DETERMINANTS OF SELF-EMPLOYMENT. A SURVEY ANALYSIS OF THE PROVINCE OF THE PUNJAB

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Abstract

This paper covers a wide range of literature on self-employment. The focus is on the determinants of self-employment like age, gender, education, marital status. District wise and rural urban demographic differences are also included. The data is borrowed from MICS 2007-08. The results showed that a person who is married, middle aged, having primary level education, resident of Gujranwala, Faisalabad and Lahore have the positive significant and comparatively more chances to be self-employed. Further more robust standard errors are used as a remedy of heteroscedasticity.

Keywords: Self-employment, Logit, Literacy, Gender, Wealth Index, Marital Status.

JEL Classification: Z000

Introduction

In recent years there has been a rapid increase in the number of people who choose to be a self-employed in many developing countries (Pietrobelli et al., 2004). Self-employed worker are those workers who, working as their own account or with one or a few partners or in cooperative, hold the type of jobs defined as a 'self-employment jobs' (i.e., jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced) ILO.

Pakistan has been facing high averagly labor force participation rate 43.73% which is not in equilibrium with the employment opportunities rate. A rough idea that can be made as the averagely employment to population is 49.67% . The population growth rate at 2% and most of the population is of young ones. Causes of this high unemployment rate upto 5.35% are like low literacy rate, less equipped with required technical skills, dualism in society, no professional experience, ethnic or demographic discrimination and lack of availability productive employment opportunities (Qayyum, 2007).

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Unemployment in Pakistan also causes due to the high inflation rates, heavy debt burdens and low investment rate. Government has no such measures to secure the investors which enable the job creation process to absorb the labor force in Pakistan. Also there has been high population growth rate at the back of this problem. In the end the structure is not there to promote the employment creation process Maqbool et al. (2013).

Agriculture alone holds 63.39% of the total employment in Pakistan. Services on the other hand the second big sector holds 44.49% of population. Industry is on third number. Except agriculture, industry and services comprises the formal sector of the economy. This formal sector is not capable of creating jobs as per requirement. Public and Private sectors (Formal Sector) contribution towards job creation has been very slow since the last 10 years or so. Kemal suggested that about to 73.5% of the non-agricultural workforce is the part of informal sector. 64% of the total employment is defined as the self-employed in Pakistan (World Bank, 2008).

In such cases self-employment becomes so much attractive for the labor force. Self-employment is not a concern of some region or specific area it is wide spreading phenomenon. Over half of all workers in the developing countries are self-employed (Margolis, 2014). Self-employment is the fast emerging state of employment in Pakistan.

On the provincial basis Punjab is the most populated. The unemployment rate is…… Therefore, self-employment could be the easy to hand option for the work force as well as the policy makers to cure this unemployment. It has the highest percentage in terms of self-employed persons 26.36%. This makes Punjab more attractive to researchers. In urban areas 12.57% of the employment is self-employed and 13.79% of the overall employment of Punjab is self-employed.

Defining determinants of Self-employment

Blau (1987) used a general equilibrium model to explore why the downward trend in self-employment has reversed in USA. He divided the whole economy into two sectors self-employed and wage employed. There were two factors which lead to this rise in self-employment according to his analysis.

First is positive impact of total factor productivity index in reference to self-employment. Second the notion of tax avoidance. A person who is wage employed his wage reported by the employer but when he is self-employed with a notion to evade tax he undermine his income. This leads to higher self-employment proportions.

Do and Duchene (2008) used Logit model for the Vietnam to construct the empirical understanding regarding the determinants of self-employment. They used the Vietnam Household Living Standard Survey (2004). Male and female respondents were chosen who were between the

ages of 16-70 years. All the selected individuals were belonging to urban areas.

The part time workers, agriculture sector employment, multi-job holders and people belonging to rural areas were excluded from the sample. Results suggested that age and house ownership are the positive notions towards self-employment. On the other hand, for female, number of children and marital status played positive and significant role only for female self-employment. The higher education had a negative impact on self-employment decision.

Dawson, Henley and Latreille (2009) had conducted an empirical research on the basis of UK Quarterly based Labor Force Survey form 1991-2001 for the spring season only. This vast range of survey was used to define some other non-tangible determinants of self-employment. These determinants were derived from the questionnaire based response by the individuals who were self-employed at that time. Independence, more money earning potential, flexible work environment, joining family business etc. were the non-tangible determinants defined.

All of these were positive and significant only for male respondents' female found to be ineffective in choosing self-employment due to these reasons. On the whole female self-employed were less in number than males. Age, number of children and ownership to the property lead to more chances of being self-employed.

Higher education's again lead to wage work rather than self-employment. Another new thing in this model was the inclusion of disability as a variable this variable lead to self-employment. The reason was provided that it made them more comfortable in their working conditions.

Svaleryd (2013) checked the labor market impact on the self-employment on the basis of Statistics Sweden, Public Employment Services by using Logit model. The time span was from 1996 to 2007. Labor market is measured through the vacancy rate. Vacancy rate is used as a proxy of labor market the interaction term with high school education. Age variable was used to include the fixed effects.

Different models were run for male and female. The results suggested that the high school education leads to more self-employment with a condition of high vacancy rate for both male and female. Another interesting feature in this article was the sectoral differences on the self-employment. Two sectors were selected Hotel and restaurants and Business and services. The results showed the positive relationship between self-employment and highly educated individuals with high vacancy rate. On the other hand in business and services only the less educated individuals were positively correlate with the self-employment at high vacancy rate.

Nikolova and Bargar (2010), used National Longitudinal Survey of Youth (1997) in defining the determinants of self-employment in USA. Data was selected for the year 2005. All the individuals

were selected either they self-employed or self-employed and wage worker at the same time.

All the conventional measures of self-employment were included like, age, gender, education, capital mobility and health. Ethnicity was included through the following Dummy Variables, Hispanic, Black, Non-Black, and Non- Hispanic.

Probit model suggested that immigrants were more being self-employed with conditions of being male and living in south. This study had deducted the hypothesis that the blacks were not attracted to self-employment.

Brower (2013) has observed the determinants of self-employment in with the collaboration of Tanzania's National Bureau of statistics. Their findings suggested that more years in education will lead to higher earnings from self-employment. Also the firm size plays a significant role if the firms size is large earning possibilities will be higher and lower if firm size is small.

Benz and Frey (2008) were of the view that in European countries people feel more satisfied while being self-employed. They used the fixed effect model and natural experiment techniques. They have measured the job satisfaction using the utility concept as its proxy. Study also concluded that the people dissatisfaction increased with the firm size.

Kaiser and Moller (2011) were considered the database for labor market research (IDA) for Danish residents, time period ranging from 1990 to 1996. Results were self-employed earn less than their counter parts that are in wage employment. Another conclusion was that if the self-employed person switched to wage employment then they were in total loss position.

Yueh (2009) studied the self-employed people in urban China with respect to a very unique idea of social networks. Survey of National Bureau of China (1999) was considered as the data base for the study. Social networking was defined as "In the past year, how many relatives, friends and colleagues or acquaintances did a person exchange the gifts."

So, a person who has extended social networks more likely to be self-employed. Some other factors were credit restrictions, forma sector complications, lack of access to supply networks, credit constraints, etc have positive impacts to self-employment. Economic development is also leads to self-employment because of absorption capacity in the economic activity.

Yuengert (1995) checked the determinants of immigrant self-employment in USA. He observed by using maximum likely hood method that immigrants who were self-employed in their home country are self-employed in immigrant country as well. They also chose to be self-employment to avoid taxes in the immigrant country. Hispanics are more likely to be self-employed in Hispanic concentrated areas. So, he explored a new channel that leads to self-employment for immigrants.

Bruce and Schuetze (2004) used the panel data from the study of Income Dynamics (USA) 1997. As a dependent variable log of hourly wage sector earnings, at the start of 5 years period selected. He found out that as the number of years increased in self-employment the chances to get higher wages decreases. So, self-employed person has to face consequences in terms of fall in wage rate in the labor market. Therefore, self-employed if starts switching to wage employment then it's just an increase in unemployment.

Faridi et al. (2008) has focused on the Bahawalpur district of Punjab to know the determinants of self-employment. They used the primary data by conducting a survey. They also constructed some models to check female self-employment determinants as well. Their study was limited in a sense of demographic constraints.

Margolis (2014) go through a theoretical based study to check the importance of self-employment in the developing countries. Although he considered the agriculture self-employment as well. He was of the view that self-employment the only way out for the people of developing countries as they face restrictions to wage employment. On the other hand entrepreneurship is only one third of the total self-employment.

Fatima and Yousaf (2015), used the probit model to define the determinants of self-employment in the urban areas of Pakistan. They used the household Integrated Economic Survey 2010-11, conducted by the Pakistan Bureau of Statistics. They considered gender, education, age, marital status, household size, asset, Punjab, Sindh and KPK as determinants. All of the determinants were statistically significant except the education. Their study lack on theoretical and literature based.

Ma and Li (2016) have defined the self-employed as a person who owned a small firm where less than 7 persons are working. They took into account another category which is called own-account worker. Own-account worker is a worker who work in such firm that is not owned by him likely to be a family business. They used the multinomial logit model for analysis. They used two times 2007 and 2013. There results suggested that in 2013 self-employment is mostly affected by the government policies in that time. Also they were supporting the older people more likely to be self-employment.

Clark (2015) promotes the serious approach by the UK government towards the self-employment among minority groups. Most of the Pakistani and Indian people more attracted towards self-employment. The reasons are the restrictions minorities faced towards the productive wage employment. So, self-employment a way out even its less productive. Therefore, according to the researcher improvement in the status of self-employed ethnic groups financially has the long lasting effects on the economic drivers by these groups.

Bogenhold and Klinglmair (2015) stated that women participation in the solo self-employment

is more in Carinthia (Austria). A survey analysis was conducted with 52 questions in Feb, 2014. Many small businesses for short term and also for low returns are run by the females but the working environment is much better in them.

Awan and Ibrahim (2015) used the primary data to check whether microfinance is the key determinant to self-employment in Bahawalpur. They used the logit model as an econometric technique. 3600 microfinance institutions working in Bahawalpur which could make the microfinance as a main driver to self-employment. On the basis of their results they suggested that 200% more chances are there of being self-employed with microfinance facility.

Christelis and Fonseca (2015) observe that 13 OECD countries with survey data on international standards. They have tried to understand the transition to self-employment. They suggested that when government policies are in favour self-employment is more attractive. On the other hand being a female and number of children also positively affect the chances of self-employment. If there are options available like early retirement or unemployment benefits then these affect the chances of self-employment negatively.

Miao (2015) is of the view that happiness should be more discussed regarding self-employment rather than its driving factors. He by the means of his results concluded that self-employed are happier than the wage employed in China. The point of concern in his study is the use of OLS for binary dependent variable. So, there are heterogeneous results.

There has been very little econometric plus theoretical literature available on the issue of self-employment in Pakistan. Form the above general analysis we have an objective to study that what are the factors that leads to self-employment in overall Punjab. We have chosen Punjab for our analysis because it is the most populated province of Pakistan. Also, according to the Labor Force Survey 2009-10 Punjab has the highest percentage of self-employed people.

A brief overview of the existing literature guides us to consider Age, Marital Status, Education, Gender and Wealth as the main driving factors towards self-employment. We will also include the rural/urban and district level dummies to check whether demographic changes may important for the decision of self-employment or not.

Methodology and Results

As we know that our dependent variable is a binary in nature therefore, we cannot use the OLS technique. We are using here Logit model as in literature most of the studies conducted with the help of this technique. Our base line model is

SE = f (Gender, Age, Education)

SE means Self-employment; on the other hand gender, age and education are taken as the control variables. STATA 11 application is used to generate the results. To check the further effects of the rest of the variables we are concerned with we have constructed five more models. So, the six models are as below,

SE = f (Gender, Age, Education).....(1)
SE = f (Gender, Age, Education, Marital Status).....(2)
SE = f (Gender, Age, Education, Area).....(3)
SE = f (Gender, Age, Education, Wealth Index).....(4)
SE = f (Gender, Age, Education, Division).....(5)
SE = f (Gender, Age, Education, Marital Status, Area, Wealth Index, Division).....(6)

We have included one variable at a time and in the model 6 we have included all of the variables.

Multiple Indicator cluster Survey 2007-08 has been selected as the data source. This report has published in 36 volumes, the first one consist of explanatory appendices of all the technical aspects in the survey. Bureau of Statistic Punjab division with the cooperation of UNICEF has constructed this report. The main objective of this report is to summarize all of the cognitive and non-cognitive changes happening in Punjab. So, it facilitates the Government to define very precise steps to improve and facilitate the human and social aspects for development. The report comprises of 9 divisions, 35 districts and 143 tehsils of Punjab. Different indicator variables consist of more than 70 characteristics.

We are only interpreting here the results of Table 5 (Appendix) which contains the margin ratios with robust standard errors, as a remedy to heteroscedasticity. Gender has the same relation to self-employment in all of the models, so, males are more likely to be self-employed as compare to females in Punjab. According to our results a male has 3.8% more chances to be self-employed. Also with robust Standard Errors we have strengthen our results. These results are in accordance with Crassco (1999), Do and Duchene (2008), and Svaleryd (2013).

Self-employment has strong relevance to different age groups as suggested by the literature Nikolova and Bargar (2010). So, with reference to the people in age group 16 years to 35 years we have compared the chances of other age groups relation to self-employment. According to our results people in the age group 35 years to 54 years in model 1 has positive 0.564% chances to be self-employed which is higher than all other groups. This has changed in the Model 2. It becomes insignificant and negative as well when in this model we included marriage status. One can see that the inclusion of the marriage status has disturbed the nature of the variable in the model. The third age group has almost negative response to self-employment as compare to base line age group. This

means that older people have no attraction towards self-employment. This has also changed its sign and turned insignificant when rural/urban and quintiles for wealth are included. This area of study needs some econometric explanations which are yet to be discovered.

Education has been analysed in a way that as compare to an illiterate person, primary pass person is more likely to be self-employed. If all of the 5 models its coefficient is positive and significant. Similarly, all of the education levels has positive significant margin ratios. That shows the positive chances to self-employment for all the education levels. This means education is best motivating factor to self-employment. The highest margin ratio is for secondary education. Many studies like Carrrasco (1999), Goetz et al. (2011), Savleryd (2013) were in the support of higher education as a significant determinant to self-employment so is the case here. We have seen the same pattern in our results. Where the studies by Do and Duchene (2008), Dawson et al. (2009), in case of widowed, divorcee and unmarried all have negative coefficients. This shows that as compare to these three categories married person has the positive chances to self-employment as discussed by Lindh and Ohlson (1996).

As compare to rural sector urban sector residents have positive margin ratio. It shows a high percentage of positive chances to be self-employed. Wealth quintiles are to check the wealth effect to self-employment. In model 4 with respect to first quintile all the quintiles shows negative chances to self-employment. But in the Model 6 all of these changing their signs and become insignificant. In the end as we can see that results support the urban self-employment. Lindh and Ohlson (1996), Mohapatra et al. (2007), Do and Duchene (2008) suggested the same story too. Similarly, we have seen our results with more precision. In all of the main districts of Punjab margin ratios are high. Faisalabad residents are most likely to be self-employed as compare to others. So, residents of the urban areas are more likely to be self-employed. Whereas Lahore is not in top of the order. This could be in line with the study by Willaims (2000), Tamvada (2005) that self-employment is not the first option in metro cities.

Conclusion

The discussion made in precious chapters now empowers us to conclude our research. In this chapter we find the relevance of our results to the literature regarding self-employment. Here we will only consider the results of Logit Model with margin ratios in (Table-13).

As we have analyzed in the literature review that the male attracted more towards self-employment (Do & Duchene, 2007; Nikolova & Bargar, 2010; Shavit & Yaar, 2001). Similar conclusions we have made here thorough our research that being male have more chances to be self-employed in Punjab Pakistan. This could be the case that our social tides are more flexible and supportive for the male sect in case of entering into the market. On the other hand females are more indulged in household works and wage employment due to lack of confidence probably. There is

much research is needed on this aspect that why female are less self-employed.

In almost all of the literature of self-employment education gained much importance. Due to which it believed that self-employment increases with the increase in education acquired (Svaleryd; 2013, Ohlsson, 2004; Do & Duchene, 2007; Nikolova & Bargar, 2010; Shavit & Yaar, 2001). We are concluding that education has significant effect but only the primary education level. Higher education is not that much influential as expected as suggested by some researchers as Tamvada (2005). The reason could be the social thought that if one is highly educated should look for the white color job.

There has been no support to the urban rural or area wise dynamics to self-employment. So, here this work included the rural urban self-employment. We conclude on the basis of our analysis that resident of rural areas are more attracted towards self-employment. The rationale can be made the less capital is needed to start a self-employment so therefore, we have also shown through our empirical analysis that people in the lowest quintile of wealth index are more self-employed.

The same kind of strengthening factor represents that a resident of Faisalabad and Gujranwala has the highest chances to be self-employed in the whole of Punjab. This could be due to the fact that there are most of the wage employment opportunities are available in big cities like Lahore. People have better chances to equip with better education. The basic infrastructure is also available in big cities to support entrepreneurship. Therefore in the rural areas or the small cities people with less capital, low education and limited markets chose to be self-employed in Punjab.

Most of the literature has suggested that being married is an insignificant factor to effect self-employment. On the contrary we conclude that the married men are found more attracted towards self-employment (Fairlie & Meyer, 1996; Blanchflower, 2000; Livanos, 2009). This could be the case that male are considered more responsible in our society to support the dependents.

The last research question was the age factor. Middle aged persons in Punjab are more likely to be self-employed. This could be of many reasons like the median age of Punjab is of young people so on the basis of this data we got this conclusion. Other reason could be that in self-employment a person has to do all of his work by himself. Therefore, being a person of middle age has better chances to excel in the field. Another reason is that most of the people who indulged in the self-employment be a part of the child labor as well in their child hood. So, when they mature they are of much experience to start their own work and become self-employed. All of these reasons are considered as the common notion in our society.

In the end we can say that the economic conditions we are observing in Punjab like less developed human capital, low literacy rate, less wage employment, large proportion of population living in the low quintile of wealth index, increased number of dependents in family base, a person

living in this society self-employment has all the good arguments to give a person an esteemed earning source. Therefore, according to our analysis being a male, having primary level education, resident of rural area, having very low level of wealth and being married are the strong determinants of self-employment in Punjab Pakistan.

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Appendix

Table 1

Years	Labor force participation rate for ages 15-24, total (%) (modeled ILO estimate)
1994	40.80
1995	39.40
1996	40.40
1997	41.50
1998	41.40
2005	45.30
2006	46.50
2007	45.00
2008	44.40
2009	45.00
2010	45.20
2011	45.20
2012	45.30
2013	45.30
2014	45.30
Average	**43.73**

Author's Own calculations, Source World Bank

Table 2

Years	Employment to population ratio, 15+, total (%) (modeled ILO estimate)
1994	48.10
1995	46.70
1996	47.10
1997	47.40
1998	47.50
2005	48.80
2006	50.30
2007	50.50
2008	50.40
2009	50.90
2010	51.20
2011	51.30
2012	51.50
2013	51.60
2014	51.70
Average	**49.67**

Author's Own calculations, Source World Bank

Table 3

Years	Unemployment, total (% of total labor force) (modeled ILO estimate)
1994	4.30
1995	5.00
1996	5.30
1997	5.80
1998	5.70
2005	7.10
2006	6.10
2007	5.10
2008	5.00
2009	5.20
2010	5.10
2011	5.10
2012	5.10
2013	5.10
2014	5.20
Average	**5.35**

Author's Own calculations, Source World Bank

Table 4
Male and female self-employment percentages in Pakistan

Pakistan		
Self-employed, female (% of females employed)	**Self-employed, male (% of males employed)**	**Self-employed, total (% of total employed)**
70.88	61.94	63.39

Table 5
Logit model estimated results with robust standard errors

VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Gender	-3.854***	-3.948***	-3.879***	-3.854***	-3.859***	-3.991***
(B.L Male=1)	(0.0431)	(0.0432)	(0.0432)	(0.0431)	(0.0431)	(0.0434)
35 <Age<55	0.564***	-0.0160	0.594***	0.564***	0.567***	-0.0465**
(B.L Age<35=1)	(0.0152)	(0.0186)	(0.0154)	(0.0152)	(0.0152)	(0.0190)
55<Age<97	-0.0344*	-0.589***	0.00918	-0.0340	-0.0400*	-0.613***
	(0.0209)	(0.0240)	(0.0211)	(0.0209)	(0.0209)	(0.0243)
Primary	0.553***	0.554***	0.468***	0.553***	0.543***	0.459***

(Table Continued...)

(B.L None=1)	(0.0209)	(0.0210)	(0.0212)	(0.0209)	(0.0210)	(0.0215)
Middle	0.633***	0.637***	0.523***	0.633***	0.617***	0.512***
	(0.0224)	(0.0225)	(0.0226)	(0.0224)	(0.0226)	(0.0230)
Secondary	0.749***	0.761***	0.554***	0.750***	0.727***	0.544***
	(0.0188)	(0.0189)	(0.0193)	(0.0188)	(0.0191)	(0.0196)
Higher	0.693***	0.709***	0.336***	0.693***	0.672***	0.331***
	(0.0230)	(0.0231)	(0.0239)	(0.0230)	(0.0232)	(0.0242)
Madrasa	0.724***	0.659***	0.582***	0.721***	0.759***	0.552***
	(0.197)	(0.197)	(0.202)	(0.197)	(0.197)	(0.204)
Widow		-0.389***				-0.406***
(B.L Married=1)		(0.0473)				(0.0478)
Divorce		-0.491***				-0.478***
		(0.122)				(0.125)
Unmarried		-0.999***				-1.095***
		(0.0204)				(0.0209)
Urban=1			0.942***			0.982***
			(0.0147)			(0.0150)
Second				-0.0355*		-0.0158
(B.L Q1=1)				(0.0209)		(0.0217)
Middle				-0.0418**		-0.0109
				(0.0210)		(0.0222)
Fourth				-0.0475**		0.00872
				(0.0211)		(0.0226)
Highest				-0.0481**		0.0132
				(0.0232)		(0.0251)
D.G.khan					0.141***	0.120***
(B.L Bahwalpur=1)					(0.0329)	(0.0334)
Faisalabad					0.497***	0.449***
					(0.0288)	(0.0294)
Gujranwala					0.417***	0.375***
					(0.0287)	(0.0296)
Lahore					0.315***	0.179***
					(0.0291)	(0.0298)
Multan					0.177***	0.123***
					(0.0309)	(0.0322)
Rawalpindi					0.178***	0.137***
					(0.0303)	(0.0314)
Sahiwal					0.177***	0.231***
					(0.0381)	(0.0385)
Sargodha					0.277***	0.303***
					(0.0315)	(0.0323)
Constant	1.327***	2.029***	1.019***	1.359***	1.081***	1.575***
	(0.0461)	(0.0488)	(0.0465)	(0.0478)	(0.0504)	(0.0542)
Observations	366,473	366,473	366,473	366,473	366,473	366,473