

**QUALITY OF HOUSING AND HOUSEHOLD
AMENITIES IN GUJARAT, 1981.**

**Dissertation submitted to the Jawaharlal Nehru University
in partial fulfilment of the requirements
for the award of the Degree of
MASTER OF PHILOSOPHY**

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1989

" DEDICATED TO MY DEAREST PARENTS"

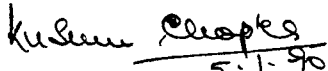


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CERTIFICATE

This is to certify that the dissertation entitled "QUALITY OF HOUSING AND HOUSEHOLD AMENITIES IN GUJARAT, 1981" submitted by MS. POONAM MALIK, in fulfilment of the six credits out of the total of twenty-four credits for the award of the degree of Master of Philosophy (M.Phil) of this University, is a bonafied work to the best of our knowledge and may be placed before the examiners for evaluation.


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"The house is not merely a place to take shelter from rain or cold or sun. It is or should be, an enlargement of one's personality and if human welfare is our objective, this is bound up with the house".

JAWAHARLAL NEHRU

CHAPTER-I

INTRODUCTION

"The well being of a nation depends on the availability and quality of primary needs such as food, clothing and shelter. Next to food and clothing, a proper house with adequate living space, and availability of basic amenities makes the surrounding atmosphere and environment congenial for the development of human and other resources"¹

"The word 'housing' has a broader meaning than 'house'. It embraces not only the consideration of physical structures but also the relationship of house to house, house to neighbourhoods and community etc. Housing in its broadest aspects plays an important role in the socio-economic development of the country. It is the tangible indication of the people's welfare as well as the incontrovertible evidence of attained cultural level".²

The home influences the way of living and also determines the way of thinking of man. The house is the physical environment in which the family performs the simple social, cultural and physical aspects of ~~its~~ life. It is the place where people care for most of their bodily needs. The need for an adequate number of houses is therefore obvious. The houses should be reasonable and hygienic and

1. Statistical Atlas, Gujarat state, Government of Gujarat, Ahmedabad.
1984. p.167.

2. C.M. Paluja, Housing and urban economics, New Delhi. 1980. p.29.

should have the essential amenities of community life.³

The importance of housing as a basic need, and the urgency to reduce the gap between housing requirement and housing supply have been widely recognised. "Housing occupies a predominant place in human life values, along with food and clothing in a statement that finds a universal acceptance. A house not only caters to the immediate physical needs of protection, but also offers privacy, for leading an intimate family life, which is so essential for a healthy society".⁴ "Thus housing as basic need of the people has its own importance and recognition. The task of providing adequate housing and related facilities to the millions calls for detailed economical, sociological and statistical analysis".⁵

Housing in its most general sense means shelter or the means of providing shelter, together with food and clothing. Shelter is the fundamental need of human existence.⁶ Thus shelter as one of the basic needs has an important place in the social life of the people. Every person desires to have a shelter of his own. But only a few who are affluent in society can construct comfortable building with such surroundings as would facilitate the resident more happy and cheerful. The others have to satisfy with the less comfortable buildings or unhealthy dwellings which are not conducive to the climatic conditions

3. Carry S. Bourne, Geography of housing , London. 1981. p.61.

4. L.R. Vagale, Trends in housing needs of India , urban and rural planning thought, vol.II, No.2, April 1959, p.59.

5. Op.Cit. Statistical Atlas , 1984, p.168.

6. Ibid, p.1.

prevailing. Despite these uneven availability of housing facilities, its vital role in creating a congenial atmosphere for social and economic progress and in leading a happy and decent life by man can not be forgotten in this context.⁷

Thus shelter is an essential ingredient in the basic requirement of civilized living. Quality of life depends largely on the kind of housing facilities which are available. The experiences of most underdeveloped countries however, show that the existing housing conditions leave much to be desired both in terms of quantity as well as quality of housing.⁸

Shelter does not, therefore, include just a living space, but also the quality of the house, the amenities available to the residents of the house and the number of residents sharing these amenities. Therefore, not only the quantitative aspect, but the qualitative aspect of housing is important. "But in most of the underdeveloped countries, the quantitative side of housing taken on such awesome dimensions that the question of quality does not arise".⁹

The term 'quality of life' is being used very widely these days, as it encompasses a large number of factors. It is presumed here that one of the indicators of physical quality of life is the housing quality.

The quality of housing is important in a number of ways. It affects almost every part of human life. It has environmental, social, economic and health dimensions.

7. B.H. Dholakia The economics of housing in India, Indian Institute of Management, Ahmedabad, 1980, p.3.
8. Francis Cherunilam and O.S. Heggade, Housing in India, 1987, New Delhi, p.3
9. Op.Cit. B.H. Dholakia, 1980, p.2.

The housing conditions and related facilities determine the immediate environment of man, the development of physical and mental potentialities is in turn influenced by the environment in which he lives. Good housing conditions reduces epidemics and diseases.¹⁰

In terms of environment, a house is basically built to protect one from the forces of nature. Therefore, a good quality house is very vital for this, keeping in mind ^{the} weather conditions and natural disasters.

The economic dimension of housing becomes important when one wants at least the minimum standards commensurate with ones income. The evolution of housing, ~~it is true~~ can never be simple process. This is due, in part, to the difficult nature of housing itself. The latter is both a consumer good and a long term capital good. It is composed of two commodities: house and land, which are very different in their characteristics, yet are inextricably united in their functions. Its product, shelter can not like wheat, be easily graded, displayed in shapes or shipped away into international markets. Thus housing is a peculiarly available rigid, localised commodity.¹¹

Housing is an important activity, which indirectly indicates the level and standard of living of the people and regulates the general rate of economic growth including employment. The importance of housing in the economy stems from the fact that the construction industry

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10. Sarveshna A preliminary report on housing condition, N.S.S. 7th round, Oct. 1953 - March 1954, No.26, p.13.
 11. V.S. Soni; A study of housing, Gandhi Nagar, Department of housing, School of planning and architecture, 1961, New Delhi. p.7.

has immense potentiality in creating direct and indirect employment as it is highly labour intensive. The share of housing sector in the gross domestic capital formation is also quite substantial.¹²

As regards ^{to} the social aspects of housing, the minimum socially acceptable standard of housing is the thing that is required by all human beings. This 'need' differs from the economic concept of housing 'demand'. Housing need the extent to which the quantity and quality of existing accommodation falls short of the required to provide each household or person in the population, irrespective of ability to pay, or of particular personal preference with respect to accommodation of a specified minimum standard and above. However, there is no sharp divide between housing need and demand. The choice of minimum socially acceptable standards is not completely independent of the incomes and prices prevailing in the country concerned, while the same demographic factors that largely determines housing need also strongly influence, the effective demand for dwelling units.¹³

"Housing also helps in increasing the productivity and creates a balanced social structure. Thus housing is a basic human need and, linked with overall socio-economic development of a country. Housing promotes economic activities as well as creates the base for attaining several national policy goals, such as :

- (i) Providing shelter and raising the quality of life.
- (ii) Stimulating economic activity and creating substantial additional employment opportunities.

12. Op.Cit. Statistical Atlas, 1984, p.167.

13. Op.Cit. V.S. Soni, 1961, p.8.

- (iii) Increasing productivity.
- (iv) Acting as a strong motivating force to generate voluntary savings and
- (v) Creating conditions conducive to the achievement of crucial goals in the health, sanitation and education sectors".¹⁴

Thus health and well being of the people can be promoted by improving housing norms which are consistent with the prevailing socio-economic conditions and the local life style of the people. Housing should catch to the need preferences and affordability of different households. Designing of such houses and ensuring economy and quality in their construction is best achieved through greater user involvement. Housing policy thus has to be dynamic to be able to meet the emerging needs and demands of the changing socio-economic conditions and life style of people.¹⁵

"Thus house is a central part of every society. As a point of departure for many different activities of its residents, it seems that house must be very important to observe and study not only for its social and economic context, but also for its physical context as well."¹⁶

Considering the physical aspect of quality of life in terms of housing quality and also the socio-economic importance of housing in a society, present study focuses attention on housing and household amenities in Gujarat state, with district wise variation. An effort

14. National housing policy, Ministry of urban development, Government of India, New Delhi, May 1988, p.1.

15. Op.Cit. National housing policy, 1988, p.13-22.

16. Op.Cit. B.H. Dholakia, 1980, p.1.

has been made to understand the quality of housing in Gujarat from the house types, the degree of congestion and the amenities available to the household for rural and urban areas. As it is felt that the condition of housing can provide a good indicator, thus quality of housing and the availability of household amenities have been taken into consideration in the proposed study to know about the level of living and state of society by taking account of districtwise household level information.

1.1 HOUSING CONDITIONS IN INDIA

Before proceeding further it is important to mention here the prevailing conditions of Housing in India.

The importance of housing was recognised very early in the history of India. The ruins of Mahenjodaro and Harappa proved that the Indus valley civilisation has highly developed in this respect.¹⁷ But unlike the earlier times, now the housing has become a basic problem. Further this problem of housing now remained a burning question both in urban and rural areas as well. It is more so in the present world and particularly in a country like India, which has a large size of population with a rapid growth rate. In India the problem is manifold, and had its inevitable repercussion not only on the social and economic life of the people, but also on the health and morals of the society as well.¹⁸

17. Op.Cit. V.S. Soni, 1961, p.9.

18. Vinita Verma, Traditional housing a study of its relevance to present mass housing programme in India, 1970, pp.13-18.

In India, as in many other Asian countries, housing conditions for the great mass of the people have long been of low standards which leads to low levels of economic development and the consequent poverty of the masses. The problem of housing in India with diverse culture has many dimensions and levels. Housing has become problematic due to the growth of population, rapid industrialisation and urbanisation.¹⁹

The housing requirement may vary in size and form for people with different regions and ecological settings, with the rapid increase in population the problem of housing inadequate has become both qualitative and quantitative.²⁰ Increase in population coupled with inadequate addition to housing stock has created scarcity of houses, congestion, squatter settlements and slum in the urban areas and absence of essential amenities and poor environmental conditions in quality of housing. Consequently many of the structures are predominately kutcha houses, not only in rural areas but also in urban areas. Basic amenities viz, drinking water, electricity and toilet facility are not available to the majority of the households.²¹

Till the formulation of first five year plan in 1951, housing in India was an undertaking almost entirely executed and financed by private enterprises, the centre and the state governments assuming the responsibility for housing their own employes. However, in the first five year plan, it was recognized that in the field of housing a welfare state could not afford to confine its role to planning regulation alone; that private enterprises was not in a position to provide adequate

19. Ibid. pp.15-18.

20. O.P. Sharma, Dynamic approach needed, National Housing Policy. Economic Times, March 24, p.5.

21. Monography on housing situation in India, National Building Organisation, Ministry of Works, Housing and Supply, Government of India, New Delhi, 1959, pp.32-33.

housing for low income groups and that the state therefore, has to 'fill the gap' and promote through some positive means the construction of suitable houses for low and middle income groups, and this would involve a large measure of assistance in the form of subsidies on a generous scale and loans at a low rate of interest.²²

Realising the growing importance of housing today, the government has set up in the Ministry of works, housing and supply is ~~supply~~ a separate department under a housing commission, who will be supported by appropriate staff, so that the implementation of the housing schemes proceeds expeditiously and in an efficient manner.²³

Housing shortage is a normative concept indicating a given short fall in the availability of housing stock from some desired levels of housing stocks, providing adequate housing shortage is essentially based on the concept of housing need.²⁴

Shortage of housing is mainly due to natural growth in population and comparatively stagnation in housing activity. Thus a large scale investment is required to meet the demand for housing. In most developing countries, as the resources are limited in relation to need other competing demands in the area of health, nutrition, transport, education, infrastructural facilities and growth of industries have to be given due importance. Therefore, housing has to compete with other

22. Ibid., pp.22-28.

23. Ibid.

24. Op.Cit. Vinita Verma, 1970, pp.19-22.

sections for public as well as private investment, even though it has been recognize as an important element among social priorities.²⁵

Provision of adequate and comfortable living space with certain essential services and amenities therefore, becomes an important aim of the national policy on housing. Such a policy can be based on factual data on various aspects of housing. Such as housing stock, housing condition, basic amenities therein, current building acitivity, quantity and cost of building materials, production and consumption of building maters, their prises etc. which would provide important socio-economic and levels of living indicators formulating housing and construction policy.²⁶ This national housing policy recognises shelter as an intrensic part of basic human need which is closely linked with the process of overall socio-economic development.²⁷ Housing policy thus has to be dynamic to be able to meet the emerging needs and demands of the changing socio-economic conditions and life style of the people.

Survey of Literature on Housing

There is plenty of material concerning the habitation in different kinds of field reports and ethnographical works from various parts of the world. But no attempt have been made to systematise the information. Although most of the studies includes various aspects of housing, but very few are purely on quality of housing.

25. Ibid, pp.19-22.

26. S. Hajras and Ashok Kumar, Housing India's millions, Economic and scientific foundation, 1977, p.26.

27. Op. Cit. O.P. Sharma, 1989, p.5.

According to Adam Smith, a house is a consumption good and produces nothing. This is true also for the ground on which it stands. However, when occupied by a tenant the house may yield a revenue to its owner and thus serve him as a capital investment.²⁸ Ricardo groups houses with consumption goods, but he tried to modify Smith's treatment of housing.²⁹

Marshall includes houses, but apparently not their land in his list of capital goods. But in another passage he classes together houses and machine and thus he implies that a house is a machine, an appliance of production which helps to produce the commodity of shelter or house room.³⁰

Thus a house should be considered not only as one of the consumer goods but also as one of capital goods, and it is important to overall development in both economic and welfare terms. Investment in housing acts as a catalytic factor in the social wellbeing of the population and therefore, it is an essential element in the socio-economic upliftment of the nation, level of economic development and consequently poverty of the masses is reflected in their housing conditions.³¹

28. Adam Smith, "An enquiry into the nature and causes of the wealth of nations," Book II, Chapter I, and Book V, Chapter II. Every man's library edition, 1963, vol.7, p245, 246 and vol.2, p.324-325.

29. David Ricardo "Principles of political economy and taxation," 1932, Gonner's edition, London, pp. 182, 185 and 276.

30. Mir Shahidul Islam, Housing and the quality of life: An Analysis of regional variation in urban Delhi, 1982, JNU, New Delhi, p5-6.

31. Ibid, p.4.

Dancan in his study says that, "the house is an extremely important aspect of built environment, embodying not only personal meaning but expressing and maintaining the ideology of the prevailing social orders."³²

The study by parvathamma and satyanarayana based on a research project and deals with housing shortage among low income groups and the poor and houseless in rural areas of Karnataka in 1981. The study mainly deals with housing in terms of quality, and house types are studied according kutchra and pucca though only roof and wall materials are considered. Persons per room per household is also seen and ownership and status is also looked into this study.³³

The United Nation has also dealt with housing conditions as part of a global series of human settlement in 1976. The housing conditions are dealt by seeing the existing stock and ownership of dwellings, person per room, basic amenities available, which includes water supply, sanitation facilities, electricity, authorised and unauthorised dwellings and housing finance.³⁴

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32. James S. Dancan (ed), Housing and identity - Cross cultural perspective, 1981, p.1.
 33. C. Parvathamma and Satyanarayana, "Housing rural poor and their living conditions", Delhi 1987, p.4.
 34. UN Global Review of human settlements. A support paper for Habitat United Nation Conference on human settlements, 1976, p.3.

Housing is a basic human right and this has been stressed decades ago in article 25 of the Universal Declaration of human rights. The right to a standard of living adequate for health including other needs like schools, hospitals, roads, water supply and cultural needs. The deteriorating housing conditions in the world have often been attributed to urban migration and inadequate allocation of resources. The rural population is therefore, often neglected.³⁵

Sociologists feel that the condition of the house, where a person lives in, considerably influences on individual's health, happiness, general manners and morals. As attitude and behaviour induces in him social consciousness and a sense of responsibility to his neighbours and to the society of which he is a member. ~~Death and~~ Morbidity rate in urban areas are directly affected by bad housing conditions. The effect of an unsuitable environment or the lack of adequate shelter on a growing child is both far-reaching and permanent. Juvenile delinquency, crimes, vices, gambling, gangsterism, family disorganisation, individual demoralisation are all attributable to the lack of proper shelter. Conversely, better housing produces important indirect benefits. The individual is healthy, happy and contented and the community gains in efficiency.³⁶

House is not only a technical or social object but also a physical one made by human beings for the human beings.³⁷

The house is a central part of every society. As a point of departure for many different activities of its residents, it seems that

35. Op.Cit. Parvathamma C. and Sathasayana , 1987, p.4.

36. L.R. Vagale, "Trends in housing needs of India", Urban and rural planning thought, vol.II, No.2, April, 1959, p.59.

37. K.G. Izikaowltz and P. Sorsensen, The house in east and south Asia, London, p.5.

house must be very important to observe and study not only for its social and economic context, but also for its physical context as well.³⁸

As urbanisation and industrialisation are fast accelerating, the bigger cities are expanding at an alarming rate while the housing activity is not keeping pace with the demand. A study of housing problem, therefore, is a persistent and relevant in the present context. The housing facilities are provided by the type of houses. The variety of their types depends on a number of factors - geographical, economical and social. Hence, the study of house types along with the availability of basic amenities is important.

Although many studies have been done at global and national level still there is a need for a study, which is related to housing conditions and household amenities. It was felt that the conditions of housing can provide a good indicator of the level of living of the people in any given area.

Accordingly in the present research data have been analysed on housing considering the materials of roof, wall and flooring and also the amenities available there in. The analysis is focused on regional variations in Gujarat in keeping in mind the following objectives :

- (1) To study the regional pattern of household distribution with structure of house types at district level.
- (2) To study the availability of household amenities, such as drinking

38. Op.Cit. B.H. Dholakia, 1980, p.1.

water by their source and location, toilet and electricity facilities.

- (3) To study the level of congestion in terms of room density i.e. number of persons per room.

Study area

Present study on housing and household amenities is carried out in Gujarat state with district wise variation and rural, urban break-up using 1981 census of India.

Gujarat state is situated on the west coast between 21.1 and 24.7 degree north latitude and 68.4 and 74.4 degree east longitude. It is bounded by Arabian sea in the west, by the state of Rajasthan in the north and north east, by Madhya Pradesh in the east, and by Maharashtra in the south and south east. Gujarat shows both the ^{sea} frontiers; and the land of the country. The state has an international boundary and has a common border with Pakistan at the north western fringe.³⁹ Fig 1.1 shows the administrative dimensions of Gujarat state and its location in India.

Between the Marshy coastal zone and, the plateau and the mountain in the interior, lie the plains of Gujarat drained principally by the rivers of Subarmati, Mahi, Narmada, Tapti and their tributeries. The plain is well demarcated by its confinement between the coastal marshes on the west and a rupture of slope on the coast rising upto the mountain. The eastern hill region consists of out layers of the Aravali

39. Statistical Atlas, Gujarat, Government of Gujarat publication, 1988, p.1

GUJARAT
(ADMINISTRATIVE)
1981

40 0 40 80 KM
16 0 16 32 48 MILES

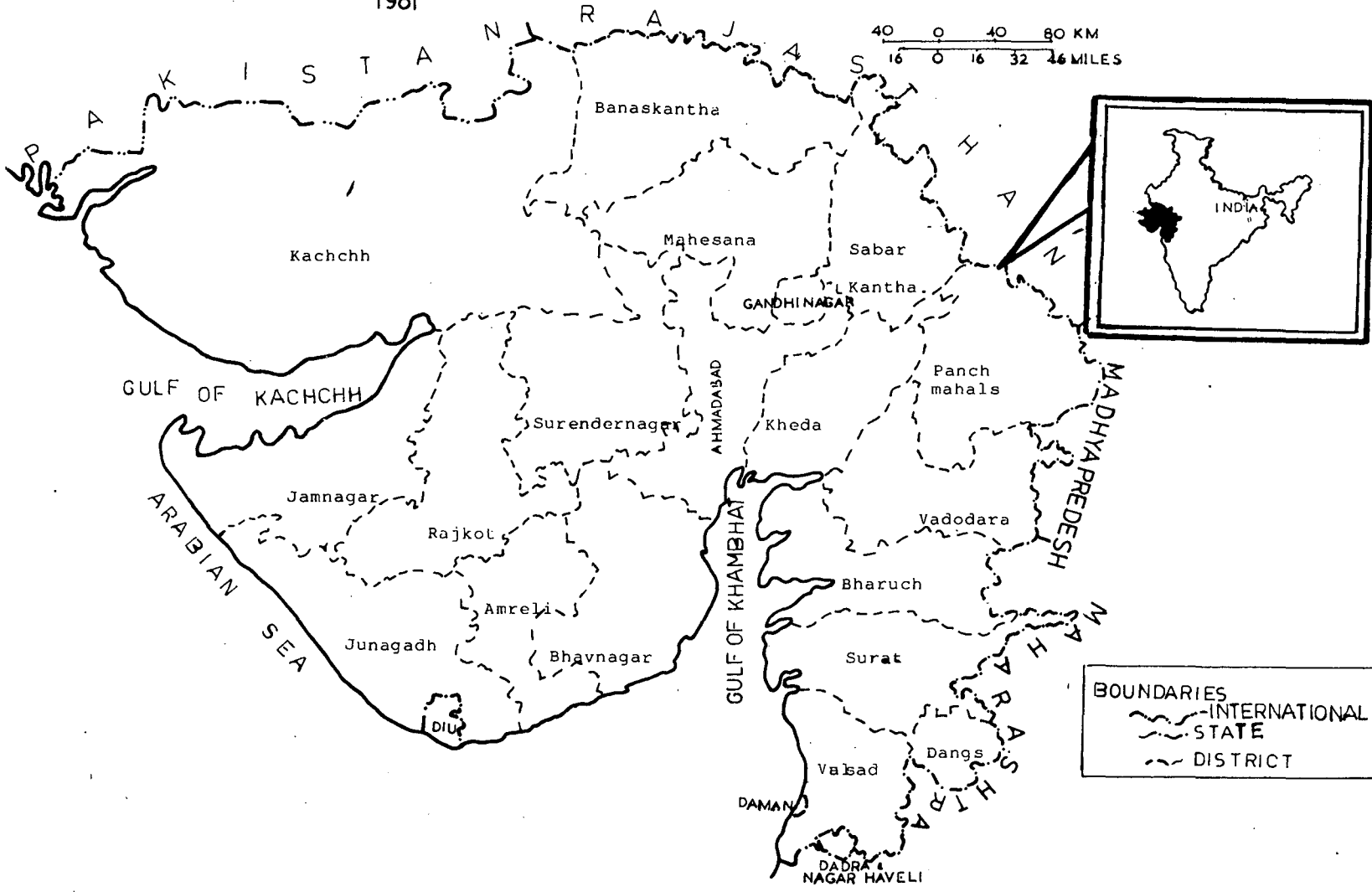


FIG 1-1

system, the Vindhya, the Satpuras and the Sahajaderes.⁴⁰

The state has an area of 1,96,024 square KM. Its population according to 1981 census is 3.41 crores, forming 4.97 percent of the country's population. It is predominantly rural (68.9 percent) but relatively highly urbanised. Gujarat is the third amongst urbanised states in the country. It has a density of 173 persons per sq. km. It ranks 9th in terms of size of population, 7th in terms of urbanisation and 4 in terms of literacy amongst the states of India. There are 18,000 villages and 250 urban areas in the state.⁴¹

The new state of Gujarat was formed on 1st May 1960, and at present, state comprises 19 districts sub-divided into 184 talukas.⁴²

The data on housing stock, residential as well as non-residential and the data on the population during the different periods of time would give a broad comparative idea about the overall growth of the housing sector, vis-a-vis the growth of population. The data on total housing stock as revealed by the house list operation during 1961, 1971 and 1981 censuses in Gujarat state alongwith the percentage decadal variationn in the population are presented in table 1.1.⁴³

During the decade 1961-1971, the census houses increased by 21.9 percent as against the growth of population by 29.39 percent. Thus the growth in the housing stock was less than the growth of population. The position was reversed in the next decade with the increase in the

40. Ibid. p.1

41. Ibid. p.1

42. Ibid., p.1.

43. Ibid., p.20.

Table No. 1.1

Growth of housing stock and population in Gujarat

Rural/Urban/ Total	Total No. of census houses (lakhs)			Percentage decadal variation in census houses		percentage decadal varia- tion in population	
	1961	1971	1981	1961-71	1971-81	1961-71	1971- 81
Rural	39.64	47.23	58.45	19.16	23.75	25.36	22.03
Urban	14.69	18.67	21.02	21.03	44.75	41.00	41.43
Total	54.33	65.90	85.47	21.09	29.70	29.39	27.67

growth of housing stock by 29.70 percent and the growth of population was 27.67 percent. Similar trend is reflected in the rural as well as urban areas of the state.⁴⁴

It may be mentioned here that merely a large growth of housing stock does not necessarily suggest that the housing facilities have relatively improved. The information regarding the number of living rooms and floor area per household or per person would reflect the conditions rather more appropriately.

Chapter Outline:

The present study is organised into **five** chapters. Introductory chapter as already showed the importance of housing as socio-economic

44. Ibid., p.20.

factor, objectives, proposals, global and national study by different authors and socio-economic demographic and geographical features of the study area.

The second chapter describes the classification scheme and the methodology of data analysis.

The third chapter deals mainly with the regional disparities in distribution of households by the type of structure and shows the housing condition in Gujarat.

The fourth chapter discusses the household amenities in the rural and urban areas. The toilet facilities is discussed only among urban areas.

The fifth chapter shows the level of congestion with the help of number of persons per room in the different levels in detail for rural and urban areas of each district.

Lastly, the summary and conclusion is brought out and also the short comings of the present study.

CHAPTER II

DATA BASE AND METHODOLOGY FOR ANALYSIS

To study the housing condition of Gujarat the indicators were selected from the point of view of quality in terms of durability of the house, which the household occupies and the availability of basic amenities such as drinking water, toilet facility and availability of electricity. The study is carried out at the household level, as it was felt that a household ideally had to be served by a particular amenity.

To meet the data requirement secondary sources are used in this study. This is because, since the present study is based on the district level analysis for the Gujarat, it would be difficult for a single student to collect the data from the primary sources, further the census of India publications are very authentic. The census also covers a variety of data relating to "HOUSEHOLD" as a unit for all the districts in India.¹ This information is available in the household tables of census of India. Since, 1981 census is the latest census conducted in India, for the present study the data is obtained from the household tables from series-5 of Gujarat state. The tables providing information on building materials and household amenities are classified according to the nature of the requirement of the study.

1. In the present study the census definitions according to 1981 regarding household, census house, building, and room are adopted. These definitions can be referred from the Appendix-I.

The present chapter deals with the indicators chosen for the study, the nature of the data and its method of classification. Throughout this study, institutional and houseless households and household belongs to all other materials and material not stated for building material are excluded in order to avoid the discrepancy.

2.1 CLASSIFICATION OF THE INDICATORS



In order to study the housing condition of Gujarat, the indicators selected are explained in detail as given below :

2.1.1 Classification of households based on building material :

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The first indicator considered to study the housing conditions is the distribution of households according to the predominant material used for roof, wall and floor. For this purpose information of building materials has been collected from table number HH-I of household tables of Gujarat part A & B (i) in which distribution of households by materials of roof, wall and floor of census houses occupied by households are given.²

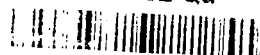
Table number HH-I provides information on eight wall materials, seven roof materials and six floor materials. In the earlier

2. A part of the table as given in the census is shown in Appendix-II.

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census (1961 & 1971) this information was available only for roof & wall, whereas in 1981 census this information was collected for roof, wall and floor materials. For each floor materials, number of households having respective wall and roof materials are tabulated in this table. In this study households belongs to all other material and material not stated for all three parts of a house such as wall, roof and floor are excluded.

On the basis of durability, the building materials are grouped into three categories such as Kutcha, Semi-pucca & Pucca material. Which is given as follows under respective categories.

(a) MATERIALS OF ROOF :

1. Kutcha :

- (i) Grass, leaves, reeds, unburnt bricks, bamboo, thatch, wood & mud.

2. Semi-Pucca :

- (i) Corrugated iron, zinc or other metal sheets.
- (ii) Asbestos, cement, sheets.
- (iii) Tiles, slate and shingle.

3. Pucca :

- (i) Bricks, lime & stone.
- (ii) Concrete R.C.C. & R.B.C.
- (iii) Stone.

(b) MATERIALS OF WALL :

1. Kutch :

- (i) Grass, leaves, reeds or bamboo.
- (ii) Mud, unburnt bricks.

2. Semi-pucca :

- (i) Wood.
- (ii) G.I. sheets and other metal sheets.

3. Pucca :

- (i) Stone.
- (ii) Burnt bricks.
- (iii) Cement, concrete.

(c) MATERIALS OF FLOOR :

1. Kutch :

- (i) Mud.

2. Semi-pucca :

- (i) Wood/planks.
- (ii) Bamboo or logs.

3. Pucca :

- (i) Bricks, stone and lime.
- (ii) Cement.
- (iii) Mosi^ac / Tiles.

In the above categories all less durable materials are included in Kutcha type houses. All highly durable materials of wall, roof and floor are included in Pucca type houses and all medium durable materials are included in Semi-pucca type of houses.

The data provides cross classification of the material used for roof, wall and floor, therefore gives the combinations of materials for all three in a house.³

While considering all the possible combinations, it is noticed that there are many combinations. Thus to simplify the classification, the wall materials are represented by capital letters, roof materials by small letters and floor materials by roman numbers.⁴

Therefore, in the present study these large combinations are broadly clubbed into four categories namely; Kutcha, Semi-pucca-I, Semi-pucca-II and Pucca. These four categories are defined as follows:

(1) Kutcha:

When all the materials used for roof, wall and floor are Kutcha, then a house is considered as a Kutcha type house.

-
3. Refer Appendix-IV for house type classification table.
 4. Refer Appendix-III for further details.

(2) Semi-Pucca I:

When two of the materials are Kutcha and one is Semi Pucca material or two are Semi pucca and one is Kutcha, or one is Pucca and two are Kutcha material than the house type comes under Semi-Pucca I type, which is better than a Kutcha house.

(3) Semi-Pucca II:

When two of the materials are Pucca and one is Kutcha or one is Pucca and two parts are Semi-pucca material or wall is Pucca, roof is Semi-pucca and floor is Kutcha or all three are Semi-pucca. Then the house type comes under Semi-pucca II type, which is little inferior to Pucca house.

(4) Pucca:

When all the three parts of a house such as wall, roof and floor are made up of highly durable materials then it is considered as a Pucca type house.

Durability is on the basis of replacement factor. Some materials require regular replacement and some are frequently replaced. The rate of replacement differs from material used.

Therefore on the basis of the durability of building material used, the most durable are the Pucca house types with all three parts viz. roof, wall and floor made up of durable materials. The Semi-

pucca II house types had two parts made up of durable material and one part of less durable material and Semi-pucca I house type had two parts of less durable and one of more durable, while Kutcha house types had materials of less durability.

Thus Semi-pucca I type houses are much better than a Kutcha type house, and Semi-pucca II type of houses are little inferior than pucca type house. On the basis of quality, the house types in descending order are Pucca, Semi-pucca II, Semi-pucca I and Kutcha.

For collecting the data in each type, all possible combination are carefully added to get total number of households for each house type and percentage is calculated for rural and urban areas separately. Rural and urban households coming under each house types are combined together to get percentage for district total.

2.1.2 Classification of households based on source of Drinking Water:

The census also provides the information on households by type of source and location of drinking water. Which is the second indicator in this study. The data regarding drinking water were obtained from table number HH-7 of household tables of Gujarat.⁵ This table provides the different sources of drinking water for which the distribution of

5. A part of table as given in the census is shown in Appendix-V.

household has been given are well, tap, hand pump/tube well, river/canal tank and others, and also by location of the source, within or outside the premises separately for rural and urban areas.

Drinking water sources are mainly grouped into two categories such as protected (potable) source of drinking water and unprotected (unpotable) source of drinking water based on their exposure to the atmosphere.

The sources of drinking water under protected water supply are included in safe drinking water source, because it is always covered and not exposed to any type of pollution. They are tap and hand pump/tube well whereas well, river/canal, tank and others are included in unsafe drinking water source because of their exposure of pollutants and thus they are called unprotected source of drinking water.

On the basis of the location of the source, the protected and unprotected source of drinking water are again sub-grouped into two categories. They are protected source of drinking water within and outside premises, unprotected source of drinking water within and outside premises, where protected source of drinking water within the premises is the most comfortable and hygienic and unprotected source of drinking water outside the premise is reverse of it.

2.1.3 Classification of the households based on availability and non-availability of electricity and toilet facilities:

The data for households with availability of electricity and toilet facilities is obtained from table HH-6 of household tables of Gujarat 1981. Information on electricity is available for both rural and urban areas, whereas information on toilet facility is available only for urban areas. The percentage for electricity is calculated for household having and not having electricity facility from total number of households of the district for total, rural and urban areas, whereas percentage regarding the availability and non availability of toilet facility is calculated for urban areas only from table number HH-6, Part A, household tables of Gujarat-1981.

2.1.4 Classification of the households based on number of persons per room

The census also provides information relating to households by size of the living room occupied by the household. The household size is by number of members from one to over six members, while number of living rooms occupied by the households is given from households with no exclusive room to households with six rooms and above. This indicator reveals the crowding in the households with respect to the number of rooms occupied.

6. A part of the table as given in the census is shown in Appendix-VI.

Thus the indicator provides an idea for rate of congestion. Less than one person per room is considered as least congested condition and more than four persons in a room is considered as highly congested living condition as per as crowding in a room is concerned.

The data relating to number of rooms by size of households is obtained from HH-2 table for rural and urban areas separately.⁷ The cross classification of households by size and living rooms excludes institutional and houseless household which have been shown separately in the table by household size.

The number of persons in the total households at district level are divided by the total number of rooms and this study of households have been classified into following five ranges depending on the number of living room occupied by the household member:

- (1) Less than one person per room.
- (2) One or more but less than two persons per room.
- (3) Two or more but less than three persons per room.
- (4) Three or more but less than four persons per room.
- (5) Four or more persons per room.

In order to get total number of households for each category of room density a table is prepared, and each individual items coming

7. A part of the table as given in the census is shown in Appendix-VII.

under respective category is summed up and percentage is calculated.⁸

Initially, the issue of privacy had been taken into account with couples per room serving as the indicator. Later on, this indicator was dropped as couple less than number of rooms showed proportions as high as 98 percent; while persons per room showed that large number of persons were in less rooms. Therefore, these two indicators were contradictory to each other. Consequently this indicator was dropped.

Thus the classification part of the study is completed, and the obtained classified data is represented with the help of different cartographic techniques such as composite pie diagrams, proportionate bar diagrams, composite bar diagrams, choropleth maps etc. to show the rural, urban and inter district variation.

8. Refer Appendix-VIII for classification table of room density.

CHAPTER-III

DISTRIBUTION OF THE HOUSEHOLDS BY HOUSE-TYPES BASED ON
BUILDING MATERIAL

Building material is an important variable for judging the quality as well as the structure of the house types. The structural form of house depends upon the type of building material available, and the material themselves are a product of the geographical environment. Further, climatic conditions and soil determines the building materials, which are most suitable as well as economic ones.¹

In olden days only the monumental buildings and the houses of the rich people were built of exotic materials. In modern days, however, this tendency has waned and the modern transport allows building materials, though heavy to be transported over long distances. Consequently in the advanced societies, building forms are coming to bear a common stamp, despite the continued variation in the climatic conditions and cultural heritage.² Yet the houses of the masses bear a strong relationship with the geographical environment in any area. Thus the type of building materials used in the construction of human dwellings in an area are a fair index of the geographical and natural resources as well as the economic prosperity of the area.³

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1. Surendra Singh, Some aspects of house types and housing problem in Rural Delhi, Delhi, School of Economics, University of Delhi, (1984), p.58.
 2. Ibid., p.59.
 3. I.M. Verma, Use of alternative materials and construction techniques for effecting economy in urban housing, Department of housing, School of planning and architecture, New Delhi, 1967, p.11.

Next to food and clothing, a roof over the head is the least that a man should have as a matter of right. Further the durability of a particular house to stand against weather conditions and other environmental factors, as well as in terms of security to the residents against theft etc is reflected through the quality of material used.⁴

In India, housing is a multidimensional and a complex problem, which requires financing on a huge scale and is dependent for its solution on the concrete efforts of individuals cooperatives, as well as central and state governments. In India, like any other Asian country, housing conditions for the most people have generally been substandard. Subsequently housing problem is worsening due to the rapid increase in population, fast rate of urbanisation and insufficient addition of housing stock.⁵

According to 1981 census, in India 65.2 percent of the urban households resides in pucca houses, whereas only 23.0 percent of rural households resides in pucca houses.⁶ In turn, it shows that percentage of households staying in kutchha houses is more in rural areas. Thus the condition of housing is poor and complex in rural areas as compared to urban areas.

Geographically speaking housing stock in a region largely depends on locally available building materials which is determined by physical and climatic features of the region. But, according to economists,

4. Op.Cit. Surendera Singh, 1984, p.59.

5. B.D. Singha Housing growth in India, 1976, p.1

6. Housing statistics at a glance, Government of India, Ministry of urban development, UN Regional housing centre, ESCAP, National building organisation, p.18.

housing stock of a region depends on economic levels of the households, price of building materials, wage rate of construction labourers, and fund allocation for housing loans. Both geographical and economic aspects, which influence the housing stocks are tried to examine in this study.⁷

The main thrust of this chapter is to study the regional variation of household distribution in respect of structure of the house types based on the durability of building material.

The building material thus is a sure and reasonable index of property or poverty of different localities in any area. While such flimsy material as grass, leaves, reeds, bamboo, timber, mud and unburnt bricks along with metal sheets used in the construction indicate the poverty of people inhabiting than either as owner or as tenants, houses built of burnt bricks, cement concrete and stone signify the material prosperity of those occupying them. For after all it is the economic condition of a household which determines the type of dwelling they occupy either as an owner or as a tenant.⁸

A householder who is well to do can afford to go in for better and costly building material of the construction of his house, likewise, a person of means who can afford to spend more by way of rent will go in for a house which is well built. On this basis building material used in the construction of wall, roof and floor can be classified into four categories, pucca, semi-pucca-II, semi-pucca-I and kutcha type which is already defined in earlier chapter.

7. Op.Cit. Surender Singh, 1984, p.61.

8. Census of India, Gujarat, Special report on Ahmedabad city, 1961, Vol.V, Part X-A (i), p.1.

In the succeeding discussion emphasis is given to study the distribution of households by the type of structure and their regional disparity in rural and urban areas of Gujarat state with the help of information available from different sources.

3.1 DISTRIBUTION OF THE HOUSEHOLD BY STRUCTURE OF HOUSE TYPES BASED ON BUILDING MATERIAL IN GUJARAT FOR 1981

Gujarat is a state with regional diversity in physical and socio-economic aspects based on which the nature and quality of building material varies from region to region.

From table 3.1, vast variation in the distribution of households by building material among rural and urban areas for the state as a whole is observed.

Table No.3.1

Percentage Distribution of Households Based on the Building Materials
in Gujarat, 1981

House Types	Total	Rural	Urban
1. Pucca	24.4	11.7	50.6
2. Semi-pucca-II	30.1	29.6	31.5
3. Semi-pucca-I	37.4	49.4	14.7
4. Kutcha	7.4	9.4	3.4

Table 3.1 shows that 7.4 per cent of total households in Gujarat were staying in kutcha houses, whereas it varies from 3.4 per cent in urban areas to 9.4 per cent in rural areas. Nearly one fourth of total households (24.4 per cent) in Gujarat, lived in pucca houses. It is important to mention here that more than half of the urban households (50.6 per cent) lived in pucca houses but it was much less in rural areas (11.7 per cent).

In Gujarat state it is noticed that there is a high variation among households staying in different house types of urban and rural areas. 54.5 per cent of total households lived in pucca and semi-pucca-I type of houses, and this percentage is very high in urban areas (82.4 per cent) and in contrast it is as low as 41.3 per cent in rural areas. 58.8 per cent of rural households lived in kutcha and semi-pucca-I type of houses together. But is only 18.1 per cent in urban areas, which in turn shows a good condition in urban areas as compared to rural areas.

The overall condition of housing for state as a whole reveals a fair picture with high proportion of households in semi-pucca-I and pucca-II type of houses and quite a good housing condition is observed in urban areas as compared to rural areas, where half the population of households resides in pucca houses and, subsequently, a vast variation is observed in rural and urban households distribution by the structure of house types. Thus overall housing condition in Gujarat as a whole is quite good, which is mainly due to the development of the state both economically and socially and also due to the large number of industries and locally available material, Gujarat attained a good position as compared to other states in India in terms of quality of housing and availability of basic amenities available therein.

3.2 INTER-DISTRICT VARIATION IN THE DISTRIBUTION OF HOUSE-
HOLDS BY STRUCTURE OF HOUSE TYPES, GUJARAT, 1981.

A districtwise analysis in Gujarat state will show a clear cut idea regarding housing condition by structure of house types separately for rural and urban areas and also the map attached will give a bird eye view to know at once the regional disparity among all the districts of the state.

3.2.1. Distribution of total households by the structure
of house types:

Table No. 3.2

Percentage distribution of total households
by the type of structure, Gujarat, 1981.

State/District	House Type			
	Pucca	SP-II*	SP-I*	Kutchha
Gujarat	24.4	30.1	37.4	7.4
1. Jam Nagar	46.9	34.0	17.1	1.9
2. Rajkot	49.4	25.8	22.7	2.0
3. Surender Nagar	23.9	29.1	41.1	5.8
4. Bhav Nagar	22.1	22.9	48.0	6.4
5. Amreli	18.7	28.6	46.4	6.3
6. Junagadh	38.8	41.2	18.6	1.3
7. Kachchh	30.7	45.1	16.3	7.8
8. Banaskantha	9.9	21.7	57.4	11.0
9. Sabarkantha	11.7	25.5	60.9	1.8
10. Mahesana	13.9	50.2	33.1	2.1
11. Gandhi Nagar	30.2	33.1	32.7	4.0
12. Ahmedabad	39.3	32.6	25.2	2.9
13. Kheda	12.1	29.6	54.9	3.3
14. Panchmahals	20.4	32.1	26.5	21.0
15. Vadodara	15.1	31.1	45.6	8.1
16. Bharuch	11.0	26.0	47.9	15.0
17. Surat	25.8	26.7	21.1	25.5
18. Valsad	23.7	23.7	14.5	38.1
19. Dangs	8.4	5.6	5.3	80.7

* Semi-pucca

Table-3.2 highlights the percentage distribution of households in pucca, semi-pucca-II, semi-pucca-I and kutcha type of houses. In all the four types of house structures, it is noticed that the range between the districts with high and low percentage of households in respective types is very high.

In the case of pucca house type, it is observed that there are altogether seven districts above the state average (24.4 per cent) which reveals a good housing condition among few districts, viz. Jam Nagar, Rajkot, Junagadh, Kachchh, Gandhinagar and Ahmedabad (Refer figure 3.1).

The inter district variation shows that in Rajkot district nearly half of the households lived in pucca houses (49.4 per cent), while this proportion in Dangs district was only 8.2 per cent. Thus there seems to be a much variation among the districts, which can be clearly observed from Table-3.2.

A good number of households in Rajkot district lived in pucca houses, which is mainly due to the fast economical, social and industrial development of the Rajkot city. This is may be *due* to the easily available local building material.

Rajkot district with twelve towns is one of the important centres of small scale industries in the country. The Rajkot units of furniture making, oil engine manufacturing/assembling oil drills, etc. are found in a large number. Not only this saree printing industry, wall cloth manufacturing and roof tiles manufacturing units are also famous units. Besides this ground nut is a major cash crop of the district and there is a sizeable number of oil mills in the district.⁹

9. Gazetteer of India, Gujarat State Gazetteer, Rajkot, 1971, pp.259-64.

In Rajkot district 41.3^{percent} of total population stays in urban areas, and the total density of the district is 187 persons per square km.¹⁰ Combinedly all these factors, partially explains the highest percentage of households in pucca houses in this district.

This proportion is lowest in Dangs due to its backwardness and with no urban influence.¹¹ There are 92.3 percent of schedule tribe population in the district as compare to the state with only 14.2 percent.¹² Which inturn can be the main cause of the backwardness in the district. Further the district has smallest area with least population (mainly Adivasi) and covered with thick forests. This fact inter alia condition, its economic growth.¹³

The Semi-pucca-I and II type of houses contains a large number of combinations which enlarge the percentage of households in these types higher than the other two types such as pucca and kutcha as shown in fig.3.1.

The proportion of total households living in semi-pucca II type of houses in Gujarat is 30.1 percent, which is a good percentage and it shows that nearly one third of population in Gujarat has semi-pucca II type of houses. Districtwise variation shows that in Mahesana the highest percentage of household lived in semi-pucca II type of houses (50.2 percent) and lowest lived in Dangs with 5.6 percentage of households.

10. Census of India, Gujarat, District Census Hand Book, Rajkot District, 1981, pp.3-4.

11. Census of India, Gujarat, District Census Hand Book, Dangs District 1981, p.9.

12. Ibid., p.3.

13. Ibid., pp.9-10.

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY TYPE OF STRUCTURE - 1981



FIG 3-1

Mahesana with density of 282 persons per square Km. had 14 towns and 20.1 percent of urban population. Thus the district with flat terrain and less forest area, had the highest percentage of semi-pucca II type of houses.¹⁴

In contrast district Dangs is having the lowest percentage of semi-pucca II type of houses (5.6 percent). The locally available cheap building material in this district is basically included in kutcha type, which also leads to say that there are lowest percentage of households with semi-pucca II, semi-pucca I and pucca houses in this district. In case of semi-pucca II house type there were seven districts above the state average (30.1 percent) as can be seen from table 3.2.

In case of semi-pucca I house type the proportion is highest in (37.4 percent) among all other house types. Table 3.2 shows that district Sabarkanta had the highest proportion of households lived in semi-pucca I type of houses (60.1 percent) while Dangs had the lowest percentage of households in this category (5.3 percent). Altogether eight districts were above the state average (37.8 percent).

The district Sabarkanta is predominated by rural population (90.1 percent). There is excessive dependence on agriculture. Mostly the houses in the district were made up of mix material. Most of the houses were made up with mud, burnt bricks, plastered with clay and cowdung emulsion though grass, leaves, reeds were also used for construction.¹⁵ Thus the Sabarkanta district had more than half the households in semi-pucca I type with lowest percentage in district Dangs. It is important to mention that semi-pucca I type of houses dominates

14. Census of India, District Census Hand Book, Mahesana District, 1981, pp.3,11.

15. Gazetteer of India, Gujarat state Gazettee, Sabarkanta District, 1971, pp.284-86.

over semi-pucca II type and thus semi-pucca I type of houses showed a highest percentage of households, as can be seen from fig 3.1, where high concentration of this type of houses is observed in most of the districts namely, Surendernagar, Bhavnagar, Amreli, Banaskantha, Sabarkantha, Kheda, Vadodara and Bharuch. Which is mainly observed in most of the coastal districts .

The data from table 3.2, depicts a high regional disparity in kutcha type houses. With highest proportion of households lived in Dangs district (80.7 percent) and lowest in Junagadh district (1.3 percent).

The district Dangs with the density of 64 persons per square Km has 311 number of villages and there are 21,552 number of occupied residential houses.¹⁶ The district is favourably situated for the growth of forests, as it lies within the belt of heavy rainfall. The district is smallest in area and predominantly occupied by Adivasi population, who are by and large illiterate and improvident. And there has not been much improvement in the living standard of the people.¹⁷

Whereas in Junagadh district the percentage of households lived in kutcha houses is lowest. House types in this district generally depends on the economic condition of the people. Most of the houses had stone walls or walls of unburnt bricks and grass, leaves, reeds or bamboo were in frequent use in the construction of hutments of those who are poor.¹⁸ Thus the district had lowest percentage of kutcha houses. Altogether there were eight districts above the state average (7.4 percent). (Refer table 3.2).

16. Op.Cit. District Census Hand Book, Dangs District, 1981, p.3.

17. Ibid., pp.9-10.

18. Gazetteer of India, Gujarat state Gazetteer, Junagadh district, 1971, pp. 217-19.

Thus above analysis for the state as a whole reveals a regional disparity among all the districts and leads to say that, there is vast variation of house types among the districts, which can be clearly observed from fig 3.1.

3.2.2 Distribution of rural households by the structure of house types

Table No.3.3

Percentage distribution of rural households by the type of structure, Gujarat, 1981.

State/District	House Types			
	Pucca	SP-II*	SP-I*	Kutcha
Gujarat	11.7	29.6	49.4	9.4
1. Jamnagar	32.5	44.0	21.4	2.1
2. Rajkot	31.8	33.3	32.3	2.6
3. Surendernagar	9.6	31.8	50.9	7.7
4. Bhavnagar	6.3	23.3	61.1	8.4
5. Amreli	12.7	28.1	50.9	7.4
6. Junagadh	22.3	51.8	24.4	1.5
7. Kachchh	18.5	53.7	18.7	9.1
8. Banaskantha	6.9	21.1	60.4	11.6
9. Sabarkantha	8.5	23.6	66.1	1.9
10. Mahesana	9.5	49.6	38.6	2.3
11. Gandhinagar	14.4	41.7	39.8	4.1
12. Ahmedabad	9.2	22.3	63.8	4.6
13. Kheda	7.4	25.8	63.5	3.3
14. Panchmahals	8.6	31.5	29.7	30.1
15. Vadodara	4.3	30.2	54.8	10.4
16. Bharuch	33.5	22.5	33.6	10.9
17. Surat	12.8	19.1	23.9	43.4
18. Valsad	13.4	20.7	14.3	51.6
19. Dangs	8.4	5.6	5.3	80.7

* Semi-pucca.

Table - 3.3 depicts that among all the districts highest percentage of rural households lived in pucca type houses is in Bharuch district (33.5 per cent) and it is lowest in Vadodara district (4.3 per cent).

Altogether there are nine districts above the state average (11.7 per cent) with pucca type of houses. As can be viewed from figure 3.2 where high concentration of pucca houses is towards the western part of the state except Bharuch which is in the eastern part. Thus the district namely Jamnagar, Rajkot, Junagadh and Kuchchh have high percentage of households lived in pucca houses.

In Bharuch district, the houses are built with mud masonry^a either with cement or chuman plaster. Majority of the villages lived in houses made up of mud walls and deshi tiles. They build their houses by locally available material like Karanthi* the most commonly used roofing materials is desi-tiles, which used to give a pucca look for the house. A small proportion of households use locally available roofing materials such as tadachi, thatch, etc.¹⁹

Vadodara is having the lowest percentage of households in pucca type house (4.3 per cent). This district is situated in the centre of mainland of Gujarat, occupied a prominent position among all other districts of the state and is one of the socially, economically and educationally advanced districts. This district with second highest number of inhabited villages (165) had 62.8 per cent of the total

* A material made up of stems of tuver/tadachi (Palm frounder/cotton stem and mud).

19. Census of India, Gujarat, District Census Hand Book, Bharuch District, 1981, pp.8-12.

PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLDS IN PUCCA TYPE HOUSE - 1981

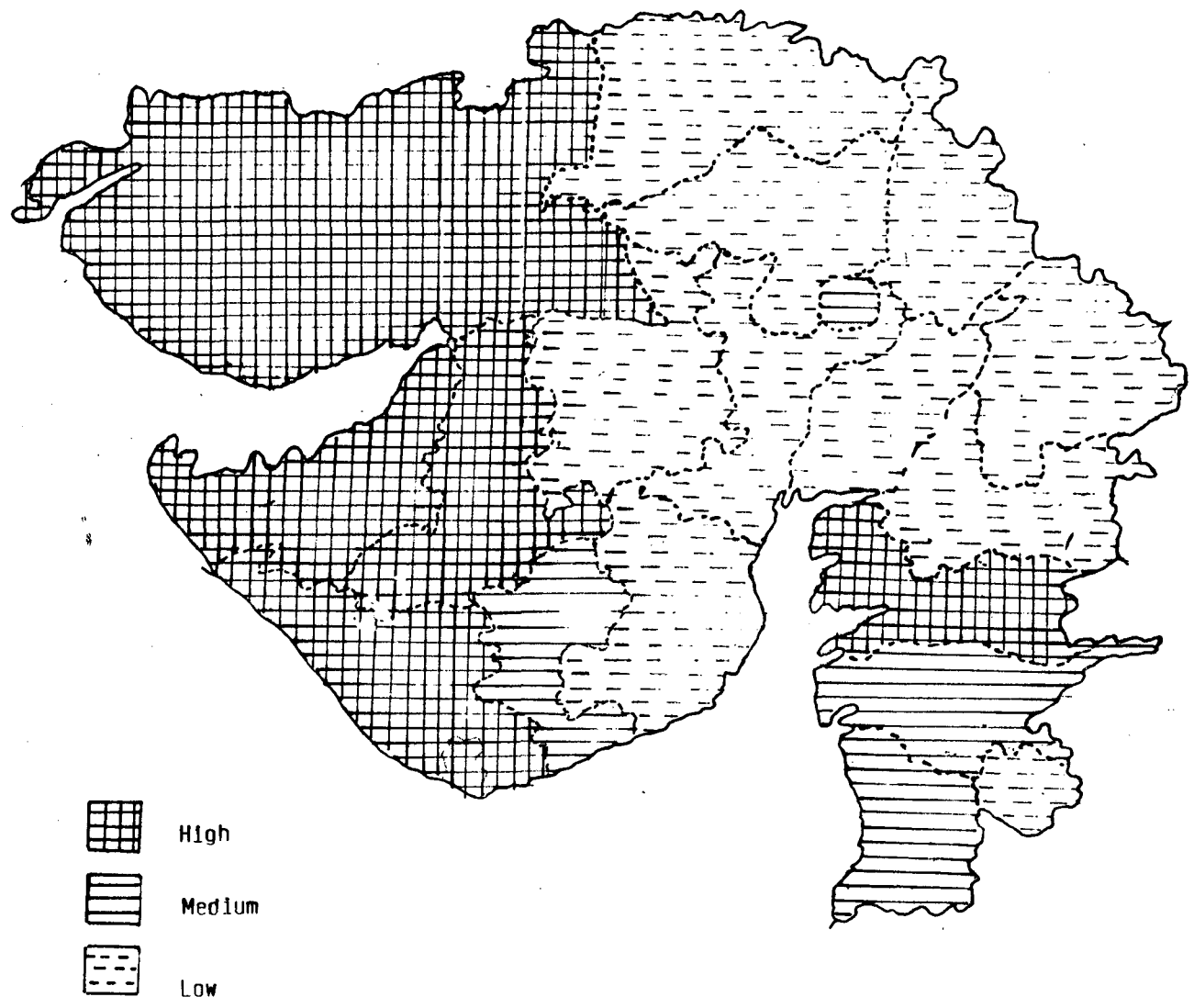


FIG. 3-2

population resides in rural areas. The general layout of large sizes villages and towns in this district appears to be essentially the same.²⁰

Thus in Vadodara district only 4.3 percent of households lived in pucca houses but it was 43.7 percent in case of urban areas. Which shows that even though district has lowest percentage of pucca houses in rural areas but it is highly developed in case of urban areas.

In case of semi-pucca II type of houses in rural areas of Gujarat state it is noticed that Kachchh district is having highest percent of households (53.7 percent) in semi-pucca II type of houses and lowest in district Dangs (5.6 percent) (Refer table 3.3).

The Rann of Kuchchh is a peculiar tract of territory not a sandy desert but a flat terrain, believed to have sprung up from the sea on account of earth upheavels and heavy sitting. The hills though of no great height are one of the chief natural features of Kachchh.²¹

The layout of the houses in the rural areas of district are more or less of same shape. The material generally used in construction are clay or claybrick and mud. But wood is also used according to the necessity. The use of thatched grass and country tiles in the roof follows the same proportions as a large majority of households have thatched roofs and very less have tiles roof. Altogether mixed combination were used for construction.²²

20. Census of India, Gujarat, District Census Hand Book, Vadodara District, 1981, pp.3-6.

21. Gazetteer of India, Gujarat state Gazetteer, Kachchh District, 1971, pp.223-49.

22. Ibid.

Whereas district Dangs had the lowest percentage of this type of houses due to backwardness and underdevelopment of the district.

Altogether there are nine districts above the state average (29.6 percent) (Refer table 3.3 and fig 3.1). Distribution of rural households in semi-pucca I type of houses are highest as compared to rest of the three house types in the state. Interdistrict variation of semi-pucca I type of houses shows that the lowest proportion of households lived in Dangs (5.3 percent) and highest in Sabarkantha (66.1 percent). As already mentioned district Dangs was having the highest percentage of kutchha house, which is mainly due to the backwardness and high percentage of Adivasi population, which influence lowest percentage of semi-pucca I type of houses. Thus on the whole district Dangs experienced a bad housing condition for all type of houses except kutchha types (Refer fig.3.1).

Sabarkantha with (90.1 percent) of rural population depends exclusively on agriculture. The configuration of the district varies from gentle undulating to steep hilly countryside running all along the eastern boarder of the district. The district is mainly divided into two regions viz. hilly and plain. In rural areas housing facilities appears to be inadequate. Houses are made up of mixed material like mud, burnt bricks, grass, leaves, reeds or bamboo, stone, unburnt bricks; sometimes with tiles roof, corrugated iron sheets and also with stone slabs or iron -cement sheets. Most of the roofs are covered with desi-tiles or country tiles, though the preference for vilayati or mangalore tiles is appearant now a days. The flooring in the majority of houses is of beaten earth covered with cowdung emulsion; some time stone and

23. Op.Cit., District Census Hand Book, Dangs district. pp.19-23.

cement tiles are used by well to do class.²⁴ Thus, mainly in most of the districts in rural areas of Gujarat state, the percentage distribution of households with semi-pucca I type of houses is highest, where eight districts are above the state average (49.4 percent).

When one examines the percentage distribution of households in rural areas with kutcha type houses from table 3.3, it showed that district Dangs was having the highest proportion (80.7 percent) and Junagadh had the lowest proportion of kutcha type of houses (1.5 percent). Thus it showed a high range of variation among the district not only for the total population but ^{is} also true in the case of rural population (Refer fig. 3.1).

Thus it can be said after above analysis and from viewing table 3.3 that there was a vast regional diversity among the districts in the rural areas of Gujarat state, in case of kutcha type of houses and ^{that} these two districts (Dangs and Junagadh) are greatly influenced by the distribution of households by the structure of house types.

Dangs with its backward class, predominance of agriculture and Adivasi population had highest percentage of kutcha houses and since the terrain of district is covered with forest area, the locally available building material will be cheap and easily available, but most of them will be of kutcha type. Thus people will construct the kutcha houses in very low cost and will service it each year.²⁵

24. Census of India, Gujarat, District Census Hand Book, Sabarkantha District, 1981, pp.3-15.

25. Op.Cit. District Census Hand Book, Dangs District, 1981, pp.7-12.

in
Whereas Junagadh district, in general the houses are made according to the economic condition prevailing in the district, and this district possessed the lowest percentage of kutcha houses. Altogether there are seven districts above the average (9.4 percent) with kutcha type of houses, which can be shown more clearly from fig 3.3, where distribution of households with this house type is concentrated mainly towards south-east districts namely Dangs, Valsad, Surat and Panchmahals. Thus overall housing condition in case of rural areas is observed and more or less seems to be satisfactory.

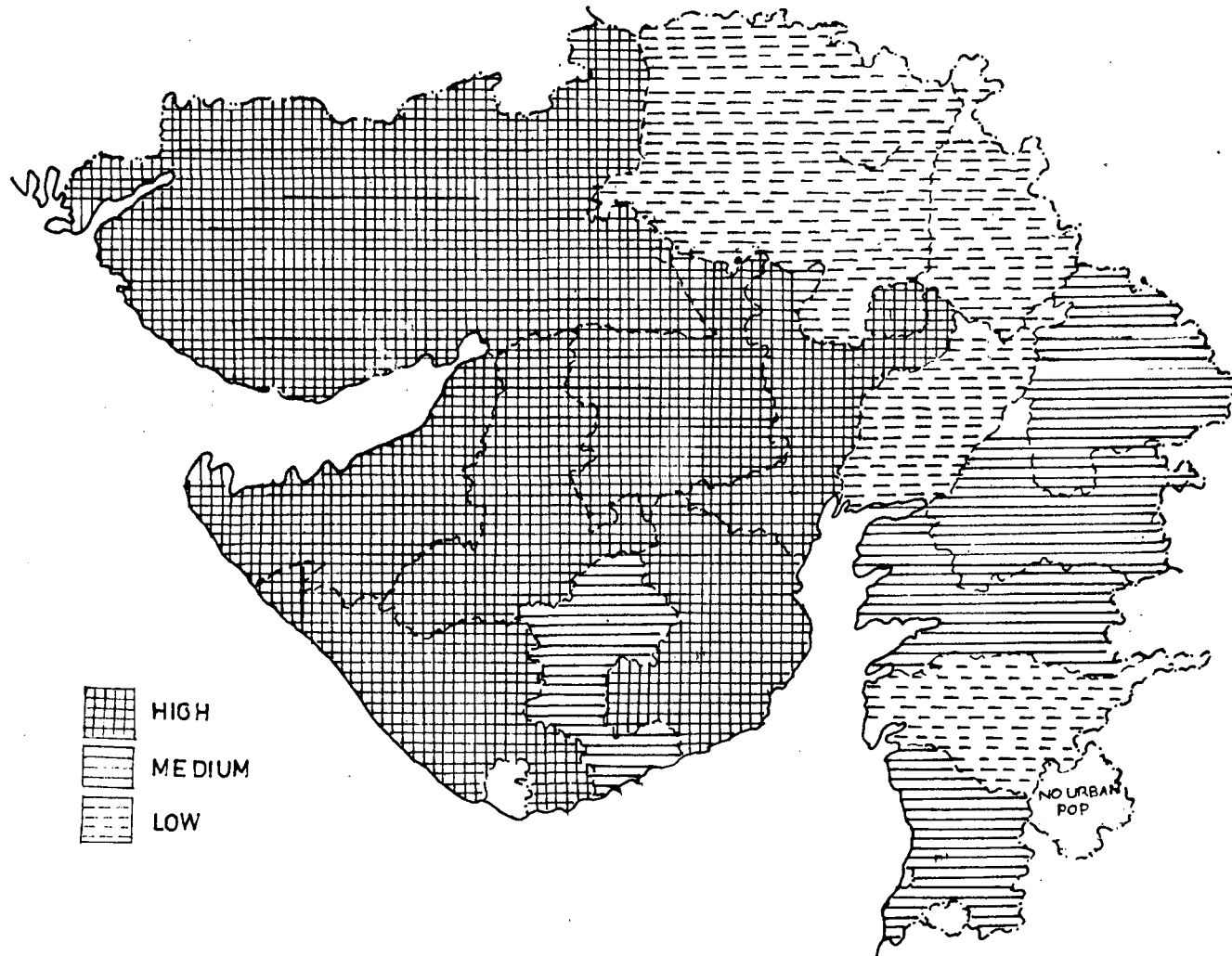
3.2.3 Distribution of urban households by the structure of house types

Table No.3.4

Percentage distribution of urban households by the type of structure, Gujarat, 1981.

State/District	House Types			
	Pucca	SP-II*	SP-I*	Kutcha
Gujarat	50.6	31.5	14.7	3.4
1. Jamnagar	69.4	18.4	10.5	1.7
2. Rajkot	73.3	15.6	9.7	1.3
3. Surendernagar	56.5	23.0	18.7	1.7
4. Bhavnagar	52.0	22.1	23.2	2.6
5. Amreli	41.4	27.3	29.3	1.1
6. Junagadh	74.2	18.5	6.3	0.9
7. Kachchh	65.3	20.7	9.8	4.2
8. Banaskantha	39.4	37.2	18.4	4.9
9. Sabarkantha	38.7	43.2	17.3	1.7
10. Mahesana	31.5	52.4	14.6	1.5
11. Gandhinagar	82.0	4.8	9.3	3.9
12. Ahmedabad	51.1	36.6	10.1	2.2
13. Kheda	31.5	45.1	20.0	3.3
14. Panchmahals	42.8	33.2	20.3	3.7
15. Vadodara	43.7	26.9	24.9	5.2
16. Bharuch	46.2	18.1	24.1	11.1
17. Surat	37.1	33.5	20.3	10.1
18. Valsad	46.6	30.4	30.4	8.2
19. Dangs	-	-	-	-

PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS IN PUCCA TYPE HOUSE - 1981



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FIG 33

While considering percentage distribution of households in urban areas with pucca type of houses, from table 3.4, it has been observed that, on the whole more than half of the households lived in pucca type of houses in Gujarat state, whereas only 4.3 percent of households were of kutcha type of houses. Thus in urban areas the highest proportion of households among the four categories lived in pucca houses.

When districtwise variation is observed from table 3.4, it showed that capital district Gandhinagar was having the highest percentage of pucca type of houses (82.1 percent) and Mahesana with lowest percentage (31.5 percent). Thus in urban areas all the district possessed more than 30 percent of household residing in pucca houses and altogether eight districts were above the state average (50.6 percent). Which can be observed from fig. 3.4, where households with high proportion of pucca type houses were concentrated towards mostly on western and few on northern part of the state viz., Junagadh, Rajkot, Jamnagar, Kutchh, Surendernagar, Bhavnagar, Ahmedabad, and highly concentrated in Gandhinagar district.

Most of the population in Gandhinagar district is served with all the facilities with only one town and with 21.6 percent of urban population of total population. Gandhinagar, the capital of Gujarat has been constructed recently over the last fifteen years and is the third new capital town developed in post independent India after Chandigarh and Bhub^{va}heshwar.²⁶ Thus the district has almost all the facilities and has a great influence of Ahmedabad also and thus it possessed the highest percentage of households with pucca house type in urban areas.

26. Census of India, Gujarat, District Census Hand Book, Gandhinagar District, 1981, pp.3-5.

PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLDS IN KUTCHA TYPE HOUSE - 1981

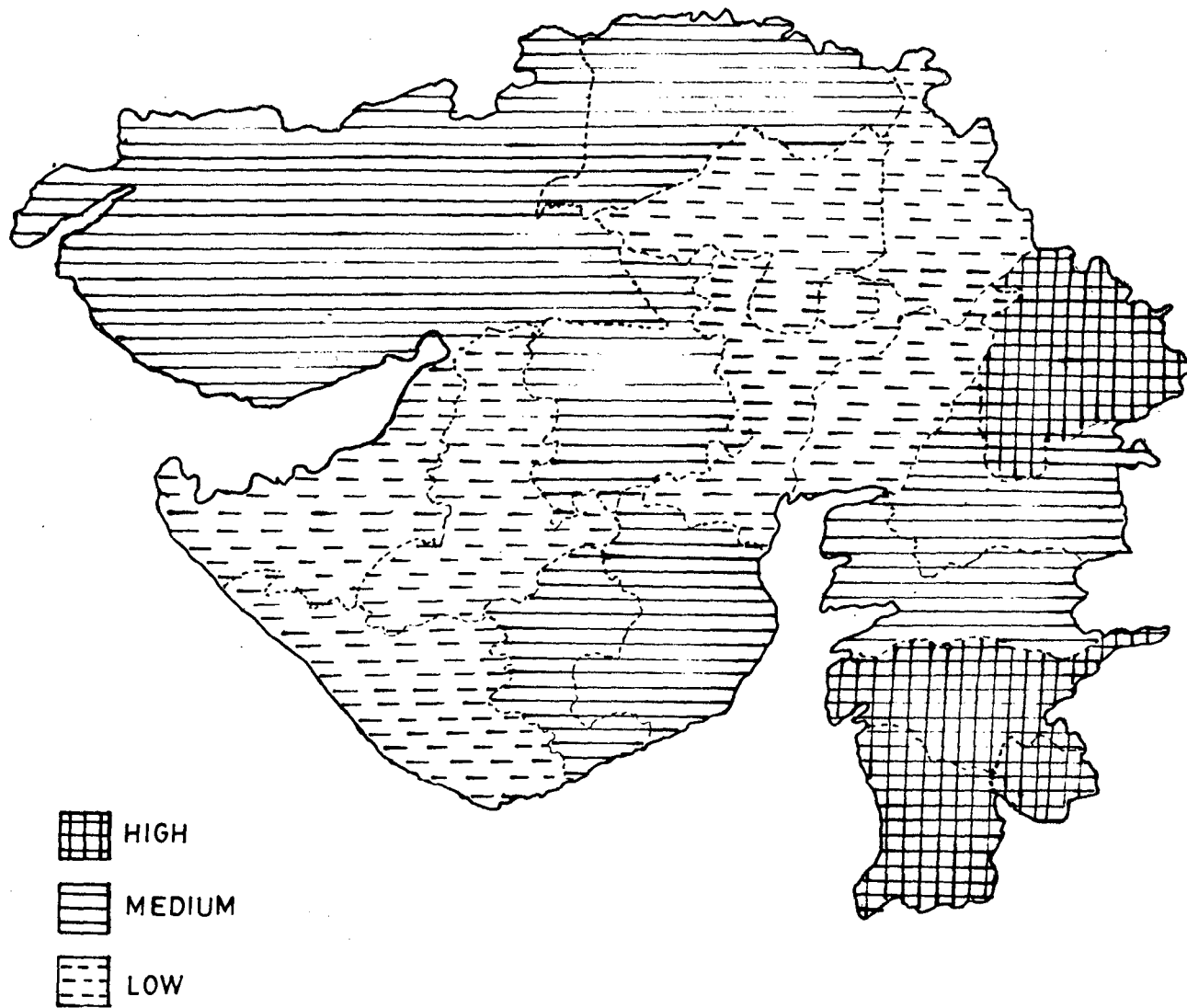


Fig 3.4

Mahesana is one of the district following part of the north Gujarat region. It is bounded to the north-west of Banaskantha district and to the west and south-west by the little Rann of Kachchh. The terrain of the district is flat, monotonous and devoid of luxuriant forest cover. The houses in the district are closely knit together. The basic material used shows housing conditions like Desitiles, corrugated iron-sheets, bricks and cement or mud smeared with cowdung.²⁷

Whereas in case of semi-pucca II type of houses, the situation is reverse, as district Mahesana possessed the highest percentage (52.4 percent) and Gandhinagar had the lowest percentage (4.8 percent) of households lived in semi-pucca II type of houses. The state average for semi-pucca II typewas quite good in case of urban areas and there were seven districts above this average (31.5 percent). (Refer table 3.4).

In case of semi-pucca I type of houses in urban areas of Gujarat, only 14.7 percent of houses falls under this category. Table 3.4 shows that Amreli has the highest percentage of households with this house types (29.3 percent), were as Junagadh possessed the lowest percentage (6.3 percent). Altogether more than half of the district are above the state average (14.7 percent).

In district Amreli, the Daccan Trap covers the whole of the district except for the southern and south eastern coastal tracts. The greatu of the district is plain without any trees except those raised along the roads and near walls. The forest covers major portion of the hilly

27. Gazetteer of India, Gujarat state Gazetteer, Mahesana Districts, 1971, pp.3-5.

areas. The district is well endowed with various land of rocks suitable for the construction of the building. The district is primarily agricultural and industrially backward still it is famous for its cottage industries and handicraft notably weaving, dying and calico printing etc.²⁸ Thus district possessed high percentage of households in semi-pucca I type of houses according to the availability of material used and climatic conditions of the district.

While considering the interdistrict regional variation of distribution of households of kutcha type houses in urban areas, it has been observed that there was not much variation as compared to rural areas. Table 3.4 shows that the percentage of households with kutcha type houses is highest in Bharuch (11.1 percent) and lowest in Junagadh , (0.9 percent). Altogether there were eight districts above the state average (3.4 percent). (Refer fig. 3.5).

District Junagadh possessed lowest percentage of kutcha houses not only in rural areas but in urban areas also, thus it is lowest for area as a whole also. The district is having one-third of population residing in urban areas. The district possessed great potentialities for trade and industry, subsequently, industrial development leads the district to have a lowest percentage of kutcha houses.²⁹

In Bharuch district majority of people make their houses with locally available material like Karanthi, tadachi, and mud. The proportion of houses with desitiles also is largest and very less were of mangalore tiles and some time bricks were also used for the

28. Gazetteer of India, Gujarat state Gazetteer, Amreli District, 1971, pp.4-10.

29. Census of India, District Census Hand Book, Junagadh District, 1981, pp.3-5.

PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS IN
KUTCHA TYPE HOUSE - 1981

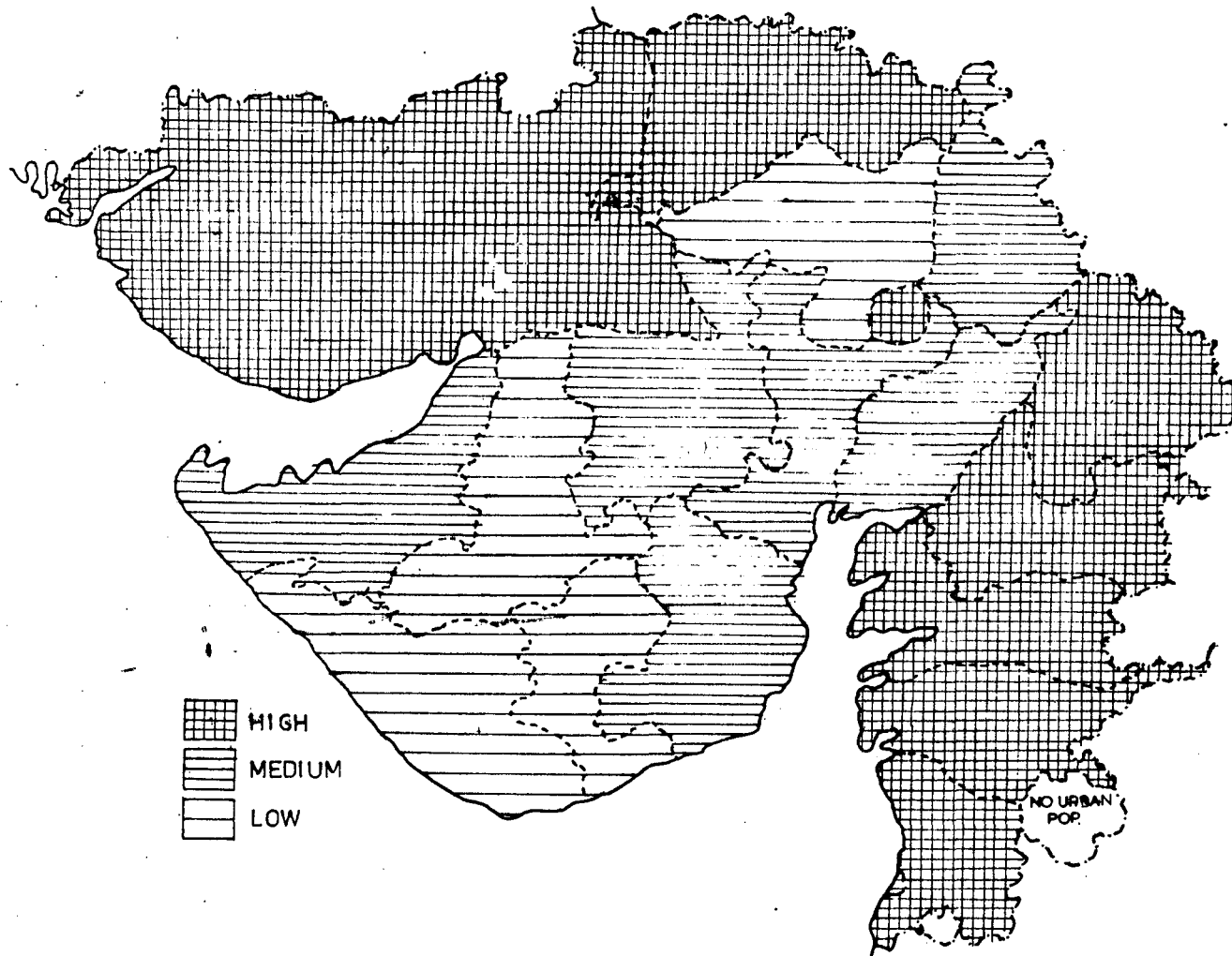


Fig 3-5

construction.³⁰ In this type of house structure there were eight districts above the state average (3.4 percent).

A clear cut picture can be observed from fig 3.5, where the districts namely Mahesana, Rajkot, Amreli, and Junagadh showed the least concentration of households in kutcha houses and proportion of the households in districts such as Bharuch, Surat, Valsad, Vadodara, Banaskantha, Gandhinagar, Kachchh, and Panchmahals showed high concentration of kutcha houses, in urban areas. Thus in urban areas the proportion of households with kutcha type houses is less as compared to pucca houses and in rural areas the proportion of households in kutcha houses is more.

Summary:

It can be summarised from the above analysis that structural quality of housing is one of the important component of overall housing quality. This structural quality can be identified by the nature of building materials used for constructing the house which largely depends on the economic condition of the households, as well as geographical and climatic condition prevailing in the region.

This chapter mainly presented the districtwise regional variation about the distribution of households, in which they are residing. It was observed that inspite of regional variation quite a substantial proportion of households in each district lived in semi-pucca type of houses. The quality of housing in respect of the nature of building material represent the satisfactory picture in most of the district

30. Op.Cit, District Census Hand Book, Bharuch District, 1981, pp.8-12.

except Dangs. District Dangs with substantial number of Adivasis possessed highest percentage of households with kutcha type house, which inter-alia conditions its economic growth. There was no pucca type house built by private person and whatever pucca houses were there belonged to government.

From this analysis it can be easily concluded that only the few districts enjoyed better quality of housing in respect of durability of building material. Mainly the ^{Central,} northern and western district enjoyed the better housing conditions. In rest of part, it was although not poor but it was satisfactory as half of the households were having semi-pucca type of houses. Thus showed the regional disparity among the districts in Gujarat state.

CHAPTER IV

REGIONAL VARIATION AND INFRASTRUCTURAL FACILITIES

In present chapter an attempt has been made to throw light on three basic amenities available to the household in a house. These three essential primary amenities are drinking water, toilet and electricity. Among these three amenities drinking water is considered essential and the most important basic need. While electricity from the point of view of basic needs does not hold much importance, protected drinking water and toilet facility play a very important role in human life. Unprotected drinking water and unhygienic toilet facilities can cause many diseases. Infact, water borne diseases are a common problem in places where these facilities are not adequate or the conditions are not hygienic. Nowadays electricity is also considered a part of basic amenities and all these three components together form a measure for the quality of housing as they are expected to be a part of any dwelling.

In this chapter the description regarding these amenities of households have been shown separately for the rural and urban areas of the state at district level for 1981 census. This chapter has been divided into three main sections with consideration of three basic amenities. First part deals with the availability of drinking water by their source and location, second part deals with the availability and non-availability of electricity for rural and urban areas and third part deals with availability of toilet facility for urban areas only, as the census does not provide data on toilet facilities in rural areas.

4.1 Distribution of households by the availability of drinking water:

Water is crucial to human life. Among the three basic needs of human being viz. air, water and food, drinking water is one of the very essential need for human survival. Drinking water is the most important and basic amenity in a house apart from other things. Drinking water problem is more acute in rural areas, because of the absence of water supply schemes in many parts of the state as well as in the country. A good percentage of rural population still depends on unprotected sources to get water viz. well and other natural resources such as river, pond, spring water and canal etc. which are all principal sources whereas in urban areas there is a centralised water supply scheme managed by public works department. Thus, type of drinking water supply is an important indicator of housing condition.

Drinking water supply has been classified into two parts for the convenience of this study viz. (1) protected water supply and (ii) unprotected water supply which is further split into two parts i.e. (i) within premises (ii) outside premises. Protected water supply includes water obtained from tap, hand pump, tube well, whereas unprotected includes water obtained from well, river, canal, pond and tank.¹

1. See Chapter II for more details.

Although water has many uses but its main importance is as drinking water. Drinking water availability is very necessary, that too to each individual household, but it is not available to everyone inside the premises as availability of water is different in urban and rural areas. In urban areas mostly water is available within the premises, whereas in rural areas it is mostly outside the premises. In India according to 1981 census out of 525.5 million population or 93.5 million households among which 86.6 millions are residential in rural parts of the country,² only 15.2 millions had drinking water supply within the premises and remaining 74.9 million had to go out, whereas in urban areas out of 159.7 million population and 29.1 million households, only 27.8 million are residential, nearly 14.1 million get water within premises and remaining 13.6 million had to go out³ which represent^{that} the source of drinking water is much better in urban areas as compared to rural areas.

Thus only 38 percent of households in India had access to safe drinking water supply, whether available within the premises or outside the premises. In urban areas it is 75 percent, while in the rural it is 26.5 percent only; thus 1/4 of the urban households don't enjoy safe drinking water supply. Considering all areas, the highest percentage of households having safe drinking water supply is in Chandigarh (99 percent), followed by Delhi (93 percent). Among the major states, the highest percentage of households with safe drinking water supply is

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2. Housing statistics at glance, Government of India, Ministry of urban Development, National Buildings Organisation UN Regional Housing centre ESCAP, Nirman Bhawan, New Delhi, 1981, p.3.
 3. O.P. Sharma, "Dynamic approach needed", National housing policy Economic Times, March 24, 1989, p.5.

reported from Punjab (84.6 percent) followed by West Bengal (69.7 percent), Haryana (55.1 percent), Gujarat (52.4 percent), Tamil Nadu (43.1 percent), Maharashtra (42.3 percent) and rest of the states with lower percentage and lowest being in Kerala (only 12.2 percent). Thus less than 50 percent of the households had safe drinking water supply in 22 states and union territories, while in eight states, or union territories more than 50 percent of households had safe drinking water supply.⁴

In rural areas, the position is really critical where roughly 3/4th of the households do not have access to safe drinking water supply. The position can be said ^{to be} really bad, in the states of Maharashtra, Karnataka, Andhra Pradesh, Rajasthan, Orissa, Madhya Pradesh and Kerala, where more than 75 percent of the rural households did not enjoy safe drinking water supply. Thus more than 90 percent of the rural households did not have safe drinking water supply in as many as 125 districts.⁵

In India, in case of 28.5 million households in cities and towns the major source of water supply was taps (63.2 percent) followed by wells (20.4 percent) and handpump/tubewell (11.8 percent). Altogether (75.1 percent) of cities and towns were having protected water supply in urban areas and rest 22 percent were having protected water.⁶ Whereas in rural only 10.2 percent of households obtained drinking water from tap, which is considered as the most protected one and 16.2 percent were getting from tubewell and hand pump. Altogether 26.5 percent of households get

4. Census of India, Occasional Paper No.1, Household literacy, Drinking water, Electricity and Toilet facilities, Demography Division. New Delhi, 1989, p.1.

5. Ibid., p.2.

6. Op.Cit., Housing statistics at glance, 1987, p.27.

protected drinking water supply whereas 61.6 percent get it from wells, 3.4 percent from tanks and ponds and 5.7 percent from river, lake and canal. Thus 70.7 percent of households are getting unprotected water supply in rural areas.⁷ It is very important to mention here that 3.6 percent of households in rural areas are still continuing highly polluted and contaminated water from tanks and ponds, which is an important issue to be considered in future planning.

Among states of India, Gujarat state ranks fourth position as far as safe drinking water supply is considered. In rural areas of Gujarat state 36.2 percent of households are having safe drinking water supply which ranks 3rd position in India whereas 86.8 percent of urban households are having safe drinking water supply, which ranks fourth in India.

In succeeding chapter emphasis is given to study of the housing condition by the availability of basic amenities and their regional disparity in Gujarat state and also for the state as a whole. According to the classification of households based on source of drinking water and their location, it has been observed that in Gujarat state 27.7 percent of households were having protected source of drinking water within premises and 24.7 percent were having outside the premises.

Altogether 52.4 percent of households were having protected source of water supply, whereas 42.5 percent of households in Gujarat are still having unprotected source of water supply outside the premises and only 5 percent are having unprotected source of water supply within the premises. (Refer table 4.1).

7. Ibid., p.21

In case of rural areas of Gujarat only 13.6 percent of households were having protected drinking water supply within the premises and 22.5 percent were having protected source of water supply outside the premises. As far as unprotected water supply condition is observed 58 percent of rural households had to go outside the premises to get water. and only 5.8 percent were getting this unprotected water supply within the premises. (Refer table 4.2).

In urban areas 57.1 percent of households were getting safe drinking water within premises and 29.4 percent were getting safe drinking water supply outside the premises. Overall 86.8 percent of urban households were getting safe drinking water supply whether within or outside the premises. And 9.8 percent of urban households in Gujarat had to go outside the premises of their house to fetch even the unprotected drinking water. Thus this is a serious problem as far as urban areas are concerned, because specially the stagnant source of water will be highly polluted in urban areas as compared to rural areas due to industrial and factory waste. (Refer table 4.3).

4.1.1 Districtwise variation of total households by source and location of drinking water:

While considering the protected sources of water supply, it can be seen that 52.4 percent of households possessed safe drinking water either within or outside the premises in Gujarat state.

When districtwise regional variation is considered within premises, it shows that district ^{of} Ahmedabad is having the highest percentage (51) of safe drinking water supply within premises as this district

Table No.4.1

Percentage distribution of total households by source and location of drinking water, 1981

State/District	Protected		Unprotected	
	WP	OP	WP	OP
Gujarat	27.7	24.8	5.0	42.5
1. Jamnagar	25.6	28.7	4.4	41.3
2. Rajkot	36.6	26.9	3.3	33.2
3. Surendernagar	14.2	17.7	2.3	64.9
4. Bhavnagar	27.8	25.8	4.9	41.5
5. Amreli	26.1	38.2	3.3	31.5
6. Junagadh	26.5	29.9	7.5	35.2
7. Kachchh	21.1	24.3	3.2	51.4
8. Banaskantha	8.9	28.8	4.4	57.9
9. Abarkantha	14.7	13.9	6.7	69.7
10. Mahesana	24.1	42.0	2.0	31.8
11. Gandhinagar	41.8	40.7	2.6	14.9
12. Ahmedabad	51.0	27.9	2.4	18.7
13. Kheda	30.8	27.4	3.6	38.1
14. Panchmahals	7.0	6.1	12.0	74.8
15. Vadodara	38.0	22.5	5.4	33.1
16. Bharuch	24.4	23.5	3.1	48.1
17. Surat	30.9	20.2	7.2	41.6
18. Valsad	14.6	9.6	10.8	65.1
19. Dangs	2.1	6.9	3.2	87.7

WP - Within premises.

OP - Outside premises.

is highly urbanised district with highest percentage of urban population (71.8 percent) and towns (30), moreover the district is industrially and economically developed with 39.3 percent of pucca houses. This district is situated in northern part of Gujarat, with no hills. Thus this

district with a plain, dry and sandy area⁹ is highly concentrated with proportion of the households having safe drinking water supply, which can be viewed from fig 4.1. and table 4.1.

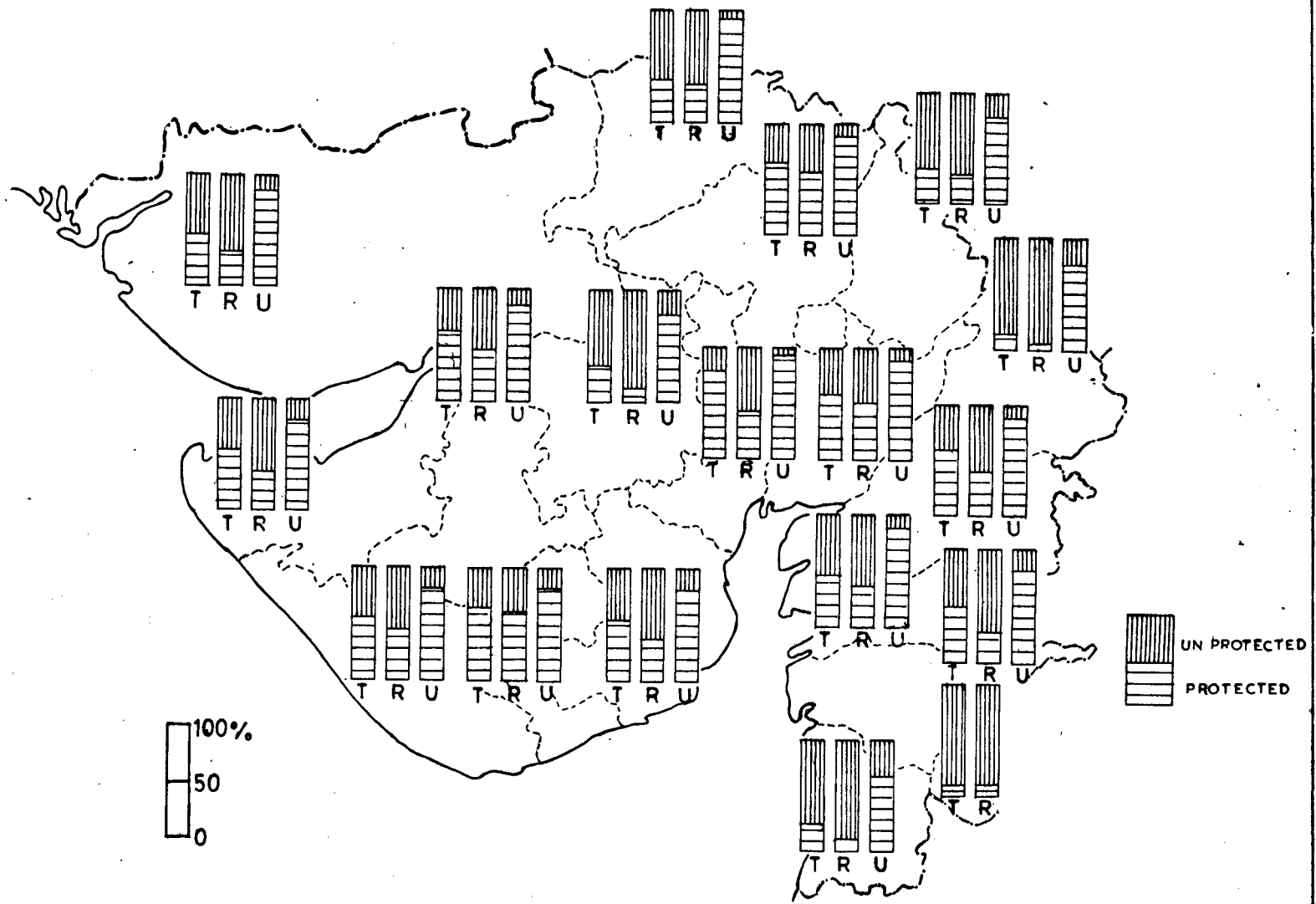
Further, this table highlights the lowest percentage of households with safe drinking water supply in Dangs district (2.1 percent) because of its backward population and primitive ideas and also due to its highest number of households in kutcha houses. Thus in this district there has not been much development as far as basic amenities are concerned.

As far as protected water supply outside the premises with district wise variation is concerned, district Mahesana was having the highest percentage (42 percent) whereas in contrast Panchmahals district had the lowest percentage of safe drinking water supply (6.1 percent).

Mahesana is a developing district with highest percentage of semi-pucca II type houses (50.2 percent). This shows that people in this district may not be able to afford a pucca type house but they can afford to live in semi-pucca II type of houses. This also reflects in the case of drinking water source, as people may not be able to install a protected source of water supply within the premises but they were getting the water from protected sources but outside the premises. In contrast Panchmahals possessed lowest percentage as in this district more than $\frac{1}{3}$ of the houses were of semi-pucca II type houses which ^{are} below the state average.

9. Census of India, Special report on Ahmedabad city, Gujarat, vol.V, Part X-A(i), 1961, p.1.

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY SOURCE OF DRINKING WATER - 1981



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Fig 4.1

Table 4.1 shows that there were seven districts above the state average (27.6 percent) within premises in case of protected water supply and half the districts (10 districts) were above the state average (24.7 percent) in case of outside premises.

In case of unprotected source of water supply for total population the district Panchmahals possessed the highest percentage of households (12 percent) and district Mahesana showed the lowest percentage (2 percent) of households with unprotected water supply within the premises. Altogether there were six districts above the state average (5 percent) with unprotected water supply within the premises.

Whereas in the case of outside the premises district Dangs had the highest percentage of households (87.7 percent) and district Gandhinagar showed the lowest percentage (14.9 percent) of households in this category. As already mentioned unprotected source of water supply is considered as the most Unhygienic and the worst situation with the availability of water supply. District Dangs with least development in Adivasi tribal population had the worst situation, which is the main reason behind the poorly developed drinking water facility in Dangs district. On the other hand Gandhinagar being the state capital enjoyed all most all the facilities and attains more attention and priority for drinking water supply schemes by the state government. There were eight districts above the state average (42.5 percent) with unprotected source of water supply outside the premises. This regional diversity can be observed from fig 4.1. Thus it is noticed that, in most of the district the source is whether protected or unprotected are located outside the premises.

4.1.2 Districtwise variation of rural households by the source and location of drinking water:

In rural areas of Gujarat state there were 36 percent of households with protective source of water supply within and outside the premises, and in the case of unprotected water supply the were (63.9 percent) of households both within and outside the premises.

Table No.4.2

Percentage distribution of rural households by source and location of drinking water, 1981

State/District	Protected		Unprotected	
	WP	OP	WP	OP
Gujarat	13.6	22.5	5.8	58.0
1. Jamnagar	9.5	27.3	4.3	58.8
2. Rajkot	17.5	29.5	2.9	50.1
3. Surender nagar	1.8 13.4	9.9	1.2	26.2 26.2
4. Bhavnagar	13.4	23.5	5.2	57.8
5. Amreli	22.4	38.4	3.2	35.1
6. Junagadh	15.5	30.3	7.3	46.9
7. Kachchh	12.0	18.8	3.5	65.6
8. Banas- kantha	6.2	25.9	4.6	63.3
9. Sabar- kantha	11.9	12.0	8.0	68.2
10. Mahesana	16.9	42.8	2.0	38.4
11. Gandhi- nagar	30.4	47.9	3.9	18.7
12. Ahmedabad	14.0	29.6	3.0	53.4
13. Kheda	24.1	26.3	3.7	45.8
14. PUNCH- Mahals	1.5	3.3	12.9	82.4
15. Vadodara	19.3	20.8	7.3	52.4
16. Bharuch	16.9	21.7	3.3	58.1
17. Surat	13.0	14.8	9.4	62.9
18. Valsad	5.3	5.7	11.5	77.3
19. Dangs	2.1	6.9	3.2	87.7

--
WP - Within premises. OP - Outside premises.

While considering the districtwise regional variation from table 4.2, it can be seen that district Gandhinagar being a state capital had the highest percentage of households (30.4 percent) with protected water supply within premises and Panchmahals had the lowest percentage (1.5 percent). As already mentioned that district Gandhinagar is most developed district both economically and socially and it has all the facilities; thus even in rural areas it contains good percentage of households with availability of protected water supply within the premises. There are nine districts above the state average (13.6 percent), which shows half the district possessed protected water supply within the premises in rural areas. Whereas in the case of protected water supply outside the premises there were altogether 10 districts above the state average (22.5 percent). Thus it shows that even though almost half the districts were having protected water supply within premises, the remaining districts have to depend on water supply from outside premises.

Similarly for outside premises also Gandhinagar possessed highest percentage (47.9 percent) of households and Panchmahals possessed the lowest percentage (3.3 percent) of households with protected water supply which leads to say that in case of protected water supply either within or outside the premises in case of rural areas, Gandhinagar ranks highest. Fig 4.1 depicts that the districts in south east part of the state were highly concentrated with unprotected water supply and the districts in the central part and south west part and north west part showed high consideration of protected water supply.

Further table 4.2 shows the districtwise regional variation for unprotected water supply, where Panchmahals had the highest percentage of households distribution with this source of drinking water (12.9 percent) and Surendernagar with a lowest percentage (1.2 percent) of households in this category. District Panchmahals has the third highest percentage of rural households (88.9 percent), with (30.1 percent) of kutcha and (29.7 percent) of semi-pucca I type houses, and economic condition is also not satisfactory thus it had the unsafe drinking water supply within the premises in rural areas. And in Surendernagar there were (17.3 percent) of rural households with (7.1 percent) of kutcha houses and (50.9 percent) of semi-pucca I type houses. As semi-pucca-I type is better than kutcha and Surendernagar had half of the households with semi-pucca I type of households. Altogether there were six districts above the state average (5.8 percent) in case of unprotected water supply within the premises. Coming to outside the premises with protected water supply, there were twelve districts above the state average (58 percent) which shows more than half of the districts were above the state average with unprotected water supply outside the premises. Districtwise regional variation shows that district Dangs had the highest percentage (87.7 percent) of households and Gandhinagar had the lowest percentage (18.7 percent) households of unprotected drinking water supply outside the premises. which leads to say....

.....that Dangs had the most polluted and uncomfortable drinking water supply both within and outside the premises. Due to its backwardness, highest tribal populations and no urban influence. Incontrast Gandhinagar being a state capital had almost all priorities and moreover government schemes are also favourable for the

development of the district. Thus this district possess the most comfortable water supply. But overall picture from fig 4.1 shows that there are more districts in rural areas with unprotected, unpotable water supply, consequently there is need to increase the number of rural water supply scheme in future and to reinforce this existing schemes in general and mostly in eastern and southern districts in particular.

4.1.3' Districtwise.. variation of urban households by the source and location of drinking water:

Table 4.3

Percentage distribution of urban households by the source and location of drinking water, 1981.

State/District	Protected		Unprotected	
	WP	OP	WP	OP
Gujarat	57.4	29.4	3.5	9.8
1. Jamnagar	50.3	30.8	4.6	14.2
2. Rajkot	62.3	23.3	3.9	10.4
3. Surendernagar	42.1	35.3	3.8	17.8
4. Bhavnagar	53.4	30.1	5.2	11.3
5. Amreli	43.9	37.7	3.7	14.6
6. Junagadh	50.9	30.1	9.2	9.5
7. Kachchh	47.0	39.9	2.3	10.7
8. Banaskantha	35.1	56.8	2.0	6.1
9. Sabarkantha	39.0	38.8	3.8	17.8
10. Mahesana	52.2	39.1	1.8	6.8
11. Gandhinagar	79.8	16.8	0.9	2.5
12. Ahmedabad	68.2	27.3	2.1	5.4
13. Kheda	57.4	31.6	2.9	8.1
14. Panchmahals	48.3	26.7	6.0	18.9
15. Vadodara	66.6	25.2	2.6	5.6
16. Bharuch	51.5	36.5	2.4	10.2
17. Surat	55.4	27.8	4.2	12.6
18. Valsad	46.1	22.9	8.1	22.0
19. Dangs	-	-	-	-

WP - within premises. OP - Outside premises.

In urban areas of Gujarat state altogether there were 86.8 percent, of households having protected water supply within and outside the premises. Which shows that in urban areas a very good percentage of households were facilitated by protected water supply both within and outside premises.

Coonsidering the districtwise regional variation, table 4.3 shows that there were (79.8 percent) of households having protected water supply within the premises in Gandhinagar district, which is highest among all other districts. In contrast Banaskantha possessed the lowest percentage (35.1 percent). There were only four districts above the state average (57.4 percent) and rest were below it. Which shows that a less percentage of households had protected water supply within premises in urban areas, as only (31.1 percent) resides in urban areas for ^{the} state as a whole and moreover there four districts are geographically ^a closer to the state capital Gandhinagar and are economically and industrially developed districts, with high urbanisation. So they possess high percentage of households with protected water supply within the premises of their house. Which can be observed from fig 4.1 where centrally located Gandhinagar district depicts high percentage of households with safe drinking water supply.

In case of outside premises, there were eleven districts above the state average (29.4 percent) which shows half of the districts were having even though protected water supply but outside the premises. Considering the regional variation in case of protected water supply outside the premises, district Banaskantha attained highest percentage (56.8 percent) and state capital Gandhinagar had the lowest percentage

(16.8 percent) of households in this category.

The percentage of urban households with unprotected water supply both within and outside the premises was very less (13.2 percent). This is due to the fact that half the households have pucca type house in urban areas and almost all the facilities are available as compared to rural areas.

Districtwise regional variation can be seen from table 4.3 as well as from fig 4.1, where Junagadh possessed highest percentage (9.2 percent) and Gandhinagar had the lowest percentage (0.9 percent) of households with unprotected source of water supply outside the premises. There were nine districts above the state average with the facility (3.5 percent).

In case of unprotected water supply outside the premises district Valsad had the highest percentage of households with unprotected source of water supply (22.1 percent) and Gandhinagar, had the lowest percentage outside the premises and altogether there were eleven districts above the state average (9.8 percent) with unprotected water supply outside the premises. Thus high regional disparity is observed from above analysis.

4.2 Districtwise variation of households by availability of electricity

Electricity facility in a house attains secondary importance after drinking water facility. Availability of electricity in a house can be considered as adding more comforts to the house. Due to high technical innovation, electricity has become an essential

facility specially in urban areas.

According to census of India 1981, only 26.2 percent of households in India were having electricity facilities. Punjab state is having highest percentage of households having electricity (60.9 percent) followed by Haryana (51.5 percent) and Gujarat (44.8 percent) and lowest in Bihar (9 percent).¹⁰

In the urban areas of India only 62.5 percent of households were having electricity and Punjab has the highest (85.4 percent) followed by Haryana (82.2 percent) and Gujarat (74.4 percent). Whereas in rural areas only (14.7 percent) of households were having electricity facility. Highest being in Punjab (50.6 percent) followed by Haryana (41 percent) and Gujarat (30.8 percent). Whereas it is an urban or rural Gujarat attain third position as far as availability of electricity in the house is concerned.¹¹

In Gujarat as a whole only 44.8 percent of households were having electricity. In rural areas only (30.8 percent) have access to electricity facility. But in urban areas nearly 3/4th of the households were having this facility (as can be seen from table 4.4, 4.5 & 4.6).

4. 2.1 Distribution of households by the availability of electricity

Districtwise regional variation for total population shows that Valsad is having the highest percentage of households having this

10. Census of India, Occasional paper No.1, 1989, p.2.

11. Ibid., p.2.

Table No. 4.4

Percentage of total households with electricity facility,

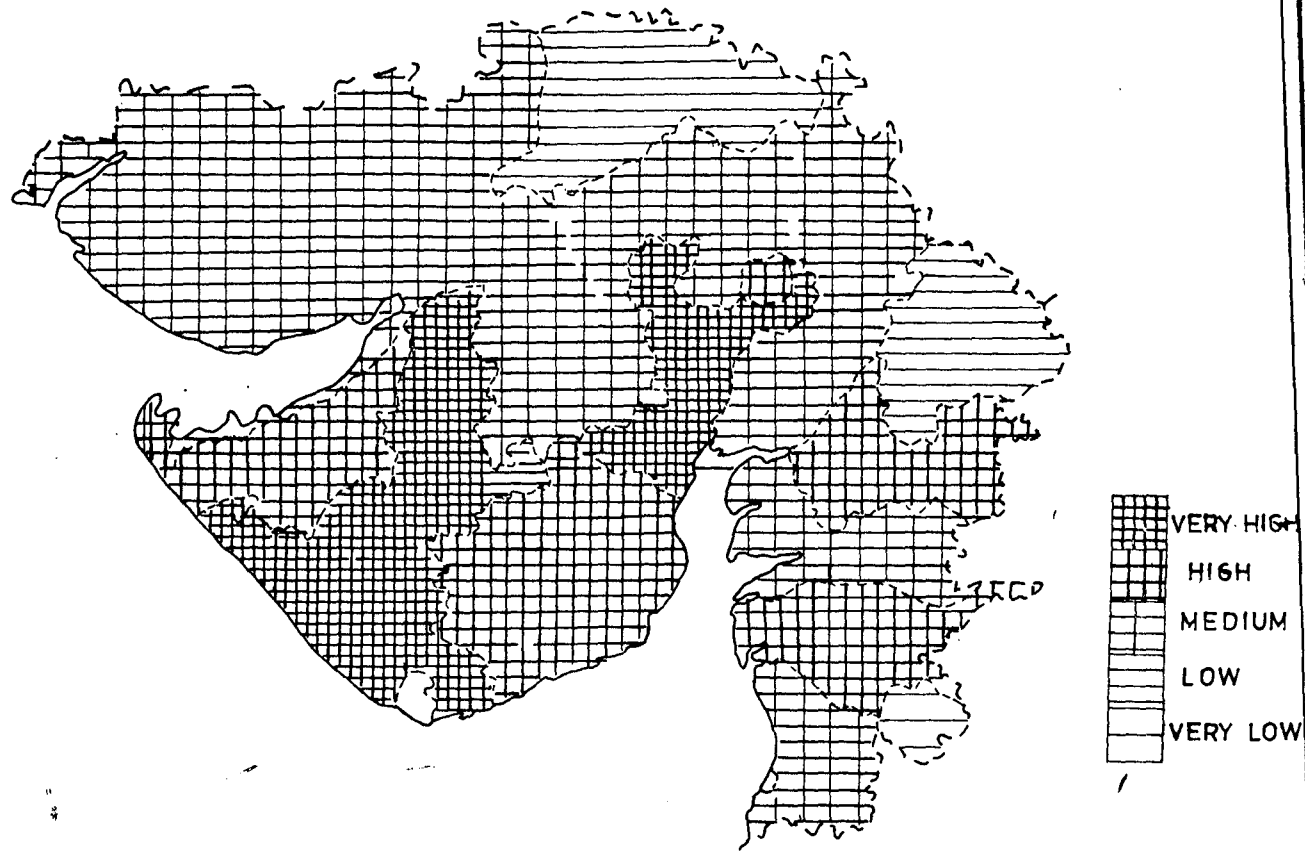
1981.

State/District	Percentage of households with electricity
Gujarat	44.8
1. Jamnagar	52.8
2. Rajkot	60.7
3. Surendernagar	40.6
4. Bhavnagar	53.6
5. Amreli	52.0
6. Junagadh	60.3
7. Kachchh	39.3
8. Banaskantha	18.1
9. Sabarkantha	37.1
10. Mahesana	43.8
11. Gandhinagar	55.9
12. Ahmedabad	63.2
13. Kheda	40.1
14. Panchmahals	15.4
15. Vadodara	48.0
16. Bharuch	31.3
17. Surat	45.5
18. Valsad	70.1
19. Dangs	9.6

facility (70.1 percent) and lowest being in Dangs (9.6 percent). As already mentioned Valsad is industrially as well as economically developed district, with 21.9 percent of urban population and twentytwo towns, moreover the district had 24.1 percent of households with safe drinking water supply; thus it possessed the highest percentage.

In contrast in Dangs it is lowest due to the backwardness and less priorities as already explained. There is no development as such in the district and percentage of households in kutcha type houses with unsafe drinking water supply Thus it possessed the lowest percentage with electricity facilities also. There were ten districts

PERCENTAGE DISTRIBUTION OF TOTAL
ELECTRIFIED HOUSEHOLDS - 1981



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Fig 4.2

above the state average (44.8 percent). A clear cut picture can be observed from fig 4.2 where south west and central district namely Ahmedabad, Rajkot, Jamnagar, Amreli, Junagadh, showed the high concentration of houses with electricity facility. And south eastern and northern district such as Bharuch, Dangs, Valsad, Banaskantha, Kheda, Kachchh and Panchmahals showed the household with least consideration of this facility.

4.2.2 Distribution of rural households by the availability of electricity

In case of rural areas only 30.8 percent of households were facilitated with electricity and rest (69.2 percent) were not having this facility. From table 4.5 districtwise regional variation can be observed.

Table No. 4.5

Percentage of rural households with electricity facility, 1981

State/District	Percentage of households with electricity
Gujarat	30.8
1. Jamnagar	38.1
2. Rajkot	46.9
3. Surendernagar	28.4
4. Bhavnagar	41.5
5. Amreli	46.2
6. Junagadh	50.1
7. Kachchh	28.7
8. Banaskantha	13.1
9. Sabarkantha	32.9
10. Mahesana	36.5
11. Gandhinagar	48.0
12. Ahmedabad	32.2
13. Kheda	33.2
14. Panchmahals	7.1
15. Vadodara	29.6
16. Bharuch	21.5
17. Surat	27.5
18. Valsad	27.5
19. Dangs	9.6

table 4.5 shows that the highest percentage of households with availability of electricity was in Junagadh district (50.1 percent) and Dangs had the lowest percentage of households with this facility (9.6 percent). Junagadh had the highest percentage as this district is urbanised and industrially developed district with (30.5 percent) of urban population and the good percentage of pucca and semi-pucca II type of houses with availability of protected water supply. This district gets more facilities than other districts whereas, Dangs possessed the lowest percentage. Being a tribal district, little efforts had been made in this district to promote all the facilities. Thus overall the situation of housing condition is needed to be improved in this district (Refer : fig : 4.3), which depicts that the centrally located districts such as Ahmedabad, Gandhinagar, Kheda, and south western located districts namely Jamnagar, Rajkot, Junagadh, Amreli and Bhavnagar were having the high concentration of households with electricity facility. In contrast, the northern districts namely Banaskantha and Kachchh and southeastern districts viz. Panchmahals, Dangs, Valsad, Bharuch, Vadodara and Surat had least concentration of households with electricity.

4.2.3 Distribution of urban households by the availability of electricity

In case of urban areas 74.4 percent of households were facilitated by electricity and rest were not having the facility. As per table 4.6 district Gandhinagar had the highest percentage of households having this facility (81.9 percent) in contrast Banaskantha district possessed the lowest percentage (66.2 percent) of households having electricity facility. Altogether eight districts were above the state average (74.4

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS
ACCORDING TO ELECTRICITY - 1981

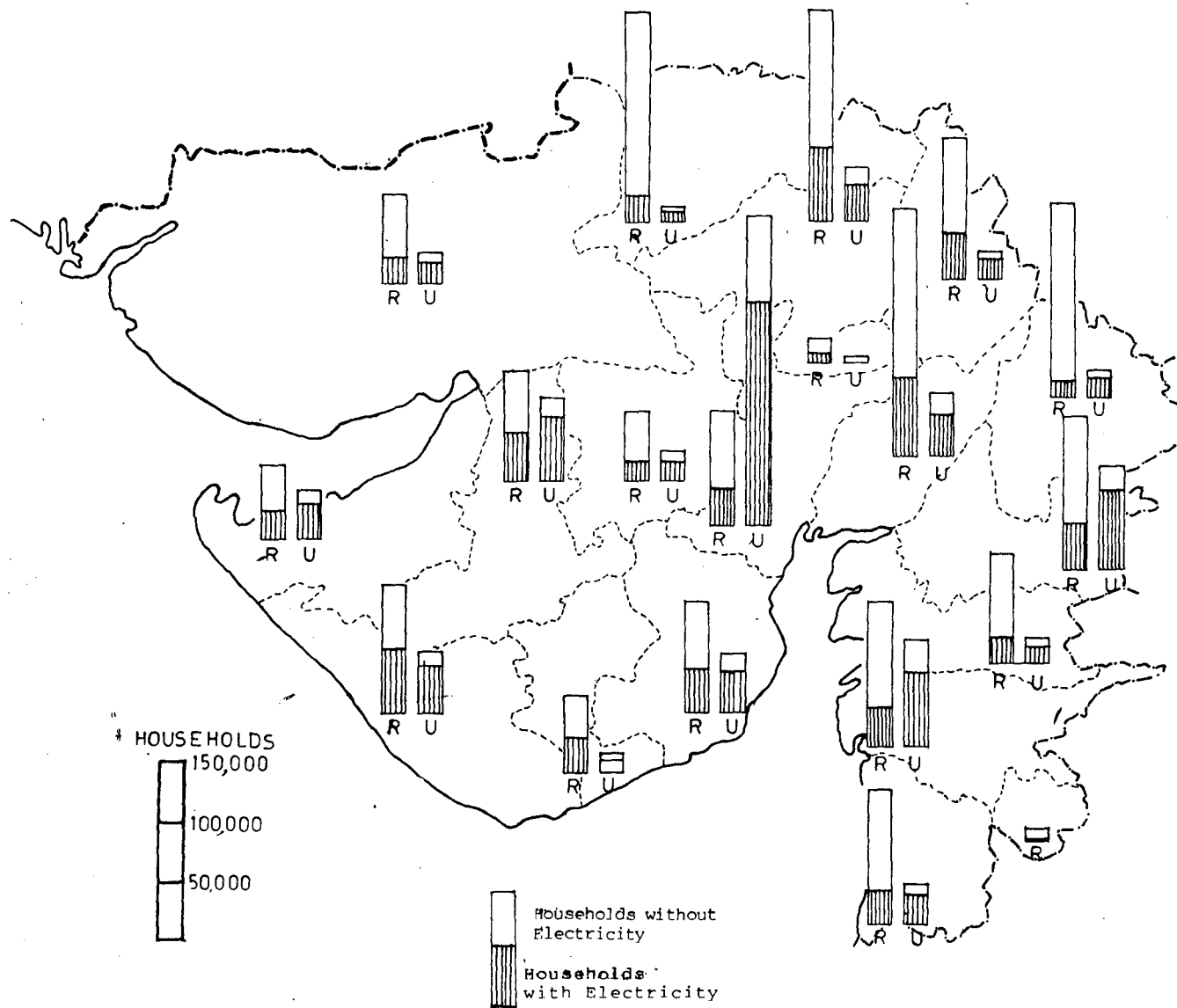


FIG 4-3

Table No.4.6

Percentage of urban households with electricity facility,1981

State/District	Percentage of households with electricity
Gujarat	74.4
1. Jamnagar	75.4
2. Rajkot	79.2
3. Surendernagar	68.1
4. Bhavnagar	76.1
5. Amreli	73.7
6. Junagadh	80.2
7. Kachchh	69.5
8. Banaskantha	66.2
9. Sabarkantha	73.1
10. Mahesana	72.8
11. Gandhinagar	81.9
12. Ahmedabad	75.1
13. Kheda	71.8
14. Panchmahals	70.2
15. Vadodara	76.2
16. Bharuch	72.8
17. Surat	70.1
18. Valsad	73.9
19. Dangs	-

percent), which is a satisfactory condition. A clearer picture can be observed from regional disparity among this districts from fig 4.3 where centrally located districts namely Ahmedabad, Gandhinagar and south western districts such as Rajkot, Junagadh, Bhavnagar and Jamnagar showed the high concentration of households with this facility, whereas rest of the districts showed medium and low concentration.

4.3 Distribution of households having electricity facility by their tenure status

It is important to throw some light on the percentage of households having electricity by their tenure status whether it is owned or rented.

Table No. 4.7

Percentage of households with electricity facility by their tenure
status - 1981.

State/District	Percentage of households lived in					
	Total		Rural		Urban	
	Owned House	Rented House	Owned House	Rented House	Owned House	Rented House
Gujarat	63.8	41.4	26.3	4.5	37.0	36.8
1. Jamnagar	69.5	43.1	32.3	57.0	37.0	38.2
2. Rajkot	81.1	45.1	40.4	6.5	40.6	38.6
3. Surendernagar	63.6	33.0	25.7	2.8	37.9	30.2
4. Bhavnagar	81.1	36.5	37.5	4.0	43.6	32.5
5. Amreli	90.4	29.4	42.0	4.2	48.4	25.3
6. Junagadh	84.7	45.6	44.7	6.3	39.9	39.4
7. Kachchh	49.9	49.4	20.9	7.9	29.0	40.5
8. Banaskantha	47.9	31.4	7.5	5.6	40.4	25.8
9. Sabarkantha	70.5	35.6	29.5	4.4	41.1	31.2
10. Mahesana	77.8	31.6	32.6	3.9	45.2	27.6
11. Gandhinagar	44.5	85.4	38.1	9.9	6.4	75.5
12. Ahmedabad	63.6	43.8	27.2	5.0	36.4	38.7
13. Kheda	68.4	36.6	29.4	4.8	40.0	31.8
14. Panchmahals	40.1	38.0	6.2	1.7	33.9	36.9
15. Vadodara	59.6	46.2	24.5	5.1	35.1	41.1
16. Bharuch	46.9	37.5	17.0	4.5	39.9	32.1
17. Surat	54.1	43.6	21.9	5.6	32.1	37.1
18. Valsad	60.1	40.4	23.2	3.4	36.9	37.0
19. Dangs	4.2	5.4	4.2	5.4	-	-

Table 4.7 shows that in Gujarat state 41.4 percent of households lived in rented houses with the availability of electricity. But 63.8 percent of households lived in their own houses, enjoyed this facility which is more than that of the people who stayed in rented houses. While considering the districtwise variation it showed that the percentage of households who lived in their own houses having electricity facility is highest in Amreli district (90.4 percent) and lowest in Dangs district (4.2 percent). Above table highlights that the percentage of households

lived in owned house is higher than the rented houses in all districts except Gandhinagar district. In rural areas of the state, the percentage of households is higher who lived in their houses as compared to rented one with electricity facility. Districtwise variation shows that in case of owned houses district Junagadh showed the highest percentage (44.7 percent) of households and Dangs showed the lowest percentage of households (4.2 percent) whereas in case of rented houses with electricity facility the highest percentage of household was observed in Gandhinagar district (9.9 per cent) as against Panchmahals with lowest percentage (1.7 per cent). Thus above table shows that in case of rural areas the percentage of households lived in their own houses with availability of electricity is higher than households lived in rented houses with availability of electricity except Dangs district. The tenure status with electricity facility in urban areas of Gujarat state reveals that 31.5 per cent of households lived in their own houses, while 36.8 per cent of households lived in rented houses with this facility. Thus the households lived in their own houses showed high percentage as compared to rented houses in urban areas of Gujarat.

As a whole in viewing regional variation among these nineteen districts in Gujarat, Gandhinagar had the highest percentage of electricity availability whether in owned or rented one whereas in case of Dangs the purchase of houses having electricity availability was least in both owned and rented houses.

4.4 Distribution of households by availability of toilet facility (urban areas)

Toilet is one of the basic amenities next to water and electricity facilities. In urban areas the lack of toilet facility will lead to an unhygienic and insanitary living conditions. In urban areas one can consider toilet as a necessary facility because of the shortage of open spaces and high density of persons per square km. In this study toilet facility is taken into consideration as it reflects the prevailing level of sanitary condition and standard of living. The data available for toilet facility is only for the urban areas. Therefore, the rural areas are not dealt with.

In India, waste disposal system and their proper maintenance needs careful attention, especially in urban areas. At the time of 1981 census, toilet was only available to 58.2 per cent of urban households and rest had to go out to fulfil their need, creating insanitary conditions. This facility was available to 51.1 per cent of households, who lived in their own houses and 66.2 per cent households who lived in rented houses. More than one-third of urban households in most of the states and union territories do not have toilet facility.

The statewise picture reveals that the percentage of households with toilet facility is highest in Tripura (95.7 per cent) and lowest in Mizoram (24.5 per cent). The position of major states in descending orders shows that West Bengal (71.7 per cent), Punjab (64.8%), Uttar Pradesh (62.1 per cent) and Gujarat (60.1 per cent) and rest of the

districts are having lowest percentage. Thus it shows that Gujarat ranks fourth in terms of toilet facility.

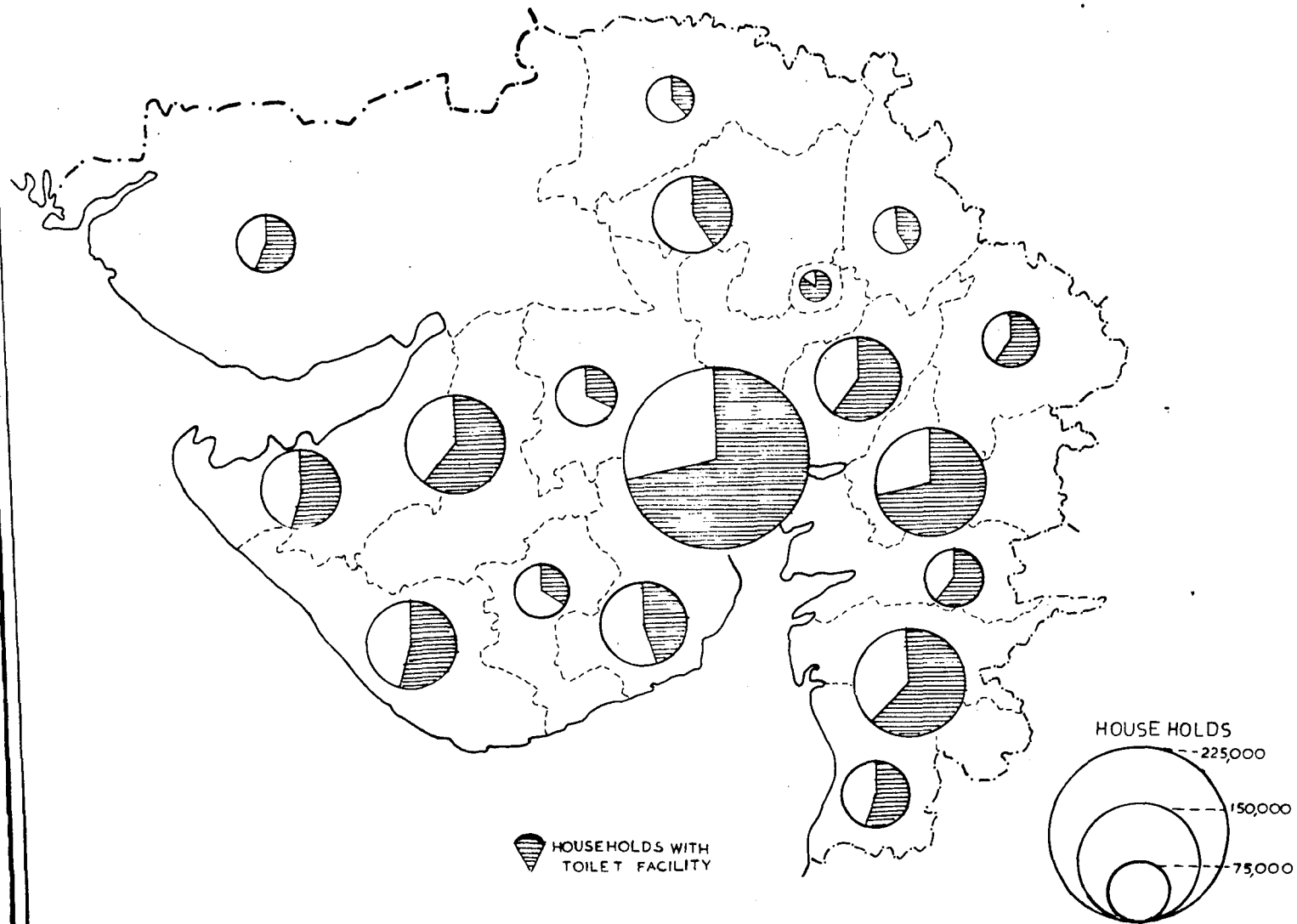
Diistrictwise variation among the urban areas regarding toilet facility shows that it was highest in district Gandhinagar (84.8 percent) and in lowest in Surendernagar (33.6 percent). As Gandhinagar being a state capital and one of the developed district enjoy all the facilities. Thus with highest percentage of pucca houses, safe drinking water within premises and electricity facility, the best toilet can also be attained by the households in this district. State average was that there were seven districts above the state average (60.1 percent) and rest are below it. This is mainly due to the fact that these districts were having urban influence and situated in central or south eastern part of the state. Where the development is much more as compared to other parts. (Refer table 4.8 and fig 4.4).

Table No. 4.8

Percentage of households with toilet facility (urban area), 1981

State/District	Percentage of households with toilet facility
Gujarat	60.4
1. Jamnagar	54.8
2. Rajkot	61.6
3. Surendernagar	33.1
4. Bhavnagar	45.5
5. Amreli	35.3
6. Junagadh	53.8
7. Kachchh	56.9
8. Banaskantha	38.6
9. Sabarkantha	42.5
10. Mahesana	40.6
11. Gandhinagar	84.8
12. Ahmedabad	70.8
13. Kheda	60.5
14. Panchmahals	59.9
15. Vadodara	77.7
16. Bharuch	61.2
17. Surat	60.5
18. Valsad	56.3
19. Dang	-

PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS TO
THE AVAILABILITY OF TOILET FACILITY -1981



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Fig 4.4

4.5 Distribution of households with toilet facility by tenure status

Efficient waste disposal system and that proper maintenance needs careful attention. Out of 28.5 million households, comprising 154.1 million people in the urban areas, the toilet facilities was available only to 58.1 percent as a whole household residing in their own house and rented one enjoyed more toilet facilities. Which can be seen from table given below.

Table No. 4.9

Percentage of urban households with toilet facility by tenure status,

1981

State/District	Percentage of households with toilet facility in owned house	Percentage of households with toilet facility in rented house
Gujarat	29.1	30.1
1. Jamnagar	24.7	30.6
2. Rajkot	30.5	31.0
3. Surendernagar	16.9	16.1
4. Bhavnagar	24.1	21.5
5. Amreli	20.6	14.8
6. Junagadh	24.7	28.1
7. Kachchh	22.1	34.8
8. Banaskantha	21.4	17.3
9. Sabarkantha	24.4	18.1
10. Mahesana	23.8	16.9
11. Gandhinagar	36.6	78.2
12. Ahmedabad	34.5	36.3
13. Kheda	33.9	27.5
14. Panchmahals	28.5	31.4
15. Vadodara	32.4	39.3
16. Bharuch	32.8	28.3
17. Surat	28.4	32.1
18. Valsad	26.9	29.5
19. Dangs	-	-

From table 4.9 a districtwise variation can be observed, which shows highest percentage of households with toilet facility in case of ~~owned~~ house is obtained by Ahmedabad district (34.5 percent) and lowest by Gandhinagar district (6.6 percent). Whereas in the case of rented house this percentage is highest in Gandhinagar district (78.2 percent) and lowest in Amreli district (14.8 percent). Which leads to say that the availability of toilet facility is highly enjoyed by ~~the~~ **people** residing in rented houses as compared to owned houses. Especially it has been observed in the case of Gandhinagar district. Only five districts are above the state average (29.1 percent) in case of households lived in their own houses with toilet facility and in the case of household who lived in rented house, only seven districts were above the state average in this state (30.9 percent). Thus above description shows that household^{ers} residing in rented house enjoyed more toilet facility than people in owned ones, except in few districts.

Conclusion

It can be summarised from the above analysis that in Gujarat state quite a good percentage of households have availability of basic amenities. Gujarat ranks fourth as far as household amenities are concerned in India. A good percentage of households were having safe drinking water facility whether the source is located within or outside the premises of the house, which shows a good hygiene in the case of drinking water. Similarly, in case of electricity and toilet facility the percentages favourable towards the high concentration of this amenities, except Dangs district which possess totally rural influence and backwardness and has lack of this facilities adequately. Whereas state capital Gandhinagar is having almost all the facilities both in

rural and urban areas. Thus there is a big range among the two extremes in the district. The developed districts with high organisation enjoys these facilities more as compared to backward and agricultural dominating districts. To conclude it can be said that the Gujarat state with regional disparities has satisfactory conditions regarding three basic communities viz toilet, drinking water and electricity; as housing condition in terms of basic amenities shows the quality of housing.

CHAPTER - 5

ROOM DENSITY

One of the measures of finding out about the quality of housing is to see the level of crowding in the existing housing stock. The present chapter deals with the density of persons per room, and mainly shows the congestion differentials existing in total, rural and urban areas separately with district wise variation. The density of house is one of the important component of overall housing condition, which can be identified by the number of members and number of living rooms. Thus it not only brings out the adequacy of the existing housing stock, but also indirectly indicates the purchasing power of the people, that is, what type of housing the head of the household can afford.

Density can be defined as number of persons per room. Density helps to measure the level of crowding or congestion in a house. When number of members are exceeding the number of living rooms then it is considered as congested condition and when number of living rooms are exceeding the number of members then there is less congestion. The level of living depends on the number of rooms and number of members in the house. The highest the ^{number of} /persons and lesser the rooms the level of living will be low and vice-versa.

Congestion is also measured with the help of privacy. Privacy is measured in two ways when there is less ^{number of} /couples and more rooms then it is considered as providing adequate privacy whereas when there are more couples and less rooms then less privacy is provided.

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Table No.5.1

Percentage of households by number of persons per room -1981

State/District	Total					Rural					Urban				
	1	1-2	2-3	3-4	4+	1	1-2	2-3	3-4	4+	1	1-2	2-3	3-4	4+
Gujarat	2.9	22.8	16.3	24.1	32.1	2.2	20.5	15.8	25.1	35.5	4.4	30.6	17.4	22.8	24.8
1. Jamnagar	1.9	22.1	16.2	29.2	30.5	1.6	17.4	15.2	30.9	35.4	3.2	29.4	17.8	26.5	23.1
2. Rajkot	1.4	20.8	16.4	29.7	31.8	0.9	18.3	15.4	31.9	33.5	2.0	24.0	17.6	26.7	29.6
3. Surendernagar	1.6	19.6	13.2	26.4	39.2	0.9	16.9	12.0	27.3	42.9	3.1	25.9	15.8	14.5	30.7
4. Bhavnagar	1.5	19.8	13.6	27.1	37.1	0.7	16.1	11.9	29.2	42.1	3.1	26.6	16.8	25.7	27.7
5. Amreli	1.2	18.3	14.2	28.9	37.4	0.8	17.1	13.8	29.3	39.1	2.8	22.7	15.8	27.4	31.3
6. Junagadh	1.1	19.1	14.1	27.1	37.7	0.7	16.6	14.4	27.8	40.5	2.0	24.4	16.2	25.8	31.6
7. Kachchh	6.7	31.7	17.2	22.5	21.9	6.5	30.1	17.5	22.6	23.3	1.3	36.4	16.4	22.0	17.9
8. Banaskantha	0.9	14.4	11.9	20.8	51.9	0.6	13.0	11.5	20.5	54.4	3.8	28.1	16.4	23.3	28.5
9. Sabarkantha	2.1	22.1	15.6	26.9	31.6	2.6	21.5	15.3	27.4	33.2	6.1	35.7	17.4	22.7	18.1
10. Mahesana	4.2	26.4	20.0	23.8	25.5	3.6	24.3	20.1	24.4	27.5	6.4	34.6	19.8	21.3	17.9
11. Gandhinagar	5.3	31.8	22.1	24.7	16.1	5.2	29.3	22.0	25.9	17.5	5.6	39.8	22.3	20.7	11.6
12. Ahmedabad	3.5	28.7	16.4	22.9	28.5	1.8	21.2	15.3	25.7	35.9	4.1	31.7	16.8	21.8	25.6
13. Kheda	4.2	27.5	17.5	24.9	25.9	3.3	22.2	17.4	26.0	28.0	7.7	36.3	17.6	20.8	17.6
14. Panchmahals	2.1	18.6	13.7	23.0	42.6	1.4	16.3	13.1	23.3	45.9	7.5	35.1	18.4	20.1	18.0
15. Vadodara	3.8	27.6	17.6	23.3	27.7	2.5	22.0	16.8	25.4	33.2	5.7	36.1	18.8	20.2	19.2
16. Bharuch	4.4	28.5	18.6	25.2	23.3	3.8	27.2	18.1	26.2	23.8	6.9	33.5	16.9	21.3	21.4
17. Surat	2.5	22.5	17.3	24.5	33.2	1.8	19.3	17.3	26.1	35.4	3.5	26.8	17.2	22.2	30.3
18. Valsad	2.8	21.4	16.2	24.6	35.0	1.9	18.7	15.8	25.4	38.2	5.8	30.9	17.6	21.8	23.1
19. Dangs	3.1	20.8	20.9	21.5	27.6	3.1	20.8	20.9	27.5	27.6	-	-	-	-	-

However, this indicator has several drawbacks. Firstly varandas, porches and other outdoor spaces are not counted which are often used for living purposes. Secondly, without making the size of a room comparable, this indicator may not reflect the reality properly. Thirdly, under certain climatic conditions, high density might be acceptable and finally the concept of privacy does not take the same meaning in rural areas as in developed western societies.

Thus there are faults in this indicator. The trend of developed countries and the more developed of the developing countries shows a reduction of overcrowded housing, but in the less developed of the developing countries, the trend is reverse.¹

Overcrowding also promotes the contagious diseases and epidemics if the amenities available are not sufficient or upto a certain minimum standard. The greater the crowding the more is the pressure on basic amenities, and unless the amenities available are excellent, the pressure is even more.

This chapter analyse the level of overcrowding using 1981 census data of household table part A(i) considering the number of persons in a room.

5.1 Distribution of households by number of persons per room

In this section an attempt is made to analyse the number of persons per room in the districts of Gujarat. For the analysis the

1. United Nations census for housing, building and planning of the Department of Economic and Social Affairs, Review of human settlement. A support paper for Habitant United Nations Conference on human settlements', 1976, p.94.

number of persons living in room are categorised as follows :

- (i) less than one person per room
- (ii) more than one but less than two persons per room
- (iii) more than two but less than three persons per room
- (iv) more than three but less than four persons per room
- (v) Four or more persons per room

5.1.1 Less than one person per room :

From the above categories, it is clear that 'less than one person per room.' is considered to be the most comfortable condition as far as the availability of rooms and number of living members are considered.

In Gujarat state as a whole, with the consideration of total population, there were 2.9 percent of households residing in less than one person per room, whereas in case of rural area it is 2.1 percent and it is 4.4 percent in urban areas.

Considering the interdistrict variation in case of total population one can see that it was highest in district Kachchh (6.7 percent) and lowest in Banaskantha (0.9 percent). Which shows that Banaskantha has the worst housing conditions in terms of number of persons per room.....

Moreover the facilities in the districts are very less as the district has 81.9 percent of households with non-availability of electricity. Not only this district also has highest percent access to unprotected water supply (51.9 percent) outside the premises and also has the highest percentage with non-availability of toilet facility (61.3 percent). Thus as a whole the district has minimum basic amenities which leads to say that households residing in this districts are leading a simple life without any proper facilities and their level of living is very low, as the number of persons per room is highest in

four and above persons per room.

In contrast district Kachchh has the highest percentage of households staying in less than one person per room (6.7 percent). In other words, it has the least congestion. Further 1.5 percent of households in this district have one person per six rooms. There are eight districts above the state average (2.9 percent) and Kachchh among them is the least congested as per 1981 census. There has a wide divergence among average housing conditions obtained in this district is due to geological factors. The Rann of Kachchh is peculiar tract of territory described as 'a space without a counterpart in the globe'.²

In case of rural areas the percentage of households with less than one person per room shows the same pattern as in case of total population with highest percentage in Kachchh (6.5 percent) and lowest in Banaskantha (0.6 percent). The reasons are already described in previous sections that Kachchh a developed district is least congested at all and in contrast Banaskantha had the highest degree of congestion in rural areas also. As it can be clearly seen from fig 5.1 and 5.2 that districts located in central and north eastern part are least congested, thus better conditions of living is observed in these districts.

2. Gazetteer of India, Gujarat State Gazetteer, Kachchh district, 1981, pp.3-5.

PERCENTAGE DISTRIBUTION OF TOTAL HOUSEHOLDS BY NUMBER OF PERSONS PER ROOM
1981

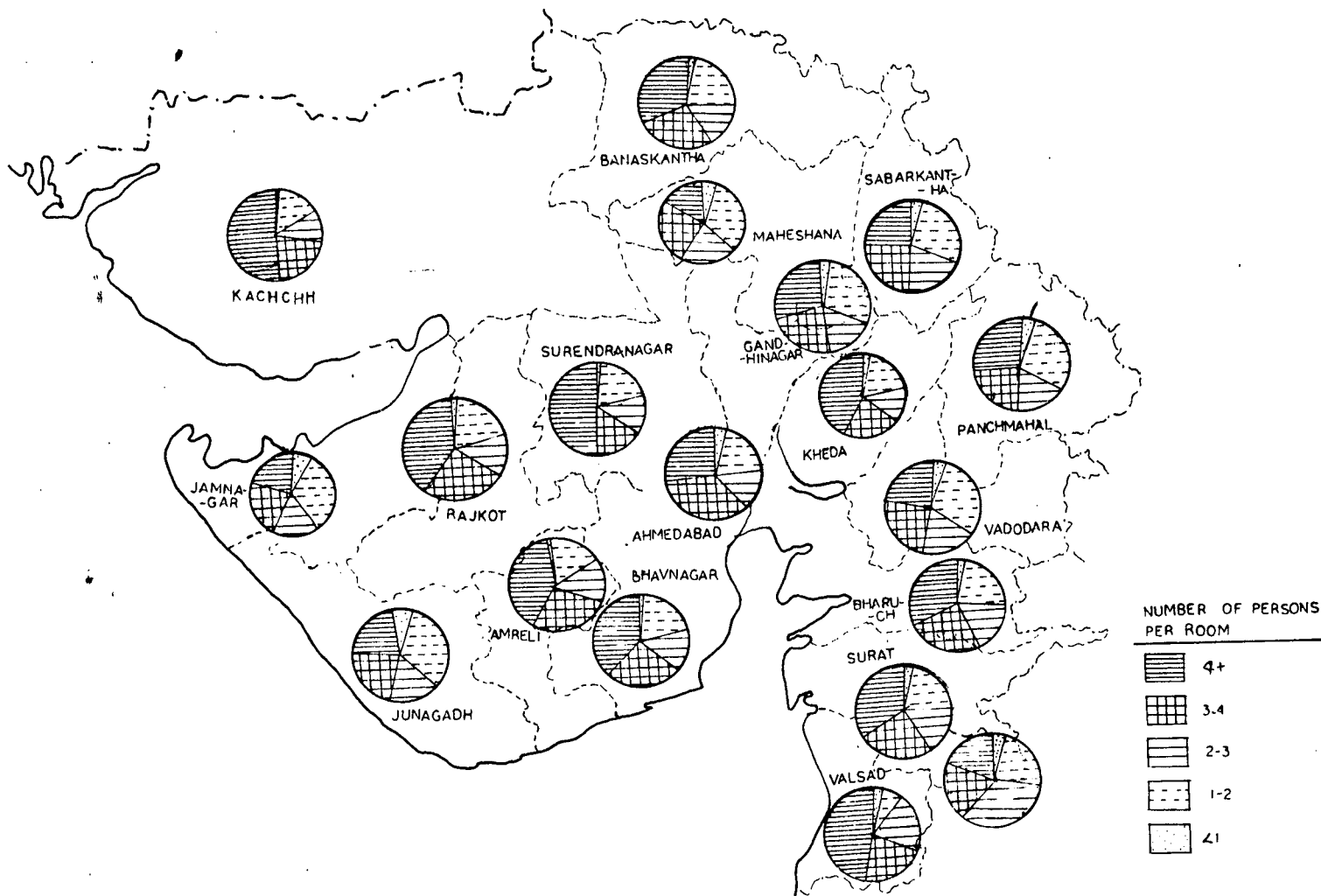


Fig 5.1

PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLDS BY NUMBER OF PERSONS PER ROOM
1981

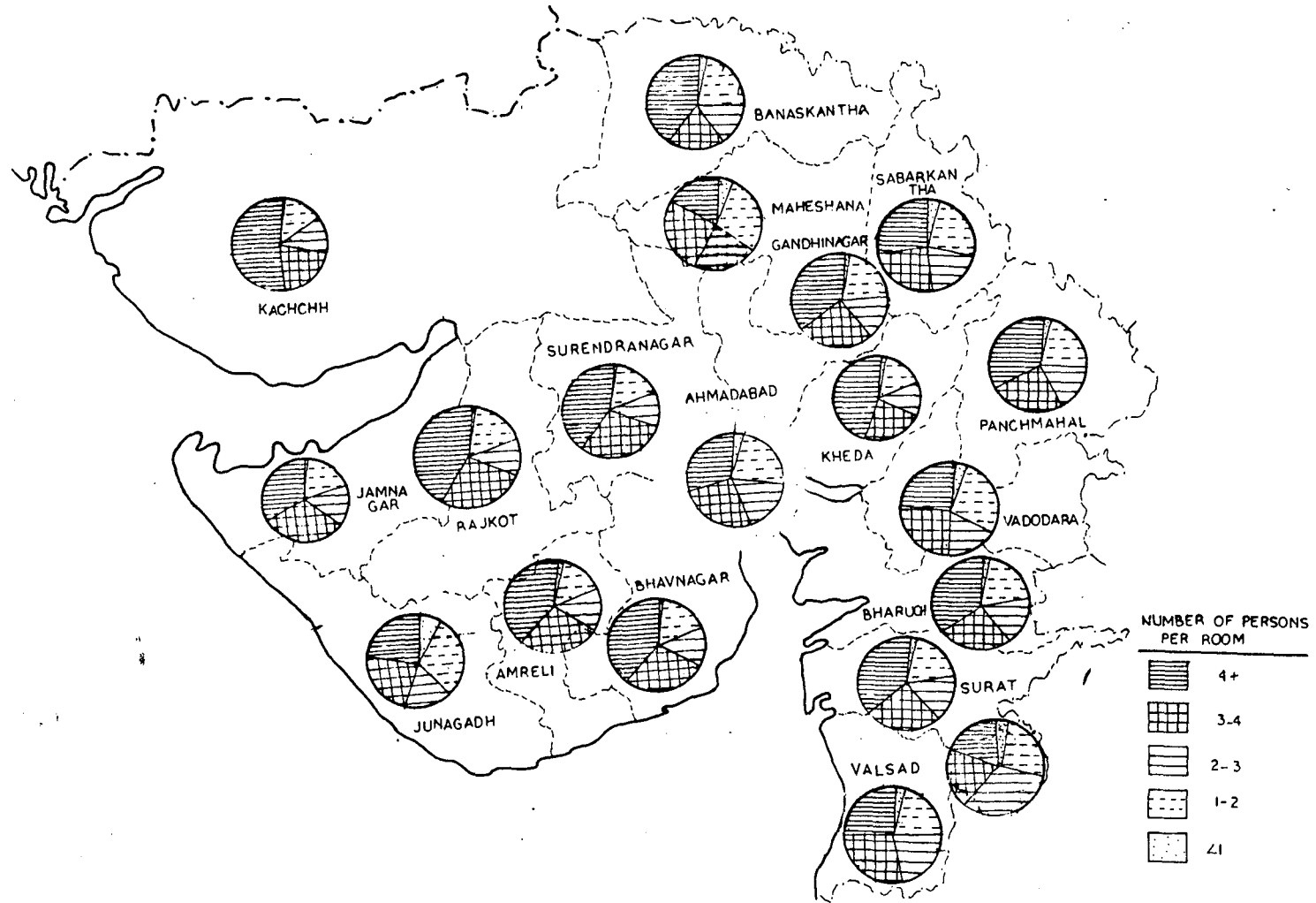


Fig 5.2

Lastly in case of urban areas the percentage distribution of households having less than one person per room is highest in Kheda (7.7 percent) and lowest in Junagadh (2 percent). In urban areas the degree of congestion is always high due to shortage of houses.

Kheda district with 20.1 percent of population is situated in central Gujarat and surrounded by almost developed districts. This district is one among the prosperous districts of Gujarat with least congestion in urban areas. The climatic conditions on the whole is temperate and rain fall is moderate. In comparison to most of other districts of the state, the congestion appears to be less in Kheda. This will be evident from the fact that as per 1981 census, the state average of persons per room was (12.4 percent), while that for district Kheda it was (7.7 percent). This district as already mentioned had adequate facilities, as households attains 71.8 percent of electricity facility, 57.4 percent of protected water supply within premises and 60.5 percent of households with toilet facility leads to say that level of congestion is very low in this district as 1.7 percent of households have more than six rooms with only one member. Which shows that the level of living is quite good in this district due to least congestion.

In contrast, Junagadh district had the least percentage of households with less than one person per room. As the district had 30.5 percent of urban population with second highest number of towns. (22). The district is highly urbanised with 74.1 percent of households in pucca type houses. The district has adequate facilities of basic amenities and housing conditions.

of people depend on economic and social development. Housing facilities in the district appear to be on the whole inadequate.

Overall it can be said from above description that percentage of households with less than one person per room is highest in Banaskantha, which shows a highest level of congestion and low standard of living in the districts in contrast to Kheda and Kachchh with satisfactory condition.

5.1.2 Less than two persons but more than one person per room:

In case of households having less than two persons but more than one person, as a whole for Gujarat state there were 22.7 percent of households under this category and it was 20.5 percent in rural and 30.6 percent of households in urban areas. The proportion of households in this category was quite high in urban areas as compared to rural areas.

Table 5.1 reveals the districtwise variation, where Gandhinagar had the highest percentage of households (31.8 percent). In this category Banaskantha showed lowest percentage (14.4 percent). There are eight districts above the state average (22.7 percent).

While analysing the rural areas falling under this category the percentage is highest in Kachchh district ((30.1 percent) and lowest in Banaskantha (13.1 percent). As it has already described that these two districts has a vast diversity by the level of congestion. Eventhough 30.1 percent of the households have more than one but less than two rooms in Kachchh, but still this district has satisfactory conditions as this district has less

percentage of households in other categories. On the other hand Banaskantha has the reverse situation with lowest percentage of households in this category, which in turn reveals a higher degree of congestion in this district. Altogether eight districts ranks above the state average (20.5 percent). Fig 5.2 reveals the clear picture, where north eastern and south eastern districts had high concentration of households under this category.

Table 5.1 further highlights the level of congestion in urban areas, where Gandhinagar showed 39.8 percent of households coming under this category. It is lowest in Amreli (22.7 percent). Gandhinagar being a state capital has all type of infrastructural facilities and ^{it} gets almost all priorities. As can be seen from table 5.1 where it shows the least congestion in this district. Thus the district has a satisfactory condition. But in case of Amreli the percentage is lowest (22.7 percent). The district has 20.4 percent of urban population.³ The greater part of the district is plain without any trees except those raised along the roads and near wells or along walls. The forest covering major portion of this hilly areas is part of a famous Gir-forest. The process of urbanisation has not gone very rapidly.⁴ Thus the non-satisfactory housing facilities ~~are~~ there in this district. Thus there is congestion but not high. There are ten districts coming above state average (30.6 percent), which leads to say that more than half of the district possessed less than two but more than one person per room in case of urban areas. Thus the level of congestion is satisfactory not severe.

3. Census of India, Gujarat, District Census Hand Book, Amreli, 1981, p.1.

4. Ibid, pp. 4-6.

5.1.3 Less than three but more than two persons per room:

The percentage of households residing in this category shows an average condition of congestion. The level of congestion is fair in this district as a whole there were 6.3 percent of households residing in less than three but more than two persons per room in Gujarat state in case of total population and reasonable percentage of households in rural and urban areas viz 15.8 percent in rural and 17.4 percent in urban areas. Thus the degree of congestion is satisfactory as far as state as a whole is considered in this category.

While considering the district-wise variation it is observed that percentage of households under this category was highest in Gandhinagar (22.1 percent) and lowest in Banaskantha (11.9 percent). In case of total population (Refer table 5.1).

The overall condition of households coming under this category shows a satisfactory condition in terms of degree of congestion. The households residing in the state capital enjoys almost all the facilities as already mentioned and the degree of urbanisation is also high with high income per capita in the districts. Thus there is a satisfactory housing conditions and the degree of congestion is not severe but not adequate also, as being an urbanised capital district it is highly influenced by the migrants due to its industrial, economical and social development. Thus the households even though has good level of living with high income per capita has to stay in the range of more than one but less than three persons per room, mainly due to housing shortage.

In contrast, Banaskantha district has the lowest percentage of households residing in this category which is evident from earlier discussion and also from table 5.1 and more clearly from fig 5.1. This district has the highest degree of congestion as compared to other districts due to the fact that, district is least urbanised with highest number of rural population (8.6 percent) ~~with~~ the second lowest number of factories (40)⁵. Moreover this district is not industrially advanced. There is less degree of urbanisation, thus the district is not facilitated with all basic amenities sufficiently. So congestion is higher with unsatisfactory housing conditions. Altogether there are ten districts above it (16.3 percent).

Coming to rural areas, where regional diversity is much clear from fig 5.2, which shows that the percentage of households in this category is same as in the case of total areas, as it is higher in Gandhinagar (22 percent) and lower in Banaskantha (11.5 percent). This is due to the fact that the percentage of rural population to the total population is much higher as compared to urban population. Thus the rural influence is more in any district as compared to urban. That is why the rural population in turn affected the total population which causes the same picture in these two cases. The reason being already discussed regarding this in previous paras.

In case of urban areas the situation is different, as it can be seen from the table 5.1, that the percentage of households belongs to this category is highest in Gandhinagar (22.7 percent) and lowest in Sabarkantha (15.8 percent).

5. Census of India, Gujarat, District Census Hand Book, Banaskantha, 1981, pp.1-2.

As already explained the description regarding Gandhinagar which effected the satisfactory condition in urban areas also, whereas in case of Surendernagar the percentage is lowest in urban areas with average number of persons per room.

The district with its physiographic surroundings and a commanding position on the national highway, has certain natural advantages for the development of its economy. The housing conditions in the district has wide disparity which mainly depends on nature of occupation and caste. The average number of person per household and per room are identical but as a whole the condition of housing is satisfactory.

5.1.4 Less than four but more than three persons per room

For the state as a whole, in case of total population there were 24.1 percent of households lived in this category, whereas in urban areas there were 22.8 percent of households and in rural areas there were 25.1 percent of households under this category, thus overall picture of state can be seen from table 5.1.

While considering the interdistrict variation it has been observed that district Rajkot had the highest percentage of households lived in more than three but less than four persons per room (29.7 percent) and Banaskantha had lowest percentage (20.8 percent). Thus the range is not much in this category, even though Banaskantha had the lowest percentage of households in this category, yet it had the highest degree of congestion as compared to other districts of Gujarat as it had inadequate facilities with least urban population. The housing conditions in the district were in all types of categories, which shows highest congestion and worst situation.

In case of Rajkot, as the percentage of households in this category is high it can be said that this district also has high degree of congestion and compactness.

The process of urbanisation has not been rapid and the district continues even today dominated by agriculture, as 90 percent of households are engaged in agricultural activities as either cultivators or agricultural labourers. The type of house built in the district vary with the locality and the stage of development and culture of the community to which the inhabitants belong. Thus even though as a whole district has adequate facilities of basic amenities with good percentage of pucca houses, but still due to low per capita income and housing shortage, the level of congestion is high.

Whereas in case of rural areas the condition prevailing with more than three persons but less than four persons per room in the district is same, as the rural influence mainly causes the same condition for the total population also. Which can also be observed from fig 5.1 and 5.2 that, northern and south eastern district has high concentration of high congestion category.

In case of urban areas the condition is different and urban influences have not much affected the total area as compared to rural areas because of high rural population. The percentage of households is highest in Amreli (27.4 percent) and lowest in Vadodara (20.2 percent), which shows that the level of congestion is high for all the urban areas as it can be seen that the range among two extremes is not much. So the prevailing conditions in case of lowest and highest percentage of households in this category is more or less same. Among the areas (fig 5.3) the centrally located and south western districts

have relatively least congestion..

In case of Vadodara district, the degree of congestion is high, as indicated in the increased demand of houses by the persons concentrated which is mainly due to industrial and economic growth of the district. Thus, although the district has higher percentage of pucca houses with adequate basic amenities and better economic conditions, still due to shortage of houses and high degree of urbanisation the district acquire higher level of congestion but not very severe.

Thus as a whole it can be said that the percentage of households living in more than three but less than four persons per room was high in most of the districts. Altogether there were fifteen districts above the state average (25.1 percent) in case of rural areas, whereas in case of urban areas were seven districts above the state average (22.8 percent). Which reveals that in case of urban areas the degree of congestion is not very acute as compared to rural areas. Which can also be observed from fig 5.2 and 5.3, where districts located in northern and south eastern part acquire high percentage of households under this category in case of rural areas, which in turn shows high degree of congestion. Whereas in case of urban areas, mostly the districts located in North eastern and south western part have high percentage of households in this category.

5.1.5 More than four persons per room:

This is the last category with highest level of congestion. In the state as a whole the percentage of households residing with four and above persons per room was 32.1 percent , in case of total population. Whereas in case of rural households it was 35.5 percent and in case of urban households it was 24.8 percent.

Considering the interdistrict variation as a whole for total population, the percentage of households with four and above persons per room was highest in Banaskantha (51.9 percent) and lowest in Gandhinagar (16.1 percent). This is obvious as these districts were highly influenced by the level of congestion, in two extremes with highest and lowest levels according to the type of the category by number of persons per room.

As already mentioned that Banaskantha had least percentage of households distributed in case of less than one person per room and it was same for the other categories also, thus it is obvious that this district in turn will acquire higher percentage of household with four and above persons per room. Which leads to say that, district Banaskantha, is the highly congested district with worst housing conditions.

Whereas Gandhinagar, as already explained that it has a state capital influence and subsequently all type of adequate facilities will be available in this district. As a result, the problem of housing shortage is not acute as compared to other districts, because of the existing number of housing schemes in the district.

In case of rural areas also the situation is same with highest percentage of households in Banaskantha (54.4 percent) and lowest in Gandhinagar (17.5 percent). The reason being evident from the earlier discussion is that, the rural areas had high congestion level with more than four persons per room in almost all the districts and highest congestion is in Banaskantha which is worst, and lowest in Gandhinagar which is satisfactory as compared to other districts.

In case of urban areas the district Junagadh possessed highest percentage of households with more than four persons per room category (31.6 percent) and Gandhinagar had the lowest percentage (11.6), which is evident from earlier discussions as Junagadh had the least percentage of households in less than one person per room, thus it is obvious that the same district will have highest percentage with more than four persons per room.

Whereas Gandhinagar had the lowest percentage, as in this district all the amenities were available in good percentage of pucca houses in urban areas. This is because government provides all the facilities to reduce housing shortage in the state capital. The economic condition of people are such that there are more than four persons per room because of housing shortage. In case of rural areas, altogether there were eight districts above the state average (35.5 percent) and in urban areas also there were eight districts above the state average (24.8 percent). Fig 5.2 and 5.3 depicts that most of the districts in south eastern and northern part were thickly congested and few districts in south western part had high level of congestion but not severe. Whereas, all centrally located districts were least congested. Which leads to say that mostly the backward districts with lack of adequate facilities had high degree of congestion level.

Conclusion

The degree of congestion in a house reveals that the quality of housing condition in overall Gujarat is satisfactory and not very acute, as the state ranks highest with respect to housing amenities and conditions.

PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS BY NUMBER OF PERSONS PER ROOM
1981

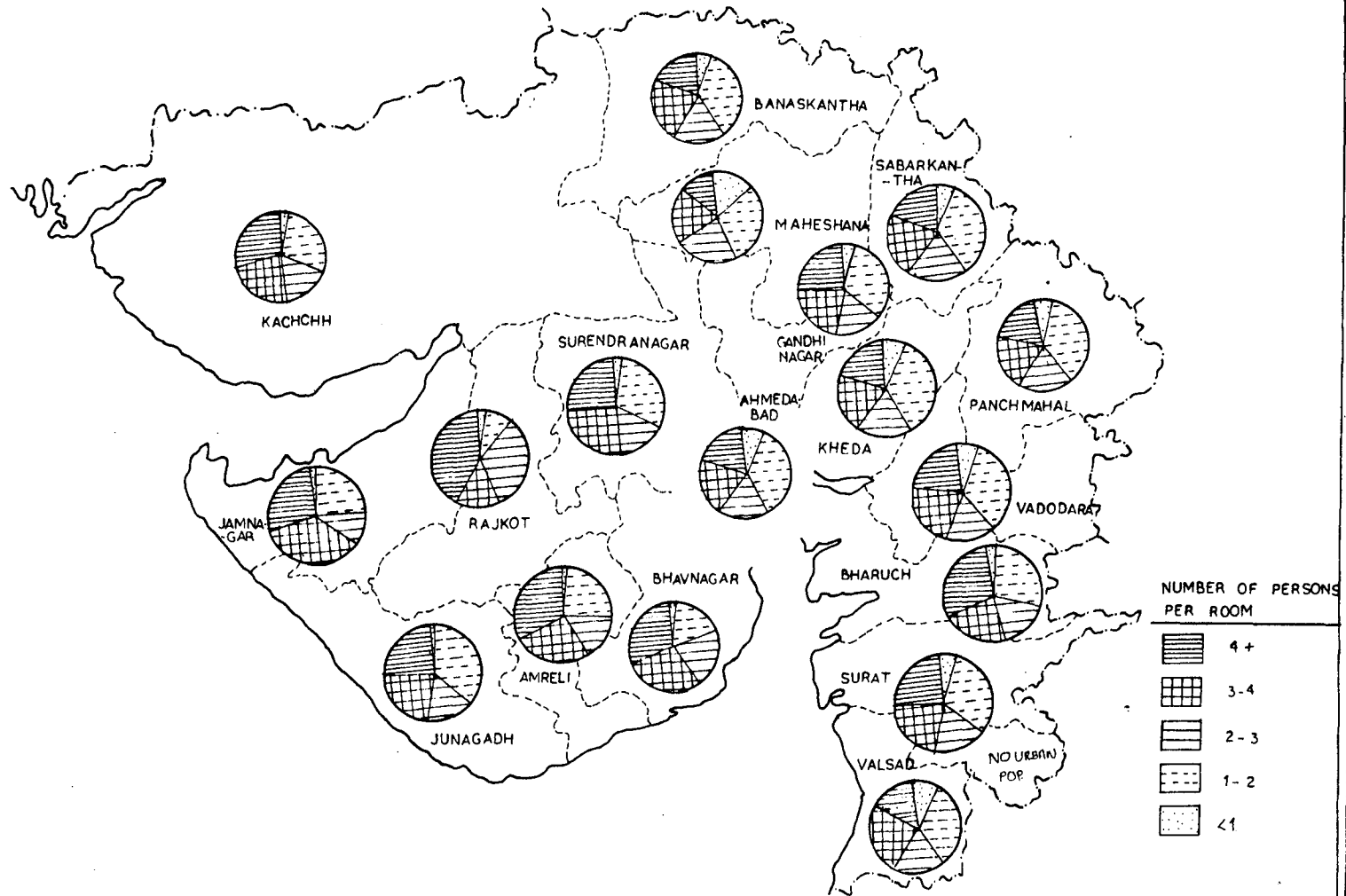


Fig 5.3

The physiography and climate play a role in level of crowding. The level of urbanisation also plays a big role in level of crowding. However, in these urban areas the difference between the best situation and the worst situation is not much, showing the existence of both crowding and space for another class of households simultaneously.

As the state is industrially advanced with good economic conditions as well as high level of urbanisation, thus people residing in the state can afford a reasonable quality of housing according to their economic conditions. The districtwise variation shows that the percentage of households with respective number of persons per room has vast diversity from lower to higher percentage.

After considering all the five categories together with districtwise variation, it is noticed that the percentage of households in category of one or more but less than two persons in a room was high for all the districts. On an average in each district nearly 40 percent of the households are coming under this category, thus the maximum percentage of households in rural or urban areas fall in the category of one or more but less than two persons per room.

Gandhinagar, the state capital district with all the housing amenities and highest percentage of pucca houses enjoys all the facilities, acquired least congestion level. Which is mainly due to several existing number of housing schemes by the government to overcome the housing problem. On the other hand, Banaskantha attained the highest degree of congestion due to the fact that the district is least urbanised with basic amenities and has backward nature. Thus the level of congestion is severe in this district.

The quality of housing conditions , thus can be judged wiith the level of density and number of persons per room, but density is not only the criteria to judge the level of housing conditions. Even though density plays an important role but in actual terms it has not attained much priority.

Basic amenities in a house are much more important because if the amenities are not proper it may lead to epidemic diseases. Further privacy is also and important aspect apart from type of structure and infrastructural facilities, as lack of privacy leads to mental tensions or psychological pressure. Thus all the aspects are equally important to judge the quality of housing, but in the present study privacy is not taken due to certain drawbacks. As the result only the degree of congestion in terms of number of persons per room is considered in this context.

SUMMARY AND CONCLUSION

Housing conditions are recognised as an important indicator of the level of living. Housing conditions in a region, reflects the socio-economic conditions of its inhabitants as well as the welfare of the society. Housing occupies the predominant place in human life values, along with food and clothing. Housing plays an important role in the life of each individual. Its physical quality may facilitate or restrict every day activities and may even effect physical and mental health. Its location may determine social and economic opportunities. Being an indicator of the level of living, quality of housing conditions and availability of household amenities is considered as the main thrust of this study.

For the purpose of the present research, a districtwise comparative study of urban and rural areas in Gujarat has been undertaken. During the course of this study various types of analysis have been performed to bring out both qualitative and quantitative aspects of housing.

"Household" is taken as a unit for the analysis of various housing characteristics. In the present study the first indicator i.e. (1) structure of the house types is grouped into four categories such as Kutcha, Semi-pucca I, Semi-pucca II and Pucca based on durability of material used for wall, roof and floor. (2) Further the basic household amenities were also considered as other indicators to see level of living. They are : (a) drinking water by their source and location, (b) Availability of electricity and (c) Toilet facilities in urban areas.

(3) Lastly the room density is also analysed in terms of number of persons per room to see the level of congestion in the house.

It will be of interest to recapitulate the salient points discussed in the preceding chapters, from the foregoing study and analysis.

The analysis of the data on housing conditions and the amenities in the earlier chapters have been brought out in three parts, which several interdistrict differences in terms of rural and urban areas.

Firstly, the structural quality of housing was analysed, as it is the important component of overall housing conditions. The building material used in the construction of human dwellings helps to identify the structural quality and are a fair index of the geographical and natural resources as well as the economic prosperity of the area. It has been found out that a substantial proportion of households in each district lived in Semi-pucca type of houses (68 percent). Nearly 25 percent of the households live in Pucca houses and it is highest in Ahmedabad district. Only 8 percent of the households are Kutcha houses and this percentage is highest in the Dangs district. The quality of housing in respect of the nature of building material represent the satisfactory picture in most of the districts. But only few districts enjoyed the better quality of housing in respect of durability of building material and these are mostly in central northern and western part of Gujarat.

Secondly, the availability of basic amenities to the households viz, drinking water, toilet and electricity facility for the all districts was considered. It was found from the analysis that in Gujarat state, quite a good percentage of households have availability of these basic amenities. A good percentage of households were having safe drinking water facility whether the source is located within or outside the premises of the houses. Similarly in case of availability of electricity and toilet facilities the percentage of households with this facility was favourable in most of the districts, namely, Gandhinagar, Ahmedabad, Rajkot, Junagadh, Jamnagar, Amreli, Surat, Kachchh, Surendernagar, Vadodara and Sabarkantha. Whereas in Dangs district the proportion ^{with} of the households/the availability of these facilities was very less because of its rural influences.

Thirdly, it was highlighted to examine the level of crowding in the present study with respect to the density of persons per room and the congestion differentials in total, rural and urban areas by districtwise variation. It has been found that the percentage of households in the category of More than four persons per room, the percentage of households is highest in Banaskantha district (51.9) followed by Panchmahals with 42.6 percent of households whereas, it was lowest in the capital district, Gandhinagar (16.1 percent). It was further found that in Banaskantha there was highest degree of congestion whereas in Gandhinagar the congestion is the lowest. This is also true in the case of rural and urban areas.

It has been found that there is a distinct relationship between the distribution of indicators. The districts which do not have one amenity, is also found to have no other amenities. It is noticed that the districts - Dangs, Valsad, Bharuch and Panchmahals have a high percentage of Kutcha and Semi-pucca I house types with more congestion and lack of adequate availability of basic amenities. In contrast, the developed districts such as Gandhinagar, Ahmedabad, Mahesana, Junagadh, Jamnagar, Rajkot and Surendernagar, eventhough had large percentage of Kutcha houses in rural areas, but also had a fairly high percentage of Pucca houses and are better served by amenities. These also had a sizable proportion of households which can afford larger houses.

It was observed that a pattern of regionalisation among the districts in terms of quality of housing. The districts such as Ahmedabad, Gandhinagar, Junagadh, Rajkot, Jamnagar, Surendernagar and Mahesana are considered as districts with better quality of housing. Whereas Bhavnagar, Kachchh, Amreli, Vadodar, Kheda, Bharuch, Valsad, Sabarkantha and Surat fall into the middle category and Panchmahals, Banaskantha have low quality of housing. Lastly, Dangs being a backward district, it has the worst conditions of housing.

The regionalisation coincides with the level of urbanisation and industrialization, as well as climate and topographical factors. The centrally located and south western coastal districts are more developed. The district covered with forest or plateau region where tribal population dominates are backward in all respects, which falls in south western part of Gujarat. The districts which are

developed are mainly due to deliberate government intervention in industrialization and economical as well as social development.

This study identified that Dangs, Banaskantha and Panchmahals are less developed districts, whereas Ahmedabad, Gandhinagar, Junagadh, Rajkot and Amreli are developed districts. Among which Dangs is the least developed, backward district with no urban influence and possess highest percentage of Kutcha houses with lack of minimum basic amenities. Thus the districts shows the low economic and social development with worst housing conditions and poor standards of living.

On the other hand, state capital district Gandhinagar is the most developed one, with highest percentage of Pucca houses with adequate availability of basic amenities. Thus the district is both economically and socially as well as industrially developed district with availability of all facilities and gets special priority from the State Government.

From the study it is noticed that in most of the centrally located and coastal districts the condition of housing is much better as compared to south eastern districts where condition of housing is poor.

The analysis shows that the conditions of housing and amenities available in Gujarat are adequate in most of the districts and in few it is unevenly distributed, especially in rural areas. The rural urban divide is very wide with respect to the conditions of housing and the available basic amenities. The rural areas are backward but the urban areas enjoys all the facilities. So considering all these, it can be said that, Gujarat state is one

of the developing states with all types of economical, social and industrial development.

Limitations of the study :

(1) There are no standard definitions for the terms such as Kutcha, Pucca and Semi-pucca. But throughout in the present study tentative definitions with certain norms are used which is almost coinciding with the definitions of National Building Organisation. There is a need for standard definitions for these terms which can be used by all researchers and policy makers.

(2) Census of India, household tables - 1981 does not provide cross classified data for e.g. whether a particular household with water facilities has electricity facilities are not. Since these type of cross-classified data is not available, it can be considered as a major limitation of the study. Due to this lacuna many of the statistical techniques could not had been used in this study.

(3) The data for this study were drawn only from the census of India, 1981. A comparative study for a decade like 1971-81 could have given better idea about the trend and changes over a period. However, that work needs more analysis and lot of additional efforts. Such^a study can be carried out at a higher level.

(4) One of the ideas in undertaking this study, was to develop an "index" reflecting on the levels of living or quality of life, particularly to estimate the population below poverty line through housing and available basic amenities. It has however, not been feasible to work out such a scheme with the present study. This

requires further analysis of the data and also appropriate method to composite the information on different indicators.

Inspite of all these limitations, the indicators choosen for the present study show a fair level of housing conditions in Gujarat. But further research is also required in this field to evolve a quality of housing index, which will incorporate all the information on housing quality and household amenities. Thus, this will be a better yardstick to measure the quality of life of the population in a region.

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APPENDIX-I

CENSUS DEFINITIONS

The following census definitions are used in the present study:

(1) BUILDING:

A building is generally a single structure on the ground. It can also be made up of more than one component unit which are used or likely to be used as dwellings i.e. residences or establishments such as shops, business houses, offices, factories, worksheds, schools, places of entertainment, places of workship, godowns, stores, etc. Building has a component unit thus it is possible that building can be used for a combination of purposes such as shop-cum-residence, workshops-cum-residence, office-cum-residence etc.¹

(2) CENSUS HOUSE:

A census can be defined as a building or a part of building having a separate main entrance from the road or common courtyard or staircase, etc. which is used or recognised as a separate unit. It may be occupied or vacant or can be used for either residential or non-residential purpose or both.²

(Contd.....)

1. Household tables series-5: Gujarat census of India, controller of publication, Delhi 1981, p.7.

2. Ibid. p.7.

(3) **ROOM:**

A room can be defined as a place, which is used in common for sitting, dinning, sleeping, storing and cooking etc. A room should have four walls with a door way with a roof over head and should be wide and long enough for a person to sleep in it. An unenclosed verandah, store, kitchen, garage, cattleshed and laterine and the room in which a household industry such as a handloom is located, which are not normally usable for living or sleeping are excluded from the definition of a living room for the purpose of our study. It should have a length of not more than 2 m&ters and breath of at least 1.5 meters and 2 meters in height.³

(4) **HOUSEHOLD:**

A household are considered as a group of persons who commonly live together and take their meals from a common kitchen unless the exigencies of work prevented any of them from doing so. There may be a household of persons related by blood or a household of unrelated persons or having a mix of both. Unrelated household includes the households residing in boarding houses, messes, hostels, residential hotels, rescue homes, jails, ashrams etc. All these are called as 'Institutional households'. The household may be one member, 2 member household or more member household. Thus all these types are regarded as a 'household' according to census 1981. Whereas if a group of persons who are unrelated to each other live in a census house but

(Contd.....)

do not have their meals from the common kitchen, does not come under 'Institutional households'. For this each such person should be treated as a separate household. Thus important link is finding out whether there is a households or not is a common kitchen.⁴

4. Census of India, series-5 Gujarat 1981 (Household tables) p.7.

APPENDIX - II

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परिवार सारणी-1 भाग-क : आबाद जनगणना मकानों की छत, दीवार और फर्श में लगी प्रमुख सामग्री के अनुसार सम्बन्धित परिवारों का वितरण—नगरीय

HH-1 PART-A : DISTRIBUTION OF HOUSEHOLDS BY PREDOMINANT MATERIALS OF ROOF, WALL AND FLOOR OF CENSUS HOUSES OCCUPIED BY THEM--URBAN

		छत की सामग्री Material of Roof							
		घास, पत्ते, सरकंडे, फूस, लकड़ी, मिट्टी, कच्ची ईंट या बांस Grass, Leaves, Reeds, Thatch, Wood, Mud, Unburnt Bricks or Lamboo	वपरैन, स्लेट, पत्थर Tiles, Slate, Shingle	लोहे, जस्ते या अन्य धातु की चादरें Corrugated Iron, Zinc or Other Metal Sheets	ऐम्बेस्टाम, सीमेंट चादरें Asbestos Cement Sheets	ईंट, पत्थर और चूना Brick, Stone and Lime	पत्थर Stone	आर०बी०सी०/आर०सी०सी० कंक्रीट Concrete R.B.C./R.C.C.	अन्य सभी सामग्री और सामग्री नहीं बताई गई All other materials and material not stated
दीवार की सामग्री Material of Wall	कुल परिवार Total Households								
1	2	3	4	5	6	7	8	9	10

गुजरात
Gujarat

- (I) फर्श की सभी सामग्री
(I) All Materials of Floor

सभी सामग्री
All Materials
घास, पत्ते, सरकंडे या बांस
Grass, Leaves, Reeds or Bamboo
मिट्टी
Mud
कच्ची ईंट
Unburnt Bricks
लकड़ी
Wood
पक्की ईंट
Burnt Bricks
जी०आई० या अन्य धातुओं का चादरें
G.I. Sheets or Other Metal Sheets
पत्थर
Stone
सीमेंट कंक्रीट
Cement Concrete
अन्य सभी सामग्री और सामग्री नहीं बताई गई
All other materials and material not stated

टिप्पणी : इस सारणी में संस्थायत और बेघर परिवार सम्मिलित नहीं हैं।
Note : This table excludes institutional and houseless households.

APPENDIX-III

BUILDING MATERIALS UNDER RESPECTIVE CATEGORIES.

(A) WALL MATERIALS:

1. Grass, leaves, reeds or bamboo (A)
2. Mud (B)
3. Unburnt bricks (C)
4. Wood (D)
5. Burnt bricks (E)
6. GI sheets or other metal sheets (F)
7. Stone (G)
8. Cement Concrete (H)

(B) ROOF MATERIALS:

1. Grass, leaves, reeds, thatch, wood, mud, unburnt bricks, or bamboo (a)
2. Tiles, slate, shingle (b)
3. Corrugated iron, zinc or other metal sheets
4. Asbestos, cement sheets (d)
5. Brick, stone and lime (e)
6. Stone (f)
7. Concrete RBC/RCC (g)

(C) FLOOR MATERIALS:

1. Mud (i)
2. Wood/planks (ii)
3. Bamboo or logs (iii)

(Contd.....)

4. Brick, stone and lime (Iv)
5. Cement (v)
6. Mosiac/Tiles (vi)

APPENDIX-IV

COMBINATION OF MATERIALS TO DETERMINE HOUSE TYPE

<u>HOUSE TYPE</u>	<u>MATERIAL OF WALL</u>	<u>MATERIAL OF ROOF</u>	<u>MATERIAL OF FLOOR</u>
1. KUTCHA	A,B	a	I
2. SEMI-PUCCA-I	A,B	c,d	I
	A,B	b,e,f,g	I
	A,B	a	II,III
	A,B	c,d	II,III
	A,B	b,e,f,g	II,III
	A,B	a	IV,V,VI
	A,B	c,d	IV,V,VI
	C,D,F	a	I
	C,D,F	c,d	I
	C,D,F	b,e,f,g	I
	C,D,F	a	II,III
	C,D,F,	a	IV,V,VI
	E,G,H	a	I
	E,G,H	a	II,III
	3. SEMI-PUCCA-II	A,B	b,e,f,g
C,D,F		c,d	II,III
C,D,F		b,e,f,g	II,III
C,D,F		c,d	IV,V,VI
C,D,F		b,e,f,g	IV,V,VI
E,G,H		c,d	I
E,G,H		b,e,f,g	I
E,G,H		c,d	II,III
E,G,H		b,e,f,g	II,III
E,G,H		a	IV,V,VI
E,G,H		c,d	IV,V,VI
4. PUCCA	E,G,H	b,e,f,g	IV,V,VI

**के अकुतार परिवार
OF DRINKING WATER**

**कीने के पानी का साधन
Drinking water source**

हण्ड पम्प/ट्यूबवेल Handpump/Tubewell		नदी/नहर River/Canal		तालाब Tank		अन्य Others	
मकान के अन्दर Within premises	मकान के बाहर Outside premises	मकान के अन्दर Within premises	मकान के बाहर Outside premises	मकान के अन्दर Within premises	मकान के बाहर Outside premises	मकान के अन्दर Within premises	मकान के बाहर Outside premises
8	9	10	11	12	13	14	15

APPENDIX-VI

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परिवार सारणी-6 भाग-क : बिजली और शौचालय सुविधाओं की उपलब्धता और आबाद मकान HH-6 PART-A : HOUSEHOLDS AND POPULATION BY AVAILABILITY OF ELECTRICITY

राज्य/जिला/ जस./सहर/नगर State/District/ U.A./City/Town	आबाद मकान की धारणाधिकार की स्थिति Tenure status of house occupied	परिवारों की कुल संख्या Total number of households	बिजली Electricity			
			उपलब्ध Available		अनुपलब्ध Not available	
			परिवार Households	जनसंख्या Population	परिवार Households	जनसंख्या Population
1	2	3	4	5	6	7

की धारणाधिकार की स्थिति के अनुसार परिवार और जनसंख्या—नगरीय
AND TOILET FACILITIES AND TENURE STATUS OF HOUSE OCCUPIED—URBAN

शौचालय सुविधा Toilet facility					
उपलब्ध Available		अनुपलब्ध Not available		आवास मकान की धारणाधिकार की स्थिति Tenure status of house occupied	राज्य/जिला/ न०स०/महर/नगर State/District/ U.A./City/Town
परिवार Households	जनसंख्या Population	परिवार Households	जनसंख्या Population		
8	9	10	11	2	1

परिवार सारणी-2 : परिवारों के आकार और उनके पास रहे
HH-2 : HOUSEHOLDS BY SIZE OF HOUSEHOLD

राज्य/ जिला/ न०/शहर- State/ District/ U.A./City	ग्राम/ ग्रामीण/ नगरीय Total/ Rural/ Urban	परिवार के सदस्यों की संख्या Number of members in the household	परिवारों की कुल संख्या Total number of households	कोई पृथक कमरा नहीं No exclusive room	परिवारों के पास कमरे Households occupying			
					1 कमरा Room	2 कमरे Rooms	3 कमरे Rooms	4 कमरे Rooms
1	2	3	4	5	6	7	8	9
गुजरात Gujarat	योग TOTAL	योग Total						
		1						
		2						
		3						
		4						
		5						
		6+ (7)						
		अविनिर्दिष्ट Unspecified						
	ग्रामीण RURAL	योग Total						
		1						
		2						
		3						
		4						
		5						
		6+						
		अविनिर्दिष्ट Unspecified						
	नगरीय URBAN	योग Total						
		1						
		2						
		3						
		4						
		5						
		6+						
		अविनिर्दिष्ट Unspecified						

टिप्पणी : 1. 5 से 13 तक के कासमों में बेघर और संस्थागत परिवार सम्मिलित नहीं हैं।

2. इस सारणी में 'कमरे' का अर्थ प्रायः रहने के कमरे से है।

Note : 1. Columns 5 to 13 do not include Houseless and Institutional Households.

2. In this table 'Room' means living room.

**कमरों की संख्या के अनुसार परिवार
AND NUMBER OF ROOMS OCCUPIED**

परिवारों के पास कमरे
Households occupying

3 कमरे Rooms	6 और उससे अधिक कमरे 6 Rooms and above	कमरों की अव्यक्तिगत संख्या Unspecified number of rooms	कमरों की कुल संख्या Total number of rooms	संस्थागत परिवार Institutional households	बेघर परिवार Houseless households	परिवार के सदस्यों की संख्या Number of members in the household	ग्राम/प्राचीन/ नगरीय Total/ Rural/ Urban	राज्य/ जिला/ म.म.०/मह.र. State/ District/ U.A./City
10	11	12	13	14	15	3	2	1
						योग Total	योग TOTAL	राज्य Gujarat
						1		
						2		
						3		
						4		
						5		
						6+		
						अव्यक्तिगत Unspecified		
						योग Total	ग्रामीण RURAL	
						1		
						2		
						3		
						4		
						5		
						6+		
						अव्यक्तिगत Unspecified		
						योग Total	नगरीय URBAN	
						1		
						2		
						3		
						4		
						5		
						6+		
						अव्यक्तिगत Unspecified		

APPENDIX-VIII

ROOM DENSITY

<u>Members</u>	<u>1 Room</u>	<u>2 Rooms</u>	<u>3Rooms</u>	<u>4 Rooms</u>	<u>5 Rooms</u>	<u>6 Rooms</u>
1	a	g	m	s	y	E
2	b	h	n	t	z	F
3	c	i	o	u	A	G
4	d	j	p	v	B	H
5	e	k	q	w	C	I
* 6+	f	l	r	x	D	J

* Considered as 7 on an average.

Density of person per room can be classified as follows in the given five categories:

- (i) Less than one person per room $g+m+n+s+t+u+y+z+A+B+E+F+G+H+I$
- (ii) One or more but less than two persons per room $a+h+i+o+p+q+v+w+x+C+D+J$
- (iii) Two or more but less than three persons per room $b+j+k+r$
- (iv) Three or more but less than four persons per room $c+l$
- (v) Four or more persons per room $d+e+f$