Economic and Social Dimensions of Rural-Urban Migration in Pakistan: Results from a Recent Survey in the North West Pakistan

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Abstract

The purpose of this work, based on a survey in the North-West Pakistan, is to assess the impact of various socio-economic factors on rural-urban migration. Using the binary probit model, our results suggest that economic factors play an important role in the household's decision to migrate but are not the only determinants. Therefore an in-depth analysis of the socio-economic conditions prevailing at the rural and urban areas is necessary to understand the causes of rural-urban migration in Pakistan. Our empirical analyses indicate a positive and significant relationship between employment type, family members in the labor force, years of education, land holdings and migration. Moreover, a negative and significant relationship was observed between living conditions, opportunities of non-farm and farm income and rural-urban migration. Based on our empirical findings, we recommend that investment in urban infrastructure should be supplemented by investment in rural areas so as to reduce the mounting pressure on the urban infrastructure.

Keywords: Urbanization, Rural-Urban Migration, Socio-Economic factors, living conditions, North West Pakistan.

1. Introduction

Economic development leads to structural transformation and as a result, the share of agriculture sector declines while that of industrial sector increases in the country's Gross Domestic Product (GDP). As the industrial output increases, employment opportunities at the urban centers also increases and people begin moving from the rural subsistence agriculture sector to the urban areas in search of better employment-opportunities and better living conditions. This phenomenon of increase in the urban population as a consequence of the mass movement of people to urban centers is commonly referred to as urbanization. However, movement of people from the rural subsistence agricultural sector is not the only cause of urbanization, the higher population growth rate especially in the developing world is also a major reason of the growing trend of urbanization. The process of urbanization on the one hand, provides opportunities of better standard of living, while it is also having certain negative effects such as congestion, environmental pollution, and an increase in crimes and so on. Urbanization is a major concern of many developing countries and Pakistan is no exception. During the last 63 years, the total population of Pakistan in general and of Pakistani cities in particular increased manifolds.

The overall population increased by more than 525% during 1951 and 2010. In 1951, 82.26% of the total population lived in rural areas whereas this figure dropped down to only 66% in 2008. The current estimated population growth rate of Pakistan is 1.513% while the population growth rate of cities is 3% which clearly points out that rural-urban migration is nearly 2% annually (Federal Bureau of Statistics, 2005 and World Fact Book, 2010). Keeping in view the current face of urbanization in Pakistan, it would not be possible to sustain the urban infrastructure with its growing needs. In the cities of Pakistan two types of people are living i-e the people who are enjoying all the facilities of this modern era and those who are living a life far below their rural counterparts. The current pace of urbanization is causing some serious concerns for the public authorities. Provision of basic facilities such as education, housing, employment, access to clean drinking water and sanitation becomes a headache on the one hand, and is also accompanied by increasing crime rates.

For example, the number of murder cases in Karachi, the largest urban center in the country, increased from 734 in 2006 to 1142 in 2008 (Sindh Police Department, 2010). Besides this, if the masses are not getting proper educational and employment opportunities, they can easily be trapped by the terrorist to promote their own agenda (Canter and Land 1985, Farrington et al. 1986).Given the adverse impacts of urbanization, it clearly calls for an understanding of the rural-urban migration process so that accurate and timely policy can be devised and implemented. Theoretical explanation of the rural-urban migration can be traced back to at least Ravenstein's "Laws of Migration". According to those laws, people migrate from areas having no or little economic opportunities to those having greater economic opportunities. Moreover, migration is directly associated with the expansion of trade and industry and inversely with the distance. Since then, these basic laws have been tested and expanded by many researchers and the importance of economic motive in the decision to migrate is still believed to play a decisive role for a potential migrant.

The modern literature on rural-urban migration can be classified under five major headings, i.e. Lewis model of rural urban migration based on unlimited supplies of rural labor force (Lewis 1954), Todaro and Harris and Todaro model of migration which is based on rural and expected urban earnings differential (Todaro 1969 and Harris and Todaro 1970), human capital theory of migration (Sjaastad 1962), new economics of migration (Stark 1991) and forced migration. According to the first model, almost all developing countries possess dual structure, i.e. a modern industrial sector and a subsistence agriculture sector exists side by side. Given the unlimited supplies of rural labor force and their zero marginal productivity on the one hand and the higher modern sector wages on the other, the rural labor force is faced with an incentive to migrate to the more promising urban sector and earn positive income. This assertion is supported by the studies of Irfan (1986), Nabi et al (1986), and Potts (2006). While Dubey et al (2006) finds partial support for the hypothesis that surplus rural labor migrates to the urban areas, the authors observe that the mere existence of surplus labor does not explain the rural-urban migration, but a thorough understanding of the social structures and the possession of human capital are crucial variables in explaining the behavior of a potential migrant.Similarly, Connell et al (1976) and De Haan and Roglay (2002) also reported that the socio-cultural factors can restrict rural-urban migration despite of considerable unemployment and underemployment in the rural areas.The Todaro (1969) and Harris and Todaro (1970) model of rural-urban migration is an extension of the Lewis work.

It differs from the Lewis work in that it consider the expected income differential at rural and urban area rather than real income differentials which induces rural labor force to migrate. According to this model, higher the employment opportunities and earning probabilities at the urban areas, higher will be the probability of a person to migrate. A number of empirical studies supports this view (Lucas 1985, Jelili and Mzali 1998) but given the imperfect job market and lack of job market information in developing countries, the expected earnings notion lose its significance in explaining the rural urban migration in LDCs (Das 1989).Moreover, it is equally possible that the difference in rural and expected urban income may be due to the differences in characteristics of urban migrants and rural non-migrant workers (Agesa 2000).The above two models covers the macro aspects of the rural urban migration phenomenon but leaves a very important question unanswered. That is, why do some individuals migrate while other does not from a locality? This question is answered in the human capital models which argue that only individuals having the required skills will migrate to the urban areas (Sjaastad 1962).

Based on the human capital models, the migrants are expected to be young, well educated and experienced (Singh 1986, Ahmed and Sirageldin 1993, Li and Zahniser 2002). But it has been observed that a joint household model of migration would be more appropriate than an individual level model of migration (Stark and Bloom 1985, Stark 1991). This perspective of migration is known as the, "new economics of migration (NELM)". The proponents of the NELM models argue that rural-urban migration is a source of diversifying income in the less developed countries. Thus the decision to place some members of the household in the urban labor market is a household decision and not the decision of an isolated individual (Stark 1978, Stark 1982).The models discussed until now covers almost every aspect of rural-urban migration but, none of these considers migrants who flee their homes neither for economic nor for social reasons but migrates for survival, because of wars, civil conflicts, violence, or any other natural or manmade hazards. Most of the social scientists deal the issue of rural-urban migration and forced migration separately. There is a general consensus that violence and threats to personal security causes people to migrate (Davenport et al 2003, Moore and Shellman 2004, Hunter 2005, Czaika and Katos 2009).

However, there are other research studies which believe that forced migration is not something different from the conventional migration decisions and thus economic and social factors are still at work when we are dealing with the forced migration (Ibanez and Velez 2008). To them, displacement involves the same cost and benefit analysis with one additional variable, i.e. violence.The purpose of this work is to have an in-depth study of the rural-urban migration phenomenon in the North West Pakistan. The distinguishing feature of the current study is that it includes all the important variables of rural-urban migration which has not been previously combined in a single study. Additionally, we have introduced a composite variable namely, "Living Index" which captures the influence of the availability of basic necessities and risk at the origin area (i.e. the area where from an individual or a household migrates) on rural urban migration. The living index is constructed by including the availability of gas as first fuel for cooking, drinking water, health, education and transport facilities, space per person available in the home, and the existence of risk/threat/violence at the origin area.

If gas is used by a household as a first fuel for cooking, it receives one (01) point on our scale and zero otherwise. Similarly, if drinking water is available within home, basic health facilities are available within five (05) kilometers, transport facilities within one (01) kilometer, K-12 schooling facilities within five (05) kilometers, then the household concerned receives one (01) point on each indicator and zero otherwise. The availability of space per person in the home is decided on the basis of family members per room in the household. If the number of family members per standard room is less than five, this is considered to be adequate and thus the household receives one (01) point on our scale. If the number of household members is greater than five per room, then the household receives zero (0) points on our scale. The presence of risk at a certain locality ensures zero (0) points while the absence of risk grants one (01) point to the locality concerned on our scale. Thus a household can score a maximum of seven if the household is living in an ideal place, judged from the standard of living in the study area. The study is organized as follows; Section two outlines the data and methodology of the study, section three present results and discussions and the last section, i.e. section four, deals with the conclusions and recommendations.

2. Data and Methodology

2.1. Data

The data set used in this study is based on the survey conducted by the researcher and his team in the North West Pakistan during the year 2010. The total sample size used in the study is 260, out of which 150 respondents are migrants and 110 respondents are non-migrants (Details of the sampling methodology are given in ***Figure 1***). For the collection of data, a two stage sampling procedure has been used. Initially, rural and urban areas were selected purposively and after making a list with the help of the local people, the required number of the respondents was randomly selected and interviewed from each sub area. In most cases, we interviewed the household head as he/she is considered to be the main actor in the household decision making process.

2.2 Methodology

The purpose of this study is to assess the different socio-economic characteristics of migrants and non-migrants. That is, the i^{th} household is either a migrant household or a non-migrant household. It is customary in applied research to code the two responses as zero (0) and (1), 1 signifying the fact that the i^{th} household is a migrant and 0 otherwise. When the dependent variable assumes a dichotomous structure, such as ours, three different approaches have been suggested in the literature to model the relationship. These include the linear probability model (LPM), the Logit model and the probit model (Gujarati 2003).The LPM is the simplest amongst these but is rarely used by the researchers due to the many problems associated with it (Green 2003).The other two approaches of modeling binary response variables overcome the problems associated with LPM. Since both models (Logit and Probit) are estimated by maximum likelihood estimation, no one has any advantage over the other (Ayuk 1997, Capps and Kramer 1985). In practice there is little difference in the predicted marginal effects obtained from the two models, unless most of the outcomes are zeros or ones (Cameron and Trivedi 2005). Since our dependent variable is a binary response variable, i.e. a household is migrant (equals 1) or non-migrant (equals 0), we are using the binary probit model to estimate the effects of different socio-economic variables on migration decision.The functional form of the probit model for the study is given as;

$$M_i = \beta_0 + \beta_1 EP_i + \beta_2 ML_i + \beta_3 ED_i + \beta_4 AG_i + \beta_5 SK_i + \beta_6 YP_i + \beta_7 YN_i + \beta_8 LP_i + \beta_9 RT_i + \beta_{10} LI_i + \varepsilon_i$$

The notations of the variables in the above equation and the expected signs of the explanatory variables are defined in Table 1.

Insert Table (1) about here.

3. Results and Discussion

The descriptive statistics of the sub-samples and overall sample are given in table 2. The results of the binary probit model are given in table 3 and table 4.

Insert Table (2) about here.

3.1 Results of the Probit Model

Table 3 reports the results of the probit model. The Likelihood Ratio χ^2 (LR chi2) reported below table 3 is significant at one percent (1%) level which means that the model fits the data well. The Pseudo R^2 is 0.1816, which is also used to check the fit of the model. To quote Hosmer and Lemeshow (2000), "Unfortunately low R^2 values in discrete regression models are the norm and this presents a problem when reporting their values to an audience accustomed to seeing linear regression values". However, as Wooldridge (2nd Ed) observes, "The goodness of fit measure is usually not as important as is the statistical and economic significance of the explanatory variables".

The various signs taken by the dependent variables are in rough conformity with the findings of the other researchers. Out of the total dependent variables included in the equation, employment type, family members in the labor force, average years of schooling, skills, land ownership and relatives at the urban center before migration induces potential migrants to migrate while average household age, value of farm income, non-farm income and living conditions at the origin area discourages people to migrate. However, not all the relationships are supported on statistical ground.

Inset Table 3 about here.

To avoid length, we will discuss only the relationships which are both supported on economic and statistical grounds. The positive and significant coefficient of the employment type variable signifies the fact that being in public sector employment increases the probability of rural urban migration. Table 04 reports the marginal effects of each individual independent variable on the decision to migrate, keeping all the other dependent variables constant at their means. The reported marginal effects for the employment type variable shows that being in public sector employment increases the probability of migration by 0.296 units. Similarly, having more family members in the labor force also increases the propensity to migrate by 0.032 units and the relationship is significant at 5 percent level. Average household schooling also increases the probability of rural-urban migration. The estimated marginal effects shows that an incremental increase in the average years of household schooling increases the probability of rural-urban migration by 0.049 units.

Although average household age and job related skills of the respondents assumes signs as per our expectations but both the relationships are insignificant. Value of farm income and non-farm income are both inversely related with rural-urban migration, though the estimated marginal effects are very small. It means that people with a reasonable living at the rural area don't consider migration a viable decision and the rural-urban migrants are likely to be people having little opportunities available to make a living in the rural settings. This finding partially supports the Lewis and the Harris-Todaro theory of rural-urban migration. However, rural-urban migration and land ownership are positively correlated which is against the Lewis theory as the Lewis theory is based on the assumptions of surplus labor and negative marginal productivity. Both negative marginal productivity and surplus labor could be an outcome of shortage of agricultural land (in the Lewis tradition) which in turn causes rural labor force to migrate to the urban area.

But our findings suggest that the reverse is true in case of rural-urban migration in North West Pakistan. Other studies with similar findings include Oda (2007) to whom, having more land enable households to finance greater rural-urban migration. But since we are concerned with family migration, the positive relationship of having more land and rural-urban migration can be supported by other theoretical arguments as well. It is a common practice in the North West Pakistan that people with large land holdings consider working on their own lands as against their prestige and usually rent out their rural lands and prefers to live in the urban areas. By doing so, they still retain a permanent source of income from their lands and invest their time in alternative activities instead.Given the current fragile security situation in the North West Pakistan, there is also an element of risk/threat involved with having more land holdings at the rural areas. Kidnappers, robberies and mafia usually target people with relatively solid economic background and ultimately push them out of the rural areas towards relatively more secure urban areas.

Inset Table 4 about here

The living index variable, which is a composite of seven variables related to the living conditions at the origin where the respondents are living (rural non-migrants) or from where they have migrated (urban migrants), assumes negative sign which supports the bright city lights argument of rural-urban migration. That is, households are more likely to migrate from areas having marginal living amenities. The estimated marginal effect of living index on rural-urban migration is 0.105 units.

4. Conclusion and Recommendations

With the development of trade and industry and the awareness produced by the mass media, the rural people are shifting towards the urban centers in the developing world in order to improve their living standards. While some of these migrants succeed in their aspirations, other suffers from the overcrowding of the cities and at times, the urban poor are worse off than their rural counterpart. Keeping the non-availability of basic amenities aside, the overcrowding of cities has made it almost impossible for the security agencies to trace the evils (urban people who commit crimes) and the crime rates in the cities of Pakistan are ever increasing.Keeping in view the worsening condition of the Pakistani cities in general and of North West Pakistan in particular, it clearly calls for an understanding of the rural-urban migration process so that timely policy could be devised and implemented. The purpose of this paper was to investigate the issue by finding out the differentiating characteristics of rural non-migrants and migrants population. Our empirical findings suggest that rural non-migrants are different from migrants in a number of ways.

Of particular interest are the findings regarding the impact of farm income, non-farm income, land holdings, family members in the labor force and the living index on rural-urban migration.A recent study on urbanization in Pakistan (Arif and Hamid, 2009) recommends public investment in urban infrastructure to reduce the negative impacts of urbanization in Pakistan but to us, investment in urban infrastructure could be less fruitful given the traditional structure of most of the Pakistani cities. To supplement the recommendations of Arif and Hamid (2009), our recommendations based on the findings of the current study are simple and straight forward. Provide basic amenities to the rural public at their door steps, improve their living conditions, provide non-farm income opportunities to them and introduce some land reforms. Beside this, subsidized electricity, education and other basic amenities would definitely do some good for solving the problem. None of these policy prescriptions, except land reforms, are harmful for others. However, if wisely undertaken, land reforms could also be made acceptable to the people apparently loosing land.

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Captions:

Figure 1: Schematic representation of the Sampling methodology and sample size.
Table 1: Definitions and expected signs of the variables included in the model.
Table 2: Descriptive statistics of the explanatory variables included in the model.
Table 3: Results of the probit regression for the household decision to migrate.
Table 4: Estimated marginal effects of the explanatory variables on household decision to migrate.
Table 5: Correlation matrix of the explanatory variables.

Figure 1

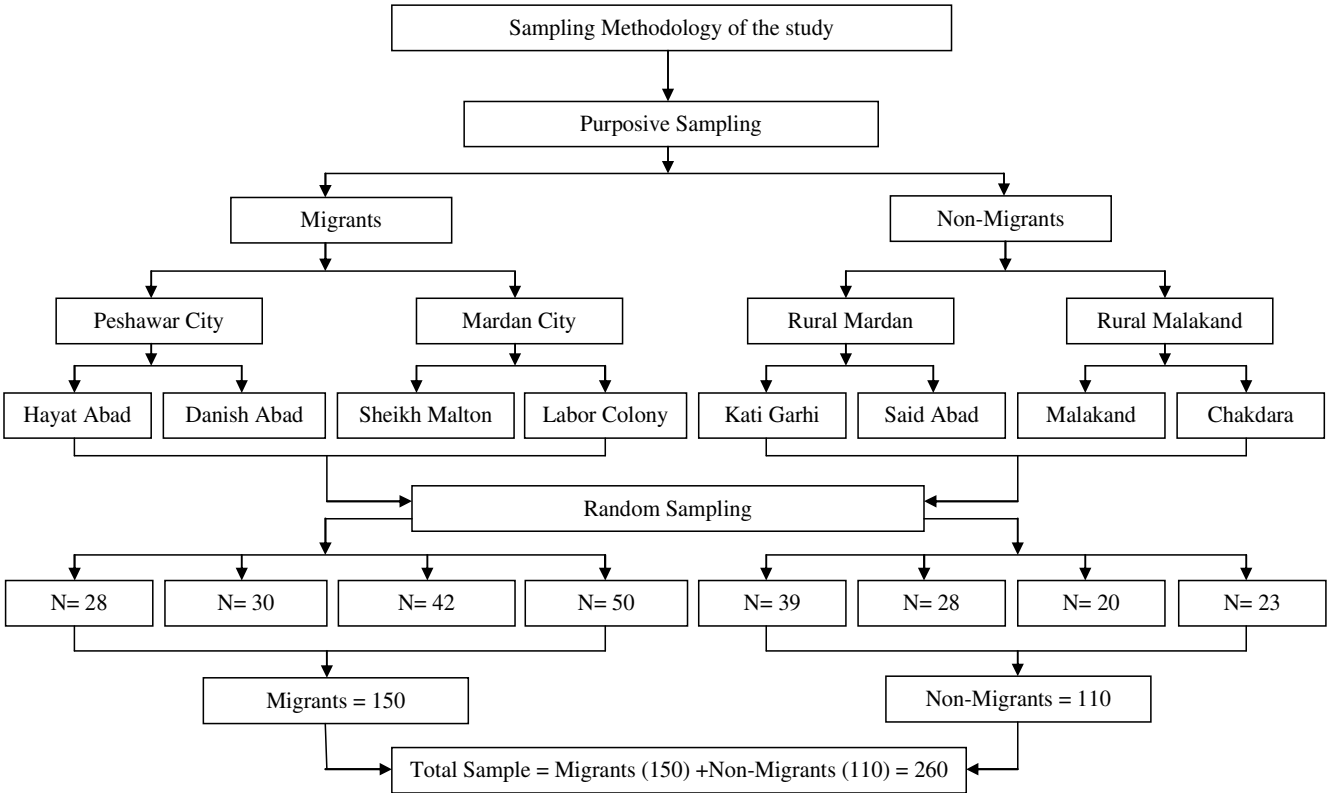

Table 1

Variable Notation	Definition	Expected Sign
M_i	Migrant (1) or Non-Migrant (0) households	---
EP_i	Employment type of the i^{th} household, Public sector (1) & other (0)	+
ML_i	Family members in the labor force of the i^{th} household	+
ED_i	Average years of schooling of the i^{th} household	+
AG_i	Average age of the i^{th} household	-
SK_i	Job related skills of the head of the i^{th} household, Yes(1) & No (0)	+
YP_i	Value of farm output of the i^{th} household	-
YN_i	Non-farm income of the i^{th} household	+, -
LP_i	Land ownership of the i^{th} household	+, -
RT_i	Relatives at the urban center of the i^{th} household, Yes(1) & No(0)	+
LI_i*	Living Index at the origin of the i^{th} household	-

Table 2

	Migrants			Non-Migrants			Overall Sample		
Variables	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev
EP	150	0.433	0.497	110	0.182	0.387	260	0.327	0.470
ML	150	4.480	2.809	110	4.273	2.107	260	4.392	2.533
ED	150	6.014	3.991	110	4.332	2.558	260	5.302	3.551
AG	150	23.608	5.970	110	24.40	5.847	260	23.944	5.920
SK	150	0.393	0.490	110	0.309	0.464	260	0.431	0.496
YP	150	9539.22	21150.65	110	10344.32	23760.19	260	9879.84	22250.93
YN	150	20133.76	31304.26	110	21209.09	28895.46	260	20588.71	30256.07
LP	150	643.20	1343.35	110	512.127	1293.84	260	587.75	1321.69
RT	150	0.567	0.497	110	0.518	0.502	260	0.546	0.499
LI	150	4.087	1.914	110	4.745	1.120	260	4.365	1.656

Table 3

Variables	Measure	Coefficients	S.E	z	P>IzI
Constant	-	0.827	0.435	1.90	0.057*
Employment Type	Dummy	0.823	0.217	3.79	0.000***
ML	Count	0.083	0.041	2.05	0.041**
Average schooling	Years	0.126	0.023	3.95	0.000***
Average Age	Years	-0.025	0.016	-1.51	0.130
Skills	Dummy	0.099	0.189	0.53	0.599
Farm Income	Rs.(000)	-0.00001	4.97e-06	-2.42	0.015**
Non-Farm Income	Rs.(000)	-0.00001	3.68e-06	-3.09	0.002***
Land Ownership	Marlas	0.00013	0.00008	1.74	0.083*
Relatives	Dummy	0.274	0.180	1.52	0.128
Living Index	Count	-0.271	0.059	-4.52	0.000***

Number of obs = 260 LR chi2(10) = 64.33 Prob > chi2 = 0.0000
Log likelihood = -144.96194 Pseudo R2 = 0.1816
*Note: ***, ** and * Indicates significance at 1 %, 5 % and 10 % probability level respectively.*

Table 4

Variables	df/dx	S.E	Z	P>IzI	x-bar
Employment Type*	0.296	0.069	3.79	0.000	0.327
ML	0.032	0.015	2.05	0.041	4.392
Average schooling	0.049	0.012	3.95	0.000	5.302
Average Age	-0.009	0.006	-1.51	0.130	23.944
Skills*	0.038	0.072	0.53	0.599	0.358
Farm Income	-4.65e-06	1.92e-06	-2.42	0.015	9879.84
Non-Farm Income	-4.39e-06	1.42e-06	-3.09	0.002	20588.7
Land Ownership	0.00005	0.00003	1.74	0.083	587.75
Relatives*	0.106	0.069	1.52	0.128	0.546
Living Index	-0.105	0.023	-4.52	0.000	4.365

(*) dF/dx is for discrete change of dummy variable from 0 to 1

Table 5

Variables	EP	ML	ED	AG	SK	YP	YN	LP	RT	LI
EP	1.00	-	-	-	-	-	-	-	-	-
ML	-0.07	1.00	-	-	-	-	-	-	-	-
ED	0.45	0.006	1.00	-	-	-	-	-	-	-
AG	0.02	0.34	0.25	1.00	-	-	-	-	-	-
SK	0.18	-0.02	0.30	0.08	1.00	-	-	-	-	-
YP	0.09	0.09	0.23	0.20	0.004	1.00	-	-	-	-
YN	0.26	0.09	0.38	0.11	0.14	0.16	1.00	-	-	-
LP	0.06	0.04	0.23	0.20	0.01	0.59	0.19	1.00	-	-
RT	-0.15	-0.02	-0.05	-0.06	0.06	0.13	-0.03	0.03	1.00	-
LI	0.11	-0.02	0.18	0.15	0.13	-0.10	0.01	-0.003	-0.12	1.00