

Determinants of Informal Wage-Employment and Informal Self-Employment in Southern Punjab (Pakistan)

Durdana Qaiser Gillani, PhD

Department of Economics,
University of Punjab, Lahore
durdana_gillani@hotmail.com

Fatima Farooq

Lecturer, Department of Economics,
Bahauddin Zakariya University, Multan
fatimafarooq@bzu.edu.pk

Nabila Asghar, PhD

Assistant Professor, Department of Economics,
University of Punjab, Lahore
nabeelakhan83@gmail.com

Abstract

Migration and urbanization has flooded cities in Pakistan and role the urban informal sector plays is very imperative. The controversy is that almost classical migration models take care of the informal sector as a temporary employment opportunity for rural-urban migrants. Some studies empirically examined that the informal sector may play an imperative role in economic development. The present study distinguishes between the wage-earner and self-employed groups within the informal sector by using a survey data of 1487 participants of the informal and formal sector in three divisions of Southern Punjab (Pakistan). The study results highlight that both the wage earners and self-employed group in the informal sector have played important role in employment creation and in the economic development of Pakistan economy. While wage earner group may provide temporary employment opportunities to the participants and self-employed group emerges as a desirable employment choice.

Keywords: Job search; Informal labor markets and Labor Force and Employment Size

JEL Classification Codes: O15; J46; J21

I. Introduction

Migration, urbanization and role of informal sector have attracted a great deal of attention from both policy makers and academics alike. Various studies have investigated different aspects of these emerging issues. However, the role of the informal sector has been a controversial issue in different studies. Most classical migration models take the informal sector as a temporary employment opportunity for migrants (see Todaro, 1969; Fields, 1975; Mazumdar, 1976, 1977; Lal, 1973). The ILO report in Kenya concluded that the informal sector has the potential for employment creation. Moreover, its growth

is faster than the formal sector and that the size of informal sector employment far-off from being only slightly productive is economically well-organized and profit giving.¹ This report challenged the above-mentioned theoretical models and suggested that the informal sector in Kenya played an important role in economic development.

This present research looks at the role of the informal sector in employment creation or income generation in the development of the economy. We have used a survey data in this regard which was collected during 2012-13 from 1487 participants of formal and informal sector in three divisions of Southern Punjab (Pakistan).

The structure of the paper is as follows: Section 2 provides some background information on the formal and informal sectors in Pakistan; Section 3 explains the data and methodological issues; Section 4 describes the socio-economic determinants of informal sector; Section 5 explains the concluding remarks and policy implications.

II. Background

The growth in the size of labor force has been much faster than the rate of growth of formal sector jobs. The informal sector has been considered as a very important sector of the economy because development strategies are redirected to endorse jobs and equity because of its presence. The very sector certainly generates employment at higher level as compared to formal sector for any particular investment having relatively high productivity of capital. The process of formal sector employment creation depends on informal sector to a great extent. Though, the productivity of workforce in informal sector is, most probably, rather low and they are not provided protection against exploitation by employers who earn skimpy wages at the cost of longer working hours. Accordingly, policy intervention regarding informal sector must hinge on the truth that informal sector, which is labor-intensive, creates additional employment. Simultaneously the public policies are required to induce enhanced labor productivity in the informal sector with no compromise on growth objective and on workers' protection in opposition to exploitation. The policy is also required to promote and encourage informal economic activities rather their creative discrimination.

The International Labor Organization (ILO) reports accredited the specific characteristics of informal sector such as ease of entry; reliance on indigenous resources; family ownership of enterprises; labor-intensive, using adapted technology; skills acquired outside the formal school system; and unregulated and competitive markets; lack of support and recognition from the government. Funkhouser (1996) defined informal sector as employment size i-e self-employed, domestic workers, family workers and wage and salary workers in firms of four or lesser persons excluding professional and technical occupations.²

It is argued that wage earners in small scale labor intensive operation may require fewer skills while operating an own business requires much more managerial and specific skills. This certainly contributes to the different employment positions to a large extent, and, hence, the behavior of an individual in the labor market. In this study, the wage

¹ See ILO (1972: 5)

² Funkhouser (1996) used wage employment as well as self-employment as urban informal sector employment.

earners and self-employed are considered as two separate groups by following the Banerjee (1983) and Meng (2001).

Growth in GDP for year 2011-12 has been estimated 3.7 percent against 3.0 percent in the previous fiscal year 2011 in Pakistan while the growth of agriculture sector is recorded 3.1 percent. The growth of large scale manufacturing (LSM) is noted 1.1 percent during July-March 2011-12. According to labor force survey 2010-11, Pakistan has experienced an increase of 0.9 million in labor force in year 2011-12. The employed are about 53.8 million during 2010-11 year, which is more than the last year.³

III. Literature Review

This section reviews the empirical evidence on aspects of informal sector and urban informal sector employment determinants. Okojie (1984) studied female migrants in the urban labor market by using data collected in 1980 in the survey of female Benin City of Nigeria. Based on regression techniques, result indicated that migrants took the urban informal sector as temporary employment opportunity. It was also found that women both (migrant and non-migrant) having low education participated in low income jobs in both informal and formal sector. The study results suggested that there is a need to increase employment opportunities in urban areas and rural-urban migration must be decreased on behalf of highly educated workers.

A survey of informal sector enterprises was conducted by House (1984) in mid - 1977 in Nairobi. The results highlighted that low skilled participants joined the urban informal sector and an influx of migrants was found in urban informal sector.⁴ The study results concluded that the informal sector offered a consistent way to urban existence, even at a bare survival. Furthermore, the results suggested maximization of development potential of the intermediate sector and lessening the size of the community of the poor at similar time. The determinants of work participation and decisions of labor supply were estimated by Kozel and Alderman (1990). The data was drawn in 1986 under the auspices of international Food Policy Research institute (IFPR) and Pakistan Institute of Development Economics (PIDE). The authors adopted Tobit and probit estimation techniques. The estimates showed that wages were influenced by the education. The results also found a negative relationship between age-square and total wages of the participants. Furthermore, the educated young informal sector participants were increased the job search for the extended family structure along with the availability of remittances. The results concluded that labor force participation was increased with an expansion in expected earnings and remuneration definitely revealed discrepancies mainly caused by differences in human resource capacity because of education and work experience.

Though, Hout and Rosen (2000) analyzed the influence of family background and race on self-employment by drawing data from General Social Survey (GSC) made from 1500 English speaking adults. By using the logistic regression technique, it was found that the self-employment rate among African, Americans and Latinos whose fathers were self-employed was lower against European ancestry average man whose father was not self-employed. The results also found that self-employment rates were influenced by Ancestry and immigration. The main conclusion was that individuals' self-

³ Pakistan Economic Survey 2011-12.

⁴ The study results support Okojie (1984) in relation to migration.

employment was primarily affected by the self-employment status of his or her father or family background. Raijman (2001) examined the determinants and entrepreneurial intention of immigrants by conducting a household survey during 1994. Logistic regression results showed that entrepreneurial intention of immigrants was influenced by their socio-economic characteristics. Self-employment was relatively high in the community and social ties played an important role in self-employment process. The authors emphasized on having business on behalf of individuals amongst family members to serve as role models and sources of assistance (i-e financial and non-financial) made accessible the business ownership to people having meager resources. Moreover, the household economic resources aspired the entrepreneurs to launch business. The results suggested that policy to develop community business must consider both (financial and nonfinancial) factors.

Meng (2001) examined the informal sector and rural-urban migration by using survey data set of 1504 rural-urban migrants of Chinese city in 1995. The author used the multinomial logit model technique. The results showed that high labor market quality individuals preferred to become self-employed rather to join other profession.⁵ The results also found that years of schooling and total training days were positively correlated with informal sector employment. Lastly, results concluded that informal sector participants' (i-e wage earners and self-employed) were better-off than those in the informal sector with regard to earning advantages.

Calves et al. (2004) studied the changing pattern of youth employment in the labor market based on National Representative Survey data collected in 2000 in Barkina Faso. The authors made descriptive techniques analysis.⁶ Findings described that people having basic formal education participated in informal economy. The results illustrated that urban informal sector provided exceedingly higher employment opportunities to the young people with low formal education. The labor market entrants were young and they participated due to urbanization and unemployment and they, thus, exacerbated the labor market competition. The policy implication was that the training opportunities should be given especially to school going young person's to recreate the education and employment relationship and to meet up the labor market demand for creative and vibrant operators in informal labor market. Moreover, the provision of scholarships to encourage female school enrolment, vocational and technical training facilities and loan facilities to prop up female informal entrepreneurship were required to certify equal access to young urban workers.

The determinants of labor force participation in formal or informal (wage and self-employment) sector for men and women were analyzed by Gallaway and Bernasek (2002). The authors used data from Family Life Survey for 1993 (IFLS) in Indonesia. By using multinomial logit model they determined the sector of employment based on socio-economic variables. The results showed the negative relationship between female informal sector employment and age. The results revealed that education and child care helped the women to make decisions regarding time and place of work. Though, age affected positively the informal subsistence sector. Findings also showed that highly educated persons preferred to work in the wage or formal sector employment. Contrarily,

⁵ The study results of higher labour market quality support study by Kozel and Alderman (1990).

⁶ The same methodology was adopted by House (1984).

those who had low human capital were enforced to exert in informal sector. The results also found that informal sector employment (both at home without pay and with pay in labor market) was positively associated with total number of male adults. There was found a negative relationship between number of male adults and informal sector employment in labor market. The results also found that low educated women earned at a lower rate and were involved more in domestic work in the presence of young children. Additionally, females' involvement in informal sector (domestically) was increased to an increase in additional toddler and having an infant. Results confirmed that informal sector seemed inferior relative to formal sector. Maternity leave policies, paid maternity leave policies to care for infants and child care arrangements to care for infants and toddlers and women's and girls' access to education were essential policy implications to boost up women's participation in paid-work.

Paratap and Quintin (2006) investigated about the segmentation of labor market in developing countries through a semi-parametric approach. The data was drawn from Argentina's urban household survey from 1993 to 1995. The parametric tests were adopted to examine the relationship between individual characteristics and informal sector. The study results pointed out that the informal sector employees were on average 60 percent in establishments employing 5 employees or lesser. The results also indicated that on average, the wages in the formal sector were higher than wages in informal sector and output in informal sector accounted for about 10 or 15 % of official GDP in most developed economies. The study also confirmed that the tax burden, weak rule of law, government corruption, and heavy bureaucracy associated with registration, weak security of property rights and the quality of the legal system made changes in the size of the informal sector in countries having same economic development levels.

However, the immigrants' decisions to be self-employed was focused by Baudar (2008) drawing primary data from the survey of 509 Vancouver residents of predominantly Chinese immigrants' neighborhood and South Asian immigrants during 2003 in Canada. By using ordinal logistic regression model, it was found that origin and background of immigrants positively affected the desire to become self-employed. The results also indicated that there was consistent relationship between urban background and lower desire to be self-employed as compared to rural background. Furthermore, females were less likely to be self-employed. The study concluded that urban or rural background was further leading variable that determined entrepreneurship against ethnic origin.

The informal economy as an engine for poverty reduction and development was analyzed by Attia and Moawad (2009). Informal sector was characterized by low productivity, low wages, long working hours and poor working conditions. The study results found that informal sector provided jobs to the society at large, including the formal sector, with the goods and services. Some persons participated in the informal sector at their own choice however it was indispensable option for others. The study concluded that there was a bulk of poor participants in the informal sector in Egypt.

IV. Data Source and methodological issues

A. Data Collection

In the present study, the authors have used primary data by conducting a household's survey in the age group of 18-64 years randomly in three urban areas (i-e

Multan, Bahawalpur and Dera Ghazi Khan) of Punjab Province. Here, sample consists of 1487 formal and informal sector participants of Southern Punjab (Pakistan). Moreover, a comprehensive questionnaire and face to face interview are taken from the sample. The interviews are conducted from main colonies, blocks and mohalas in three divisions of Southern Punjab (Pakistan). The sample has been drawn from each stratified location. A simple random sampling and stratified sampling techniques are used in this study.

B. Methodology

We make a multinomial logit analysis of the factors that influence the probability of wage and self-employment. A multinomial logit model is used in order to see the effects of socio-economic variables on participation decision of workers i-e both wage earners and self-employed and an individual's supply decisions affect the probability of individual i working in position j . The model is given below:

$$\text{Probability (Yi= j)} = \frac{e^{\beta_j X_i}}{\sum_{m=1}^3 e^{\beta_m X_i}}$$

Where N is sample size, $i = 1, \dots, N$, $j = 1, \dots, J$, J is number of sector groups, x_i is a vector of exogenous variables that affect supply and demand decisions.

Here, the dependent variable is the nature of participants' work. The participants have three choices i-e to work in the formal sector, work as a wage earner in the informal sector, and work as self-employed in the informal sector. While the independent variables such as age, education, sex, marital status, parents' education, spouse education, household size, family set up, number of dependents, presence of assets and migrants are incorporated in the analysis.

C. Model Specifications

Based on the above mentioned methodology, our sample model is as follows. The model specified for self-employment is given as followed.

Model I: The Wage-employment Model

$$\text{WE} = (\alpha_0 + \alpha_1 \text{EDY} + \alpha_2 \text{AGY} + \alpha_3 \text{SEX} + \alpha_4 \text{MRS} + \alpha_5 \text{FED} + \alpha_6 \text{MED} + \alpha_7 \text{SPEDU} + \alpha_8 \text{HSIZ} + \alpha_9 \text{FSP} + \alpha_{10} \text{PAS} + \alpha_{11} \text{MGT} + \mu_i)$$

In the above equation of self-employment of the model, the independent variables are complete years of education (EDY), age (AGY), sex (SEX), marital status (MRS), Father's education (FED), mother's education (MED), spouse education (SPEDU), household size (HSIZ), family set up (FSP), presence of assets (PAS) and rural-urban migrant (MGT).

Model II: Self-Employment Model

$$\text{SE} = f(\beta_0 + \beta_1 \text{EDY} + \beta_2 \text{AGE} + \beta_3 \text{SEX} + \beta_4 \text{MRS} + \beta_5 \text{FED} + \beta_6 \text{MED} + \beta_7 \text{SPEDU} + \beta_8 \text{HSIZ} + \beta_9 \text{FSP} + \beta_{10} \text{PAS} + \beta_{11} \text{MGT} + \mu_i)$$

In the above equation of self-employment of the model, the independent variables are number of years of education (EDY), complete years of age (AGE), marital status (MRS), father's education (FED), mother's education (MED), spouse education

(SPEDU), family set up (FSP), household size (HSIZ), presence of assets (PAS) and rural-urban migrant(MGT).

V. Results and Discussion

The present study based on statistical analysis as well as an empirical analysis of factors influencing wage workers and self-employed workers to participate in informal sector by using multinomial Logit model.

Table 2 explains the basic statistics of some explanatory variables. The table incorporates the mean value, the standard deviation, minimum and maximum of some personal socio-economic and demographic variables. These variables affect the wage as well as self-employment. The workers have 39.61 percent average age. Generally, the most people in the labor force have lower level of education. By sex, most males are engaged in the labor force. Majority of the workers are married in the labor force. Less than 50% of the workers' have educated parents. The average size of household of the workers is 7.18 persons. More than 50% of the workers have joint family set up. Almost workers own assets. Rural-urban migrants are 0.29 percent on average.

The multinomial logit estimates regarding wage employment and self-employment in Southern Punjab (Pakistan) is presented in the table (3). The estimated coefficient indicates a negative impact of age on wage-employment in model (1). The result is in contrast with Meng (2001). The persons possessing initial basic education prefer to work as wage workers in their early age.

Generally education has a vital effect on participants' decisions in labor market. Workers with high human capital join the formal labor market while the low educated workers become wage workers. The study results show that the education is negatively associated with the wage-employment and the coefficient is negative and has a significant influence on wage-employment. The result is consistent with Gallaway and Bernasek (2004). It is found that highly educated workers are less likely to be wage workers in Southern Punjab (Pakistan).

The impact of marital status on wage work employment is also checked. The study result shows a positive effect of marital status on wage employment. However, the result is insignificant. The married workers with initial basic education are inclined to be wage workers in order to meet up their requirements due to low jobs in the formal labor market. Sex of the participant is positively associated with the wage employment in urban areas of Southern Punjab. However, the result is insignificant. The result is in contrast with Levin *et al.* (1999).

Theoretically, workers whose parents are educated are less likely to be wage workers. The coefficients of father's and mother's education are negative and statistically significant. The negative signs show that persons having more educated fathers and mothers are less likely to work as wage earners. It is also argued that parents prefer that their children join formal sector for employment.

Spouse education also affects the wage worker's decision. Increase in spouse education decreases the probability of participation as wage workers in model (1). Our

study result is consistent with Assaad *et al.* (2000). The study result concludes that persons having more educated spouses are less likely to be wage workers.

Table 3: Determinants of wage works and self-employed in Southern Punjab

Variables	Wage workers 1	Self-employed 2
Number of Years of Education	-0.0043*	-0.0204*
	(-1.73)	(-6.54)
Age	-0.0025**	0.0033***
	(-2.54)	(2.73)
Sex	0.0079	0.0287
	(0.39)	(-1.17)
Marital Status	0.0315	-0.0295
	(1.31)	(-1.00)
Father's Education	-0.1048***	-0.0019
	(-4.68)	(-0.07)
Mother's Education	-0.0444*	-0.1010***
	(-1.65)	(-3.62)
Spouse Education	-0.0442**	-0.0675**
	(-2.11)	(-2.69)
Household Size	0.0012	0.0216***
	(0.32)	(4.63)
Family Setup	0.0365*	0.0232
	(1.77)	(0.93)
Presence of assets	-0.981***	0.1345***
	(-4.83)	(4.82)
Migrants	0.0843***	-0.0021
	(4.32)	(-0.08)
Pseudo R ²	0.15	
Observations	1487	

Note: The table reports estimated average marginal effects while the values in the parenthesis are z-statistics. * Significant at 10% level of Significance, ** Significant at 5% level of Significance, *** Significant at 1% level of Significance

Theoretically, household size affects positively the wage-employment. The estimated coefficient indicates positive impact of household size on wage-employment. The result is consistent with Hayami (2003). The household heads due to family financial pressure are leaned to work as wage workers due to lack of jobs in the formal sector.

The hypothesis is that with presence of assets, people prefer leisure to work and strong substitution effect dominates the low income effect. The study result points out that the coefficient of presence of assets is negative and highly significant influence on

wage-employment in model (1). The rural-urban migrant workers prefer to join labor market for their earnings. The study results highlight that the coefficients of rural-urban migrant are positive and statistically significant. Increase in migrant worker consistently increases the wage work in urban areas of Southern Punjab (Pakistan). The result is consistent with [Okojie; 1984 and House; 1984]. The reason can be that the urban informal sector absorbs the migrant wage employed workers from rural areas and thus urban informal sector increases employment in Southern Punjab (Pakistan).

While result in model (2) makes clear that age has positive and statistically significant influence on self-employment. The positive coefficient shows that formal sector cannot absorb all the persons having initial basic education. The result is in consistent with Roberts (2001). Our result is consistent with Boyd (1990) and Baudar (2008). Generally, the almost experienced participants take the self-employment as permanent activity and engage themselves in self-employment with increasing age.

The education basically influences the decision of workers in labor market. The highly educated persons participate in the formal labor market; conversely, the informal sector absorbs the low educated workers in the urban informal sector of Southern Punjab (Pakistan). The coefficient of years of education is significant and negative, showing that educated workers are less likely to be self-employed workers. The result is in contrast with the Meng (2001) and consistent with Gallaway and Bernasek (2004). Our regression result shows that low educated people are less likely to be self-employed workers in Southern Punjab (Pakistan).

As far concerned marital status, the regression found a negative association between self-employment and marital status. However, the result is insignificant. This obvious fact is that couples with low education are inclined to be employed in order to meet up their requirements due to inadequate jobs in the formal labor market.

The sex of the workers influences negatively the self-employment but the result reveals no significance on self-employment. The study result support result by Baudar (2008). It is argued that self-employment does not commensurate with their high level of education. In this way, the male self-employed are switching off from the self-employment and moving towards the formal sector, which is an important and lucrative source of earning. Another argument is that the level of jobs more relates to less educated workers more available as females.

In terms of parental education, it is argued that workers whose parents are educated are less likely to be self-employed workers. Result concludes that workers having more educated mothers are less likely to indulge into self-employment in model (2). The parents prefer that their children join formal sector for employment.

Household size generally indicates dependence on the head of household. The supply of labor working as family helpers endorses the participation in self-employment. The argument is that household size is positively associated with the self-employment. The coefficient also exerts a positive and statistically significant impact. The study result support the result by Hayami (2003). The economic reason is that household heads having low basic education are leaned to work as self-employed worker due to family financial pressure.

Influence of joint family structure on the decision of self-employed is also important. The spirit to work is low in the joint family system due to strong substitution effect of leisure. Our study result reveals no significance on self-employment. Almost family members due to lack of quality education and family financially pressure partake in self-employment.

The presence of assets has enlarged effect on choice of sector of employment. The hypothesis is that due to presence of assets, people prefer leisure to work and strong substitution effect is greater than the low income effect. Our findings show that the coefficient of presence of assets is positive and it has highly significant influence on self-employment in model (2). The rural-urban migrant workers also join informal labor market for their earnings. The result indicates that the coefficient of rural-urban migrant is positive and statistically insignificant. The reason is that the urban informal sector absorbs the migrant self-employed workers from rural areas and thus urban informal sector increases employment in urban areas of Southern Punjab (Pakistan).

VI. Conclusions and Suggestions

The present study identifies the determinants of wage and self-employment. The findings shows that age, education, parental education, spouse education, presence of assets have significant effect on wage employment. The study also found that household size is positively associated with wage employment. Result also points out that wage workers are less likely to be employed with an increase in level of education. Result also concludes that older persons have higher likelihood of joining the self-employment in urban areas of Southern Punjab (Pakistan). Highly educated workers are less likely to join self-employment. The workers are less likely to be self-employed with the educated mothers. The workers are more likely to be employed having assets.

An appropriate policy is needed to enhance the education level of both wage as well as self-employed workers in Southern Punjab (Pakistan). The participants' efforts must be directed towards improving literacy status of the workers in urban informal sector of Southern Punjab. Govet should provide more training facilities and technical institutes for the workers with their basic education in order to improve the productive employment. Moreover, the labor intensive and small industries should be established in order to enhance the wage employment along with self-employment in Southern Punjab (Pakistan). There is a serious need to formulate policy to mobilize to invest more in private public partisanship to enhance self-employment. There is a serious need for more proper employment opportunities creation both in rural and urban areas. Strategies can be undertaken for more convincing policies to invest more in order to create more employment opportunities for the needy workers. Govt should also preferably provide more jobs in rural along with urban informal sector. The concerning authorities should employ an attention in order to improve the policy for minimum wage laws and regulation for labor.

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Appendix

Table 1: Variable Description

Variables	Description of variables
Dependent variable	
IWW	=1 if the participant is informal wage worker =0 otherwise
ISE	=1 if the participant is informal self-employed =0 otherwise
Independent variables	
AGY	= Age of the participant (Complete years).
EDY	= Complete years of education.
SEX	1 = if the participant is male 0 = otherwise
MRS	=1 if the participant is married =0 otherwise
MED	=1 if participant's mother is educated =0 otherwise
FED	=1 if the participant's father is educated =0 otherwise
FSP	=1 if the participant belong to joint family =0 otherwise
HSIZ	=Size of the household or total member of the family
PAS	=1 if the worker has earning assets in any form =0 otherwise
MGT	=1 if the worker is rural-urban migrant =0 otherwise

Table 2: Descriptive Statistics

Variables	Mean	S.D	Minimum	Maximum
AGY	39.61	10.50	18	65
EDY	10.24	4.05	0	16
SEX	0.62	0.48	0	1
MRS	0.73	0.44	0	1
FED	0.48	0.50	0	1
MED	0.31	0.46	0	1
SPEDU	0.46	0.50	0	1
HSIZ	7.18	2.65	0	25
FSP	0.57	0.50	0	1
PAS	0.75	0.43	0	1
MGT	0.29	0.46	0	1