Determinants of Internal Migration in Pakistan: Evidence from the Labour Force Survey, 1996-97

ALIYA H. KHAN and LUBNA SHEHNAZ

I. INTRODUCTION

The process of migration has diverse economic, social and environmental implications for the places of origin and destination. In the context of balanced regional growth and sustainable regional development it is important to study how internal migration affects the patterns of population distribution within a country. The spatial distribution of population is influenced by the characteristics of the sending and receiving areas in terms of push and pull factors resulting in rural-urban, urban-urban, rural-rural and urban-rural migration flows.

As economies transform from being predominantly rural to being predominantly urban societies, the process of urbanisation assumes a rapid pace. Individuals migrate from rural to urban areas as a rational human capital investment decision to reap economic rewards in the form of better economic opportunities and benefits. The consequences of rapid urbanisation are multi faceted and require timely responses by development planners and policy-makers to deal with pressures created on the infrastructure of large urban centres by the influx of migrants. However, in some developing as well as developed countries, lately, there have been signs of a change in the trend of the population distribution away from concentration in a few large cities towards a more widespread distribution in medium-sized urban centres. The other dimension of this rural-urban migrant outflow manifests itself in the changing labour market scenario in the rural economy which loses the more productive members of its labour force to the urban economy.

A proper assessment of the consequences of internal migration cannot be made without analysing the patterns and determining factors of such migration. An understanding of the dynamics of local and national labour markets is linked to a

functional labour market information system (LMIS) and labour market mobility patterns form an integral part of an LMIS.[1] It is being increasingly emphasised that proper design of human development policies rests heavily on a country's LMIS.

The importance of economic research and analysis based on detailed and periodic information on both internal and external migrants cannot be overstated. It is in this spirit that the present study aims to augment the existing literature on internal migration in Pakistan by exploring data from the Labour Force Survey 1996-97. The Labour Force Survey has been used as a data source both to highlight the fact that a regular nationwide household survey contains important information on internal migrants but also that the information needs to be augmented with additional queries for conducting meaningful research on internal labour mobility patterns and determinants.

The plan of the paper is that a brief review of literature on internal migration is presented in Section II, the data source is outlined in Section III, followed by a discussion of statistical and econometric analysis in Section IV and conclusions in Section V.

II. REVIEW OF LITERATURE

One of the seminal studies on developing a theoretical framework for migration behaviour was done by Sjaastad (1962). He views migration as an investment in human capital and formulates empirically testable hypotheses related to observed migration behaviour. The main conclusions of his study are that age is a significant variable in influencing migration and that the private and social costs and returns to migration depend upon market structure, resource mobility and revenue policies of the state and local governments.

Another important study on migration that led to numerous other studies was by Todaro (1969). The Todaro model theorised that potential migrants are rational economic agents who base their migration decision on a comparison of expected urban sector incomes with current wages in the rural sector occupations.

Research on labour migration in Pakistan received a major impetus from a nationwide household survey known as the "Population, Labour Force and Migration (PLM) Survey conducted in 1979-80 by PIDE and ILO. A study by Irfan, Demery and Arif (1983) based on the PLM Survey data measures and analyses the internal and international migration flows in detail. In the context of internal migration, the incidence of internal migration, the pattern of internal migration flows by distance categories (short, medium and long), the direction of internal migration (rural to rural, rural to urban, urban to urban and urban to rural), and net migration flows by province are studied for both sexes. They conclude that internal migration in Pakistan is increasingly becoming a long distance and rural to urban phenomenon.

---

[1]See Khan. Concept and Dynamics of Labour Market Information System. In the Final Report of the National Workshop on Labour Market Information System, organised by the Ministry of Labour and ILO, Lahore, October 25-27, 2000.

In another study based on the PLM Survey, Irfan (1986) develops some linkages between migration and economic growth and development by analysing the human resource flows of internal migrants, income and capital flows in the form of remittances generated through internal migration, the effects of migration on income distribution and the relationship between migration and fertility. His main findings are a higher propensity to migrate among females signifying migration for marriage, an inverted U shaped age–mobility curve for migrants with a peak occurring at the 15–24 years age group and a positive association between education and propensity to migrate. He also finds that remittances sent back yield a low rate of return on investment in out-migration.

Ahmed and Sirageldin (1993) use the theoretical framework of human capital investment to model internal migration behaviour for Pakistan. They use the PLM Survey data to estimate the migration decision rule by applying the maximum likelihood probit technique. Their findings suggest that migration is generally selective in terms of age and the human capital variables of education and occupation, the incidence of migration being highest among those who possessed college or university degrees and those belonging to the professional or skilled worker occupation groups. It was also found that "commitment to place of residence" variables like land and house ownership and presence of school going children inversely affected the probability to migrate by increasing the costs of relocation.

III. DATA SOURCE

The data source of this study is the Labour Force Survey 1996-97 (LFS) of Pakistan which is an annual sample enquiry of the Federal Bureau of Statistics. The survey provides comprehensive information on the labour force or currently active population as well as on the currently inactive population. The LFS (1996-97) is based on a sample of 20,198 households enumerated during the year 1996-97.[2]

The questionnaire of the LFS is periodically revised to improve the labour force statistics. The 1995 revision of the LFS questionnaire introduced questions on migration and the informal sector. Specifically, the migrant population is defined as those who have moved from one administrative district to another administrative district. It excludes the population who has moved within a district. The migration questions in the LFS (1996-97) questionnaire are asked from all persons aged 10 years and above and relate to the duration (in years) since migration, previous district of residence, previous region of residence i.e. rural or urban and the main reason for migration.[3]

The present study is carried out at two levels. At first a detailed statistical analysis of the distribution of the migrant population is done to get a profile of

[2]Federal Bureau of Statistics, *Labour Force Survey, 1996-97*.
[3]ibid.

migrants and the pattern of migratory flows between the rural and urban areas of residence. Next, the decision to migrate is modeled in the framework of the human capital investment framework[4] using the maximum likelihood probit estimation technique.

IV. STATISTICAL AND EMPIRICAL ESTIMATION

The sample size of the population aged 10 years and above in the LFS (1996-97) comprises of 89033 individuals out of which 12342 (13.9 percent) are classified as migrants and 76691 (86.1 percent) are classified as non-migrants. Among the migrants, the majority are currently residing in urban areas (72.8 percent). A look at the distribution of migrants across the five provinces reveals that the urban areas of Punjab and Sindh have received the greatest inflow of migrants. A breakdown of the migrants by sex shows that the sample contains more female migrants (52.9 percent) as compared to male migrants (47.1 percent). [See Appendix Tables 1, 2 and 3].

The pattern of migratory flows indicates that migration has been mainly in the urban-urban direction followed by migration in the rural-urban direction and both migratory flows contain more females than males. [See Appendix, Table 4]. An interesting picture emerges when the distribution of male and female migrants is analysed according to main reason for migration.

The reasons for migration and consequently, the migrants, can be grouped into two categories namely economic and non-economic migrants in relation to the primary motive for migration.[5] If the migrant identified job transfer, finding a job, education or business as the main reason for migration, then such migration is based on reasons which can be classified as economic reasons and the migrants as economic migrants. Migration for economic motives is viewed as an investment in human capital which entails both direct and indirect costs as well as the expectation of returns in the form of increased earnings in the destination. Migration undertaken for reasons of health, marriage, accompanying parents or return to the origin can be classified as migration for non-economic reasons and the migrants as non-economic migrants under the pretext that the decision is not based upon a comparison of costs and returns but on other criteria which may not be primarily economic.[6] [See Appendix Table 5].

An analysis of the migrant distribution by reason for migration shows that majority of the males (59.5 percent) and females (94 percent) have cited non-economic reasons as the main reason for migration. In case of females, migration for

---

[4]Sjastaad (1962) laid the foundations of a model of migration based on human capital theory which considers migration as an investment in the human agent.

[5]The typology of economic and non-economic migrants has been developed by Chiswick (1979) and also used by Khan (1997) in a study on international migration.

[6]The question about main reason for migration also has a response category called "other". In the absence of information about the reasons in its composition, it is assumed to be a listing of non-economic reasons.

marriage, accompaniment of parents and "other" reasons (presumably non-economic) are the most important explanations for moving from one district to another while for males it is the category "other" combined with accompaniment of parents that are the main reasons. [See Appendix Table 6]

The analysis of main reasons for migration by the direction of migration indicates that even though the two major directions of migratory flows (urban-urban and rural-urban) are dominated by migrants with non-economic motives for migration, the proportion of economic migrants (30.7 percent) in the rural-urban flow is greater than the proportion of economic migrants (20.1 percent) in the predominant urban-urban flow. [See Appendix Table 7].

An educational profile of the migrants by the direction of migration points out that the majority of the male migrants who moved in the urban-urban direction have completed either 6 to 10 years of schooling (27.8 percent) or 11 to 14 years of schooling (37.5 percent) while the majority of migrants who moved in the rural-urban direction have not completed any formal schooling (38.7 percent). The picture for female migrants is that the majority of females in the urban-urban flow (37.9) and the rural-urban flow (66.1 percent) have not completed any formal schooling. [See Appendix Tables 8 and 9]. This pattern reconciles with the evidence that the major reasons cited for female migration are mainly the non-economic ones of marriage and accompaniment of parents.

In order to further analyse the determinants of the migration process in a human capital framework, the decision to migrate is modeled as a dichotomous variable representing migrant/non-migrant status in a probate model. The set of explanatory variables reflecting the determinants of migration in terms of the costs and returns to migration consist of the standard human capital variables representing age in years (AGE) age squared (AGESQR), education attained in terms of years of schooling completed[7] (EDUC) and technical/vocational training attained (TECH VOC). Other variables are those representing marital status (MARSTAT), variables representing (urban/rural) region of residence (URBAN) and province of residence (PROVRES), variables indicating position in the family in terms of head of household or other household member (HHEAD) and the type of family as being nuclear/joint (NUCFAM). The specified model for the male or female sample be written as:

MIG = f [AGE, AGESQR, EDUC, TECHVOC, MARSTAT, URBAN, PROVRES, HHEAD, NUCFAM]

The variable representing education attained in years can be expressed as a set of categorical dichotomous variables representing the different levels of education. The specified model with educational level categories can now be written as:

---

[7]Since the question pertaining to highest grade completed is coded in terms of education level categories, a continuous variable for years of schooling was constructed by assigning a number representing mean years of schooling in a particular educational level category.

MIG = f [AGE, AGESQR, KGLTPRIM, PRIM, SEC, COLL, PROF, POSTGRAD,
          TECHVOC, MARSTAT, URBAN, PROVRES, HHEAD, NUCFAM]

The pooled sample of 89033 males and females aged 10 years and above in the LFS (1996-97) contains 46764 (52.5 percent) males and 42269 (47.5 percent) females. Results of the estimated probit model for the male sample of 46764 males consisting of 5814 (12.4 percent) migrant and 40950 (87.6 percent) non-migrant males are presented in Table 10 and Table 11 of the Appendix. Results of the estimated probit model for the female sample of 42269 females consisting of 6528 (15.4 percent) migrant females and 35741 non-migrant females are presented in Table 12 and Table 13 of the Appendix.

The coefficient of the AGE variable reflects that the probability of migration increases with age for both males and females. The AGESQR variable is generally not significant implying that the increasing effect of age does not fall with age. This result does not indicate that migration has been age selective in terms of varying inversely with age so that a longer expected work life in the destination would maximise returns to migration. The results for the continuous variable of education EDUC indicate a significantly positive effect on the probability of migration for both males and females. The coefficient of EDUC is greater in magnitude and more significant for females as compared to males. The possession of technical and vocational training also appears to increase the probability of migration for both males and females.

To further analyse the contribution of education to the migration decision, a set of dichotomous variables representing the various levels of education were also introduced in the probit equations for males and females. For both males and females the effect of professional (degree in engineering, medicine and agriculture) and post graduate education (M.A/M. Sc, M. Phil. and Ph.D.) on the probability of migration is higher than the effect of primary, secondary or college education.[8] This result indicates that migration does appear to be selective with respect to education.

The marital status variable MARSTAT is negatively significant in both the male probit equations and positively significant in both the female probit equations. This result reconciles with the statistical analysis of the distribution of male and female migrants with respect to reasons for migration. As mentioned earlier, female migration is mostly marriage driven so the probability of being a married female migrant is greater than that of being a not married female migrant, the reverse being true for males.

The coefficients of the region of residence variable URBAN are consistently positive and significant in all the probit equations indicating that the probability of being a migrant for both males and females is higher if current residence is in an

_____

[8]It should be noted that the TECHVOC variable switches its sign and becomes negative when education is decomposed into categories.

urban area as compared to current residence in a rural area. This result is also supported by the earlier statistical analysis which established that the main direction of migratory flows has been from one urban administrative district to another urban administrative district. The above result has partially reversed the earlier results from the PLM (1979) Survey regarding migrant flows being mainly in the rural-urban direction.[9]

To capture the effect of the thrust of migration towards the urban and rural areas of the province of Punjab, a dichotomous variable PROVRES representing the province of current residence is introduced. The variable is coded as 1 if province of current residence is Punjab and 0 if province of current residence is Sindh, NWFP, Balochistan or AJK. The coefficient of PROVRES in all the male and female probit equations is positive and significant implying that the probability of being a male or female migrant is higher if province of current residence is Punjab as opposed to the other provinces.

The variable HHEAD indicates the position of head of household in the family. Its coefficients are positive and significant for both males and females implying that being in the position of head of household leads to a greater probability of making the decision to migrate than if the male or female is a household member other than the head.

The variable NUCFAM represents the composition or type of the family and is introduced to see whether the probability of migration is influenced by affiliation to a nuclear or extended/joint family system. The significantly negative coefficients of NUCFAM reveal that belonging to a nuclear family system decreases the probability of migration or that belonging to an extended/joint family system increases the probability of migration.

V. CONCLUSIONS

The aim of the paper was to study the process of internal migration within the general theoretical framework of human capital theory which views migration as an investment with accompanying costs and returns. To analyse whether the decision to migrate is undertaken as a rational choice in expectation of economic rewards in the destination or not, the classification of economic versus non-economic migrants was used to categorise the sample of migrants. The statistical analysis showed that the migrant population in the LFS (1996-97) is mostly composed of males and females who undertook the decision to migrate for non-economic motives. However, this pattern is more evident in the predominant urban-urban migratory flow than in the rural-urban migratory flow.

The reversal of the main direction of migration from the rural-urban direction (as evidenced in previous studies of internal migration based on the PLM Survey 1979) to the urban-urban direction is also an important finding from the LFS (1996-

[9]See Irfan *et al.* (1983) and Ahmed and Sirageldin (1993).

97) sample. This trend seems to be indicative of the changed pattern of population distribution in many countries which signifies a more widespread movement away from rural-urban shifts to large urban centres towards urban-urban shifts among medium-sized urban centres. This pattern can be further investigated in the future using the detail on district to district movements in the LFS (1996-97) and forthcoming Labour Force Surveys.

The encouraging finding regarding migration as a human capital investment is the significantly positive (though small in magnitude) effect of education in terms of years of schooling coupled with the positive effect of technical and vocational training on the probability of migration for both males and females. Professional and post graduate education appears to have a stronger effect on the probability to migrate than primary, secondary or college level education. This effect of higher level education is more pronounced for females. Taken together these results do imply that there is evidence of the migration decision being positively linked to the human capital embodied in the individual.

The evidence of urban residence and residence in the province of Punjab positively affecting the probability of migration also lends support to the directional pattern of migratory flows highlighted by the statistical analysis. This result has many implications for the labour market adjustment of migrants in the migrant receiving urban areas, especially in the province of Punjab. It would be a useful exercise to investigate whether the urban-urban inter district migration ultimately turns out to be economically rewarding for the migrants in terms of absorption in the local labour markets.

Overall, the statistical and empirical analysis in this paper shows that even though there are data limitations in the LFS (1996-97) regarding information on the migration process of internal migrants, it is still possible to investigate broad patterns of migratory flows and also identify some determinants influencing the probability to migrate within a human capital framework. However, a more rigorous analysis of internal migration based on a richer informational database on migrant characteristics definitely needs to be undertaken for better understanding of internal labour mobility and its labour market implications within the context of equitable economic growth through appropriately designed and effectively implemented human development policies and poverty reduction strategies.

APPENDICES

Appendix Table 1

Distribution of Population (Age 10 and above) by Migration Status,
and Region of Residence

	Non-migrant	Migrant	Total
Urban	33681	8985	42666
	[78.9%]	[21.1%]	[100]
	(43.9%)	(72.8%)	(47.9%)
Rural	43010	3357	46367
	[92.8%]	[7.2%]	[100]
	(56.1%)	(27.2%)	(52.1%)
Total	76691	12342	89033
	[86.1%]	[13.9%]	[100]
	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Appendix Table 2

Distribution of Migrants by Province and Region of Residence

	Urban	Rural	Total
Punjab	4403	2493	6896
	[63.8%]	[36.2%]	[100]
	(49.0%)	(74.3%)	(55.9%)
Sindh	3469	383	3852
	[90.1%]	[9.9%]	[100]
	(38.6%)	(11.4%)	(31.2%)
NWFP	666	369	1053
	[64.3%]	[35.7%]	[100]
	(7.4%)	(11.0%)	(8.4%)
Balochistan	305	101	406
	[75.1%]	[24.9%]	[100]
	(3.4%)	(3.0%)	(3.3%)
AJK	142	11	153
	[92.8%]	[7.2%]	[100]
	(1.6%)	(0.3%)	(1.2%)
Total	8985	3357	12342
	[72.8%]	[27.2%]	[100]
	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Khan and Shehnaz

Appendix Table 3

Incidence of Migration by Sex and Region

	Male	Female	Total
Urban	4362	4623	8985
	[48.6%]	[51.4%]	[100]
	(75.0%)	(70.8%)	(72.8%)
Rural	1452	1905	3357
	[43.2%]	[56.8%]	[100]
	(25.0%)	(29.2%)	(27.2%)
Total	5814	6528	12342
	[47.1%]	[52.9%]	[100]
	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Appendix Table 4

Distribution of Migrants by Sex and Direction of Migration

	Urban-Urban	Urban-Rural	Rural-Urban	Rural-Rural	Total
Male	2537	440	1825	1012	5814
	[43.6%]	[7.6%]	[31.4%]	[17.4%]	[100]
	(47.8%)	(52.0%)	(49.6%)	(40.3%)	(47.1%)
Female	2767	406	1856	1499	6528
	[42.4%]	[6.2%]	[28.4%]	[23.0%]	[100]
	(52.2%)	(48.0%)	(50.4%)	(59.7%)	(52.9%)
Total	5304	846	3681	2511	12342
	[43.0%]	[6.9%)	[29.8%]	[20.3%]	[100]
	(100)	(100)	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Appendix Table 5

Distribution of Migrants by Sex and Main Reason for Migration

	Male	Female	Total
Job Transfer	745	129	874
	[85.2%]	[14.8%]	[100]
	(12.8%)	(2.0%)	(7.1%)
Finding a job	1093	137	1230
	[88.9%]	[11.1%]	[100]
	(18.8%)	(2.1%)	(10.0%)
Education	69	45	114
	[60.5%]	[39.5%]	[100]
	(1.2%)	(.7%)	(0.9%)
Business	450	81	531
	[84.7%]	[15.3%]	[100]
	(7.7%)	(1.2%)	(4.3%)
Health	11	13	24
	[45.8%]	[54.2%]	[100]
	(0.2%)	(0.2%)	(0.2%)
Marriage	100	3116	3216
	[3.1%]	[96.9%]	[100]
	(1.7%)	(47.7%)	(26.1%)
With Parent	1385	1054	2439
	[56.8%]	[43.2%]	[100]
	(23.8%)	(16.1%)	(19.8%)
Return to his/her Home	497	333	830
	[59.9%]	[40.1%]	[100]
	(8.5%)	(5.1%)	(6.7%)
Other	1464	1620	3084
	[47.5%]	[52.5%]	[100]
	(25.2%)	(24.8%)	(25.0%)
Total	5814	6528	12342
	[47.1%]	[52.9%]	[100]
	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Appendix Table 6

Distribution of Migrants by Sex and Economic/Non-economic Reasons

	Economic	Non-economic	Total
Male	2357	3457	5814
	[40.5%]	[59.5%]	[100]
	(85.7%)	(36.0%)	(47.1%)
Female	392	6136	6528
	[6.0%]	[94.0%]	[100]
	(14.3%)	(64.0%)	(52.9%)
Total	2749	9593	12342
	[22.3%]	[77.7%]	[100]
	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Appendix Table 7

Distribution of Migrants by Economic/Non-economic Reasons
and Direction of Migration

	Urban-Urban	Urban-Rural	Rural-Urban	Rural-Rural	Total
Economic	1065	174	1129	381	2749
	[38.7%]	[6.3%]	[41.1%	[13.9%]	[100]
	(20.1%)	(20.6%)	(30.7%)]	(15.2%)	(22.3%)
Non Economic	4239	672	2552	2130	9593
	[44.2%]	[7.0%]	[26.6%]	[22.2%]	[100]
	(79.9%)	(79.4%)	(69.3%)	(84.4%)	(77.7%)
Total	5304	846	3681	2511	12342
	[43.0%]	[6.9%]	[29.8%]	[20.3%]	[100]
	(100)	(100)	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Appendix Table 8

Distribution of Male Migrants by Level of Education

	Urban-Urban	Urban-Rural	Rural-Urban	Rural-Rural	Total
No Formal Education	549	212	707	653	2121
	[25.9%]	[10.0%]	[33.3%]	[30.8%]	[100]
	(21.6%)	(48.2%)	(38.7%)	(64.5%)	(36.5%)
1–5 Years of Schooling	109	21	92	47	269
	[40.5%]	[7.8%]	[34.2%]	[17.5%]	[100]
	(4.3%)	(4.8%)	(5.0%)	(4.6%)	(4.6%)
6–10 Years of Schooling	706	130	481	205	1522
	[46.4%]	[8.5%]	[31.6%]	[13.5%]	[100]
	(27.8%)	(29.5%)	(26.4%)	(20.3%)	(26.2%)
11–14 Years of Schooling	951	73	459	102	1585
	[60.0%]	[4.6%]	[29.0%]	[6.4%]	[100]
	(37.5%)	(16.6%)	(25.2%)	(10.1%)	(27.3%)
15 and above Years of Schooling	222	4	86	5	317
	[70.0%]	[1.3%]	[27.1%]	[1.6%]	[100]
	(8.8%)	(0.9%)	(4.7%)	(0.5%)	(5.5%)
Total	2537	440	1825	1012	5814
	[43.6%]	[7.6%]	[31.4%]	[17.4%]	[100]
	(100)	(100)	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Appendix Table 9

Distribution of Female Migrants by Educational Level

	Urban-Urban	Urban-Rural	Rural-Urban	Rural-Rural	Total
No Formal Education	1048	297	1226	1298	3869
	[27.1%]	[7.7%]	[31.7%]	[33.5%]	[100]
	(37.9%)	(73.2%)	(66.1%)	(86.6%)	(59.3%)
1–5 Years of Schooling	135	13	69	28	245
	[55.1%]	[5.3%]	[28.2%]	[11.4%]	[100]
	(4.9%)	(3.2%)	(3.7%)	(1.9%)	(3.8%)
6–10 Years of Schooling	700	63	342	142	1247
	[56.1%]	[5.1%]	[27.4%]	[11.4%]	[100]
	(25.3%)	(15.5%)	(18.4%)	(9.5%)	(19.1%)
11–14 Years of Schooling	806	31	201	28	1066
	[75.6%]	[2.9%]	[17.8%]	[2.6%]	[100]
	(29.1%)	(7.6%)	(10.8%)	(1.9%)	(16.3%)
15 and Above Years of Schooling	78	4	18	3	101
	[77.2%]	[2.0%]	[17.8%]	[3.0%]	[100]
	(2.8%)	(0.5%)	(1.0%)	(0.2%)	(1.5%)
Total	2767	406	1856	1499	6528
	[42.4%]	[6.2%]	[28.4%]	[23.0%]	[100]
	(100)	(100)	(100)	(100)	(100)

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
Note: Values in brackets are row-wise percentages. Values in parentheses are column-wise percentages.

Appendix Table 10

Probit Model Estimates for the Sample of Males Aged 10 and above

Variable	Estimated Coefficient	*t*-statistic
Intercept	–2.362	–42.35*
AGE	0.0240	8.58*
AGESQR	–.00005	–1.82***
EDUC	0.015	8.90*
TEC VOC	0.171	5.46*
MARSTAT	–0.153	–5.23*
URBAN	0.720	40.58*
PROVRES	0.221	13.61*
HHEAD	0.254	6.85*
NUCFAM	–0.234	–7.35*

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
     *Significant at α < 0.01.
      **Significant at α < 0.05.
     ***Significant at α < 0.1.
Chi-Square: 46567.570.
Sample Size: 46764.

Appendix Table 11

*Probit Model Estimates for the Sample of Males Aged
10 and above with Education Level Categories*

Variable	Estimated Coefficient	t-statistic
Intercept	–1.644	–30.79*
AGE	0.016	5.83*
AGESQR	–.00004	–1.34
KGLTPRIM	–0.019	–0.63
PRIM	–0.013	–.59
SEC	0.015	.75
COLL	0.093	3.38*
PROF	0.449	7.32*
POSTGRAD	0.314	4.97*
TECVOC	–0.062	–2.00**
MARSTAT	–0.118	–4.28*
URBAN	0.476	30.89*
PROVRES	0.152	10.34*
HHEAD	0.109	3.21*
NUCFAM	–0.095	–3.33*

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.
     *Significant at α < 0.01.
      **Significant at α < 0.05.
     ***Significant at α < 0.1.
Chi-Square: 30505.773.
Sample Size: 46764.

Appendix Table 12

Probit Model Estimates for the Sample of Females Aged 10 and Above

Variable	Estimated Coefficient	t-statistic
Intercept	–2.402	–54.98*
AGE	0.018	6.82*
AGESQR	–.00001	–.42
EDUC	0.025	13.10*
TEC VOC	0.163	3.11*
MARSTAT	0.410	17.41*
URBAN	0.641	36.70*
PROVRES	0.371	23.08*
HHEAD	0.125	2.89*
NUCFAM	–0.096	–4.83*

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.

  *Significant at α < 0.01.

   **Significant at α < 0.05.

   ***Significant at α < 0.1.

Chi-Square: 42361.595.

Sample Size: 42269.

Appendix Table 13

*Probit Model Estimates for the Sample of Females Aged 10
and above with Education Level Categories*

Variable	Estimated Coefficient	t-statistic
Intercept	–1.456	–36.36*
AGE	0.011	4.46*
AGESQR	–0.00004	–1.30
KGLTPRIM	0.150	4.47*
PRIM	0.170	7.11*
SEC	0.144	6.33*
COLL	0.150	4.33*
PROF	0.259	2.09**
POSTGRAD	0.546	4.85*
TEC VOC	–0.093	–1.83***
MARSTAT	0.205	9.67*
URBAN	0.333	21.88*
PROVRES	0.223	15.54
HHEAD	0.057	1.39
NUCFAM	–0.034	–1.67

Source: *Labour Force Survey (1996-97)*, Federal Bureau of Statistics, Government of Pakistan.

  *Significant at α < 0.01.

   **Significant at α < 0.05.

   ***Significant at α < 0.1.

Chi-Square: 28132.192.

Sample Size: 42269.

REFERENCES

Ahmed, Ather Maqsood, and I. Sirageldin (1994) Internal Migration, Earnings and the Importance of Self-selection. *The Pakistan Development Review* 33:3, 211–227.

Ahmed, Ather Maqsood, and I. Sirageldin (1993) Socio-economic Determinants of Labour Mobility in Pakistan. *The Pakistan Development Review* 32:4, 1031–1041.

Chiswick, Barry R. (1979) The Economic Progress of Immigrants: Some Apparently Universal Patterns. In. William Fellner (ed.) *Contemporary Economic Problems.* 359–399.

Irfan, M. (1986) Migration and Development in Pakistan: Some Selected Issues. *The Pakistan Development Review* 25:4, 743–755.

Irfan, M., Lionel Demery, and G. M. Arif (1983) Migration Patterns in Pakistan: Preliminary Results from the PLM Survey, 1979. Pakistan Institute of Development Economics, Islamabad. (Studies in Population, Labour Force and Migration Project, Report No. 6.)

Khan, Aliya H. (2000) Concept and Dynamics of Labour Market Information System. Paper presented at the National Workshop on Labour Market Information Organised by the Ministry of Labour and ILO, held in Lahore from October 25-26.

Khan, Aliya H. (1997) Post Migration Investment in Education by Immigrants in the United States. *The Quarterly Review of Economics and Finance* 37:Special issue, 285–313.

Pakistan, Government of (1998) *Labour Force Survey, 1996-97.* Islamabad: Federal Bureau of Statistics, Statistics Division.

Sjaastad, L. A. (1962) The Costs and Returns of Human Migration. *The Journal of Political Economy* 70:5, 80–93.

Todaro, M. (1969) A Model of Labour Migration and Urban Unemployment in Less Developed Countries. *The American Economic Review* 59:1, 138–148.

Comments

These comments are restricted to two areas only even though a number of points could also be raised on various tables presented in the paper. The two areas of particular concern are:

   (i) the usefulness of the LFS data to study the phenomenon of internal migration; and

  (ii) the selection of the sample for empirical analysis.

It is now well-known that migration is a dynamic process. According to the theory of migration, it is nothing but investment in human capital. Many authors have verified that intending migrants are ambitious and selective; they are educated and acquire necessary skills so that they face little or no difficulty at the destination so far as assimilation and participation in the labour market is concerned. The accumulation of human capital is therefore time-consuming, and there are implications both for places of origin and destination.

After carefully analysing the LFS data from this perspective, one finds that there are only a few questions which allow us to quantify the dynamic process. The limitation becomes even more pertinent if the LFS questions on migration are compared with the Population, Labour Force and Migration (PLM) data. Even though the latter has a rich-enough migration module, yet it fails to address some critical questions.

The second limitation of the LFS has been highlighted by the authors themselves through a half liner on page 6.[1] It says that *the LFS excludes the population who [sic] has moved within a district*. This creates the serious difficulty of identifying a migrant which should be obvious from the following example. Consider two persons, one living in *Chakri*, a village about 50 kilometers away from Rawalpindi, and the other living in District East of Karachi. The first person 'migrates' to Rawalpindi and the other 'migrates' to District West of Karachi. According to the LFS, the movement of the first person is *not* migration as it excludes movement within the same district, despite the fact that the movement is from a rural to an urban area. On the other hand, the movement of the second person is migration even though the movement is within the same city.

It is not clear how one can draw meaningful conclusions on the basis of data which has serious limitations about problems under consideration.

Now let us consider the second area of concern, i.e., the selection of a sample for empirical analysis. On page 8 it has been concluded that the "majority of males (59.5 percent) and females (94 percent) have cited non-economic reasons as the main reason for migration". However, the authors continue to analyse the determinants of

---

[1]Please refer to the paper circulated during the 16th Annual General Meeting for page and table numbers.

the migration process in the human capital (HK) framework (see pages 10 and 11), notwithstanding this observation. It should be clear that according to the Harris-Todaro model and its subsequent extensions, migrants calculate the present discounted value of costs and benefits before migration. The move takes place only if the benefits exceed costs, that is, the reasons are purely economic if anyone wants to use the HK framework for analysis. Thus, the methodology concern should be obvious.

For a closer look at the problem, we concentrate on Table 6. It shows that 47.7 percent women migrate for reasons of marriage, 16.1 percent move with parents, and 24.8 percent leave for other unspecified reasons. Subtracting another 5.3 percent who migrate because they want to return home (another dubious category) or move for health reasons, one is left with only 6 percent (i.e., 392 out of 6528) women who migrate for economic reasons. The residual sample is no doubt fairly small but is the outcome of a large representative sample.[2] Had the authors applied the HK model to *this* sample to draw their conclusions, the results would have been different from those obtained by running the model on the entire sample.

Continuing with Table 6, one also finds that of the 59.5 percent male migrants, nearly 24 percent younger members move with their parents. The question that naturally arises is: Why do the parents move? If they move for economic reasons, should we continue to consider all 60 percent as moving for non-economic reasons? The some holds for girls who also move with their parents. This may be true of the marriage category as well. Some women who initially migrate for marriage reasons may find a job opportunity relatively easily in the urban areas and may end up joining the labour market. So the motive of migration which was non-economic initially turns economic. This precisely is the dynamic characteristic of the migration process which is difficult to capture with the LFS data.

Summing up the comments, it is recommended that the authors start with a detailed discussion of the LFS data and explain its limitations. They should then truncate the sample, on the basis of descriptive statistics, in such a way that the Human Capital (HK) model is made applicable to draw meaningful conclusions.

Ather Maqsood Ahmed

Pakistan Institute of Development Economics,
Islamabad.

---

[2]The author is grateful to Syed Mubashir Ali (PIDE) for this clarification.