
Age	-0.00484	0.001028	-4.7	0	35.7288	-0.00686	-0.00283
Marital Status	-0.10504	0.027548	-3.56	0	0.690707	-0.15904	-0.05105
Household Size	-0.00307	0.002701	-1.14	0.255	8.24133	-0.00837	0.002219
Asset	-1.48E-09	1.44E-09	-1.03	3.03E-01	2.40E+06	-4.30E-09	1.30E-09

Table 10: Determinants of Self-Employment across Urban Regions of Balochistan

	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Gender	0.854196	0.388493	2.2	0.028	0.092763	1.615629
Education	0.022354	0.008172	2.74	0.006	0.006337	0.038371
Age	-0.01801	0.00448	-4.02	0	-0.02679	-0.00923
Marital Status	-0.37628	0.147211	-2.56	0.011	-0.66481	-0.08775
Household Size	-0.01514	0.012051	-1.26	0.209	-0.03876	0.008483
Asset	-1.15E-07	2.64E-08	-4.35	0	-1.67E-07	-6.32E-08
Constant	2.025148	0.199904	10.13	0	1.633344	2.416952

Table 11: Determinants of Self-Employment across Urban Regions of Sindh

	dF/dx	Std. Err.	Z	P>z	x-bar	[95%	C.I.]
Gender	0.120697	0.028284	2.2	0.028	0.053485	0.065261	0.176132
Education	0.004967	0.001814	2.74	0.006	7.01135	0.001412	0.008522
Age	-0.004	0.000998	-4.02	0	36.2123	-0.00596	-0.00205
Marital Status	-0.07601	0.026499	-2.56	0.011	0.730146	-0.12794	-0.02407
Household Size	-0.00336	0.002677	-1.26	0.209	8.34684	-0.00861	0.001883
Asset	-2.56E-08	5.91E-09	-4.35	0	803130	-3.70E-08	-1.40E-08

Table 12: Summary of Variables

Variables	Urban Pakistan
Gender	Significant
Education	Not Significant
Age	Significant
Marital Status	Significant
Household size	Significant
Asset	Significant
Punjab	Significant
Sindh	Significant
KPK	Significant

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