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Internal Migration in India: A trend of Million Plus Cities in 2011

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Abstract
In the present times of the urbanizing world, humans' migration plays a decisive role, other than natural population growth, in urban centers' evolution. The highly urbanized centres across the globe, commonly labelled as the million-plus cities, act as a decisive pull factor for the migration among individuals, as these centres are the hubs of economic activities and immense opportunities. Through the present study, an effort was made to evaluate the internal migration trend of million-plus cities and their respective urban agglomerations in India. The migration data released by the Census of India was being used for 2001 and 2011 in the analysis. The growth rate and proportional percentage increase, both total and gender-wise, of migrants, were assessed. The findings depicted the influx of proportional in-migrants was more in southern India than in the north. In-migrants' growth was more in the newly forming million-plus cities than the old established one regardless of the respective large migrant base in their total population.

Keywords: *Internal Migration, Million Plus Cities, Proportional Percentage Change, Growth Rate*

Backdrop

Migration is broadly defined as a change of place of residence from one geographical area to another. The technological advancement and development in transportation and communication have made migration a universal phenomenon in modern times (Gilbert and Gugler, 1984). It is the means of communications and urban centers' progression worldwide, which stimulates migration by acting as a growth pole. The occurrence of migration has also been an integral part of the development, which is decisively associated with urbanization. The major drivers of economic growth in educational & healthcare services, scientific & technological innovations, financial activities, and communication services are prevalent in large urban centres. It serves as a connecting cord with the rural areas for their development and a significant workforce migration from rural peripheral regions to urban centres (Bhagat, 2020). The rapid rate of urbanization and mounting migration to the cities brings with it both risks and opportunities for migrants, communities, and governments concerned (WMR, 2015). The study's significance on migration lies in its influence on the social, economic, and demographic profile of both the places of origin and destination of migrants, besides affecting the population's size and composition in the concerned regions (Singh and Yadava, 1981). United Nations Department of Economic and Social Affairs (2014) stated the rapidly growing cities of Asia and Africa are expected to absorb almost all the future urban population growth. The mobility pattern in these towns or urban centres is already characterised by the temporality and circularity of the internal migration process (Hugo, 2014). Urban areas worldwide cater to half of the entire world's total population, supported by the rapidly increasing migration rate. The present age is considered the Age of Migration (Castle 1998). It is a global megatrend of the present century (United Nations Conference on Sustainable Development, 2012). The number of international migrants rose from 220 million in 2010 to 258 million in 2017 (United Nations, 2017). However, it has been noticed that the rate of internal migrations or in-migrations is far more than the international migrations (King et al., 2008). When migration is envisaged in India's context, it has been observed that people here are less mobile in the previous decades. The recent growth in development processes across the nation, structural changes in the economy resulting in changes in the workforce distribution across all the sectors have accelerated the rate of mobility and induced migration, towards large urban centres, among

Indian nationals (Gill, 2012). Parallelly, such unprecedented and rapid growth of the cities in developing nations, like India, has made the internal migration a matter of concern because these flows have been followed by poverty induced migration rather than prosperity induced migration (Kumar, 2012; Lucas, 1997). A few economically advanced states in India are the prominent stakeholders of urbanization. These states harbor the maximum number of million-plus cities, further acting as the hubs for various national development activities. These cities grew over time to substantial urban agglomeration; it is a continuous urban spread constituting a town with its adjoining outgrowths (Census of India). Such big urban centres attract most migrants as they provide jobs to every migrated individual irrespective of his/her skill level, respectful and dignified life, and better opportunities with a conducive environment for career growth. Pragmatically, employment opportunities, availability of health services, and accessibility of education turned out to be the primary pull factors for the migrants from rural areas to million-plus cities.

Objectives

The prime question taken into consideration under the study was to evaluate the trend of internal migration in India's million-plus cities. How the involved migrants have proportionally changed in a decade and at which rate from 2001 to 2011 was assessed. The sex-wise classification was also brought into deliberation to confer the facets of egalitarianism utilized by them. To understand the dynamics of these urban centres, regarding their upcoming state-of-development the picture of internal migration to date should need to be portrayed.

The Unit of Analysis

In India, there were 35 Million plus Cities in the 2001 census, and only in the next decade, the number ascended to 53 in the year 2011. These centres are home to 43 per cent of the total urban population of India. For analysis in the present study, these million-plus cities of India were considered. Most migrants reside in the periphery of the city in the view of cheap and better residential facilities, so it was the city and its agglomeration taken as the unit of the research herein. Figure no.1 depicts the spatial distribution of these cities along with their size of the population.

Data Source and Methodology

The secondary data of Primary Census Abstract and D3 migration tables from the Census of India, 2011 were procured for the current study. The data was compared with the Primary Census Abstract and D3 migration tables from the Census of India, 2001 for respective cities to bring out the trend of in-migration. The total population and total migrants' figures, gender-wise statistics of each million-plus city, and its urban agglomeration (UA) were tabulated and calculated. The proportional change in migrants between the years was computed, followed by a percentage increase in 53 UA cities. At last, the growth rate of the migrants was determined, and conclusions were drawn. The tabulated data was brought into the GIS environment and attributed with each City UA's coordinates. On the outline map of India, 53 points were overlaid; and choropleth and proportional symbol maps of percentage changes were prepared.

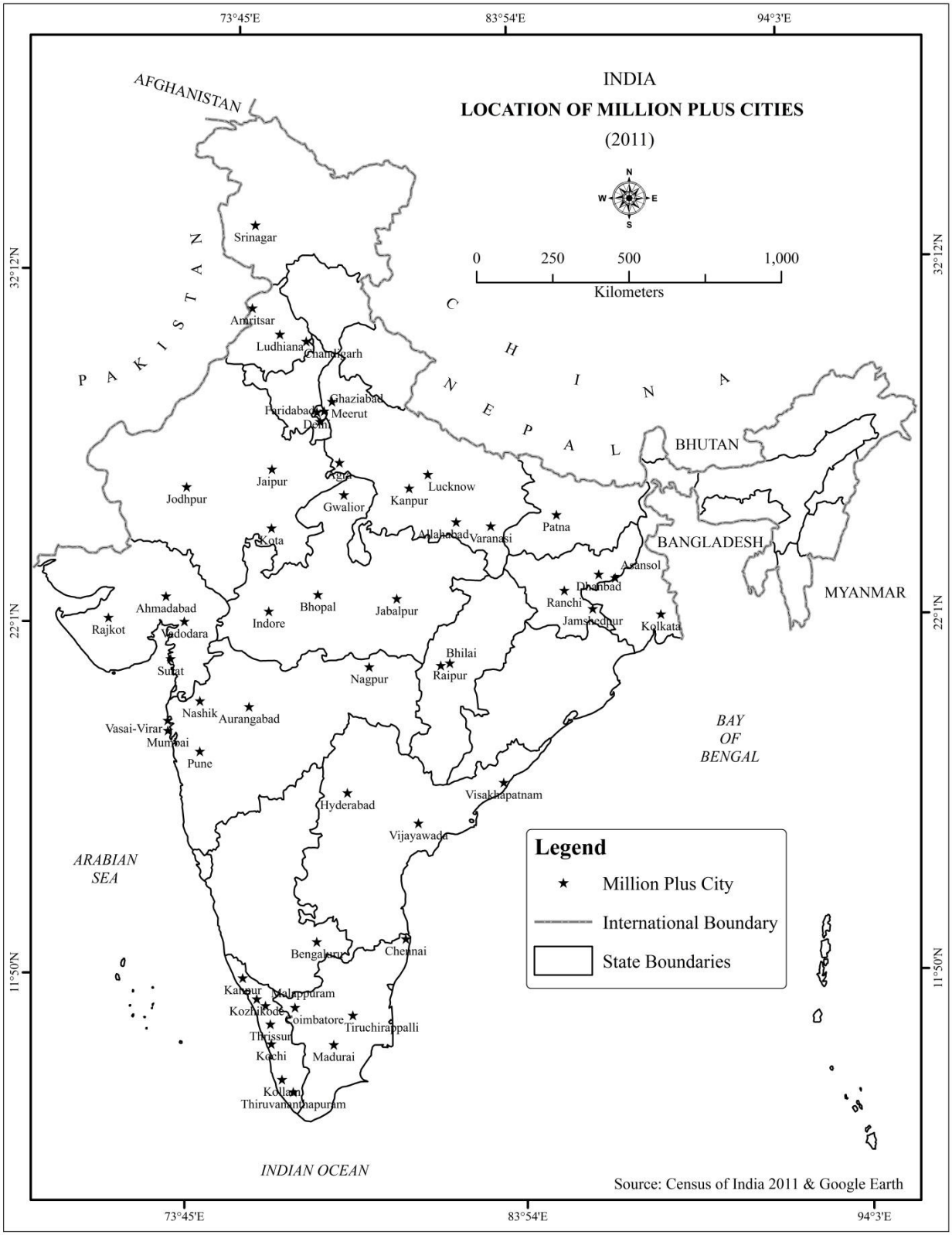

Figure 1: The distribution of Million Plus Cities of India (2011)

Analysis

Four stages of analysis were determined over the tabulation of in-migrants and the total population data of 2001 and 2011.

Stage One (Total In-Migrants Percentage per Total Population)

The proportion of total migrants in each million-plus city UA's total population for the year 2011 was computed and subsequently evaluated. The following formula was used to calculate the proportion:

$$P^p = \frac{T^m}{T^p} \times 100$$

where P^p is the proportional percentage, T^m is total migrants and T^p is the total population of each urban centre.

Stage Two (Percentage In-Migrant Change)

Second, the percentage change was calculated for the migrants who changed in the year 2011 compared to the year 2001. The following formula was used to calculate the percentage change:

$$P^c = \frac{T^{m11} - T^{m01}}{T^{m01}} \times 100$$

where P^c is the percentage change, T^{m11} is the total number of migrants in the year 2011 and T^{m01} is the total number of migrants in the year 2001.

Stage Three (Gender-wise In-migrant proportion to the total migrant population)

Sex-wise proportional classification of the in-migrants was done by taking total migrants of the year 2011 and bifurcating it into male and female migrant classes. It included further two parts, in the first one considering a change in male and female migrants from the year 2001 to 2011 and in the next one previous stage two was implemented to assess the percentage increase. It helped determine the gender-wise approach of migrants towards any city from one aspect and the availability of better prospects in a centre for a particular gender from another component.

Stage Four (Exponential Growth Rate of In-migrant)

The exponential percentage growth rate of these in-migrants over a decade (2001-2011) was computed in the last step. The formula used for the calculation of growth was as follow

$$Gr = 100\ ln \frac{T^{m11} / T^{m01}}{N}$$

where Gr is the growth rate, ln is the natural logarithm, and N was the number of years. Defining the growth rate tells the actual migration scenario for any urban centre and prepares it for the coming years regarding infrastructural development and associated components. It is expressed in percentage per year.

Results

Proportional Percentage of Total In-Migrants in Total Population

The proportion of migrants per total population of each million-plus city varied from as low as 16% (for Srinagar UA) to as high as 78% (for Vasai Virar City, M.Corp) in 2011. Figures no. 2 depict that 24 million-plus cities and their UAs had 50 per cent or more total migrants in their aggregated population. The top ten in the list (incl. Vasai Virar City) were Ghaziabad (70%), Faridabad (67%), Surat (65%), Hyderabad (65%), Pune (65%), Nashik (63%), Ludhiana (62%), Chandigarh (60%) and Vijayawada (59%). And the bottom ten in the list (incl. Srinagar) were Jodhpur (31%), Kanpur (31%), Jabalpur (33%), Gwalior (34%), Asansol (35%), Agra (35%), Varanasi (37%), Dhanbad (37%), and Jaipur (38%).

Change in Proportional Percentage of Total In-Migrants

There was an increase in total in-migrants (similar to total population) for every million-plus city from 2001 to 2011. The overall percentage range in change varied from 19% to 1972%. The city which received the slightest increase in migrant population was Dhanbad UA (370327 in 2001 to 438868 in 2011) and, on the contrary, Malappuram UA (from 36029 in 2001 to 746440 in 2011) received the most significant in-migrant change. However, the proportional percentage change of Malappuram was less than 50 per cent. The prominent highs and lows in the percentage category are in table no.1. One of the striking facts which came

up here was the transformation of non-million plus cities of 2001 into the million-plus cities in 2011. The top eight in the list of change were all non-million plus cities in the previous census, and six cities out of these were from the state of Kerala.

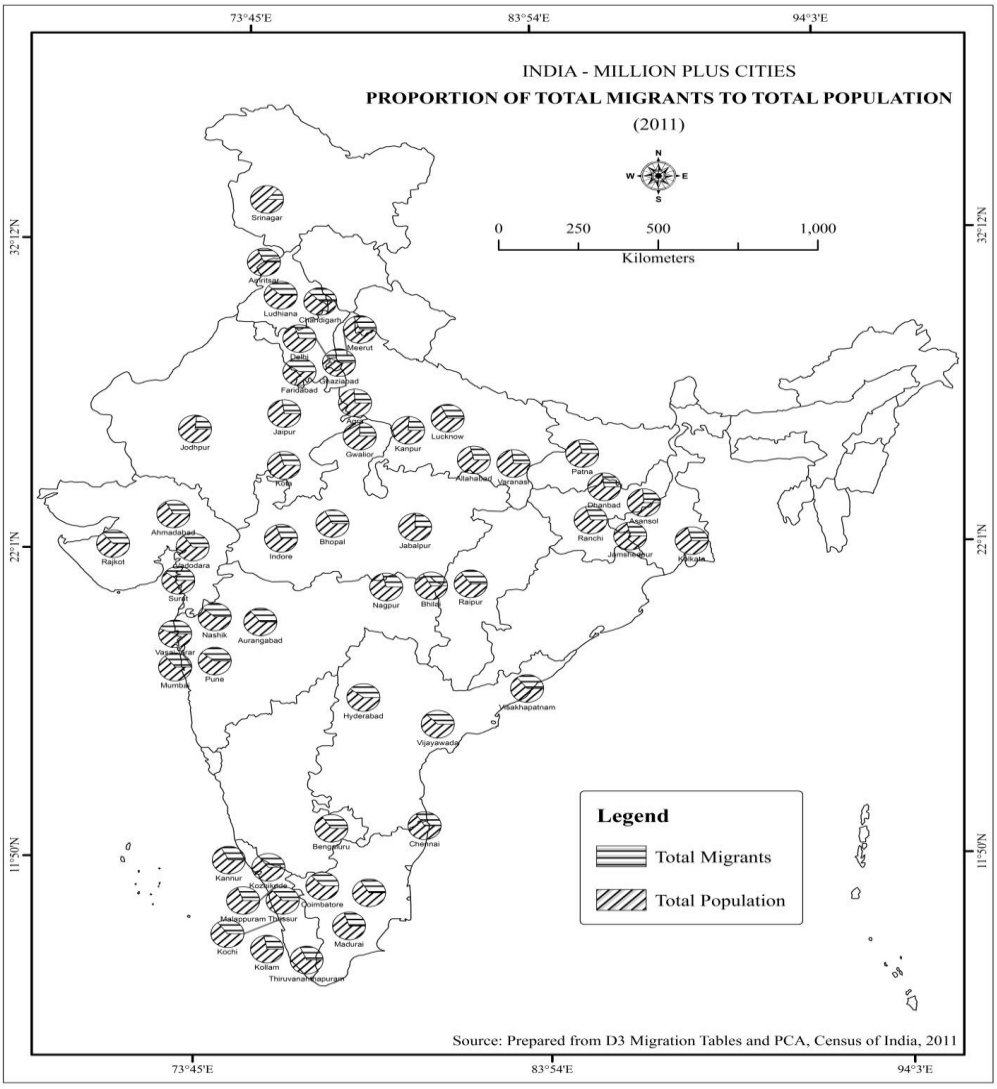

Figure 2: Proportional percentage of Total Migrants to total population in Million-Plus Cities (2011)

Table 1: The highest and lowest Percentage Change of in-migrants (2001-2011)

Level	Million Plus City with UA	Percentage Change	Total Migrants (2011)	Total Migrants (2001)
High Change	Vasai Virar	1906	956,270	47659
	Thrissur	1111	1,070,510	88423
	Kollam	889	5760770	43873
Low Change	Chandigarh	20	619371	517171
	Ludhiana	25	998586	795972
	Delhi	27	7041207	5550323

Proportional Change in Male and Female In-Migrants with Total Migrants

The first part under this did not include the percentage of migrants but the actual proportion. A more generalized form of in-migration was unveiled when a change in total migrants (2001-2011) was apportioned in male and female categories. Figure no.3 illustrates the size of the change in total migrants of each million-plus city and the second, proportional male and female migrant change within them. Cities of Hyderabad, Greater Mumbai, Chennai, Bengaluru, Kolkata, and Pune constituted the maximum proportion of male and female change of migrants to their total migrants. In contrast, Gwalior, Durg-Bhilainagar, Dhanbad, Srinagar, and Chandigarh were with the minimum proportion of male and female change of their total migrants.

Proportional Percentage Change in Male and Female In-Migrants

The second part included the percentage increase, i.e., positive change in the male and female migrants from 2001 to 2011. Figure no. 4 demonstrates the percentage increase in both male and female categories. Malappuram received the most considerable male migrant change (from 10217 in 2001 to 260926 in 2011), and Vasai Virar City was highest in female migrant change (from 21718 in 2001 447024 in 2011). On the lower end, Dhanbad received a minor male migrant change (from 183763 in 2001 to 184004 in 2011), and Chandigarh received the slightest female migrant change (from 232890 in 2001 to 291,068 in 2011). The point to note here is that the change in male migrants was proportional to the total migrants under stage one. Still, this assertion stands false in the cities where female migrant change was more than the male migrants as in Vasai Virar City (1958% over 1863%), Thrissur (1119% over 1099%), and Kannur (538 % over 512%). One of the reasons behind this was the high female population than male

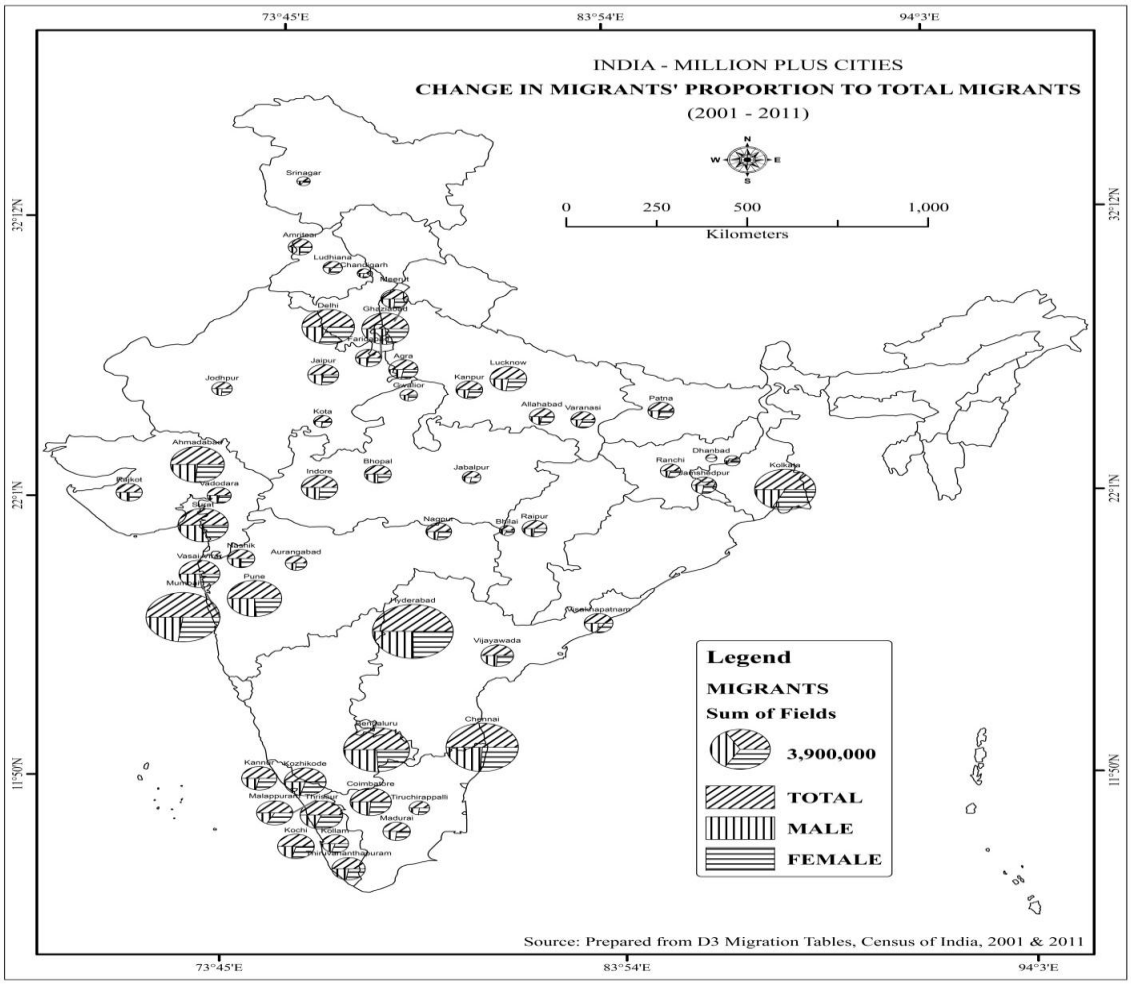

Figure 3: Proportional change of Male and Female Migrants to Total Migrants change in Million-Plus Cities

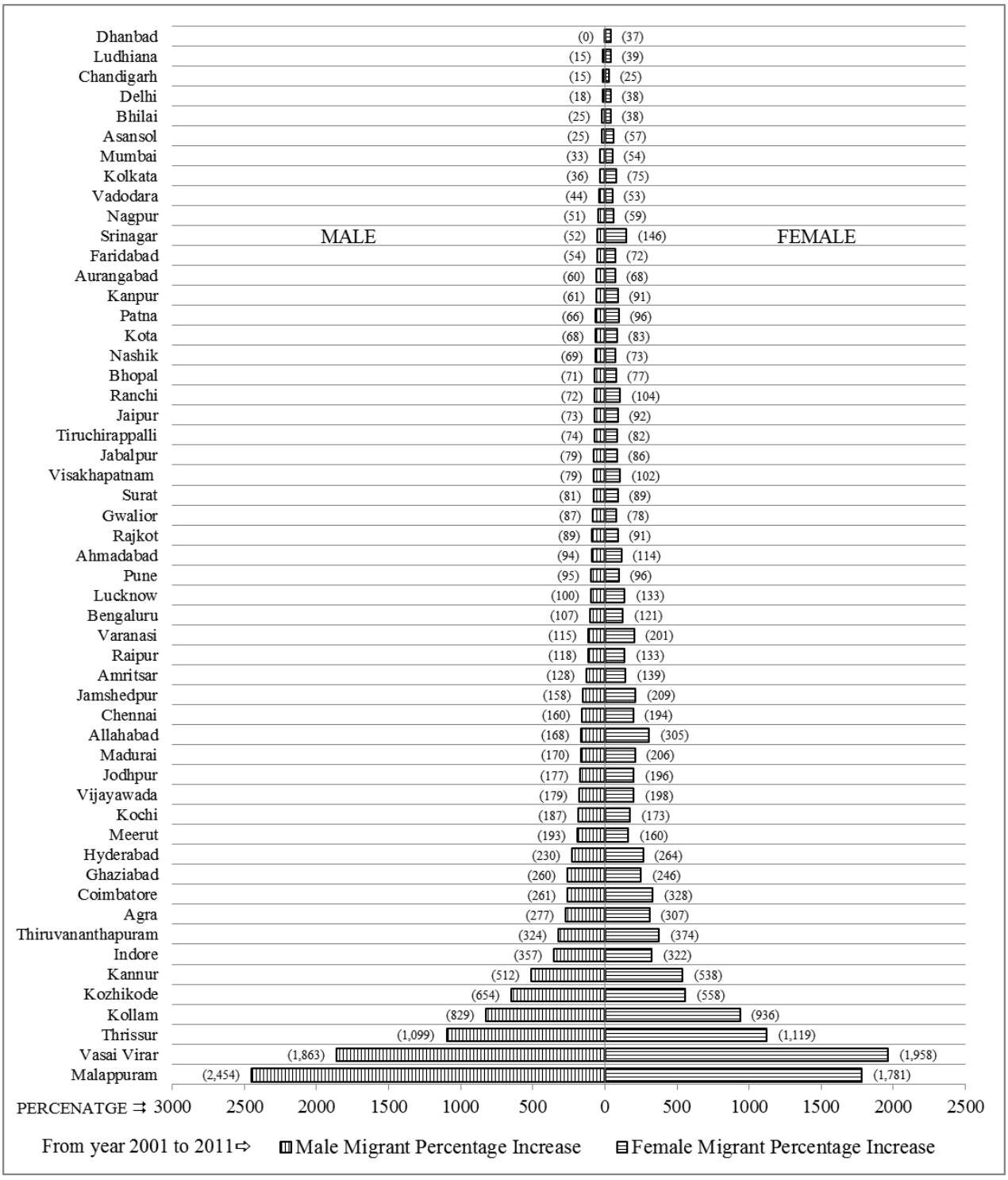

Figure 4: Male and Female Migrant percentage increase pyramid

counterparts in census 2011. The other reason was the Kerala state's highest literacy rate, making females of this region more adaptive to work than other areas. Even at the lowest end, the cities with standard male migrant change had comparatively high female migrant change Dhanbad (37% over 0.13%), Ludhiana (39% over 15%), Chandigarh (25% over 15%), and Delhi (38% over 18%)

Exponential Growth Rate of In-migrants

If the exponential growth rate of in-migration has been seen in context with the total migrants of the year 2011, then the highest migrants enumerated million-plus cities did not pose the highest growth rate. It was just that these have been receiving the migrants for ages, like in the cases of Greater Mumbai, Delhi, and Kolkata, so the annual growth rate in these was not so high (table no.2). Contrary to this, the million-plus cities where the minimum migrants have been enumerated in the year 2011 showed a comparatively high growth rate, which illustrates that the small uncommon urban centres were also becoming focal centres of in-migration.

Table 2. Comparative figures of maximum and minimum migrant base million-plus cities with their growth rates

Level	Million Plus City with UA	Total Population (2011)	Total Migrants (2011)	Total Migrants (2001)	Growth rate (percentage)
Maximum Migration	Mumbai	18394912	10112688	7141583	0.2
	Delhi	16349831	7041207	5550323	0.1
	Kolkata	14035959	5760770	3735752	0.2
Minimum Migration	Srinagar	1117740	204378	106935	0.4
	Jodhpur	1138300	349623	122111	0.9
	Gwalior	1264202	374712	206117	0.4

Discussion

The present study explicitly defines the trend of in-migration in the country by making a regional divide wherein million-plus cities of peninsular India receive more migration than their northern counterparts. In the extreme north, Ludhiana and Chandigarh were leading the high proportional percentage of in-migrants. Ghaziabad and Faridabad were heading the overall list of million-plus cities on the second and third position from the north-western front, respectively. Vasai Virar City in the Greater Mumbai periphery's surroundings tops the list with maximum percentage change and female percentage in the in-migrant flow over a decade. The infrastructure boom in the area and better transport connectivity led to the massive-scale residential construction that directly facilitates the commuters of Mumbai. An escalation in female migrants in this area specifies the surge of opportunities in the Bollywood industries for them. Kerala's state got maximum numbers of million-plus cities, i.e., six, from 2001 to 2011. Malappuram from Kerala showed the highest growth of 9.1 per cent in both total and male in-migrants. Dhanbad and Chandigarh were at the bottom of the list in the growth rate of migrants, the reason being the concentration of migrants in their neighboring cities like Jharia and Gobindpur near Dhanbad and Panchkula and Mohali near Chandigarh from where migrants travel to these million-plus cities.

Acknowledgment

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