Residential Crowding and Chandigarh City Planning

Author Details: Dr. Anita
Associate Professor in the Department of Geography, Government College of Girls’ Sector-14, Gurugram

Abstract
The accelerating growth of urban population has been accompanied by haphazard growth of cities leading to the emergence of such problems as overcrowding and creation of slums. Almost every city in the country has a rapidly burgeoning population of slums and pavement developers. In fact, Calcutta and Bombay are among the eight cities, which United Nations had determined as the most crowded Metropolises on the globe.

An immediate victim of this overcrowding has been the quality of urban environment particularly in the large unplanned cities. It is usually accompanied by social ill health and disorder, characteristic feature of an overcrowded urban milieu throughout the world.

Chandigarh is a planned city, planned to avoid ill effects of growth of population. Present paper is to study the nature and degree of crowding in this planned city. It has been found that with the growth of population over time, population has crossed the limit of estimated population.

Key Words – Residential Crowding, City Planning, Urban Environment

Introduction
In the process of urbanisation throughout the world the growth of early cities had generally been governed by the availability of requisite researches and the then prevailing socio-economic organisations. The influx of the rural migrants leading to an overcrowding of the city was not a very strong factor for the growth of cities till the start of industrial revolution. However, this does not mean that the earliest cities were not crowded. Residential crowding has been an integral part of an urban system since the first cities came into being. The earliest example of urban residential crowding is recorded for the Greek cities, generally considered to be the first examples of planned cities.

In these cities “insula” was the abode of the common man. These structures were from four to six stories but not more than 70 feet in height. In general, the height limit was established because the buildings were dangerous, suffering from both fire and structure failure. Accounts of daily collapse of “insula” and killing of occupants and pedestrians are available.

The number of persons per ‘insula’ is not available. However, the number of stories of each insula and their massiveness it seems that density within them must have been fairly high and the inhabitants from the poorer section of the society, could not have a afford high rents and had to risk their life by inhibiting buildings which usually collapsed or caught fire and did not have any provision of water.

These attributes also suggest that the insulas were also a means of segregating lower working class from the higher-ranking social groups. Another example of a similar segregation in Ancient city maybe evidenced existence of workman’s quarters in Indus valley towns. However, this evidence is less conclusive than the one identified in the Greek cities. (Vance, 1977)

In India, during the more recent period, particularly the period of colonial rule, crowding was a distinct feature of only a few cities particularly those established by the British for the performance of industrial and trading functions. In the colonial spatial organisation large tracts of India function mainly as suppliers of raw materials which were collected at part of towns for further transhipment to the manufacturing centres located in Britain and markets located elsewhere. In return, these towns received cargo from abroad and functioned as centre of redistribution within the Indian territory. At a later stage, many Industrial and trade towns also developed near these collection and redistribution centres. The performance of urban functions of these centres required cheap labour in large numbers. The existence of such employment opportunities promoted considerable rural to urban migration which in turn resulted in an increase in the pressure on housing and lead to residential crowding.

The Independence of India was accompanied by a large scale of redistribution of population in favour of urban areas. One of the results of the partition of the country at the time of independence was a phenomenal growth in the population of towns located in North India. The independence of the country also initiated period of planned economic development. This promoted development in agricultural, industrial
and transport sectors. It was inevitable that this overall economic development particularly in industry and transport should be reflected through a still higher rate of growth of cities.

The accelerating growth of urban population has been accompanied by haphazard growth of cities leading to the emergence of such problems as overcrowding and creation of slums. Almost every city in the country has a rapidly burgeoning population of slums and pavement developers. In fact, Calcutta and Bombay are among the eight cities, which United Nations had determined as the most crowded Metropolises on the globe. Slum dwellers for 38 percent of Bombay population and 42 percent of Calcutta live in slums. (Sunday Express Magazine, 1987)

An immediate victim of this overcrowding has been the quality of urban environment particularly in the large unplanned cities. It is usually accompanied by social ill health and disorder, characteristic feature of an overcrowded urban milieu throughout the world. The enormous proportions that these problems have assumed in the short span since the independence of many of the third world countries in general and in India in particular made planning of cities almost obligatory.

Since independence several planning efforts have been made to regulate unplanned urban growth through various proposals contained in the successive five-year plans. The first such proposal was contained in the first five-year plan, in which the main strategy was to clear the slums. (Five Year Plan, 1952)

In the second five-year plan, this strategy continued. In 1961 in addition to the early strategy of clearance of slums implementation of a master plan for all the growing towns and cities, expansion of housing facilities LIG (lower income group) and EWS (Economically Weaker Sections) were suggested in order to check the haphazard growth. (India G., Five Year Plan, 1956) (India G., Five Year Plan, 1961)

The new proposals were in response to difficulties encountered in the implementation of the earlier proposal for the clearance of slums. It was found that the clearance of slump everywhere is impossible due to the limitation of resources; therefore, the new strategy was to improve the environmental conditions along with the clearance of slums in order to make an area habitable. (India G., Five Year Plan, 1966) (India G., Five Year Plan, 1966) (India G., Five Year Plan, 1980) These strategies were first proposed for the largest Metropolitan cities such as Bombay and Calcutta and were later extended to other cities. The Seventh five-year plan contains proposals for small and intermediate towns also. (India G. o., Seventh Five Year Plan)

However, the planning efforts are still at an experimental stage because:

1. adoption of a strategy for proper town planning has been somewhat late in our country

2. it is very difficult to assess the performance of planning efforts executed in the already existing towns. Such schemes have, of necessity, been operating under a pre-existing socio-economic context. The best examples of such schemes are the model towns and the urban estates established in many of the already existing towns.

One of the major areas where a fairly thorough assessment of the role of planning in the creation of better urban living conditions can be provided by those towns which have been created a new under a comprehensive town plan. one of the most well-known and extensive exercises in the field has been the creation of 'Chandigarh'

Conceptualization of the problem

Crowding may be directly attributed to the non-availability of physical space for each individual where he can live in physical comfort.

Due to the diversity and contradictions in the characteristics used by various social scientists for defining residential crowding it is difficult if not impossible arrived at a universally acceptable definition of residential crowding as an urban attribute. However, an effort can be made by focusing on those characteristics on which there is substantial agreement, through the identification of several crowd-like attributes of some social groups and on the basis of event concepts.

The dictionary of Social Sciences defines 'crowd' as an aggregate of human beings in physical proximity brought into direct and temporary contact with strong rapport and mutual stimulation. (Gourd). It
would not be wrong to suggest intensity of these attributes may result in crowding. In this definition, groups not in physical proximity have a predictable organisation and groups in which do not have a proper rapport would be automatically excluded.

Crowds can develop spontaneously or through manipulation. There may or may not be a distinct objective or differentiation among the participants in feeling, behaviour and status positions. A common sub classification based on the presence or absence of a central objective, is that of the acting crowd in which attention is directed towards some common objective and the expressive crowd in which there is no direct central focus participants engage only in excited movements. The example of this type are the audience groups and street corner crowds.

Social scientist big in consideration of crowds with similar observation. The selection of basic and diagnostic characteristics is essential for an accurate description but then extension to other contexts frequently results in variation and confusion in the use of the term. There is a general consensus with comment of K. Davis that "one criterion of the crowding is physical presence- without such physical there can be no crowd." (Davis.K, 1949)

C. A. Rawlsian and W.F. Gethys "physical proximity is not requisite to crowd formation what is necessary is that the individuals compositing the crowd must be in contact through communication". (Rawson & Gethys, 1948)

R. Brown defines crowds as collective that are congregated and polarised on a temporary irregular basis and which usually involve only temporary identification. (Brown, 1954)

But S.S. Sargent speaks of the audience as 'a highly structured group. Its members are oriented towards the speaker and performance and only incidentally toward each other'. (Sergent, 1950)

H. Cantrill defines a 'crowd' as a 'congregate group of individuals who have temporarily identified themselves with common values and who are experiencing emotions'. (Cantril, 1941)

R.N. Turner and L.M. Killian suggests that the members of a crowd maybe at various stages of development of crowd action feeling, thinking and acting quite differently, get contributing to the development of a common line of action. (Turner & Killion, 1951)

In addition to search direct contradictions definition, where is authors also list different characteristics:

R. E. Park stresses among other things the necessity of having rapport, 'such a collectively becomes a crowd...... only when a condition of rapport has been established' (Park & Bingess, 1942)

L.W. Wilson and W.L. Kolb stress the relation of the crowd to its social and cultural environment. 'The attributes are either a part of the cultural pattern of the community or they have been created alike in each individual. Thus, the crowding is a product of the community and its system ok social relations'. (Wilson & Kolb, 1949)

From these definitions it is possible to identify the following broad conditions which may be considered as comprising a crowd and conditions of crowding:

1 physical presence 2 constant contact through communication 3 congregation and identification on a temporary, is regular basis, 4 structured groups only incidentally oriented towards each other 5 congregate of individuals with temporary identification, common values and emotions, 6 A group contributing to the development of a common line of action, 7 A group with an established rapport, 8 Crowd as a product of community and its system of social relations.

On the basis of the various groups, such as(i) those registered as residing in institutional housing, namely hotels, hostels etc., and(ii) people belonging to different economic levels, qualify for being included in a study of residential crowding.

it is possible to compute the following indicators of residential crowding on the basis of different types of data:

A) Physical indicators:
   i) Density of population in individual blocks.
   ii) Density of residential structures in individual blocks.
   iii) Number of households per census house.
   iv) Number of houses persons was block.
   v) Number of persons per Census house.
   vi) Number of persons per floor per building.
vii) Number of persons per room per house.
viii) Average size of floor space of living area.

B) Social indicator
social segregation, i.e., religion, class, caste etc.

C) Psychological indicators
i) Residents’ perception of their living environment.
ii) Duration of stay in the present locality.

D) Economic indicators
i) Occupational structure.
ii) Economic status.
iii) Number of earning members in the family.
iv) Occupancy status.

Residential crowding can be defined on the basis of physical proximity of residential structures; or the number of inhabitants within each residential structure. However, in both of these, the availability of physical space where each individual can live in comfort and in conditions of rapport is basic. Its absence would contribute to residential crowding and the probability of deterioration of physical, social and culture environments.

In the present study, the number of persons per house has been taken as the basic indicator of residential crowding irrespective of the size of the house or its area and is, therefore, different from density of population.

The purpose of this study is:
1 to understand to describe the nature and extent of residential crowding in Chandigarh.
2 to try to understand the role of planning in controlling or promoting or remaining neutral in such a well-known extensive exercise as the planned city of Chandigarh.

Study area
Chandigarh is located between latitude 30-degree 46 minute and longitude 76-degree 46 minute at the foot of Shivalik Hills. It is presently functioning as the joint capital of Punjab and Haryana States and the administrative headquarters of the union territory of Chandigarh. It recorded a total population of 360,494 persons in the 1981 census.

Most of these towns even before partition lacked essential amenities, such as adequate drainage and water supply and some of them had schools and hospitals which could meet the normal needs of the population according to modern standard of search services. After partition, these services had to cater to a population far in excess of what they were originally designed for, with the result that in most places these were either on the verge of breaking down or were so inadequate that these were considered almost non-existent.

Le Corbusier was the architect for the preparation of the final master plan of Chandigarh. (Evanson, 1966)

On the basis of the general attributes of the unplanned cities of India, four objectives were kept in mind preparing the master plan of Chandigarh. These are following:

1. Decongestion of centres of cities.
2. Decrease of vertical density.
4. Enlargement of landscape areas.

Among other objectives was the use of high land use structures to accommodate urban populace, yet have large areas of the ground to be kept free for Park and Recreation Zones, particularly in the working areas and City Centre.

The Rapid flow of traffic was to be enhanced by the separation of pedestrians and from motor care. The concept of traffic and differentiation was also applied to the planning for transport network.

Chandigarh was planned in two phases total population of 580000 persons over an area of 75.5 square kilometres.
Phase 1 and Phase 2 were planned specially for residential and industrial purposes respectively. In wards in unplanned cities of India, each phase was divided into sectors, further subdivided into four parts called A, B, fC and D, comprising a number of houses. Further subdivisions, just like Mohalla’s in unplanned cities as blocks.

In the first phase, 30 sectors were to be developed for a total population of 150000 persons. Not only this but the number of persons within each sector and hence densities were also fixed, for instance, Sector 1 was to accommodate 205 persons over a fixed area and Sector 30 was designed total of 21900 persons. The fixation of variations in number of persons in different sized houses in each sector was related to social economic status of different groups of people. In other words, in the Northern half, the size of the plots was kept large in many of the sectors resulting in a lesser number of houses. These sectors were planned for the highest economic status groups, i.e., chief ministers, Indian Administrative Service officers etc. In Phase 2, houses were to be constructed by both government as well as private agencies. 13 types of houses were to be constructed in different sectors, for different income and social groups.

For each house 50 to 60 percent of the total area at the ground floor level was to be built. For the first floor 50 to 60 percent of the total built up area of the ground floor was to be built up and at second floor 50 percent of the built-up area of the first floor was to be built up. The floor space index of these houses out to be 1.38.

In the second phase, an additional 17 sectors were to be developed to cater a total population of 5 lakh persons. In phase II, 50 percent of the total plot area was to be built up at the ground floor level, 45 percent of the built-up area of the ground floor at the first floor and 30 percent of the first floor was to be built up at Second floor. Floor space index of these houses comes to 1.33.

Unlike the unplanned cities, the plan of Chandigarh has fixed the location of different functions in different parts of the city to serve a maximum of population without adversely influencing the environment, e.g., industries were located on one side of the city to minimum pollution. Commercial area in the centre of the city was located to resist congestion within the Kernel of the city as in unplanned cities. Institutions located in the North Western part. Beyond Phase 2, Mohali was proposed to be developed to serve as a ring or satellite town to serve Chandigarh.

Sources of Data and Methodology

The study is based on secondary data contained in the District Census Handbook of Chandigarh Union Territory 1981. The data pertains to be total population and the number of houses in each census block in the city.

In the present study the number of persons per house has been computed and used as an indicator of residential crowding. Some other indicators could not be used due to the non-availability of relevant data. For instance, density of population and houses could not be calculated at the block level and used as an indicator since, area of individual blocks is not available.

The number of persons per house directly indicates the internal living density and excludes the non-residential element of land use.

The available census data refers to the number of jhuggis and shops but in some blocks only. This is because in Chandigarh, two types of residences are identified as non-planned residential areas (Sarin, 1986): i) Authorised- number is given
ii) Unauthorised- number is not given

In this district census handbook details of only the authorised houses are given. Wherever these are excluded the problem of underestimation in the number of houses is encountered.

Unconstructed residences, particularly in phase II sectors and in sector29 and 30 of Phase 1, included in the data contribute two and underestimation of population figures. Large sized houses with large number of subunits also result in over estimation as in the district census handbook main number is given that main number may have further subdivisions, that is in district census handbook only house number 400 is given although it is further subdivided into 400/1, 400/2 and so on.

In order to calculate the spatial pattern of residential crowding in different parts of Chandigarh, following steps were followed:

1. first the number of persons per house for each of the 625 blocks was calculated.

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2. The computed values of number of persons per house from ranging from Nil to 815 for all the blocks were arranged in ascending order. Median, Upper Quartile and lower quartile were used to separate into four categories.

Spatial Patterns of Crowding

Chandigarh City has been developed into phases. According to the Le Corbusier plan, the first phase includes 30 sectors, covering an area of 9000 acres. 17 additional sectors were included Phase II, covering an area of 6000 acres. The two industrial sectors, Industrial Area Phase 1 and Industrial Area Phase II, are included neither in Phase 1 nor in phase II of Chandigarh planning.

Thus, the total number of sectors in the present study is 49. Out of which 47 are residential sectors and two industrials. on the basis of 1981 census data these sectors have further been sub divided into 625 census blocks.

According to official records, Chandigarh is comprised of 19394 residential plots in sectors 1 to 30 and 19601 plots in sectors 31 to 47. The number of these plots excludes government houses, Punjabi University other institutes, the Grain market and Chandigarh Housing Board colonies.

The city was designed to cater to a population of 5 lacs. According to 1981 census, Chandigarh had a population of 360494 persons. It is interesting to note that Phase 1 which was designed to accommodate 150000 persons has exceeded this target and houses 280535 persons. In other words, in Phase 1, the total population is almost double to that of the estimated population.

In the phase II sectors, which are not yet fully developed a population of 79959 got it in 1981 as against the estimated population of 3,50000 persons.

In the Phase 1 sectors, the heavy concentration of population is more pronounced in the following types of sectors:

1. Those which have attracted specialised functions, for example the location of scooter market;

2. The old developed sectors of the city;

3. The sectors which have high proportion of lower middle income group people as reflected by the location of the low-income group government housing schemes (compare figures 3 and 4) for example, in Sector 23, one of the first sectors to be developed in Chandigarh, the estimated population was 15,700 persons but in 1981 it has been recorded a population of 19,353 persons.

In Phase 1, exception to the above finding is in the high-class income group sectors, like 1, 3, 6; and 14,18,19,20 and 29.

The disparity in the estimated population for which a sector was planned and its actual population is a strong indicator of the level of residential crowding in Chandigarh. This is also indicated by the fairly high average number of persons per house in Chandigarh (23 persons for house) as compared to the national average of 18 persons for house.

Spatial patterns of crowding

i) A few generalities can be identified in the spatial patterns of residential crowding in Chandigarh. The pattern of residential crowding in Chandigarh very clearly reveals the existence of the core and peripheral areas of crowding.

The crowding in these areas is not related to the fully developed or partially developed nature of the individual sectors because these are located both in developed as well as partially developed parts of the city. This pattern is quite similar to the one identified in other Indian towns in which the core areas have values of population density and comprise high class residential and business areas. The level of crowding goes on decreasing with increasing distance from the core and again increases in the peripheral areas which generally house the lower income groups. However, as in the other Indian towns, in Chandigarh also this increase in the peripheral areas neither becomes as marked as in the core areas nor it is over a short distance from the core area.
Another model proposed for the Indian cities is that of a low population concentration in the kernel related to the decline of the core area, followed by high concentration with increasing distance. This type of model should have been evident in Chandigarh also in which one of the major principles of planning was to locate the non-residential City Centre Hindi Core of the city so that a minimum of population is actually located in the heart of the city. Interestingly, this has failed in the case of Chandigarh where the city centre shows a very high level of residential crowding.

In this case, total population according to 1981 census (1514) has exceeded to the estimated population (1000 persons)

Another feature in the spatial pattern of residential crowding in Chandigarh is that in the north, the entire length of the city comprising of sectors 1, 2, 3, 4, 5 and 6 housing very high social and income group people, such as the chief ministers, ministers, administrative officers, their secretaries and Deputy secretaries, etc. emerges as an area of high level of residential crowding. If one were to compute the density of population for these sectors, these would emerge as areas of low density because in such a computation the area of the entire sector, rather than the actual occupancy of residential structures is involved. This attribute also helps in bringing out one of the fallacies in many of the planning proposals which attempt to control density of population but fail to visualise the actual future use of buildings in the socio-economic context.

ii) In the north western quadrant there is another cluster of blocks with very high and high values of persons per house. this part comprises of educational institutions such as colleges, the University and P.G.I. and their residential areas located in sector 10, 11, 12, 14, 15, and 16.

iii) Another cluster of high value blocks located in the North Eastern side of the city comprises of sectors 20, 21, 22, 27, 28, 29 and 30.

iv) the southern extreme of the city, comprising of the outer sectors in phase 2 of the city, also has high values of persons per house. this is somewhat unexpected as most of these sectors have not yet been fully developed.

Elsewhere in the city, the blocks with high values of persons per house are scattered in different sectors.

Generally, the industrial parts of the Indian cities display higher levels of crowding since the slums are usually attracted to such areas favouring these sites for residential purposes due to their close vicinity to the area of work the slum dwellers. However, in Chandigarh this quite noteworthy feature of the Indian city is not identified.

The northern part of phase 2 sectors, unlike their counterparts to the south generally display low to moderate values of persons per house.

A rectangular shape is more readily identifiable in most of the blocks with high values of residential crowding. This is the basic shape of the sectors and is generally modified to a rectilinear form. The blocks which do not display these shapes are either very small in size or scattered throughout the city. largest rectangles are located extreme Northern and Southern parts of the city.

Some blocks with lower values of residential crowding have collectively formed the rectangular shape. However, these are not as prominent as the blocks with high values of crowding individually or collectively.

The areas of moderate crowding generally form a zone of transition between the areas of high and low residential crowding. This pattern is also generally observed in other Indian cities.

**Regional pattern**

The city has been divided into four types of areas of residential crowding on the basis of the number of persons per house.

1. **Areas of very high residential crowding** (more than 12 persons for house)

These areas contain total population of 13208 persons which is 3.6 % of the total population.

Out of the 625 total number of blocks identified in Chandigarh, 170 blocks (28percent of the total) located in 37 different sectors have high residential crowding with values ranging between 12 persons per
house to 815 persons per house. High crowding 815 persons per house value is located in block number 51 of sector 10.

As many as 11 entire sectors (1 to 6, 39, 41, 42, 43 and 46) by virtue of their being considered as one census block show high values of persons per house. these are located in the extreme north and central part of the Phase 1 and southern part of the Phase 2

The diagonal belts of high residential crowding also be identified running through running:

i) 10, 11, 12, 14 and 15 Sectors in the Northern halves;

ii) through sectors 18, 19, 20, 21, 22, 23, 27 and 28 in the Southern half of phase 1

The value of persons for house ranges between three persons to 15 persons in these blocks.

Besides, some compact areas in the north, south and central parts of the city, blocks of high crowding are also scattered in other parts of the city

The blocks with high value of persons per house are located in;

i) highly developed, as well as least developed sectors.

ii) blocks of high standard of living as well as low standard of living

iii) institutional blocks, i.e., where a larger part of the block houses and institution.

iv) commercial and specialised functional areas, like scooter market of 21, shopping market of Sector 22 and 17. The only exception is the industrial area of the city which, in spite of being a special functional area, does not have a high value of persons per house.

There are 6 blocks of high crowding in the developed and five in the undeveloped sectors of the society. The rest are located in commercial, specialised function and institutional factors Thus,

i) Development stage of a sector is not a major determinant of crowding.

ii) The economic status of a sector is also not a determinant of residential crowding.

iii) High crowding is commercial areas of Chandigarh is similar to the pattern identified in other cities.

2. **Areas of high values** (between 9 to 12 persons per house)

Unlike, the areas of very high crowding, these blocks do not make compact and contiguous areas and are generally scattered throughout the city.

In general, these are located between areas of very high and low crowding and in some cases between very high and very low value areas.

In Phase 1, 70 percent of the blocks excluding the entire sectors that form one block have patches of high values are located between very high and low areas. While in Phase II, 20percent of the blocks with high values are located between areas of very high and very low values. The number of persons per house in these blocks’ ranges between 9 to 12 persons per house.

A high concentration of these blocks occurs in specialised functions actors, e.g., scooter market of sector 21 and shopping market of sector 22.

In these sectors, total population according to 1981 is 29,767 persons and 28,584 persons respectively, which is more than estimated population, i.e., 23200 persons and 219 00 persons respectively.

3. **Areas of low values** (between 6 to 9 persons for house)

In this category, there are 108 blocks which is nearly 16 percent of the total number of blocks) out of the total 625 blocks.

Such blocks are distributed throughout the city and form compact as well as scattered patterns.

Shape of the areas formed by these blocks are compact rectangles as well as rectangular  Rectangles can be identified particularly in Sector 11 and 10; half of sector 37 A rectangle has been identified in the industrial area. These shapes are derived from the overall shape of the sector.

Elsewhere, blocks with these values are scattered in the entire city forming different shapes. These blocks with low values occur in all types of sectors, i.e., developed as well as un developed sectors; old as
well as newly developed sectors. Sectors with specialised functions\(^\text{*}\) as well as purely residential sectors. **

Generally, proportion of such blocks is higher in Phase 1. In Phase 1, 9 percent of the total number of blocks fall in this category while in Phase II only 6 percent have a low level of residential crowding.

4. **Very low residential crowding (less than 6 persons per house)**

In general, blocks with very low residential crowding are located in the Eastern part of the city and the Northern part of the Phase 2. (Figure 4)

In Phase 1, particularly in the Northern part there is a complete lack of this type of crowding.

However, in Phase 2, this pattern is reversed. Here, in the Northern half there is a concentration of the blocks with a very low level of crowding while the southern half has a very small number of blocks in this category.

Like other categories, this category is also comprising of 108 blocks. This is one sixth of the total number of blocks of under study.

There is a direct correlation between the period of development and the number of blocks in this type of area. but same is not true in all the sectors, e.g., Sectors 14, 26, 19, 27, 22 and 24 in Phase I and 39, 41, 42, 43 and 46 in Phase II.

**Summary and Conclusions**

Despite the fact that considerable attention has been paid in the planning of Chandigarh, one of the drawbacks, like crowding of unplanned Indian cities can still be identified in the core of the city. this shows net planning has failed one of its objectives, i.e., decongestion in the centre of the cities.

Blocks covering larger proportion of the sectors with very high crowding are located in the extreme North and South part of the city. It is quite interesting to note that these two areas differ not only in their age of development but also in social economic status. Northern horizontal belt is a continuous belt while the southern belt has been interrupted at two points by two blocks covering complete sector. Elsewhere, blocks with very high crowding are scattered throughout the city in various pockets.

Blocks with moderately high residential crowding are distributed throughout the city not only between areas of very high and low crowding but also between very high and very low crowding areas as well. In other words, in general, this forms a transitional zone between outer side of the core and inner side of the peripheral residential crowding areas.

Blocks with very low residential crowding have been readily identified in the newly developed sectors of Phase 2 and in the slums housing the socially backward and economically poor people.

Blocks of such values form compact as well as scattered types of arrangement.

On the whole, in Phase 1, old developed sectors and specialised functional blocks have a higher level of residential crowding except in the industrial area. Thus, in the real sense planning efforts on control of density of population in different sectors have only been successful in the industrial sectors.

**References**


\(^*\) Specialised functional sectors are those which are recognised by their special activity. For instance, Sector 22 is commercial sector; Sector 17 administrative and market; and Sector 21 scooter and meat markets.

\(^**\) Residential factors may be called in which Commercial activity is not well known, e.g., Sectors 30, 27, 24, 23, etc.


