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Is it Push or Pull? Recent Evidence from Migration in India

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Is it Push or Pull? Recent Evidence from Migration in India

Abstract

Given urban areas contribute to more than 65 percent of India's GDP, the sustainability of the rapid 8%-9% GDP growth India has experienced in the last decade, is dependent to a large extent on urban areas. With migration being one of the important factors contributing to the growth of urban population, we attempt to understand whether it is push (out of the rural area) or pull (toward the urban area due to its perceived benefits) explains migration in India, taking the case of Bangalore, which has one of the largest proportions of in-migrants to total population. An examination of these factors is done using a primary survey of migrants in Bangalore. Using a probit model, we find that the lower the level of education of the migrant, the greater the importance of the push factors whereas with increasing level of education of the migrant, pull factors become more important in migration. Women are more likely to be 'pulled' toward urban areas. We find migrants from within Karnataka are 'pushed'. This suggests that non-farm employment opportunities have to be increased, rural infrastructure improved and the development of small and medium towns encouraged.

JEL Classification: O15, R23, R58

Key words: India, Migration--Bangalore, Cities, Rural-urban migration, Skilled and unskilled migrants, Migrants and Non-migrants, Push versus pull factors in migration

Is it Push or Pull? Recent Evidence from Migration in India

Chapter 1: Introduction

The year 2007 is a tipping point since more than half of the world's population started to live in urban areas. The urbanization pattern in India has been undergoing significant change. The share of urban population in the total has grown from about 11% in 1901 to nearly 29% in 2001.[1] The urban population is expected to increase to about 40 percent of total population by 2021 (Ministry of Urban Employment and Poverty Alleviation and Ministry of Urban Development, Government of India 2005). Given urban areas contribute to more than 65 percent of the country's GDP, the sustainability of the rapid 8%-9% GDP growth India has experienced in the last decade, is dependent to a large extent on urban areas.

This urbanization has been attributed to the "attraction of city lights" and the Census of India also acknowledges that migration is one of the important factors contributing to the growth of urban population. According to data from the Census of India, 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 indicate that 20.5 million people enumerated in urban areas are migrants from rural areas who moved in within the last 10 years. It may also be worth noting that rural-urban migration constitutes a significant component of inter-state migration (about 41.1 million as of 2001) taking place within the country.

Clearly, haphazard migration is not the way to urbanize and there are many undesirable outcomes that have resulted in rural as well as urban areas from the migration. Rural areas stand to lose from the out-migration of skilled residents. One problem in the urban areas, which, in most cases, are a result of the migration, is slums. On average, 4 percent of population in the country lives in slums, varying from nearly 50 percent of the population in Mumbai to 15 percent slum population in Delhi to about 5 percent in Tamil Nadu, as of the 2001 census. When we consider the fact that slums are

[1] According to the official Census definition, only 29 percent of India's population lives in urban areas as of 2001. However, India's definition of what constitutes 'urban' is very conservative when compared with that of China. For instance, while in China, areas having 10 percent non-agricultural employment are defined as being urban, in India, areas having a minimum of 75 percent non-agricultural employment are

areas in which buildings are not fit for human habitation, with inadequate ventilation, light or sanitation facilities for various reasons (such as dilapidation or overcrowding) that are detrimental to health and safety, the problem assumes increasing importance. In 2001, 50.3 percent of urban households had no piped water within premises, and 44 percent of them were devoid of sanitation facilities (Ministry of Urban Employment and Poverty Alleviation and Ministry of Urban Development, Government of India 2005). While none of the south Asian countries have universal access to a basic service like water supply or sanitation even as of 2002, data from the Water and Sanitation Program (WSP-South Asia) indicate that the access to water supply is better in Iran, Maldives and Sri Lanka than it is in India and that to sanitation is better in Pakistan and Maldives than in India. This calls for greater attention to migration and its associated problems in India. While public service delivery problems are not caused by migration per se, they are no doubt aggravated by it. Migration from rural to urban areas poses a major challenge to attaining the Millennium Development Goals.

The Todaro model is the basic explanation underlying rural-urban migration in developing countries.[2] Todaro's migration model is an economic model which attributes migration to the standard assumptions of rationality. The model seeks to explain rural-urban migration as a function of the income differential adjusted for the probability of finding a job. The model postulates that migration proceeds in response to urban-rural differences in expected income rather than actual earnings. Expected urban income is adjusted by the likelihood that migrant will find a job in the urban area when he migrates. The likelihood that the migrant will be selected for a job in the urban area depends on the rate of job creation in the urban area which is in turn dependent upon the rate of industrial growth and growth of labor productivity in the area. Todaro's model thus showed that the unemployment rate of an area is dependent on the job creation and income differential in the area. It also shows the paradoxical result that the creation of more job opportunities in

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defined by the Census as being urban. Cohen (2004) argues that if India were to revise its definition of urban areas to make it more liberal, a majority of India were to be urban.

[2] The process of rural-urban migration was till 1950s known to be explained by Lewis' theory of labor transfer. This theory recognizes that developing countries are dichotomous and are characterized by a rural sector dominated by agricultural activity and an urban sector focusing on industrialization. The process of development in these countries is characterized by the gradual movement of labor out of agriculture into industry through rural-urban migration. But during the 1960s and 1970s, the developing countries

cities can lead to more unemployment by encouraging more migration. The mathematics of the model and how this happens is in Todaro (1969).

A significant limitation of the model is that it assumes full information on the part of rural migrants regarding the nature of jobs available in the urban (informal or formal) job market. Another limitation is that it assumes potential migrants are risk neutral, as if they are indifferent between their actual rural income and an uncertain expected urban income of the same magnitude. This assumption's reflection of economic realities is questionable; poor migrants will likely be risk averse and require a significantly greater expected urban income to migrate.

While the Todaro model has been extensively studied in different country contexts, recent evidence on the push and pull factors of migration in India is lacking (see Chapter 2 on literature survey) at the city-level, at a time when cities have become engines of macroeconomic growth. In this research, we make this attempt, and examine whether push or pull factors cause migration and what their impacts are. The results from this work have implications for rural development that could check the growth of urban slums and improve public service delivery in urban and rural areas.

Objectives

While the Todaro model is more a pull explanation of migration in developing countries, push factors have implications for migration originating regions. In this research, we make an attempt to understand whether it is push (out of the rural area) or pull (toward the urban area due to its job opportunities and expected income) which explains migration. Our objectives in this research are as follows:

1. Examine the push and pull factors in migration (which Todaro's model highlighted). We intend to understand what determines the extent of push or pull factors in migration decisions. The explanatory variables include past occupation, past income, age, education, gender and other socio-economic characteristics of the migrants. It is important to understand why migrants move from their original destination. There are economic, social and psychological costs to moving. Hence there is a need to focus on

witnessed mass migration of their rural populations into urban areas despite rising levels of urban unemployment. This lessened the validity of the Lewis model.

place-oriented policies. That is, if migrants move from rural to urban areas, what can be done in rural areas to suitably arrest migration to the urban areas, so that the negative impacts on urban areas, of their migration also can be mitigated. Sridhar (1998) develops a model of a place oriented policy, enterprise zones, in the United States and finds that it is impossible to isolate the incidence of the tax cut given in the enterprise zone just to the zone alone, and there are general equilibrium effects on the entire economy.

The other questions we intend to answer are:[3]

2. What are the labor market implications of skilled versus unskilled rural-urban migration? Does it merely transfer poverty to cities?
3. What can be done to reduce rural-urban migration, so that the originating and destination regions are benefited?[4]

The questions posed above are answered based on a primary survey of a small sample of migrants in Bangalore. It might be useful to note that the Census of India, in its migration data, deals only with micro-level responses to migration (such as economic reasons, marriage, family moved and so forth). For instance, the Census found that marriage continues to remain the most important reason for migration among females in 1991-2001, whereas among males, however, 'work/employment' and 'family moved' continued to be important reasons. In this research, we attempt to understand policy-level responses from a push perspective so that they can be useful for policy making. For instance, these could be interventions which increase cultivatable land, equalize land or income distribution, which could stem the tide of migration out of rural areas that also stand to lose with the out-migration of skilled residents. We also intend to understand what kind of economic activity migrants engage in, and their incomes once they migrate. We examine the factors which determine the extent of push out of rural areas, or the pull towards urban areas, in the context of a formal econometric model.

[3] The following questions explore the content of the migration rather than the context.

[4] Here we assume that migration necessarily has negative economic consequences. In fact, the World Development Report 2009 highlights the role of migration as a positive force in economic development by enabling poor rural migrants to come out of poverty.

Outcome of Research

This research has policy implications for the migration originating and the destination regions. For instance, if it were to be the case that inadequate employment generation is the cause of migration from various parts of northern Karnataka to Bangalore, then the implication for the government might well be to increase employment opportunities in north Karnataka, rather than having to address its implications in Bangalore. This might mean that some growth centres or special economic zones may have to be set up in the migration originating regions to counter the effect of brain drain and lost skills in those areas. Similarly if it were to be found that Karnataka created jobs leading to greater unemployment, this shows the futility of addressing problems merely at the destination front.

Until now, since it has been the case that only either push or pull has been addressed in the literature, the findings from this work combining primary evidence at the city level, should find general acceptance in the academic community.

Overview of Report

This report is organized as follows. Chapter 2 contains a brief overview of the literature thus far on the subject and highlights the contribution of this study. Chapter 3 contains a description of the approach to and methodology of the research and the econometric work, along with a description of its limitations. Chapter 4 summarizes the findings from the primary surveys, and describes the characteristics of migrants and non-migrants. Chapter 5 presents the results from probit estimation of what determines push or pull factors in migration, conditions required for migrants to return to their place of origin if at all they intend to go back, and summarizes policy implications of the work.

Chapter 2: Literature Survey

Most of the literature on rural-urban migration builds on work of the Todaro model (1969) and the Harris-Todaro model (1970)[5] and tests its validity in various countries, contexts and using its assumptions, hence focus mostly on pull factors, with few studies focusing on push factors.

Being focused on push factors, the importance of family considerations in mobility decisions of rural to urban migrants in India was investigated by Banerjee (1981) analyzing evidence on urban rural ties. The empirical basis was a survey of migrant heads of households in Delhi conducted from October 1975 to April 1976. Banerjee and Kanbur (1981) used a probabilistic migration model to examine internal migration in India and presented evidence that migration tends first to rise and then falls as rural income rises.

Rhoda (1983) focuses on push factors, its purpose being to examine the hypothesis that rural development projects and programs reduce rural-urban migration. The study concludes that the common belief that rural interventions reduce urban migration is not justified. Rural-urban migration may be reduced by interventions which increase cultivatable land, equalize land or income distribution, or decrease fertility. On the other hand, migration is stimulated by interventions which increase access to cities, commercialize agriculture, strengthen rural-urban integration, raise education and skill levels, or increase rural inequalities. Rhoda (1983) is a general review, however, and does not offer rigorous empirical evidence to support the claims made.

Probabilistic migration models assume that search for urban jobs is entirely an urban-based activity and that employment in free-entry activities is a transitional phase during which migrants are actively searching for formal sector employment. A paper by Banerjee (1984) tests the empirical validity of these assumptions using data collected by the author in a sample survey in Delhi, India, in 1975-76, on 1,400 migrants from rural areas. Evidence is presented that the migration process postulated in probabilistic models is not realistic in the case of Delhi. Over one-half of the sample had moved to Delhi after

[5] The Todaro model and Harris-Todaro model are variants of the same model explaining rural-urban migration. The Todaro model (1969) explains rural-urban migration as a function of the income differential adjusted for the probability of finding a job. The Harris-Todaro (1970) model attempts to explain the

lining up specific jobs; a sizeable proportion expected to enter on arrival activities generally considered to be characterized by freedom of entry; and the majority of entrants into free-activities did not search for alternative employment and were engaged in the same activities at the time of the survey.

Based on survey data from 1,600 respondents collected in 1975-76, Banerjee (1986) is a study of labour migrants in Delhi, India. A primary objective was to test the empirical validity of the assumptions on which probabilistic migration models are founded. In particular, an examination is made of information transmission, expectations, inter-sector mobility, intra-sector turnover, and the structure and determinants of earnings, focusing on pull factors. The author found that the Delhi experience does not fit the migration process postulated in the probabilistic models. This book examines the economic selectivity and the articulated motives of migrants, and urban-rural ties are investigated. These ties are strong and are manifested in regular visits and remittances by migrants to family members living in the rural area. The determinants of remittances and conjugal separation are analyzed using tobit and logit analysis respectively. The evidence suggests that the underlying objective of migration is maximization of family rather than individual benefits.

Williamson (1988) examines the consequences of migration and asks the question whether cities can close their doors to migration. He offers an alternative, which is that only pricing of services needs to be corrected. Sridhar and Mathur (2009) takes a hint from this, estimates the marginal cost of water supply in cities of India, and finds that several cities in India are significantly under-pricing their water. Hence it is rather pricing that is the solution, closing the cities to migration is certainly not a solution to the problem of poor service delivery, especially in a democracy.

Haan (1997) looked at the relation between rural-urban migration and poverty: who migrates, from which areas and income groups, how do the migrants compare to non-migrating urban groups, and how do the migrants fare over time. The analysis focuses on field-work and interviews in an industrial area of Calcutta, India, mainly amongst migrants from other states (Bihar, Uttar Pradesh, Orissa) who in many cases had

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phenomenon of accelerating rural-urban labor migration despite the existence of positive marginal products in agriculture and significant levels of urban unemployment.

moved 600 km or more to come and work in the jute and paper industries (de Haan 1997). Migrants had been attracted to the unskilled work in these industries in earlier parts of this century; during the last decennia few new jobs have been created.

Tianhong, Maruyama and Kikuchi (2000), through their examination of labor markets that are involved in rural-urban migration in China, find that rural-urban migration is not a uniform phenomenon as the Todaro model postulates. On the other hand, they find evidence that rural-urban migrants are diverse, and that there were no significant differences in earnings between urban formal and informal sector jobs. Potts (2000) presents evidence regarding the Todaro model with reference to Africa. The findings from this work cast doubt on the extent to which net in-migration was a factor contributing to unemployment in contemporary sub-Saharan Africa.

Bird and Deshingkar (2009) explore circular migration in India, the policy response and impact of the policy response on the welfare of migrants and more broadly on regional inequality.[6] They find that circular migration rates are high in remote rural areas, particularly amongst the chronically poor. Particularly high rates are found in drought prone areas with low agro-ecological potential, poor access to credit or other pre-requisites for diversification and high population densities. Circular migration is found to be high among the poor, SCs, STs and Muslims. Young adult populations have a greater propensity to migrate and permanent migration rates are found to be higher among the more educated but illiterate and unskilled people appeared to dominate seasonal labour migration (Deshingkar, 2006). The study finds that a range of push and pull factors drive circular migration. Income is one driver, with people migrating in search of paid employment. Migrants may be pushed to migrate by debt, poor access to credit, declining access to common property resources or commodity price crashes (Deshingkar, 2003).

While most of the literature and the policy responses take a negative view of migration, some literature argues that internal migration can lead to positive change in both sending and receiving areas (Deshingkar and Grimm, 2004). Migration can help to reduce poverty and increase income, savings and assets. It can lead to the sending of

[6] Circular migration in an urban context is a form of migration by which migrants move to the city for a few months and then return to the village when they can be most useful there. It is often part of a larger household strategy that seeks to diversify income streams and maximize consumption (http://en.wikipedia.org/wiki/Circular_migration).

remittances to marginalized sending localities, which can be used to invest in human capital or in productive assets in sending localities. This can play an important role in reducing vulnerability, improving food security, stimulating land markets in sending areas, increase local wages, the demand for local goods and services and generally improving the economy (Deshingkar, 2006).

According to Bird and Deshingkar (2009), there are two forms of policy responses in relation to migration at the state and national level in India. The first response has been to increase rural employment in an attempt to stem the flow of migrants out of rural areas. The suit of policies in place aimed at increase the availability of rural employment includes NREGS and water shed development programs. But these attempts only partially reduce circular migration, as opportunities are still better in urban areas and high productivity rural areas. The second response is essentially a 'non-response'. Hostility towards migrants by local, state and national governments results in migrants living in illegal settlements, their exclusion from the ration system and their lack of adequate access to essential services and amenities. Neither of these policies have enabled, nor controlled, migration.

McCatty (2004) focuses on rural-urban migration and its influence on urbanization in developing countries. This paper analyzes three models that provide theoretical reasons for the process of rural urban migration: the Lewis dual sector model, the family/household migration model and the Todaro model. The case of Peru and Bolivia are used to test these models. Further it argues that rural urban migration is an inevitable consequence of both asymmetric policies and economic development favouring urban areas. Consequently, migration should be seen as an equilibrating response to disequilibrium existing in the economy. As long as there are gaps in rural-urban employment opportunities caused by urban bias there will be migration, and it is the responsibility of government to reduce this disequilibrium. The benefits and costs are also analyzed and it is found that although there are benefits that can arise from rural-urban migration, the costs are pervasive in developing countries. The marginal social costs far outweigh the marginal private costs, so urbanization is not efficient. The level of urbanization takes place at the point where marginal private costs equal marginal private benefits.

On a basic efficiency note also a policy implication/challenge may be to find and design measures whereby the social (marginal) costs of migration are internalised to each migrant so as to resemble the true cost of their choice. This cost would obviously be less in small towns than cities such as Bangalore, the focus of the present study, which is overcrowded, infrastructure over-burdened and its capacity full.

Shanthi (2006) examines the extent of employment oriented migration of females in India and the inter-state variations in its magnitude using NSSO 55th round household level data on migration. It is found that though the percentage is very small for 'employment oriented migration' an analysis of work force participation of female migrants in the age group 15-60, irrespective of the reasons for migration reveals that in the post migration period, work participation of these migrants increases steeply in all the states. In the recent past 'independent migration' of females is on the increase in response to the employment opportunities in export industries, electronic assembling and garment units. In all the states in south India this percentage is high. In the north at the disaggregated level the percentage of 'never married' and 'heads' is high in rural-urban and urban-urban migration.

Mitra and Murayama (2008) analyze the district level rural to urban migration rates among males and females separately and find that both the rates are closely associated irrespective of whether the migrants originate from the rural areas within the state or outside the state. Though many of the relatively poor and backward states actually show large population mobility, which is primarily in search of a livelihood, the mobility of male population is also seen to be prominent in the relatively advanced states like Maharashtra and Gujarat. The social networks, which play an important role in the context of migration, are prevalent among the short distance migrants which tend to lose their significance with a rise in the distance between the place of origin and destination. Further they find that the effect of factors at the place of destination, prospects for better job opportunities are a major determinant of male migration. Low castes and minority groups tend to pull migration through network effects.

Hossain (2001) studies rural urban migration in ten villages of Comilla district of Bangladesh. His study mainly focuses on differentials and determinants of migration and finds that persons involved in the process of rural out-migration are adults and more

educated. Most of them were engaged in studies or unemployed before migration. About half of the migrants migrated for temporary service and about one quarter migrated for permanent jobs. Further, educational attainment of the migrants is found related with the permanent type of migration, whereas temporary types of migration are mainly associated with illiterate migrants. The migration rate is found to be significantly higher for educated as well as unemployed, and also for those belonging to the ages 20-29. Poverty, job searching and family influence are the main push factors for out migration, while better opportunity, prior migrants and availability of job are the main pull factors behind migration.

Chapter 5 of the World Development Report 2009 deals with factor mobility and migration. It describes that the majority of labour movement is not rural-urban migration, but from economically lagging to leading rural areas like Punjab, Gujarat and Maharashtra to work on the farm. However there has also been a steady flow of longer term migration into the cities and they are pulled in by economic growth or agglomeration economies and increasing returns to scale obtainable by the clustering of skills and talent. Ghate (2009) highlights the case of Oriya migrants to the cities of Gujarat. He argues that the emergence of these migration corridors across the country has led to the development of some unique institutions to serve them. For instance, on the financial side, a set of money transfer intermediaries have emerged in Surat. They deliver remittances to recipients back home in Orissa within 6 to 48 hours at a much lower effective cost than that charged by the post office on money orders.

The WDR distinguishes between voluntary migration based on pull factors, as opposed to involuntary migration based on push factors of over population, drought, non-existent social services and environmental stress. It argues that policy barriers to internal mobility in India are imposed by omission rather than by commission. Negative attitudes held by government and ignorance of the benefits of population mobility have caused migration to be overlooked as a force in economic development. Further it argues that instead of trying to fight the pull factors of agglomeration economies on workers and their families government should work to eliminate the factors that push people out of their home areas. Labour mobility driven by economic reasons leads to greater

concentration of people and talent in places of choice and adds more to agglomeration benefits in the places than to congestion costs.

It is interesting to note from the migration literature that while Todaro's model has been extensively studied, adequate distinction has not been made regarding push versus pull factors in migration, especially so at the city level in India. As discussed, focusing on both is required for balanced development of rural and urban areas. The objective of this work is to examine the push and pull factors of the rural-urban migration that has been occurring in an Indian city experiencing significant in-migration and reeling from negative impacts on its infrastructure. This research points as to what can be done to mitigate the negative impacts of migration on urban and rural areas.

The next chapter describes the approach we have taken and the details of the methodology followed for the primary survey of migrants in Bangalore, the caveats, followed by a description of the econometric model used for the estimation of what determines whether it is primarily a push or pull decision in migration.

Chapter 3: Approach and Methodology

The research is conducted through a primary survey of migrants in Bangalore. It is useful to note that Bangalore which has been touted as the silicon valley of India, is the target of large scale migration from the northern parts of the state and other states which are relatively poorer.[7] Out of a total of 761,485 migrants into the Bangalore UA in 2001, representing 13.4 percent of the UA's population (of 5.7 million), 401,932 were from within the state and 353,156 were from outside the state. Bangalore is second next only to Greater Mumbai, in terms of the proportion of in-migrants to total population (13.4 percent).

Bangalore is also a good example of a small city turning into a metropolitan area overnight without the requisite infrastructure. For instance, in Bangalore, only 1,100 of the 3,000 tonnes of solid waste generated per day is collected and sent to composting units, with the rest dumped in open spaces and on roadsides. Another widely accepted major problem in Bangalore (as with other large cities) is the tremendous rise in vehicular traffic, which has grown by 10% a year and currently stands at 1.6 million registered vehicles, resulting in massive traffic gridlocks. It is estimated that the one-way travel time in Bangalore increased from about 24 minutes in 1991 to roughly 40 minutes in 2001 (Savage and Dasgupta 2006).

Bangalore is also unique (as Sridhar and Mathur (2009) found) in that it has both highly skilled migrants and unskilled migrants. The solid waste problem could be an outcome of unfettered migration and/or habitation of the unskilled category, whereas the vehicular traffic problem could be attributed to skilled migrants or population.

Thus examination of pull and push factors with respect to Bangalore which has experienced differentiated migration, offers a complete perspective of migration in many ways that is typically representative of India. As is clear, it is not possible to examine push and pull factors completely without a primary survey of respondents.

In the primary survey of migrants in Bangalore, we focus on a sample of low and high skill migrant workers since the former end up being homeless and creating slums,

[7] There are significant disparities in India across the southern and northern states (see Paul and Sridhar (2009); Sridhar and Reddy (2009)). For instance, states such as Uttar Pradesh (UP) are significantly poorer than Karnataka as may be seen in the fact that UP's per capita net state domestic product was only Rs.6,138

whereas the migration of highly skilled migrants has different kind of implications for the labor-losing region. We compare these migrant workers to a set of non-migrant workers with similar characteristics to understand whether they are systematically different. Hence in this research, primary data are combined to provide rigorous quantitative results supported by qualitative findings from respondents. Without primary data, it is not possible to authenticate experiences of the migrants and throw light on the push factors. Hence the research design and methods proposed here are the most suited for the research questions posed.

As discussed in the first chapter, a primary survey of migrants was conducted in Bangalore to understand the importance of push versus pull factors in migration.

The sample size for the primary survey was given by:

$$N = \frac{Q}{P} \times \frac{1}{e^2}$$

The proportion of migrants in the Bangalore UA (Urban Agglomeration) is 13.4 percent (P=13.4) which can be used to find out sample size directly. If P is the given proportion, Q=1-P (here, 86.6) gives the proportion of non-migrants in Bangalore. With P=13.4, Q=86.6, error (e)=0.10, the sample size turns out to be 650.[8] Based on these considerations and our budget, we sampled 600 migrant households and 200 non-migrants, for a total sample of 800 households, accounting for non-response.

Further, we wanted to distinguish between skilled and unskilled migrants. This is because their impacts on the destination regions are different. Skilled migrants have likely impacts on the travel time to work (by adding to traffic with their fleet of vehicles). For instance, as discussed earlier, in Bangalore, the one way travel time increased from only 24 minutes in 1991 to nearly 40 minutes in 2001. However, unskilled migrants might contribute to increases in solid waste generation on roads. In many Indian cities, more than half of the solid waste is neither collected nor disposed. Hence it is important to address problems of both types.

Because of their differential impacts, we surveyed 300 skilled migrants and 300 unskilled migrants in Bangalore, in addition to 100 skilled and 100 unskilled non-

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when compared with Rs.13,820 for Karnataka (in 1993-94 prices) as of 2004 (based on data from Economic and Political Weekly-Research Foundation (EPW-RF)).

migrants.[9] We imposed certain restrictions to select skilled and unskilled migrants. We expected that skilled migrants can come to an urban area from rural or urban areas, whereas unskilled migrants are most likely to have migrated from rural areas only. Taking these considerations into account, we devised filter questions for skilled and unskilled migrants separately (although the questionnaire was the same for skilled and unskilled migrants). We defined a migrant as anyone who has migrated into Bangalore within the last 0-10 years.[10] A detailed questionnaire along with filters was discussed, translated (into the local language) and pre-tested.[11] We defined skilled migrants as those in the following professions: shopkeeper/shopowner, self employed professional, clerical/salesman, officer/executive, software professional, and others. Unskilled migrants were defined as those who do not have specific skills (e.g., sweepers, construction workers, cleaners, peons, hawkers, vendors, petty traders, domestic workers, cooks, and so forth). Skilled workers with specific skills such as craftsmen, artisans, machine operators, electricians, mechanics, drivers and so on were also defined as being unskilled.

We also developed separate filter questions for the non-migrants. Non-migrants were defined to be the mirror opposite of migrants, i.e., those who were either natives of the city or had lived in Bangalore for longer than 10 years. The appendices at the end of this report contain the filter questions for the skilled migrants, unskilled migrants and non-migrants. The appendices also contains the questionnaire used for migrants and non-migrants to elicit responses regarding the importance of push versus pull factors in their migration decision. In our survey of migrants, we excluded those in transferable jobs (bank and government employees)[12] since there is not much of a decision involved in such jobs. If unskilled migrants migrated to Bangalore from a place which is not a district

[8] When we tried an error of only 5 percent instead of the 10 percent we actually decided to go with, the sample size turned out to be 2,585, which was well beyond our budget.
[9] The primary surveys were conducted by A.C.Nielsen ORG-MARG Centre for Social Research.
[10] We tried the criterion of migration into Bangalore during the last 0-5 years, but the hit rate of respondents with this criterion was very low during the pre-testing, with the result that we relaxed this criterion to 0-10 years.
[11] We, along with a team from A.C. Nielsen, conducted a detailed, day-long briefing session for the enumerators so that they understood the objectives of the survey and our intentions in asking specific questions. Mock interviews of the instruments were conducted by the enumerators amongst themselves during the day-long briefing session.
[12] We provided a list of nationalized public sector banks to the enumerators for this purpose.

headquarters, then we determined them as having migrated from a rural area into Bangalore.[13]

We determined that skilled migrants would be sampled from 'general' census wards, whereas unskilled migrant respondents would be surveyed from 'slum' census wards. This is because it is likely that unskilled migrants such as drivers, domestic maids, cooks, petty traders, and other workers with lower skills most likely are found in slum wards and skilled migrants (those in white collar jobs, clerical, secretarial, office-keeping jobs and other professionals) are likely to be found in general wards.[14]

The market research firm Operations Research Group of A.C. Nielsen conducted the primary surveys. The determination of the sample in Bangalore was done according to the process described below.

A list of the earlier 100 wards in Bangalore was obtained from Bangalore Mahanagara Palike (BMP) (2002) (containing ward names and ward numbers) across east, west and south zones together with names of slums and slum types across wards. The surrounding city municipal councils (7 of them) and town municipal councils (1) were merged into the BMP in 2006, causing the creation of Bruhat Bangalore Mahanagara Palike (BBMP) consisting of 147 wards. The list of 147 wards and ward wise population across north, south and central (2009) zones was obtained from BBMP website (www.bmponline.org) with ward boundaries. Further, a list was also obtained from Karnataka Slum Clearance Board (KSCB) (2009) containing declared slum names and population across 14 wards. It was decided that the sampling exercise would be taken up based on the new ward list (147) and the new ward numbers of the BBMP, since the wards and areas were completely different in the new list and secondly the old city boundary (ward list) did not include the outgrowth or recent developments.

To select sample wards across zones, the proportion to population size (PPS) method was followed. Given our sample size was 800, we had to equally distribute them across the wards. Given the minimum sample for a ward should be 20 households, we decided

[13] We provided enumerators with a list of all district headquarters in all states of the country to enable them to make a decision regarding rural areas.

[14] While in India (let alone Bangalore) there is no information on the proportion of urban poor living in slums, in south Asia as a whole, 43 percent of urban population was living in slums as of 2005 (United Nations Statistics Division - UN Millennium Development Goals Report 2007), downloaded from http://www.dfid.gov.uk/Documents/publications/mdg-factsheets/slumdwellers-factsheet.pdf.

to choose 40 wards spread across the various geographic regions of Bangalore (north, south, east, west and central parts) for purposes of the survey.

It is to be noted that the wards are spread across three zones in Bangalore: north zone, central zone and south zone. Out of 147 total wards in BBMP, around 66 wards (45 percent) are found in north zone, 48 wards (33 percent) in south zone and 33 wards (22 percent) in central zone (see Table 3.1). The sample wards were also selected in a similar proportion as in the population, i.e., out of 40 selected wards, 18 wards were selected from north zone (45 percent), 12 wards were selected from south zone (30 percent) and 10 wards from central zone (25 percent). The sample wards were equally distributed across slum wards and general wards. Out of a total 20 slum wards, 9 wards were from north zone, 6 wards were from south zone and 5 wards were from central zone. Similarly out of total 20 general wards, 9 wards were from north zone, 6 wards were from south zone and 5 wards were from central zone.

Table 3.1 summarizes the ward selection in BBMP. It shows that the sample of 800 households consisting of migrants and non-migrants were selected from a total of 40 wards with 20 of them being in general wards (which did not have any slums) and the remaining being in slum wards (i.e., those wards which contained at least one slum).

All wards were classified based on number of existing slums in the wards. Wards having slums as per the list received from slum clearance board and BBMP were identified as slum wards while wards not having any slums were identified as general / non-slum wards. Out of 147 wards, a total of 91 wards reported having slums while 56 wards reported not having any slum.

In the case of the central zone, as there were very few general wards, (only 2 general wards without any slum), we selected 3 wards as general wards which were having only 2 slum pockets as per the slum list received from BBMP/slum clearance board.

Table 3.1: Ward Selection for Primary Surveys, BBMP

Region	Total No. of wards	Total no. of slum wards	Total no. of general wards	Total sample wards	Sample slum wards	Sample general wards
North	66	34	32	18	9	9
South	48	26	22	12	6	6
Central	33	31	2*	10	5	5*
Total	**147**	**91**	**56**	**40**	**20**	**20**

*The number of selected sample general wards is more than the total general wards as some slum wards have been taken as general wards, due to paucity of 'pure' general wards (without any slums), as indicated above.

Selection of sample wards

The list of wards for each zone was arranged in ascending order of their population. We calculated the sampling interval as 4 and a random number in 1 to 4 was generated. Suppose that random number was 1, we selected the 1st ward, 5th ward, 9th ward, 13th ward, 17th ward, 21st ward, 25th ward, 29th ward and 33rd ward. Similarly in general wards, the same process of selection was followed, where wards were arranged based on total population in ascending order and the sampling interval was calculated (as k). Based on random selection of the first ward (1 to k), each kth ward was selected for final selection. Table 3.2 summarizes the ward names, numbers and the sample of surveys taken from those wards.

A caveat of our sampling is that urban areas are expanding and many rural areas have now become part of Bangalore (as in the case of other cities). With transport infrastructure improving, it is possible for a resident of rural area to commute daily to Bangalore for his/her job in Bangalore,[15] but such workers may not be reflected in our sample because we survey only migrant residents, not migrant workers. We also may have missed outlying rural areas of Bangalore from our sample.

Another limitation of the methodology is that through the primary surveys, we capture only the perceptions of the migrants. If the perceptions were to be different from the real factors behind migration, we have no way of capturing those micro-level responses.

[15] We note that a large middle class is emerging with rising incomes in the urban areas and the resultant demand for other services (household/domestic services such as cooking and cleaning) fuels demand for employment in urban areas (which may be classified as pull factors since they refer to creation of job opportunities in the urban informal economy).

Table 3.2: Final Wards Chosen for Surveys of Migrants and Non-Migrants

SAMPLE GENERAL WARDS				
NORTH ZONE				
Region	**Ward no.**	**Ward name**	**Sample Size**	
			Migrants	**Non Migrants**
NORTH ZONE	14	Anandnagar	15	5
	10	Horamavu	15	5
	44	Ramamurthy nagar	15	5
	35	RT Nagar	15	5
	22	Herohalli	15	5
	23	Sanjeevani Nagar	15	5
	77	Vimanapura	15	5
	11	HBR Layout	15	5
	56	West of Chord Road	15	5
SOUTH ZONE				
SOUTH ZONE	146	Gottigere	15	5
	143	Chunchaghatta	15	5
	64	Rajajinagar Industrial Town	15	5
	75	Doddanakundi	15	5
	139	Sarbandapalya	15	5
	144	Bilekhalli	15	5
CENTRAL ZONE				
CENTRAL ZONE	61	Kamakshi playa	15	5
	84	Sampangiramnagar	15	5
	110	Wilson garden	15	5
	97	Goripalya	15	5
	83	Richmond Town	15	5

SAMPLE SLUM WARDS				
NORTH ZONE				
Region	**Ward no.**	**Ward name**	**Sample Size**	
			Migrants	**Non Migrants**
NORTH ZONE	31	Malleshwaram	15	5
	17	Mattikere	15	5
	1	Yelahanka	15	5
	28	Geleyara Balaga	15	5
	19	Peenya Industrial Area	15	5
	16	Sanjay Nagar	15	5
	74	Mahadevapura	15	5
	71	Sarvagna Nagar	15	5
	57	Kamala Nagar	15	5

SOUTH ZONE				
SOUTH ZONE	121	Uttarahalli	15	5
	124	Basavangudi	15	5
	94	Bapuji Nagar	15	5
	136	BTM Layout	15	5
	127	Pattabhiram Nagar	15	5
	128	Jayanagar	15	5
CENTRAL ZONE				
CENTRAL ZONE	52	Jaymahal	15	5
	100	Chamarajpet	15	5
	85	Gandhinagar	15	5
	86	Binnypet	15	5
	70	Bharatinagar	15	5

Caveat of the Push versus the Pull Factors

We also acknowledge that some of the factors that we call as "push" and some that we call as "pull" are related and are not easy to differentiate from each other. When a person says he migrated because of lack of adequate income at home, what does he mean by 'inadequate income'? Inadequacy here cannot simply be perceived as relative to need, because, if that were the case, then almost the entire rural population would have migrated. What he probably has in mind is low income relative to what he can expect to earn by migrating. So, it is not very different from a pull factor. On the other hand, when someone says he was attracted by 'higher expected income' it can be counted as a pull factor, but what he means is that his actual income at home was lower than what he expected to earn on migration.

An inadequate income can be a true push factor in the absence of a higher expected income in the city. Similarly, a higher expected income can be a purely pull factor in the presence of an adequate rural income. The same applies to a lack of non-agricultural jobs in rural settings and better job opportunities in the cities. It is only in the case when the two overlap that one cannot tell if it was neither a push nor a pull factor, or both. The multiple response scheme used in the survey conducted of migrants takes care of this as the survey-takers were in no way forced to choose one instead of the other. Therefore, the ones who chose both a "push" and a corresponding "pull" factor can be classified as a set of people for whom both the push and pull factors were important for migration.

Hence to disentangle the purely push from the purely pull factors, we define a variable Y_i, for each individual migrant, where

Y_i = (Number of Pull reasons for migration chosen) / (Total number of reasons for migration chosen)

Hence the variable Y_i varies from 0 to 1, with the value 0 indicating that the individual's reasons for migration are "only push" in nature, and with the value 1 referring to "only pull" factors. For sake of classification we can divide the range of possible values that Y_i can take, into five parts:

Y_i	=	0;			"Only Push"
0	<	Y_i	<	0.5;	"Mainly Push"
Y_i	=	0.5;			"Both Push and Pull"
0.5	<	Y_i	<	1;	"Mainly Pull"
Y_i	=	1;			"Only Pull"

Finally, in order to understand the factors which determine the extent of push versus pull factors in migration, we estimated a probit model where the dependent variable is continuous and has the range [0, 1]. The model was setup as follows:

$$\mathbf{Y_i} = \mathbf{\Phi^{-1}} (\beta_0 + \beta_1 \text{ Gender} + \beta_2 \text{ Religion} + \beta_3 \text{ Social group (SC/ST)} + \beta_4 \text{ Completed education} + \beta_5 \text{ Family size} + \beta_6 \text{ Dummy for Karnataka} + \beta_7 \text{ Income at migration} + \beta_8 \text{ Age} + \beta_9 \text{ Marital status} + e_i) \quad \text{----------[1]}$$

Here, $\mathbf{\Phi^{-1}}$ is the inverse cumulative distribution function, and the exogenous variables are socio-demographic and economic in nature, and are self-explanatory.

The next chapter dwells on the various socio-economic and demographic characteristics of the migrants and non-migrants, and among skilled and unskilled migrants.

Chapter 4: Characteristics of Migrants and Non-Migrants

As described in the previous chapter, primary surveys were conducted of a sample of migrants and non-migrants in Bangalore to understand the intentions of migration and compare their characteristics. Both among migrants and non-migrants, we distinguished between the skilled and unskilled, since their impacts on the destination region are different. We surveyed 300 skilled and 300 unskilled migrants, and 100 skilled non-migrants along with 100 unskilled non-migrants as a control group. In this chapter, we summarize and compare the migrants and non-migrants, both skilled and unskilled, in terms of their socio-demographic and economic characteristics.

Comparison of Socio-Demographic and Economic Characteristics

Table 4.1 summarizes the distribution of migrants and non-migrants, both skilled and unskilled, across the various zones of Bruhat Bengaluru Mahanagara Palike (BBMP). The table shows that all zones of the city are represented with nearly 50 percent of all migrants being sampled in the northern zone, one-fifth in the central zone and the remaining 30 percent in the southern zone. In all the zones where we visited, we picked peripheral areas since they are the ones most likely inhabited by migrants.[16] Further, all skilled migrants and non-migrants were sampled from 'general' census whereas all unskilled migrants and non-migrants were sampled from 'slum' wards. Further, in two-thirds of the cases, the chief wage earner of the household himself responded to our questions, testifying to the authenticity of the responses we obtained, with 28 percent of surveys being answered by spouses.

Table 4.1: Distribution of Migrants (by Skill) in the Zones of BBMP

Zone	No. of wards	Skilled Non-Migrants	Unskilled Non-Migrants	Skilled Migrants	Unskilled Migrants	Total
North	18	46 (46%)	44 (44%)	152 (50%)	143 (47%)	**385 (48%)**
South	12	29 (29%)	31 (31%)	79 (26%)	106 (35%)	**245 (30%)**
Central	10	25 (25%)	25 (25%)	72 (24%)	56 (18%)	**178 (22%)**
Total	**40**	**100**	**100**	**303**	**305**	**808**

[16] This might amount to purposive selection of the sampling frame.

Table 4.2 compares the distribution of skilled and unskilled migrants by their state of origin. As we expect, a majority of both skilled (70 percent) and unskilled (59 percent) migrants are from Karnataka. From within Karnataka, 54 percent of migrants were skilled whereas only 46 percent were unskilled. Other major sources of skilled migrants into Bangalore are neighboring states such as Tamil Nadu (9 percent) and Andhra Pradesh (8.9 percent), although Kerala is not a major source (out of our sample of 600 migrants, Kerala accounted for 1.7 percent of skilled migrants and only 0.7 percent of unskilled migrants). Tamil Nadu is a major source of unskilled migrants into Bangalore (25 percent).

Table 4.2: Distribution of Migrants by State of Origin

State of Origin	**Type**		
	Skilled	**Unskilled**	**Total**
Karnataka	213	180	393
	54.20%	45.80%	100.00%
Within Type	70.30%	59.00%	64.60%
Tamil Nadu	28	76	104
	26.90%	73.10%	100.00%
Within Type	9.20%	24.90%	17.10%
Andhra Pradesh	27	25	52
	51.90%	48.10%	100.00%
Within Type	8.90%	8.20%	8.60%
Uttar Pradesh	2	10	12
	16.70%	83.30%	100.00%
Within Type	0.70%	3.30%	2.00%
Rajasthan	12	0	12
	100.00%	0.00%	100.00%
Within Type	4.00%	0.00%	2.00%
Other states	21	14	35
	60.0%	40.0%	100.00%
Within Type	6.9%	4.6%	5.7%
Total	**303**	**305**	**608**
	49.80%	**50.20%**	**100.00%**
Within Type	**100.00%**	**100.00%**	**100.00%**
t-value (Karnataka vs. others)	**-2.925***		
*Statistically significant at 1 percent level and indicates that more unskilled migrants come from other states (other than Karnataka).			

Skilled and unskilled migrants are likely to have different characteristics including their level of education, marital status, family size, age, income in current and previous jobs, and their occupations. Sometimes it is also likely that members of certain social groups are unskilled. In order to understand these differences systematically, we present in the forthcoming tables a summary of the above-mentioned characteristics for skilled and unskilled migrants and non-migrants in our sample.

Table 4.3 compares the age of migrants and non-migrants in our sample. For the migrants, the age group is based on the age at which migration occurred, not their current age.[17] We found that the respondent migrants are young as more than two-thirds (416 out of 608 migrants) of the respondents were under 30 years of age, with an additional quarter of migrants being in the 31-40 age group. In contrast, only 38 percent of non-migrants were under 30 years of age. Nearly 40 percent of non-migrants were in the age group of 31-40 years. Thus, on average, non-migrants are older than migrants and unskilled migrants are older than skilled migrants (see Table 4.3).

Table 4.3: Comparison of Age Group Distribution, Migrants and Non-Migrants

	Migrants			**Non-migrants**		
Age group	**1 Skilled**	**2 Unskilled**	**All migrants**	**Skilled**	**Unskilled**	**All non-migrants**
Up to 30 years of age	217	199	416	39	36	75
	71.6%	65.2%	68.4%	39.0%	36.0%	37.5%
31 to 40 years	71	75	146	38	41	79
	23.4%	24.6%	24.0%	38.0%	41.0%	39.5%
41 to 50 years	12	26	38	11	19	30
	4.0%	8.5%	6.3%	11.0%	19.0%	15.0%
Above 50 years	3	5	8	12	4	16
	1.0%	1.6%	1.3%	12.0%	4.0%	8.0%
All	303	305	608	100	100	200
Mean	31.83	34.02	32.93			36.00
t-value	-3.467*		-4.071*			
*Statistically significant at the 1% level, and indicates that on average, non-migrants are older than migrants and unskilled migrants are older than skilled migrants.						

[17] This is calculated by subtracting the duration of stay (in Bangalore) from the migrant's current age.

The gender distribution of migrants and non-migrants shows that there is not much of a difference with over 90 percent of chief wage earners both among migrants and non-migrants being male and the remaining being female. The distribution of migrants and non-migrants by religion shows that overall 89 percent of migrants and 91 percent of non-migrants were Hindu. Nine percent each of migrants and non-migrants were Muslim, and the remaining 2 percent in the case of migrants and 1 percent in the case of non-migrants were Christian. Surprisingly, a review of the distribution of migrants and non-migrants by their social group status showed that a majority of them (three-fourths of migrants and 73 percent in the case of non-migrants) were non-SC (scheduled caste) and non-ST (scheduled tribe). One would have expected minorities such as Muslim or Christians or social groups such as SC or ST to have migrated. None of the t values for differences in means for these groups based on gender, religion or social group, were statistically significant.

Next, we reviewed the educational attainment of the skilled and unskilled migrants and non-migrants to understand if the migrants were systematically different from the non-migrants in some way. Table 4.4 summarizes the educational attainment for migrants and non-migrants. It shows that the two groups are not different after all.

This may be corroborated by the fact that nearly half (47 percent in each case) of the respondents had completed either secondary school or pre-university at the most. There was of course a small proportion (5 percent) of technical post-graduates among the migrants, not found among the non-migrants. The proportion of general post graduates is also higher among the migrants. Based on these considerations, we surmise that our migrant sample is more educated than the non-migrant sample (see Table 4.4).

There are also more differences between the skilled and unskilled rather than between the migrants and non-migrants. For instance, nearly 32 percent of skilled migrants were graduates at the minimum (with some of these having post graduate degrees and technical post graduate degrees), there were none among the unskilled. Similar was the case with non-migrants. While 22 percent of the skilled non-migrants were graduates at the minimum, there were none among the unskilled non-migrants. No surprise that on average, skilled migrants are far better educated than unskilled migrants (see Table 4.4).

Table 4.4: Comparison of Educational Attainment, Migrants and Non-Migrants

	Migrants			Non-migrants		
	Skilled	**Unskilled**	**Total**	**Skilled**	**Unskilled**	**Total**
Illiterate	0	45	45	0	13	13
	0.0%	14.8%	7.4%	0%	13.0%	6.5%
Literate without formal education	0	5	5	1	1	2
	0.0%	1.6%	0.8%	1.0%	1.0%	1.0%
Primary (1 to 4)	9	36	45	4	18	22
	3.0%	11.8%	7.4%	4.0%	18.0%	11.0%
Middle (5 to 7)	13	75	88	12	23	35
	4.3%	24.6%	14.5%	12.0%	23.0%	17.5%
Secondary (8 to 10)	52	103	155	20	30	50
	17.2%	33.8%	25.5%	20.0%	30.0%	25.0%
Higher secondary (PUC)	90	35	125	31	13	44
	29.7%	11.5%	20.6%	31.0%	13.0%	22.0%
Technical certificate course (ITI)	17	4	21	3	1	4
	5.6%	1.3%	3.5%	3.0%	1.0%	2.0%
Technical diploma	26	2	28	7	1	8
	8.6%	0.7%	4.6%	7.0%	1.0%	4.0%
General graduate	59	0	59	15	0	15
	19.5%	0.0%	9.7%	15.0%	.0%	7.5%
Technical graduate	8	0	8	5	0	5
	2.6%	0.0%	1.3%	5.0%	.0%	2.5%
General post graduate	13	0	13	2	0	2
	4.3%	0.0%	2.1%	2.0%	0%	1.0%
Technical post graduate	16	0	16	NA	NA	NA
	5.3%	0.0%	2.6%	NA	NA	NA
All	303	305	608	100	100	200
t-value	19.493*		2.126**			

*Statistically significant at the 1% level and implies that on average skilled migrants are far better educated than unskilled migrants.
**Statistically significant at the 5% level and implies that on average migrants are more educated than the non-migrants.

We reviewed the marital status of migrants and non-migrants to find that both among migrants and non-migrants, the unskilled were more likely to have been married. For instance, 86 percent of unskilled migrants and 87 percent of unskilled non-migrants were married when compared with only 63 percent of skilled migrants and 74 percent skilled non-migrants who were married. Because of this, we expect the unskilled migrants and non-migrants to have larger families.

Table 4.5 summarizes the family size of the two sets of migrants with different kinds of skills. Table 4.5 shows that the average (total) family size of the non-migrant is larger than that of the migrant, as we expect, although the number of adults on average is higher in the case of skilled migrants as well as skilled non-migrants when compared with their unskilled counterparts. If we were to arrange the family size of migrants and non-migrants along a continuum, the family size of the skilled migrants is the smallest (at 3.96 members), followed by that of unskilled migrants and then the non-migrants who have much larger families. We found a statistically significant difference between the family size of the skilled and unskilled migrants, with the skilled migrants have a larger number of adults, and the unskilled migrants having a larger number of children, on average. We also found a statistically significant difference between the family size of the migrants and non-migrants, with the overall family size (or number of children) of the non-migrants being higher than that of migrants on average (Table 4.5).

Next, we review the status of dwelling for the migrants and non-migrants, since we expect non-migrants to have settled in the city when compared with the migrants. Table 4.6 summarizes the status of dwelling for the two groups of respondents, with 91 percent of migrants living in rented dwelling and only 84 percent of non-migrants in a rented or leased dwelling. This difference is statistically significant, as we expect, since non-migrants are resident in the city for a much longer duration of stay and would have a permanent dwelling.

Table 4.5: Family Size, Skilled and Unskilled Migrants

	Migrants Mean (Min, Max)			**Non-migrants Mean (Min, Max)**		
	Skilled migrants	**Unskilled migrants**	**Total**	**Skilled non-migrants**	**Unskilled non-migrants**	**Total**
Number of family members - Adults	2.81 (1,8)	2.42 (1,7)	2.61 (1,8)	2.9 (1,7)	2.55 (1,9)	2.72 (1,9)
t-value	4.051*		-1.113 (Not statistically significant)			
Number of family members - Children	1.15 (0,4)	1.66 (0,8)	1.41 (0,8)	1.44 (0,4)	1.8 (0,6)	1.62 (0,6)
t-value	-5.525*		-2.178**			
Number of family members - Total	3.96 (1,10)	4.08 (1,12)	4.02	4.34 (1,10)	4.35 (1,15)	4.34 (1,15)
t-value	-0.904		-2.321**			

*Statistically significant difference between the family size (adults and children) of the skilled and unskilled migrants, with the skilled migrants have a larger number of adults, and the unskilled migrants having a larger number of children, on average.
** Statistically significant difference between the family size of the migrants and non-migrants, with the overall family size (or number of children) of the non-migrants being higher than that of migrants on average.

Table 4.6: Comparison of Status of Dwelling, Migrants and Non-Migrants

		Migrants		Non-Migrants		
Status of the dwelling of the chief wage earner	**Skilled**	**Unskilled**	**Total**	**Skilled**	**Unskilled**	**Total**
Rented/leased	263	288	551	82	86	168
	86.8%	94.4%	90.6%	82.00%	86.00%	84.00%
Owned	38	12	50	18	13	31
	12.5%	3.9%	8.2%	18.00%	13.00%	15.50%
Staying with others	1	3	4	0	1	1
	0.3%	1.0%	0.7%	0.00%	1.00%	0.50%
Paying guest	1	2	3	NA	NA	NA
	0.3%	0.7%	0.5%	NA	NA	NA
Total	303	305	608	100	100	200
	100.0%	100.0%	100.0%	100.00%	100.00%	100.00%
t-value	-2.601*			3.898*		
*Differences between the migrants and non-migrants statistically significant.						

For a majority of respondents (both migrants as well as non-migrants), the dwelling is rented or leased. The remaining 16 percent of non-migrants owned their dwelling, compared with only 8 percent of migrants who owned their dwelling. There is also a small proportion of migrants who stay as paying guests, which is not applicable in the case of non-migrants.

Table 4.7 compares the occupation of the skilled and unskilled migrants and non-migrants. Of the migrants, while nearly 50 percent are unskilled, of the non-migrants, only 32 percent are unskilled.[18] Other major categories of occupation where skilled migrants were clustered are shopkeeper (30 percent), and clerical/salesman jobs (34 percent). These are also respectively the other major categories in which skilled non-migrants are clustered (44 and 22 percent respectively for shopkeeper and clerical/salesman jobs). Thus the occupational distribution across skilled migrants and skilled non-migrants is quite similar with a majority of both skilled migrants and skilled non-migrants being shopkeepers or in clerical/salesman jobs.

[18] However, the reader should note that for all practical purposes, being a 'skilled worker' is classified as unskilled since workers with specific skills such as drivers, cooks, and so forth are also classified as being unskilled.

Table 4.7: Occupation of Migrants and Non-Migrants

Present Occupation	Migrants			Non-migrants		
	Skilled	**Unskilled**	**Total**	**Skilled**	**Unskilled**	**Total**
Unskilled worker	0	297	297	0	64	64
	0.0%	97.4%	48.8%	0.00%	64.00%	32.00%
Skilled worker	2	8	10	0	35	35
	0.7%	2.6%	1.6%	0.00%	35.00%	17.50%
Shopkeeper	90	0	90	44	0	44
	29.7%	0.0%	14.8%	44.00%	0.00%	22.00%
Self employed professional	16	0	16	8	0	8
	5.3%	0.0%	2.6%	8.00%	0.00%	4.00%
Clerical/salesman	104	0	104	22	0	22
	34.3%	0.0%	17.1%	22.00%	0.00%	11.00%
Officer/Executive	41	0	41	12	0	12
	13.5%	0.0%	6.7%	12.00%	0.00%	6.00%
Software Professional	20	0	20	3	0	3
	6.6%	0.0%	3.3%	3.00%	0.00%	1.50%
Teacher	7	0	7	2	0	2
	2.3%	0.0%	1.2%	2.00%	0.00%	1.00%
Travel agent	2	0	2	3	0	3
	0.7%	0.0%	0.3%	3.00%	0.00%	1.50%
Driver	0	0	0	0	1	1
	0	0	0	0.00%	1.00%	0.50%
Business man/Business	21	0	21	6	0	6
	6.9%	0.0%	3.5%	6.00%	0.00%	3.00%
Total	303	305	608	100	100	200
t-value (migrants vs. non migrants)			0.040			

Roughly 14 and 12 percent respectively of skilled migrants and skilled non-migrants are officers/executives. However the proportion of software professionals among skilled migrants is high (being 7 percent) when compared with the skilled non-migrants (only 3 percent). This lends support to the view that software professionals are a greater proportion of skilled migrants into the city which is the silicon valley of India when compared with skilled non-migrants. When combined with information on their incomes, it is likely that skilled migrants such as software professionals contribute to traffic woes in the city.

We also wanted to know the industry in which he/she was working if a worker were to be unskilled. Table 4.8 summarizes in the case of migrants and non-migrants the industry in which they were working if they were unskilled.

Table 4.8: Comparison of the Industry of Unskilled Worker: Migrants and Non-Migrants

Category of unskilled worker/worker with specific skills	Migrants	Non-migrants
Textiles	31(10.4%)	3(4.7%)
Hotels	24(8.1%)	(1.6%)
Leather	6(2.0%)	0(0%)
Construction work	94(31.5%)	22(34.4%)
Domestic worker	25(8.4%)	4(6.2%)
Petty trader	39(13.1%)	15(23.4%)
Technician/assistant	9(3.0%)	1(1.6%)
Security/protection services	11(3.7%)	NA
Art/Painting	11(3.7%)	1(1.6%)
Household Repair/plumbing /carpentry	11(3.7%)	2(3.1%)
Driver	22(7.4%)	2(3.1%)
Cleaner/Attender	8(2.7%)	7(10.9%)
Metals	1(0.3%)	NA
Barber	2(0.7%)	NA
Fisherman	2(0.7%)	NA
Cook	2(0.7%)	NA
Total	**298**	**64***

*The categories of unskilled workers reported here do not add up to 64 as there are two categories not reported for the migrants (power work (5 (7.8%)), and printing work (1 (1.6%)).

Nearly one-third of both unskilled migrants (32 percent) and unskilled non-migrants (34 percent) are in construction work. Other major categories of unskilled work are petty trade (which is 13 percent in the case of migrants and 23 percent in the case of non-migrants) and domestic worker (higher in the case of migrants, being 8 percent, and 6 percent in the case of non-migrants).

Table 4.9 compares the monthly income of migrants and non-migrants, taking into account both the skilled and unskilled workers. We've included the monthly income of Rs.1,500 or less as that represents the $1 a day international norm for defining the poverty line. A majority of the migrants (nearly 87 percent) are in the income range Rs.1,501 to Rs.10,000. Similarly, nearly 86 percent of non-migrants are in this income group. Non-migrants are better off since nearly 25 percent of them (the skilled) make more than Rs.10,000 a month, whereas only 20 percent of the skilled migrants make more than Rs.10,000 a month.

Table 4.9: Income Distribution of Migrants and Non-migrants

	Migrants			Non-migrants		
	Skilled	**Unskilled**	**Total**	**Skilled**	**Unskilled**	**Total**
Up to 1500	0	17	17	0	4	4
	0%	5.6%	2.8%	0.00%	4.00%	2.00%
1501 to 3000	0	157	157	2	42	44
	0%	51.5%	26.0%	2.00%	42.00%	22.00%
3001 to 5000	34	102	136	21	41	62
	11.4%	33.4%	22.5%	21.00%	41.00%	31.00%
5001 to 7000	79	24	103	21	12	33
	26.4%	7.9%	17.1%	21.00%	12.00%	16.50%
7001 to 10000	126	5	131	31	1	32
	42.1%	1.6%	21.7%	31.00%	1.00%	16.00%
Above 10000	60	0	60	25	0	25
	20.1%	0%	9.9%	25.00%	0.00%	12.50%
Total	299	305	604	100	100	200
	100.0%	100.0%	100.0%	100.00%	100.00%	100.00%
Mean (Rupees)	9729	3438	6552			6581
t-value	17.976*		-0.071			
*Statistically significant at the 1% level and implies that the average income of skilled migrants is much higher than that of unskilled migrants.						

While there is no statistically significant difference between the income of the migrants and that of the non-migrants, we find that the skilled migrants are relatively richer compared with the unskilled migrants (which is statistically significant, see Table 4.9), natural to expect since they are also more educated than the unskilled migrants.

The migrants alone were asked some more questions, such as those regarding a migrant's occupation and income prior to migration, so as to obtain better information regarding the push versus pull factors in migration. Table 4.10 summarizes the previous occupation of the migrant, for the skilled and unskilled migrants separately.

Similar to what we find in the case of the current occupation of the migrants, a majority of the migrants (84 percent) were unskilled in their previous occupation as well, natural for us to expect, given 97 percent of migrants are unskilled in their current job.

Table 4.10: Previous Occupation of Skilled and Unskilled Migrants

Occupation	Skilled	Unskilled	Total
Unskilled worker	37	257	294
	12.2%	84.3%	48.4%
Skilled worker	12	16	28
	4.0%	5.2%	4.6%
Shopkeeper	66	0	66
	21.8%	0.0%	10.9%
Self employed professional	22	0	22
	7.3%	0.0%	3.6%
Clerical/salesman	27	0	27
	8.9%	0.0%	4.4%
Officer/Executive	7	0	7
	2.3%	0.0%	1.2%
Software Professional	3	0	3
	1.0%	0.0%	0.5%
Student	69	8	77
	22.8%	2.6%	12.7%
Other specify	1	0	1
	0.3%	0.0%	0.2%
Unemployed	59	24	83
	19.5%	7.9%	13.7%
All	303	305	608

Consistent with the current occupation of the skilled worker, nearly one-fifth (22 percent) of skilled workers were shopkeepers in their previous job as well (compared with 30 percent of skilled migrants who are shopkeepers in their present occupation). Therefore more migrants are shopkeepers in their present job. This appears like an attractive option once they migrate. An additional one-fifth of skilled migrants were students in their previous occupation. Hence it is easy to imagine that once they finished schooling, they migrated and came to Bangalore in search of jobs.

We probed into the industry of the unskilled migrants in their previous occupation to understand further their underlying reasons for migration. Table 4.11 summarizes the industry of the unskilled migrant in their previous occupation. A majority of the migrants were either agricultural laborers (31 percent), or farmers (10 percent) before migration. Less than one-fifths (18 percent) of them were in construction work. This distribution of migrants in their previous jobs strongly suggests that it was primarily push out of the agricultural area and the lack of non-agricultural jobs which forced them to migrate.

Table 4.11: Industry of Unskilled Migrant in their Previous Job

Industry	Skilled*	Unskilled	Total
Agriculture labour	15	76	91
	40.5%	29.6%	31.0%
Hotels	1	22	23
	2.7%	8.6%	7.8%
Farmer	17	13	30
	45.9%	5.1%	10.2%
Construction work	0	54	54
	0.0%	21.0%	18.4%
Domestic worker	0	21	21
	0.0%	8.2%	7.1%
Petty trader	4	29	33
	10.8%	11.3%	11.2%
Security/protection services	0	2	2
	0.0%	0.8%	0.7%
Textiles	0	17	17
	0.0%	6.6%	5.8%
Leather	0	5	5
	0.0%	1.9%	1.7%
Art/Painting	0	1	1
	0.0%	0.4%	0.3%
Driver	0	4	4
	0.0%	1.6%	1.4%
Cleaner/Attender	0	5	5
	0.0%	1.9%	1.7%
Mechanical/Technical work	0	1	1
	0.0%	0.4%	0.3%
Cattle Rearing	0	1	1
	0.0%	0.4%	0.3%
Carpentry	0	1	1
	0.0%	0.4%	0.3%
Barber	0	2	2
	0.0%	0.8%	0.7%
Household repair/plumbing/carpentry	0	1	1
	0.0%	0.4%	0.3%
Fisherman	0	2	2
	0.0%	0.8%	0.7%
Total	37	257	294

*The way in which 'skilled' workers enter the frequency distribution of the industry for unskilled workers in their previous job is as follows: Skilled 'workers' are also classified as 'unskilled' since they are usually workers with a specific set of skills such as driving, cooking, knowledge of operation of certain machines (e.g., photocopier, laser printing) and so forth.

Having noted these socio-demographic and economic characteristics of migrants and the non-migrants, the next chapter presents the reasons for migration, and compares them with evidence from Census' D3 tables for Bangalore. The next chapter also presents the results from the probit estimation of push versus pull factors as dependent on various socio-demographic and economic characteristics of migrants. Finally it dwells upon the migrants' willingness to go back to their place of origin and if so what conditions would be necessary. It summarizes all findings and presents the policy implications of the work.

Chapter 5: Reasons for Migration

While the previous chapter compared the socio-economic characteristics and demographics of the migrants and non-migrants, this chapter compares the migrants (the skilled and unskilled) in terms of various characteristics relating to migration – the year of migration, the reasons thereof, their previous job and income. This chapter also presents results from the econometric work we performed to understand the determinants of push versus pull factors in migration decisions.

Table 5.1 summarizes the year of migration for skilled and unskilled migrants. Looking at the range, migration into Bangalore has taken place over the last 10 years for skilled migrants and over the last 9 years for unskilled migrants.[19]

Table 5.1: Comparison of Year of Migration, Skilled and Unskilled Migrants

Skilled/Unskilled	N	Minimum	Maximum	Mean	Median
Skilled Migrants	303	1999	2008	2004.21	2004.00
Unskilled Migrants	305	2000	2008	2003.80	2004.00
All migrants	608	1999	2008	2004.00	2004.00

Given the year of migration does not speak for the exact duration of stay of the migrants, we computed the duration of stay for migrants, both skilled and unskilled, taking into account the month in which they migrated. Table 5.2 summarizes the duration of stay (in months) for the skilled and unskilled migrants.

Table 5.2: Duration of Stay (in Months), Skilled and Unskilled Migrants

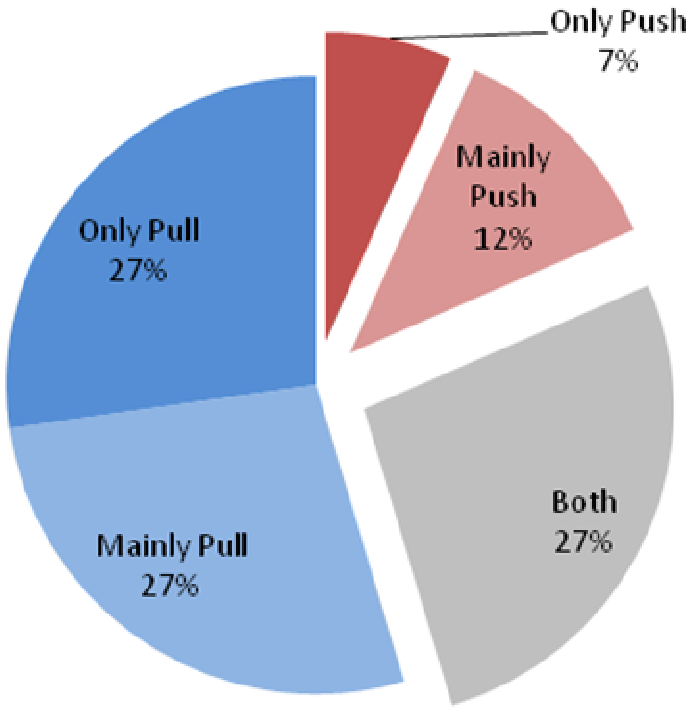
Skilled/Unskilled	N	Minimum	Maximum	Mean	Median
Skilled migrants	303	4	116.00	56.19	56.00
Unskilled migrants	305	7	112.00	61.85	61.00
All	608	4	116.00	59.03	59.00
t-value, migrants vs. non-migrants			-2.603*		
*Statistically significant at the 1% level implying that on an average unskilled migrants have been in the city for longer period of time.					

[19] As described earlier, we had initially confined ourselves to those who had migrated into Bangalore during the last 5 years, but the hit rate of respondents with this criterion during the pre-testing and pilot was very low, with the result that we had to relax this to those who migrated into Bangalore during the last 10 years.

The table shows that on average, the unskilled migrants have stayed longer in Bangalore (average of 5.15 years) when compared with the skilled migrants (4.7 years), which is statistically significant. The minimum stay in Bangalore for the unskilled migrants is higher (7 months) when compared with that for skilled migrants (4 months).

Figure 5.1 summarizes the reasons for migration from rural areas into Bangalore. The reasons for migration included both push and pull factors.[20] Examples of push factors are inadequate non-agricultural jobs in the place of origin, inability to grow much grains/crops, lack of adequate income, large size of household, small size of agricultural holding and poor public services (such as roads, public transport, water supply or sanitation). Pull factors refer primarily to the attraction of the urban area such as income earning opportunities including jobs, the promise of higher expected income, marriage and the existence of family and support networks to help find a job.

Figure 5.1: The Role of Push and Pull Factors in Rural-Urban Migration

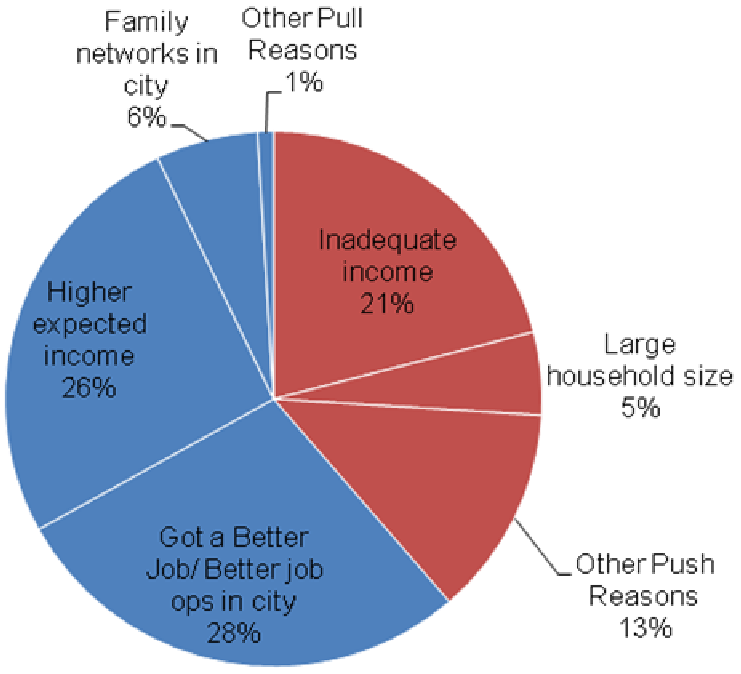


[20] Without giving the respondent clues about these factors, we merely asked them an open ended question about the reasons for their migration.

Observe from Figure 5.1 that only a small part of the population (19%) is pushed out of villages and that a much larger proportion (54%) gets pulled. However, what is worthy of note is that a majority of the population (27%) is influenced equally by **both** push and pull factors while deciding to migrate from rural areas to the cities.

When we look at the specific individual reasons for migration (see Figure 5.2), we find that the majority cite economic reasons (better job opportunities in cities (28%) and higher expected income (26%)) as the cause of their migration to cities. This is followed by inadequate income (21%).

Figure 5.2: Specific Reasons for Rural-Urban Migration



We compare our findings with those reported in the D3 tables for Bangalore (see Table 5.3).

Table 5.3: Reasons for Migration from Rural Areas into Bangalore, D3 Tables

Reason for Migration		All durations	%	Duration < 10 years*	%
	Persons	831,893		374,351	
	Males	470,988		211,989	
	Females	360,905		162,362	
Work/employment	Persons	324,528	39.01%	164,292	43.89%
	Males	287,775		140,563	
	Females	36,753		23,729	
Business	Persons	18,510	2.23%	7,010	1.87%
	Males	16,652		6,147	
	Females	1,858		863	
Education	Persons	22,919	2.76%	15,083	4.03%
	Males	18,129		11,478	
	Females	4,790		3,605	
Marriage	Persons	159,173	19.13%	66,380	17.73%
	Males	4,598		1,783	
	Females	154,575		64,597	
Moved after birth	Persons	38,954	4.68%	15,126	4.04%
	Males	21,467		7,868	
	Females	17,487		7,258	
Moved with household	Persons	161,192	19.38%	77,960	20.83%
	Males	64,218		29,053	
	Females	96,974		48,907	
Others	Persons	106,617	12.82%	28,500	7.61%
	Males	58,149		15,097	
	Females	48,468		13,403	

Source: D3 Tables, Census of India

*This was arrived at adding those rural to Bangalore migrants with duration of residence in Bangalore for less than a year, those migrating from rural areas with duration of residence 1-4 years and those with duration of residence in Bangalore between 5-9 years.

For those who migrated from rural areas into Bangalore, Table 5.3 summarizes the reasons for migration into Bangalore for all durations of residence and for those that lived 1-10 years (criterion used here). Our findings are consistent with those we find from D3 for Bangalore. For instance, taking into account only those migrants who migrated to Bangalore during the last 9 years, from a rural area (as done here), the D3 tables show that nearly 44 percent (with duration of residence in Bangalore less than 10 years) (or 39 percent of those with all durations of residence) moved for reasons of work or employment. A majority of migrants in our sample also migrated primarily due to economic reasons. Nearly 96% of respondents in our sample moved out of their villages into the urban area because of at least one these economic reasons: lack of adequate

income or the lack of adequate non-agricultural jobs in rural areas, and higher expected income or better job opportunities in urban areas. An additional one-fifth of rural-Bangalore migrants moved along with their household, and 18 percent moved because of marriage (in the Census D3 tables), whereas in the case of our survey, a smaller proportion (2%)) moved because they got married.

We discussed in the chapter on methodology that there could be a lot of confounding effects between the push and pull factors. An inadequate income, for example, can be a true push factor in the absence of a higher expected income in the city. Similarly, a higher expected income can be a purely pull factor in the presence of an adequate rural income. The same applies to a lack of non-agricultural jobs in rural settings and better job opportunities in the cities. It is only in the case when the two overlap that one cannot tell if it was neither a push nor a pull factor, or both. The multiple response scheme used in the survey conducted of migrants takes care of this as the survey-takers were in no way forced to choose one instead of the other. Therefore, the ones who chose both a "push" and a corresponding "pull" factor can be classified as a set of people for whom both the push and pull factors were important for migration.

To study how the multiple responses are distributed across the migrant population surveyed, the multiple response data was analysed using MS Excel and SPSS. Venn diagrams were prepared for each of the two push-pull pairs mentioned above. See figures 5.3 and 5.4.

Figure 5.3: Overlap of Push and Pull – The case of Job Opportunities

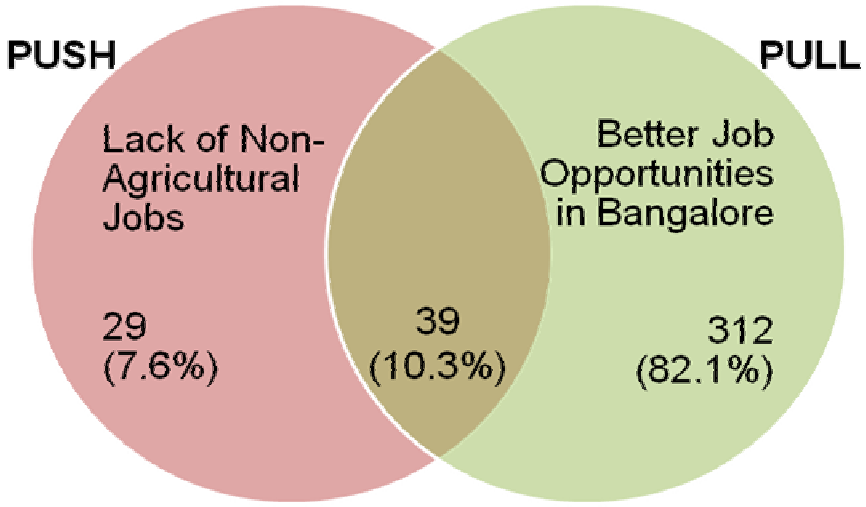
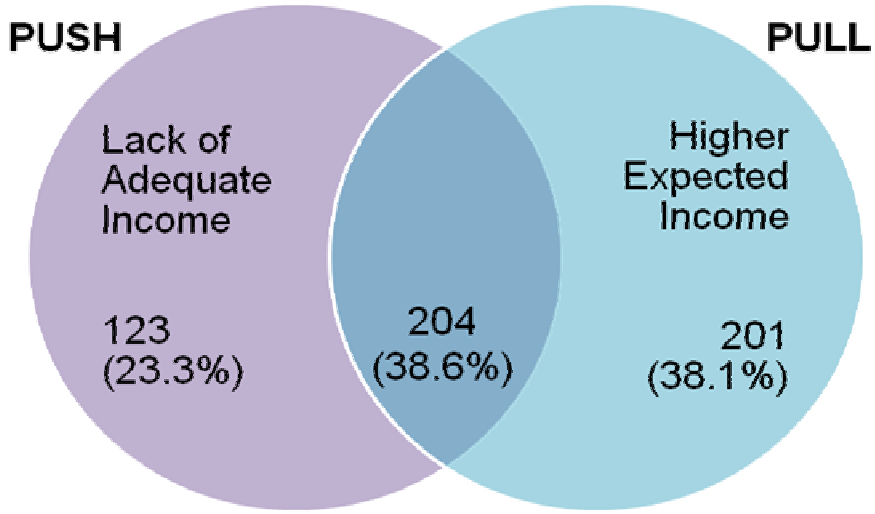


Figure 5.4: Overlap of Push and Pull Factors -The case of Income



Given a total of 608 migrants were surveyed, around three-fifths of them listed at least one of the two: lack of non-agricultural jobs (push) or better job opportunities in Bangalore (pull). Among them, 82% chose only the pull factors, 8% chose only the push factors, and 10% chose both. In the income related pair, more than five-sixths of the migrants surveyed chose at least one of the two: lack of adequate income (push) or higher expected income after migration (pull). Among them, 38% chose only the pull factor, 23% only the push factor and 38% chose both. This shows that there is perhaps a greater semantic overlap between the push and pull factors here. However, we can still see the fraction of people for whom it is a purely pull and a purely push factor.

We must note that these are just 4 out of 12 listed reasons for migration, 6 of them being push, and 6 pull. We can extend the idea of demarcating migrants by "only push", "only pull" and "both push and pull" subtypes to cover all twelve listed reasons.[21]

Over and above the reasons for migration, in our primary survey, we also probed the migrant respondents regarding why they chose Bangalore specifically so that it could give us additional insights. But since these reasons are not very different from those reported for migration into any city, we do not report them here.

We computed the income differential accruing to the migrant comparing the income on their present job to that in their previous job. Based on the income differential, it is indeed possible to test Todaro's hypothesis regarding the income differential as a reason for migration.[22] Table 5.4 summarizes the descriptive statistics for the income differential, measured as the difference between earning on the current job minus that on the previous job. The table shows that the skilled migrants experience greater increases in their income (to the extent of Rs.7,000 per month) upon migration when compared with their unskilled counterparts (who experience only an increase of Rs.1,670 per month on average). There are some skilled migrants who have experienced an increase of nearly Rs.50,000 per month after their migration, compared with a maximum income differential of only Rs.10,000 per month for unskilled migrants, to be expected. Some skilled migrants saw a decline in their income to the extent of Rs.4,000, whereas some unskilled migrants saw a decline in their income to the extent of only Rs.2,000 after their move to Bangalore. Even the median income differential of the skilled migrants is much higher (being Rs.6,000 per month) than that of the unskilled migrant (which is only Rs.1,500 per month).

Table 5.4: Income Differentials Across Current and Previous Jobs, Skilled and Unskilled Migrants

	N	Minimum	Maximum	Mean	Median
Skilled migrants	296	-4,000	50,000.00	7,209.12	6,000
Unskilled migrants	297	-2,000	10,000.00	1,670.24	1,500
Total	593	-4,000.00	50,000.00	4,435.01	3,000
T value	15.959*				
	*Statistically significant at the 1% level				

Based on Todaro's prediction, it should be the case then that pull factors are more important for the skilled migrants as a motivation to migrate since the economic benefits from migration appear to be greater for them than for their unskilled counterparts. This seems to be true, based on an analysis of the reasons for migration (see Figure 5.2).

[21] A data caveat with the multiple response scheme is that the reasons chosen for migration were not ranked according to their importance in making the decision to migrate. Therefore, we are forced to treat all chosen reasons to be of equal importance.

[22] It should be remembered that Todaro's model is based on the *expected* income differential rather than the *actual* income differential, which we are discussing here.

Results from Probit Estimation

In this section, we report the results from the probit estimation of push versus pull factors as being dependent on a variety of socio-demographic and economic characteristics as described by equation (1). The dependent variable, as explained in the chapter on methodology, is $Y_{i.}$ This variable indicates the degree to which the decision was based on purely pull factors (in which case Y_i takes a value of 1) or based purely on push factors (in which case Y_i takes a value of 0). The coding of various variables is given in Table 5.5.

Table 5.5: Coding of Variables in the Probit model

Variable	Code or Range
Dependent variable Y_i	Range between 0 to 1 (0: Push; 1: Pull)
Gender	Male -1 and female – 0
Religion	Hindu – 1 and others (Christians and Muslims) - 0
Social group	General – 1 and others (SC/ST) – 0
Education	Range between I to 12
Number of family members	Continuous
Marital status	Single – 1 and married - 0
Origin of the state	Karnataka – 1 and others - 0
Earning on job at migration	Continuous
Age at migration	Continuous

Table 5.6: Probit Model of Push Versus Pull Factors in Migration

Parameter	Estimate	Std. Error	Z	Sig.
Intercept	0.62*	0.23	2.67	0.01
Gender of the chief wage earner	-0.35*	0.15	-2.40	0.02
Religion of the chief wage earner	-0.14	0.11	-1.32	0.19
Social group status of the chief wage earner	0.17*	0.08	2.03	0.04
Completed education level	0.05**	0.02	3.47	0.00
Number of family members - Total	-0.05*	0.02	-2.31	0.02
Name of the chief wage earner's state (Karnataka=1; Other states=0)	-0.15*	0.07	-2.19	0.03
Chief wage earner's monthly earning in the previous job	0.00	0.00	-1.36	0.17
Age at migration	0.00	0.00	-0.07	0.94
Marital status of the chief wage earner	0.07	0.09	0.75	0.45

**Statistically significant at the 1 percent level.
* Statistically significant at the 5 percent level.

Table 5.6 summarizes the results from the probit estimation. The explanatory variables are gender, religion (Hindu versus others), social group status (general versus scheduled castes/scheduled tribes), completed education level, family size, state of origin (from within the state of Karnataka versus others), age and income both at migration and migrant's marital status. We expect that relatively more marginalized groups such as SC/STs, minorities such as Muslims/Christians, the less educated are more likely to be 'pushed' out of rural areas, whereas the better educated would be 'pulled' towards opportunities in urban areas such as Bangalore.

The gender of the chief wage earner has a statistically significant and negative impact on the push versus pull factor. Thus, women are more likely to be 'pulled' either by marriage, by the attraction of job opportunities, or higher expected income in the city. By the same token, men are more likely to be 'pushed' out of the rural area, due to the non-availability of non-agricultural jobs, family size or lack of adequate income.

The social group status of the migrant has a positive and statistically significant impact on the push versus pull factor. This implies that migrants in the general category (not SC or ST) are more likely to be 'pulled' towards urban areas rather than 'pushed' out of rural areas. This is reasonable to expect because those in the general category are more likely to be educated, more skilled and such migrants are usually attracted by job opportunities and the prospect of higher income in the city.

The sign of the parameter estimate on the completed education comes as no surprise. It shows that higher educated migrants are likely to be more 'pulled' toward the city for its networks, income earning opportunities, and availability of jobs. This also implies that the less educated are more likely to be 'pushed' out of the rural areas

Higher family size (consisting of both adults and children) induces 'push' out of the rural area, which is natural to expect, holding other things constant. 'Push' can be induced due to the lack of adequate income caused by the non-availability of non-agricultural jobs.

We also looked for a correlation between current family size and "large size of household" listed as a reason for migration. We did this because a high positive correlation implies that people who migrate because of a large household size have an appropriately large number of family members migrate with them to the cities.

A high negative correlation, on the other hand implies that migrants who are leaving the rural areas because of a large family tend to make sure that their household size in the city is of a more manageable number. The Pearson coefficient for this pair was calculated to be 0.037, giving no evidence for any correlation, positive or negative. This would mean that perhaps both mechanisms operate or neither, with the current household size not being influenced by the past.

Finally, those from Karnataka are likely to be 'pushed' out of their rural areas into the city, whereas migrants from other states are more likely to be 'pulled' towards the city for its promise of better job opportunities.

Most of these findings are as expected, except the finding that the income at migration has no statistically significant impact on push or pull, following Todaro's model. We would have expected previous income to have acted as a 'push' factor (which implies a negative sign on the parameter estimate).

We investigated this further to examine whether a cited "lack of adequate income" as a reason for migration by the people surveyed correlated in any way with their actual previous income in the rural area. Interestingly, we found that there was no correlation, with a low Pearson coefficient of 0.081. The coefficient did not increase even when we split the population into skilled and unskilled migrants. This tells us that the lack of adequate income cited is almost entirely subjective, and dependent on the perception of the migrant, as opposed to an objective, universal basis that could be drawn for inadequacy.

We also computed a correlation for the duration of stay (of migrants) in the city, with their current earning. The Pearson coefficient was only **-0.108**. For sake of completeness we also ran the correlation between duration of stay and the income differential, which gave a Pearson coefficient of only **-0.067**. Therefore we find no correlation of any note.

Problems with Settling Down and Intentions to Return to Place of Origin

With a view to understanding the implications of migration, we asked the migrants whether they would be willing to go back to their place of origin. If yes, what were the conditions required for them to go back. We further checked whether the migrants faced any problem to settle down in Bangalore after they migrated and the nature of the problem.

First, Table 5.7 summarizes whether the migrants faced any problem to settle down in Bangalore, to understand if that has any policy implications. While a majority of skilled (92 percent) and unskilled (95 percent) migrants do not face any problem to settle down in Bangalore, surprisingly, a relatively larger proportion of skilled migrants (8 percent) face problems in settling down.

Table 5.7: Problems to Settle Down, Skilled and Unskilled Migrants

Problem to Settle Down	Skilled	Unskilled	Total
Does migrant face any problem to settle: Yes	25	15	40
	8.3%	4.9%	6.6%
Does migrant face any problem to settle: No	278	290	568
	91.7%	95.1%	93.4%
Total	303	305	608
	100.0%	100.0%	100.0%
T value	-1.657*		
	*Not statistically significant		

We probed into the nature of problems faced by both the skilled and unskilled migrants in settling down (see Table 5.8). Apparently, water supply seems to be a problem with both a majority of both the skilled and unskilled migrants citing this to be a problem in their settling down. For skilled migrants, finding suitable housing and finance-related issues are other problems, whereas with the unskilled migrants, drainage, sanitation and obtaining the ration card are problems. Thus public services such as water supply, drainage and sanitation, being poor in their level and quality, are major obstacles for migrants to settle down.

Table 5.8: Nature of Problems Faced, Skilled and Unskilled Migrants

Nature of Problem	Skilled		Unskilled		Total	
	Cases	%	Cases	%	Cases	%
Water problem	10	40.0%	3	20.0%	13	32.5%
House problem	7	28.0%	6	40.0%	13	32.5%
Financial problem	2	8.0%	4	26.7%	6	15.0%
Electricity shortage	3	12.0%	1	6.7%	4	10.0%
Job issues	3	12.0%	NA	NA	3	7.5%
Ration card problem	1	4.0%	1	6.7%	2	5.0%
Traffic	1	4.0%	NA	NA	1	2.5%
Drainage & Sanitation	NA	NA	1	6.7%	1	2.5%
Problem finding a Job	NA	NA	3	20.0%	3	7.5%
Food problem	NA	NA	1	6.7%	1	2.5%
Language problem	NA	NA	2	13.3%	2	5.0%
Total	25	200.0%	15	213.3%	40	205.0%

Table 5.9 summarizes the desire of skilled and unskilled migrants to go back to their place of origin eventually. Overall, a majority of both skilled (84 percent) and unskilled migrants (83 percent) would not like to go back to their place of origin. This is consistent with the fact that they do not face any major problems to settle down in Bangalore once they move (Table 5.7).

Table 5.9: Willingness to Go Back to Place of Origin, Skilled and Unskilled Migrants

Willingness to Go Back	Skilled	Unskilled	Total
Would the chief wage earner go back: Yes	49	53	102
	16.2%	17.4%	16.8%
Would the chief wage earner go back: No	254	252	506
	83.8%	82.6%	83.2%
Total	303	305	608
	100.0%	100.0%	100.0%
T value	0.397*		
	*Not statistically significant		

Nevertheless, in order to understand the implications for migration-originating regions, we asked the respondents regarding the conditions necessary in their place of origin to persuade them to go back. Table 5.10 summarizes the conditions necessary for migrants to go back to their place of origin.

Table 5.10: Conditions Necessary for Migrants to Return to Their Place of Origin

Conditions	Skilled		Unskilled		Total	
	Cases	%	Cases	%	Cases	%
Better income earning opportunities availability of non-agricultural jobs	15	30.6%	17	32.1%	32	31.4%
Higher land acreage for cultivation	4	8.2%	15	28.3%	19	18.6%
Make available better yielding varieties of seeds	7	14.3%	10	18.9%	17	16.7%
Facilitate better learning skills through training	11	22.4%	9	17.0%	20	19.6%
Facilitate obtaining better finance	35	71.4%	33	62.3%	68	66.7%
Better public services: water	16	32.7%	9	17.0%	25	24.5%
Better road connectivity	8	16.3%	NA	NA	8	7.8%
Others specify	1	2.0%	NA	NA	1	1.0%
Better educational facilities	NA	NA	1	1.9%	1	1.0%
Total	49	198.0%	53	177.4%	102	187.3%

A majority of both skilled (71 percent) and unskilled (62 percent) migrants wanted facilities to obtaining better finances in their place of origin in order to enable them to go back. Another 31 percent of skilled migrants and 32 percent of unskilled migrants wanted better income earning opportunities such as the availability of non-agricultural jobs in their place of origin. In the case of skilled migrants, an additional 33 percent wanted better public services like water. In the case of the unskilled migrants, an additional 28 percent wanted higher land acreage for cultivation. Thus Table 5.12 makes it very clear that the initiatives both skilled and unskilled migrants would like addressed in the place of origin are primarily the availability of better finance facilities and availability of non-agricultural jobs. Beyond this, unskilled migrants focus on agricultural aspects for better conditions to enable them to go back, whereas the skilled migrants had better services on their wish list.

Summary of Findings and Policy Implications

In this chapter, we summarize the findings from Chapters 4 and the current one. Overall, migrants are significantly[23] younger than non migrants with the average migrant age being 32.9 years compared to the average non-migrant age of 36 years. We also found a statistically significant difference between the family size of the migrants and non-migrants, with the overall family size (or number of children) of the non-migrants being higher than that of migrants on average. We also found a statistically significant difference between the migrants and non-migrants on education. On average migrants are more educated than the non-migrants. In most other respects, no statistically significant demographic differences were found amongst the migrants and non-migrants surveyed.

When comparing the skilled migrants and the unskilled migrants, a lot more demographic differences emerge. The skilled migrants are much younger than the unskilled migrants at age 31.8 years against 34 years (at 99% confidence level).

There also seem to be a greater proportion of Muslims and Christians among the unskilled migrants. Interestingly, looking at the interplay of push and pull factors for migrants by religion tells us that there is a greater importance of push factors for Christians compared to the overall population, but markedly lesser importance of the same for Muslims.

The social status of the skilled migrants is much higher than that of the unskilled migrants, with a far greater proportion of SCs and STs present in the latter.

Household size statistics and marital status across skilled and unskilled migrants paint an interesting picture. A much smaller proportion of the unskilled migrants are unmarried (at 11%) when compared to the proportion of single skilled migrants (33%). This makes sense given that the average age of the skilled workers is also lesser than that of the unskilled migrants. However, there are on average 2.8 adults per household of skilled migrants, greater than the number of adults per household among unskilled migrants (2.4). Conversely, skilled migrant households have only 1.2 children on average, compared to 1.7 in unskilled migrant households. This implies that skilled migrants often support more adult family members such as siblings and parents, whereas unskilled migrants are more often involved in raising their own children.

[23] All claims here are made with a confidence level of >99% probability that the null hypotheses are false.

Pulling the findings from the probit estimation, we find women are primarily 'pulled' toward urban areas for their job opportunities and higher expected income. We find that the lower the level of education of the migrant, the greater the importance of the push factors whereas with increasing level of education of the migrant, pull factors become more important in migration.

Migrants in the general category (not SC or ST) are more likely to be 'pulled' towards urban areas rather than 'pushed' out of rural areas. Higher family size (consisting of both adults and children) induces 'push' out of the rural area, which is natural to expect, holding other things constant. Most of these findings are as expected, except the finding that the income at migration has no statistically significant impact on push or pull, following Todaro's model. We would have expected previous income to have acted as a 'push' factor (which implies a negative sign on the parameter estimate).

Finally when we examine migration based on the state of origin, migrants from within the state (Karnataka) are 'pushed' (by lack of adequate income) as well as pulled (with the promise of better job opportunities and higher expected income) toward urban magnets. This suggests that new farm employment opportunities such as those created by NREGS and non-farm employment opportunities such as those contained in the growth centres program[24] (see Sridhar (2006)) have to be increased. Already the news is that the government of India might spend 41 percent more to create rural jobs in 2009 under the NREGS, following a nationwide assessment of village administrations' ability to undertake work.[25] There is some anecdotal evidence that NREGS has indeed stemmed migration. Contractors have had to raise wages in cities to attract workers from the surrounding countryside. Even states like Bihar are sending fewer agricultural workers to work in Punjab and elsewhere (see Ghate 2009). What NREGS has reduced most is seasonal distress migration of whole families including women and children who can

[24] The Government of India introduced the "growth centres" (GCs) programme in June 1988 to give impetus to industrialisation in backward regions (http://dipp.nic.in/growth.htm). According to this programme, 71 GCs were set up throughout the country that were to be allotted to the various states on the basis of combined criteria consisting of area, population and the extent of industrial backwardness. These GCs provide basic industrial infrastructure like power, water, telecom, and banking to enable the states to attract industries. See Sridhar (2006) for details of this program.

[25] About Rs.48,000 crore will be made available to gram panchayats or local bodies which is expected to boost rural demand for consumer goods, cement and steel. Gram panchayats will spend the amount to create productive assets like roads, bridges and other facilities and give 100 days of work for every rural household whose adult members volunteer to work.

now stay back in their villages to the huge benefits of the children's health, education and nutrition. Thus while the NREGS is focused on short-term employment, what we are interested in, is long term employment and employability.

Some recent research also suggests that only a comprehensive policy package complemented by extensive infrastructural facilities, financial and technological support, especially for the local micro (labor-intensive) enterprises engaged in processing, storing, grading and packaging, can boost non-farm production and service activities involving indigenous resources and utilizing local labor (see Chakrabarti and Kundu 2009). Thus the importance of rural infrastructure including connectivity to markets, good roads, telecommunications, and electricity cannot be emphasized enough. It is in this context that the government's Bharat Nirman program has to be strengthened.

Our findings also imply that the level of public services has to be improved in the rural areas to stem the flow of migration. This implies that a large number of small towns have to be developed closer to rural areas to enable rural residents experience the benefits of city living without having to migrate to a distant and large urban area. This is consistent with the findings in Sridhar (2001). If governments are willing to invest in improving the physical infrastructure in small and medium towns, it is possible that they can compete as alternative sources of cutting down on operational costs for industries. In such instances, firms have incentives to locate in small towns as they can save on real estate and infrastructure costs. Discussions with manufacturing firms indicate that the availability of all infrastructure (e.g., power, roads and telecom) at one time is an important factor attracting them when compared to areas where infrastructure comes to be available only in phases (e.g., first power, then telecom, followed by roads). This has direct relevance for the Ministry of Urban Development's program for smaller and medium towns – Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) which is one of the components of the JNNURM.

In smaller and medium-sized towns, firms will also be able to get adequately trained labor force at relatively low cost. This is because the cost-of-living adjusted wage is itself lower in smaller and medium towns, holding quality constant. Industries can exploit this advantage.

Finally, as Sridhar (2001) highlights, the development of smaller and medium towns closer to rural areas might imply that they are self-contained communities, but eventually automotive ties have to develop between urban areas and their satellite towns. This implies that development of roads and highways that has been neglected for a long time, gets the attention it needs.

Everything said and done, it has to be borne in mind that closing the doors of cities for immigration would not be a solution in a democracy such as India. In a democracy like India, attempts should be made at the policy level to internalize the social costs created by migrants. From an efficiency point of view, if indeed the public service delivery problems highlighted at the beginning of this report were in a large part aggravated by migrants, the migrants need to at least partially compensate for the social costs they create through payment of a higher price for public services. Indeed water supply is the most important one and the marginal costs indicated by Sridhar and Mathur (2009) would be the starting point.

Appendix A: Filter Questions
Filter Questions (Skilled and Unskilled Non-Migrants)

1.1	Name of the zone	North 1 South 2 Central 3
1.2	Ward Name and Number	_____ ☐☐☐
1.3	Name and address of the Chief Wage Earner (CWE)/Head of Household (HoH)	_____ _____ _____ _____ Phone_____ (Mobile/ Landline)

Filter Questions:

Number	Question	Response
2.1	Which is the CWE/HoH's hometown?	Name of the place_____ State _____ If Bangalore (Skip to Q 2.3) If not Bangalore, go to Q2.2
2.2	Has the CWE/HoH lived in Bangalore during the last 10 years or more?	Yes (Continue with survey) ……..1 No (Terminate) 2
2.3	What is the occupation of CWE/HoH? ENUMERATOR: SKILLED WORKERS ARE THOSE WHO HAVE SPECIFIC SKILLS IN INDUSTRY (E.G., CRAFTSMEN, ARTISANS, MACHINE OPERATORS, ELECTRICIANS, MECHANICS, DRIVERS AND SO ON). UNSKILLED WORKERS ARE THOSE WHO DO NOT HAVE SPECIFIC SKILLS (E.G., SWEEPERS, CONSTRUCTION WORKERS, CLEANERS, PEONS, HAWKERS VENDORS, PETTY TRADERS, DOMESTIC WORKERS, COOKS, AND SO FORTH)	ENUMERATOR: WRITE VERBATIM AND CODE _____ Unskilled worker 1 } **TO BE CONSIDERED AS UN-SKILLED FOR FINAL ELECTION** Skilled worker 2 Shopkeeper/Shopowner 3 Self employed professional 4 Clerical/salesman 5 Officer/Executive 6 Software Professional 7 Other (Specify) _____ 8 Unemployed 9 } **TO BE CONSIDERED AS SKILLED FOR FINAL SELECTION**
2.4	Interviewed by	

Filter Questions (Skilled Migrants)

1.1	Name of the zone	North 1 South 2 Central 3
1.2	Ward Name and Number	_____ ☐☐☐
1.3	Name and address of the Chief Wage Earner (CWE)/Head of Household (HoH)	_____ _____ _____ _____ Phone_____ (Mobile/ Landline)

Filter Questions:

Number	Question	Response
2.1	Is the CWE/HoH a migrant into Bangalore during the last 0-5 years?	Yes (Continue with questionnaire) ……1 No (Terminate) ……..2
2.2	Which is the CWE/HoH's hometown?	Name of the place_____ State _____ If Bangalore (Terminate) If not Bangalore (Continue with questionnaire)
2.3	Is the CWE/HoH a government or nationalized bank** employee?	Yes (Terminate)……1 No (Continue)……2
2.4	What is the occupation of CWE/HoH? ENUMERATOR: SKILLED WORKERS ARE THOSE WHO HAVE SPECIFIC SKILLS IN INDUSTRY (E.G., CRAFTSMEN, ARTISANS, MACHINE OPERATORS, ELECTRICIANS, MECHANICS, DRIVERS AND SO ON). UNSKILLED WORKERS ARE THOSE WHO DO NOT HAVE SPECIFIC SKILLS (E.G., SWEEPERS, CONSTRUCTION WORKERS, CLEANERS, PEONS HAWKERS VENDORS, PETTY TRADERS, DOMESTIC WORKERS, COOKS AND SO FORTH)	ENUMERATOR: WRITE VERBATIM AND CODE _____**TO BE CONSIDERED AS UN-** Unskilled worker 1 **SKILLED FOR** Skilled worker 2 **FINAL** Shopkeeper 3 **SELECTION** Self employed professional 4 Clerical/salesman 5 **TO BE** Officer/Executive 6 **CONSIDERED** Software Professional 7 **AS SKILLED** Other (Specify) _____ 8 **FOR FINAL** Unemployed 9 **SELECTION**
2.5	Interviewed by	

**List of nationalized banks provided.

Filter Questions (Unskilled Migrants)

1.1	Name of the zone	North 1 South 2 Central 3
1.2	Ward Name and Number	_____ ☐☐☐
1.3	Name and address of the Chief Wage Earner (CWE)/Head of Household (HoH)	_____ _____ _____ _____ Phone_____ (Mobile/ Landline)

Filter Questions:

Number	Question	Response
2.1	Is the CWE/HoH a migrant into Bangalore during the last 0-5 years?	Yes (Continue with questionnaire) ……..1 No (Terminate) ……2.
2.2	Which is the CWE/HoH's hometown?	Name of the place_____ State _____ If Bangalore (Terminate) If not Bangalore (Continue with questionnaire)
2.3	From where has the CWE/HoH migrated to Bangalore?	Name of the place_____ State_____
2.4	Has the CWE/HoH migrated from a rural area? **DETERMINE BASED ON ANSWER TO 2.3.***	Yes (Continue with questionnaire) ……..1 No (Terminate) ……..2
2.5	Is the CWE/HoH a government or nationalized bank** employee?	Yes (Terminate)……..1 No (Continue)…… 2

2.6	What is the occupation of CWE/HoH? ENUMERATOR: SKILLED WORKERS ARE THOSE WHO HAVE SPECIFIC SKILLS IN INDUSTRY (E.G., CRAFTSMEN, ARTISANS, MACHINE OPERATORS, ELECTRICIANS, MECHANICS, DRIVERS AND SO ON). UNSKILLED WORKERS ARE THOSE WHO DO NOT HAVE SPECIFIC SKILLS (E.G., SWEEPERS, CONSTRUCTION WORKERS, CLEANERS, PEONS HAWKERS VENDORS, PETTY TRADERS, DOMESTIC WORKERS, COOKS AND SO FORTH)	ENUMERATOR: WRITE VERBATIM AND CODE _____ Unskilled worker 1 — **TO BE CONSIDERED AS UN-SKILLED FOR FINAL SELECTION** Skilled worker 2 — **TO BE CONSIDERED AS UN-SKILLED FOR FINAL SELECTION** Shopkeeper 3 Self employed professional 4 Clerical/salesman 5 Officer/Executive 6 Software Professional 7 Other (Specify) _____ 8 Unemployed 9 **TO BE CONSIDERED AS SKILLED FOR FINAL SELECTION**
2.7	Interviewed by	

***FOR ENUMERATORS: A RURAL AREA IS A PLACE WHICH IS NOT A DISTRICT HEADQUARTERS. REFER TO PROVIDED LIST OF DISTRICTS HEADQUARTERS FOR ALL STATES IN THE COUNTRY.**

****List of nationalized banks provided.**

Appendix B: Survey of Migrants

Survey for "Is it Push or Pull? Recent Evidence from Migration in India"

I am from ORG Centre for Social Research and I have come on behalf of Public Affairs Center in Bangalore. We are conducting a survey about migrants in Bangalore. We are attempting to understand the reasons and motivation behind migration into Bangalore. Your responses to this short survey will be used for research purposes only and will not be disclosed to anyone. Please cooperate with this survey by answering all the questions.

SECTION I: IDENTIFICATION (TO BE FILLED BY ENUMERATOR)

1.1	Name of the zone	North 1 South 2 Central 3
1.2	Ward Name and Number	
1.3	Type of the ward	Slum 1 General 2
1.4	Name of the Locality	
1.5	Interviewed by	
1.6	Supervisor	
1.7	Date of Interview (**DD**/**MM**/**YY**)	☐☐ ☐☐ ☐☐
1.8	Time of interview **(Hour**/**Min)**	Starting time ☐☐☐☐ (Use 24-hour clock) Ending time ☐☐☐☐ (Use 24-hour clock) Total Duration _____Min
1.9	Accompanied	Yes 1 No 2
1.10	Back checked	Yes 1 No 2
1.11	Scrutinized By	
1.12	PAC Supervisor's signature	

SECTION II: BACKGROUND INFORMATION

SL No	Questions	Response	Skip to
2.1	Name and phone number of the respondent (ENUMERATOR: HOUSEHOLD HEAD (HoH) OR CHIEF WAGE EARNER (CWE) TO RESPOND, IF HoH or CWE NOT PRESENT, SPOUSE / PARENTS/ SIBLING, TO ANSWER THE QUESTIONS).	Phone: _____	
2.2	Relationship with the chief wage earner	Self 1 Spouse 2 Sibling 3 Parent 4 Relative 5 Others (specify)_____ 6	
2.3	Name of the chief wage earner		
2.4	Age of the chief wage earner (ENUMERATOR: IN COMPLETED YEARS)	☐☐	
2.5	Gender of the chief wage earner	Male 1 Female 2	
2.6	Religion of the chief wage earner	Hindu 1 Muslim 2 Christian 3 Other (Specify)_____ 4	
2.7	Social group status of the chief wage earner (ENUMERATOR: IF OTHER BACKWARD CASTE (OBC) OR OTHERS, INCLUDE IN GENERAL)	SC 1 ST 2 General 3	
2.8	Completed education level of the chief wage earner	Illiterate 1 Literate without formal education 2 Primary (1 to 4) 3 Middle (5 to 7) 4 Secondary (8 to 10) 5 Higher secondary (PUC) 6 Technical certificate course (ITI) 7 Technical diploma 8 General graduate 9 Technical graduate 10 General post graduate 11 Technical post graduate 12 Others (please specify)_____ 13	
2.9	Marital status of the chief wage earner	Single 1 Married 2 Divorced 3 Separated 4 Widowed 5	

2.10	Number of family members **(**ENUMERATOR: INCLUDE PERSONS BELOW 18 YEARS AS CHILDREN**)**	Adults Children Total	
2.11	Status of the dwelling of the chief wage earner	Rented/leased 1 Owned 2 Staying with others 3 (relatives or friends) Paying guest 4	
2.12	Present occupation of the chief wage earner ENUMERATOR: SKILLED WORKERS ARE THOSE WHO HAVE SPECIFIC SKILLS IN INDUSTRY (E.G., CRAFTSMEN, ARTISANS, MACHINE OPERATORS, ELECTRICIANS, MECHANICS, DRIVERS AND SO ON). UNSKILLED WORKERS ARE THOSE WHO DO NOT HAVE SPECIFIC SKILLS (E.G., SWEEPERS, CONSTRUCTION WORKERS, CLEANERS, PEONS HAWKERS VENDORS, PETTY TRADERS, DOMESTIC WORKERS, COOKS AND SO FORTH)	Unskilled worker 1 → Skilled worker 2 Shopkeeper 3 Self employed professional 4 Clerical/salesman 5 Officer/Executive 6 Software Professional 7 Other (Specify) _____ 8 Unemployed 9 →	Q2.13 Q2.14 Next section
2.13	If unskilled worker specify the industry	Textiles 1 Hotels 2 Leather 3 Construction work 4 Domestic worker 5 Petty trader 6 Others (Please specify)_____ 7	
2.14	What was the chief wage earner's previous month earning?	Rs._____	

SECTION III: ASPECTS ON INTENTION OF MIGRATION

SL no	Questions	Responses	Skip to
3.1	From where did the chief wage earner migrate to Bangalore?	Name of the place_____ State _____	
3.2	What was the chief wage earner occupation in the previous place? ENUMERATOR: SKILLED WORKERS ARE THOSE WHO HAVE SPECIFIC SKILLS IN INDUSTRY (E.G., CRAFTSMEN, ARTISANS, MACHINE OPERATORS, ELECTRICIANS, MECHANICS, DRIVERS AND SO ON). UNSKILLED WORKERS ARE THOSE WHO DO NOT HAVE SPECIFIC SKILLS (E.G., SWEEPERS, CONSTRUCTION WORKERS, CLEANERS, PEONS HAWKERS VENDORS, PETTY TRADERS, DOMESTIC WORKERS, COOKS AND SO FORTH)	Unskilled worker 1 → Skilled worker 2 Shopkeeper 3 Self employed professional 4 Clerical/salesman 5 Officer/Executive 6 Software Professional 7 Student 8 → Other (Specify) _____ 9 → Unemployed 10 →	Q3.3 Q3.4 Q3.5 Q3.4 Q3.5

3.3	If unskilled worker, specify the nature of the work	Agriculture labour 1 Hotels 2 Farmer 3 Construction work 4 Domestic worker 5 Petty trader 6 Others (specify)_____ 7	
3.4	What was the chief wage earner's monthly earning over there?	Rs._____	
3.5	When did the chief wage earner migrate? Approximate (or exact) month and year of arrival in Bangalore:	Month ☐☐ year ☐☐☐☐	
3.6	Why did the chief wage earner choose to migrate? **(**ENUMERATOR: NOTE THAT THIS IS MULTIPLE RESPONSE**)** ENUMERATOR: ALLOW THE CHEIF WAGE EARNER TO COME UP WITH RESPONSES HIM/HERSELF BY MAKING THIS AN OPEN-ENDED QUESTION. ONLY IF THEY ARE LACKING IN IDEAS, THAT YOU SHOULD GIVE THIS LIST.	Lack of enough non-agricultural jobs where you were earlier 1 Couldn't grow enough in the place where you were a farmer 2 Lack of adequate income 3 Large size of household (Too large that you couldn't support with income there) 4 Small size of agricultural holding 5 Poor public services (such as water or roads) 6 Got a job here 7 Got married 8 Better job opportunities in Bangalore 9 Existence of family networks in Bangalore 10 Higher expected income in Bangalore 11 Other reasons please specify _____ 12	
3.7	Why did the chief wage earner choose this particular city? **(**ENUMERATOR: NOTE THIS IS MULTIPLE RESPONSE**)** ENUMERATOR: ALLOW THE CHEIF WAGE EARNER TO COME UP WITH RESPONSES HIM/HERSELF BY MAKING THIS AN OPEN-ENDED QUESTION. ONLY IF THEY ARE LACKING IN IDEAS, THAT YOU SHOULD GIVE THIS LIST.	Got a job here 1 Got married 2 Better job opportunities in Bangalore 3 Existence of family/business networks in Bangalore 4 Higher expected income in Bangalore 5 Other reasons please specify _____ 6	
3.8	If married, are spouse and children staying with chief wage earner or staying in his previous place?	Staying with him 1 Staying in previous place 2 Not applicable 3	

If Unemployed (coded 9 in 2.12) ask the questions form 3.9 to 3.18 (If employed SKIP to 3.15)

SL no	Questions	Responses	Skip to
3.9	Who will be the chief wage earner's sponsor until such time he finds a job here? (ENUMERATOR: NOTE THIS IS MULTIPLE RESPONSE)	Immediate family (parents/wife/children) 1 Relatives 2 Friends 3 Self sponsor 4 Other (Specify):_____ 5	
3.10	Does chief wage earner have any close relatives or friends who are presently working here who could help him in getting a job?	Yes 1 No 2 →	Q3.12
3.11	If yes, whom does chief wage earner have:	Friends 1 Relatives 2 Both friends and relatives 3	
3.12	What kind of employment is the chief wage earner seeking here? (ENUMERATOR: NOTE THIS IS MULTIPLE RESPONSE) ENUMERATOR: ALLOW THE CHIEF WAGE EARNER/RESPONDENT TO COME UP WITH RESPONSES HIM/HERSELF BY MAKING THIS AN OPEN-ENDED QUESTION. ONLY IF THEY ARE LACKING IN IDEAS, THAT YOU SHOULD GIVE THIS LIST.	Unskilled work: (Please specify)_____ 1 Skilled work 2 Shopkeeper 3 Self employed professional 4 Clerical/salesman 5 Officer/Executive 6 Software Professional 7 Other (Specify) _____ 8	
3.13	What kind of employment will the chief wage earner accept?	Job suitable for my qualification 1 Any job that is offered to me 2	
3.14	What is the chief wage earner's expected monthly earning here?	Rs._____	
3.15	Would the chief wage earner like to go back to his earlier place if conditions were better there?	Yes 1 No 2 →	3.17
3.16	If yes, what are the conditions necessary for the chief wage earner to go back to his earlier place? ENUMERATOR: ALLOW THE CHIEF WAGE EARNER/RESPONDENT TO COME UP WITH RESPONSES HIM/HERSELF BY MAKING THIS AN OPEN-ENDED QUESTION. ONLY IF THEY ARE LACKING IN IDEAS, THAT YOU SHOULD GIVE THIS LIST OF CONDITIONS.	Better income earning opportunities, e.g., availability of non-agricultural jobs 1 Higher land acreage for cultivation 2 Make available better yielding varieties of seeds 3 Facilitate better learning skills through training 4 Facilitate obtaining better finance 5 Better public services: water 6 Better road connectivity 7 Others (please specify)_____ 8	
3.17	After migrating here, does he face any problem to settle down in Bangalore?	Yes 1 → No 2 →	End the Interview
3.18	What is the nature of problem faced ENUMERATOR: MAKE THIS AN OPEN-ENDED ONE		

Thank you very much for your time in answering the questions above.

Appendix C: Survey of Non-Migrants

Survey for "Is it Push or Pull? Recent Evidence from Migration in India"

I am from ORG Centre for Social Research and I have come on behalf of Public Affairs Center in Bangalore. We are conducting a survey about non-migrants in Bangalore. We are attempting to understand how the characteristics of non-migrants. Your responses to this short survey will be used for research purposes only and will not be disclosed to anyone. Please cooperate with this survey by answering all the questions.

SECTION I: IDENTIFICATION (TO BE FILLED BY ENUMERATOR)

1.1	Name of the zone	North 1 South 2 Central 3
1.2	Ward Name and Number	
1.3	Type of the ward	Slum 1 General 2
1.4	Name of the Locality	
1.5	Interviewed by	
1.6	Supervisor	
1.7	Date of Interview (**DD**/**MM**/**YY**)	☐☐ ☐☐ ☐☐
1.8	Time of interview **(Hour**/**Min)**	Starting time ☐☐☐☐ (Use 24-hour clock) Ending time ☐☐☐☐ (Use 24-hour clock) Total Duration _____Min
1.9	Accompanied	Yes 1 No 2
1.10	Back checked	Yes 1 No 2
1.11	Scrutinized By	
1.12	PAC Supervisor's signature	

SECTION II: BACKGROUND INFORMATION

SL No	Questions	Response	Skip to
2.1	Name and phone number of the respondent (ENUMERATOR: HOUSEHOLD HEAD (HoH) OR CHIEF WAGE EARNER (CWE) TO RESPOND, IF HoH or CWE NOT PRESENT, SPOUSE / PARENTS/ SIBLING, TO ANSWER THE QUESTIONS).	Phone: _____	
2.2	Relationship with the chief wage earner	Self 1 Spouse 2 Sibling 3 Parent 4 Relative 5 Others (specify)_____ 6	
2.3	Name of the chief wage earner		
2.4	Age of the chief wage earner (ENUMERATOR: IN COMPLETED YEARS)	☐☐	

2.5	Gender of the chief wage earner	Male 1 Female 2	
2.6	Religion of the chief wage earner	Hindu 1 Muslim 2 Christian 3 Other (Specify)_____ 4	
2.7	Social group status of the chief wage earner (ENUMERATOR: IF OTHER BACKWARD CASTE (OBC) OR OTHERS, INCLUDE IN GENERAL)	SC 1 ST 2 General 3	
2.8	Completed education level of the chief wage earner	Illiterate 1 Literate without formal education 2 Primary (1 to 4) 3 Middle (5 to 7) 4 Secondary (8 to 10) 5 Higher secondary (PUC) 6 Technical certificate course (ITI) 7 Technical diploma 8 General graduate 9 Technical graduate 10 General post graduate 11 Technical post graduate 12 Others (please specify)_____ 13	
2.9	Marital status of the chief wage earner	Single 1 Married 2 Divorced 3 Separated 4 Widowed 5	
2.10	Number of family members **(**ENUMERATOR: INCLUDE PERSONS BELOW 18 YEARS AS CHILDREN**)**	Adults ☐☐ Children ☐☐ Total ☐☐	
2.11	Status of the dwelling of the chief wage earner	Rented/leased 1 Owned 2 Staying with others (relatives or friends) 3 Paying guest 4	
2.12	Present occupation of the chief wage earner ENUMERATOR: SKILLED WORKERS ARE THOSE WHO HAVE SPECIFIC SKILLS IN INDUSTRY (E.G., CRAFTSMEN, ARTISANS, MACHINE OPERATORS, ELECTRICIANS, MECHANICS, DRIVERS AND SO ON). UNSKILLED WORKERS ARE THOSE WHO DO NOT HAVE SPECIFIC SKILLS (E.G., SWEEPERS, CONSTRUCTION WORKERS, CLEANERS, PEONS HAWKERS VENDORS, PETTY TRADERS, DOMESTIC WORKERS, COOKS AND SO FORTH)	Unskilled worker 1 → Skilled worker 2 Shopkeeper 3 Self employed professional 4 Clerical/salesman 5 Officer/Executive 6 Software Professional 7 Other (Specify) _____ 8 Unemployed 9 →	Q2.13 Q2.14 Next section

2.13	If unskilled worker specify the industry	Textiles 1 Hotels 2 Leather 3 Construction work 4 Domestic worker 5 Petty trader 6 Others (Please specify)_____ 7	
2.14	What was the chief wage earner's previous month earning?	Rs._____	

IF EMPLOYED, END THE INTERVIEW
IF UNEMPLOYED (CODED 9 IN Q2.12) ASK Q2.15 TO Q2.20

2.15	Who will be the chief wage earner's sponsor until such time he finds a job here? **(**ENUMERATOR: NOTE THIS IS MULTIPLE RESPONSE**)** (…œ®± Eq®ÙŠ®)	Immediate family (parents/wife/children) 1 Relatives 2 Friends 3 Self sponsor 4 Other (Specify):_____ 5	
2.16	Does chief wage earner have any close relatives or friends who are presently working here who could help him in getting a job?	Yes 1 No 2 →	Q2.18
2.17	If yes, whom does he have	Friends 1 Relatives 2 Both friends and relatives 3	
2.18	What kind of employment is the chief wage earner seeking here? (ENUMERATOR: NOTE THIS IS MULTIPLE RESPONSE) ENUMERATOR: ALLOW THE CHIEF WAGE EARNER TO COME UP WITH RESPONSES HIM/HERSELF BY MAKING THIS AN OPEN-ENDED QUESTION. ONLY IF THEY ARE LACKING IN IDEAS, THAT YOU SHOULD GIVE THIS LIST.	Unskilled work: (Please specify)_____ 1 Skilled work 2 Petty trader/Shopkeeper 3 Self employed professional 4 Clerical/salesman 5 Officer/Executive 6 Software Professional 7 Other (Specify) _____ 8	
2.19	What kind of employment will the chief wage earner accept?	Job suitable for my qualification 1 Any job that is offered to me 2	
2.20	What is the chief wage earner's expected monthly earning here?	Rs._____	

Thank you very much for your time in answering the questions above.

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