

AN ANALYSIS OF CAUSES OF MIGRATION TO THE METROS

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DECLARATION

I declare that the dissertation entitled "An Analysis of Causes of Migration to the Metros" submitted by me for the award of the degree of **Master of Philosophy** of Jawaharlal Nehru University is my own work. The dissertation has not been submitted for any other degree of this University or any other university.

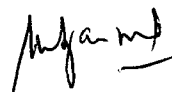

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CERTIFICATE

We recommend that this dissertation be placed before the examiners for evaluation.


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CHAPTER 1

INTRODUCTION

Internal migration takes place when individuals change their place of residence and/or leave their place of birth within the country. According to the 55th round of the National Sample survey, “A normal resident of a sample household is defined as a migrant if the person’s place of enumeration is different from his place of residence for more than six months.” With the intensification of trade and commerce, coupled with industrial development, population mobility or migration is bound to increase.

Migration is one of the most important development and demographic issues facing the country. It is a major factor in the process of urbanization and social change. Apart from the natural increase in population brought about by changes in birth and death rates, migration is the only other factor, which can change the demographic features of a region.

Unbalanced regional development and unbalanced investment on men and materials lead to out- migration for economic reasons from rural areas and underdeveloped regions. The lack of industrial development in rural areas, poor infrastructure, limited market place, rural poverty, low agricultural income and productivity, higher land man ratio and underemployment induce the rural population to out- migrate to other areas which offer better employment opportunities and wages.

An understanding of the types, streams, causes/determinants and consequences of migration and the relationship between such flows and the relative economic opportunities in urban and rural areas is central to any analysis of economic problems of LDCs. This would lead to a better understanding of the development process and the formulation of appropriate policies to influence the process in socially desirable ways.

Numerous studies have now documented the fact that throughout the developing world, rates of rural urban migration continue to exceed rates of urban job creation and surpass the capacity of both industry and urban social services to absorb this labour effectively. Today, migration is being increasingly looked upon as the major contributing factor of urban surplus labour and urban unemployment problems due to growing economic and structural imbalances between rural and urban areas. Metropolitan areas are growing faster than the remaining urban areas and the rapid growth of cities is mostly due to a higher rate of net migration.

In the 21st Century, a remarkable feature of the process of urbanisation has been the development of big cities as the centres of industry, trade, commerce and cultural activities that has led to the concentration of people in such centres. Appropriate policy making would reduce the imbalances between rural and urban sectors, avoid negative consequences of migration at the point of destination like population congestion, land encroachment, proliferation of slums, housing and other infrastructural inadequacies, environmental degradation and many other related social problems. Thus, a highly involved and complex area of demography, internal migration as a subject of research deserves serious attention due to its impact on population growth and its socio- economic implications.

Shekhar Mukherjee (1995) supports the above finding, “Such metropolitan cities can not produce adequate means of subsistence and shelter to such massive influx of rural peasants and unskilled and illiterate or semi-literate migrants who are thus compelled to get absorption in very poor urban informal sectors such as domestic servants, porters, road construction workers, maidservants, hawkers, etc. These are low paid services where wages are low, competition cut throat and exploitation severe. Such distress migration thus does not lead to development and higher qualitative change in urbanization. To unfold such complex processes in the Indian situation and to recommend probable alternative planning strategies in order to alleviate such problems are therefore the highest research requirement.”

It is commonly agreed that policies to tackle the problems associated with migration must be based on a knowledge of the migration process particularly who comes to the city and why. Evidence indicates that the young, educated and unmarried persons

have the highest propensity to migrate. Reasons for migration as articulated in urban surveys do not provide us with proper information regarding who migrates. To measure selectivity, we need information on pre- migration characteristics of migrants and to compare these to the characteristics of those at origin who did not migrate.

The perception of potential migrants is determined primarily by the information available to them about differential opportunities. The nature of information on which migrants base their move reflects their job search strategy. In the conventional economic models, migration is viewed as the consequence of individual's decision to maximize their net benefit. In recent years, it has however been suggested that family considerations and influence play an important role in migration decisions. In a large number of cases, migration does not involve movement of all persons of the family. Migration has thus been viewed as a means of supplementing family income rather than as an alternative source of income. Empirical research has also investigated the magnitude, determinants and uses of remittances in the context of impact of migration on rural income distribution.

According to the 2001 Census, out of the 1.02 billion people in India, 307 million persons were enumerated in places other than their place of birth, accounting for 30% of the total population.

Till 1961 Census, migration data was presented with reference to place of birth only. The information on place of birth was being collected since 1872. In 1961 the scope of collecting information on migration was enlarged by including the rural or urban status of the place of birth and duration of residence at the place of residence. Since 1971 Census, data are being collected on the basis of place of last residence in addition to question on birthplace. A question on 'Reason for migration' was introduced in 1981. The pattern adopted in 1991 and 2001 Census remained the same as in 1981 except that in 2001 Census, information on the rural/ urban status of place of birth was not collected. Also the category 'Natural Calamities' as one of the reasons for migration in 1991 was excluded and a new reason 'Moved at birth' added in 2001.

According to the Census 2001, a person is considered as migrant by place of birth if the place in which he is enumerated during the census is other than his place of birth. As a person could have migrated a number of times during his lifetime, migration by place of birth would not give a correct picture of the migration taking place currently. A person, on the other hand, is considered as migrant by place of last residence, if the place in which he is enumerated during the census is other than his place of immediate last residence. By capturing the latest of the migrations in cases where persons have migrated more than once, one would get a better picture of current migration scenario.

The distribution of migrants by migration streams (i.e. rural to rural, rural to urban, urban to rural and urban to urban areas) is generally associated with the degree of economic and social development. Among the different forms of internal migration, namely rural-rural, rural-urban, urban-urban and urban-rural; rural-urban is considered significant as being the index of the growing industrialisation of a country's economy. The interaction of the opposite forces of rural push and urban pull has considerable impact on the spatial mobility of population.

While rural-urban migration had played a key role in transforming the economies of developed countries, migration in developing countries has not progressed along with economic development. The need for a comprehensive population redistribution policy is much more recognized. The formulation of such a policy and its effectiveness will depend on the degree of understanding of the complex factors that govern mobility.

1.1 Urbanization

Migration is one of the important factors contributing to the growth of urban population. The total urban population of the country, excluding Jammu and Kashmir increased from 217.6 million in 1991 to 283.6 million in 2001 registering a growth rate of 30.3 per cent. The migration data of 2001 Census indicates that 20.5 million people enumerated in urban areas are migrants from rural areas who moved in within the last 10 years. There are 6.2 million migrants who have similarly migrated from urban areas to rural areas. Thus the net addition to urban population on account of

migration is 14.3 million. This works out to be 6.6 per cent of the urban population in 1991. In other words, out of the urban growth of 30.3 per cent, 6.6 per cent is accounted for by migration to urban areas. Thus, natural growth of urban population and growth due to formation of new urban settlements and extension of areas of towns during 1991-2001 adds up to 23.7 percent.

1.2 Statement of the Problem

In a country like India where disparities in respect of economic development exist not only between the states but also within districts, the study of rural-urban and urban-urban migration has its own importance.

The possibility and desirability of interfering with the present movement of people is an important issue as the rate of migration into urban areas is usually greater than the rate of urban sector job creation and since most migrants stay back in the cities and towns even if they do not get a job in the first instance. This swells the urban informal sector and expands the urban unemployment pool, resulting in a shortage of housing and creating a number of civic problems.

A significant portion of the labour force growth has been on account of the migration from rural areas to the towns. This figure is much higher in case of large cities like Delhi, Mumbai, Chennai and Kolkata. The total number of immigrants during the last 10 years is largest in Greater Mumbai Urban Agglomeration (UA) i.e. 2.48 million, the main component being those who are coming from outside the state, followed by Delhi UA which received 2.11 million migrants. The inflow of migrants depends upon the size of the UA/city as in large UAs and Cities the availability of work/employment is greater. However, in terms of amenities and services, immigration causes a severe pressure, as these are not commensurate to high growth in population.

1.3 Objectives

An understanding of the forces by which out-migration from rural areas is determined is usually considered a subject of real interest and important for planners, economists, social scientists, researchers and government decision makers who wish to utilise the

knowledge about factor mobility. The causes of migration are significant because only a proper understanding of the reasons of rural migration can help one to adopt a proper decision or policy in relation with it. Any economic and social policy that affects rural and urban real income will directly and/or indirectly influence the migration process. This process in turn will itself tend to alter the pattern of social, sectoral and geographic economic activity, income distribution and even population growth.

The specific objective is:

“To identify the important variables or factors motivating people to migrate to the four metropolitan cities of Delhi, Mumbai, Chennai and Kolkata from rural and urban areas of 15 states of India.”

Apart from the commonly studied rural to urban migration flows, an attempt has been made to analyse the significant aspect of migration of people between urban areas.

1.4 Data

The major sources of data are the Census of India, 2001 and the 55th Round Survey of the NSS on internal migration (July 1999- June 2000). An attempt has been made to study the information available in the data and then analyse some of the factors which motivate people to migrate to the four metropolitan cities.

1.5 Hypothesis

Our hypotheses are as follows:

1.5.1 Hypotheses for Rural areas

- Rural literacy acts as a push factor in rural urban migration. Thus, there will be a positive relationship between rural literacy and migration.
- An increase in rural non- household manufacturing will discourage migration, while its under- development will act as a push factor. Thus, a negative sign is attached to the relationship.

- Employment in the urban tertiary sector is positively related to migration by acting as a pull factor for rural migrants.
- Rural poverty has been considered as a major push factor as the rural poor migrate to urban areas in search of a livelihood. Thus, there will be a positive relationship between poverty and migration.
- Growth of irrigated areas through expansion of irrigation facilities is likely to abate rural-urban migration. Thus, it is negatively related to migration.

1.5.2 Hypotheses for Urban areas

- Employment in the urban tertiary sector is positively related to migration by acting as a pull factor for rural migrants.
- Urban literacy acts as a pull factor in urban-urban migration. Thus, there will be a positive relationship between urban literacy and migration.
- A high degree of urbanisation is associated with more employment opportunities and better infrastructural facilities and will thus attract more migrants. There will be a positive relationship between urbanisation and migration.
- High income levels in the state of origin would not induce people to migrate to the destination areas and is negatively related to migration.

1.6 *Plan of the Study*

The plan of the study is as follows. Chapter 2 gives a brief summary of the literature on migration. Chapter 3 discusses the area of study and the pattern of migration in the four metropolitan cities during the decade 1991-2001. It then talks about the important sources of data on migration and the method used in the analysis. Chapter 4 discusses the econometric results of the analysis. In Chapter 5 we summarise our results and discuss issues on migration related to LDCs and suggest certain policy prescriptions.

CHAPTER 2**SURVEY OF LITERATURE**

The process of theorization of migration began in the 19th century. It has been discussed by sociologists, geographers and economists who have respectively emphasized the social and cultural, the distance and economic factors as the causes of migration.

According to Lee (1966), "Migration is defined broadly as a permanent or semi-permanent change of residence. No restriction is placed upon the distance of the move or upon the voluntary or involuntary nature of the act, and no distinction is made between external and internal migration."

2.1 Review of Migration Research

The literature on migration goes back over a hundred years to two papers by the British demographer Ravenstein (1885, 1889), the first paper being based on the British census of 1881. Using data for more than 20 countries, Ravenstein formulated 'The Laws of Migration' in 1885. Ravenstein's papers have stood the test of time and remain the starting point for much of contemporary migration theory. Ravenstein's "laws" of migration may be summarised in the form of six basic propositions.

In relation to technology, Ravenstein found that an increase "in the means of locomotion" and "development of manufactures and commerce" led to an increase in migration. A similar relationship between development of manufactures and migration was also formulated by Lewis, but in a more specific way.

The Lewis model is a long run analysis of the development of a dual economy. It traces the path over time of a poor economy getting gradually industrialized. Lewis described his model as a classical one, i.e. with an unlimited supply of labour at the subsistence wage in the rural sector. With marginal products almost zero, labour resources get transferred to urban areas as the capitalist pays a higher wage, which is a markup on the rural wage, if it wishes to draw on this unlimited labour supply. The

primary focus of the model is both on the process of labour transfer and on the growth of employment in the modern sector. Both labour transfer and urban employment growth are brought about by output expansion in the modern sector. The speed with which they occur is given by the rate of industrial capital accumulation in the modern sector. It is assumed that the capitalist invests the entire profit that he makes in the process. It is supposed that marginal product increases as the capital stock increases. This relentless cycle of surplus, investment and growth continues and steadily the industrial sector absorbs the rural one.

However, the Lewis model has been criticised. Some of the assumptions which can be questioned are explained below. The model implicitly assumes that the rate of labour transfer and employment creation in the urban sector is proportional to the rate of urban capital accumulation. The faster the rate of capital accumulation, the higher the growth rate of the modern sector and the faster the rate of new job creation. However, it has been suggested that the extra profits may be invested in labour saving technology. The notion of constant urban wages has been questioned. One of the striking features of urban labour markets has been the tendency for these wages to rise even in the presence of unemployment. The Lewis model assumes that surplus labour exists in rural areas while there is full employment in urban areas. But, most research indicates that the reverse may be true. However, the model does emphasize two major elements of the employment problem: the structural and economic differences between the rural and the urban sectors, and the central importance of labour transfer which links them together.

Ravenstein's law on distance and stream and counter stream can be supplemented by the gravity model. Ravenstein stated that each main current produces a compensating counter current. John Q. Stewart (1950) in the 'Gravity Theory of Migration' related the isomorphic relationship of population movements with Newton's Law of Gravitation. He observed that migration is proportional to the product of population of the place of origin and that of the destination, and inversely proportional to the square of the distance between the two places. The theory propagated that the economic base of a country is fundamentally important for attracting migrants.

Stouffer offered an explanation similar to the gravity model, but in more economic terms. Stouffer (1940) regarded migration not as a mere function of distance and population size, but as a function of intervening opportunities. The number of people going to a given distance is proportional to the number of opportunities at that distance and inversely proportional to the number of intervening opportunities. In 1960, Stouffer revised his hypothesis and introduced an additional variable of competing migrants. This revised model postulated that the total number of individuals migrating from place A to place B was a function of the number of opportunities at place B and an inverse function of the number of opportunities intervening between place A to place B as well as the number of other individuals competing for opportunities at place B.

Lee's model (1966) seems to be an improvement over Stouffer's model. Lee developed a general schematic framework for analyzing the volume of migration, the development of streams and counter-streams and the characteristics of migrants. According to Lee, "every act of migration involves an origin, a destination, and an intervening set of obstacles". The factors which enter the decision to migrate and the migration process can therefore be summarized under four general categories:

1. Factors associated with the area of origin
2. Factors associated with the area of destination
3. Intervening obstacles
4. Personal factors

Every origin and destination area is assumed to have positive forces which hold people within the area, negative forces which repel people from the area or zero forces which on balance exert neither an attractive nor a repellent force and towards which people are essentially indifferent. While Lee's general theory of migration is appealing, it is of limited help for policy analysis in developing countries because of its high degree of generality and the interdependence of many of its hypotheses. It does not determine which positive factors and which negative factors at both the origin and destination are quantitatively the most important to different groups and classes of people. It does not help us know which intervening opportunities are major and which are minor. Lee's theory of migration and most other non-economic social science migration models offer little practical policy guidance for decision

makers in developing nations. For practical policy guidance, we need to turn to the economist's specification of the migration problem and to econometric methods for evaluating the quantitative significance of alternative explanatory variables.

Todaro in his widely discussed hypothesis gave the model an econometric perspective in context of policy formulation by decision makers. The evidence of the 1960's in which many developing nations witnessed a substantial migration of their rural populations into urban areas in spite of rising levels of urban unemployment and underemployment called into question the validity of a number of traditional models of labour transfer and economic development. This is the starting point of the well-known Harris Todaro model, which assumes a dual economy similar to Lewis, but one where the worker's decision to locate themselves is based on expected earnings maximization. The Harris- Todaro (HT) model proposed in Todaro (1969) and Harris-Todaro (1970), provides an interesting analysis of migration and unemployment in LDCs.

Todaro disregarded the prevailing view among economists that rural urban migration was a desirable process and an integral part of economic development. In the model, the urban formal sector wage is set above the market clearing level and is downwardly rigid. Because of the excess labour supply migrants may not be able to obtain employment in this sector immediately upon arrival. Therefore, in the decision to migrate, migrants balance the probability of being unemployed for a considerable period against the positive differential between urban and rural incomes. Migration proceeds in response to urban-rural differences in expected rather than actual earnings. Expected gains are measured by:

- The difference in real incomes between rural and urban job opportunities, and
- The probability of a new migrant obtaining an urban job

Todaro sums up four major features of his model:

1. Migration is stimulated primarily by rational economic considerations of relative benefits and costs, mostly financial, but also psychological.

2. The decision to migrate depends on ‘ expected’ rather than actual urban- rural real wage differentials and the probability of successfully obtaining employment in the urban modern sector.
3. The probability of obtaining an urban job is inversely related to the urban unemployment rate.
4. Migration rates in excess of urban job opportunity growth rates are not only possible but also rational and probable in the face of continued positive urban rural expected income differentials. High rates of urban unemployment are therefore inevitable outcomes of the serious imbalances of economic opportunities between urban and rural areas of most underdeveloped countries.

The decision to migrate or not will depend on whether

$$V(O) = [p(t) Y_u(t) - Y_r(t)] e^{-it} dt - C(O)$$

is positive or negative.

Where,

$V(O)$ is the discounted present value of the expected “net” urban-rural income stream over the migrant’s time horizon

$Y_u(t)$, $Y_r(t)$ are average real income of individuals employed in the urban and the rural economy respectively

$C(O)$ represents the cost of migration, and

$p(t)$ is the probability that a migrant will have secured an urban job at the average income level in period t .

There have been a number of important modifications of the basic Todaro migration model. Many of these modifications were made to introduce some element of reality into the migration process. Todaro and John Harris (1970) utilised and extended the basic Todaro framework to construct a two sector internal trade model of migration and unemployment which made it possible to give explicit attention to the impact of migration on rural incomes, urban and rural output and total social welfare. Harris and Todaro utilised their internal trade cum migration model to deduce a number of policy implications.

However, the HT model has been subject to criticisms. It has been observed that use of urban unemployment rate as the probability of finding a job amounts to an overestimation of the likelihood of finding a job. The assumption of homogenous labour is not consistent with the universally observed selectivity by the migrant stream of particular sub groups of source area populations. The model must accommodate several types of labour. The HT model supposes that in the urban sector, people either find jobs in the formal sector or remain unemployed. But this is not an exact description of reality. An important finding of empirical research has been the discovery of the informal sector. Many people who don't find jobs in the formal sector end up working in the urban informal sector, which can be quite large.

There have been a number of important modifications of the basic Todaro model since it appeared as a Ph.D Thesis in 1967. Most of these modifications were designed to introduce some element of reality into the migration process, elements which were assumed away or not taken into explicit account in the original Todaro model (Todaro, 1976).

Another important theory in this regard was given by Sjastaad in 1962. His main approach about the decision to migrate is an analysis of investment in human resources. Sjastaad presented a human investment theory of migration which treats the decision to migrate as an investment decision involving costs and returns distributed over time. The returns are divided into money and non-money components. Non-money returns include changes in 'psychic benefits' as a result of locational preferences. Similarly, costs include both money and non-money costs, such as costs of transport; of disposal of movable and immovable property necessitated by a shift in residence; of wages forgone while in transit; of retraining for a new job, if necessary. There are psychic costs too; of leaving familiar surroundings; in many cases of giving up one's language and culture; and of adopting new dietary habits and social customs; of growing out of one's ethos altogether. Although Sjastaad takes into account money as well as non- money costs and benefits, yet in calculating net returns to migration he includes only money costs and non-psychic benefits.

Speare (1971) maintains that when value of all future monetary benefits from moving is greater than the monetary costs involved, migration takes place. The approach is

relevant to the analysis of a good many patterns of migration including internal and external as well as rural to urban or rural to rural migration.

Another notable theory in this regard is the Situational Approach. According to the 'Situational Approach' given by Wolport (1965), migration occurs 'when the place utility' in a few locations becomes greater than that of the present location. Place utility represents the social, economic and other costs and benefits derived from an 'individual's integration at some position in space'. The range of alternatives will be limited by one's own experience, information available and even position in his life cycle. It is known as situational approach because the determinants of migration such as population, density, political and social structure etc. vary from situation to situation. However, the approach fails to take into account the fact that the individual rational behaviour is caused by the system of which the individual is a part only.

According to Zelinsky (1971), personal mobility through space and time during recent history constitutes an "essential component of modernization process". The mobility transition of a society is composed in his view, of five stages, which correspond roughly to the stages of demographic transition.

Kingsley Davis (1968) is of the opinion that modern migrations are an ebb and flow that result from technological and economic inequalities. Poor economic opportunities are the reason for a higher propensity to migrate to urban areas.

Charles Wood (1982) integrated the individual and structural approaches to migration studies. The integration of the two is to be effected by shifting the unit of analysis to the households. Migration is an individual choice under certain structural conditions that make the choice possible.

Thus, the theory of migration is still in an underdeveloped stage. The set of above mentioned models have been providing the framework for migration research and their validity has also been tested by many researchers with varying experiences. Though migration researchers have put forward a number of hypotheses, theories and models, there is still need for more research to test the hypotheses and explain the processes. A theoretical framework which can include all the hypothetically relevant

factors of migration and can also specify their interaction in an empirically testable form is the most immediate need.

2.2 Review of empirical studies on internal migration

Mangalam (1968) has observed that a majority of migration researchers have been concerned with four basic questions:

- Who migrates
- Why do they migrate
- What are the patterns of flow and direction of migration
- What are the consequences of migration

A major objective of research on migration has been to explain its occurrence. Studies concerned with explaining migration can be divided into: (i) macro studies, discussing migration movements between areas, and (ii) micro studies, analysing the migration of individuals. Macro studies explain aggregate migration flows, or the rate of migration, by identifying factors which make certain areas attractive to migrants and those which cause others to experience out-migration. A common and widely used method in recent years has been to estimate the parameters of 'macro' migration functions which are a useful basis for economy-wide policy formulation. Micro studies are concerned with motives of individuals and with measuring and explaining migration selectivity.

2.2.1 Determinants of migration

Several recent studies concerning labour migration in less developed countries have placed emphasis on the factors that influence migration and on the magnitude in which each factor exerts its influence on aggregate geographic labour supply adjustments. There can be different sets of factors responsible for migration. Broadly, it can be economic factors like search of jobs or better jobs, social factors like marriage or accompanying of parents or an earning member, personal factors like pursuing of higher studies or for getting access to better educational, medical and health facilities and sometimes natural calamities and political factors or lack of social security in a place.

Factors such as pressure of population resulting in a high land man ratio, low rate of investment in agriculture, unequal distribution of land ownership, capital intensive technologies, and promotion of schools in rural areas are the basic causes of migration (Oberoi and Singh, 1983). Oberoi and Singh have also stated that the “policies of the State also exercise a powerful influence on the redistribution of population as between the rural and the urban areas”. According to Kingsley Davis (1968), improvements in the level of education and transport and communication facilities, shift of workforce from agriculture to industry and tertiary activities would increase mobility.

Numerous studies show that migrants respond to economic incentives, and are affected by the presence of friends and relatives and by distance from the home site. The range of economic incentives includes more than income and employment opportunities. When the destinations are cities, better living conditions, better educational opportunities, or a wider variety of shopping, social and recreational activities may also be important motivating factors. Unfortunately the econometric studies can only confirm the collective attraction of cities, without being able to separate the wage and non-wage components (Yap, 1977).

With regard to the determinants of rural-urban migration, distinction has been made between push factors and pull factors. Push factors are those that operate in areas of out-migration and compel the people to move to other areas. Pull factors are those that operate in areas of in-migration and attract the people to these areas. It is not necessary that in an area only push or pull factors should operate, in fact, both push and pull factors operate simultaneously in the same area. It is because of this that it sometimes becomes difficult to differentiate between push and pull factors. Ghaffari and Singh (2004) have used an OLS regression model to identify the major push and pull factors responsible for rural out-migration for 50 districts of Uttar Pradesh. They have found that urban literacy rate, level of urbanisation, percentage of urban workforce in non household manufacturing and construction activities are important pull factors in attracting people to urban areas. And rural literacy rate and net area under irrigation are significant push factors.

However, many authors have pointed out this oversimplification of push pull theory. It has been suggested that migration causation needs to be viewed within the

framework of factors associated with personal characteristics, area of origin, area of destination, distance between the two, intervening obstacles, and the migrants themselves (Kumar, P. and Aggarwal, S.C., 2003).

The econometric specification and quantification of the most important determinants of migration in Third World countries is a potent literature with new theoretical insights into the migration process. Some of the studies on gross migration in developing areas are: Beals, Levy and Moses (1967) on Ghana, Paul Schultz (1971) and Gary Fields (1982) on Colombia, Sahota (1968) on Brazil, and Richard Agesa (2001) on Kenya. Greenwood (1971), Chakrapani and Mitra (1995), Sensarma (1997), S.P. Singh and R.K. Aggarwal (1998), P. Kumar and S.C. Aggarwal (2003) and Ghaffari and Singh (2004) have tried to explain inter regional migration in India.

The basic form of the migration function is as follows:

$$M_{ij} = f(Y_i, Y_j; U_i, U_j; Z_i, Z_j; P_i, P_j; d_{ij}).$$

The specification is usually log linear. Typical independent variables used to explain migration from place i to place j (M_{ij}) include wage or income levels (Y), unemployment rates (U), the degree of urbanization (Z) for the population in areas i and j ; the size of the population (P) in areas i and j ; the distance between i and j (d_{ij}). Macro migration functions similar in form to that shown above have been estimated for most developing countries primarily from census data. Yap (1977) has provided one of the most extensive reviews of the limited but growing economic literature on internal migration in developing countries.

Among the various theories of migration, Todaro's migration model remains the most widely discussed. In spite of many significant modifications, the basic features of the model (i.e. that migration proceeds primarily in response to differences in expected urban and rural real incomes, and thus increasing migration in the presence of urban unemployment is plausible and rational), remain intact to this day and provide the framework for most contemporary econometric migration studies. The acceptance at the 'theoretical level' is reflected at the empirical level by the widespread utilisation of econometric migration functions, which give explicit recognition to 'explicit'

income differentials as one of the most important explanatory variables in the migration decision-making process (Todaro, 1976).

As might be expected, all the above econometric work demonstrates the importance of economic variables in explaining migratory movements. Differences in income between two places turn up as the most important explanatory variables. When rural and urban income levels are included as separate variables, migration is positively related to urban wages and negatively related to rural wages. When the income variables are combined into a single variable, migration varies positively with the income differential.

Taking state wise data, Greenwood (1971) tested Todaro's model in India. He took migration rates as the dependent variable and rail distance, annual income in rural and urban areas and degree of urbanisation as the independent variables. Fitting a loglinear regression model, he found that economic factors like transport costs, income and job opportunities are important factors in an individual's decision to migrate to a city. Inter-urban area migrants tended to move from cities with relatively low-income levels to cities with relatively high-income levels. On the contrary, while migrants from rural areas tend to move to relatively high-income cities, these same migrants also tend to come from relatively high-income rural areas. This is because the likelihood that the low-income, poorly educated rural dweller will be quickly absorbed in the urban sector may be so low that his 'expected income differential' may be negative. Rural and urban persons were found to move to rapidly growing cities because of the likelihood that such cities also had rapidly growing job markets.

Beals, Levy and Moses (1967), Sahota (1968), Greenwood (1971) and Kuntal Sensarma (1997) have found the degree of "urbanisation" in the destination region as an important factor behind inter- regional migration. This is because urbanisation is associated with more employment opportunities. So increasing urbanisation will attract migrants from rural and urban areas. But given the level of industrialisation, greater urbanisation also reflects increasing competition in the job market, congestion, and pollution which may deter in-migration (Chakrapani and Mitra, 1995; Ghaffari and Singh, 2004).

Using the 1991 Census data for 14 states of India, Kuntal Sensarma (1997) has studied various aspects of migration and migration of labourers in particular. His is a cross-section study with two different linear specifications. He has explained rural-urban, urban-urban migration and migration for economic reasons. Sensarma finds urban tertiary sector employment is a very crucial “pull” factor behind migration to urban areas. An increase in employment opportunities in the tertiary sector raises the demand for services offered by the marginal labour in the informal sector, which acts as a base for future entry into the formal sector.

A number of studies for LDCs and advanced countries have found “distance” to be an important factor for migration, viz. Beals, Levy and Moses (1967), Sahota (1968), Greenwood (1971) and P.Kumar and S.C.Aggarwal (2003). Distance acts as a proxy for the transportation costs, information costs and psychic costs associated with migration. Since all these costs can be expected to increase with increase in distance between the home and the destination, and information declines with distance, migration is expected to decrease with increased distance.

Education is another important variable related to migration. The tendency to migrate increases with the acquisition of educational qualifications. Several studies find a positive relationship between formal schooling and increased tendency for migration (Sahota 1968, Paul Schultz 1971, Gary Fields 1982, S.P. Singh and R.K.Aggarwal 1998, Ghaffari and Singh, 2004).

Bulsara (1964) hypothesized that unsatisfactory economic conditions were the largest push factors and industrial cities like Mumbai, Kanpur and Jamshedpur attracted a large proportion of such migrants.

It has also been observed that educated people in India migrate to urban areas not only because they do not have jobs in rural areas but also because they develop a distaste for traditional work in the village (Banerjee, 1986). According to Banerjee, the most frequently cited motives for migrating were “to obtain cash”, “worsening of economic situation” and “dislike of agricultural work/desire for different job”. “Dislike of agricultural work” was cited mainly by migrants who had studied beyond the middle school level. The cash motive was prevalent among landowning migrants, particularly

among those with less than 5 acres than among non-landowning migrants. Non-landowning migrants had a greater tendency to highlight “worsening of economic situation”.

However, the urban growth due to migration has several facets such as demographic, economic, spatial and infrastructure. Increasing population in urban centres puts pressure on physical and social infrastructure. The water supply, drainage and sewage, public transport, roads, sanitation, power, street lights, garbage disposal, communication, housing, community open spaces, other community facilities, education and health infrastructure require added attention and in the face of increasing resource crunch it is becoming difficult to make available these to the population. Thus, migration today is being increasingly looked upon as a major factor contributing to the problem of urban surplus labour, and a force aggravating the already serious problem of urban unemployment due to growing economic and structural imbalances between rural and urban areas.

2.2.2 Pattern of Migration

Kingsley Davis (1968) had observed that the population of the Indian sub-continent was relatively immobile. He attributed this immobility to prevalence of caste system, joint families, practice of early marriage, diversity of language and culture, lack of education and predominance of agriculture in the economy. It is argued that a society bound by caste, family system and traditional values, often acts as a deterrent to migration. It has been observed that population mobility has declined during the recent decades (Kundu and Gupta, 2000). Mobility of population has declined both in rural as well as the urban areas.

M.K.Premi (1981) has analyzed the growth of urban population during 1951-61 and 1961-1971 in India. He has shown that during the decade 1961-1971, migration proportions were lower than in 1951-61. In 1971, employment in manufacturing and services declined while employment in agriculture increased. He contends that the economy did not create enough jobs, so as a push back effort, rural migrants returned in the 60's.

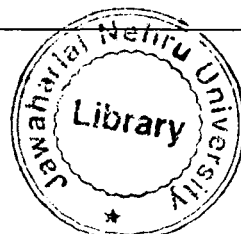
Chakrapani and Mitra (1995) have undertaken a cross-section study of 15 states in India and estimated macro-migration functions. They find the pace of urbanization slow in relation to countries at comparable levels of development due to sluggish labour absorption in productive activities. Employment opportunities in the urban areas have not been increasing rapidly to attract migrants on a large scale.

Providing the latest patterns of out- migration, J.P.Singh (1992) noticed that metropolitan cities and large cities which offer a wide range of employment opportunities are the major attraction for rural-urban and urban-urban migrants. Calcutta, Bombay and Kanpur drew large number of migrants in the early stages of industrialisation whereas Delhi and Bangalore, the fastest growing metropolises have been favoured destinations for migrants in the post independence period. The study done by Kundu and Gupta (2000) also explains that after independence, the increasing intra- state regional disparities mainly caused by biased activities of the Central Govt. in distribution of subsidies resulted in the development of few large cities. Besides the growth of agriculture was uneven. Increases in land and labour productivity were restricted to a few districts only. This sharpened inequality and encouraged intra state migration especially from rural to urban areas.

Surjit Singh (2001) contends that a significant number of people move from place/ region to place/ region in India, though movements within the state are more dominating. Maharashtra, Madhya Pradesh, Orissa, Kerala, Rajasthan and Tamil Nadu are major migrant originating states. Most of these states despite the existence of metropolitan cities in few of them, have regions which are very poor both relatively as well as absolutely. The preferred destinations are neighbouring states in large number of cases, besides the big cities like Bombay, Madras, Hyderabad, Calcutta and Delhi.

For males, the main reasons for migration are 'employment'; while for females it is 'marriage' or 'family moved' irrespective of the type of movement or distance of movement (D.P.Singh, 1998).

In case of interstate migration, rural to urban and urban to urban migration streams predominate over rural to rural and urban to rural migration flows.



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2.2.3 Characteristics of out migrants

Migrants typically do not represent a random sample of the overall population. On the contrary, they appear to be disproportionately young, better educated, less risk averse and more achievement oriented and to have better personal contacts in destination areas than does the general population in the region of out-migration (Todaro, 1976).

Oberoi and Singh (1983) observe that rural urban migrants are predominantly young adults (15-29 years), and relatively better educated than those who remain at the origin. The young have a higher propensity to migrate because the return on investment in human capital declines with increase in age, while on the other hand; the older people tend to develop stronger attachment to their property and family. Moreover, migration for reasons other than employment accentuates this age selectivity; for example migration for marriage and migration for education are both commonest in the lower age groups.

G.S.Mehta's (1991) findings indicate that in the case of extremely poor households, the family members have been migrating at a very early age. Almost all the migrants are forced to migrate due to poor economic conditions of their households, growing burden of the population on traditional agriculture and lack of employment opportunities in the villages.

The belief that migrants originate from poor households has persisted because a number of studies have noted that the rate of migration is higher from densely populated and poor regions or villages (Dandekar and Rath, 1971). However, Banerjee and Kanbur (1981) have suggested that rural poverty deters migration, as the very poor cannot finance the cost of migration.

It is usually observed that men migrate first and then the family moves once the male migrant has established himself. Males who are unemployed or underemployed in the rural areas migrate in large numbers (Oberoi, Prasad and Sardana, 1989).

A survey of both the empirical and descriptive literature on migration and particularly the new econometric literature shows that there are several problems with the econometric functions which tend to limit their usefulness for prediction. Inter state migration flows tend to lump together rural and urban flows though in some countries, migration to and between urban areas is an important component since such moves tend to cover longer distances. The independent variables are often poorly measured. It is very difficult to find appropriate measures for urban and rural income, particularly rural income. No adjustment for cost of living differences between areas is made for lack of appropriate data.

In the present study an attempt has been made to identify the important variables responsible for migration to the four metropolitan cities of Delhi, Mumbai, Chennai and Kolkata during the period 1991-2001. Such a study will help in identifying the dominant factors that are responsible for internal migration from rural to urban areas and urban to urban areas.

AREA, DATA AND METHOD

According to the Census 2001, a person is considered as migrant by place of last residence, if the place in which he is enumerated during the census is other than his place of immediate last residence.

3.1 Area of Study

3.1.1 The Demographic Characteristics

Contrary to popular concepts of a predominantly rural India, an increasingly larger percentage of Indian population lives in the urban areas. Today, India's urban population is second largest in the world after China, and is higher than the total urban population of all countries put together barring China, USA and Russia. Over the last fifty years, while the country's population has grown by 2.5 times, in the urban areas it has grown by five times.

The total urban population of the country, excluding Jammu and Kashmir increased from 217.6 million in 1991 to 283.6 million in 2001, registering a growth rate of 30.3%. According to the 1991 census, 25.71 per cent of Indian population lived in urban areas. And in 2001, 27.81% of the Indian population resided in urban areas. The growth in number of people living in urban areas is partly due to the skewed development that has led to proliferation of commercial activities and great job opportunities in towns and cities. Facilities like health and education and infrastructure like roadways, telecommunication, airports and railways are better in urban areas.

Mumbai is the commercial and entertainment capital of India, and houses important financial institutions. Mumbai has attracted migrants from all over India because of the immense business opportunities, and the relatively high standard of living, making the city a potpourri of various communities and cultures and the largest metropolitan city in India.

Mumbai contributes 10% of all factory employment, 40% of all income tax collections, 60% of all customs duty collections, 20% of all central excise tax collections and 40% of India's foreign trade

Up until the 1980s, Mumbai owed its prosperity largely to textile mills and the seaport, but the local economy has since been diversified to include engineering, diamond-polishing, healthcare and information technology. Mumbai's status as the state capital means that state and federal government employees make up a large percentage of the city's workforce. Mumbai also has a large unskilled and semi-skilled labour population, who primarily earn their livelihood as hawkers, taxi drivers, mechanics and other such blue-collar professions. The port and shipping industry too employs many residents, directly or indirectly.

The population of Mumbai is about 18 million, with a density of about 29,000 persons per square kilometre. Like other large cities in the developing world, Mumbai suffers from the same major urbanisation problems seen in many fast growing cities in developing countries — widespread poverty and poor public health, employment, civic and educational standards for a large section of the population. With available space at a premium, Mumbai residents often reside in cramped, relatively expensive housing, usually far from workplaces, and therefore requiring long commutes on crowded mass transit, or clogged roadways. According to the *Business Week*, around 43% of the population lives in shantytowns and slums.

With an estimated net State Domestic Product (SDP) of 83,085 crores (830.85 billion) Indian rupee (INR) (for the year 2004–05), *Delhi* is an important commercial centre in South Asia. Delhi has a per capita income of 53,976 INR which is around 2.5 times of the national average. The tertiary sector contributes 70.95% of Delhi's gross SDP followed by secondary and primary sectors with 25.2% and 3.85% contribution respectively. Delhi's workforce constitutes 32.82% of the population of Delhi.

Delhi's service sector has expanded due in part to the large skilled English-speaking workforce that has attracted many multinational companies. Key service industries include information technology, telecommunications, hotels, banking, media and

tourism. Delhi's manufacturing industry has also grown considerably as many consumer goods industries have established manufacturing units and headquarters in and around Delhi. Delhi's large consumer market, coupled with the easy availability of skilled labour, has attracted foreign investment in Delhi. Construction, power, telecommunications, health and community services, and real estate form integral parts of Delhi's economy. Delhi's retail industry is one of the fastest growing industries in India.

Delhi has grown up to be a cosmopolitan city owing to the immigration of people from across the country. Like many other large cities of the world, Delhi suffers from urbanisation problems such as pollution, traffic congestion and scarcity of resources. With falling groundwater level and rising population density, Delhi faces severely acute water shortage. Delhi faces a power shortage resulting in frequent blackouts and brownouts, especially during the summer season when energy demand is at its peak. The city faces acute transport management problems leading to air pollution, congestion and resultant loss of productivity.

According to the 2001 Census of India, the population of Delhi that year was 13,782,976 and is the third largest metropolitan city in India. The corresponding population density was 9,294 persons per km². In 2005, Delhi accounted for the highest percentage (16.2%) of the crimes reported in the 35 cities in India with populations of one million or more. Delhi, being the capital of the country, attracts students from all over India. It has a number of government and private colleges offering quality education in the fields of science, engineering, medicine, arts, law and management.

Chennai formerly known as Madras is the capital of the state of Tamil Nadu and is India's fourth largest metropolitan city. With an estimated population of 6.98 million (2006), the 368-year-old city is the 34th largest metropolitan area in the world.

Chennai has a diversified economic base. The main industries are automobile, software services, hardware manufacturing and financial services. Other important industries include petrochemicals, textiles and apparels. The Chennai Port and

Ennore Port contribute greatly to its importance. The city has a fully computerised stock exchange called the Madras Stock Exchange.

Chennai is the third largest commercial and industrial centre in India, Chennai is considered the automobile capital of India, with a major percentage of the automobile industry having a base here and a major portion of the nation's vehicles being produced here. It has also become a major centre for outsourced jobs from the West. Since the late 1990s, software development and business process outsourcing and more recently manufacturing have emerged as major areas in the city's economy.

Chennai has emerged as the topper among Indian cities ahead of the three other metros as well as Bangalore based on the 'Location Ranking Survey' conducted by ECA International. Chennai has improved its global ranking to 138 in 2006-07 from 179 in 2002-03. It is now ranked at 26th position in Asia in terms of liveability, up from 31st rank in 2002-03.

The population density in the city is 24,418 per km² while the population density of metropolitan area is 5,847 per km². The sex ratio is 948 females for every 1000 males, slightly higher than the national average of 934. The average literacy rate is 80.14%, much higher than the national average of 64.8%. 18% percent of the city's population is classified as living in slum conditions.

The main problem Chennai faces is traffic congestion and resulting pollution. Chennai has a fairly well developed transportation infrastructure in terms of coverage and connectivity. The majority of city's population uses public transportation thus burdening the system which gets overcrowded during peak hours. Chennai is among the densest cities in the world in terms of population per area. The city's ground water levels have been depleted to very low levels in many areas. Most residents buy their drinking water.

Kolkata, formerly Calcutta, capital of West Bengal state, is the second largest metropolitan city in India and one of the largest in the world. Ten of Kolkata's suburbs have well over 100,000 people each. The area of the Kolkata metropolitan

area is 228.5 sq mi (591 sq km), extending more than 40 miles along the Hugli. Kolkata is the major seaport (see Haldia) and industrial center of E India; jute is milled, and textiles, chemicals, paper, and metal products are manufactured.

Kolkata is the main business, commercial and financial hub of eastern India and the north-eastern states. It is home to the Calcutta Stock Exchange — India's second-largest bourse. It is also a major commercial and military port. The informal sector comprises more than 40% of the labour force. State and federal government employees make up a large percentage of the city's workforce. The city has a large unskilled and semi-skilled labour population, along with other blue-collar and knowledge workers.

As of 2001, Kolkata city had a population of 4,580,544, while the urban agglomeration had a population of 13,216,546. The sex ratio is 828 females per 1000 males – which is lower than the national average, because many working males come from rural areas, where they leave behind their families. Kolkata's literacy rate of 80.86% exceeds the all-India average of 64.8%.

Like other large cities, Kolkata continues to struggle with urbanization problems like poverty, pollution and traffic congestion. Parts of the city still lack sewage facilities leading to unsanitary methods of waste disposal. The city has terrible poverty, chronic unemployment, overcrowding, inadequate transportation, and resultant social unrest.

The population of the four metros has been growing at a very high rate as can be seen from Table 1 below.

Table 1: Trend of Population

	India		Delhi		Mumbai		Chennai		Kolkata	
Year	<i>Total Population</i>	<i>Dec. growth</i>	<i>Total Population</i>	<i>Dec. growth</i>	<i>Total Population</i>	<i>Dec. growth</i>	<i>Total Population</i>	<i>Dec. growth</i>	<i>Total Population</i>	<i>Dec. growth</i>
1991	846300000		8420000		12596000		5422000		11022000	
2001	1028737436	21.34	12877470	52.94	16434386	30.47	6560242	20.99	13205697	19.81

Source: Census of India, 2001

It can be seen that the population of Delhi and Mumbai has increased at a higher rate than that of the country as a whole. A large part of this increase in population can be accounted for by increasing migration into the metros because in these UAs the availability of work/employment is greater. The migration data of 2001 indicates that 20.5 million people enumerated in urban areas are migrants from rural areas who moved in within the last 10 years. There are 6.2 million migrants who have similarly migrated from urban areas to rural areas. Thus the net addition to urban population on account of migration is 14.3 million. This works out to be 6.6 percent of the urban population in 1991. In other words, out of the urban growth of 30.3 %, 6.6% is accounted for by migration to urban areas. Thus, natural growth of urban population and growth due to formation of new urban settlements and extension of areas of towns during 1991-2001 adds up to 23.7%.

According to the 2001 Census, out of the 1.02 billion people in the country, 307 million (or 30%) were reported as migrants by place of birth. This proportion is slightly more than what was reported in 1991(27.4%).

Table 2: Number of in-migrants by last residence (duration 0-9 years) into Urban Agglomerations: 2001 Census

<i>Name of the UA</i>	<i>2001 Population</i>	<i>In-migrants from within the state</i>	<i>In-migrants from other states</i>	<i>In-migrants from other countries</i>	<i>Total In migrants</i>	<i>% of inmigrants to total population</i>
INDIA (Urban)	286,119,689	24,974,372	11,157,574	348,060	36,480,006	12.7
Greater Mumbai UA	16,434,386	892,706	1,571,181	25,665	2,489,552	15.1
Delhi UA	12,877,470	77,663	1,988,314	46,386	2,112,363	16.4
Chennai UA	6,560,242	334,972	94,964	5,684	435,620	6.6
Kolkata UA	13,205,697	470,601	297,279	54,509	822,389	6.2

Source: Census of India, 2001

As can be seen from Table 2, total number of in-migrants during the last ten years is largest in Greater Mumbai UA, the main component being those who are coming

from outside the state. Delhi UA on the other hand received 1.9 million migrants from other states, the largest among the UAs shown above. Kolkata UA is important as it received 54,509 persons from other countries, most likely Bangladesh. In terms of proportion of in-migrants to total population in these UAs, Delhi UA was at the top, with in-migrants constituting 16.4% of the population followed by Greater Mumbai (15.1%).

Migration from various States of India into the metropolitan cities

Table 3 presents the migration from various states of India to the metros for all durations of residence. Major influx of population into Delhi was from U.P., Bihar and Haryana. In case of Maharashtra, intra-state migration was very important. Nearly 6% of the migrants into Mumbai were intra-state migrants. U.P., Gujarat and Karnataka also contributed a large portion to the total migration. Similarly, in the case of Chennai, intra-state migration was important. Other states from where sizeable number of immigrants came to Chennai are the neighbouring states of Kerala and Andhra Pradesh. In the case of Kolkata, intra-state migration was an important component of migration. Bihar and U.P. are the other important states. Migrants from Bihar moved mainly because of economic reasons- poor economic condition of Bihar and readiness to do hard work.

Table 3: Migration State wise (duration 0-9 years)

Year/State	Delhi	Mumbai	Chennai	Kolkata
UP	895187 (6.95)	706973 (4.30)	4904 (0.07)	57819 (0.44)
Punjab	58886 (0.46)	11502 (0.07)	1175 (0.02)	4294 (0.03)
Rajasthan	94078 (0.73)	115421 (0.70)	11681 (0.18)	12814 (0.10)
Maharashtra	28431 (0.22)	1105550 (6.73)	10734 (0.16)	5711 (0.04)
West Bengal	87846 (0.68)	89344 (0.54)	5430 (0.08)	1019586 (7.72)
Haryana	169881 (1.32)	9133 (0.06)	886 (0.01)	2628 (0.02)
Karnataka	9612 (0.07)	145287 (0.88)	17636 (0.27)	1625 (0.01)
Gujarat	12690 (0.10)	169916 (1.03)	3298 (0.05)	3899 (0.03)
Orissa	25012 (0.19)	31428 (0.19)	2289 (0.03)	30842 (0.23)
Andhra Pradesh	12521 (0.10)	78273 (0.48)	42776 (0.65)	5372 (0.04)
Tamil Nadu	21392 (0.17)	75955 (0.46)	789206 (12.03)	3484 (0.03)
Madhya Pradesh	44141 (0.34)	35387 (0.22)	1966 (0.03)	3548 (0.03)
Bihar	403532 (3.13)	128860 (0.78)	3287 (0.05)	207850 (1.57)
Assam	16020 (0.12)	4596 (0.03)	1001 (0.02)	11204 (0.08)
Kerala	34095 (0.26)	69410 (0.42)	42512 (0.65)	3175 (0.02)

Source: Census of India, 2001

Figures in the parentheses are percentages

Rural- Urban Migration and Sex Composition

Table 4 shows that males have dominated females incase of migration to the metros. The rural-urban distribution reveals that a large part of the migration to the metropolitan cities is from rural areas.

Reasons for Migration to the Metros

Table 5 provides details of reasons for migration incase of migration by last residence with duration of residence as 0-9 years. The 'reasons for migration' was included in the census for the first time in 1981. The possible reasons for employment include work, employment, business, education, marriage, moved after birth, moved with family and others. The most important reasons for migration were

'work/employment' and 'moved with family'. The reason 'moved with family' is dependent upon persons migrating due to work/employment, as in due course of time, the entire dependants have to move to the new place. While 'work/employment', 'business' and 'education' were more important factors for males; 'marriage' was a significant factor for females. A relatively smaller percentage of migrants cited 'Moved after birth' as the reason for migration, a reason added for the first time in 2001 Census.

For comparative assessment of the reasons for migration between the last two decades, data from 2001 Census and 1991 Census in the preceding ten years (duration 0-9 years) has been presented in Table 6 for India (excluding J&K). Both the censuses present almost a similar picture when the reasons are compared in terms of proportion to total migrants.

From the above comparison in Table 6, it is evident that marriage continues to remain the most important reason for migration among females in 1991-2001, as was the case in 1981-1991. In India (excluding J&K), out of total 82.1 million migrants (both sexes) by last residence during 1981-1991 about 36.1 million were female migrants who moved due to marriage. Among males, however, 'Work/Employment' and 'Family moved' continued to be important reasons.

Table 4: Migration from rural/urban areas (duration 0-9 years)

	<i>Delhi</i>			<i>Mumbai</i>			<i>Chennai</i>			<i>Kolkata</i>		
	Total migrants	Male	Female	Total migrants	Male	Female	Total migrants	Male	Female	Total migrants	Male	Female
Total	2486192	1393197	1092995	2887222	1670791	1216431	967274	498869	468405	1543103	805571	737532
From Rural areas	1429115	841586	587529	1803944	1091859	712085	288397	150477	137920	600562	314422	286140
From Urban Areas	712551	360873	351678	810093	427261	382832	271953	139333	132620	268072	127580	140492

Source: Census of India, 2001

The place of last residence unclassifiable as rural or urban is included in total

Table 5: Reasons for Migration by last residence with duration 0-9 years: 2001

		Work/ Employment	Business	Education	Marriage	Moved after birth	Moved with family	Others	Total
India	Persons	14446224	1136372	2915189	43100911	6577380	20608105	9517161	98301342
	Males	12373333	950245	2038675	679852	3428673	8262143	5164065	32896986
	Females	2072891	186127	876514	42421059	3148707	12345962	4353096	65404356
Delhi	Persons	780,635	12,024	57,234	285,680	62,900	825,502	462,217	2,486,192
	Males	733,168	10,313	45,233	2,717	33,711	303,191	264,864	1,393,197
	Females	47,467	1,711	12,001	282,963	29,189	522,311	197,353	1,092,995
Mumbai	Persons	986404	16213	46816	407053	278167	579659	572910	2,887,222
	Males	935947	14608	36014	3999	147463	227158	305602	1670791
	Females	50457	1605	10802	403054	130704	352501	267308	1216431
Chennai	Persons	135599	8599	21994	71963	38722	154394	536003	967274
	Males	114348	6717	14903	3997	20297	66664	271943	498869
	Females	21251	1882	7091	67966	18425	87730	264060	468405
Kolkata	Persons	204316	20790	30674	173388	45568	264525	803842	1543403
	Males	176770	18827	24902	3304	24665	111725	445378	805571
	Females	27546	1963	5772	170084	20903	152800	358464	737532

Source: Census of India, 2001

Table 6: Reasons for migration of migrants by last residence with duration (0-9 years) INDIA (excluding J&K) 2001 & 1991

Total Migrants		Work/ Employment	Business	Education	Marriage	Moved after birth	Moved with family	Natural Calamities	Others	Total
2001 Census	Persons	14,372,194	1,131,763	2,902,027	42,925,568	6,569,178	20,482,990	Not Available	9,453,393	97,837,113
	Males	12,309,216	946,921	2,029,462	674,884	3,424,194	8,210,258	Available	5,125,173	32,720,108
	Females	2,062,978	184,842	872,565	42,250,684	3,144,984	12,272,732		4,328,220	65,117,005
1991 Census	Persons	9,937,046	2,245,485	3,453,065	36,856,978	Not Available	18,450,763	424,645	10,739,193	82,107,175
	Males	8,286,330	1,809,643	2,439,795	717,778	Available	8,273,769	247,587	5,480,400	27,255,302
	Females	1,650,716	435,842	1,013,270	36,139,200		10,176,994	177,058	5,258,793	54,851,873

Source: Census of India, 1991 and Census of India, 2001

3.2 Data

The present study is based entirely on secondary data. Census of India is the largest single source of data on migration characteristics for the people of India. Another important source of information are the various surveys conducted by the National Sample Survey Organisation (NSSO).

The data falls under the following categories:

1. Population (States and Metropolitan cities, Total population and urban population)
2. Migration (Data on migration)
3. Socio-economic and demographic characteristics of migrants
4. Socio-economic facilities in the metropolitan cities

The migration tables released by the 2001 Census on migration come under the D-Series. These help in analysing the social and economic characteristics of migrants, the profile of migrants within a state and those coming from outside. There are 19 migration tables in the 2001 census including six tables on migration of Scheduled castes and Scheduled tribes.

Data on migrants by their sex, rural/urban origin, age structure, literacy, reasons for migration, duration of residence at place of enumeration, economic status, occupational status and industrial classification, distance of migration classifying migrants as migrants from within the district of enumeration, within the state of enumeration and outside the state of enumeration are important variables in studying the characteristics of migration to the cities.

The place of last residence is classified as migrants from within the state (within the district of enumeration and from other districts of the state), from other states of India and from other countries. Duration of residence is divided as less than 1 year, one to four years, five to nine years, ten years and above. The reasons for migration are work/employment, business, education, marriage, moved after birth, moved with household and others.

AREA, DATA AND METHOD

In order to understand the process of migration to a greater extent, data on size of population, size of urban population, etc. has been collected. Data on urbanization, i.e. urban population has been collected to study the centres where the population is migrating.

Data on migration by rural to rural migrants, rural to urban migrants, urban to urban migrants and urban to rural migrants have been worked out from the D-1, D-2 and D-3 migration tables. This data has been collected for each of the states and the four metropolitan cities to analyze to what extent migration is declining or rising in the states and the metropolitan cities.

Data on social and economic facilities and services available in the states and the metros has been collected to get information on the living conditions of people in rural and urban areas in India and its relationship with migration.

The list of tables on migration is given in the table below.

<i>Table No.</i>	<i>Title of the Table</i>	<i>Lowest Level of Presentation of Data</i>
D-1	Population classified by place of birth and sex	District
D-1 (appendix)	Population by place of birth, age and sex	District
D-2	Migrants classified by place of last residence, sex and duration of residence in the place of enumeration	District
D-2 SC	Migrants within the state / UT classified by place of last residence, sex and duration of residence in place of enumeration for Scheduled Castes	State
D-2 ST	Migrants within the state / UT classified by place of last residence, sex and duration of residence in	State

AREA, DATA AND METHOD

	place of enumeration for Scheduled Tribes	
D-3	Migrants by place of last residence, duration of residence and reason for migration	State/UA/City
D-3 SC	Migrants within the State/UT by place of last residence, duration of residence and reason of migration for Scheduled Castes	State
D-3 ST	Migrants within the State/UT by place of last residence, duration of residence and reason of migration for Scheduled Tribes	State
D-4	Migrants by place of last residence, age, sex, educational level and duration of residence	India/State/City
D-5	Migrants by place of last residence, age, sex, reason for migration and duration of residence	India/State/City
D-6	Migrants by place of last residence, economic activity, age, sex and duration of residence	India/State/City
D-7	Migrants by place of last residence with duration 0-9 years reporting 'Work / Employment' as reason for migration by age, sex and educational level	India/State/City

AREA, DATA AND METHOD

D-8	Migrant workers by place of last residence and industrial category	India/State/District/City
D-9	Migrant workers (other than cultivators and agricultural labourers) from place of last residence and occupational divisions	India/State/District/City
D-10	Migrants by place of last residence, age, sex, marital status and duration of residence 0-9 years	India/State/District/City
D-11	Persons born and enumerated in districts of the State/UT	District
D-11 SC	Persons born and enumerated in districts of the State/UT for Scheduled Castes	District
D-11 ST	Persons born and enumerated in districts of the State/UT for Scheduled Tribes	District
D-12	Migrants by place of last residence with duration of residence as 0-9 years and age	India/State

Till 1961 Census, migration data was presented with reference to place of birth only. In 1961, another question on the rural or urban status of the place of birth was also introduced. This census also collected information on the duration of residence. In the 1971 Census, data on the place of last residence was also collected in addition to the place of birth, as it was believed that tabulation of migrants on the basis of place of last residence gives a more realistic picture of population redistribution. In the 1981 Census, another question on the reason for migration was included. The pattern has remained the same in the 1991 and 2001 Census except that in 2001 Census,

data on the rural/urban status of the place of birth has not been collected. The category “ Natural Calamities” as one of the reasons for migration was removed and “Moved at birth” added in 2001.

The NSS beginning with the Ninth round survey (1955) has been collecting data on migration as part of its employment and unemployment enquiries. In the 9th, 11th and 12th rounds, migration particulars were collected for the labour force only. From the 13th round, more detailed information on internal migration has been collected. In the 18th round, the survey was conducted on a much larger scale. In the NSS 28th round survey on birth, death, morbidity and disability, migration information for the usual members of the sample household was also collected. From the 38th round, NSSO integrated the collection of migration data with the regular quinquennial surveys on employment and unemployment. The same approach was followed in the 43rd round also. The coverage was much wider in the 49th round with detailed information being collected on different facets of migration. Comprehensive data on out-migrants and return-migrants were collected for the first time in the 49th round.

An all- India survey on the situation of employment and unemployment in India during the period July 1999- June 2000 was carried out as part of the 55th round of the NSSO in the central sample. In this survey, information on various facets of employment and unemployment as well as on migration in India was collected through the employment-unemployment schedule. Based on the detailed information collected from the ‘central sample’ through the employment-unemployment schedule, 8 reports were brought out.

The last report in the series deals with the estimates pertaining to migration in India, social and economic profile of the migrants, reasons for migration, etc. Information on migration particulars was collected for each household member of the sample household through the employment-unemployment schedule. From each of the sample migrants, information on reason for migration, period elapsed since migration, location of last usual place of residence, usual activity pursued at the time of migration etc. was collected. In this survey, to assess the short duration movement of the people of India, for each person who stayed in the sample village or town for at least 6 months, it was ascertained whether during last 365 days preceding the date

of survey; he/she stayed away from the village/town for 60 days or more either for employment or better employment or in search of employment.

3.3 Method

The analysis is a cross section study involving migration to the 4 metropolitan cities of Delhi, Mumbai, Chennai and Kolkata from rural and urban areas of 15 major states of India. We have used Ordinary Least Squares (OLS) techniques in estimating our migration functions and the equations are of a simple linear form. Least squares is a natural approach to estimation which makes efficient use of the structure of the model as laid out by the assumptions. The regression line fit by least squares is an optimal linear predictor for the dependent variable. Thus, it enjoys a sort of robustness that other estimators do not. We have tried two different linear specifications for estimating each of our two indices of migration, viz., RUM- rural-to-urban migration and UUM- urban-to-urban migration in order to capture the effect of different sets of explanatory variables.

For urban –urban migration, the assumption is that the dominant flow is from small towns to the four metropolitan cities of Delhi, Mumbai, Chennai and Kolkata.

The following model would be applied to analyse the factors accountable for *rural urban* migration or migration from rural areas of the 15 states to the four metropolitan cities. The functional form of the model is:

$$RUM = \alpha + \xi\beta_i X_{ij} + \mu_j$$

RUM: Rural urban migrants as a percentage of total urban population

α and β_i are parameters to be estimated, μ_j is a random unobserved disturbance with zero mean and constant variance.

On the basis of apriori logic and availability of data, the following variables are used to explain variation in *rural urban migration*:

RLIT: Rural literacy rate in state 'j'

RWNM: Percentage of rural workforce in non-household manufacturing in state 'j'

UWOT: Difference in Percentage of urban workforce engaged in the 'Others' (i.e. non-agricultural and non-household) sector in the metro and state 'j'

RPOV: Percentage of rural people below poverty line in state 'j'

NAI: Percentage of area under irrigation to the area sown in state 'j'

This specification has been used to estimate the migration functions for each of the four metropolitan cities separately.

The following model would be applied to analyse the factors accountable for *urban-urban* migration or migration from urban areas of the 15 states to the four metropolitan cities. The functional form of the model is:

$$UUM = \alpha + \xi\beta_i X_{ij} + \mu_j$$

UUM: Urban- urban migrants as a percentage of total urban population

α and β_i are parameters to be estimated, μ_j is a random unobserved disturbance with zero mean and constant variance.

Variables used to explain variation in *urban-urban migration* are:

UWOT: Difference in Percentage of urban workforce engaged in the 'Others' (i.e. non-agricultural and non-household) sector in the metro and state 'j'

ULIT: Difference in Urban literacy rate of the metro and state 'j'

URB: Difference in level of Urbanisation of the metro and state 'j'

UINCOM: Average per capita income of the origin state 'j'

This specification has been used to estimate the migration functions for each of the four metropolitan cities separately.

The detail of variables is given in Appendix 1. Before fitting the regression models, correlation matrices of dependent and independent variables for both the models, i.e. RUM and UUM, were prepared to analyse the extent of correlation between different variables and to know the problem of multicollinearity. The tables of correlation matrix given in Appendix 2 indicate that in the UUM model, for all the four metropolitan cities, the variable UINCOM is highly correlated with UWOT and URBN. To avoid the problem of multicollinearity, we dropped the variable UINCOM from the model.

CHAPTER – 4

DETERMINANTS OF MIGRATION IN THE METROPOLITAN CITIES

4.1 Rural-Urban Migration

Econometric Results

We estimated the relationship using the linear regression command in SPSS package. Regression command gave the Ordinary Least Square Estimators. It also gives R^2 as a goodness of fit measure.

4.1.1 Delhi

When the data of rural urban migration to Delhi was used to empirically estimate the regression equation, we obtained the following results:

Results of Estimated Coefficients for Rural -Urban Migration (RUM) to Delhi

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.870	3.426		-.838	.424
	RLIT	-.012	.039	-.088	-.298	.772
	RWNM	.120	.094	.354	1.273	.235
	UWOT	.067	.066	.272	1.009	.339
	RPOV	.036	.027	.378	1.328	.217
	NAI	.014	.015	.270	.918	.383

The value of R^2 indicates that 55% of the variation in Rural Urban Migration to Delhi is explained by the five explanatory variables. Examination of the result reveals that the coefficient of UWOT and RPOV have the expected sign and the coefficients of variables RLIT, RWNM and NAI do not conform to a priori expectations. We see that all the explanatory variables are insignificant at acceptable levels.

The negative sign of the rural literacy variable reveals that contrary to expectations, an increase in the rural literacy rate in the origin leads to a decline in migration to

Delhi. Development of education facilities in the rural areas means that the rural population need not come to large cities in search of better education prospects. Apart from direct effects, education may also have certain indirect effects on migration. These apart from higher earnings, may include such things as the information and awareness of opportunities at home and elsewhere, prestige and snob appeal at home, and so on.

The positive sign of RWNM shows that contrary to expectations, development of RWNM tends to promote migration. This could be explained by the fact that employment in the rural non-household manufacturing sector could act as a base for rural people and provide them with the requisite skills and experience to get gainful employment in the large manufacturing units in Delhi. These industrial establishments provide a higher income to the migrants than the rural manufacturing units.

The variable UWOT has the expected sign but is not significant. An increase in employment opportunities in the 'Others' sector (i.e. non-agricultural and non-household sector) raises the demand for services such as factory workers, plantation workers, those engaged in trade, commerce, business, transport, banking, mining, construction, political or social work, priests, entertainment artists, etc. Infact only the low productivity tertiary sector activities in the informal sector requiring low levels of skill can absorb the migrants when they come to towns and cities initially in search of jobs.

RPOV has the expected sign, but is not significant. An increase in rural poverty rate seems to increase rural urban migration as the rural poor migrate in search of a livelihood.

The variable NAI is positive and does not confirm to apriori expectations and is insignificant. Thus development of irrigation facilities does not act as a significant factor in checking the rural exodus. This could be explained by the general "dislike of agricultural work" among the rural population. Even after being provided with adequate irrigation facilities and thus a possibility for higher earnings, people in the rural areas want to move out of agriculture and to large cities because of a dislike

towards agricultural work. Moreover, penetration of capital intensive methods of production into the agricultural sector and mechanization of certain processes reduce labour requirements in rural areas and substitute other inputs for labour and therefore many have to migrate to urban areas.

The results of this regression analysis for Delhi suggest some policy implications which are useful for controlling the undesired flow of rural population. To control the flow of rural urban migration, more education facilities including more schools and colleges of good quality need to be established in the vicinity of villages and small towns. Development of rural non-household manufacturing sector leads to greater migration to the urban areas in search of jobs in industrial establishments in Delhi. Also, a lot of migrants are attracted by opportunities in the tertiary sector in the urban areas. Thus development of industrialization process in rural areas is a necessity.

4.1.2 Mumbai

Using the same basic specification, the results of the analysis for rural urban migration to Mumbai are:

Results of Estimated Coefficients for Rural -Urban Migration (RUM) to Mumbai

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-3.865	3.632		-1.064	.315
RLIT	.000	.041	.001	.005	.997
RWNM	.255**	.099	.804	2.569	.030
UWOT	.010	.070	.042	.140	.892
RPOV	.026	.029	.287	.897	.393
NAI	-.019	.016	-.396	-1.199	.261

** denotes 5% level of significance

The value of R^2 indicates that 43% variations in rural-urban migration to Mumbai from 15 major states of India are explained by the five explanatory variables.

Contrary to expectations, the sign of rural workforce in non-household manufacturing (RWNM) is positive and significant at 5% level of significance.

Thus, with the development of rural non-household manufacturing, more people are migrating from rural areas. For every 1% increase in rural non-household manufacturing, rural –urban migration is expected to increase by 0.26%. This could be explained by the fact that employment in the rural non-household manufacturing sector could act as a training base for rural people and provide them with the requisite skills and experience to get gainful employment in the factories in Mumbai.

The regression coefficient for RLIT is positive as expected, but not significant at acceptable levels. Higher education among the rural population is captured by rural literacy rate (as a proxy for higher education) and it acts as a “push” factor in rural urban migration. More schooling in rural areas stimulates migration of the young and more educated.

NAI has the anticipated negative sign but is insignificant at acceptable levels of significance. The correct sign emphasizes that growth of net irrigated areas abates rural urban migration by raising the level of rural employment and income.

The positive sign of UWOT conforms to a priori expectations but is insignificant. The variable RPOV has the anticipated sign but is not significant at acceptable levels. The positive sign shows that rural poverty is a “push factor” and in order to escape poverty, the rural poor migrate continuously to the urban areas in search of a livelihood.

The possibility and desirability of interfering with the present movement of people is an important issue in view of the fact that the rate of migration into Mumbai UA is greater than the rate of job creation and since most migrants stay back in the city even if they do not get a job in the first instance. This has expanded the urban unemployment pool and resulted in shortage of housing, proliferation of slums and created a number of civic problems in Mumbai. Also on the basis of our regression results, lack of irrigation facilities acts as a significant push factor in rural out migration. To abate the unbalanced flow of rural population to Mumbai, high priority must be given to development of irrigation facilities in rural areas. Nevertheless, there are reasons to expect continued rural out migration, in spite of rising rural incomes. Rural development programmes and diversification of the rural

economy will increase local opportunities, but will not duplicate opportunities in cities.

4.1.3 Chennai

Using the same basic specification, the results of the analysis for rural urban migration to Chennai are:

Results of Estimated Coefficients for Rural -Urban Migration (RUM) to Chennai

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-4.347	2.870		-1.515	.164
RLIT	.038	.033	.392	1.161	.276
RWNM	.094	.079	.378	1.192	.264
UWOT	.114***	.056	.632	2.052	.070
RPOV	-.001	.023	-.013	-.041	.968
NAI	-.009	.012	-.255	-.761	.466

*** denotes 10% level of significance

The value of R^2 indicates that 42% of the variation in rural urban migration to Chennai is explained by the independent variables. Examination of the result reveals that RLIT, UWOT and NAI have the expected sign while RPOV and RWNM does not have the expected sign. However, the only significant factor is UWOT.

Employment in the “Others” sector in the metropolitan cities leads to more migration by acting as a significant factor in pulling the rural people into urban areas. The coefficient of UWOT is positive and significant at the 10% level of significance, so that 1% increase in the employment opportunities in the “others” sector tend to pull 0.11 percent rural people to urban areas. Therefore expansion of employment opportunities in urban areas tends to pull rural workers to urban areas.

Rural literacy (as a proxy for higher education) acts as a push factor in rural urban migration. The coefficient of RLIT is found to be positive but statistically insignificant at acceptable levels. With increase in rural literacy, people migrate to urban areas in search of higher education and thereafter for better employment

opportunities. Studies show that higher the school enrolment rates or average level of educational attainment in the origin, the higher the out-migration to other cities.

RWNM is positive but insignificant implying that an increase in employment in rural non- household manufacturing leads to greater rural urban migration. The coefficient of RPOV is negative and insignificant. The sign implies that the very poor rural people cannot even afford to finance the cost of migration.

Expansion of irrigation facilities raises the employment opportunities in the rural areas via raising cropping intensity and agricultural productivity. With increase in irrigation, both off-farm and on-farm employment increase. Therefore, lack of irrigation is a push factor. Though the sign of the coefficient of NAI confirms this, it is found to be insignificant.

Hence our findings for Chennai are that better employment prospects is a significant factor responsible for migration. Thus there is a need to intensify the ongoing rural development programmes. Priority must be given to accelerate the pace of rural industrialization. This would require the launching of non- farm employment projects. This would also help reduce rural poverty. In order to curb excessive migration, more schools and colleges of good quality need to be set up in the vicinity of villages so that the flow of youths who migrate for higher education is checked.

4.1.4 Kolkata

Using the same basic specification, the results of the analysis for rural urban migration to Kolkata are:

Results of Estimated Coefficients for Rural -Urban Migration (RUM) to Kolkata

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1.316	2.479		-.531	.608
RLIT	.006	.028	.081	.212	.836
RWNM	.018	.068	.096	.269	.794
UWOT	-.031	.048	-.221	-.636	.540
RPOV	.030****	.020	.559	1.525	.162
NAI	.011	.011	.379	1.001	.343

**** denotes 20% level of significance

The results of Kolkata are not very impressive. The R^2 is 25% so that only 25% of the variation in rural urban migration to Kolkata is explained by the 5 explanatory variables. Moreover, only RPOV is significant and that too at 20% level of significance. The signs of RLIT and RPOV are as expected. However the signs of RWNM, UWOT and NAI do not conform to apriori expectations.

The positive sign of RPOV implies that rural poverty is an important factor leading to migration into Kolkata from rural areas. The rural poor migrate in order to earn a livelihood and improve their standard of living. Thus, to curb migration, the condition of rural poor needs to be improved. This can be achieved by providing suitable avenues of employment in the rural areas itself.

No definite policy prescription can be given regarding the other factors as they are not significant at acceptable levels.

Broadly speaking we can say that with the development of rural non-household manufacturing, more people are migrating from rural areas. Employment in the rural non-household manufacturing sector acts as a training base for rural people and provides them with the requisite skills and experience to get gainful employment in the large manufacturing units in the metros. These industrial establishments provide a higher income to the migrants than the rural manufacturing units.

Employment in the "Others" sector in the metropolitan cities leads to more migration by acting as a significant factor in pulling the rural people into urban

areas. Better employment prospects is a significant factor responsible for migration. Thus in order to curb excessive rural urban migration and prevent over-crowding in the metros, there is a need to intensify the ongoing rural development programmes. Priority must be given to accelerate the pace of rural industrialization. This would also help reduce rural poverty. Rural poverty is an important factor leading to migration from rural areas. The rural poor migrate in order to earn a livelihood and improve their standard of living. Thus, to curb migration, the condition of rural poor needs to be improved. This can be achieved by providing suitable avenues of employment in the rural areas itself.

4.2 Urban- Urban Migration

Econometric Results

Using the same specification as was used in the case of rural-urban migration, we estimated the relationship to explain migration to the metropolitan cities from other urban areas. The results of the analysis for the four metropolitan cities are explained below.

4.2.1 Delhi

When the data of rural urban migration to Delhi was used to empirically estimate the regression equation, we obtained the following results:

Results of Estimated Coefficients for Urban -Urban Migration (UUM) to Delhi

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	-.126	.763		-.165	.872
UWOT	.006	.023	.081	.263	.797
ULIT	.036****	.023	.517	1.601	.138
URBN	.003	.010	.088	.347	.735

**** denotes 20% level of significance

The R² indicates that 36% of the variation in migration to Delhi from smaller towns is explained by the 3 explanatory variables. The signs of UWOT, ULIT and URB are as expected and conform to a priori expectations. However, only ULIT is significant at acceptable levels.

The sign of ULIT implies that an increase in urban literacy leads to greater migration from smaller towns. For every 1% increase in ULIT, urban -urban migration increases by 0.03%. ULIT by acting as a proxy for education can imply better educational opportunities in Delhi. People in smaller cities migrate to metropolitan cities like Delhi for a more wide range of higher educational opportunities. Though the smaller towns provide basic education facilities, they may lack colleges offering specialized courses which may be primarily available in the metros only. Institutes that offer professional courses like hotel management, fashion designing, advertising, etc attract migrants by providing better placement opportunities.

The variable URBN is positively related to migration but is not significant at acceptable levels. The sign of URBN indicates that level of urbanization is positively related to migration. A high degree of urbanisation is associated with more employment opportunities and better infrastructural facilities and will thus attract more migrants.

The coefficient of UWOT is positive and insignificant. The sign implies that increase in job opportunities in the non-agricultural and non-household sector is positively related to migration. Expansion of employment opportunities in urban areas tends to pull rural workers to urban areas.

Thus, we can conclude that in order to curb urban-urban migration to Delhi, better educational opportunities should be created in smaller towns. Opportunities for a wider range of professional courses, if set up in the smaller towns, can control the flow of migration to Delhi for education purposes. Also, creation of more gainful employment opportunities in small-scale units in smaller towns and cities is required.

4.2.2 Mumbai

Using the same basic specification, the results of the analysis for urban- urban migration to Mumbai are:

Results of Estimated Coefficients for Urban -Urban Migration (UUM) to Mumbai

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	1.747	.882		1.979	.073
	UWOT	-.008	.027	-.108	-.309	.763
	ULIT	.013	.028	.167	.460	.655
	URBN	-.020****	.012	-.464	-1.622	.133

*** denotes 20% level of significance

The results for Mumbai indicate that only 20% of the variation in migration to Mumbai from urban areas is explained by the 3 explanatory variables.

The sign of ULIT conforms to expectations while the signs of UWOT and URBN do not. However, only URBN is significant at acceptable levels. URBN is a significant factor in explaining the variation in urban- urban migration to Mumbai. URBN is negatively related to migration and is significant at the 20% level of significance. For every 1% increase in urbanization, urban- urban migration decreases by 0.02%. This could partly be explained by the fact that the fast increase in urban population has been creating slum settlements, putting pressure on civic amenities such as health, water supply and also increases urban crime rates. Due to existing problems and difficulties in urban areas including high level of unemployment and underemployment, rising cost of living, pollution, congestion; recently a reverse flow from urban to sub-urban areas is experienced.

ULIT has the anticipated sign but is not significant at acceptable levels. The correct sign emphasizes that a rise in urban literacy in the metro relative to the state of origin leads to greater migration. A possible explanation is that the urban literacy rate by acting as a proxy for education shows superior and more wide range of educational opportunities in the metropolitan city.

However, the variable UWOT does not have the anticipated sign and is also insignificant at acceptable levels. The sign shows that more employment opportunities in Mumbai are not commensurate with more migration from the

smaller towns. This could be due to cut throat competition and job related stress in the metros which may detract migrants from smaller towns.

Thus, we can conclude that providing superior quality educational institutions around smaller towns can help prevent some part of the migration to the metros. A large number of these migrants come for better job opportunities and a higher income. But uncontrolled migration to Mumbai has led to pressure on the existing civic amenities, created slum settlements, rising crime rates leading to security concerns and a rising cost of living in the city, which could lead to a reverse flow.

4.2.3 Chennai

Using the same basic specification, the results of the analysis for urban- urban migration to Chennai are:

Results of Estimated Coefficients for Urban -Urban Migration (UUM) to Chennai

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.059	1.126		1.829	.095
UWOT	.102*	.035	.745	2.916	.014
ULIT	-.064***	.035	-.486	-1.823	.096
URBN	-.032***	.016	-.436	-2.079	.062

*, **, *** denotes 1%, 5% and 10% level of significance respectively

The results for Chennai are very impressive. The R^2 shows that 57% of the variation in UUM is explained by the 3 explanatory variables. While UWOT has the expected sign, the signs of URBN and ULIT do not conform to apriori expectations. All the 3 variables are significant.

UWOT is significant at the 1 % level of significance. This implies that a 1 % increase in UWOT leads to 0.10 % increase in migration to Chennai from urban areas. Increasing employment opportunities in Chennai is a major attraction for migrants and a very crucial “pull” factor behind migration to Chennai from other urban areas.

URBN is next in importance in terms of significance. URBN is significant at the 10% level of significance and is negatively related to urban – urban migration. This

implies that rising level of urbanization tends to significantly deter migrants. A 1 % increase in URBN tends to decrease urban- urban migration by 0.03%. The “bright city lights” of the metros do not attract people already belonging to urban areas. On the other hand, the congestion, pollution and housing problems tend to deter them.

ULIT is also significant at the 10% level of significance and is negatively related to migration which is not in line with expectations. A 1% rise in urban literacy rate decreases urban-urban migration by 0.06%. A possible explanation could be that urban migrants to Chennai are not attracted by the education facilities in Chennai.

Thus, there is a need to expand gainful employment opportunities in small-scale labour intensive units in smaller towns around bigger towns and cities. This can help prevent congestion in the metropolitan cities. Those who are in the informal sector can be provided financial support and training so as to be useful to the urban economy. Thus better economic opportunities should be spread between bigger towns and cities and smaller ones.

4.2.4 Kolkata

Using the same basic specification, the results of the analysis for urban- urban migration to Kolkata are:

Results of Estimated Coefficients for Urban -Urban Migration (UUM) to Kolkata

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.027	.698		-.039	.970
UWOT	-.012	.021	-.208	-.549	.594
ULIT	.009	.021	.175	.442	.667
URBN	.003	.009	.105	.335	.744

The results for Kolkata are very poor. The R^2 of 4% implies that only 4% of the variation in urban migration to Kolkata is explained by the 3 explanatory variables. None of the independent variables are significant.

The negative sign of UWOT shows that employment in the ‘Others’ (i.e. non-agricultural and non- household sector) sector is negatively related to migration.

Thus, migrants are not attracted by opportunities in Kolkata. However, this variable is not significant at acceptable levels and hence nothing definite can be inferred.

The positive sign of ULIT shows that migrants from other urban areas are attracted by education opportunities in Kolkata. But ULIT is insignificant and we cannot draw any concrete conclusion.

The positive sign of URBN shows that increase in urbanization leads to more migration from urban areas. Migrants are attracted by the 'bright city lights', amenities, infrastructure of the metropolitan cities. However, this variable is also insignificant.

The results show that the regression result for Kolkata is very poor and no definite conclusion can be drawn for policy making.

Taking into account all the regression results for urban -urban migration, we can say that migrants are typically attracted by increasing educational opportunities in the metros. The specialized courses offered in the metros are generally not available in the smaller towns. Thus, opportunities for a wider range of professional courses if set up in the smaller towns, can help curb some of the migration for education. Migrants are also detracted by the increasing urbanization in the metros. In Mumbai and Chennai, more urbanization has been found to decrease migration. This could be explained by the fact that fast increase in urban population creates slum settlements and puts pressure on the existing civic amenities like water and sanitation. It leads to more pollution and congestion thus detracting migrants.

Increasing opportunities in the 'Others' sector leads to more migration. In Chennai, migrants from other urban areas are attracted by an increase in job opportunities. Thus, employment is a very crucial 'pull' factor for migrants. Creation of more gainful employment opportunities in small-scale units in smaller towns and cities is required.

CONCLUSION

This study attempted to identify the causes of migration to the four metropolitan cities of Delhi, Mumbai, Chennai and Kolkata from rural and urban areas of 15 states of India.

We have found that in the case of migration from rural areas, better employment prospects is a significant factor responsible for migration. Rural poverty is an important factor leading to migration from rural areas. The rural poor migrate in order to earn a livelihood and improve their standard of living. With the development of rural non-household manufacturing, more people are migrating from rural areas. Employment in the rural non-household manufacturing sector acts as a training base for rural people and provides them with the requisite skills and experience to get gainful employment in the large manufacturing units in the metros.

As far as migration from smaller towns and cities is concerned, migrants are typically attracted by increasing educational opportunities in the metros. These migrants are also detracted by the increasing urbanization in the metros. In Mumbai and Chennai, more urbanization has been found to decrease migration. This finding is also confirmed by the report of the United Nations' 'State of the World Population 2007' report. According to the report, cities like Mumbai and Kolkata have a far greater number of people moving out than coming in. However, employment is a very crucial 'pull' factor for migrants.

A variable generally ignored by researchers in migration is irrigation facilities. Growth of net irrigated areas abates rural urban migration by raising the level of rural employment and income. However in some cases, development of irrigation facilities does not act as a significant factor in checking the rural exodus because of the general "dislike of agricultural work" among the rural population.

CONCLUSION

However many of the variables in the analysis are insignificant and thus, no concrete conclusion can be drawn. The reason for lack of results is that marriage and associational mobility which are important factors behind migration could not be included in the migration functions. Lack of data on employment by industrial classification at city level has hampered the analysis. At the city level, the workforce is categorized on the basis of agricultural labourers, cultivators, workers in the household industry and 'others'. The 'others' category (UWOT) is very vast and includes categories as varied as factory workers, plantation workers, those engaged in trade, commerce, business, transport, banking, mining, construction, political or social work, priests, entertainment artists, etc. Thus, it includes labour in the secondary sector as well as in the services sector. In the case of migrants from rural areas, it is informal sector employment requiring relatively low levels of skill which attracts them. If we could use data on employment in different industrial categories at the city level, then probably we would have obtained a significant relationship. Thus, lack of data on industrial classification at city level hampers the analysis. This is because employment opportunities always play a predominant role in the decision making process of migration.

One limitation of the study is that it does not discuss the social returns and costs of migration. Also, the inclusion of certain other explanatory variables could have increased the usefulness of our model; especially the inclusion of some measure of rural income or future expected urban income. But finding an accurate measure for rural income is very difficult.

The results of this regression analysis suggest some policy implications which are useful for controlling the undesired flow of migrants into the metropolitan cities. There is a need to interfere with the movement of people because the rate of migration into the metros exceeds the rate of job creation. This leads to unemployment and underemployment and puts additional pressure on the existing civic amenities. According to the United Nations' 'State of the World Population 2007' report, over 90 percent of slum dwellers live in developing countries with China and India accounting for 37 percent. About 56 percent of the urban population lives in slum conditions. The report also says that in countries like India, Pakistan and Bangladesh, the literacy rate of women living in slums is as low as 52

CONCLUSION

percent. Though the rates of migration are not very high in India, given the sluggish labour absorption in productive activities, the absolute number of migrants is quite large.

My analysis suggests that better employment prospects and education opportunities are important factors responsible for rural-urban and urban-urban migration. To decrease the outflow of rural people from rural areas, more educational institutions need to be set up in the vicinity of rural areas and small towns. The specialized courses offered in the metros are generally not available in the smaller towns. Opportunities for a wider range of professional courses if set up in the smaller towns, can help curb some of the migration for education.

The ongoing rural development programmes need to be intensified. This would require setting up non-farm employment projects in rural areas. Stress should be on small-scale labour intensive units. Emphasis should also be given to develop better living conditions in rural areas. In urban areas, there is a need to expand gainful employment opportunities through judicious investment in small and medium scale labour intensive units. These should be developed in smaller towns in order to reduce congestion and over crowding in the metros. Creation of more gainful employment opportunities in small-scale units in smaller towns and cities is required.

However, there are reasons to expect continued rural out migration inspite of increasing rural incomes. Rural development programmes will increase local opportunities, but will not duplicate opportunities in cities. Therefore migration to large cities will continue under present circumstances. Given the sensitivity of migration to economic differentials, the differences in economic opportunities between metros and rural areas, and even between metros and small towns, will encourage migration. Government policies that increase wages and employment in cities relative to rural areas will lead to more migration.

APPENDIX

Appendix 1**Details of Dependent and Independent Variables*****Rural-Urban Migration******Delhi***

States	RLIT	RWNM	UWOT	RPOV	NAI	RUM
UP	52.53	24.26	15.25	31.22	74	4.89
Punjab	64.72	19.59	6.39	6.35	95	0.13
Rajasthan	55.34	15.47	10.19	13.74	31	0.44
Maharashtra	70.36	21.79	5.18	23.72	17	0.05
West Bengal	63.42	19.3	4.94	31.85	54	0.31
Haryana	63.19	21.52	6.26	8.27	84	0.73
Karnataka	59.33	15.32	10.31	17.38	24	0.02
Gujarat	61.29	23.08	3.67	13.17	31	0.04
Orissa	59.84	14.49	7.45	48.01	23	0.11
Andhra Pradesh	54.5	18.08	10.66	11.05	36	0.02
Tamil Nadu	66.21	22.86	16.81	20.55	46	0.05
Madhya Pradesh	57.8	12.2	14.63	37.06	31	0.21
Bihar	43.92	17.41	20.55	44.3	60	2.48
Assam	59.73	12.14	1.65	40.04	6	0.06
Kerala	90.04	16	5.57	9.38	17	0.12

Mumbai

States	RLIT	RWNM	UWOT	RPOV	NAI	RUM
UP	52.53	24.26	15.53	31.22	74	3.28
Punjab	64.72	19.59	6.67	6.35	95	0.02
Rajasthan	55.34	15.47	10.47	13.74	31	0.45
Maharashtra	70.36	21.79	5.46	23.72	17	4.19
West Bengal	63.42	19.3	5.22	31.85	54	0.23
Haryana	63.19	21.52	6.54	8.27	84	0.03
Karnataka	59.33	15.32	10.59	17.38	24	0.52
Gujarat	61.29	23.08	3.95	13.17	31	0.51
Orissa	59.84	14.49	7.73	48.01	23	0.14
Andhra Pradesh	54.5	18.08	10.94	11.05	36	0.26
Tamil Nadu	66.21	22.86	17.09	20.55	46	0.22
Madhya Pradesh	57.8	12.2	14.91	37.06	31	0.1
Bihar	43.92	17.41	20.83	44.3	60	0.6
Assam	59.73	12.14	1.93	40.04	6	0.01
Kerala	90.04	16	5.85	9.38	17	0.21

Chennai

States	RLIT	RWNM	UWOT	RPOV	NAI	RUM
UP	52.53	24.26	14.8	31.22	74	0.02
Punjab	64.72	19.59	5.94	6.35	95	0
Rajasthan	55.34	15.47	9.74	13.74	31	0.12
Maharashtra	70.36	21.79	4.73	23.72	17	0.02
West Bengal	63.42	19.3	4.49	31.85	54	0.01
Haryana	63.19	21.52	5.81	8.27	84	0
Karnataka	59.33	15.32	9.86	17.38	24	0.07
Gujarat	61.29	23.08	3.22	13.17	31	0.02
Orissa	59.84	14.49	7	48.01	23	0.01
Andhra Pradesh	54.5	18.08	10.21	11.05	36	0.46
Tamil Nadu	66.21	22.86	16.36	20.55	46	7.95
Madhya Pradesh	57.8	12.2	14.18	37.06	31	0.01
Bihar	43.92	17.41	20.1	44.3	60	0.02
Assam	59.73	12.14	1.2	40.04	6	0
Kerala	90.04	16	5.12	9.38	17	0.44

Kolkata

States	RLIT	RWNM	UWOT	RPOV	NAI	RUM
UP	52.53	24.26	14.52	31.22	74	0.23
Punjab	64.72	19.59	5.66	6.35	95	0.01
Rajasthan	55.34	15.47	9.46	13.74	31	0.03
Maharashtra	70.36	21.79	4.45	23.72	17	0
West Bengal	63.42	19.3	4.21	31.85	54	2.83
Haryana	63.19	21.52	5.53	8.27	84	0.01
Karnataka	59.33	15.32	9.58	17.38	24	0
Gujarat	61.29	23.08	2.94	13.17	31	0.01
Orissa	59.84	14.49	6.72	48.01	23	0.13
Andhra Pradesh	54.5	18.08	9.93	11.05	36	0.02
Tamil Nadu	66.21	22.86	16.08	20.55	46	0
Madhya Pradesh	57.8	12.2	13.9	37.06	31	0.01
Bihar	43.92	17.41	19.82	44.3	60	1.05
Assam	59.73	12.14	0.92	40.04	6	0.02
Kerala	90.04	16	4.84	9.38	17	0.01

RLIT: Rural literacy rate in state 'j'

RWNM: Percentage of rural workforce in non-household manufacturing in state 'j'

APPENDIX

UWOT: Difference in Percentage of urban workforce engaged in the 'Others' (i.e. non-agricultural and non-household) sector in the metro and state 'j'

RPOV: Percentage of rural people below poverty line in state 'j'

NAI: Percentage of area under irrigation to the area sown in state 'j'

Urban-Urban Migration**Delhi**

States	UWOT	ULIT	URBN	UINCOM	UUM
UP	15.25	12.21	79.22	52.1	1.6
Punjab	6.39	2.86	66.08	141.3	0.27
Rajasthan	10.19	5.76	76.61	79.7	0.23
Maharashtra	5.18	-3.52	57.57	136.15	0.16
West Bengal	4.94	0.71	72.03	96.52	0.33
Haryana	6.26	2.8	71.08	131.87	0.47
Karnataka	10.31	1.38	66.01	111.86	0.05
Gujarat	3.67	0.12	62.64	123.04	0.05
Orissa	7.45	1.12	85	53.95	0.07
Andhra Pradesh	10.66	5.87	72.7	98.65	0.07
Tamil Nadu	16.81	-0.57	55.96	116.09	0.11
Madhya Pradesh	14.63	2.57	73.54	71.59	0.11
Bihar	20.55	10.03	89.54	31.08	0.49
Assam	1.65	-3.38	87.1	56.41	0.06
Kerala	5.57	-11.23	74.04	99.58	0.13

Mumbai

States	UWOT	ULIT	URBN	UINCOM	UUM
UP	15.53	17.3	79.22	52.1	0.8
Punjab	6.67	7.95	66.08	141.3	0.04
Rajasthan	10.47	10.85	76.61	79.7	0.21
Maharashtra	5.46	1.57	57.57	136.15	1.68
West Bengal	5.22	5.8	72.03	96.52	0.29
Haryana	6.54	7.89	71.08	131.87	0.03
Karnataka	10.59	6.47	66.01	111.86	0.3
Gujarat	3.95	5.21	62.64	123.04	0.43
Orissa	7.73	6.21	85	53.95	0.05
Andhra Pradesh	10.94	10.96	72.7	98.65	0.19
Tamil Nadu	17.09	4.52	55.96	116.09	0.21
Madhya Pradesh	14.91	7.66	73.54	71.59	0.1
Bihar	20.83	15.12	89.54	31.08	0.16
Assam	1.93	1.71	87.1	56.41	0.02
Kerala	5.85	-6.14	74.04	99.58	0.18

Chennai

States	UWOT	ULIT	URBN	UINCOM	UUM
UP	14.8	15.95	79.22	52.1	0.04
Punjab	5.94	6.6	66.08	141.3	0.01
Rajasthan	9.74	9.5	76.61	79.7	0.06
Maharashtra	4.73	0.22	57.57	136.15	0.11
West Bengal	4.49	4.45	72.03	96.52	0.05
Haryana	5.81	6.54	71.08	131.87	0.01
Karnataka	9.86	5.12	66.01	111.86	0.16
Gujarat	3.22	3.86	62.64	123.04	0.03
Orissa	7	4.86	85	53.95	0.02
Andhra Pradesh	10.21	9.61	72.7	98.65	0.27
Tamil Nadu	16.36	3.17	55.96	116.09	2.92
Madhya Pradesh	14.18	6.31	73.54	71.59	0.02
Bihar	20.1	13.77	89.54	31.08	0.02
Assam	1.2	0.36	87.1	56.41	0.01
Kerala	5.12	-7.49	74.04	99.58	0.27

Kolkata

States	UWOT	ULIT	URBN	UINCOM	UUM
UP	14.52	12.87	79.22	52.1	0.12
Punjab	5.66	3.52	66.08	141.3	0.01
Rajasthan	9.46	6.42	76.61	79.7	0.04
Maharashtra	4.45	-2.86	57.57	136.15	0.03
West Bengal	4.21	1.37	72.03	96.52	1.18
Haryana	5.53	3.46	71.08	131.87	0.01
Karnataka	9.58	2.04	66.01	111.86	0.01
Gujarat	2.94	0.78	62.64	123.04	0.01
Orissa	6.72	1.78	85	53.95	0.07
Andhra Pradesh	9.93	6.53	72.7	98.65	0.02
Tamil Nadu	16.08	0.09	55.96	116.09	0.02
Madhya Pradesh	13.9	3.23	73.54	71.59	0.01
Bihar	19.82	10.69	89.54	31.08	0.27
Assam	0.92	-2.72	87.1	56.41	0.05
Kerala	4.84	-10.57	74.04	99.58	0.01

UWOT: Difference in Percentage of urban workforce engaged in the 'Others' (i.e non-agricultural and non-household) sector in the metro and state 'j'

ULIT: Difference in Urban literacy rate of the metro and state 'j'

URB: Difference in Level of urbanisation of the metro and state 'j'

UINCOM: Average per capita income of the origin state 'j'

Appendix 2**Correlation Matrix of Dependent and Independent Variables*****Rural-Urban Migration******Delhi***

Model		NAI	RPOV	UWOT	RWNM	RLIT	
1	Correlations	NAI	1.000	.277	-.170	-.456	.313
		RPOV	.277	1.000	-.166	.228	.406
		UWOT	-.170	-.166	1.000	-.067	.365
		RWNM	-.456	.228	-.067	1.000	-.095
		RLIT	.313	.406	.365	-.095	1.000

Mumbai

Model		NAI	RPOV	UWOT	RWNM	RLIT	
1	Correlations	NAI	1.000	.277	-.170	-.456	.313
		RPOV	.277	1.000	-.166	.228	.406
		UWOT	-.170	-.166	1.000	-.067	.365
		RWNM	-.456	.228	-.067	1.000	-.095
		RLIT	.313	.406	.365	-.095	1.000

Chennai

Model		NAI	RPOV	UWOT	RWNM	RLIT	
1	Correlations	NAI	1.000	.277	-.170	-.456	.313
		RPOV	.277	1.000	-.166	.228	.406
		UWOT	-.170	-.166	1.000	-.067	.365
		RWNM	-.456	.228	-.067	1.000	-.095
		RLIT	.313	.406	.365	-.095	1.000

Kolkata

Model		NAI	RPOV	UWOT	RWNM	RLIT	
1	Correlations	NAI	1.000	.277	-.170	-.456	.313
		RPOV	.277	1.000	-.166	.228	.406
		UWOT	-.170	-.166	1.000	-.067	.365
		RWNM	-.456	.228	-.067	1.000	-.095
		RLIT	.313	.406	.365	-.095	1.000

Urban- Urban Migration**Delhi**

Model			UINCOM	ULIT	UWOT	URBN
1	Correlations	UINCOM	1.000	-.226	.649	.917
		ULIT	-.226	1.000	-.606	-.323
		UWOT	.649	-.606	1.000	.617
		URBN	.917	-.323	.617	1.000

Mumbai

Model			UINCOM	ULIT	UWOT	URBN
1	Correlations	UINCOM	1.000	-.226	.649	.917
		ULIT	-.226	1.000	-.606	-.323
		UWOT	.649	-.606	1.000	.617
		URBN	.917	-.323	.617	1.000

Chennai

Model			UINCOM	ULIT	UWOT	URBN
1	Correlations	UINCOM	1.000	-.226	.649	.917
		ULIT	-.226	1.000	-.606	-.323
		UWOT	.649	-.606	1.000	.617
		URBN	.917	-.323	.617	1.000

Kolkata

Model			UINCOM	ULIT	UWOT	URBN
1	Correlations	UINCOM	1.000	-.226	.649	.917
		ULIT	-.226	1.000	-.606	-.323
		UWOT	.649	-.606	1.000	.617
		URBN	.917	-.323	.617	1.000

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