MODELS FOR MIGRATION OF AGRICULTURAL LABOURERS IN BELGAUM DISTRICT

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C O N T E N T S

Sl. No.	Chapter Particulars
	CERTIFICATE ACKNOWLEDGEMENT LIST OF TABLES LIST OF FIGURES LIST OF APPENDICES
1	INTRODUCTION
2	REVIEW OF LITERATURE 2.1 Models of migration 2.2 Effect of socio-economic and demographic characteristic of agricultural labour migrations
3	METHODOLOGY 3.1 Selection of the study area 3.2 Description of the study area 3.3 Selection of the sample 3.4 Development of questionnaire 3.5 Analytical tools and techniques employed.
4	RESULTS 4.1 Tabular analysis 4.2 Correlation analysis for migration data 4.3 Gravity model 4.4 Fitting the logistic regression model
5	DISCUSSION 5.1 Tabular analysis 5.2 Correlation analysis for migration data 5.3 Gravity model 5.4 Fitting the logistic regression model
6	SUMMARY AND CONCLUSIONS
	REFERENCES
	APPENDIX

LIST OF TABLES

Table No.	Title
1	Incidence of migration
2	Migrates in Belgaum district
3	Gender profile of migrating households in Belgaum district
4	Age profile of the migrants in the sample villages of Belgaum district
5	Occupational pattern of sample households under study for migrants
6	Occupational pattern of sample households under the study for non migrants
7	Literacy profile of Migrants
8	Migration rate by the caste in sample villages of Belgaum district
9	Distribution of sample households under the study on the basis of land holdings
10	Correlation analysis for Bailhongal taluk
11	Correlation analysis for Chikkodi taluk
12	Correlation Analysis for Gokak Taluk
13	Correlation analysis for Belgaum District
14	Gravity model for prediction of volume of migration between the place of origin and destination
15	Logistic regression model fitted for Bailhongal taluk
16	Logistic regression model fitted for Chikodi taluk
17	Logistic regression model fitted for Gokak taluk
18	Logistic regression model fitted for all taluks
19	Logistic regression model fitted for the data of entire Belgaum district

LIST OF FIGURES

Figure No.	Title
1	Migration in the family for Belgaum district
2	Gender profile of migrating families
3	Occupational pattern of sample households under study (migrants)
4	Occupational pattern of sample households under study (non migrants)
5	Literacy status of migrants

LIST OF APPENDICES

Appendix No.	Title
I	Interview schedule

1. INTRODUCTION

The study of migration is a unique branch of demography. Because of its multi disciplinary nature it has attracted the attention of scholars from different disciplines. The research in this area has been characterized by useful sharing and borrowing of ideas from many disciplines such as: statistics, anthropology, economics, geography, psychology, sociology *etc*. (Greenwood *et al*., 1991).

Migration is 'the movement of people from communities concerned chiefly with agriculture to other communities, generally larger, whose activities are primarily centred in government, trade, manufacture and allied interest', thus people move from one place to other that is, it may be rural to urban migration, rural to rural migration, urban to urban migration, international migration and so on. Migration from urban areas and cities is an old and ancient practice. It is known fact that, migration alters the size and structure of the population of urban areas as well as that of rural areas. Rural to urban migration is an important component of urban population growth.

There are several reasons for the migration; they may be the social and cultural factor such as quest for independence, the desire to break away from traditional constraints of social organization and conflicts among family members. Further the geographical and physical factors like distance, natural barriers, size of the community, weather and climatic conditions, health hazards also make an effect on the movement of people. Thus migration flows are determined by a complex interaction of economic, environmental and demographic factors.

However, compared to the other two components of demography i.e. fertility and mobility, there are less empirical and theoretical generations in the area of migration also compared to developed countries, the analysis of migration in the context of developing countries are not abundant. One of the main reasons for this is the non-availability of accurate and adequate data on migration in these countries. The study of internal migration in the Indian context seems to be more complex than elsewhere. It is not only because of inadequacy of available data or unequal distribution of land or natural resources but also due to diversity of social, cultural and linguistic groups and sub groups within the groups that exists within and between states of India.

India is highly populated country, where agriculture is the back bone of the country. In India economic factors exercise a dominant influence on the rural urban migration process. It is a well known fact that agriculture is the principal occupation of the rural people of our country. About 70 per cent of rural population earns their livelihood from agriculture and allied activities. Because of population pressure, the agriculture sector is now overcrowding and the problem of disguised unemployment has become very acute in this sector. Frequent occurrence of drought and lack of proper irrigation facilities are the factors responsible for the migration of rural people from the dominant sector.

In India, migration of agricultural labourers from village to towns is not a new phenomenon, but its magnitude in the past one decade due to liberalization has attracted the attention of policy makers and they are trying to find ways to arrest this migration. Hence, studying the impact of liberalization at the micro level on agricultural labourers, on their employment opportunities, working and living conditions and trends, is of vital importance. However, the magnitude of rural labour circulation is of recent origin and it has a direct consequence on structural changes, which have taken place both in origin (village) and destination areas of migration. Though direct statistics on rural-urban migration of agricultural labourers in India are not available for comparison, it can be well understood with tremendous increase in urban population. The urban population has increased from 26 million in 1901 to 62 million in 1951, an increase of 36 million in the last 50 years. But, thereafter the absolute increase during the next three decades was in the order of 94 million (1951-81). Urban population has increased up to 31.16 per cent in 2011 from 27.81 per cent in 2001. The reason attributed to this was, net migration of labourers from rural area and poor agricultural economy, in addition to natural increase in urban population (Tondon and Singh, 2007). Industries situated in the urban areas require a steady supply of labour which induces migration from the adjoining villages and so called rural-urban migration and impacts the most on the labour market in sending and receiving areas.

Seasonal and circular migration of labour for employment has become one of the most durable components of the livelihood strategies of people living in rural areas. Migration is not just by the very poor, during times of crisis for survival and coping but has increasingly become an accumulative option for the poor and non-poor alike.

Migration status in Karnataka

The total population of Karnataka in 2001 was 52.7 million of which the urban population was 17.9 million or 34%. Karnataka ranks fourth in the degree of urbanization among the major states of India after Tamil Nadu, Maharashtra and Gujarat. The present population of Karnataka is 61.1 million of which 31.06 million are males and 30.07 million are females and the growth rate is 15.67%. In Karnataka 37.5million people live in rural areas while 23.5million people reside in cities and towns. Urbanization in Karnataka increased from 33.99 per cent in 2001 to 38.57 per cent in 2011, while the rural population declined from 66.01 to 61.43 per cent.

The population of Belgaum district is 47,78,439 out of which 24,27,104 are males and 23,51,335 are females. Belgaum district ranks second in Karnataka state in terms of population after Bengaluru. Belgaum district accounts for 7.97% of the state's total population. The decadal growth of population from 2001-2011 is 13.38% which is lower than the previous decadal rate of 17.61%. The Sex ratio (females per 1000 males) is now, 969 which were 960 earlier. The density of population per sq. km was increased from 314 to 356. When it comes to ranking in terms of density of population per sq.km, Belgaum is ranked 8th position; where as Bengaluru urban is the leader with 4378/sq km. According to 2011 census Belgaum ranked 14th in male literacy rate (82.90%) and 18th in female literacy rate (64.74%). The literacy percentage of females is still very low and is even below the average literacy rate. According to 2000- 10 data the total labour population in Belgaum was 18,77,774 of which 12,01,858 are , males and 6,75,916 are females.

Present per capita land availability is 0.15/square ha and agriculture itself is not providing a reliable source of income especially in this era of globalization, High cost of cultivation, scarcity of irrigation water, stagnation of productivity in agriculture and fluctuation in prices of agricultural products are the main factors responsible for converting agriculture into non profitable sector of employment. In such distress conditions, rural labours and farmers are compelled to move from villages to urban areas and cities in search of betterment of their livelihood.

Therefore the present study was undertaken with the following objectives in Belgaum district.

- To build the models for migration.
- To study the effect of socio-economic and demographic characteristic of agricultural labour migrations.
- To study the relation between land holding and distance of migration.

2. REVIEW OF LITERATURE

An acquaintance with related literature of the past studies is a must for any researcher for formulating a sound methodology. The literature in connection with the study of migration of agricultural labourers and the statistical methods or models employed to analyze the data are reviewed in this chapter.

2.1 Models of migration

Akwasi Mensah-Bensu and Kees Burger (2000) studied the migration pattern in North East Region of Ghana. Nested logit model and Tobit model estimation technique were used to estimate migration and remittance model respectively. Totally 30 villages each selected from 3 designated regions of North East Ghana. The results depicted that 10 % increase in per capita land holding decreases the migration probability by 1.8% from the Nested logit model. Increasing the farm household population relative to available land size (ie decrease in per capita land hold) would increase the rate of migration from economic activities in the regions would help to reduce dependency on the land resource as well curb migration.

Amaresh Dubey *et al*. (2004) conducted a study on surplus labour social structure and rural to urban migration. The employment and unemployment data collected by NSSO during surveys in 1990-2000 were used for the study. The strong empirical support for the key prediction of the Lewis model showed that rural urban migration is influenced by the existence of surplus labour in the rural areas from where the migrants originate. The states with high rural labour land ratios and/or low labour agricultural productivity are likely to see more, out-migration to urban areas from rural areas, controlling for relevant households and individuals characteristics

Depoo (2008) conducted the study on International labour migration and factors affecting repatriation from developed to developing countries: A case of Guyana's brain drain. This study used a quantitative, non-experimental, correlation (explanatory) and causal-comparative (exploratory) cross-sectional survey research design is the first study to examine the intention of Guyanese living in the United States to return to Guyana with survey data collected from 236 participants and 169 of these were selected for analysis of the intention to return. As the data collected was non-continuous and nonparametric, logistic regression analysis, Pearson Chi-square test, and ANOVA analyses were used to test the hypotheses and the answer research question. Of the ten hypotheses tested in this study, age, gender and number of children were supported as having significant correlation with the intent to return to Guyana and predicators to return to Guyana. Educational level was found to be marginal predictor for the intent to return. Six factors namely level of income, marital status, intent to contribute to economic development, socio-political factors, wealth and accumulated assets, and earned skills, were not correlated nor identified as predictor variables for the intent to return to Guyana.

Omprakas *et al*. (2009) studied the migration effect of agricultural labours on agricultural activities. The study was carried out in the eight selected villages of two blocks viz., Palari and Simga of Raipur district of Chhattisgarh during the year 2001-2002. A total of 80 migrant and 40 non-migrant farmers were selected randomly and personally interviewed with the help of structured interviewed schedule. Data were analyzed with the help of suitable statistical analysis. Majority of migrants (72.50%) occupied only less than 1 ha land and majority of non-migrants (52.50%) occupied 2.1-5 ha of land. About 16.25, 7.50 and 3.75 per cent migrants were found as small, medium and big farmers, respectively. As for as crops grown by respondents was concerned during kharif season, majority of migrants and non-migrants were growing paddy crop in maximum part of their arable land about 79.98% and 79.11% of their land respectively. Whereas, in case of rabi crops, majority of the migrants used to grow lathyrus crop in about 50.57% of their cropped land, but non-migrants were growing gram and summer paddy in their maximum part of land. Regarding the productivities of the crops, the significant difference was found for kharif season crops i.e. paddy, pigeonpea, maize, til, vegetables. Whereas, significant difference was noted in rabi for the productivity of gram among the migrant and non-migrant respondents. In case of knowledge and adoption it was found that non migrants had more knowledge and adoption of different agricultural practices.

Deepak k Mishra (2010) studied seasonal migration in globalizing India. The study was conducted in Bolangir and Nuapada districts of Orissa. The study reveals that low productivity of agriculture, landlessness, low levels of education, limited access to alternative livelihoods and food and employment insecurity during the lean period emerges as significant determinants of seasonal migration.

Holly *et al*. (2010) made a study on men's and women's migration in coastal Ghana. The data was collected from the 2002 Population and Environment (P&E) Survey of the Central Region in Ghana. Discrete-time event history logit model – an extension of logistic regression – was used to estimate the probability of a migration event occurring in the current year as a result of the previous year's characteristics. Finally, results demonstrated the benefits of a LHC (life history calendar) approach and suggested that migration research should further examine men's and women's mobility as it relates to both human capital household and family dynamics, particularly in developing settings.

Horácio Fustino and Isbel Proenca (2011) conducted the study on effects of immigration on intra-industry trade: a logit analysis. The data set used in the estimation was an unbalanced panel of 38 countries observed for the years 2000 to 2005. Since, indexes were fractional variables, the pseudo-likelihood Logit estimator was used on the panel data to obtain the empirical results. The study found that an increase of the immigrant stock will produce an increment in the trade indexes considered and this effect is enhanced if immigrants originate from a country where Portuguese is the official language, or if they are highly qualified, whereas immigrant entrepreneurs have no significant effect.

Babita Sinha *et al*. (2012) made a study on Migration and empowerment: the experience of women in households in India where migration of a husband has occurred. Analysis of three indices namely, decision making, mobility and restrictions of women's empowerment has been achieved through multinomial logistic regression models on data from India's 2005–2006 National Family Health Survey-3 (NFHS-3). The finding of this study showed that out-migration of men had no significant impact on the emancipation of women. The common factors which increase the decision-making power and mobility of women and lessen the social restrictions placed on them are age, their educational attainment, marital duration, occupation and residence in urban areas.

2.2 Effect of socio-economic and demographic characteristic of agricultural labour migrations

2.2.1 Relation between land holding and distance of migration

Donald and Mandlak (1995) studied inter-sectoral migration of agricultural labour. The number on total and agricultural labour for 1950, 1960, 1970 and 1980 were taken from International labour organization data maintained in the World Bank data bases where as the 1990 values were calculated from various ILO (International labour organization) publications. Regression model was used to analyse the data. The study reveals that individuals compare the benefit of migration against costs, because individuals differ in the attributes that determine their income in various occupations as well as their cost of migration.

Paramjit and Chavhan (1998) studied migration of women labour and their problems: a micro study. The study was conducted in Andhra Pradesh, the census of India data was collected of the year 1981 to 1991 for the study. Problems such as backwardness, poverty and unemployment made the women to migrate but as they were uneducated there were other problems like less wages and unlimited working hours.

Agapi *et al*. (2001) examined the rural labour market in China based on the countries first national agricultural census. The analysis highlighted the distinct difference in employment by age, gender, education level, size of the household and size of land holdings.

Ohajianya (2005) studied rural-urban migration and effect on agricultural labour supply. Primary data was collected from labourers who converge at specific locations in the three urban centres of Owarri, Orlu and Okigwe and also agricultural labourers from six communities chosen from the three agricultural zones of sample size 210 respondents data was analysed using descriptive statistics, three point likert scale, multiple regression analysis and present value net benefits model. The study recommended the setting up of rural based industries and the provision of basic infrastructure and amenities in the rural areas in order to retain rural labour supply.

Shanti (2006) studied on the migration of the female labours; the objective of the study was to examine the extent of employment oriented migration of female in India, and the interstate variation in its magnitude. NSSO 55th round household level data was collected for the study. This paper concluded that micro level case studies indicate high levels of rural urban migration among females is for reasons of employment and gender dimensions should adequately be captured in the official data system for purpose of effective policy intervention.

Priya Deshingkar (2006) made a study which was based on the remarks of the four Asian countries namely India, China, Vietnam and Indonesia. Remarks were drawn out from International organization for migration at IOM SSRC-ESRC workshop on migration and development within and across borders. The conclusion was that the policy makers need to recognize the importance of migration for poverty reduction and development policy which must aim to ease hardship of migrants, facilitate and distribute the benefits of growth as evenly as possible.

Priya Deshingker and John Farrington (2008) conducted the study on rural labour markets and migration in South Asia; evidence from India and Bangladesh. The study was conducted using selected case studies and longitudinal studies from five parts of India and Bangladesh. The paper showed that seasonal migration has emerged as an important livelihood option for poor rural labouring households in low agricultural productivity situations.

Surabhi and Ajit Kumar (2007) conducted the study on labour migration to Kerala; A study of Tamil migrant labourers in Kochi. The study was of a pilot nature on internal migration in Kerala with a very limited sample size of 100 casual labourers from Tamil Nadu seeking work at selected centres on a day basis from Kochi city. The study concluded that the migrant labourers get much higher monetary wages than in their native places, but they have to spend higher cost for living in Kochi for food, shelter and transport.

Suresh *et al*. (2007) studied women labour migration. A sample of 100 women was selected for survey in Karimnagar town of Andhra-Pradesh. The study reveals that about 1/4th of the migrant women from the rural areas of the same districts are not satisfied with their present job work, but still due to unemployment they have to migrate to other place/town for searching job/work.

Kamble (2008) studied secondary data which was published by NSSO rounds. The statistical tools applied were ratio analysis, growth rate, migration rates and others. The study reveals that the migrated labours have been facing number of severe problems and there is urgent solution need for it, thus we have to conduct many number of research studies which will provide necessary inputs to government, decision makers and policy makers to formulate a comprehensive policy to deal with their problems and maximisation of welfare.

Naomi Jacob (2008) the main findings of the study were to know how NREGA (National Rural Employment Guaranty act) programme impacts on migration, weather it induces or curb the migration of labour. The data was collected by field survey of Villuppuram district of Tamil Nadu. Gathering data from the government about NREGA incomes, getting income data from periods before the NREGA and after NREGA programme 5 villages survey each in 5 blocks of Mailam, Vanur, Thirukailur, Thiruvennainallur and Thirunavalur of Villuppuram` district were surveyed and concluded that well implementation of NREGA in the region or else it curb distress migration. The lack of exact official data on migration is a matter that has to be corrected as soon as it is quite important to quantify this as accurately as possible as rural urban migration can become problem for both source and destination areas.

Brigitte and Michael (2009) studied on labour migration and remittances in the Hindu Kush-Himalayan region. The secondary data at the regional level to highlight the migration trends of mountain people, age .ethic etc was collected at Hindu Kush-Himalayan region. In the study ICIMOD's partners were supported to develop appropriate tools to dress the consequences of migration and the needs of migrants those who stay behind.

Doddarasaiah and Shivalingappa (2009) conducted the study on characteristics of out migrants from Mysore city. The study was based on the primary data, 1137 households having population of 4573 were selected for field study as sample of these selected population 2423 were males and 2150 were females. The outcome of the study was that nearly 70% of migrants had moved to cities like Bangalore, Mumbai, Chennai and abroad etc for economic/high earning purpose because well developed industries and IT, BT companies were in these cities attracted the migrants from neighbouring urban centres.

Priya Deshingker and Shaheen Akter (2009) made a study on migration and human development in India. The study was conducted in villages of Andhra Pradesh and Madhya Pradesh. They concluded that roughly 100 million circular migrants in India are contributing 10% to the national GDP. Detailed analyses of village surveys in MP and AP were showed conclusively that migration is an important route out of poverty.

Priya Deshingkar (2010) studied about the remote rural migration and the chronic poverty in India through the LOP, three districts were covered representing three diverse region in state of AP and MP states. 4647 households in AP and 1297 households in MP were surveyed and data census was collected on household characteristics, education, age, occupation, asset, weather a household had a migrant. Survey was done in two seasons in kharif and Rabi. Thus, from both emperical findings and the secondary material reviewed in this paper showed that migration is higher in remote rural areas, and within those areas among SC's and ST's permanent migration constituted a small proportion of total movements for work and that circular migration was the most important form of mobility.

Vijay Korra (2010) studied seasonal labour migration. The study was based on a primary level survey conducted in mid 2006 in Mahabubnagar district in AP, India. The study reveals that migration from the village is essentially seasonal and cyclic in nature and differs for both rural and urban migrants. Indeed it is taking place mainly for survival and repayments of debts.

Deepak (2010) studied seasonal migration in globalizing India. The study was conducted in Bolangir and Nuapada districts of Orissa. The study reveals that low productivity of agriculture, landlessness, low levels of education, limited access to alternative livelihoods and food and employment insecurity during the lean period emerges as significant determinants of seasonal migration.

Goveradevi (2010) studied about migrant construction workers in Gulbarga city. The study was purely based on the primary data collected in the form of personal interviews in the extension areas of Gulbarga city. The study had been designed to collect several aspects like sex, age composition, level of education, nature of job performed in construction, income per day and reasons for migrating to Gulbarga city etc. Random sample of 100 workers were selected representing all the areas. The study concluded that most of the construction workers both male and female fall in the group of 14-40 years. The education level was found very low.

Gita Jaiswal (2010) studied the causes and effects of migration in India with special reference to North-East India. The study found that rural people migrate to cities in lure of city life and better access to education, income and other facilities. This type of migration is one of the main causes of increasing the density of population in town and cities, slum areas etc. Migration often takes place in areas that are witnessing high growth rate and where opportunities are bright.

Mahesh and Kuchay (2010) analysed the trends of migration in India. From this study it is clear that the people migrate from one place to another. There was a positive and negative impact of migration on both places of origin and also on the places of destination. This study made a moderate attempt to analyse the migration trends in India based on NSSO 64^{th} survey on migration for the period 2007-2008. It was found that the female migration rate in rural areas was lower than female migration rate in urban areas. The magnitude of male migration was also lower than the female migration rate in both rural and urban areas.

Pratibha *et al*. (2010) made a study on migrant workers at retail organizations. The data for the study was collected in eight well known organised retail stores, which were randomly selected. It was found that in all the stores 154 employers were working and out of them 90 (58.44 percent) were intra-state or inter-state migrants. No women migrant employee was found in the store under study. In majority of the cases (62.22 percent) it was urban to urban migration. It was found that educated and technically qualified employees are coming from the cities of Uttar Pradesh, Bihar, Uttrakhand and Himachal Pradesh etc. After getting the requisite qualification, the majority migrant employees belong to the age group of 18-30 were found.

Rekha and Vishal Chari (2010) studied causes and consequences of female migration in informal sector. The study was based on both primary and secondary data. Primary data was collected by interviewing 200 migrant women. In North Goa district, Tiswadi and Panda talukas were chosen for field work. Similarly in South Goa, Mormugoa and Salcete talukas were selected. In each of these four talukas, 50 migrant women working as maid servent were selected randomly. The study found that the most of the female migrants have come to Goa in search of employment from backward talukas and villages of neighbouring states like Karnataka, Maharashtra, Andhra Pradesh, Orissa and Jharkhand. The causes for the migration were to earn more, improve standard of leaving and to be away from the quarrels.

Rabi and Mahendra (2010) studied rural-urban migration by using macro theories, micro level evidence and policy implications. The study was based on both primary and secondary data. Secondary data was taken from the census statistics for the years 1971-2001. Primary data was collected from 52 households having 100 migrants. Simple analytical tools have been applied for analysing data and drawing conclusion. The study states that migration is governed by a push-pull kind of economic forces and income motive. It is not necessarily associated with the compulsion to escape poverty and overcome livelihood insecurity but more importantly with the need of easing economic burden of the household, improving living standards and creating income yielding assets.

Shoba Jain (2010) discussed the factors determining the migration of rural skills from rural areas. It was based on the field study done by researcher in Aligarh district of Uttar Pradesh. The study found that labour migration is big problem in Aligarh. There are many factors responsible for labour migration like lack of market demand , finance, lack of basic facilities and educational training , shortage of raw materials, irregular power supply etc.

Shabir and Javid-ul-Aziz (2010) studied about labour migration, its nature and impact. Migration has become a universal phenomenon in modern times. In most countries it has been observed that industrialisation and economic development has accompanied by large scale movement of people from villages to towns, towns to another towns and country to another country composition and distribution of population. Labour migration is an important factor affecting the course of socio-economic development in India.

Channveer and Lokesh (2011) conducted the study on farm labour migration after the implications of MGNEREGA in Gulbarga district Karnataka. Primary data of 120 samples was selected from 5 villages and provision of better employment opportunities have been found as the main reasons for out migration of labour in the MGNEREGA implemented villages in Gulbarga district.

Sundaravaradarajan *et al* (2011) studied determination of key correlates of agricultural labour migration in less resources enclosed areas of Tamil Nadu. The study was conducted in the backward district of Perambalur in Tamil Nadu. The study concluded that though both economic and non economic reasons are responsible for migration of agricultural labourers economic reasons are stronger.

Singh and Singh (2011) studied determinants and Impacts on Socio-economic Welfare. The investigation was done on labour out-migration from the states of Uttar Pradesh and Bihar to find its determinants and its impacts on farm economy. The analysis of determinants shown that the number of members in a family and their educational status have a positive impact on migration. As a result of male out-migration, the women left behind in the villages assume a major role in various farm activities resulting in the so-called feminization of agriculture. It has also empowered the female members of the migrant households in terms of enhancing their decision-making role in various activities.

Jonathan Pattenden (2012) conducted study on migration between rural Raichur and boomtown Bangalore: class relations and the circulation of labour in South India. It analyses the class and household based outcomes of migration during the 2000's between Karnataka's poorest district and the building sites of Bangalore. The study reveals that 62 percent of households are found to gain from migration, but better design and implementation of welfare policies intended for migrant labourers would significantly increase migration contribution to labouring class socio-political mobility.

3. METHODOLOGY

An investigation on “Models for migration of agricultural labourers in Belgaum district” was carried out during 2010-2011. The details of materials used and methodology employed in carrying out the study are described as below.

The methodology carried out for the investigation is presented under the following headings:-

3.1 Selection of the study area

3.2 Description of the study area

3.3 Selection of the sample

3.4 Development of questionnaire

3.5 Analytical tools and techniques employed.

3.1 Selection of the study area

Belgaum district was selected for the study as it is the second highest populated district next to Bangalore. Three taluks of Belgaum district were selected by cluster sampling procedure based on the highest labour force. They were namely Bailgongal, Chikkodi and Gokak. Three villages were selected from every taluk at random. A total of 153 samples were selected for the purpose with 51 samples from each taluk.

3.2 Description of the study area

Belgaum district is located in the north western part of the state. It lies between 15023' and 16058' north latitude and 7405' and 75028' east longitude. The district is situated at the height ranging from 450 to 900 m above mean sea level and extends over an area of 13379sq. km and ranks fifth in area among the districts of the state. The district is surrounded by Maharashtra state in the north, Bijapur district in the east, Dharwad and Uttar Kannada districts in the south, Goa state in the southwest.

The geographical area of Belgaum district is 13,44,382 ha spread in ten taluks with 20 towns, 35 hoblis, 1138 inhabited villages and 26 villages without any inhabitation. The population of the district according to 2001 census was 42,14,505 with 1000:959 male to female ratio and 47,78,439 out of which 24,27,104 are Males and 23,51,335 are females according to 2011 census. Out of total population in the district, 32.01 lakhs were in rural areas and the rest were urban and semi-urban.The density of population per sq. km has risen to 356 from 314.

The geographical area of Bailhongal taluk is 1,12,233 ha consisting of 126 inhabited villages and 2 uninhabited villages. The population of the taluk was 3,56,286 and overall population density of the taluk was 318 per sq. Km. The growth rate of population in the taluk was 14.54 per cent. The agriculture labour population was 67,365 (1991-2001).

The geographical area of Chikkodi taluk is 126949 ha consisting of 102 villages. The population of the taluk was 5, 67,601 and density of the population was 442 per sq.km. The growth rate of population was 15.19 per cent.The agriculture labour population was 82,598 (1991-2001).

The geographical area of Gokak taluk is 154308 ha consisting of 107 villages. The population of the taluk was 526092 and density of the population was 342 per sq.km. The growth rate of population was 19.17 per cent. The agriculture labour population was 76,876 (1991-2001).

3.3 Selection of the sample

From each selected taluks three villages were selected at random. Anigol, Nichanki and Soutgi villages were selected from Bailhongal taluk. Hatarvat, Mugali and vadral from Chikkodi taluk. In the same way Khangav, Gilihosur and Nalanatti were selected from Gokak taluk. From these villages 17 samples were selected by snow ball sampling technique for the study. The total sample size was 153 households.

3.4 Development of questionnaire

A detailed questionnaire was developed in consultation with experts and by referring to literature. The questionnaire included various aspects of demographic profile of subject and details concerned with the migrant and non migrants (Appendix I)

Pre testing of the questionnaire was done in the non sample area and then suitably modified. The information was collected by personal interview method.

3.5 Analytical tools and techniques

For the purpose of achieving the objectives of the study, the data were analysed using the following statistical techniques.

1. Tabular analysis
2. Correlation analysis
3. Gravity model
4. Logistic regression model

3.5.1 Tabular analysis

Tabular analysis is made for the different characteristic features of the sample households of the Belgaum district.

3.5.2 Correlation analysis

This analysis was carried out to assess the nature and magnitude of the association between the variable size of the family, per capita land holding, education, income, and caste with the migration using the SPSS software.

Correlation analysis was done by computing correlation coefficients for each independent with the dependent variable. The correlation coefficient was worked out using the following formula.

$$r = \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum (X_i - \bar{X})^2 (Y_i - \bar{Y})^2}}$$

Where,

r = correlation coefficient

X_i = variables (size of the family, per capita land holding, education, income, and caste)

Y_i = variable (migration)

$\bar{X}$ = Mean of the X_i

$\bar{Y}$ = Mean of the Y_i

t-test

To test the significance of the correlation coefficients''- test was computed with the help of following formula.

$$t_{(n-2)} = \left| \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \right|$$

Where,

n = degrees of freedom

r = correlation coefficient

3.5.3 Gravity model (Lewer *et al*., 2008)

Gravity model was used to predict the volume of the migration between the origin and the destination place. Through which we could forecast the volume of migration for the future days.

$$MI_{ij} = (p_i p_j / d^2_{ij}) * k$$

Where,

MI_{ij} is the volume of migration between the centres i and *j*

P_i and P_j are population size of the two centres,

d_{ij} is the distance between them and

k is a constant.

3.5.4 Logistic regression model

To examine the factors influencing the migration, the logistic model with, the most likely variables was fitted. The logit model postulates that P, the probability of migration is a function of an index variable Z, summarizing a set of the explanatory variables. In fact, Z is equal to the logarithm of the odd ratio, (i.e.) ratio of probability of migration to the probability of non-migration and it can be estimated as linear function of explanatory variables (X_k).

This can be expressed as $P = 1/ (1+e^{-Z})$, which represents the cumulative logistic distribution.

$$Ln (P/1-P) = Z = F(X_1, X_2, X_3 \ldots X_K)$$

Once this equation is estimated, factors influencing migration can be ascertained.

Specification of the variables used in the Logistic regression model:

Variables	Definition/code
Dependent variable (Y)	Y=1, if Migrant Y=0, if non-migrant
Land/capita	ha/person
Size of the family	In Numbers
Income	Rs.
Educational status of the head of the household	1=literate, 0=illiterate
Caste	1=General,0=(SC/ST/OBC)

4. RESULTS

In the consonance with the objectives of the study, the primary data collected from the different taluks were analysed and interpreted. The results of the study are presented in this chapter under the following headings,

4.1 Tabular analysis

Tabular analysis was done for the different features of the migrant and non migrants in the sample villages of Belgaum district. They were analysed under the different headings as below

4.1.1 Incidence of migration

From three taluks of the Belgaum district 51 households were selected for the study from each taluk. In Bailhongal taluk 39 households were migrated out of 51. This comprises of 76.47 per cent of migration from Bailhongal taluk. Out of three villages of Bailhongal taluk, Nichanki village had the highest migration rate (88.23%). From Chikkodi and Gokak taluks 40 households were migrated from each taluk which was 78.43 per cent. From these two taluks, Vadral village of Chikkodi had 94.11 per cent and Nalanatti of Gokak taluk had 88.23 per cent of migration. (Table1)

4.1.2 Migrates in Belgaum district

The persons migrating from the family may be both husband and wife, family or the individual. (Table 2) showed that 21.57 per cent were non migrants, 13.73% were both husband and wife who had migrated. Around 14.38 per cent of families had migrated from district and 50.33 per cent were individuals who had migrated out of 153 sample size. When coming to selected taluks there we notice that maximum numbers of non migrants (12) were found in Bailhongal taluk and minimum (11) were noticed in Gokak. Both husband wives had migrated more (9) from Chikkodi taluk and minimum (4) from Gokak taluk. Maximum numbers of families (8) were migrated from Chikkodi taluk and seven families each from Bailhongal and Gokak taluk had migrated. There was highest number of individual's migration in all the selected taluks, maximum was seen in Gokak (30) taluk and minimum (23) were seen in Chikkodi.

4.1.3 Gender profile of migrating households in Belgaum district

In the gender profile of migrating households (Table 3) interprets that per cent of male migrants were more when compared to women in all the villages. In Hatrvat and Gilihosur villages it was noticed 100 per cent male migration. The maximum male migration was noticed in Nalanatti (99%) followed by Vadral village (84%) and it was minimum in Khangav village (55%). Similarly in case of female migration maximum was noticed in Nichanki and Khangav village and minimum in Hatarvat and Gilihosur. Similar trend is also present in Fig.2.

4.1.4 Age profile of the migrants in the sample villages of Belgaum district

Table 4 indicated that the male migration is more in all the age group except in > 45 years age group. The maximum migration was noticed in 15-30 years age group for both male and female. In the age group more than 45 years female migration was zero in all the selected villages. In the less than 15 years maximum migration was noticed in Nichanki village for male and female, no migration in three villages *viz* Hatarvat, Gilihosur and Nalanatti. Between the age group of 15-30 years maximum migration was noticed in Vadral (13) and minimum in Hatarvat (3) village for male, in Nichanki and Khangav villages female migration was 8 each in both the villages and female migration was found zero in Hatarvat, Gilihosur and Nalanatti villages. In the age group of 31-45, years maximum number of male migration was found in Mugali village and minimum in Hatarvat, Khangav and Nalanatti villages. Between the age group of 31-45, female migration was zero in Soutgi, Hatarvat and Gilihosur. When coming to the age group of more than 45 years we noticed that there is no female migration and maximum male migration was found in Hatarvat village (5).

Table 1. Incidence of migration

	Total No of house holds	Number of households with at least one member migrated	Percentage
Bailhongal Taluk			
Anigol	17	10	58.82
Nichanki	17	15	88.23
Soutgi	17	14	82.35
Total	51	39	76.47
Chikkodi Taluk			
Hatarvat	17	11	64.70
Mugali	17	13	76.47
Vadral	17	16	94.11
Total	51	40	78.43
Gokak Taluk			
Khangav	17	11	64.70
Gilihosur	17	14	82.35
Nalanatti	17	15	88.23
Total	51	40	78.43

Table 2. Migrates in Belgaum district

Migration in the family					
Village	Non migrants	Both	Family	Individual	Total
Bailhongal Taluk					
Anigol	7	4	2	4	17
Nichanki	2	4	4	7	17
Soutgi	3	0	1	13	17
Total	12	8	7	24	51
Chikkodi taluk					
Hatarvat	6	0	0	11	17
Mugali	4	5	1	7	17
Vadral	1	4	7	5	17
Total	11	9	8	23	51
Gokak Taluk					
Khangav	6	4	6	1	17
Gilihosur	3	0	0	15	17
Nalanatti	2	0	1	14	17
Total	11	4	7	30	51
Total for the selected taluks of Belgaum District					
Total	33	21	22	77	153
Percentage	21.57	13.73	14.38	50.33	100

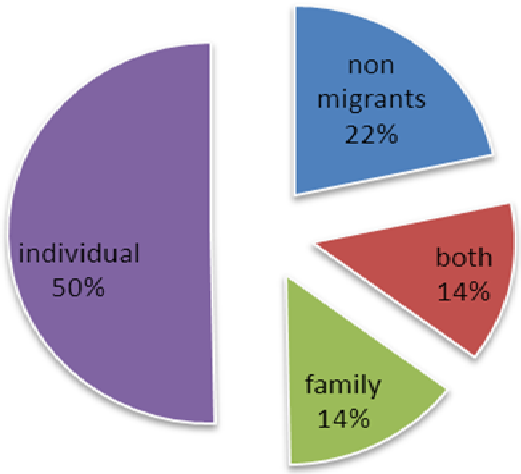

Fig: 1. Migration in the family for Belgaum district

Fig: 1. Migration in the family for Belgaum district

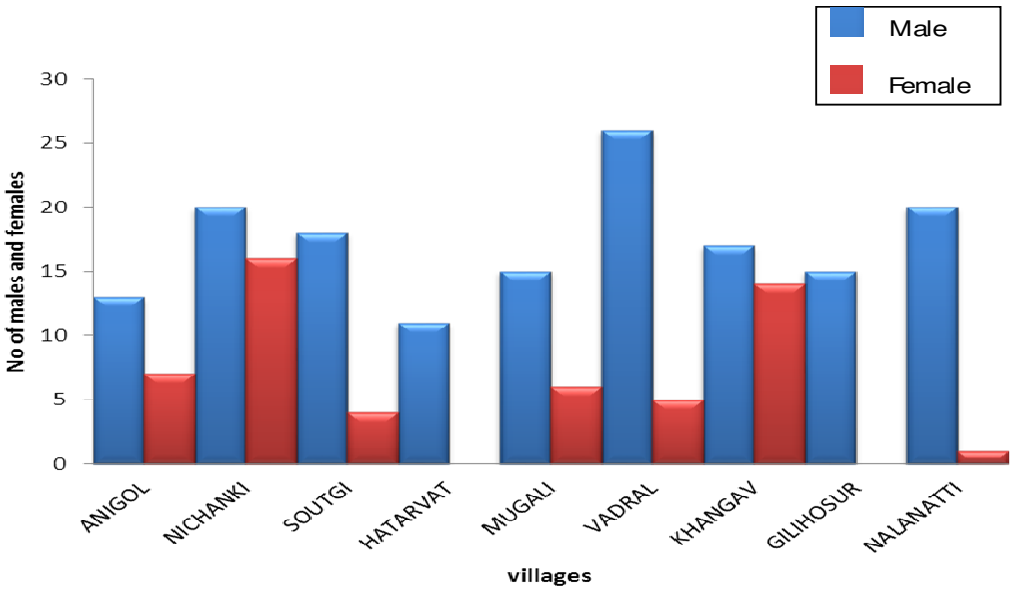

Fig: 2. Gender profile of migrating families

Fig: 2. Gender profile of migrating families

Table 3. Gender profile of migrating households in Belgaum district

Village	Male	Female	Total	Male (%)	Female (%)
Bailhongal Taluk					
Anigol	13	7	20	65	35
Nichanki	20	16	36	56	44
Soutgi	18	4	22	82	18
Total	51	27	78	65.38	34.62
Chikkodi Taluk					
Hatarvat	11	0	11	100	0
Mugali	15	6	21	71	29
Vadral	26	5	31	84	16
Total	52	11	63	83	17
Gokak Taluk					
Khangav	17	14	31	55	45
Gilihosur	15	0	15	100	0
Nalanatti	20	1	21	99	1
Total	52	15	67	78	22

Table 4. Age profile of the migrants in the sample villages of Belgaum district

Village	<15 years		15-30 years		31-45 years		>45 years		
	Male	Female	Male	Female	Male	Female	Male	Female	Total
Bailhongal Taluk									
Anigol	1	1	5	3	7	3	0	0	20
Nichanki	3	6	10	8	6	2	0	0	36
Soutgi	1	2	6	2	7	0	4	0	22
Total	5	9	21	13	20	5	4	0	78
Chikkodi Taluk									
Hatarvat	0	0	3	0	4	0	4	0	11
Mugali	2	0	5	2	8	4	0	0	21
Vadral	1	0	13	2	9	3	3	0	31
Total	3	0	21	4	19	6	8	0	63
Gokak Taluk									
Khangav	1	2	9	8	4	4	2	0	31
Gilihosur	0	0	5	0	6	0	4	0	15
Nalanatti	0	0	12	0	6	1	2	0	21
Total	1	2	25	8	14	5	6	0	208

Age profile for different taluks in (Table 4) depicts that male and the female migration was maximum (78) in Bailhongal and there was no female migration in Hatarvat village of Chikkodi taluk. For the age group of 15-30 male migration was maximum (25) in Gokak and minimum in the other two taluks Bailhongal and Chikkodi. Female migration was maximum in Bailhongal and minimum in Chikkodi taluk. Between the age group of 31-45 years male migrants were found more in Bailhongal taluk (20) and minimum were found in Gokak taluk. When coming to the female migrants six of them had migrated from Chikkodi taluk and five each from Bailhongal and Gokak taluk. In case of more than 45 years age group there was no female migration in all the three taluks and maximum number of male migration was seen in Chikkodi taluk (8).

4.1.5 Occupational Pattern of Sample Households for migrants

Table 5 showed that landless agricultural labours were found maximum in Vadral village and minimum in Nichanki, there were no land less agricultural labourer was migrated in Anigol, Soutgi, Hatarvat, Mugali and Nalanatti villages. There were no migrants with farming community in any of the villages from selected taluks. Non farm wage labours were noticed 13 each in Soutgi and Nalanatti villages, zero in Vadral. Three migrants with business occupation were seen in Nichanki village no business occupants were found in Soutgi, Hatarvat, Vadral, Khangav, Gilihosur and Nalanatti villages. Maximum numbers of migrants were noticed to have other occupation in Mugali village and zero migrants with other occupation were found in Vadral and Khangav villages.

Maximum numbers of migrants with landless agricultural labours were seen in Chikkodi taluk (16) and one migrant in Bailhongal tauk. There were no migrants seen with the farming occupation in any of the three taluks. Nonfarm wage labours were maximum in Gokak taluk (26) and minimum in Chikkodi (11). Five migrants had the business occupation in Bailhogal taluk and zero in Gokak taluk. Migrants with the other occupation were maximum in Chikkodi taluk and minimum in Gokak.

4.1.6 Occupational Pattern of Sample Households for non migrants

Table 6 indicated that maximum number (7) of the non migrants had the farming occupation in Anigol village and there were no non migrants with the framing occupation in Nichanki, Mugali and Nalanatti villages. Three non migrants were landless agriculture labours in Kahngav village and one each in Nichanki and Soutgi villages, the remaining villages had no landless agriculture labours. Only Mugali village had (4) nonfarm wage labour and remaining eight villages had zero nonfarm wage labours. Non migrants with business occupation were found one in each Khangav and Nalanatti villages and there were no business occupants in rest of the selected villages.

Bailhongal taluk had more non migrants with framing occupation (8) and Gokak taluk had only three. Maximum number of land less agricultural labours were found in Gokak taluk (3) and there were no land less agricultural labours in Chikkodi taluk. Chikkodi taluk had four nonfarm wage labours where as Bailhongal and Gokak taluks had zero of them. There were no business occupants in Bailhongal and Chikkodi taluks, only two non migrants with business occupation were found in Gokak taluk. The non migrants with other occupation were found maximum in Gokak taluk (3), one in Bailhongal and zero in Chikkodi.

4.1.7 Literacy profile of the migrants

The maximum numbers of illiterates migrants were found in Vadral village (23) and minimum in Hatarvat village (4). Migrants with the primary education were noticed highest (13) in Nichnaki village and there was only one migrant completed primary education in Hatarvat. In Gilihosur village there was no migrant with high school education and maximum number was eight migrants each from Anigol, Nichanki and Nalanatti villages who had completed their high school education. Highest number of migrants who had done their education above matriculation were six in Nichanki village and there were no migrants with above matriculation in Soutgi,Mugali, Vadral Khangav and Nalanatti villages (Table 7).

Here the literacy rate for taluks showed that Chikkodi and Gokak taluks had the maximum number of illiterates (36) and minimum was (22) in Bailhongal taluk. Primary education was highest (25) in Bailhongal taluk and minimum (13) in Gokak.

Table 5. Occupational pattern of sample households under study for migrants

Village	Farming	Land less agril. labour	Non farm wage labour	Business	Others	Total
Anigol	0	0	6	2	2	10
Nichanki	0	1	6	3	5	15
Soutgi	0	0	13	0	1	14
Hatarvat	0	0	6	0	5	11
Mugali	0	0	5	2	6	13
Vadral	0	16	0	0	0	16
Khangav	0	5	6	0	0	11
Gilihosur	0	6	8	0	1	15
Nalanatti	0	0	13	0	2	15
Total	0	28	62	7	22	120
Percentage	0	23.53	52.10	5.88	18.49	100

Table 6. Occupational pattern of sample households under the study for non migrants

Village	Farming	Land less agril labour	Non-farm wage labour	Business	Others	Total
Bailhongal Taluk						
Anigol	7	0	0	0	0	7
Nichanki	0	1	0	0	1	2
Soutgi	1	1	0	0	1	3
Total	8	2	0	0	2	12
Chikkodi Taluk						
Hatarvat	6	0	0	0	0	6
Mugali	0	0	4	0	0	4
Vadral	1	0	0	0	0	1
Total	7	0	4	0	0	11
Gokak Taluk						
Khangav	2	3	0	1	0	6
Gilihosur	1	0	0	0	2	3
Nalanatti	0	0	0	1	1	2
Total	3	3	0	2	2	11
Total for the selected taluks of Belgaum District						
Total	18	5	4	2	5	34
Percent	52.94	14.71	11.76	5.88	14.71	100

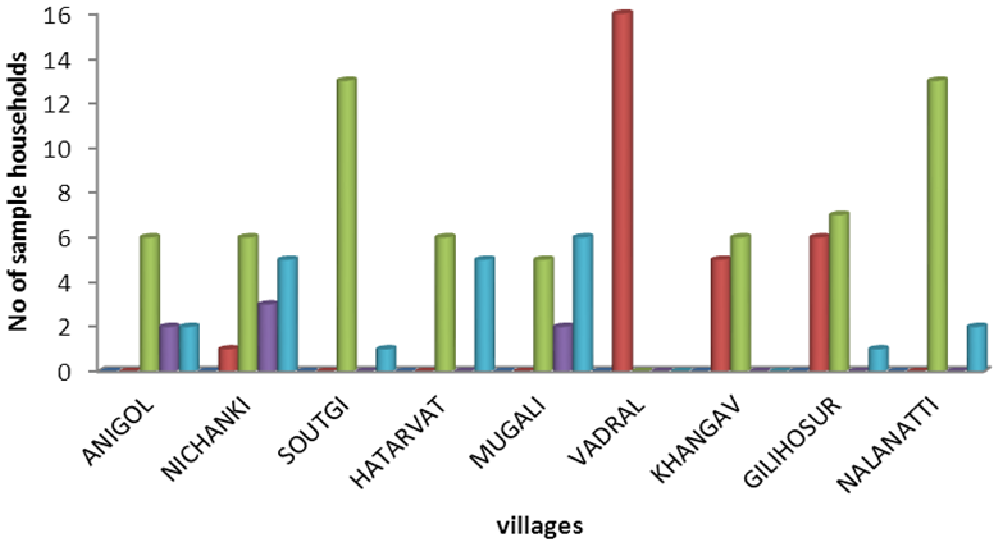

Fig: 3. Occupational pattern of sample households under study (migrants)

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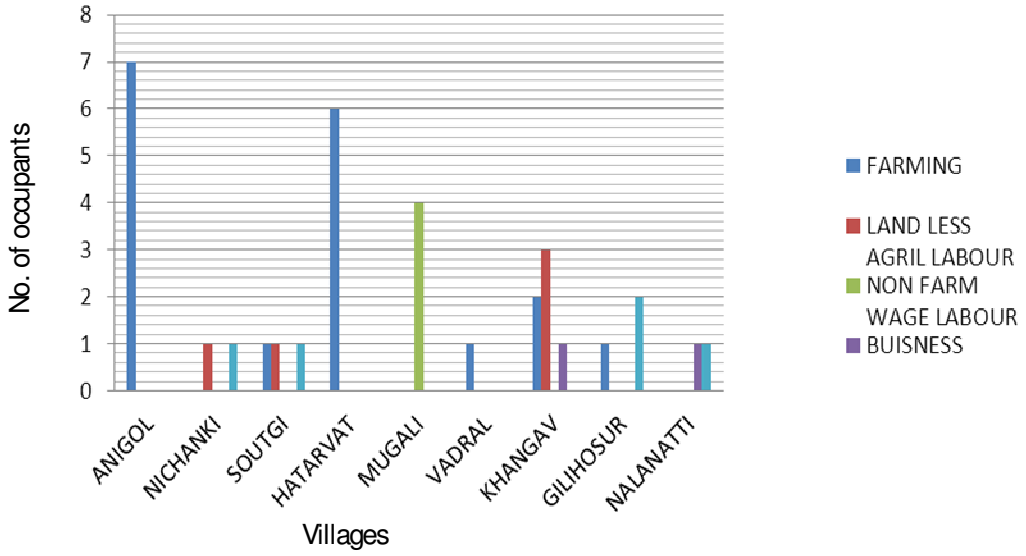

Fig: 4. Occupational pattern of sample households under study (non migrants)

Fig: 4. Occupational pattern of sample households under study (non migrants)

Twenty migrants had completed their high school education in Bailhongal taluk and the least (19) were found in Chikkodi taluk. Highest number of migrants with above matriculation was found in Bailhongal taluk (8) and least in Gokak taluk with one migrant.

The overall percentages of illiterates were highest i.e., 47.96 per cent and the migrants with primary education were 26.53 per cent. Among the migrants 19.90 percent had completed their high school education and only 5.61 per cent had done above matriculation.

4.1.8 Migration rate by the caste in sample villages of Belgaum district

Table 8 showed that Nichanki village had the maximum number of migrants (7) belonging to 3B category, Anigol and Hatrvat villages had only one each. The other villages namely, Mugali, Vadral, Khangav, Gilihosur and Nalanatti had no migrants belonging to 3B category. The migrants belonging to 2A category had migrated more from Vadral village (13) and Soutgi (9). There were no migrants of 2B category except in the two villages Soutgi and Mugali. The migrants belonging CAT-I were four in Anigol village and zero in all the other remaining selected villages. When coming to SC and ST category there maximum number of migrants SC's to migrate from Khangav village (11) and (14) ST's from Gilihosur village.

The percentage distribution as per caste categories showed that 41.88% of migrants were belonging to 2A category. The migrants belonging to 3B and 2B were 10.26% and 2.56 % respectively. CAT-I had 3.42 per cent of migrants. The migrants had percentage of 21.37% and 20.51% of SC and ST to migrate respectively from Belgaum district.

4.1.9 Distribution of Sample Households under the Study on the Basis of Land Holdings

The classification of the families based on the land was presented in (table 9) showed that 41.83 per cent of migrants and 4.58 per cent of non migrants were land less. (28.1%) of the migrants and (10.46%) of the non migrants were belonging to the group of the marginal farmers who had the land, less than 1ha. Hardly (1.31%) of migrants and (2.61%) of non migrants were belonging to the group of semi medium farmers who had (2-4 ha) of land in Belgaum district.

Bailhongal taluk had maximum number of land less migrants (27) and minimum in Chikkodi taluk (12). There were no non migrants with land less in Chikkodi taluk. Chikkodi taluk had the maximum migrants belonging to the group of marginal land holding and minimum in Bailhongal. There were six non migrants each in Chikkodi and Gokak taluks belonging to the group of marginal land holders. Ten migrants were belonging to the group of small farmers in Chikkodi taluk and other two taluks had no migrants belonging to small farmers. Among the non migrants there were (3) small farmers and two each in Bailhongal and Gokak taluks. Only two farmers of Chikkodi Taluk were belonging to semi medium land holding. Non migrants of Bailhongal and Chikkodi taluk had two each non migrants belonging to the group of semi medium land holding and Gokak taluk had no non migrant in that group.(Table 9)

4.2 Correlation analysis for migration data

The correlation study was carried out to know the extent of relationship between migration and variable like land per capita, size of the family, education status, income and caste.

4.2.1 Correlation analysis for Bailhongal taluk

In Anigol village migration is negatively correlated with land per capita (-0.776), it is significant at one per cent level and with income, correlation was negative (-0.484) significant at 5% level. Similarly with education it was negatively correlated but it was not significant. The migration is positively correlated with size of the family (0.318) but it is not significant (Table 10).

In Nichanki village migration is positively correlated with land per capita (0.251) it is not significant. Size of the family is negatively correlated (-0.494) it is significant at five per cent level. Similarly education is negatively correlated and income is positively correlated with migration but they are not significant.

Table 7. Literacy profile of Migrants

Village	Illiterate	Primary school	High school	Above matriculate	Total
Bailhongal Taluk					
Anigol	6	4	8	2	20
Nichanki	8	14	8	6	36
Soutgi	10	8	4	0	22
Total	22	25	20	8	78
Chikkodi Taluk					
Hatarvat	4	1	4	2	11
Mugali	9	8	4	0	21
Vadral	23	6	2	0	31
Total	36	14	9	2	63
Gokak Taluk					
Khangav	22	5	3	0	30
Gilihosur	8	5	0	2	15
Nalanatti	8	4	9	0	21
Total	36	13	10	1	67
Total for the selected taluks of Belgaum District					
Total	94	52	39	11	196
Percentage	47.96	26.53	19.90	5.61	100

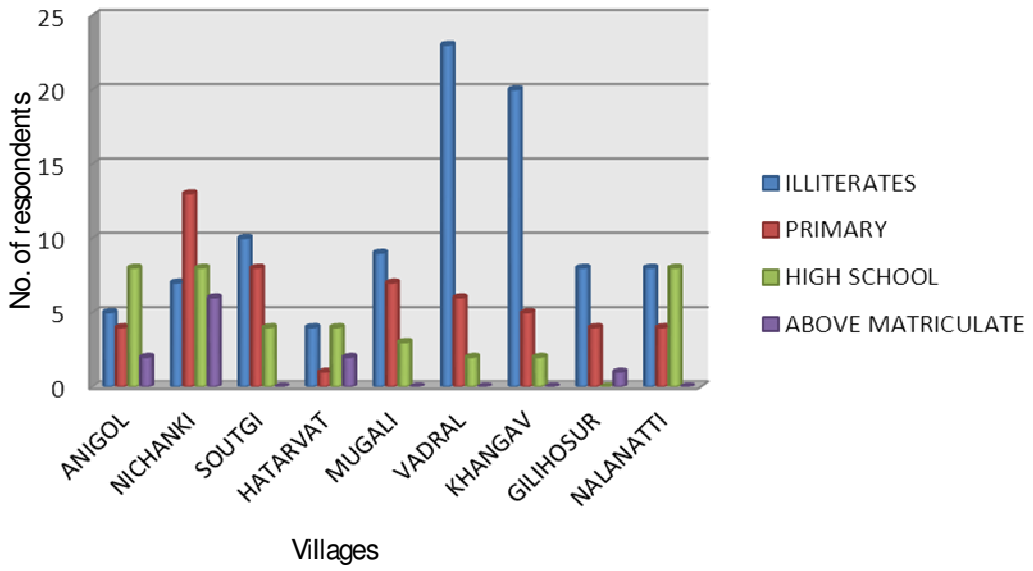

Fig. 5. Literacy status of migrants

Fig: 5. Literacy stats of migrants

For Soutgi village migration is negatively correlated with land per capita and education (-0.259 and -0.304) but they are not significant. Size of the family and income were positively correlated with migration, even these were not significant.

4.2.2 Correlation analysis of Chikodi taluk

In Hatarvat village migration was negatively correlated with land per capita and size of the family (-0.318 and -0.340) but they were not significant. Education was positively related and income was negatively correlated, these were also not significant (Table 11).

In Mugali village migration was negatively correlated with land per capita, size of the family and education (-0.186, -0.068 and -0.461), they were not significant. Income was positively correlated with migration even it was not significant.

For Vadral village of Chikkodi taluk land per capita was negatively correlated with migration (-0.232) it was not significant. Size of the family, education and income were positively correlated even these were not significant.

4.2.3 Correlation analysis of Gokak taluk

Table 12 indicated land per capita was negatively related to migration in Khangav village (-0.433) it was not significant. Size of the family was positively correlated with migration (0.253) even though it was not significant. Education was negatively correlated with migration (-0.494) and it was significant at 5% level. Income was significant at 1% level with correlation value of (0.614).

In Gilihosur village land per capita was negatively correlated with migration (-0.312) it was not significant. Size of the family was negatively correlated with migration (-0.600) and it was significant at 5% level. Education was not significantly correlated. Income was positively correlated with migration (0.490) it was significant at 5% level.

Similarly in Nalanatti village land per capita was negatively correlated with migration (-0.588), it was significant at 5% level. Size of the family and education were negatively correlated (-0.329 and -0.165) with migration but not significant. In the same way income was positively correlated with no significance.

Table 9. Distribution of sample households under the study on the basis of land holdings

Village	Land less		Marginal (< 1ha)		Small (1-2 ha)		Semi medium (2-4 ha)	
	M	NM	M	NM	M	NM	M	NM
Bailhongal Taluk								
Anigol	7	0	3	3	0	2	0	2
Nichanki	8	2	7	0	0	0	0	0
Soutgi	12	2	2	1	0	0	0	0
Total	27	4	12	4	0	2	0	2
Chikkodi Taluk								
Hatarvat	1	0	5	1	4	3	1	2
Mugali	8	0	3	4	2	0	0	0
Vadral	3	0	8	1	4	0	1	0
Total	12	0	16	6	10	3	2	2
Gokak Taluk								
Khangav	9	2	2	3	0	1	0	0
Gilihosur	5	1	9	2	0	0	0	0
Nalanatti	11	0	4	1	0	1	0	0
Total	25	3	15	6	0	2	0	0
Total for the selected taluks of Belgaum District								
Total	64	7	43	16	10	7	2	4
Percentage	41.83	4.58	28.10	10.46	6.54	4.58	1.31	2.61

Note: M-migrants, NM-Non migrants

Table 10. Correlation analysis for Bailhongal taluk

Variables \ Villages	Anigol	Nichanki	Soutgi
Land/capita	-0.776**	0.251	-0.259
Size of the family	0.318	-0.494*	0.144
Education	-0.015	-0.169	-0.304
Income	-0.484*	0.226	0.035

* Significant at 5% level
** Significant at 1% level

Table 11.Correlation analysis for Chikkodi taluk

Variables \ Villages	Hatravat	Mugali	Vadral
Land/capita	-0.318	-0.186	-0.232
Size of the family	-0.34	-0.068	0.083
Education	0.29	-0.461	0.169
Income	-0.163	0.159	0.074

4.2.4 Correlation was done for over all data of the Belgaum district

Correlation was calculated to the variables for entire Belgaum district there land per capita was negatively correlated with migration (-0.284) it was significant at one per cent level. Education had the negative relation with migration (-0.175) with significance at 5% level. Income and caste were correlated positively with no significance (Table 13).

4.3 Gravity model

The analysis of gravity model was done to predict the volume of migration between the place of origin and destination of the migrants. Table 14 showed the forecasted amount of population to be migrated in the future. The volume of migration depends on distance of the destination. The distance of destination increases as the volume of the migration decreases.

4.4 Fitting the logistic regression model

The factors influencing agricultural labour migration were identified using the logistic regression model. The factors identified were land per capita, number of members in the family, family income and education. Tables (15 to 19) indicate the estimation of the logit model. In order to give more precise explanation, odd ratio of point estimate of the factors influencing migration was worked out. The odd ratio can be defined as the ratio of probability of migrants to the probability of non migrants.

In three villages of Bailhongal taluk *viz* Anigol and Nichanki the influence of land per capita was significant (Table 15) . The land per capita had a negative impact on migration. In other words, more the per capita land holding with the family, less were the chances of labour migrating from that family. More than unit value for the odd ratios of Anigol (2.092), Nichanki (7.501) and Soutgi (42.391) favours the migration of the labour as they had the less land holdings. The size of the family had a positive impact on labour migration in all the three villages. Larger the odd ratio in Anigol (72.012) and Soutgi (3.036) as compared to Nichanki (0.0000094) indicated that the influence of the family for migration was more in Anogol and Soutgi as compared to Nichanki. The estimates of the logistic regression show that litracy had positive effect in Anigol (37.48) and negative effect in Nichanki (-30.388) and Soutgi (-4.047) villages. In Anigol village the chances of literate migration was in search of better employment and in other two villages people even when they are illiterate have migrated due to unemployment in the villages. Odd ratio more than unit value in Anigol and Nichanki villages show that the odd ratio in favour of migration increases with increase in level of education. Income had the positive impact on Anigol (0.000672) and Nichanki (0.00054) villages as compared to Soutgi (-0.0000020) village which had the negative impact, it means that when the person had the more income in the village was less likely to migrate.

Table 16 indicated the estimates for the three villages from Chikodi taluk. In Chikodi taluk all the three villages had the negative impact of per capita land holding on migration of labours. In other words more the per capita land holding with the family, less were the chances of people migrating from that family. Odd ratio more than unit value for Vadral (1.314) village indicated that people migrate more during the off season from that village even when they have more land holdings, which is due to no irrigation facilities during the rabi season in the village. The size of the family was not significant in all the three villages but larger the odd ratio in Mugali (1.275) and Vadral (1.995) as compared to Hatarvat (0.547) indicated that the influence of size of the family on labour migration was more in Mugali and Vadral as compared to Hatarvat. Estimates of logistic regression for literacy in Hatarvat village (0.755) was not significant where as Mugali village (-9.999) had negative effect and Vadral (19.561) had positive effect. Odd ratio more than unit value in Vadral village (3129101), showed that illiterates had migrated more from the village during the off seasons. Income had positive effect for all the three villages. Odd ratio with unit value indicated that labour migration has influenced with every increase in income level of the family.

Table 17 showed the results of logistic regression for the three villages of Gokak taluk. Land per capita had negative effect for Khangav (-7.65) and Nalanatti (-201.43) and positive effect for Gilihosur (5.160). Less than unit value for odd ratio (0.00047) in Khangav village disfavoured labour migration. The size of the family had negative impact in Gilihosur (-28.059) and Nalanatti (-50.482) which indicated that even when the size of the family was small there was more labour migration.

Table 12.Correlation Analysis for Gokak Taluk

Villages / Variables	Khangav	Gilihosur	Nalanatti
Land/capita	-0.433	-0.312	-0.588*
Size of the family	0.253	-0.600*	-0.329
Education	-0.494*	-0.471	-0.165
Income	0.614**	0.490*	0.279

* Significant at 5% level
** Significant at 1% level

Table 13. Correlation analysis for Belgaum District

Variables	Migration
Land/capita	-0.284**
Size of the family	-0.08
Education	-0.175*
Income	0.051
Caste	0.05

* Significant at 5% level
** Significant at 1% level

Table 14. Gravity model for prediction of volume of migration between the place of origin and destination

Origin	Destination	Distance (km)	Predicted Volume Of Migration
Anigol	Goa	130	108868.0136
	Banglore	479	1598.84447
	Dharwad	70	36076.19143
	Tamil nadu	804	57805.48034
Mugali	Goa	150	72226.24022
Khangav	Goa	180	45063.95262
Gilihosur	Belgaum	70	11271.18367
	Hospet	195	2036.639053
	Goa	180	21002.71605
Nalanati	Goa	180	28629.32731

Table 15. Logistic regression model fitted for Bailhongal taluk

Factors	Anigol		Nichanki		Soutgi	
	Estimates	Odd Ratio	Estimates	Odd Ratio	Estimates	Odd Ratio
Land/capita	-91.36**	2.092	-50.94**	7.501	3.747	42.391
Size of the family	4.277*	72.012	-11.568**	0.0000094	1.111**	3.036
Education	37.48**	1.763	-30.388**	6.347	-4.047*	0.075
Income	0.000672	1.001	0.00054	1.001	-0.0000020	1.000

* Significant at 5% level
** Significant at 1% level

Table 16. Logistic regression model fitted for Chikodi taluk

Factors	Hatarvat		Mugali		Vadral	
	Estimates	Odd Ratio	Estimates	Odd Ratio	Estimates	Odd Ratio
Land/capita	-4.199**	0.0150	-22.731**	0.0000	-48.081**	1.314
Size of the family	-0.603	0.547	0.243	1.275	0.671	1.995
Education	0.755	2.128	-9.999**	0.0000	19.561**	3129101
Income	0.000032	1.00	0.00040	1.000	0.000340	1.000

* Significant at 5% level
** Significant at 1% level

Table 17. Logistic regression model fitted for Gokak taluk

Factors	Khangav		Gilihosur		Nalantti	
	Estimates	Odd Ratio	Estimates	Odd Ratio	Estimates	Odd Ratio
Land/capita	-7.650*	0.00047	5.160*	174.175	-201.43**	4.060
Size of the family	0.357	1.429	-28.059**	6.519	-50.482**	1.191
Education	-18.894**	0.000	-29.83**	1.101	84.971**	7.985
Income	0.0005	1.000	0.0000531	1.000	0.00452	1.005

* Significant at 5% level
** Significant at 1% level

Table 18. Logistic regression model fitted for all taluks

Factors	Bailhongal		Chikodi		Gokak	
	Estimates	Odd Ratio	Estimates	Odd Ratio	Estimates	Odd Ratio
Land/capita	-5.246*	0.0052	-4.293*	0.0137	-3.175*	0.0418
Size of the family	-0.199	0.820	-0.150	0.861	-0.234	0.792
Education	0.0027	1.003	-0.687	0.503	-0.581	0.559
Income	0.000027*	1.000	0.0000462*	1.000	0.0000815*	1.000

* Significant at 5% level
** Significant at 1% level

More than unit value for odd ratio indicated that the influence of size of family on labour migration was more in all the three villages. Estimates of logistic regression for education had negative effect for Khangav (-18.89) and Gilihosur (-29.83) i.e. literates had migrated less from these villages. Nalanatti (84.971) had the positive effect, where literates had migrated more in search of better employments. Income had the positive effect in all the three villages. The odd ratio (1.000) value showed that there was increase in income of the migrants in all the three villages.

Table 18 indicated the estimates of logit model for all the three taluks. The influence of land per capita was significant for all the three taluks. The land per capita had negative impact in Bailhongal (-5.246), Chikodi (-4.293) and Gokak (-3.175) which indicated that more the land holding with the family, less were the chances of people migrating from that family. Less than unit value for odd ratios also reflects that it disfavoured the labour migration. The size of the family had the negative impact in all the three taluks which indicated that smaller the size of the family also influences labour migration. Less than unit value for odd ratios (0.820, 0.861 and o.792) for Bailhongal, Chikkodi and Gokak respectively indicated that it disfavoured labour migration. The estimates of the logistic regression show that literacy had a positive effect for Bailhongal (0.0027). Negative effect for Chikodi (-0.687) and Gokak (-0.581) indicated that even when they were illiterates they had migrated in search of employment. Income was not highly significant but had the positive impact on migration. The unit value for the odd ratio showed that there was increase in migration for every change in the income level.

The logistic regression model fitted for the entire Belgaum district in (Table 19) indicated that land per capita had the negative effect on migration. In other words, more the per capita land holding with the family, less were the chances of people to migrate from that family. Less than unit value for odd ratio (0.0203) also reflects that it disfavoured labour migration. The estimates of the logistic regression for the size of the family had the negative (-0.180) impact on labour migration i.e. even when the size of the family was small the probability of migration was more but the odd ratio (0.835) less than unit value for the Belgaum district show that there is no impact of family size on the labour migration. Education also had the negative impact on migration; literates migrated less when compared to the illiterates in the district. The odd ratio (0.546) for education was less than unit value which indicated illiterates migrate more in search of employment as compared to the literates. Income had the positive impact on migration in the district. More than unit value for the odd ratio for income showed that increase in income, increase the labour migration.

Table 19. Logistic regression model fitted for the data of entire Belgaum district

Factors	Belgaum	
	Estimates	Odd Ratio
Land/capita	-3.897*	0.0203
Size of the family	-0.180	0.835
Education	-0.605	0.546
Income	0.0000341*	1.000

* Significant at 5% level
** Significant at 1% level

5. DISCUSSION

The study was carried out to know the quantity of migration of agricultural labourers from Belgaum district of Karnataka state and to fit the statistical models for the migration data from the sampled villages. The results obtained are discussed under the following headings.

5.1 Tabular analysis

The data on incidence of migration in Belgaum district sample villages (Table 1) indicate that on an average, majority of migrants were from Chikkodi and Gokak taluks. In Chikkodi taluk majority of people belonging to Vadral and Hatarvat villages migrated seasonally. In Bailhongal taluk , out of the three sample villages, Nichanki had more number of migrants because there were some educated people who had migrated more in search of good jobs for better opportunities and since Soutgi village was mainly dry land situated at the remotely people migrated due to unemployment and underemployment.

The migration of the persons varied from one family to the other. In the village individual, both husband and wife and the whole family might migrate. Therefore the data presented for the entire Belgaum district sample villages (Fig: 1) showed that individuals migrate more compared to families and both husband wife because when the families migrate to some urban areas, the cost of living increases when compared to village and when they keep on migrating it affects the education of their children therefore individuals migration is more.

The gender profile (Fig: 2) represented that the amount of male migration is more compared to females. In some villages, totally the female migration is zero since the persons belonging to Hatarvat and Gilihosur migrate seasonally during off seasons for digging the wells and contract based tamarind harvesting in different places.

The persons belonging to the age group of (15-30) years migrate more (Pratibha *et al.* 2010) compared to the other age groups (Table 4), because the persons completing their primary or high school education migrate in search of some labour works at factories or others and also the young illiterates. No females migrate after the age group of 45 and fewer males migrate in that age group as the efficiency of working will be less.

Data on occupational patterns of migrants and the non migrants (table 5 and 6). The tables indicated that among the migrants nonfarm wage labours are more when compared to the agriculture labours. Among the non migrants more persons were engaged in farming only.

The literacy profile of the migrants (Table 7) showed that illiterates comprised (47.96%) and the literates were (52.04%). Very few persons were above matriculation. Due to the family migrating frequently to the different places, the parents are unable to give the proper education to their children thus illiteracy is increasing in the community.

Sample households were classified based on the land holdings (Table 9). Majority of the migrants belonged to the land less category. Hardly few migrants and non migrants belonged to the category of semi-medium farmers and rest all were in the group of marginal farmers.

5.2 Correlation analysis

In order to understand the extent of relationship of variables like per capita land availablity, size of the family, income and education of the migrants' correlation coefficients were computed. The correlation analysis was carried out for the three villages of the Bailhongal taluk, where in Anigol had the negative relation with the migration which showed that, as the land holding increased the migration rate decreased. In the similar way income also had the negative relation i.e., if the family income was more, quantity of migration in the family was less (Table 10).

Chikkodi taluk showed (Table 11) no significant or relation between the dependent and the independent variables, since in this taluk people migrated during the off season even when they have the sufficient land holdings and good income. They migrated during the Rabi season due to lack of rains and no irrigation facilities available from October to June. In Gokak taluk (Table 12) it was noticed that per capita land availability had the negative

correlation with migration i.e., as the land holding size increased the quantity of migration decreased. This was due to the fact that in this taluk there is facility of canal water for the farming compared to Chikkodi taluk. Income had a positive relation which indicated that there was increase in the amount of income with increase in migration rate. The people from this taluk migrated more to the industrial areas where they were paid more wages for their work and they were paid extra wages for the overtime work done. Thus their income also increases with increase of migration.

When correlation analysis was carried out for the entire data of Belgaum district (Table 13) per capita land availability was negatively related with migration and so is for education also. The negative relation was true because there was underemployment problem arising in the villages, as the people were uneducated and they go in search of employment to the different areas.

5.3 Gravity model

Migration was driven by the attractive force between the place of origin and destination and implied by the costs of moving from one place to other. The gravity model for the labour migration suggested (Table 14) that the attractive forces between source and the destination places depended on the difference between labour incomes in the two places ((Lewer *et al.*, 2008). Population size also mattered more for people in the source place and more people were likely to migrate. Larger the population in the destination, larger was the labour market for the migrant labours. The gravity model showed that volume of the migration which was on decreasing trend as the distance between the place of origin and destination increased. People migrated more to nearby cities or the urban areas more in search of the employments. More the population of the destination people migrate more. Gravity model would be employed to see the volume of the migration.

5.4 Fitting logistic regression model

The data for fitting logistic regression model was taken from the three taluks of Belgaum district, where 153 households were selected as sample for the study and the analysis was presented in the tables 15 to 19. The result of the logistic regression was fitted separately for each sample village of all the three taluks.

When the logistic regression was fitted for the data of Bailhongal taluk, it was found that, per capita land availability was negatively significant for Anigol and Nichanki villages, but Soutgi village had no significant difference (3.747) relating to land because it's one of the village situated at the remote area where in even when the family had the land holding they migrated in search of employment since they had mainly the dry land. These results were in accordance with the findings of Akwasi Mensah-Bensu and Kees Burger (2000).

In Chikkodi taluk it was noticed that land per capita for Hatarvat and Mugali villages were negatively significant but the odd ratio was less than unit which indicated that migration was not so much favoured in those villages as maximum respondents had the land holdings and they migrated only during the off seasons. In the Vadral village estimated value was negative but highly significant when compared to the other two villages. Here the odd ratio was more than unit which showed that migration was favoured even when they had sufficient land holdings, because of lack of the irrigation facility and occurrence of droughts.

Gokak taluk of Belgaum district (Table 17) noticed that the positive estimated value for land per capita in Gilihosur village showed that even when the landholding was more, people migrated because they said that the productivity was low due to lack of rains. In Nalanatti village education was positively significant and also odd ratio was more than unit. It can be inferred that people are migrating in search of better employment suitable for their education in the city areas. The other two villages had the negative estimated value with more than unit value of the odd ratio which showed that even when the persons were not literates they migrated in large numbers to the different places in search of employment, as there was under employment in the origin place with constraints of land holdings or land less.

The logistic regression model which was fit for the data of the three taluks (Table 18) showed that income was significant in all the three taluks with equal unit value of the odd ratio which showed that there was increase in the income level of the family due to the migration.

Logistic regression fitted for the data of all 153 households of Belgaum district. (Table 19) showed that the estimated values for land per capita and income of the family were negatively significant and were in line with the findings of study conducted by Singh and Singh (2011).

Overall results of the logistic regression model fitted for the data of Bailhongal taluk showed that the households with the less land holdings or landless families migrated more and some people migrated due to the underemployment in the village. Many farmers with the smaller land holdings expressed that agriculture was not profitable due to lack of irrigation facilities and occurrence of droughts. The persons who were educated migrated to the faraway places in search of better employment suitable to their profile.

6. SUMMARY AND CONCLUSIONS

Migration is a form of mobility, which is a more general term covering all types of movements from one place to another. Migration is an important feature of human civilization. It reflects, human endeavor to survive in the most testing conditions both natural and manmade. Rural to urban migration is a response to diverse economic opportunities across space.

In India, internal mobility is critical to the livelihoods of many people, especially for people from rural areas. In rural areas, sluggish agricultural growth and limited development of the rural non-farm sector raises the incidence of rural poverty and unemployment. Thus many of them migrate to the urban areas in search of jobs. There are many types of migration *viz,* rural to urban, urban to rural, urban to urban etc

The present study was an attempt to know the different reasons for the migration of the agricultural labours from Belgaum district and to build the suitable models for migration data. The data was collected through personal interview method.

Specific objectives

The objectives of the study were

1. To build the models for migration
2. To study the effect of socio-economic and demographic characteristics on agricultural labour migration and
3. To study the relation between land holding and distance of migration.

Selection of the study area

Belgaum district was selected for the study as it is the second highest populated next to Bengaluru. Three taluks of Belgaum district were selected by cluster sampling procedure based on the highest labour force. They were namely Bailgongal, Chikkodi and Gokak. Three villages were selected from each taluk at random.

Nature and source of data

For evaluating the objectives of the study, the primary data was collected through the personal interview method. A total of 153 samples were selected for the purpose with 51 samples from each taluk.

Tools and techniques employed for analysis

The logistic regression model was used to know the factors influencing the migration of agriculture labours and the gravity model was used to forecast the quantity of migration of the agriculture labours in the future days. To know the relation between the socio-economic and demographic characteristics, correlation analysis was made between the dependent variable migration and the independent variables *viz.,* land/capita, income, size of the family and education status of migrants.

Results

The summary of the findings is as follows.

Tabular analysis

Tabular analysis was done for the different features of the migrant and non migrants in the sample villages of Belgaum district. Tabular analysis showed that out of sample households around 78 per cent of people migrate from Chikkodi and Gokak taluks. Tabular analysis revealed that more than 50 per cent individuals migrate from the family when compared with the family migration and the individuals belonging to the age group of 15-30 years migrate more. The persons, who migrate, go to the non farm labour works at the place of destination. Analysis also showed that 48 percentage of illiterates migrate due to underemployment and unemployment in the villages. The families with no land or less land with no irrigation facilities migrate more. The tabular analysis also showed that people belonging to lower caste migrate more than that of upper caste.

Correlation analysis

The results for the correlation coefficients between dependent variable migration and the independent variables *viz.,* land/capita, size of the family, education, income and caste revealed that there was significant relation between the land per capita and migration. The significant relation also existed even with family income and the migration.

Gravity model

The analysis of gravity model revealed that the people migrate more to places located near to their origin. It also predicts the quantity of migration in the future days. Here as distance of destination increases the volume of migration decreases.

Logistic regression model

Logistic regression model was fitted for the migration data of Belgaum district. When the model was fit for the three taluks *viz.,* Bailhongal, Chikkodi and Gokak they showed that land per capita was negatively significant with the odd ratios greater than unit, by this we can interpret that lower the land per capita influenced more migration. Considering the other features *viz.,*size of the family, it was positively significant for few villages and negative for the others with the odd ratio unit or less than unit. The positive significance showed that the migration was influenced more as the size of the family was big and the negative significance showed that even when the size of the family was small people migrated due to different reasons. The other aspect was the education; the model showed that illiterates also migrate more than that of literates.

REFERENCES

Agapi Somwaru, Xinsen Diao, Fred Gale and Francis Tuam, 2001, China's employment and rural labour migration. American Agricultural Economics Association annual meeting Chicago, IL, August 5-8.

Akwasi Mensah-Bonsu and Kees Burger, 2000, A Bargaining Models for migration. Economics of poverty, environment and Natural resources use, Rob B.Dellink and Arjun Raju's (Eds), pp. 185-204.

Amaresh Dubey, Richard Palmer-Jones and Kunal Sen, 2004, Surplus labour, social structure and rural to urban migration: evidence form Indian data. Paper presented at the Conference on the 50th anniversary of the Lewis model, July 6-7.

Babita Sinha, Smita Jha and Nalin Singh Negi, 2012, Migration and empowerment: The experience of women in households in India where migration of a husband has occurred, *J. Gender Studies,* **21**: 61-76.

Brigitte, H. and Michael, K, 2009, Labour migration and remittances in the Hindu-Kush Himalayan region. International centre for integrated mountain development working paper. 1-15.

Channveer and Lokesh, H, 2011, Farm labour migration after the implementation of MGNEREGA in Gulbarga district of Karnataka. *Agric.Eco.Research.*, **24**: 562.

Deepak Mishra, 2010, Seasonal migration in globalizing India. *Proceedings of 52nd Annual Conference* 17-19 December, 86-87.

Depoo, 2008, International labour migration and factors affecting the repatriation from developed to developing countries: A case of Guyunas brain drain. *Ph.D Thesis*, Lynn University.

Doddarasaiab,G.and Shivalingappa, B.N, 2009, Characteristics of out-migration from Mysore city. *Southern Economist J.*, **50** (15): 44-51.

Donald, L. and Mandlak,Y,1995, On the inter sectoral migration of agricultural labour. Policy Research Working Paper No 1425.

Gita Jaiswal, 2010, An analysis of the cause and effects of migration in India with special reference to North-East India. The Indian Society of Labour Economics, 52nd Annual Conference 17-19 December.163-164.

Gouradevi K., 2010, Migrant construction workers in Gulbarga city. The Indian Society of Labour Economics, 52nd Annual Conference, 17-19 December :113.

Greenwood, M J., Maeses, P.R., Plane, D.A. and Schlottman, A.M, 1991, New direction in migration research. *The Ann. Regional Sci.*, **25**: 237-270.

Haracio Fustino and Isble Proenca, 2011, Effect of Immigration on Intra-Industry trade : A logit analysis, Technical university of Lisbon. Dept of Economics, Working Paper No 19.

Holley Reed, Catherine,S.Andrzeijewski and Michael, J.W., 2010, Men's and Women's migration in coastal Ghana: An event history analysis, *Demographic Res.,* **22**(1): 771-812.

Jonathan Pattenden, 2012, Migration between rural Raichur and boomtown Bangalore and the circulation of labour in South India. *Global Labour J.*, **3**(1): 163-190.

Kamble, P.S., 2008, Labour migration among backward castes in India. *Southern Economist J.*, **50**(15): 39-44.

Lewer, Joshua,Van den Berg and Hendrik,2008, A Gravity Model of Immigration. Management Department Faculty Publications. Paper 22.

http://digitalcommons.unl.edu/managementfacpub/22

Mahesh, M., and Rais Ahmad Kuchay, 2010, Analysing the trend of migration in India. The Indian Society of Labour Economics, 52nd annual conference, 17-19 December.146-147.

Naomi Jacob, 2008, Impact of NREGA on rural-urban migration, field survey villumpuram District Tamil Nadu, *CCS* Working paper No.202.

Ohajianya ,D.O, 2005, Rural-urban migration and effect on agricultural labour supply in Imo state of Nigeria. *Int. J. Agric. Rural Dev.,* **6**: 111-118.

Omprakash Paraganiha, Sharma M.L, Paraye P.M and Soni V.K, 2009, Migration effect of agricultural labourers on agricultural activities. *Indian Res. J. Extn. Educ.*, **9**(3) : 95-98.

Paramjit Kaur and Chavhan, 1998, Migration of women labour and their problem: A micro study. *Southern Economist J.*, **37** (1): 9-10.

Pratibha Gayal, Mini Gayal, and Sukhjeet Singh, 2010, Migrant workers in organised retail in Punjab. The Indian Society of Labour Economics, 52nd Annual Conference 17-19 December, p.185

Priya Deshingkar, 2006, Internal migration, poverty and development in Asia http://www.asia2015 conference.org

Priya Deshingkar, 2010, Migration remote areas and chronic Poverty in India, ODI working paper 32; http:// www.odi.org.uk.

Priya Deshingkar and Akter, S, 2009, Migration and human development in India. Human Development Research Paper, 13.

Priya Deshingkar and John Farrington, 2008, Rural labour markets and migration in South Asia : Evidence from Indian and Bangladesh. World Development paper p.442

Rabi N. Pattar, and Mahendra, P., Agasty, 2010, The Indian Society of Labour Economics, 52nd Annual Conference, 17-19 December, P. 202.

Rekha R,, Gaunkar, and Vishal Chari, 2010, Causes and consequences of female migration in informal sector. The Indian Society of Labour Economics, 52nd Annual Conference, 17-19 December, p.165.

Shabir Ahamad, Padder, and Javed-ul-Aziz, 2010, Labour migration , its nature and impact. The Indian Society of Labour Economics 52nd Annual Conference, 17-19 December, p.162.

Shanti, 2006, Female labour migration in India. Insights from NSSO data, Working Paper 4, **http://www.mse.ac.in**

Shoba Jain, 2010, Factors determining the migration of rural skills from rural areas. The Indian Society of Labour Economics, 52nd Annual Conference, 17-19 December, p.206.

Singh, N.P and Singh, R.P., 2011, Labour migration in Indo-Gangetic plains: Determinants and impacts on socio-economic welfare. *Agril. Eco. Res. Review*.

Sundaravaradarajan, K.R, Shivkumar P and Jaghanmohan K.R, 2011, Determination of key correlates of agricultural labour migration in less resources endowed areas of Tamil Nadu. *Agri. Eco. Res. Rev.*, **24**: 467-472.

Surabhi, K. S. and Ajith Kumar, N, 2007, Labour migration to Kerala: A study of Tamil migrant labours in Kochi. Working paper, 16.

Suresh, Lal, B., Sujatha, G. and Kavitha, G,2007, Women labour migration :an empirical investigation. *Southern Economist J.*, **46** (15): 33-36.

Tondon Barkh and Singh, D.K., 2007, Rural-urban migration in India: Status and direction, *Kurukshetra*, **55**(8): 23-27.

Vijay Korra, 2010, Nature and characteristics of seasonal labour migration: A case study in Mahabubnagar district of Andhra Pradesh. Working paper No 433.

APPENDIX I

INTERVIEW SCHEDULE

Name of the village :

Total population :

Labour force in the village :

1. Name of the respondent -
2. Age -
3. Education -
4. Occupation -
5. Marital status - married/unmarried/widow/separated
6. No of children - boys: girls:
7. Caste -
8. Religion -
9. Family composition :

Sl. No	Name	Relationship with respondent	Sex	Age	Marital status	Education	Occupation	Annual Income (Rs)

10. Type of the family: Nuclear family /Joint family

11. Land holding:

Particulars	Land (ha)	Water source
Irrigated		
Dry land/rainfed		
Total		

Kharif season	Area (ha)	Input Cost (Total)	Input Cost/ha	Yield q/acre	Income (Rs)
Irrigated Dry land/rainfed					

12. Crops grown:

Rabi season	Area (ha)	Input Cost (Total)	Input Cost/ha	Yield q/acre	Income (Rs)
Irrigated Dry land/raifed					

13. Has any of the family members migrated: Yes/No

14. If yes, specify the names:

i)

ii)

15. Details of the migrated person:

Reasons for migration	Place of migration	Period of migrate-on	Distance (km)	Labour force in area	No of persons migrated	Nature of work in migrated village	wages	Hours of work	Income for the migrated period
Agriculture not profitable									
Unemployment									
Less wages									
Landless									
Smaller land holdings									
On season									
Off season									
Natural calamities									
Drought									
Better opportunities									
Loan repayments									
Health problems									
Children education									

16. Changes in the cropping pattern (during last 5 years)

Sl.No	Crops grown at present	Crops grown before	Reasons for shifting

17. Availability of agricultural labours: optimum/moderate/less/no

18. If no/less, when do you face labour problem?

19. How do you overcome labour problem: mechanisation/ bringing labours from outside

20. What is daily wages for?

S.No	Labour work	Men (Rs/day)	Women (Rs/day)	Child (Rs/day)	Mode of wages paid
i.	Weeding				
ii.	Ploughing				
ii.	Harrowing				
iv.	Harvesting				
v.					
f.					

21. Problems faced in the migrated village:
    i.
    ii.

22. How often the migrant visits the family?
23. Changes in the socio-economic conditions of the family due to migration:

		Before migration	After migration
a.	Income wise		
b.	Education status		
c.	New skills		
d.	Standard of living		
e.	Assets created		
f.	Consumption pattern		
g.			
h.			

24. What is your opinion about migration?

25. How to reduce the problem of migration?

MODELS FOR MIGRATION OF AGRICULTURAL LABOURERS IN BELGAUM DISTRICT

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ABSTRACT

Migration is an important feature of human civilization. It reflects, human endeavour to survive in the most testing conditions both natural and manmade. There are several reasons for the migration, thus the study was carried out based on the primary data, collected from the three taluks of Belgaum district *viz.,* Bailhongal, Chikkodi and Gokak based on highest labour force. Totally 153 samples were selected from three taluks.

Tabular analysis showed that out of sample households, around 78 per cent of people migrate from Chikkodi and Gokak taluks. It also showed that more than 50 per cent individuals migrate from the family when compared with the entire family migration and the individuals belonging to the age group of 15-30 years migrate more. Correlation coefficients for the variables *viz.,* land/capita, size of the family, education, income and caste revealed that there was significant relation between the land per capita and migration. The significant relation also existed even with family income and migration. The gravity model revealed that the people migrate more to places located near to their origin and as distance of destination increases the volume of migration decreases.

Logistic regression model was fitted for the migration data of Belgaum district. It revealed that land per capita was negatively significant with the odd ratios greater than unit, by this we can interpret that lower the land per capita influenced more migration. Considering the other features *viz.,* size of the family, it was positively significant for few villages and negative for the others with the odd ratio unit or less than unit. The positive significance indicates that the migration was influenced more as the size of the family was big and the negative significance indicates that even when the size of the family was small people migrated due to different reasons. The other aspect such as the education; the model showed that illiterates migrate more than that of literates.