



## TRENDS OF RESIDENTIAL PROPERTIES, AMENITIES AND DEMAND FOR HOUSING IN DIMAPUR TOWN, NAGALAND, INDIA

**Vitsoie Vupru**

*Department of Economics, Dimapur Government College, Nagaland, 797112, India.*

**Keweu Vupru**

*Department of Education, Dimapur Government College, Nagaland, 797112, India.*

### ABSTRACT

#### KEYWORDS:

*Residential properties,  
Amenities, Land prices,  
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*The progress of Dimapur town in the economic and educational fields has been attracting new entrants continuously. Over the past few decades, there has been an exponential growth of population with people flocking the town who require housing facilities. This phenomenon is exerting immense pressure on the housing sector in the town. Residential properties and amenities have been growing to satisfy this growing demand. But due to lack of proper planning, it has resulted in congestion and overcrowding of people and buildings in the town. With the continued increase in population and households, the demand for housing is ever rising which is most visible in the rapidly growing land prices in the town. Spatial variation in land prices and population density also exhibits people's preference of location of residence.*

### INTRODUCTION

Residential house is the centre of most people's lives where they spend maximum time and where they mainly need to get comfort and security. Apart from providing shelter, privacy and storage of possessions, it is also the primary base for family and social activities and a forum for expression of personality and taste. Moreover, it serves as the centre for gratification of leisure activities for many people.

In a developing economy, the push of the rural areas and the pull of the town have resulted in significant impact of rapid population growth on housing development (Aluko, 2010). A key determinant of migration is the income differential between rural and urban regions (Michaelsen & Haiskan-DeNew, 2015). Abiodun (1976) asserted that the most outstanding of all the problems of urbanization is that of providing ample housing facilities for the residents.

Households attempt to maximize well-being by their location decisions (Blomquist, Berger and Hoehn, 1988). The deep connection between urban change and the housing stock is evident in the strong correlation between population levels and housing units. There is little argument that the less available is land, the more difficult it is to build. The cost per square foot in multi-floor apartments is considerably higher than the cost per square foot to build single-family detached homes, and congestion in a city can increase the difficulty of building in many other ways. However, places that are densely built generally also are locations where housing demand is relatively high (Glaeser, Gyourko and Saks, 2005). Thus, empirically it

is difficult to separate out the effect of a limited housing supply in dense locations from higher housing demand.

Lindh and Malmberg (2008) concluded that theoretical considerations and empirical data support a clear effect of demographic change on residential construction even if the price effect may be less clear-cut for various reasons. They found that working age population has a positive effect while increasing population shares in the dependent age groups have a negative effect on residential construction. The growth in income level has a significant positive impact on the quantity of housing demanded. The level of the rental rate for a given housing stock increases with the number of people in high demand age groups, i.e., essentially the working population. Eichholtz and Lindenthal (2014) found the demand for most housing components increase with household size.

#### OBJECTIVES

This paper tried to examine the impact of population growth on residential properties and amenities as well as demand for housing in Dimapur Town, Nagaland.

#### DATA COLLECTION

For the purpose of the analysis, both primary and secondary data have been used. The secondary data on growth of population in Dimapur town, Nagaland over time, its density, number of households, number of buildings, availability and quality of amenities, etc. have been collected from urban development authority, municipal authority, census reports and other government reports. Data on

population growth, its density, literacy rates and number of households has been taken from the census reports and municipal authority. The demand for housing and land/property prices are positively related. However, due to the absence of Government administered prices in Dimapur, the available government data cannot throw any light on the actual value of land prevalent across the town or over time. Since there are no reliable secondary data on land prices, the information has been collected through direct personal interviews from Councillors, Gaon Buras (G.Bs.), Colony Chairmen and prominent citizens across the 23 wards.

## METHOD OF ANALYSIS

The data on population along with residential properties and amenities have been taken from secondary sources and tabulated. Also, their decadal growth rates have been calculated. The increase in land prices over the years have been considered to reflect the impact of demand for housing on housing prices since houses are not sold independently in the survey area. Ward-wise differences in the land prices and its growth both at current prices and constant prices during 2000 – 2015 have been analysed. The constant prices for the land prices have been calculated by using the GDP deflator. The analysis has been carried out on the basis of land use which has been categorized into six categories as per the classification adopted by Land records and Survey department, Dimapur, viz, Special Commercial, Commercial A, Commercial B, Residential A, Residential B,

and Homestead and barren or agricultural. The temporal and periodic growth of the prices for each category of land has also been estimated.

## RESULTS AND DISCUSSIONS

### 1. Population Growth:

Population growth is a major underlying factor behind the demand for housing and without sufficient new supply of dwellings; it pushes up the prices for both renting and purchasing houses (Karantonis, 2008). The population of Dimapur town has grown rapidly since 1971 as shown in Table 1. The exponential growth of population is not only leading to the geographical expansion of the town but they are also becoming more concentrated as is evident from the rising population density per square kilometre. It is observed that growth of area of Dimapur town has been seized since 1991 but not the population. The population which was merely 12426 in 1971, increased to 122834 in 2011 (Census of India reports). Density of population has also increased rapidly over the past four decades from about 781 persons per sq. km. in 1971 to 4809 persons per sq.km. in 2011. Density of housing units is one obvious proxy for the elasticity of housing supply in a city (Glaeser, Gyourko and Saks, 2005). Though the growth rate of population and density has decelerated, absolute growth of population and density is expected to increase parallel in order to meet the housing requirement of the population.

**Table 1: Growth of Population, Area & Density of Population in Dimapur since 1971 to 2011**

Year	Population	Decadal Growth of Population (%)	Area (Sq Km)	Density (per Sq Km)	Decadal Growth of Density (%)	Literacy Rate
1971	12426	-	15.9	781.51	-	-
1981	32878	164.5	18.13	1813.46	132.05	61.82
1991	57182	73.9	25.54	2238.92	23.46	68.65
2001	98096	71.5	25.54	3840.88	71.55	81.73
2011	122834	25.2	25.54	4809.47	25.22	87.48

*Source: Census of India, 1971, 1981, 1991, 2001 & 2011.*

The growth of town can also be observed from the increasing number of wards too. Till 1981, there were only 6 wards in the town, but it increased to 15 wards in 1991, 21 wards in 2001 and thereafter to presently 23 wards (Census of India reports 1971, 1981, 1991, 2001 and 2011).

Further, the growth of the town can also be viewed in terms of the length of road in the town over time. In 1991, the total length of roads in the town consisted of 144 km of surfaced road and 9 km of unsurfaced road. In 2001, it increased to about 287 km of surfaced road and 96 km of unsurfaced road (NPWD, R & B, Dimapur). As per census reports 2011, it recorded as 393.7 km and 158.48 km respectively.

### 2. Trend of Residential Properties and Amenities:

In all communities, some changes are continuously taking place whether it is in the domiciles of people or land use pattern. Some of these changes lead to new physical developments in land by public or private agencies, and consequently changes in the housing sector take place. The most basic physical requirements that a dwelling provides are shelter, adequate space for all the occupants to live, eat and sleep and a degree of privacy for the household as a whole and for individual members of it. However, according to recent census reports, as part of the basic minimum housing

provisions we also take into account other built-in housing amenities, such as space for cooking, availability of sufficient and good quality water for drinking and cooking, bathing and sanitary facilities, source of lighting and fuel, and availability of other durable household goods. We also expect that the structure and facilities of the dwelling will be properly maintained and in working order.

The characteristics of the house and the dwelling unit of the households such as the type of structure, condition of the structure, use of house, status of ownership of the house, number of rooms, etc., constitute important aspects of housing condition. Besides, the micro environmental ambience surrounding the house ensured by availability of proper drainage arrangement, garbage disposal system, availability of roads, etc., has an impact on the quality of life of the households (GOI-UNDP Project, 2013).

#### 2.2: Trend of Residential Properties:

Population growth, particularly the growth in the number of households, leads to a growth in housing demand (Mulder, 2006). The progression of households through the life cycle and the changes that take place within households generate diverse needs for housing space at different times (Clark, Deurloo & Dieleman, 2000). The growth of the town over the years has resulted in increased economic activities. This phenomenon is constantly attracting new migrants into

the town as evident from the fast increase of population as per census records. Accordingly, it is observed that residential houses and the number of households have been increasing over the years in the survey area, though at a diminishing rate (Table 2). The number of households which was 6627 in 1981 increased to 27857 during the last thirty years. The phenomenal growth of households has resulted in the sharp increase of residential houses in the town over the years. The number of occupied residential houses (ORH), which was

just 6620 in 1981, increased by about 90 per cent to 12581 in 1991. It further increased by about 60 per cent to 20198 in 2001. The last decade also witnessed a growth rate of about 37 per cent to 27640 as per 2011 census report. Housing supply in Dimapur town is mainly based on informal operations, championed by individuals in the private sector, but at a scale that is not commensurate with the growing housing demand in the town.

**Table 2: Growth of Occupied Residential Houses & No. of Households in Dimapur during 1981 to 2011**

Year	Occupied Residential Houses	Decadal Growth of Residential Houses (%)	No. of Households	Decadal Growth of No. of Households (%)
1981	6620	N.A.	6627	N.A.
1991	12581	90.04	12581	89.84
2001	20198	60.54	20996	66.89
2011	27640	36.84	27857	32.68

Source: Census of India Reports, various issues.

Ownership of urban dwelling is associated with higher standard of living (Ademiluyi, 2010). The share of owner occupied households increased from 23 per cent in 2001 to about 27 per cent in 2011. The percentage of households living on rented houses has decreased from 74.67 per cent to 68.39 per cent during the same period. The residential houses have, however, shown qualitative improvement during the period (Table 3). The number of residential houses is leaning towards categories 'Good' and 'Permanent' during the first decade of the 21<sup>st</sup> century. In

2011, almost 65 per cent of the total number of households is living in 'good' residential houses in contrast to just 44.56 per cent in 2001. On the other hand, the number of households living under 'Dilapidated' condition has gone down from 10.27 per cent to 2.49 per cent during the same period. The total number of households under 'permanent' and 'semi-permanent' structure of building also increased from 48.34 per cent and 34.96 per cent in 2001 to 52.50 per cent and 41.10 per cent respectively in 2011.

**Table 3: Status of Residential Properties in Dimapur Town in 2001 and 2011**

Year	No. of Household	Ownership status			Condition of Residential Houses			Type of Residential House			
		Owned	Rented	Any other	Good	Liveable	Dilapidated	Permanent	Semi-Permanent	Temporary	Unclassifiable
2001	20996	4866 (23.18)	15677 (74.67)	453 (2.16)	9001 (44.56)	9123 (45.17)	2074 (10.27)	9764 (48.34)	7062 (34.96)	3372 (16.69)	0 (0.00)
2011	27857	7403 (26.58)	19051 (68.39)	1403 (5.04)	18073 (64.88)	9091 (32.63)	693 (2.49)	14625 (52.50)	11449 (41.10)	1532 (5.50)	251 (0.90)

Note: Figures in the parenthesis represent percentage to total.

Source: Census of India Reports 2001 and 2011.

### 2.3: Growth of Amenities:

The increase in population and standard of living necessitates the growth of amenities such as schools, hospitals, banks, etc. Over the past four and half decades, these amenities have witnessed rapid growth in absolute terms

in Dimapur town (Table 4). However, the availability of amenities per thousand populations has decreased in respect of schools, dispensaries and banks over the period.

**Table 4: Growth of Schools, Colleges, Hospitals & Banks during 1971-2011 in Dimapur Town**

Amenities	1971	2015
Schools	16 (1.29)	78 (0.59)
Colleges	1 (0.08)	14 (0.11)
Hospitals	1 (0.08)	20 (0.15)
Dispensaries	1 (0.08)	7 (0.05)
Banks (Including Branch)	3 (0.24)	30 (0.23)

Note: Figures in the parenthesis represent numbers per thousand populations.

Source: Various Government Offices and Field Survey conducted during March-April 2015.

The per capita NSDP of Nagaland at constant prices has increased over time. At 2004-05 prices, it increased from Rs 16314 in 1980-81 to Rs 43992 in 2010-11. This growth in the per capita income is also likely to be associated with the

growth of banks and banking activities in Dimapur town. At the time of statehood in 1963, there was only 1 bank in the town. In 1971, it increased to 3 banks and then rapidly increased to 10 by 1981. There has been a strong positive

growth over the next 3 decades and the number of bank branches grew to 14, 15 and further to 25 in 1991, 2001 and 2011 respectively. As on 31<sup>st</sup> March 2015, there are 30 bank branches operating in the town. However, the availability of banks per thousand populations has remained almost constant over the same period (Table 4). As per the census reports, there were 6726 households availing banking facilities in the town in 2001, which almost tripled to 18090 households in 2011. In terms of percentage, it is 32.03 per cent and 64.94 per cent of total households respectively in 2001 and 2011.

The status of the amenities associated with the dwelling units determines the quality of life to a great extent.

Availability of bathroom and latrine within premises increased from 57.29 per cent and 93.93 per cent in 2001 to 95.34 per cent and 96.09 per cent respectively in 2011 (Table 5). The percentage of total households having closed drainage facilities also increased during the period from 12.24 per cent in 2001 to 16.93 per cent in 2011. Use of electricity as the main source of lighting and use of LPG as the principal source for cooking is the reflection of higher standard of living. The percentage of households using electricity as the major source of lighting has increased from about 89 per cent in 2001 to about 98 per cent in 2011. The percentage of total households using LPG as the main source for cooking has also increased from 45.23 per cent in 2001 to 73.48 per cent in 2011.

**Table 5: Status of Sanitary, Lighting and Cooking Fuel used by the Households in Dimapur Town in 2001 & 2011**

Year	Bathroom within Premises	Latrine within Premises	Drainage System		Source of Lighting			Type of Cooking Fuel			
			Closed	Open	Electricity	Kerosene	Others	Firewood	LPG	Kerosene	Others
2001	12029 (57.29)	19721 (93.93)	2571 (12.25)	11346 (81.53)	18596 (88.57)	2110 (10.05)	290 (1.38)	7939 (37.81)	9496 (45.23)	2561 (12.20)	1000 (4.76)
2011	26559 (95.34)	26769 (96.09)	4715 (16.93)	18218 (79.44)	27232 (97.76)	577 (2.07)	48 (0.17)	5995 (21.52)	20469 (73.48)	700 (2.51)	693 (2.49)

*Note: Figures in the parenthesis represent percentage to total. Source: Census of India Reports 2001 & 2011.*

The main sources of drinking water in Dimapur town are the private sources (Table 6). The percentage of Government sources (tap) however increased slowly from 9.73 per cent in 2001 to 16.14 per cent in 2011. People depend heavily on private sources for the collection of drinking water because of poor public water supply and also because it is relatively easy to get underground water as exploited by the individuals. This is evident from the wide availability of wells

and tube/bore wells in the town own by private individuals. It is observed that percentage of people who use tube/bore well as source of drinking water has increased rapidly from about 7 per cent in 2001 to almost 33 per cent in 2011, while the share of well and other sources has declined during the same period. The percentage of households having the source of drinking water within their premises also increased from 67.98 per cent in 2001 to 88.02 per cent in 2011.

**Table 6: Percentage Distribution of Households on the basis of Source and Location of Drinking Water Used in 2001 & 2011**

Year	Source of Drinking Water				Location of Drinking Water		
	Tap	Tube/Bore	Well	Others	Within Premises	Outside Premises	Away
2001	2043 (9.73)	1540 (7.33)	12155 (57.89)	5258 (25.04)	13664 (67.98)	4881 (24.28)	1554 (7.73)
2011	4496 (16.14)	9089 (32.63)	10216 (36.67)	4056 (14.56)	24519 (88.02)	3958 (14.21)	1380 (4.95)

*Note: Figures in the parenthesis represent percentage to total. Source: Census of India Reports 2001 & 2011.*

The type of materials used for constructing a house determines the type and quality of the house. It is observed that cement is the most commonly used material for flooring while CGI/Asbestos is the most common material used for

roof in Dimapur (Table 7). With respect to material of wall, it is observed that wall made of bricks or cement increased from 55.82 per cent in 2001 to 63.46 per cent in 2011 of the total houses.

**Table 7: Distribution of Houses in terms of Material of Floor, Roof and Wall in 2001 & 2011**

Year	No. of Census Houses	Material of Floor				Material of Roof				Material of Wall			
		Cement	Mosaic or Tiles	Mud	Others	CGI or Asbestos	Concrete	Thatch	Others	Grass or bamboo	Bricks or Cement	Plastic or Polythen	Others
2001	30419	19976 (65.67)	850 (2.79)	8951 (29.43)	642 (2.11)	18743 (61.62)	7188 (23.63)	3846 (12.64)	642 (2.11)	11101 (36.49)	16981 (55.82)	201 (0.66)	2136 (7.02)
2011	38749	30592 (78.95)	1628 (4.20)	5436 (14.03)	1093 (3.08)	21551 (55.62)	12605 (32.53)	1832 (4.73)	2761 (7.13)	11742 (30.30)	24591 (63.46)	259 (0.67)	2157 (5.57)

*Note: Figures in the parenthesis represent percentage to total. Source: Census of India Reports 2001 & 2011.*

The percentage of census houses using cement for floor also increased from 65.67 per cent in 2001 to 78.95 per cent in 2011. The share of houses with Mosaic or Tiles floor also increased but marginally, whereas the percentage of houses

with mud floor has decreased more rapidly from 29.43 to 14.03 per cent during the same period.

Having concrete roof indicates that there is an upward growth in double or multi-storied buildings in the

town over the years. The percentage of total census houses with concrete roof rose from 23.63 per cent to 32.53 per cent, whereas the percentage of houses with CGI/Asbestos and thatch has decreased during 2001 to 2011.

### 3. Growth of Housing Price in Dimapur since 2000:

Though Dimapur town is growing very fast over the past few decades, the real estate sector is still not developed. Apartment or flat system is not yet in existence. Most houses are detached and so it is very difficult to segregate house prices from land prices. But considering the small geographical spread of the town, it is assumed that similar structural buildings constructed during a given period have identical cost of construction and so variations in the price per unit area of housing is reflected in different land prices. Thus, the price of land would go up with an increased demand for housing since land and housing are complementary goods in this case. However, due to lack of any Government Administered prices in Dimapur town, the land prices may also vary depending on the bargaining power of the sellers and buyers.

Owing to rapid urbanisation, access to land for housing development has become an almost insurmountable challenge for many people in Dimapur. In recent years, the price of land has risen exponentially, making it unaffordable to many low and middle-income earners. However, as stated earlier since the number of ward have not only changed several times through expansion in area as well as bifurcation of existing ones but also changes in the ward number associated with the same locality; it is difficult to study the characteristics of respective wards over time. Moreover, there are no secondary data available with regard to the actual land prices for the town. Therefore, to overcome this problem, direct verbal interviews were conducted across the present 23 wards with former Councillors, Gaon Buras (G.Bs.), Colony Chairmen and prominent citizens of the localities to ascertain the trend of land prices in the respective colonies/wards during 2000 to 2015. It may be noted that most land transactions are carried out with the G.Bs. and Chairmen of colonies as witnesses and so they have a sound knowledge of the different rates in their localities. Information on current land/house

prices are also collected from newspaper advertisements given by potential sellers in the study area. It is observed that land prices and its growth rates vary substantially across various categories of area during the period 2000-2015.

The spatial variation in land prices has been viewed on the basis of land use which has been categorized into six categories as adopted by the Land Records and Survey Department, Dimapur, viz, Special Commercial, Commercial A, Commercial B, Residential A, Residential B, and Homestead/Barren/Agricultural land. An analysis of the temporal land prices shows substantial differences in land prices across the wards and also its growth rates during 2000-2015 (Table 8). For the town as a whole, the average land prices at current prices in 2000 is found to be Rs 701.67 per square feet and it increased to Rs 1608.33 per square feet in 2010 and that increased further to Rs 2275 per square feet in 2015. At constant prices (2004-05 prices) the land prices are found to be Rs 844.07, Rs 1122.06 and Rs 1255.46 per square feet respectively in 2000, 2010 and 2015. In 2015, the price per square feet at 2004-05 prices has been estimated to be Rs 3035.18 in respect of special commercial land while it is merely Rs 193.15 in case of homestead/barren/agricultural land. Wide variations in the average annual growth rates at constant prices in respect of the various categories are also observed during the period. During 2010-15, it is observed that, at constant prices, the average annual growth of special commercial land prices has been negative. On the whole, during 2000-15 all categories of land recorded positive growth in prices with homestead/barren/agricultural land recording the highest growth rate of 11.17 per cent, while the overall growth in land prices during the period is found to be 6.50 per cent.

At constant prices the average annual growth rate varies from 1.74 per cent to 11.17 per cent during 2000-2015. Growth of price of homestead is the highest because the price per unit of area was relatively low while special commercial recorded the lowest growth rate because its price has already reached saturation level. Also, due to very low price and after rising scarcity in the commercial areas the demand for the outskirts barren areas has increased significantly.

**Table 8: Temporal Land Prices Category-wise at Current Prices, Constant Prices and Average Annual Growth Rates at Constant Prices (per sq. ft.)**

Category	Land Prices at Current Prices			Land Prices at Constant Prices (2004-05 prices)			Average Annual Growth Rates at Constant Prices		
	2000	2010	2015	2000	2010	2015	2000-10	2010-15	2000-15
Special Commercial	2000	4500	5500	2405.91	3139.72	3035.18	3.05	-0.66	1.74
Commercial A	1200	2300	3500	1443.54	1604.74	1931.48	1.12	4.07	2.25
Commercial B	500	1250	2000	601.48	872.14	1103.70	4.50	5.31	5.57
Residential A	300	900	1500	360.89	627.94	827.78	7.40	6.36	8.62
Residential B	150	500	800	180.44	348.86	441.48	9.33	5.31	9.64
Homestead/Barren	60	200	350	72.18	139.54	193.15	9.33	7.68	11.17
Average	701.67	1608.33	2275.00	844.07	1122.16	1255.46	5.79	4.68	6.50

Source: Field Survey conducted during March-April 2015

The periodic growth rate of land prices at 2004-05 prices as displayed in Table 9 reveals substantial variations within a category across periods and across categories over different periods.

Category	2000 - 10	2010 - 15	2000 - 15
Special Commercial	30.50	- 3.33	26.16
Commercial A	11.17	20.36	33.80
Commercial B	45.00	26.55	83.50
Residential A	74.00	31.82	129.37
Residential B	93.33	26.55	144.66
Homestead/Barren	93.33	38.41	167.60
Average	57.89	23.39	97.52

*Source: Field Survey conducted during March-April 2015*

During 2000-10, growth of land prices varied from 11.17 per cent to 93.33 per cent with an average of 57.89 per cent. From 2010 to 2015, however land prices witnessed an overall growth of 23.39 per cent but special commercial land prices experienced a negative growth (-3.33). During 2000 to 2015, land prices increased substantially in the range of 26.16 per cent to 167.60 per cent with an overall growth rate of 97.52 per cent.

## CONCLUSION

Dimapur town is considered as the economic gateway of Nagaland state and is one of the fastest growing towns in the North-Eastern region of India. The progress of the town in economic and educational fields has been attracting new entrants continuously. Over the past few decades, there has been an exponential growth of population with people flocking the town not only from different parts of Nagaland and various other states of India, but also from neighbouring countries. Increasing population brings along more number of households who require housing facilities. It is quite natural that with rising economic activities, growth of labour force and urbanisation, population and required housing sector also grow in any town. This phenomenon led to rise in pressure exerted on the housing sector in the town like Dimapur. Due to lack of proper planning and spatial expansion, it has resulted in congestion and overcrowding of people and buildings in certain parts of the town. With the continued increase in population and households, the demand for housing is ever rising. This pressure is most visible in the rapidly growing land prices in the town. Spatial variation in land prices and population density also exhibits people's preference of location of residence.

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