

ISSN 2454-5597



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NAVI MUMBAI**

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Working Paper – 29
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Issue – April 2017

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REGIONAL DEVELOPMENT AS STUDY OF MIGRATION IN NAVI MUMBAI

Manashree Kusnur¹
A. M. Swaminathan²

Abstract

Theories of migration are important because they can help us understand population movements within their wider political and economic contexts. Migration theories deal with movements of labour who are attracted by positive wage differentials and positive expected real incomes, external economic opportunities and better skilled jobs. It also deals with family movements to maximise well-being of household and minimise risks, investment decisions to increase productivity of human capital and so on. These no doubt are the root causes behind the movement of labour or families but rarely are these deliberate efforts on the part of the government to decongest an over-crowded place. A study in this direction would be the creation of Navi Mumbai which was born out of a policy effort of the Maharashtra Government. In this study, we look into the birth and development of Navi Mumbai not only as an effort to decongest the population of Mumbai, but also as an independent, well developed city with proper housing, strong economic base, world class infrastructure, well preserved environment, well balanced and landscaped city, designed and planned for the life and development of 21st century India.

Key Words: Migration, Regional Development, Navi Mumbai, Environment.

JEL Codes: R11 and R23

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1. INTRODUCTION:

Theories of migration deal with movements of labour who are attracted by positive wage differentials and positive expected real incomes, external economic opportunities and better skilled jobs. It also deals with family movements to maximise well-being of household and minimise risks, investment decisions to increase productivity of human capital and so on. These no doubt are the root causes behind the movement of labour or families but rarely are these a deliberate effort on the part of the government to decongest an over-crowded place. A study in this direction would be the creation of Navi Mumbai which was born out of a policy effort of the Maharashtra Government. In this study, we look into the birth and development of Navi Mumbai not only as an effort to decongest the population of Mumbai, but also as an independent, well developed city with proper housing, strong economic base, world class infrastructure, well preserved environment, well balanced and landscaped city, designed and planned for the life and development of 21st century India. Navi Mumbai remains a fascination not only to urban planners but also to scholars of social sciences. It is a unique project that has been attempted in recent years in India, both in terms of the magnitude of investments (in spite of being a self - funded project) and also an exercise in Indian government's policy of creating counter-magnet cities in order to deflate the swelling population in mega cities like Mumbai. The idea of Navi Mumbai took a long time to be accepted and different interest groups played an important role in lobbying for its implementation.

Before we look into the emergence and development of Navi Mumbai by discussing the history behind this emergence in section 3 we deal with the literature on Migration studies in section 2. In section 4 we deal with the development stages of this city along with the migration. Data Analysis is presented section 5, while section 6 looks into the policy implications of this study with conclusion in section 7.

2. REVIEW OF LITERATURE ON MIGRATION:

Migration is the geographical movement of people across a specified boundary for the purpose of establishing a new permanent or semi-permanent residence for various reasons ranging from better employment opportunities to persecution.

Although migration is a multidimensional problem and its causes are varied, it has been a subject of study to administrators, scholars and researchers all over the world. Migration between regions plays a potentially important role in regional development and growth. Several attempts have been made through researchers to explain migration in terms of various theories.

Although, the classical theories of migration had begun with the “Laws of Migration” by Ravenstein (1885), this idea was on one side, developed further to form the Gravity theory of Migration by Zipf (1946) and on the other side, reformulated to have a push pull framework by Lee (1966). Parallely, migration theory moved from purely mechanical models to more sophisticated theories. Some of the prominent theories of migration were that of the basic model developed by Lewis (1954) and later extended by Fei and Ranis (1961), which grew out of trade theory and dealt with wage equality in two sectors. While, the Harris and Todaro (1970) model deals with rural-urban migration, the Human Capital Model of Sjaadstad (1962), compared the benefits to cost of migration. The neoclassical theory of migration has been subject to a conceptual critique and rich empirical testing. Widespread dissatisfaction with neoclassical led to the emergence of new theoretical perspectives. The Dual Labour Marker Theory, developed by Piore (1979), dealt with the causes of migration of foreign workers for unskilled jobs, whereas, Stark and Bloom (1985) dealt with migration of households rather than individuals. While, Massey (1990) talked about perpetuation in migration under the networks theory of migration and cumulative causation theory, Wallerstein (1974), talked about migration as a function of globalization.

Thus, it is seen that the theories of migration show a multifaceted, which is very complex and diverse phenomenon and hence there is no common theory or principle that can explain different types of migration. This makes research conceptually as well as empirically challenging. The presented theories are very rarely tested simultaneously and empirical applications shy away from settling down which factor is the most important in explaining given migration patterns.

Empirical Studies on migration have been reviewed in this section. While on the one hand, Ardeshir Anjomani (2002) attempts to identify the factors that influence

interstate migratory flow in United States in the study period (1975-1980) using simultaneous equation model of migration, on the other hand Singh and Aggarwal (1998) examine the major ‘push’ and ‘pull’ factors in rural-urban migration in their study which is based on the data collected from 1991 Census for 25 districts of North-Western Uttar Pradesh using the Ordinary Least Square Regression Model. Filipe Lage de Sousa (2012) investigates the influence of urban externalities on migration flows using the gravity equation estimated by OLS. Three types of urban externalities are considered: entertainment options, congestion and violence. Neighbouring effects of urban externalities are also analysed. Again, an attempt is made by Cris Beauchemin and Bruno Schoumaker (2005) to establish new empirical evidence on the effects of local development policies implemented both in rural areas and in secondary towns in order to reduce migration to cities. Using recent longitudinal individual and community-level data on migration and local development, this paper provides new empirical evidence on this question in Burkina Faso. While Bird and Deshingkar (2009) explore circular migration in India, the policy response and impact of the policy response on the welfare of migrants and more broadly on regional inequality, Kyaing Kyaing Thet (2014) focuses on the socio-economic characteristics of migrants and examines the significant pull and push factors of migration in Monywa Township using factor analysis. Sahota (1968) analyses interstate migration in Brazil which was found to be highly responsive to earning differentials. The empirical results are derived from two models: a single-equation model and a simultaneous- equation model. Two themes are examined by Fan (2005) in this paper: first, migration as a more effective factor in population redistribution, and second, the strengthening of the relationship between migration and regional development. Sudnya Mahimkar’s study (2015) theoretically encompasses two complex phenomena – one of internal migration from rural to urban areas and other is continuous efforts of original settlements or villages to maintain their cultural identity and struggle with pressure of urbanization.

3. HISTORY BEHIND THE EMERGENCE OF NAVI MUMBAI:

Mumbai has evolved from being a fishing hamlet to a colonial node, subsequently to being the cradle of textile civilisation and in contemporary times has become the hub of India’s commerce and finance. The most widely held popular

perception about Mumbai is that of a city of opportunity for people from across South Asia, and now even beyond. A phenomenal rate of urban growth has been experienced by India during the 25 years following independence and Bombay has had its due share in it. The population of Greater Bombay rose from 2.966 million in 1951 to 4.152 million in 1961 and to 5.970 million in 1971, registering 40.0 and 43.80 per cent growth rates during the first and second decades respectively.

The rapid rate of growth of population, made possible by the increasing industrial and commercial importance of the city, resulted in a fast deterioration in the quality of life for the majority of people living in the city. Development inputs could not keep pace with the rapidly growing population, industry, trade and commerce. Besides, there are physical limitations to the growth of a city built on a long and narrow peninsula, which has very few connections with the mainland. The growth of Mumbai city is constrained by sea towards south, east and west and as a result total land area available for development of Mumbai is limited. Hence, developmental planners in late 1960s started exploiting an alternative for dispersal and control of Mumbai population. Eminent architects like Mr. Charles Correa, Mr. Shirish Patel and Mr. Pravin Mehta suggested Navi Mumbai as an alternative to Mumbai.

Emergence of Navi Mumbai

The Government of Maharashtra has been alive to the emerging problems of this metropolis. Responsible public opinion was equally vigilant and several constructive suggestions appeared from time to time. All this helped in keeping the problems of Bombay in the forefront of public awareness. In the context of the overall liberal/socialistic spirit and policy environment, Maharashtra took up several efforts in the urban planning and development sector from the mid-1950s to mid-1970s, even ahead of national policy moves.

In 1958, the Govt. of Bombay appointed a study group under the Chairmanship of Shri S. G. Barve, Secretary to Government, Public Works Department, to find a remedy for the problems of Mumbai. The recommendations made a regional impact. The Barve Reportⁱ said: "There is little doubt that the development of the mainland opposite the Island of Bombay would really be a master

stroke.” One of its major recommendations was that a rail-cum-road bridge be built across the Thane Creek to connect peninsular Bombay with the mainland. The group felt that the bridge would accelerate development across the Creek, relieve pressure on the city’s railways and roadways, and draw away industrial and residential concentrations eastward to the mainland. The Group hoped that the eastward development would be orderly and would take place in a planned manner. The Government of Maharashtra accepted the Barve Group recommendation.

Thereafter, the Gadgil Committee was appointed to formulate regional planning principles for Mumbai and Pune in 1965. The Gadgil Committee submitted its report in 1966.ⁱⁱ As a result, the Mumbai Metropolitan Region was delineated; a Regional Development Authority was formed. The Gadgil Committee also recommended that the mainland across the Thane Creek should be opened for multi-nucleated development. The fundamentals of metropolitan planning in India were laid through these actions. The State passed a watershed Act, in regional and metropolitan planning, which was the first in India ‘The Maharashtra Regional and Town Planning Act’ (MRTP) in 1966 and brought into force in January 1967. The Bombay Metropolitan Region (BMR) was notified in June 1967 and a Regional Planning Board was constituted under the Chairmanship of Shri L.G. Rajwade, I.C.S. The Draft Regional Plan of the Board was finalised in January 1970.ⁱⁱⁱ It proposed the development of a twin city across the harbour, on the mainland to the east, as a counter-magnet to the over concentration of jobs and population taking place at the southern tip of Bombay. The Board recommended that the new metro-centre or Navi Mumbai as it is now called, be developed to accommodate a population of 21 lakhs. The regional plan was framed in 1970, which proposed not just a single city but a metropolis across the creek which would siphon off the office jobs from South Mumbai as a mainstay of its existence. Ultimately the idea of a twin city received official acceptance and the Government of Maharashtra set up the City and Industrial Development Corporation (CIDCO) on 17th March 1970 under the Indian Companies Act 1956.

City and Industrial Development Corporation (CIDCO)

CIDCO is a public limited company wholly owned by State Government. It was designated as the New Town Development Authority (NTDA) under the Maharashtra Regional and Town Planning Act for the New Bombay Project. The seed capital given to CIDCO was just Rs.3.95 cr. and it was expected that it would use land as resource to finance the project. The land on which Navi Mumbai is planned was sparsely populated in 1970s (580 persons per sq.km.) consisting of mainly traditional paddy farmers and fishing communities. It was left to CIDCO to infuse life and catalyse the growth of the new city New Bombay. CIDCO carved out 14 self-contained townships called 'nodes', each developed at a different point of time and with independent physical and social infrastructure system, but linked by mass transport rail system and trunk roads. These nodes are named Airoli, Ghansoli, Koparkhairane, Vashi, Sanpada, Nerul, CBD Belapur, Kharghar, Kamothe, New Panvel, Kalamboli, Ulwe, Dronagiri and Pushpak.

4. DEVELOPMENT STAGES OF NAVI MUMBAI:

Navi Mumbai has been developed as a planned city, a counter magnet for Mumbai. It has been developed as an independent, fully self-contained metro city. It's the world's largest, planned, well-balanced, modern city. Navi Mumbai has been planned and developed by CIDCO to meet the infrastructural needs of a modern metropolis. CIDCO was given a mandate to undertake all development as works and recoup the cost of development from the sale proceeds of land and constructed property. Based on the mandate, CIDCO set several broad objectives for itself. It aims to prevent population influx into Mumbai, diverting it to the new town, by providing an urban alternative which will lure citizens wishing to relocate to a city of peace and comfort. Immigrants are to be absorbed from other states and efficient and rational distribution of industries is promoted by preparing a ground for them who otherwise could have opted for Mumbai. CIDCO plans to provide basic civic amenities to all and elevate standards of living for people of all social and economic strata. Moreover, it wants to offer a healthy environment and energizing atmosphere in order to utilize human resources at their fullest potential. In order to achieve these goals, CIDCO started to develop land and provide the required physical infrastructure such as roads,

bridges, drainage and sewerage system, drinking water system and street lights. It has built a stock of houses supported by social infrastructure such as community centres, hospitals, markets, parks, education institutes and playgrounds. It promotes commercial activities, warehousing, transportation and decentralization of government administration. Lastly, it involves agencies in the development of public transport and telecommunication.

In 1992, the 74th Amendment of the Constitution of India (the 1992 Amendment Act on Municipalities) emphasised the devolution of power to the local bodies. Development planning must be done on democratic principles. According to this Act, management must be done by elected representatives of the population who will account for two-thirds of the board. This ensures a bottom-up process with direct inputs from the citizens. This Act affected the functioning of CIDCO. The direct result of this Act is the creation in 1992, of the Navi Mumbai Municipal Corporation (NMMC).

Navi Mumbai Municipal Corporation (NMMC)

The NMMC has an area of 162 sq.km. under its supervision. There are eight nodes covering 108.5 sq.km. under NMMC. They are Belapur, Nerul, Vashi, Koparkhairne, Ghansoli, Airoli and Digha. NMMC is headed by a municipal commissioner and an elected mayor. Newly developed wards on the south side of Navi Mumbai like Khargar, Kalamboli, New Panvel, Kamothe, Ulwe, Dronagiri and Pushpak came under Raigad district and were maintained by CIDCO.

The representative body of NMMC however came into existence only in 1995. The government directed CIDCO to hand over to NMMC, free of cost, plots reserved for primary schools, sanitation purposes and recreational use (some of the latter already developed). Land reserved for other public purposes was to be transferred at certain prices, some of them concessional. The capital liabilities that CIDCO incurred on the creation of Navi Mumbai have remained with it. NMMC gets a whole set of assets, with no obligations to service the debts incurred on their creation. NMMC resources were assured by a property tax and a cess on sales tax. On 1st Jan.1998, NMMC took charge of the key services from CIDCO. NMMC functions were

classified as (a) Administration (b) Controlling of ward offices (c) Cess (d) Public works (e) Health services (f) A/cs and finance (g) Property tax (h) Town planning (i) Municipal secretary.

Panvel Municipal Corporation (PMC)

Panvel municipal council^{iv} became a municipal corporation from October 1, 2016. It is Maharashtra State's 27th and the Raigad district's first municipal corporation. It comprises the area under the Panvel municipal council -Panvel city and 29 villages.

Dr. Sudhakar Shinde from the Indian Revenue Service (IRS) has been appointed as the first Municipal Commissioner of the newly formed Panvel Municipal Corporation at the council headquarters. He had been posted as the deputy secretary at urban development department and will now be the administrator for PMC. The CEO of the erstwhile Panvel municipal council, Mangesh Chitale, has been appointed the deputy municipal commissioner.

With the Constitution of PMC on October 1, all documents on the gram panchayats that were included within the Corporation limits, were submitted to the corporation on the same day. The gram panchayats have been dissolved and their areas are now under the municipal corporation. The offices and personnel of gram panchayat are transferred to the corporation.

The PMC includes areas of erstwhile Panvel municipal council, Taloja MIDC and Panvel taluka's 29 revenue villages including the CIDCO administered nodes of Kharghar, Kamothe and Kalamboli. While CIDCO will continue to retain the planning agency status for the partially-developed Kharghar node which has been included in the municipality, Chief Minister Devendra Fadnavis has directed authorities to complete infrastructure and development work in this node within three years.

While the Government had originally proposed that the new municipality should be spread over 179.96 square kilometres and cover 68 villages, the area was

eventually trimmed down to 29 villages and the council. About 69.90 square kilometres of the originally proposed area, covering 36 other villages, was excluded, after CIDCO made the case of developing them as part of the state's new urban centre-Navi Mumbai Airport Influenced Notified Area (NAINA). PMC, spread over 110 hectares, as per 2011 census will have a population of 5 lakh people.

Population Growth of Mumbai and Navi Mumbai

One of the main objective of setting up of Navi Mumbai was to decongest the main city Mumbai. The following Table 1 shows the growth of population in Mumbai and Navi Mumbai since 1971.

Table 1: Population Growth of Greater Mumbai and Navi Mumbai
(Population in lakhs)

| Census Group | Navi Mumbai Population | Annual Growth Rate (%) | Greater Mumbai Population | Annual Growth Rate (%) |
|--------------|------------------------|------------------------|---------------------------|------------------------|
| 1971 | 1.56 | | 59.71 | |
| 1981 | 2.50 | 6.03 | 82.43 | 3.81 |
| 1991 | 5.35 | 11.40 | 99.25 | 2.04 |
| 2001 | 11.03 | 10.62 | 119.14 | 2.00 |
| 2011 | 19.15 | 7.36 | 124.42 | 0.44 |

Source: Census of India

From the above table, it can be seen that the change in population scenario of Navi Mumbai has been dramatic since the birth of the city in 1971. In every decade, the population of Navi Mumbai has almost doubled. The impact of Navi Mumbai city shows the reduction in the growth rate of population in Greater Mumbai. The growth rate of population of Greater Mumbai in 1971-1981 was 3.81, which was reduced to 2.04 in 1981-1991. It further decelerated to 2.0 in 1991-2001 and 0.44 in 2001-2011. This shows an overall reduction in population growth rate due to migration of people from Mumbai to Navi Mumbai and other suburbs. The main reason for this is steep rise in Mumbai's real estate prices, which has prompted people to look beyond the city for affordable housing. This shift has decongested Mumbai. The population

growth rate of Navi Mumbai increased from 6.03 in 1971-1981 to 11.40 in 1981-1991 and further to 10.62 and 7.36 for the decades 1991-2001 and 2001-2011 respectively. Navi Mumbai was expected to attract people from Greater Mumbai to a city with better quality of life. The planned development of Navi Mumbai envisaged better and affordable housing, new types of industries and businesses as well as physical and social infrastructure facilities.

Migration in Navi Mumbai

Migration has been defined as crossing of the boundary of a political or administrative unit for a certain minimum period of time. It includes the movement of refugees, displaced persons, uprooted people as well as economic migrants. Migration from one area to another in search of improved livelihoods is a key feature of human history. While some regions and sectors fall behind in their capacity to support populations, others move ahead and people migrate to access these emerging opportunities. Migration is an essential aspect of economic development and social change.

The most dramatic urbanization trends in Asia, as witnessed during the past-half of the last century, are mainly attributed to rural-to-urban, circular migration and natural growth. Migration is a two-way process - it is a response to economic and social change and is a catalyst to change for those areas gaining and losing migrants. India has been characterized by some as a relatively immobile society. Yet, even by conservative estimates, three out of every ten Indians are internal migrants. Internal migration is an important element of population, redistribution and equilibrium. In recent years, several changes in India are likely to have impacted on the pattern and pace of migration, particularly in the globalization era which is characterized by structural changes and consequent alterations in the economy. Hence the nature, pattern and magnitude of migration have been evolving overtime. Theories of migration are important because they can help us understand population movements within their wider political and economic contexts.

Migration theories deal with movements of labour who are attracted by positive wage differentials and positive expected real incomes, external economic

opportunities and better skilled jobs, family movements to maximise well-being of household and minimise risks, investment decisions to increase productivity of human capital and so on. These no doubt are the root causes behind the movement of labour or families but rarely these are deliberate effort on the part of the government to decongest an over-crowded place. A study in this direction would be the creation of Navi Mumbai which was born out of a policy effort of the Maharashtra Government. In this study, we look into the birth and development of Navi Mumbai not only as an effort go decongest the population of Mumbai, but also as an independent, well developed city with proper housing, strong economic base, world class infrastructure, well preserved environment, well balanced and landscaped city, designed and planned for life and commerce of 21st century India.

Contrary to what has been reported literature on internal migration and urbanization, the process of migration in Navi Mumbai which started in 1970, was somewhat different: it involved transformation of local rural habitats and shifting of people from the adjacent mega city of Mumbai.

Migration Pattern of Population of Navi Mumbai

Navi Mumbai, adjacent to Mumbai, created by a policy initiative of the Government of Maharashtra, is one of the largest planned cities in the world. It was considered obligatory by the Government of Maharashtra to ease the population pressure on Mumbai. Accordingly, it would be relevant to know the proportion of the newly settled households who have shifted from Greater Mumbai to Navi Mumbai. This is revealed in the Socio-Economic surveys conducted by CIDCO every five years in Table 2.

Table 2: Percentage of Population migrated from Mumbai to Navi Mumbai

| Year of Socio Economic Survey | Population migrated from Mumbai to Navi Mumbai (%) |
|-------------------------------|--|
| 1987 | 48.0 |
| 1995 | 36.6 |
| 2000 | 42.4 |
| 2005 | 40.1 |
| 2010 | 55.5 |

Source: The Socio-Economic Surveys by CIDCO

The above table reveals that migration from Mumbai to Navi Mumbai has been increasing over the years and this has greatly contributed to the easing of population of Mumbai. Families have also shifted to Navi Mumbai from other districts of Maharashtra, other States of India and other countries.

Reasons for migrating to Navi Mumbai

As mentioned earlier, the main objective of creating Navi Mumbai is to attract the population of Mumbai. Therefore, it is necessary to know the reasons for migrating in Navi Mumbai. The Socio-Economic Survey conducted by CIDCO in 2010 classifies the reasons given by the respondents in Table 3.

Table 3: Main Reasons for Migrating to Navi Mumbai.

| Sr. No. | Main Reasons for Migrating in Navi Mumbai | Percent of Respondents |
|---------|--|------------------------|
| 1 | Easy House Availability | 54.3 |
| 2 | Better Place to stay | 47.1 |
| 3 | Planned City | 27.8 |
| 4 | Proximity of place of work | 24.7 |
| 5 | Availability of housing at reasonable cost | 19.7 |
| 6 | Independent Houses | 18.0 |
| 7 | Preference for CIDCO houses | 14.7 |
| 8 | Bigger Accommodation | 13.3 |
| 9 | Business reasons | 11.5 |
| 10 | Easy rented house availability | 11.1 |
| 11 | Job transfer | 10.2 |

Note: A large number of respondents have given more than one reason for the choice of Navi Mumbai.

Source: The Socio-Economic Survey by CIDCO 2010.

It can be seen from Table 3 that the main reason for coming to Navi Mumbai is the easy availability of houses. This is directly attributable to the development of houses by CIDCO and to some extent by private builders. In addition, the amenities and surroundings make it a better place to stay, which has been cited as the second main reason for shifting to Navi Mumbai. Job availability and closeness to the place of work is an added attraction. Availability of housing at reasonable cost means that people can obtain affordable housing without having to struggle unduly.

Thus, it can be observed that both CIDCO and NMMC have been able to create the development momentum in housing and infrastructure development that has succeeded in ‘pulling’ or attracting the population of Mumbai and elsewhere to settle in Navi Mumbai.

A study in this direction is being carried out in a Ph.D. work. Some portion of the same is being reproduced here.

The objective of the study was to:

1. Study the socio-economic status of respondents who have migrated to Navi Mumbai.
2. Study the important reasons of migrations.
3. Study the association between pattern of migration and reasons of migration.

5. DATA ANALYSIS:

Database and Methodology

For the above study, information is collected from 300 respondents who have migrated to Navi Mumbai. A structured questionnaire is used to collect primary data. This information is analysed and tested using appropriate statistical tools like testing of hypothesis. A Hypothesis means a theory that is yet to be proved. It may be a tentative explanation which is to be tested for further investigation or even just an assumption or a guess. In this study, Chi-square test is used for testing significant

association between pattern of migration (ownership status) and reasons for migration using SPSS.

In Chi-square test for independence of attributes, a population is categorized into many parts with respect to two attributes. A chi-square test determines whether the two attributes are independent of each other. In the null hypothesis H_0 : The two attributes are independent against the alternative hypothesis H_1 : The two attributes are associated. To go beyond intuitive feelings about observed and expected frequencies, chi-square is used and this is calculated this way: Under H_0 , the test statistic:

$$\chi^2 = \sum (f_o - f_e)^2 / f_e \quad \dots\dots\dots (1)$$

follows χ^2 distribution with $(r-1)(c-1)$ degrees of freedom (d.f) where

f_o = observed frequencies

f_e = stands for the expected frequencies

r = denotes the number of rows

c = the number of columns

If calculated p-value (significance value) is greater than standard p-value, say, 0.05, then test is accepted *i.e.* Null Hypothesis is accepted. If calculated p-value (significance value) is less than standard p-value 0.05, then test is rejected *i.e.* Null Hypothesis is rejected.

Analysis

Pattern of Migration:

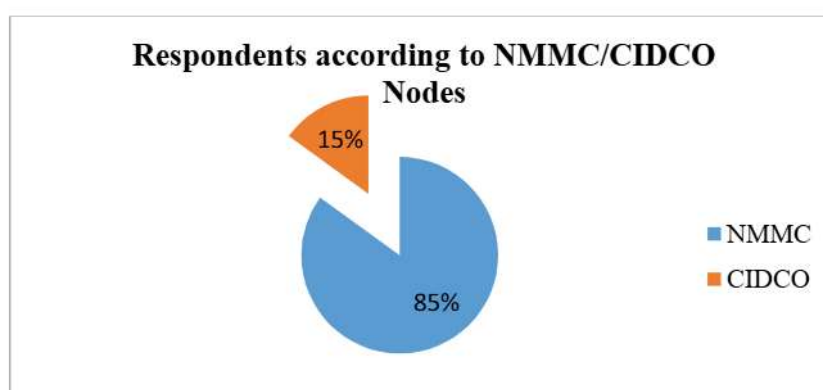
It is observed from the Survey Data that out of 300 respondents' 255 respondents belong to NMMC nodes and only 45 are from CIDCO nodes. This is shown in the Table 4 and Pie-diagram 1.

Table 4: Respondents according to NMMC/CIDCO Nodes.

| Node | Frequency | Percent |
|-------|-----------|---------|
| NMMC | 255 | 85 |
| CIDCO | 45 | 15 |
| Total | 300 | 100 |

Source: Survey of this study

Pie-Diagram 1: Respondents according to NMMC/CIDCO Nodes.



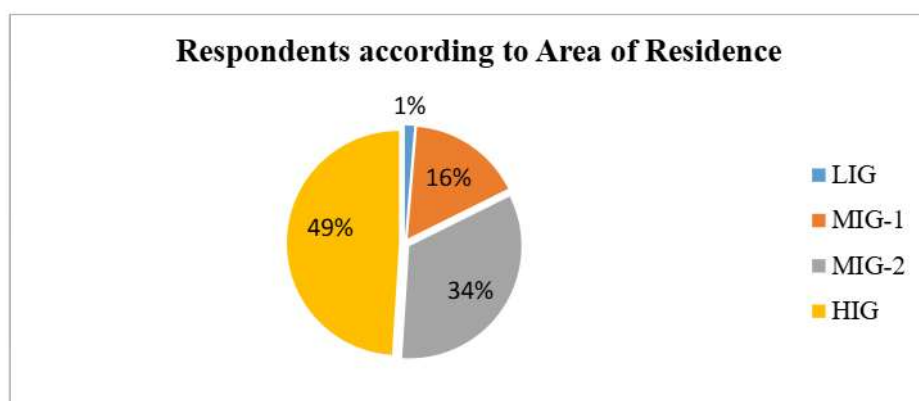
According to classification of area of residence of respondents, out of total 300 respondents only four are in Lower Income Group (LIG), 49 belong to Middle Income Group 1 (MIG-1) and 100 to Middle Income Group 2 (MIG-2) and the remaining 147 to Higher Income Group (HIG). This is shown in the following Table 5 and Pie-diagram 2.

Table 5: Respondents according to Area of Residence.

| Type of Area | Frequency | Percent |
|--------------|-----------|---------|
| LIG | 4 | 1.3 |
| MIG-1 | 49 | 16.3 |
| MIG-2 | 100 | 33.3 |
| HIG | 147 | 49 |
| Total | 300 | 100 |

Source: Survey of this study

Pie-Diagram 2: Respondents according to Area of Residence.



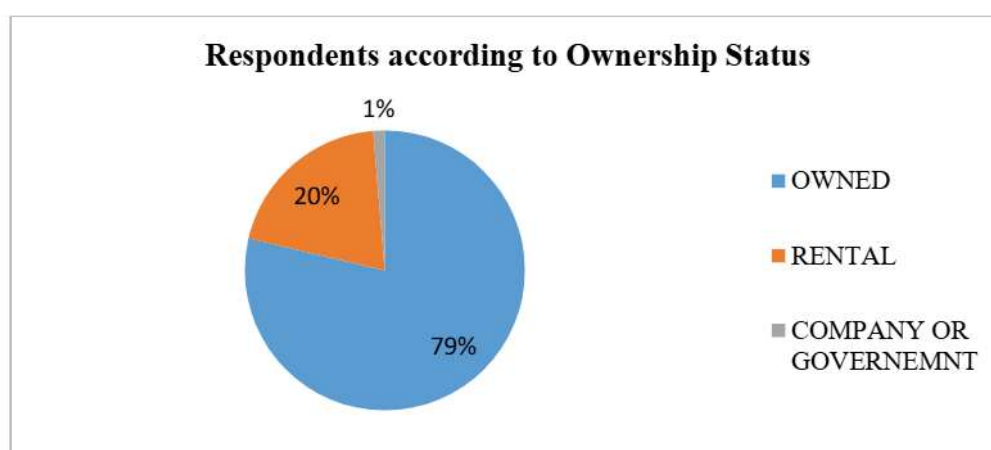
Ownership status of housing indicates that 236 migrated to own house, 60 migrated to rental house and only 4 got company or Government house. This is shown in the following Table 6 and Pie-diagram 3.

Table 6: Respondents according to Ownership Status.

| Ownership status | Frequency | Percent |
|-----------------------|-----------|---------|
| Owned | 236 | 78.7 |
| Rental | 60 | 20 |
| Company or Government | 4 | 1.3 |
| Total | 300 | 100 |

Source: Survey of this study

Pie-Diagram 3: Respondents according to Ownership Status.



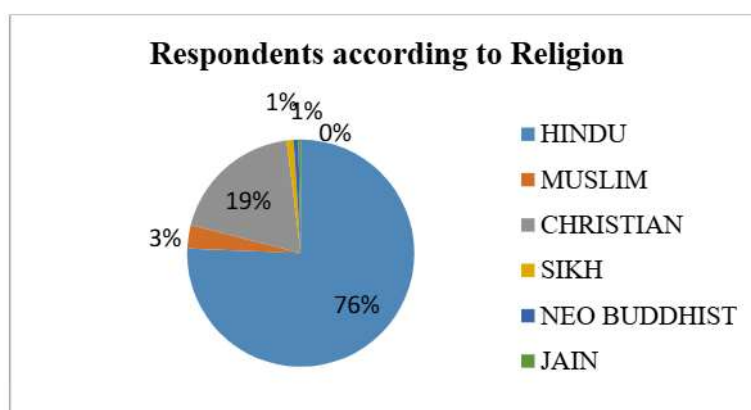
Respondents are classified according to their religion. Out of 300 respondents 227 are Hindus, 10 are Muslims, 57 are Christians, 3 are Sikhs, 2 are Neo Buddhist and only one is Jain. This can be seen in the following Table 7 and Pie-diagram 4.

Table 7: Respondents according to Religion.

| Religion | Frequency | Percent |
|--------------|-----------|---------|
| Hindu | 227 | 75.7 |
| Muslim | 10 | 3.3 |
| Christian | 57 | 19.0 |
| Sikh | 3 | 1.0 |
| Neo Buddhist | 2 | 0.7 |
| Jain | 1 | 0.3 |
| Total | 300 | 100 |

Source: Survey of this study

Pie-Diagram 4: Respondents according to Religion.



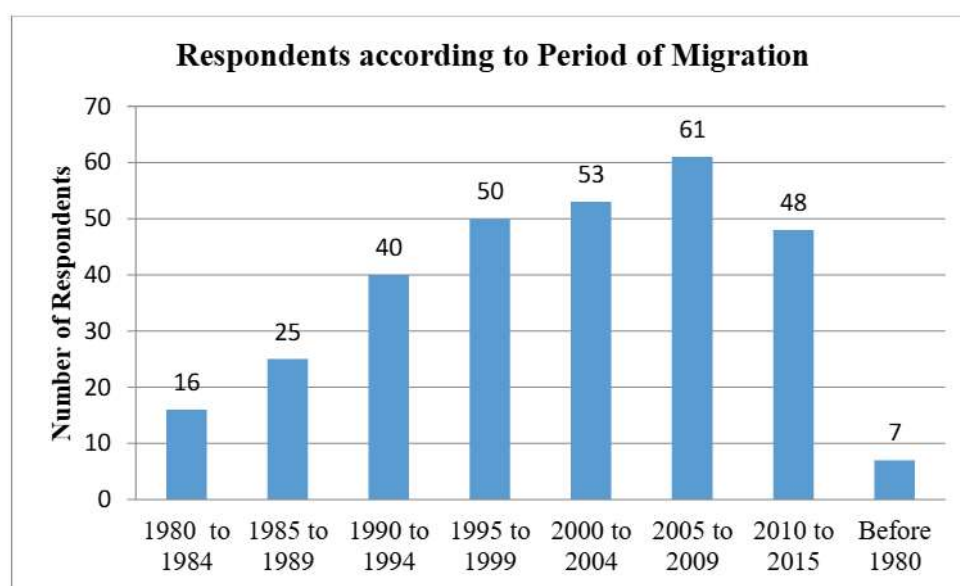
Year of migration of respondents is also recorded. Out of 300 respondents under the study 16 respondents migrated in 1980-84, 25 migrated in 1985-89, 40 in 1990-94, 50 in 1995-99, 53 in 2000-04, 61 in 2005-09, 48 in 2010-14. It shows that there is continuous increase in migration. This is shown in the following Table 8 and Graph 1

Table 8: Respondents according to Period of Migration

| Period of Migration | Frequency | Percent |
|---------------------|-----------|---------|
| 1980 to 1984 | 16 | 5.3 |
| 1985 to 1989 | 25 | 8.3 |
| 1990 to 1994 | 40 | 13.3 |
| 1995 to 1999 | 50 | 16.7 |
| 2000 to 2004 | 53 | 17.7 |
| 2005 to 2009 | 61 | 20.3 |
| 2010 to 2015 | 48 | 16.0 |
| Before 1980 | 7 | 2.3 |
| Total | 300 | 100 |

Source: Survey of this study.

Graph 1: Respondents according to Period of Migration



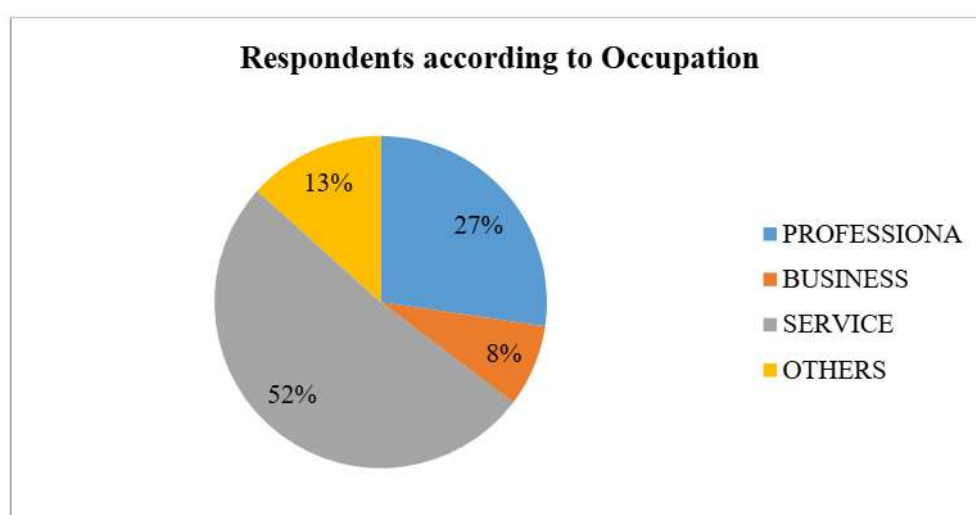
Occupation of migrated respondent is also studied. 82 respondents belong to 'Professional Category', 24 belong to 'Business' and 154 respondents are from 'Service' category and remaining 40 are from other occupation category. This is shown in the following Table 9 and Pie-diagram 5.

Table 9: Respondents according to Occupation.

| Occupation | Frequency | Percent |
|---------------|-----------|---------|
| Professionals | 82 | 27.3 |
| Business | 24 | 8.0 |
| Service | 154 | 51.3 |
| Others | 40 | 13.3 |
| Total | 300 | 100 |

Source: Survey of this study

Pie-Diagram 5: Respondents according to Occupation.



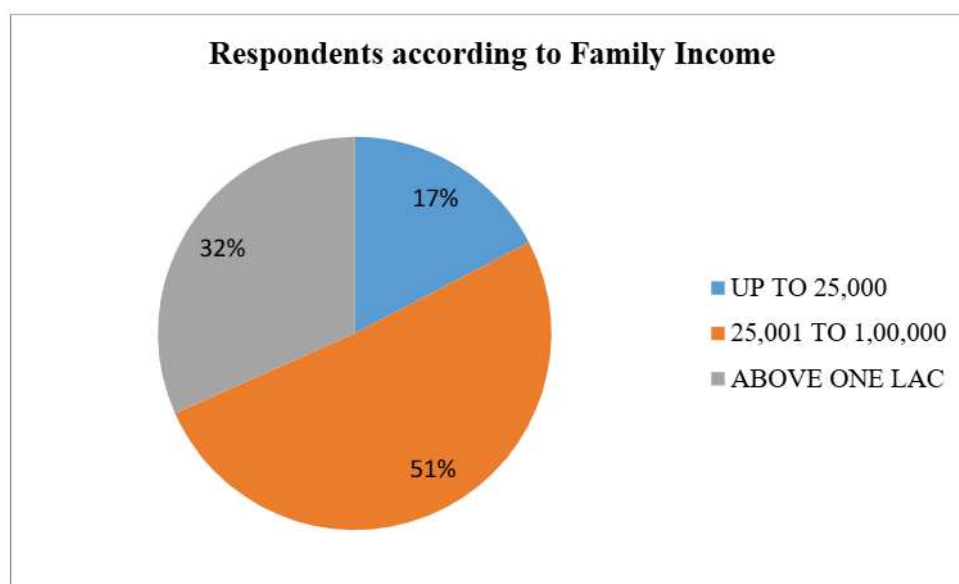
Monthly family income of respondents is also recorded for the said study. It indicates that there are 52 respondents belongs to income group 'Up to Rs. 25,000' 153 respondents belong to 'Rs 25,001 to 1,00,000' and remaining 95 respondents belongs to income group 'above Rs one lakh'. This is shown in the following Table 10 and Pie-diagram 6.

Table 10: Respondents according to Family Income.

| Income (Rs.) | Frequency |
|--------------------|-----------|
| Up To 25,000 | 52 |
| 25,001 TO 1,00,000 | 153 |
| Above One Lakh | 95 |
| Total | 300 |

Source: Survey of this study

Pie-Diagram 6: Respondents according to Family Income



Reasons for Migration:

To understand reasons of migration to Navi, information was collected through twenty different reasons. Top five reasons of migration are as follows. Out of total 300 respondents 176 respondents migrated to Navi Mumbai because 'Houses were available at reasonable cost' (Reason 1).

Table 11: Respondents according to Reason 1 of Migration

| Response | Frequency | Percent |
|----------|-----------|---------|
| No | 124 | 41.3 |
| Yes | 176 | 58.7 |
| Total | 300 | 100 |

Source: Survey of this study

Second best reason for migration into Navi Mumbai is found to be availability of 'bigger accommodation' (Reason 2). 169 respondents pointed out this reason.

Table 12: Respondents according to Reason 2 of Migration

| Response | Frequency | Percent |
|----------|-----------|---------|
| No | 131 | 43.7 |
| Yes | 169 | 56.3 |
| Total | 300 | 100 |

Source: Survey of this study

Third reason of migration into Navi Mumbai was because 'Navi Mumbai is a planned city' (Reason 3). 116 respondents, that is, 38.7 % of the respondents pointed out this reason.

Table 13: Respondents according to Reason 3 of Migration

| Response | Frequency | Percent |
|----------|-----------|---------|
| No | 184 | 61.3 |
| Yes | 116 | 38.7 |
| Total | 300 | 100 |

Source: Survey of this study

156 respondents found Navi Mumbai to be a 'Better place to stay/ better environment' (Reason 4). These amounted to 52% of the respondents.

Table 14: Respondents according to Reason 4 of Migration

| Response | Frequency | Percent |
|----------|-----------|---------|
| No | 144 | 48 |
| Yes | 156 | 52 |
| Total | 300 | 100 |

Source: Survey of this study

38.7% of respondents migrated to Navi Mumbai as they had 'Got a job in Navi Mumbai'.

Table 15: Respondents according to Reason 5 of Migration

| Response | Frequency | Percent |
|----------|-----------|---------|
| No | 139 | 46.3 |
| Yes | 161 | 53.7 |
| Total | 300 | 100 |

Source: Survey of this study

Summarising the reasons of migration to Navi Mumbai in Table 16 we get the following results.

Table 16: Main reasons of migration to Navi Mumbai

| Sr. no | Reasons | Yes | % | No | % |
|--------|--|-----|------|-----|------|
| 1 | Houses available at reasonable cost | 176 | 58.7 | 124 | 41.3 |
| 2 | Bigger accommodation available | 169 | 56.3 | 131 | 43.7 |
| 3 | Got job in Navi Mumbai | 116 | 38.7 | 184 | 61.3 |
| 4 | Better place to stay/ better environment | 156 | 52.0 | 144 | 48.0 |
| 5 | Navi Mumbai is planned city | 161 | 53.7 | 139 | 61.3 |

Source: Survey of this study

Hypothesis Testing

Further, analysing the association between pattern of migration and reasons for migration it is hypothesised that there is an association between pattern and reasons for migration

To study the above objectives, the following two hypotheses are designed:

Null Hypothesis H_{01} : There is no association between ownership status of respondents and cheap housing (Reason 1 of migration).

Alternative Hypothesis H_{11} : There is association between ownership status of respondents and cheap housing (Reason 1 of migration).

Hypothesis-1

Table 17: Respondents according to Ownership Status and Reason 1 of Migration.

| Ownership status | Reason R1 | | Total |
|--------------------|-----------|-----|-------|
| | No | Yes | |
| Owned | 87 | 149 | 236 |
| Rental | 33 | 27 | 60 |
| Company/Government | 4 | 0 | 4 |
| Total | 124 | 176 | 300 |

Source: Survey of this study

Graph 2: Respondents according to Ownership Status and Reason 1 of Migration

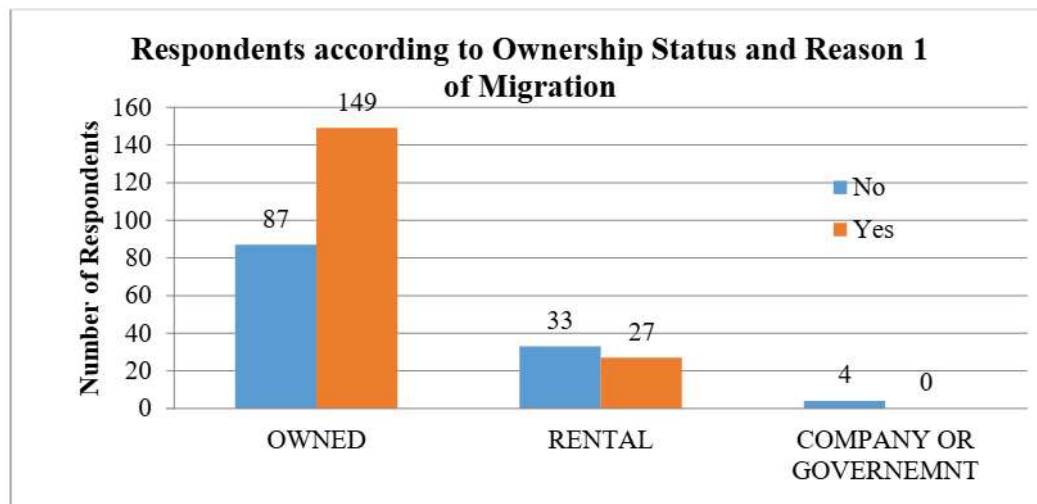


Table 18. Chi-Square Tests for Analysis on Association between Ownership Status and Reason 1 of Migration

| Test | Value | Df | P-Value | Result |
|--------------------|--------|----|---------|----------|
| Pearson Chi-square | 12.243 | 2 | .002* | Rejected |

*Denotes significant at 5% level for Chi-square test

Result and Findings: To test above null hypothesis Chi-square test is applied. Calculated p-value is 0.002. It is less than standard p-value 0.05. Therefore, test is rejected, that is, Null Hypothesis is rejected and Alternative Hypothesis is accepted. It is concluded that there is association between ownership status of respondents and

migration due to reasonable cost of housing. Chi-square test shows that the decision of respondents to own a house is associated with the fact that houses are comparatively cheap in Navi Mumbai. This also implies that a better and bigger accommodation could be attained in Navi Mumbai as compared to Mumbai. Comparatively cheap housing in Navi Mumbai is an important reason for migration to Navi Mumbai.

Null Hypothesis H₀₂: There is no association between ownership status of respondents and employment in Navi Mumbai (Reason 3 of migration).

Alternative Hypothesis H₁₂: There is association between ownership status of respondents and employment in Navi Mumbai (Reason 3 of migration).

Hypothesis-2

Table 19: Respondents according to Ownership Status and Reason 3 of Migration.

| Ownership status | Reason 3 | | Total |
|-----------------------|----------|-----|-------|
| | No | Yes | |
| Owned | 154 | 82 | 236 |
| Rental | 27 | 33 | 60 |
| Company or Government | 3 | 1 | 4 |
| Total | 184 | 116 | 300 |

Source: Survey of this study

Graph 3: Respondents according to Ownership Status and Reason 3 of Migration

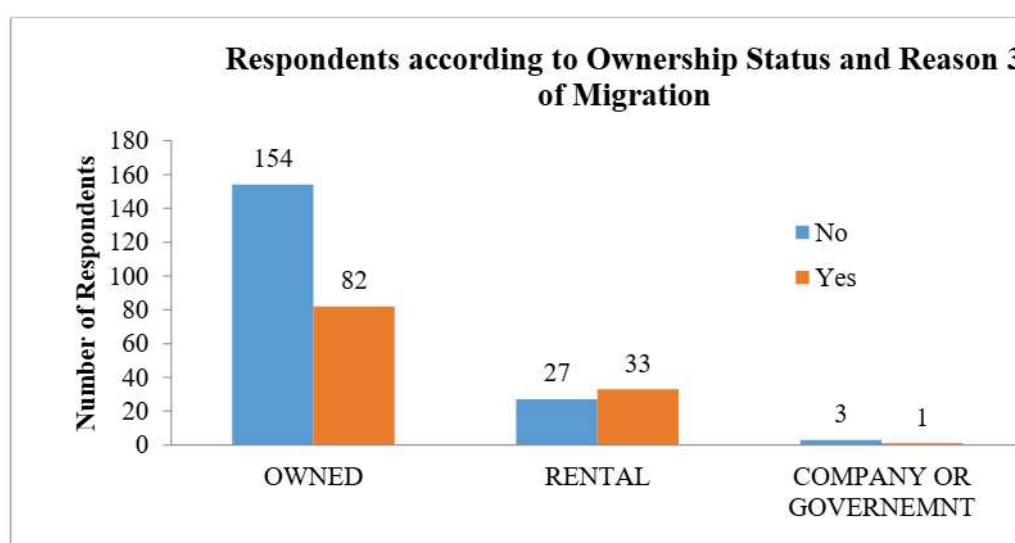


Table 20: Chi-Square Tests for Analysis on Association between Ownership Status and Reason 3 of Migration

| Test | Value | df | P-Value | Result |
|--------------------|-------|----|---------|----------|
| Pearson Chi-Square | 8.594 | 2 | .014* | Rejected |

*Denotes significant at 5% level for Chi-square test

Result and Findings: To test above null hypothesis Chi-Square test is applied. Calculated p-value for Chi-square test is 0.014 which is less than standard p-value 0.05. Thus, the Null Hypothesis is rejected and Alternative Hypothesis is accepted. Conclusion is that there is an association between ownership status of respondents and getting a job in Navi Mumbai, that is, they are not independent but dependent on each other. Here again the test shows that the decision of respondents to own a house is associated with that of securing a job in Navi-Mumbai. Job opportunities in Navi Mumbai attracted migrants to own houses in Navi Mumbai.

Overall it could be said that the Government's measures to decongest Mumbai and develop Navi Mumbai was quite successful. This can be largely attributed to the efficient integration of economic activities and infrastructure in Navi Mumbai.

6. POLICY IMPLICATIONS:

Balanced regional development paves the way for optimum utilisation of resources available in different regions of the country. It leads to the total utilisation of various infra-structural facilities like means of transport and communications, power resources, irrigation facilities, educational and health facilities. Also, employment opportunities in a country will be expanded uniformly at a satisfactory rate. Interregional migration, in search of jobs, is said to be controlled by balanced regional development. This implies that with regional development, migrations in search of jobs could be considerably reduced. When certain regions are less developed and others are more developed, the advanced regions tend to get congested. Mumbai, the 'City of Dreams', is an example where people flock in search of a livelihood-the ultimate result being overcrowding, housing problems, growth of slums, law and order problems, etc. This was anticipated by our planners and policy

maker's way back in the 1940s. By the end of the sixties, the Mumbai intelligentsia believed that building of Navi Mumbai was the only way of saving the old city. It was 'the dream across the water'^v that had to be made a reality. Finally, a new region Navi Mumbai emerged (in the year 1970) through policy efforts (resulting in easy accessibility to this region) and through infrastructure developments like cheap housing facilities, planned roadways, railways, *etc.*

This study also, through its data analysis, is able to support these developments which would set as an example for other policy measures in various other congested, highly developed regions. Governments could take this as a role model to develop adjacent undeveloped regions of highly congested areas. This effort would be, on the one hand, a step towards balanced regional development and on the other, reducing the pressure of the overpopulated congested regions.

7. CONCLUSIONS:

Thus it can be seen that CIDCO and NMMC, through their efforts, are trying to meet the development challenges arising from the growth in population, to rejuvenate Navi Mumbai into a dynamic growth city, and to achieve city standards comparable with the best in the world. Navi Mumbai region is now poised for an economic take-off and emerge as a growth engine for Maharashtra state. With critical infrastructural projects of international quality on the anvil, Navi Mumbai hopes to achieve sustainable growth and development in future thorough effective policies and programs.

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ANNEXURE

A Survey of Migrants to Navi Mumbai

QUESTIONNAIRE

| Questions | Responses |
|--|--|
| Name of Respondent | Mr./Miss/Mrs. |
| Contact No. | |
| Date of Interview | / / 2015 |
| 1. Household Details | |
| 1.1 Address | |
| Node of Navi Mumbai & Sector | |
| Name of Building/ Association or Society | |
| Built up area | <div style="display: flex; justify-content: space-between;"> _____ sq.mtrs / _____ sq.ft </div> <div style="display: flex; justify-content: space-between;"> <div>LIG (≤ 250sq.ft.)</div> <div>1</div> </div> <div style="display: flex; justify-content: space-between;"> <div>MIG 1(250-500sq.ft.)</div> <div>2</div> </div> <div style="display: flex; justify-content: space-between;"> <div>MIG 2(501-750sq.ft.)</div> <div>3</div> </div> <div style="display: flex; justify-content: space-between;"> <div>HIG (> 750sq.ft.)</div> <div>4</div> </div> |
| 1.2 Builder of Tenement | <div style="display: flex; justify-content: space-between;"> <div>CIDCO</div> <div>1</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Co-op Hsg. Soc.</div> <div>2</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Private Builder</div> <div>3</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Self</div> <div>4</div> </div> |
| 1.3 Year of Occupation of house | |
| 1.4 Ownership status of house | <div style="display: flex; justify-content: space-between;"> <div>Own</div> <div>1</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Rented</div> <div>2</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Company / Govt. flat</div> <div>3</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Any other</div> <div>4</div> </div> |
| 1.5 If owned, nature of ownership | <div style="display: flex; justify-content: space-between;"> <div>Male</div> <div>1</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Joint ownership</div> <div>2</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Female</div> <div>3</div> </div> |
| 1.6 If owned, main source of finance | <div style="display: flex; justify-content: space-between;"> <div>Own savings</div> <div>1</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Loan from Bank</div> <div>2</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Loan from Company</div> <div>3</div> </div> |

| Questions | Responses | | | |
|---|---|----|-----------------|----|
| | Loan from any other financial institution | | | 4 |
| | Any other _____ | | | 5 |
| 2. Personal Details | | | | |
| 2.1 Religion | Hindu | 1 | Sikh | 4 |
| | Muslim | 2 | Neo- Buddhist | 5 |
| | Christian | 3 | Jain | 6 |
| | Any other _____ | | | 7 |
| 2.2 Mother tongue | Marathi | 1 | Hindi | 2 |
| | Punjabi | 4 | Sindhi | 5 |
| | Bengali | 7 | Tamil | 8 |
| | Telugu | 10 | Kannada | 11 |
| | English | 13 | Urdu | 12 |
| | Any other _____ | | | 14 |
| 2.3 Caste | General | 1 | O B C | 4 |
| | S C | 2 | Neo- Buddhist | 5 |
| | S T | 3 | Any other _____ | 6 |
| 2.4 Since how many years staying in Navi Mumbai | _____ Years | | | |
| 2.5 Year of shifting to Navi Mumbai | | | | |
| 2.6 Last place of Residence | Specify Last Place of Residence: _____: | | | |
| | South Mumbai | 1 | | |
| | Mum. Western Suburbs | 2 | | |
| | Mum. Eastern/ Central Suburbs | 3 | | |
| | Thane to Karjat/ Kasara | 4 | | |
| | Borivali to Virar | 5 | | |
| | Panvel to Khopoli | 6 | | |
| | Other Navi Mum. Node | 7 | | |
| | Other Mum. Metropolitan Region | 8 | | |
| | Other Districts (Mah.) | 9 | | |
| | Other States _____ | 10 | | |
| | Outside India _____ | 11 | | |
| 2.7 If resided in Greater Mumbai, number of years there | | | | |

| Questions | Responses |
|---|--|
| 2.8 Reasons for shifting to Navi Mumbai | Reasons Houses available at reasonable cost 1 Bigger accommodation available here 2 Got a job in Navi Mumbai 3 Better place to stay / better environment 4 Navi Mumbai is a Planned City 5 |
| 3. Other personal details | |
| 3.1 Relationship with Head | Head (Self) 1 Relationship with head _____ 2 |
| 3.2 No. of persons in the family | Male: _____ Female: _____ Total: _____ |
| 3.3 Age | _____ years |
| 3.4 Marital Status | Unmarried 1 Widow/Widower 3 Married 2 Divorcee/ Separated 4 Any other _____ 5 |
| 3.5 Disability, if any | Physical movement 1 Speaking 4 Hearing 2 Mental 5 Eyesight 3 Any other _____ |
| 3.6 Education | Specify Education Classify as: Illiterate 1 Primary 2 Secondary 3 SSC 4 HSC 5 Graduate 6 Post Graduate 7 Eng./Medical/Arch. 8 Technical Diploma 9 Management 10 IT 11 Any Other: _____ 12 |
| 3.7 Occupation | Specify: _____ Classify: Professional 1 Business 2 Service Industry 3 Any Other 4 |
| 3.8 Place of work | Govt. Office 1 Public Sector/Banks 2 |

| Questions | Responses | |
|--|--------------------------------------|-------|
| | Pvt. Sector Office | 3 |
| | Industrial Unit | 4 |
| | Commercial Unit | 5 |
| | School/College | 6 |
| | Construction | 7 |
| | Self-employed | 8 |
| | Any Other (Specify) | 9 |
| 3.9 Location of work | Specify: _____: | |
| | South Mum. | 1 |
| | Mum. Western suburbs | 2 |
| | Mum. Eastern/ Ctrl Suburbs | 3 |
| | Thane to Karjat/Kasara | 4 |
| | Borivali to Virar | 5 |
| | Panvel to Khopoli | 6 |
| | Other Navi Mum. Node | 7 |
| | Other Mum. Metropolitan regions | 8 |
| | Other districts (Mah.) | 9 |
| | Other States _____ | 10 |
| | Outside India _____ | 11 |
| 3.10 Monthly Household income (Rs.) | Upto 25,000 | 1 |
| | 25001 to 1,00,000 | 2 |
| | Above One Lakh | 3 |
| 3.11 No. of earning members in Family | Male earning members | _____ |
| | Female earning members | _____ |
| | Total earning members | _____ |
| 4. Monthly expenditure | | |
| 4.1 Approximate monthly expenditure (Rs.) | Upto 5000 | 1 |
| | 5001 to 10000 | 2 |
| | 10001 to 15000 | 3 |
| | 15001 to 20000 | 4 |
| | 20001 to 25000 | 5 |
| | 25001 to 50000 | 6 |
| | 50001 and above | 7 |
| | Don't Know/ Can't Say | 8 |
| 4.2 Approx item-wise expenditure per month (Rs.) | Education | _____ |
| | Grocery/ Fruits / Vegetables | _____ |
| | Maintenance (Bldg/Water/Electricity) | _____ |
| | Telephone / Mobile | _____ |
| | Internet | _____ |
| | TV / cable | _____ |
| | Clothing | _____ |

| Questions | Responses | |
|--|-----------------------------|-------|
| | Entertainment | _____ |
| | Eating out | _____ |
| | Medical | _____ |
| | Transportation / conveyance | _____ |
| | Instalments | _____ |
| | Others (Specify) | _____ |
| | Total | _____ |
| 5. Monthly savings (Rs.) | Less than 5000 | 1 |
| | 5001 to 10000 | 2 |
| | 10001 to 15000 | 3 |
| | 15001 to 20000 | 4 |
| | 20001 to 25000 | 5 |
| | 25001 to 50000 | 6 |
| | 50001 and above | 7 |
| | Don't Know/ Can't Say | 8 |
| 6. Overall opinion | | |
| 6.1 If you were to describe to somebody else how happy you are residing in Navi Mumbai, which one option would you choose? | Extremely happy | 5 |
| | Happy | 4 |
| | Neither happy nor unhappy | 3 |
| | Unhappy | 2 |
| | Extremely unhappy | 1 |

END NOTES

ⁱ Report of a Study Group on Greater Bombay, (Govt. of Maharashtra, 1961).

ⁱⁱ Report of the Committee appointed for Regional Plans for Bombay-Panvel and Poona Regions, (1966) Govt. of Maharashtra, 1966

ⁱⁱⁱ The Bombay Metropolitan Regional Planning Board. *Report on the Draft Regional Plan of the Bombay Metropolitan Region 1970-1991*, (1970, 2 vols.) Govt. of Maharashtra, 1970

^{iv} Panvel Municipal Council was established in the year 1852, and is the oldest municipal council of Maharashtra. The notification reclassifying Panvel council to a corporation reads, "With effect from October 1, 2016, the whole of Panvel Municipal Council smaller urban area and the areas specified in the schedule, shall be larger urban area, known by the name of the Municipal Corporation of the City of Panvel." Panvel Municipal Corporation (PMC) is the ninth corporation in the Mumbai Metropolitan Region (MMR). The others being Mumbai, Thane, Kalyan –Dombivali, Ulhasnagar, Mira Bhayander, Bhiwandi, Navi Mumbai and Vasai-Virar.

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