Quality of Housing Stock and Availability of Household Amenities in Madhya Pradesh-1981 A District Level Analysis

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in partial fulfilment of the requirements
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MASTER OF PHILOSOPHY

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CERTIFICATE

This is to certify that the disseration, entitled QUALITY OF HOUSING STOCK AND AVAILABILITY OF HOUSEHOLD AMENITIES IN MADHYA PRADESH - 1981 : A DISTRICT LEVEL ANALYSIS submitted by Mr. STYA PARKASH in fulfilment of six credits out of total requirements of twenty-four credits for the Degree of MASTER OF PHILOSOPHY of the university is his original work according to the best of our knowledge and may be placed before the examiners for evaluation.

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(SATYA PARKASH)

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CHAPTER I

INTRODUCTION

"Housing not only provides shelter for a family but also serves as a centre of its total residential environment. As a focus of economic activity, as a symbol of achievement and social acceptance and as an element of urban growth and income distribution, housing fulfills a social need and satisfies criteria for remunerative urban investment".[1]

"Housing cannot be seen in isolation. It is an integral part of a family's development and when access to housing is possible at righ time it forms a vehicle for changes in attitudes to many aspects of life. A family with a better house is likely to take more interest in the health and education of its members, and will have a larger perspective on its future".[2]

It is through housing that the major life experiences, conventionally associated with occuptional class, are determined housing's relevance for stratification. It is not just an index of achieved life chances but a means by which the inequalities of the occupational structure are transformed in the wider social

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1. Orville F.Grimes Jr. (1976), "Housing for low-income families : Economics and policy in the Developing World",p.3. The Johns Hopkins University Press,Baltimore and London.
2. Dewit Micheal and Schenk Hans (1989), "Shelter for the poor in India : Issues in low cost housing", Manohar Publications 2/6 Ansari Road, Daryaganj, New Delhi-110 002,p.6.

structure.[3]

"Housing is an investment good capable of generating income and influencing the productivity of the occupants at their work, housing is therefore not only a good of development policy but also a tool of this policy".[4]

"Housing encompasses far more than living space and shelter. Its nature and value are determined by the services it offers. These services are varied, including neighbourhood amenities, access to education and health facilities and security, in addition to shelter. Their worth depends upon quality consideration such as design, density, building material, and floor space and an access to employment and other income earning opportunities, public facilitiies, commercial services and market. Next to food, housing is the largest component of the households budget,making up typically 15 to 25 per cent of the total expenditure and in low income bracelets anywhere from 5 to 40 per cent".[5]

H.M.Buskens (1957) highlighted the standards of a good dwelling. "It should guarantee health and security, independence, adequate space for storage, cooking and bathing

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3. Byrne D.S. Harrison S.P., Keithley J and Macarthy P. (1986), "Housing and Health : The relationship between housing condition and the health of council Tenants". Gower Publishing Company Ltd, England. P.31-45.
4. Rodwin Lloyd (1987), "Shelter, Settlement and Development", Allen and Unwin Inc. London. p.1-60.
5. Jakhade V.M. and Shetty S.L. (1974), "Distribution of urban households wealth in India", Economic and Political weekly, vol.9.

etc., and sleeping and contact with social life".6

"Good housing i.e. well planned and well built dwelling, streets and neighbourhood are of inestimable importance for the development of the young child. Slums could well be regarded as the 'democratic version of Hitler's concentration camps', because anyone doomed to live in a slum seldom emerges from it unarmed.[7]

It is not surprising that housing often plays a key role in social conflict, economic organisation and political mobilization. Housing is work, home and politics".[8]

"Housing conditions mean the actual living condition of the people, rather than the mere physcial appearance of the buildings".[9]

Housing at its most basic level, is certainly "shelter" but it is equally clearly much more than that. It is both a physical entity, a social artifacts, an economic good, a capital stock, a status symbol and at times a political "hot potato".

Bourne S.Larry (1981) further defined housing on the basis of physical, social and economic aspects. According to him

(a) it is a physical facility unit or structure, which provides shelter to its occupants, but which also consumes land and

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6. Ettinger Van J. (19609), "Towards a habitable world : Task, Problems and Methods - Acceleration", Elsevier Publication Company, Amsterdom. p. 27-28.
7. Ettinger Van J. (1960), "Towards a habitable world : Task, Problems and Methods - Acceleration", Elsevier Publication Company, Amsterdom. p.27.
8. D.Peter, D.Simon, G.Mark and G.Fred (1985), "Housing, States and Localities", Mathuen and Company Ltd., London and New York. p.11-12.
9. Sen Gupta Aditi (1980-81), "Housing conditions of the people in the Calcutta Metropolitian District", The National Geographical Journal of India, Vol.26-27, 1980-81, Part-1-2, March-June, p.197.

demands the provision of physical services such as water and sewage as well as social services to households;

(b) as an economic good, or commodity, a consumer durable good, which is traded or exchanged in a market and as an investment good which returns equity to its owner;

(c) as a social collective good, as an element in the social fabric and in that society's set of social relations and which is provided to everyone just as it attempts to in education, food and in most cases, health care;

(d) as a package or bundle of services-a view which recognizes that the occupancy of housing involves the consumption of neighbourhood services (parks, schools), a location (accessibility to jobs and amenities) and the proximity of certains types of neighbours (a social environment);

(e) as a sector of economy, a component of fixed capital stock, a means of productivity wealth, and a tool of government in regulating economic growth.[10]

Housing the poor in the developing world is one of the major challenges facing mankind in the last decade of twentieth century. The challenge is particularly acute in urban areas, where population is projected to grow from a total of less than 300 million in 1950 to almost two billion by the turn of this century, more than 50 million every year throughout the 1990s, an

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10. Bourne S.Larry (1981), "The Geography of Housing", Edward Arnold (Publishers) Ltd., 41 Bedford Square, London.p.1-10.

average growth rate of 3.4 per cent per annum.

Currently the major housing problem is the shortage of affordable accomodation for the ubran poor; the low income majority. Over the last three decades, most offical housing programmes have failed to reach considerable portion of this group, especially the households in the lowest 20 to 40 per cent of the population. As Wood field (1989) reports, in low income countries during the early 1980s, 61 additional people were born or nine new households were formed for every new permanent dwelling unit. The situation was also serious in middle income countries where population increased at ten times the rate of new permanent dwelling construction. IMF statistics show that government in developing countries typically spent about 2 per cent of their budget on housing and community services (Woodfield 1989).

"Formal housing is both scarce and expensive relative to wage levels. Thus low income households have found niches for themselves in cheaper altenatives often in single room in central city rented housing. It is estimated that 35 per cent of urban dwellings in Africa are single rooms (UN, 1987). While in some cities the proportion of households living in single rooms rises above 70 per cent (Malperi, Tipple and Willis, 1990; Peil and Sad 1984), others have built houses in Squatter settlement, peripheral or unsued land or found rented rooms in squatter settlement (Amis, 1987). Some households have even found no

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housing at all and resort to sleeping under bridges, in culverts or in central city pavements".[11]

Housing conditions have become significantly worse in most developing countries, this is in direct constrast with the trend in developed countries. The most relevant reasons are the rapid growth of population;the imigration of rural households to the cities and the decline of the rate of increase in the national output.

"In 1970, UN had estimated dwelling stock per thousand of habitants in different regions of the world. The world average comes out 257 dwellings per thousand of inhabitants. The situation was better in developed world where more than three hundred dwellings were available for each one thousand inhabitants. In North America, Europe and Australia and Newzealand, 331, 329 and 309 number of dwellings were available for one thousand inhabitants respectively. On the other hand in developing countries, of Asia (excluding Japan), Africa and Latin America, 184, 152 and 200 dwellings were occupied by one thousand inhabitiants respectively".[12]

The deterioration in the shelter conditions throughout the world attracted the attention of the United Nation Organisation. It proclaimed the year 1987 as the 'International Year of shelter

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11. Willis G.Kenneth And Tiple Grham A. (1991), "Housing the poor in Developing World : Methods of Analysis, Case Studies and Policy", Routledge, New Fetter Lane, London. p.1-2.
12. UN Conference on Human Settlement (1976), "Global Review of Human Settlements", Pergaman Press, Oxford. p.91-92.

for the Homesless (IYSH-87).[13]

Realizing the importance of the housing, the government of India has also launched various schemes through five year plans. Investment in the housing sector has gone up from Rs. 115.0 crores in the first five year plan to Rs. 3145.8 crores in the seventh plan.[14] Consequently the plan outlay on housing and urban development has increased from 1.5 per cent in third five year plan (1961-66) to 2.4 per cent in the seventh plan (1985-90).[15] The likely plan outlay during eight plan will be of the order of Rs. 5633 crore.[16]

Due to these efforts, with the help of various government and private agencies, the total housing stock in the country has gone up from mere 64.4 million units in 1951 to 114.4 million units in 1981. In urban areas the total housing stock has been estimated to be 86.14 million and in rural areas 27.59 million units.[17]

A working group of the Planning Commision estimated the housing stock in 1985 at 124.9 million units including 29.7 million urban units. As per the estimates of the National

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13. "Manual on Human Settlement, IYSH context" Government of India Press, Ring Road, New Delhi-110 064.
14. "Housing Finance Institutional Directory - 1988", National Building Organisation, Nirman Bhawan, New Delhi.
15. "Economic Survey - 1991".
16. "New Housing Policy : Grreater Role for Private Sector", Hindustan Times, New Delhi, 22 May 1992.
17. Handbook of Housing Statistics Part-I (1990)", Non-Government Organisation (NGO) and United Nation Regional Housing Centre, ESCAP, Nirman Bhawan, New Delhi.

Building Organisation, the housing shortage in India in 1985 was 24.7 million, comprising 18.8 million in rural areas and 5.9 million in urban areas.[18]

The National Building Organisation has estimated that in 1991 the total housing shortage will be of the order of 31.00 million units which may increase to 41.00 million units in the year 2001.[19] A working group of the Planning Commission has estimated that between 1985-2000 an additional housing stock of 90.8 million units will be required to meet the needs of increasing population in the country.

National Building Organisation has noted that there is 23.27 million housing units shortage in the country in 1981 out of which 16.29 million in urban areas and rest of the 6.98 million units in rural areas.

In Madhya Pradesh, the total housing stock has been estimated to be 8.93 million units out of which 7.07 million are in rural areas and 1.86 million in urban areas.[20] National Buildings Organisation has also estimated that there is 0.84 million housing units shortage in Madhya Pradesh. The shortage of housing units in urban and rural areas are of the order of 0.57 million units and 0.27 million units respectively.[21]

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18. Ma Kyo Seong, "Housing Policy and Practice in Asia", Croomhelm Ltd., Provident House, Burrel Row, Beckcham, Kent.p.52.
19. "Housing Statistics at a Glance - IYSH-87", NBO, Nirman Bhawan, New Delhi.
20. "Hnadbook of Housing Statistics Part-I (1990)", Non-government Organisation (NGO) and UN Regional Housing Centre, ESCAP, Nirman Bhawan, New Delhi.
21. "National Building Organisation", Nirman Bhawan, New Delhi.

National sample survey and NBO has noted that in India 64.52 per cent of urban households were living in pucca houses, 19.64 per cent in semi-pucca and 15.84 per cent in Kutcha houses in 1981. The two above mentioned organisations have further noted that in rural India 18.42 per cent households were living in pucca houses, 32.41 per cent in semi-pucca houses and rest of the 42.17 per cent in kuthca houses.[22]

1.2 Study Area

Physical Location : The State of Madhya Pradesh came into being on first November 1956, as a result of the reorganisation of states on linguastic basis. It is the largest state in India having an area of 443446 sq. km which account for 13.49 per cent of the total area of the country according to 1981 census. It lies at the central part of India between latitudes 17°46'55" and 26°52'46" North and between longitude 74°1'55" and 84°23'54" East. The tropic of cancer passes through the state. The state is bounded by seven other states namely, Uttar Pradesh in the North, Bihar and Orissa in the East, Andhra Pradesh and Maharashtra in the South annd Gujarat and Rajasthan in the West.

Topography and Drainage System : The undulating topography characterised by low hills, narrow valleys, plateaus and plains is the general physiography of the state which separate the

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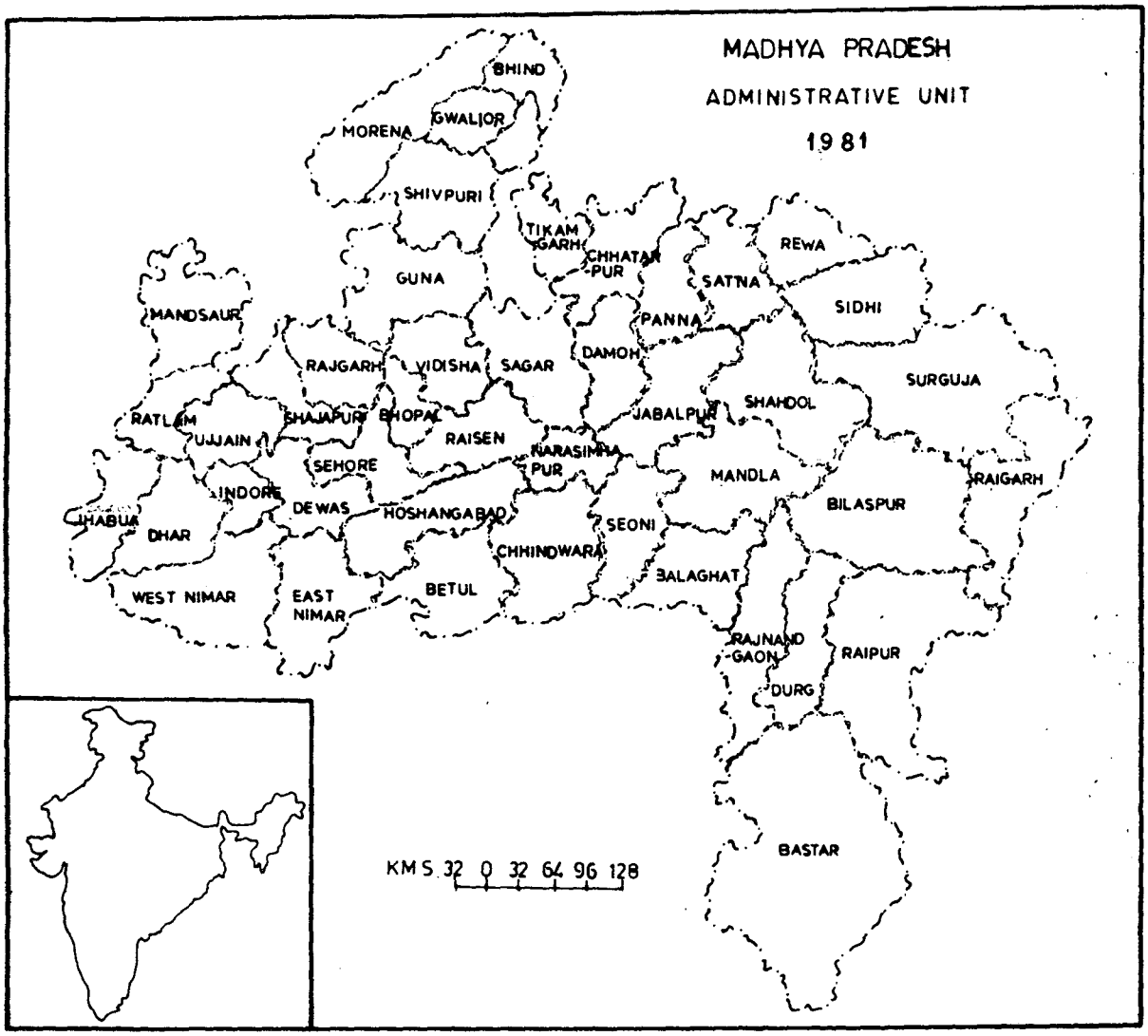
22. "National Sample Survey Organisation" and "National Building Organisation", Ministry of Urban Development, Nirman Bhawan New Delhi.

Gangetic plains of Uttar Pradesh in the North from the broad table land of the Deccan plateau in the South. The general elevation varies from 100 meters to over 1200 meters. Dhoopgarh peak (1350 meters) is the highest peak near Panchmarhi. The main hill ranges are Vindhyan, Satpuras, Mahadeo, Bhander, Renna, Kaimer, Maikal, Manipat, Samripat and Bastar hills. The slope is generally from south to north in northern part of the state and in southern part the slope is towards west. In the eastern part, the slope is towards east.

There are three major rivers system in the state flowing northwards, eastwards and westwards. The major rivers flowing towards north and joining Ganga are Chambal, Sind, Betwa, Ken and Son. The east flowing rivers are Mahanadi and its tributries. Narmda flowing towards west is the bigest river of the state. Tapti also flows towards west.

Type of Soils : Black soils occupy western Madhya Pradesh (Malwa Plateau in Narmda velley and Satpura ranges and are suitable for cotton cultivation. Red and Yellow soils found in Chhattisgarh plain, are fit for rice cultivation. Latertie soils are found in small pockects of Mandasaur, Durg, Raipur, Bilaspur and Bastar district.

Forests : The state is rich in forests. The total forest area of 166161 square km constitutes 37.52 per cent of the total area of the state. It is about 1/4 of the total forest area of


MADHYA PRADESH
ADMINISTRATIVE UNIT
1981
BHIND
MORENA
GWALIOR
SHIVPURI
TIKAM GARH
CHHATAR PUR
REWA
SATNA
SIDHI
GUNA
MANDSAUR
PANNA
DAMOH
RAJGARH
VIDISHA
SAGAR
SURGUJA
SHAHDOL
RATLAM
SHAJAPUR
BHOPAL
JABALPUR
UJJAIN
RAISEN
NARASIMHA PUR
SEHORE
MANDLA
RAIGARH
INDORE
DEWAS
HOSHANGABAD
BILASPUR
JHABUA
DHAR
SEONI
CHHINDWARA
BALAGHAT
WEST NIMAR
EAST NIMAR
BETUL
RAJNAND GAON
RAIPUR
DURG
BASTAR
KMS 32 0 32 64 96 128

the country. Major forest areas are located in Bastar, Bilaspur, Raipur, Mandla and Raigarh districts. The major species of trees found in Madhya Pradesh are 30 per cent Sal, 30 per cent Teek and 40 per cent are mixed forests.

Climate : The climate of the state is typically tropical. Summers are hot but windy and winters are quite cold. The average rainfal is 106 cms, varying from 8 cms in western Madhya Pradesh (Ratlam, Jhabua and Dhar) to 202 cms in the East (Hohangabad, Sagar and Bhopal).

Population Characterstics : According to 1981 census, the total population of the state was 5.2 crore out of which 20.29 per cent lived in urban areas and rest of the approximately 80 per cent are inhabitant of rural areas. Bastar is the largest district not only in the state of Madhya Pradesh but also in India with an area of 39114 square km. It is even larger than the state of Kerala. The total population of the state live in 76468 villages and 327 towns. Jabalpur has the largest urban population of 990 thousand persons. It is followed by Indore, Bhopal, Gawalior and Durg with 929, 681, 609 and 601 thousand persons. But still Madhya Pradesh continues to be a predominantly agrarian state with about 80 per cent of its population living in villages. Bilaspur is the most populous distgrict in terms of population followed by Raipur and Bastar. The rice growing region (Chhatisgarh Plain) which is also known

as the "rice bowl of the country" is relatively more populous in terms of rural population.

According to 1981 census there are 941 females to every 1000 males in the state. It is considerably lower than 1901 census when sex ratio was recorded as 990 females per thousand of males. An interesting feature is that as one moves from north towards south, the sex ratio declines. The lowest sex ratio of 827 has been found in district Bhind and the highest being 1020 in Rajnandgaon. The rice growing tract is characterised with more females than males.

Litracy : Litracy rate in Madhya Pradesh according to 1981 census is recorded as 27.87 per cent. Indore district has the highest litracy of 49 per cent while Jhabura has the lowest 11.5 per cent. The litracy among Schedule Caste and Schedule Tribes are 18.97 per cent and 10.68 per cent respectively.

Schedule Caste and Schedule Tribe Population : More than one third of the population consists of schedule caste and scheduled tribes. The constitute 14.10 per cent and 22.97 per cent respectively. Highest proportion of scheduled caste population is found in Datia in which it constitute 24.60 per cent of the total schedule caste population of the district. Jhabua has the highest schedule tribe population which constitute 83.48 per cent of total population of district.

Agriculture : Main crops grown in the state are rice, wheat, grain, jowar, cotton and linseed. The mixed croping

pattern is found in the western and southern regions. Rice is confined to eastern half of the state. Chhatisgarh plain is important for agriculture. Wheat is mainly grown in central and northern western port part of state. West and East Nimar are well known for cotton cultivation. Gram is grown with wheat and other crops. Groundnut is important crop in South-Western and North-Western part of the state. Wheat occupies the largest share of 22.65 per cent area followed by rice 18.18 per cent, jowar 11.55 per cent, gram 8.2 per cent and cotton 4.2 per cent.

Working Population : About 43 per cent of the total population in the state are workers (main and marginal). The participation ratio is high in tribal dominated area. The proportion of agricultural workers and cultivators accounts for 76.20 per cent of the total work force in the state.

1.3 Objectives of the Study :

Following are the prime objectives of this study;

i) To find the available stock of housing units and type of housing structure in the state of Madhya Pradesh in 1981, and district-wise variations in the distribution of different types of houses in the state.

ii) To determine the corelation between the type of structure and infrastructure facilties.

iii) To trace the level of development of households amentities and their regional variations.

iv) To ascertain the level of development and regional variation in the distribution of infrastructual facilities.

v). To examine the level of congestion (room density i.e. number of persons per room) and its regional variation.

vi) To identify the level of privacy or lack of privacy in the state and its regional variation.

1.4 Hypothesis :

The present study will investigate the following hypothesis:

i) there is positive corelation between urbanization and pucca houses.

ii) there is positive corelation between pucca houses and level of infrastructural facilities.

iii) there is positive corelation between type of structure of houses and availability of building materials at local level.

iv) kuthca houses are more in those areas which have comparatively large track of land under forests.

v) kuthca houses are more in predominantly tribal districts.

vi) that kutcha houses are more in rural areas than urban areas.

vii) that households amenities are more available in urban areas than rural areas.

viii) that level of room density is negatively corelated with density of population and positively corelated with level of poverty.

ix) that level of congestion is more in rural areas than urban

areas (room density).

x) that lack of privacy is more in rural areas than urban areas.

1.5 Database, Classification and Methodology

1.5.1 Database and Maps :

Present study "Quality of Housing and Households Amenities in Madhya Pradesh-1981" is primarily based in the secondary sources of data given in various reports of the census of India-1981.

The data pertaining to the distribution of households by predominant materials of roof, wall and floor of census houses occupied by them in both rural and urban area is collected from the household tables of Madhya Pradesh 1981, HHI Part-VIII A and HHI Part-VIII B for rural and urban areas resepectively.

The data related to drinking water facilities is based on Table HH-7, while for Electricity and Toilet facilities collected from HH-6 Part-A and Part-B tables. Part-A of the District Census Handbook of each district provides data for infrastructural facilties in both rural and urban areas.

The data pertaining to room density (households by size of households and number of rooms occupied) for both rural and urban area is collected from HH-2 table and for number of married couples usually living in households and number of room occupied (lack of privacy) from HH-3 table for both rural and urban areas.

The outline maps used in the study are based on the map

given in the Census of India.

1.5.2 Classification and Methodology

Classification of the households based on building materials :

In this part of the study information regarding building materials are collected from table HH-1 part VIII A&B (i) series 11 Madhya Pradesh. The information pertaining to building materials of roof, wall, and floor are given in the Household of Madhya Pradesh - 1981 tables. There are eight wall materials, seven roof materials and six floor materials which are taken account in this study. All materials and all other materials and materials not stated are excluded from this study.

The data is collected according to the norms adopted in each of the four categories viz-a-viz Kutcha, Semi-Pucca-I, Semi-Pucca -II and Pucca, on the basis of the durability and servicability of the building materials. The norms adoped in this study are slightly diferent to what are given by National Building Organisation.

Following are the norms adopted in the present study in the classification of house types according to the kind of material used in the house construction.

i) Kuthca house : when all the three parts viz-a-viz wall, roof are made of Kutcha materials such as leaves, grass, mud, wood, bamboo etc.

ii) Semi-Pucca 1 : When two parts of a house (out of wall, roof

and `floor) are made of Kutcha and one of semi-pucca or two of semi-pucca and one of Kutcha; or one part of pucca and two of Kutcha.

iii) Semi - Pucca-II : When two parts of the house are made of Pucca and one of Kutcha materials or one part of Pucca and two semi - pucca-I or wall is pucca, roof is semi-pucca and floor is kutcha materials or all three parts of a house are made of semi-pucca materials.

iv) Pucca : When all the three parts of a house are made of pucca materials.

Taking in mind the above mentioned norms adopted in different types of house types all the building materials for which data is collected are grouped in to the four categories of houses as given below;

i) Kutcha :

a) Wall : Mud, Grass, Leaves, Reed or Bamboo

b) Roof : Grass, Leaves, Reed, Thatch, Wood, Mud and unburnt bricks.

c) Floor : Mud

ii) Semi - Pucca :

a) Wall : Unburnt bricks, Galvanised iron sheets (GI sheets) or others material sheets, wood.

b) Roof : Corrugeted iron, zinc or other metal sheets, Asbestos cement sheets.

c) Floor : Bamboos, logs, wood/planks.

iii) Pucca :

a) Wall : Burnt bricks, stone, cement concrete.

b) Roof : Tile, slate, shingle, brick, stone and lime stone, cement, RBC/RCC.

c) Floor : Brick, stone and lime, cement, mosaic/tiles etc.

Compare to the above classification adopted in this study, the classification of house types given by National Building Organisation is as follows.[1]

i) Kutcha : It is divided into two types;

i) Serviceable Kutcha and ii) Unserviceable Kutcha;

i) Serviceable kutcha : It includes all residential units which may have mud walls and thatch roof.

ii) Unserviceable kutcha : It includes residential units which have walls and roof made of grass, leaves, needs, thatch etc.

ii) Semi - Pucca :
These housing units are those which do not fall within either pucca or kutcha categories. Generally such houses will have either the material of roof and wall of pucca unit. Housing units having mud walls and tiled roof will be treated as semi - pucca.

iii) Pucca :

Housing units, in which material like burnt bricks, GI sheets or other metal sheets, stone, cement concrete etc. are used for the construction of walls and for roof tiles,

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1. "Manual on Human Settlement : IYSH context", National Building Organisation, Nirman Bhawan, New Delhi.

slate, corrugated iron, zinc or other material sheets or asbestos, cement sheets, burnt bricks, limestone, RBC, RCC etc are predominately used.

After considering the above mentioned norms in different types of house categories, all the three possible combinations (8 wall x 7 roof x 6 floor) of building materials are grouped into different types of house categories on the basis of the following tables;

The symbols given in the brackets are used in the classification of the types of materials under each category of house types.

Table 1 (a)
Type of Materials

1. **Wall Materials :**
   a) Grass, leaves, reeds or bamboo (1)
   b) Mud (2)
   c) Unburnt bricks (3)
   d) Wood (4)
   e) Burnt bricks (5)
   f) GI sheets or other metal sheets (6)
   g) Stone (7)
   h) Cement concrete (8)

2. **Roof Materials :**
   a) Grass, leaves, reeds, thatch, wood, mud, unburnt bricks or bamboo (I)
   b) Tiles, slate, singale (II)
   c) Corrugated iron, zinc or other metal sheets (III)
   d) Asbestos, cement sheets (IV)
   e) Bricks, stone and lime (V)
   f) Stone (VI)
   g) Cement, RBC/RCC (VII)

3. **Floor Materials :**
   a) Mud (a)
   b) Wood/Planks (b)
   c) Bamboo/Logs (c)
   d) Brick, stone and lime (d)
   e) Cement (e)
   f) Mosaic/Tiles (f)

Table 1 (b)

House Type :

	MATERIAL OF WALL	MATERIAL OF ROOF	MATERIAL OF FLOOR
A. Kutcha	1,2	I	a
B. Semi-Pucca-I	1,2	III,IV	a
	1,2	II,V,VI,VII	a
	1,2	I	b,c
	1,2	III,IV	b,c
	1,2	II,V,VI,VII	b,c
	1,2	I	d,e,f
	1,2	III,IV	d,e,f
	3,4,6	I	a
	3,4,6	III,IV	a
	3,4,6	II,V,VI,VII	a
	3,4,6	I	b,c
	3,4,6	I	d,e,f
	5,7,8	I	a
	5,7,8	I	b,c
C.Semi Pucca-II	1,2	II,V,VI,VII	d,e,f
	3,4,6	III,IV	b,c
	3,4,6	II,V,VI,VII	b,c
	3,4,6	III,IV	d,e,f
	3,4,6	II,V,VI,VII	d,e,f
	5,7,8	III,IV	a
	5,7,8	II,V,VI,VII	a
	5,7,8	III,IV	b,c
	5,7,8	II,V,VI,VII	b,c
	5,7,8	I	d,e,f
	5,7,8	III,IV	d,e,f
D. Pucca	5,7,8	II,V,VI,VII	d,e,f

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After collecting the data for each category table 1(b) is added to get total for each category of house type and percentages are obtaind for each category and for each district for both rural and urban areas. To get the total of Madhya Pradesh as a whole the data of each category for both rural and urban areas of each district is added and percentage are obtained

for each district.

A corelation between Pucca houses and composite index of infrastructural facilities is also obtained with the help of the following statistical method :

$$r = \frac{\sigma xy}{\sqrt{\sigma_x^2 \cdot \sigma_y^2}}$$

where,

r = Correlation
x = $(X-\bar{X})$
y = $(Y-\bar{Y})$

1.5.3 Households Amenities : Household amenities are one of the most important part of a house. A house alone without household amenities such as drinking water, electricity and toilet facilities does not indicate high quality of life even if it is made of pucca materials. So household amenities are essential part of a house which defined the quality of life of households. Chapter IV of the present study deals with the households amenities in Madhya Pradesh as a whole (total), and urban and rural areas separately. For the purpose of this study three variables: drinking water, electricity and toilet facilities are taken into consideration. Various infrastructural facilities (including household amenities) are also studied to know the quality of life in rural and urban areas of Madhya Pradesh.

i) **The classification of households based on source of drinking water :** The different sources of water about which the information are given in the census are well, tap, handpump/tube-well, river/canal, tank and others. The data pertaining to above mentioned sources of drinking water are grouped under within premises and outside the premises, on the basis of their location.

For the purpose of this study all the sources of drinking water are clubed into two categories viz-a-viz (i) protected sources of drinking water and unprotected sources of drinking water and percentages are obtained for each category for each district.

The protected sources of drinking water are those in which water does not expose to the harmful effect of atmosphere and remain safe for drinking purposes. It is the most suitable method of providing safe and hygienic water to the people. The protected sources of water included in this study are tap and tubewell/hand pump etc.

The unprotected sources of water supply are those in which water is exposed to atmosphere and can be contaminated. The sources of water clubed under unprotected sources of water are well, tank, canal/river etc. Information regarding other sources of water are also assumed to fall in this category and included into unprotected sources of water supply.

Thus, there are four categories of drinking water based on location of water sources (within premises or outside the premises) and quality of water supply protected and unprotected sources. All these four categories of drinking water can be classified as;

1. Protected Sources of Water supply within premises;
2. Protected Sources of Water supply outside the premises;
3. Unprotected Sources of Water supply within the premises;
4. Unprotected Sources of Water supply outside the premises.

On the basis of accessibility and quality of water supply the proected sources of water supply withing premises are the most hygienic and safe for the point of view of human health. While unprotected sources of water supply outside the premises are the most unhygienic and unsafe for human health.

ii) **Classification of the households based on availability of electricity** : In the census the information is given about availability and non-availability of electricity to number of households in both rural and urban areas separately and by tenure status as well.

For the purpose of this study the number of households with electricity are clubed into one to get the total number of households having access to electricity. Information about availability of electricity by tenure status is also

collected for both rural and urban areas. Number of households which don't have access to electricity are not consider. After collecting the data percentages are obtained for both total rural and urban areas.

iii) **Classification of households based on availability of toilet facilities :** The information about rural areas are not available in the census and hence due to lack of availablity of required data, toilet facilities in rural areas are not taken into consideration. Toilet facilities by tenure status are also included into the study under rented and owned house in urban areas only. After collecting the data, percentages for each district are obtained.

iv) **Classification of Number of infrastructure facilities available in rural and urban areas :** The information pertaining to various infrastructural facilities are collected from Districtr Census Handbook - Part-A, of different districts for both rural and urban areas. But the variables taken in this study varies in rural and urban areas and hence it is not possible to group them into one to obtain the total. Secondly, the required information of infra-structural facilities are not available for three districts viz-a-viz East Nimar, Mandla and Seoni and hence these districts are excluded from the study. Following are the infrastructural variables taken into account in this

study for both rural and urban areas separately;

A. - Urban :

a) Road Length : i) Kuthca Road and ii) Pucca Road

b) Electrification (Number of connections) : i) Domestic ii) industrial iii) commercial iv) road lightening and v) others.

c) Medical : i) Hospital ii) dispensery iii) health centre iv) family planning centre v) T.B., nursing home and others and vi) beds in medical colleges.

d) Educational institutions : i) Degree Colleges ii) Medical Colleges iii) Engineering Colleges iv) Polytechic Colleges v) Vocational training and short hand typing vi) higher secondary school vii) middle school viii) primary school and ix) adult litracy centres.

e) Cultural institutions : 1) Stadium and 2) Cinema 3) Auditorium or dramma/community halls and 4) public library including reading room.

f) Commercial institutions : 1) Number of banks 2) Number of agricultural credit society and 3) Number of non-agri-cultural society.

B. - Rural :

a) Education : 1) Primary School 2) Middle School 3) Higher secondary school and 4) others.

b) Medical : 1) Dispensery 2) hospitals 3) maternity and

child welfare centre 4) primary health centre 5) family planning centre and 6) others

c) Post and telegraph : 1) Post office 2) T.O and phone

d) Communication : Bus stop and 2) Railway stations

After collecting the data pertaining to each variables used in the study for each district in both rural and urban areas separately, a compisite index is prepared with the help of Principal Component Analysis technique. All the variables have been changed into indicators by dividing each of them by the population of the respective districts in rural and urban areas. After that all the indicators have been made scale free by dividing them with their respective mean (X). To give them respective weightage a modified Principal Component Analysis (PCA) has ben done for both rural and urban indicators separately. The first set of eigen vectors of the PCA has been treated as their respective weightages for the indicators and after adding these weighted values of each indicators, get the factor scares or the composite index. In this study only first Principal Component is takne in rural areas while in urban areas first and third PCA is taken to get the overall view of infrastructural development in rural and urban areas of the State of Madhya Pradesh.

1.6 Classification of households based on number of persons in a room (Room Density) Number of members in the households and

ROOM DENSITY TABLES

Table 1.e

No. of Persons	1 persons/room	2 P/R	3 P/R	4 P/R	5 P/R	6+ P/R
1	1/1	1/2	1/3	1/4	1/5	1/6
2	2/1	2/2	2/3	2/4	2/5	2/6
3	3/1	3/2	3/3	3/4	3/5	3/6
4	4/1	4/2	4/3	4/4	4/5	4/6
5	5/1	5/2	5/3	5/4	5/5	5/6
6+	6/1	6/2	6/3	6/4	6/5	6/6

ROOM DENSITY

Table 1.f

Category / Symbol (C/S)	C/S	C/S	C/S	C/S	C/S
I (a)	L1 (g)	L1 (m)	L1 (s)	L1 (y)	L1 (E)
II (b)	I (h)	L1 (m)	L1 (t)	L1 (z)	L1 (F)
III (c)	I (i)	L1 (O)	L1 (u)	L1 (A)	L1 (G)
IV (d)	II (j)	I (p)	I (v)	L1 (B)	L1 (H)
IV (e)	II (k)	I (Q)	I (w)	I (C)	L1 (I)
IV (f)	III(l)	II (r)	I (x)	I (D)	I (J)

ROOM DENSITY

Table 1.g

Member	1 Room	2 Room	3 Room	4 Room	5 Room	6+ Room
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

Table 1.h

L1	=	<1	= g+m+n+s+t+u+y+z+A+B+E+F+G+H+I
I	=	1-2	= a+h+i+o+p+Q+V+W+X+C+D+J
II	=	2-3	= b+j+k+k
III	=	3-4	= c+l
IV	=	4+	= d+e+f

number of rooms occupied by the households are classified into different categories. The number of member in the households are given as such; one member, two members, three member, four members, five members, six and more than, six members and unspecified members in the households. On the other hand number of rooms occupied by households are; No exclusive room, one room, two rooms, three rooms, four rooms, five room, six and more than six room and unspecified number of rooms.

For the purpose of this study unspecified number of member in the households and no exclusive rooms and unspecified number of rooms are excluded from the study to maintain accuracy.

In this study, to calculate the room density, distribution of urban households by number of persons in a room are classified into five categories viz-a-viz i) less than one person in a room; ii) one or more than one but less than two persons in room, iii) more than two but less than three persons in a room iv) more than three but less than four persons in a room and v) four or more than four persons in a room. the tables, with the help of which distribution of urban and rural households by numer of persons in a room are classified into above mentioned categories are given below;

After collecting the data according to the table 1.d for different categories; are summed up and percentages are obtained for rural and urban areas. To obtain number of persons in each category for total the value of urban and rural areas are summed

up and percentages of each category are obtained.

1.7) Classification of households based on number of married couples usually living in households and number of rooms occupied

In the census number of married couples are given as zero couple, one couple, two couples, three couples, four couples, five couples, six and more than six couples, and unspecified number of couples. Households occupying number of rooms are given as no exclusive room, one room, two rooms, three rooms, four rooms, five rooms, six and more than six rooms and unspecified number of rooms.

For the purpose of this study zero and unspecified number of couples and no exclusive room and unsepecified number of rooms are excluded from the study to maintain accuracy.

It is assumed that to maintain privacy, a married couple need at least one room. If the number of married couples exceed number of rooms it means there is lack of privacy and if number of married couples are less than the number of rooms than there is no lack of privacy.

In the present study number of households experienced lack of privacy are calculated with the help of a table (1.h) and after that percentages are obtained for total, rural and urban areas.

PRIVACY TABLE

HOUSEHOLD OCCUPYING

Table 1.c

No. of Couples	1 Room	2 Room	3 Room	4 Room	5 Room	6+ Room
1	1/1	1/2	1/3	1/4	1/5	1/6
2	2/1	2/2	2/3	2/4	2/5	2/6
3	3/1	3/2	3/3	3/4	3/5	3/6
4	4/1	4/2	4/3	4/4	4/5	4/6
5	5/1	5/2	5/3	5/4	5/5	5/6
6+	6/1	6/2	6/3	6/4	6/5	6/6

HOUSEHOLD OCCUPYING

Table 1.d

No. of Couples	1 Room	2 Room	3 Room	4 Room	5 Room	6+ Room
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

Total Number of households having more couples than number of room are those which full below the line; these are; B+C+D+E+F+I+J+K+L+P+Q+R+W+X+d.

1.8 Research Design :

The present study i.e. "Quality of Housing Stock and Availability of Household Amentities in Madhya Pradesh-1981 : A district level analysis" is clubed into six chapters namely introductory, Review of literature, Housing Stock by Type of Structure, households Amenities, Room Density and Conclusion.

The first chapter deals with introduction to the topic, introduction to the area under study, objectives and hypothesis, database and maps classifications and methodology and research design.

The second chapter is about review of literature. The third chapter deals with availability of housing stock by type of structure in Madhya Pradesh as a whole and rural and urban areas separately. Emphasis is given to assign reasons for district-wise as well as regional variation in the distribution of various types of houses.

The fourth chapter deals with distribution of households amenities viz-a-viz drinking water, electricity, toilet and infrastructural facilities in both rural and urban areas. Due to non-availability of data to toilet facilility for rural and urban areas, only urrban areas are taken into account in this study.

The fifth chapter concernes about number of persons living a room (Room density) and number of couples living in a room (lack of privacy) in Madhy Pradesh as a whole and in rural and urban areas separately.

The last chapter of the study includes conclusion.

CHAPTER II

REVIEW OF LITERATURE

Food shelter and clothing are regarded as the three basic needs of mankind and the wide consensus that otbains on this proposition cut across ideology and philosphy Eastarn or Western. These needs are as old as mankind and they are discovered afresh at UN and international meetings held periodically doubted Undoubtedly, the right of human beings to be found as athe primary means of staying active and as a source of energy for their function in the human habitat has implicity acquired the status of a human or civic right.[1]

The importance of housing in the economy is not to be measured solely in terms of the economy devoted to accumulation changes in the rate of house building can have powerful effects on demand in the rest of the economy. A sustantial proportion of the income of most families is spent on paying for the roof over heads. As houses are durable assets, one would expect that housing would account for a higher proportion of the total stock of a country's wealth than of its current expenditure. In most of the Western countries, home building absorbs about 1/5 to 1/4 of the fixed investment and about five per cent of the national income.[2]

"The demand for housing services is a function of a number of exogenous variables; the price of alternative accomodation,

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1. Rao B.B (1977), "Housing and Habitat in Developing countries", Newman Group of Publishers, 4-C Ansari road, New Delhi.pp. 38.
2. N.Lionel (1965), "The Economics of Housing" Steples Press, London.

the price of other goods, the number of households formation, the households income, tastes and ages, the household size and composition and the availability of terms and finance. Other variables, of less directly but possibly of similar importance, will include the spatial relationship of housing to a town or neighbourhood centre, proximity to amenities and jobs, and demographic, physical and social environmental factors. The demand for housing stock is clearly drived from the demand for housing services, for if the stock did not provide any service it would have no value in the housing market".[3]

The most pressing housing problems concern the living needs of the households and the housing costs they have to bear which the state can influence by legistative reform and in particular, through housing subsidies. Yet presenting housing problems in this way is, at the same time, the specification of a particular approach to looking at them. There are two basic conceptual categories in the approach, households and the state. Households have limited means by which satisfy their housing needs and the state has the power and the means to deny or satisfy those needs via its housing policies. The linkage between the two conceptual pillers is therefore, the effect of state policies on households comsumption of housing.[4]

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3. Stafferd D (1978), "The Economics of Housing Policy", Crown-helm Company ltd., London, pp-25.
4. Ball M (1983), "Housing Policy and Economic Power; The Political Economy of Owner Occupation", Mathuen and Comapny Ltd, London.

the price of other goods, the number of households formation, the households income, tastes and ages, the household size and composition and the availability of terms and finance. Other variables, of less directly but possibly of similar importance, will include the spatial relationship of housing to a town or neighbourhood centre, proximity to amenities and jobs, and demographic, physical and social environmental factors. The demand for housing stock is clearly drived from the demand for housing services, for if the stock did not provide any service it would have no value in the housing market".[3]

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3. Stafferd D (1978), "The Economics of Housing Policy", Crown-helm Company ltd., London, pp-25.
4. Ball M (1983), "Housing Policy and Economic Power; The Political Economy of Owner Occupation", Mathuen and Comapny Ltd, London.

According to P.S.A.Sundaram, "in India housing stock has been broadly divided in the census and official surveys into four categories, Pucca, Semi-Pucca servicable Kutcha and unservicable Kutcha. A Pucca house has walls/roofs built of predominantly superior quality building materials like burnt bricks, galvanised iron sheets, stone blocks and R.C.C. are used for roof. A semi-Pucca house is a mid-way house comprising walls made of pucca materials and roofs made of kutcha materials or vice-versa. A kutcha house is one where the walls and roofs are made of unburnt bricks, bamboo, mud, grass, leaves, reeds and thatch. It is not ordinarly expected to withstand monsoon or fire. About 13 per cent of the urban housing stock is kutcha and 19 per cent of semipucca in the country. The share of pucca houses are very small".[5]

"In India over a fifty percent of dwellings units are twenty years old and functionally obsolete. In comparison to India, in U.S.A. about 34.7 per cent of the houses built before 1940 while in France about 57.3 per cent of the housing stock built prior to 1948".[6]

"Analysis the housing stock in the country, Sinha (1975) found that all India supply of houses increased from 47 million in 1901 to 92 million in 1971, which shows an increase in supply of houses as 45 million units within 70 years. Out of the total

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5. Ha K.S (1987), "Housing Policy and Practice in Asia", Croom helm, London. pp-52.
6. Nagarlok VOl. 20, 1988. pp-14.

increase of 45 milion unit from 1990 to 71 the in rural areas, housing supply works out to be 32 million units and that urban areas to 13 million. In percentage there was 97 per cent increase of housing supply in the country, 75 per cent in rural and 283 per cent in urban areas. In 1951, total supply of housing was of the order of 64 million units against the demand of 72 million units, which left a shortage of 8 million units. In 1951-61 decades there was a further increase in demand of 16 million units against supply of only 15 million. During the 1961-71 decade demand and supply of housing units were of the order of 22 million and 13 million units respectively. Cumulatively there was a shortage of 18 million housing units in the country in 1971".[7]

However, National Building Organization has estimated that in 1971, the shortage of housing units was of 14.5 million units out of which 11.6 million in rural and 2.9 in urban areas. In 1981 and 1985 the shortage was of the order of 21.3 million and 23.6 million units respectively. It also estimated that in the year 1991 and 2000 the shortage of housing in the country will be 27.4 million and 34.10 million units.[8]

There are various agencies which are engaged in the construction of housing. It has been found that the share of investment of private sector in the construction of houses increased from 78.26 per cent in the first plan to 92.18 per cent in 7th five year plan. The total investment by public sector in the housing was 250 crores in the first five year plan which

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7. Sinha D. Bakshi (1975) "Housing growth in India", Birla Institute of Scientific Research: Economic research division, Lajpat Nagar, New Delhi. pp. 20-21.
8. National Building Organization and city and industrail Development Corporation of Maharastra, Bombay.

susequently increased to 300 cr in second five year plan, 425 crores in third plan, 643 crores in fourth paln, 1044 crores fifth plan 2114 crores in sixth paln and 2458 crores in seventh plan. But in relation to private sector as well as percentage of investment to toal economy its share, declined. It had constituted 34 per cent of the total investment in the economy in the first five year plan but in sixth plan it declined to only eight per cent.[9]

Various schemes of housing were implemented during the planning period in India. Up to January 1982, 188,871 housing units were constructed for industrial workers and EWS with an investment of 226.57 crores, 342,786 housing units under Low income group Housing Scheme (LIG) with an investment of 234.46 crores Rs. and 46,436 housing units with or investment 124.46 crores and Medium income group Scheme(MIG).[10]

Other than type of structure the quality of housing stock also depends on access to service like potable water and sanitation. "The proportion of urban households in india receiving water directly from taps increased from 45.4 per cent in 1953-54 to 76 per cent in 1973-74, but there are still large number of households with limited access to potable water. More than 50 per cent of households have electric lightening. However 33 per cent of households do not have access to any type of latrine."[11]

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9. V, VI and VII Five year Plans of India and Housing finance in Indian, CID, Bombay.
10. Ministry of Works and Housing, Nirman Bhawan, New Delhi.
11. Ha K.S. (1987) Ibid, pp-53.

"It is generally observed that different types of dwellings are differentiated by the existence or non existence or party existence of the three major facilities i.e. kitchen, bath and lavatory. In Bombay Ramachandran (1977) found that huts don't have any of these facilities. Chawls may have separate Kitchen, but do not have separate baths and lavatories; these being common ones with other buildings, in the building or floor of a building. Flats and bungalows are self contained. As regards water supply, the observation would be that under normal conditions, huts would have no separate taps, if any would be common one for the whole neighbourhood. Chawls may have just one tap per dwelling. Flats and Bunglows would have an adequate number of these in dwellings. Electric points would also be distributed in the same manner as water taps. Balconies would be common in flats and verandahs in Chawls and Bunglows."[12]

"Safe water and sanitation are two basic components of hygiene which have a strong cultural determination and key influence on people's health, perhaps comparable only to food. 74 per cent of India's urban area is served by piped water to households and only 31 per cent of the rural area has easy access to safe water. While in case of sanitation, 47 per cent of urban area is served with installed sanitation facilites and only 2 per cent of rural area has any access to sanitation facilities."[13]

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12. Ramachandaran P (1977) "Housing situation in Greater Bombay" Somaiya Publication Pvt. Ltd., Bombay, pp-2 .
13. Bhasin V (1990) "Habitat, Habitation and Health in the Himalayas" Kamal Raj Enterprises, Delhi. pp.3.

"Despite the over all resource constraints, the success of the water supply programme largely depends on public acceptance and appropriate utilization of the new facilities. For instance, the evaluation of the UNICEF/WHO assisted Rural Water Supply Programme in India in 1976 noted that spot studies slowed nearly 70 per cent of the pumps as not functioning at any given time. There is necessity to design and introduce a water supply and sanitation technology suited to local condition which the villagers themselves can operate and maintain without external assistance.[14]

Due to lack of hygienic drinking water and sanitation facilites, many disease cropped up. It is estimated that one quarter of the world's population lacks clear drinking water and sanitary human waste disposal. As a result, diarroeal diseases are endemic throughout the third world. Cholera, typhoid, fewer, geinea warm and intenstinal parasites also are the major diseases coused due to absence of clear drinking water supply and sanitation. Respiratory diseases and eye disease resulted due to lack of proper ventilation. It is argued that water and sanitation should receive higher priority than other investment. It is found that during the last century in the U.S.A. and Great Britain, Cholera and diarrhoea rates dropped sharply, mainly because of improvement in sanitary conditions. A Chilean study concluded that, "Availability of drinking water cut the incidence of acute diarrhoea by about 74 per cent (Department of Rural

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14. Bhasin V. (1990) Ibid, pp.3.

Water Supply, National Sanitary work, Chile).[15]

"Sundaram (1987) found that about 50 percent of the households in India lived in one room units 27 percent in two room units, 11 percent in the three room unit and the rest in dwelling units over three room. The occupancy per room is 4.7 persons in one room house.The number of persons per room has increased over successive decades and this reflects the extent of over crowding. The space available tends to increase with the per capita expenditure. It also varies between different cities. In Bombay, as much as 77 percent of the households occupy one room houses and most of them live in old dilpidated multi story structure with communal amenities."[16]

"Majority of dwellings in greater Bombay are one room tenement 74 percent of the dwellings consisted of only one room each. Another 17 percent were two room dwellings, 5 percent were three roomed and 3 percent of the dwellings had four or more room. As household size increased the percentage of household living in one room dwellings decreased. At the other extremity, as household size increased, the tendency to live in three or more room also increased".[17]

"While the average area per household generally tended to increased with household size, it is found that the per capita steadily drops with an increased in household size".[18]

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15. Bhasin V. (1990) Opcit, pp. 298-99.
16. Ha K.S. (1987) Opcit pp. 53.
17. Ramachandaran P (1977) Opcit pp. 34.
18. Ramachandaran P (1977) Opcit pp. 35.

"In Bombay owner of the house formed 15 percent of the total household, paying tenants formed 77 percent and free tenants constituted. seven percent of all the households. It is found that chawls and flats are more likely to be tenanted and bunglows and flats are more likely to be owned".[19]

"The larger the family size, the greater is the occurance of common illness in the family. The health of the family is affected by nutritional dificiencies.[20]

In metropolitan cities of India, the average number of persons per room is 3.99 (Bombay), 3.4 (Calcutta), 3 (Delhi) as against the country average of number of persons per household of 5.6 and number of persons per room of 2.8. It is found that percentage of households in one room was 67.6 in calcutta, 77.4 in Bombay, 57.1 in Delhi, 53.6 in Madras and 65.1 in Poona. The lowest percentage of households in one room dwellings found in Hydrabad (44.9) in 1971.[21]

In comparison to India in developed countries of the world such as U.S.A., Japan and Sweden average number of persons per room and average number of persons per household are less. In U.S.A. in 1977 average number of household were 2.9 and .56 persons per room. In Sweden was 3.2 and .6 persons, per households and per room respectively et.[22]

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19. Ramachandaran P (1977) Opcit pp-35.
20. Bhasin V (1990) Opcit pp-298.
21. Census of India, 1971, Part IV B, Housing Tables and National Building Organization, Nirman Bhawan.
22. 'Nagarlok', Vol. 20, 1988, Opcit pp-12.

To solve the problems of shelter was a relatively simple matter in the days of the cave man, not so today. The complexity of our society and the termendous advances in science, not only permit, but also require, man's shelter to be much more than protection against the elements. It must satisfy his economic, social and psychological needs as well.[23]

Abrams studied the factors responsible for shortage of housing. He said that in most under developed countries, land for Urban expansion is ample but too little has been made accessible to Urban centres. Speculation in accessible land has often Costs as much to buy the land as to build home.[24]

Paradoxically enough most planners today talk about planned regional development while imbalances within the settlement housing needs. Themselves continue to grow a pace, intra settlements inequalities are much worse, if anything than intra-regional or inter-regional imbalances.[25]

The past few decades of planning and development have realy undermined the basis of the rural economic structure and unfitted rural areas for becoming nodes for development. Furthermore, the environmental non-basic intrastructure that exists in the rural areas is ruther poor and inadeuates.[26]

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23. Beyer H. Glenn (1958) "Housing : A factual Analysis", The Macmillan Company ltd, New York. pp- 2-10.
24. Abrams C. (1964) "Housing in the Modern World" Faber and Faser, London. pp- 25-37.
25. Rao B.B. (1977) Opcit. pp-7.
26. Abrams C. (1964) Opcit.

There has been a considerable research and discussion on allocation policies in recent years, particularly in relation to the question of who gets what in terms of housing quality. The tendency for households with little bargaining power, for example, be allocated less popular accomodation is deeply rooted, but many housing authorities now attempt to avoid this happening by giving greater weight to housing needs.[27]

Recent attempts at unconventional and innovative approaches to low income group housing, like site and services really is and what it had always inthe centuries prior to industrialization and the advent of government housing agencies. This rediscovery of how ordinary pepole traditionaly obtain shelter came at a time when a dilemma in housing activities by government agencies was being confronted. In the process of trying to improve the housing condition of the urban poor, such agencies were bankrupting themselves in building for too, few for too improve expensive housing units and at the same time were destroying the existing housing stock of a large number of poor urban families because they were illegal. These houses were considered illegal because they were on land that did not belong to the occupants and because they were not upto the high structural standards dictated by the Urban building codes, which were in many cases, were a Colonial heritage from developed countries. The net effect,

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27. David C. and Jhon (1980) " Public Housing : Current Trends and Future Development", Croomhelm ltd, London.

year by year was to dehouse a growing number of Urban poor".28

Friedrichs wrote awbout the use of growth restrictions. It has been claimed that one of the result of these pratices wheather unintended or not, is the exclusion of moderately priced housing.

The scarcity of land, the limited number of building permits issued and so forth are viewed as driving up prices of existing stock and newly consructed dwelling. [29]

Commenting on the shortage of houses, Churchill commented that resolving the need of low income groups for shelter will not be an easy task. The problems essentially, are rooted in long-entrenched traditions, prejudices and practices and to over come them will receive a sustained effort.

"The low income housing problem in third world cities is essentially a supply problem. The failure of the overall supply system raises housing prices and thus cuts off part of the effective demand for housing. Techniques are available to build cheap and scarce housing with satisfactory sanitary infrastructure at standards the poor can afford. But the problem is that such housing development is often is not considered as contributing positively to housing supply and therefore suppressed rather than supported by governments interventions. This impedes the growth of overall of supply and contributes to high prices - such - counter-productive policies result from

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28. Swan P.J, Wegelin E.A and Pancher K (1983) "Management of site and services Housing Scheme : The Asian Experience", Jhon Wiley and Sons, New York.p.1
29. Friedrichs. J. (1988) "Affordable housing and the Homeless", Walter de Gruyter, Berlin.

institutional and affitudinal bottlenecks".30

"Housing code enforcement programs attempts to establish minimum legal standards for housing and a method for enforching these requirements within existing stock. The goal of these programes is initially enhnaced, housing quality and ultimatily, neighberhood preservation. There are three methods of intensive enforcement, Cyclical; Turnover and Zoned. Cyclical enforcement is a system by which every housing unit goes through inspectior and inforcement in a fixed order at regular intervals. It will control physical deterioration occuring over time. Turnover enforcement is triggered any time, a housing unit occupancy through sale or rental. Zoned enforcement would establish different levels of enforcement for different kinds of neighberhoods".[31]

Muher studies the influence of groups such as real estate agents on the operation of local housing Markets.In Melbourne, an increasing incidence of property sales by means of open auctions is the results of a sustained Compaign by the real estate industry. Such sales have sustantial benfits for the agents and alter many of the strategies for buying adopted by both buyer and seller. However, it is apperent that there are a number of unitended impacts including making the purchase of housing more difficult or risky for some groups. The practice of auctioing is seen to be or active element in determing housing access and

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30. Skinner R.J. and Rodell M.J (1983) "People, Poverty and shelter : Problems of self-help housing in the Third world" Mathuen and Company Ltd. London. p. 106-107
31. Meier B.R. (1983) " Code Enfercement and Housing Quality Revisited : The Turn over case", Urban Affairs Quarterly, Vol. 19. Number2, Dec. 1983, p.225.

basis for social change. [32]

Jud Donald and other (1986) further reveals that real estate brokers obtain higher prices for the homes they sell and imlicitly shift part of the brokerage-commision burden to the buyer. Evidence also seggests that buyers who search the housing market with assistance of a real estate broker have higher demand for housing than buyer who shop the housing market without the help of a broker.[33]

Yates critically evaluates the effects ofthe growing imbalance between direct and indirect assistance for housing. He proposes a radical restructuring of assistance to be directed solely towards the poor. The policy proposals consists of several essential companents; these are a housing cost insurance scheme, the provision of shared equity arrangements and the introduction of housing bonds.[34]

"Profound changes have taken place in the housing policy of countires in third world. The old approach was imlpements during the 1950s and 1960s when governments had to face problems accompanying an unprecedented urban growth. Slums and squatter settlements were considered as disfunction and disrupt the city. They seek to apply Western solutions to the Urban housing

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32. Maher C (1989) "Information; Intermediaries and sales strategy in an urban housing market : The implications of Real Estate Auctions in Melbourne." Urban Studies, Vol 26.No.5, Oct., 1989, p.495.
33. Jud D.G and Frew J (1986) "Rural Estate Brokers, Housing prices and the DEmand dor Housing Urban studies, Vol. 23.no1., Feb., 1986, p.21.
34. Yates J (1988) "Housing Policy Reform : A Cosntructive critique", Urban studies Vol. 26.no.4, Aug, 1984, p.419.

problems of the third world. Today the old formula has been replaced by a new framework of ideas about housing. This new framework is based on self-help housing".[35]

"Sites and services is a relatively new approach to the low income housing problem. The apporach rest on the principle that cheap lots with basic infrastructure are provided to households who have the responsibility to look after house construction themselves".[36]

"The role of government can only be l;imited, due to financial constraints. Thus the private sector is required to share the responsibility to solve the housing problem as expeditiously as possible. It includs individuals households, groups, co-operatives and non-profit organization, which has a vital and innovatory role to paly in the field of housing".[37]

"The lack of funds with the housing finance instituteions could be due to the overdependence on other financial institutions. The potential of household sector saving which constitute 71 per cent of total saving (Yojna, 1987) is being overlooked by our finance insitutions".[38]

A community movement is the ideal apporach in providing cheap and affordable low cost housing for the homeless. In Kerla

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35. Peter N. (1987) "Editorial", Urban India Vol. 7. Jan-Jun 1987.
36. Linder VAn D.J. (1987) " Sites and services : The background of Bottlenecks", Urban India, Vol. 7. Jan-June, 1987, p.24.
37. Reddy M.A and Kumar AN (1987) "Housing Through Co-operatives", Urban India Vol. 7. Jan-June, 1987, p.55.
38. Sivashanmugam M (1987) "Household saving as a potential source in Housing Finance Intermedeiation" Urban India, Vol.7. July-Dec, 1987, p.72.

a movement called 'Nirmithi' has been started by then dynamic District Collector, Mr. C.V.Ananda (1986) with the help of local artisan and engineers. He was able to trained large people in the new but very simple techniques of house constrution. Now, the state has embarked on a plan of one million houses for the shelterless in which Nirmithi is going to play a crucial role by providing low-cost technology, training for projects managers and other functionaries and facilities for the upgradation of skills of masons and other traditional artisans. Now there are Nirmithi Kendras in all the district headquarters of the state and fast spreading to taluks and villages to diffused the technology to the grassroot level.[39]

Till 1974 the role of government has been limited to provision of subsidised housing on a marginal scale for the economically weakeer section of the society. In the fifth five year plan, a provision was made to provide house sites to rural landless people on a limited scale in addition to evolving scheme for implementation in Urban areas.

The first five year plan clearly accepted that central government is directly concerned with the subject of housing and it should be provided primarily to the low, and weaker sections of the society. The objectives of the seventh plan also further confirmed the nation's concern in the subject of housing. The objectives of the seventh plans were, promotions of self housing

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39. Karim A.N. (1992) "Nirmithi -A New Movement for Low cost Houses", Yojna, Feb, 1992, Vol. 36, No. 3.

provision of sites and services to the landless poor and financial assistance for consturction of dwellings in rural areas, regularization of prices within the paying capcity of targeted beneficiarious, regulation of cost of land, modification in buildings bye-laws in order to reduce the cost of construction and science and technology efforts in order to improve building technology in the usage of local building materials".[40]

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40. Seventh Five Year Plan (1985-90), Planning Commission. pp. 15.

CHAPTER III

HOUSING STOCK BY TYPE OF STRUCTURE

This chapter deals with housing stock by type of structure which is an ideal indicator to know the quality of life in a given region. For the purpose of this study the data from census is clubed into four categories viz-a-viz Kutcha, Semi-pucca-I, Semi- pacca-II and pucca, for total, rural and urban areas in Madhya Pradesh. The data pertaining to each category of house types mentioned above is collected with the help of a table given in classification part of introductory chapter (chapter one). After collecting the data according to the table, grouped into different categories and added to get total of each district both rural and urban areas separately. To get the total, the figure of both urban and rural areas are added and percentages are obtained.

3.1 Percentage Distribution of Total housing Stock by Type of structure in 1981 :-

The table No. 3.1 shows the percentage in the state of Madhya Pradesh in 1981. In Madhya Pradesh 7.28 percent of the total hgouseholds lived in Kutcha type houses. The highest proportionate share found in the category of semi-pucca-I. It consitutes 65.85 percent of the total housing stock. Semi pucca-II and pucca houses categories consitute 18.07 and 8.80 percent of the total housing stock in the state.

There is large district-wise variation in the distribution of different type of housing stock in the state of Madhya Pradesh

PERCENTAGE DISTRIBUTION OF TOTAL HOUSING STOCK BY TYPE OF STRUCTURE - 1981

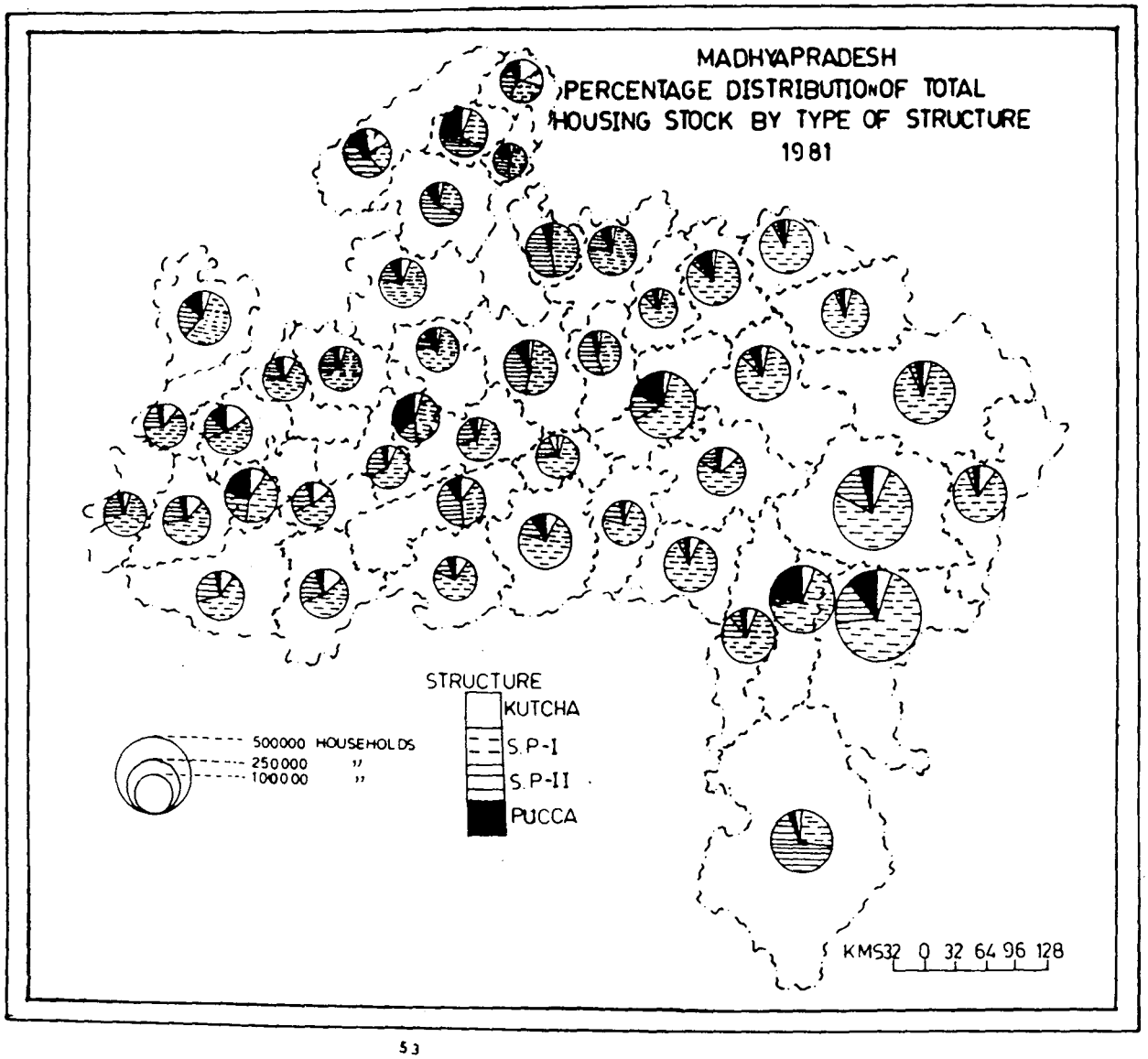
S.No.	STATE/DISTRICTS	KUTCHA	S.P-I	S.P-II	PUCCA
	M.P	7.28	65.85	18.07	8.80
1.	MORENA	17.07	20.63	47.48	14.82
2.	BHIND	27.95	30.06	32.27	9.72
3.	GWALIOR	4.61	26.92	28.13	40.34
4.	DATIA	1.07	48.44	41.45	9.03
5.	SHIV PURI	3.77	25.59	59.23	11.40
6.	GUNA	6.21	71.49	14.31	8.00
7.	TIKAMGARH	0.45	47.21	47.82	4.53
8.	CHHATARPUR	0.97	77.39	14.07	7.57
9.	PANNA	2.13	84.31	8.71	4.89
10.	SAGAR	2.27	50.07	40.49	7.17
11.	DAMOH	2.54	42.37	50.96	4.14
12.	SATNA	1.79	83.86	5.80	8.55
13.	REWA	2.55	89.04	3.86	4.55
14.	SHAHDOL	3.66	83.16	7.30	5.88
15.	SIDHI	3.86	91.53	2.07	2.54
16.	MANDASAUR	5.39	56.58	25.60	12.44
17.	RATLAM	10.95	63.64	21.85	3.55
18.	UJJAIN	15.82	53.64	17.81	12.73
19.	SHAJAPUR	8.79	70.15	16.48	4.58
20.	DEWAS	12.92	56.67	25.49	4.92
21.	JHABUA	4.53	68.89	23.75	2.83
22.	DHAR	12.14	61.13	24.69	2.04
23.	INDORE	8.87	42.67	26.44	22.01
24.	WEST NIMAR	9.97	60.89	26.96	2.18
25.	EAST NIMAR	13.66	55.67	25.07	5.60
26.	RAJGARH	4.02	67.75	24.18	4.05
27.	VIDISHA	3.11	76.11	12.21	8.56
28.	BHOPAL	4.93	42.21	14.98	37.88
29.	SEHORE	6.35	61.88	27.29	4.48
30.	RAISEN	3.53	68.10	23.83	4.50
31.	BETUL	9.26	71.40	12.90	6.43
32.	HOSHANGABAD	8.79	44.58	36.02	10.54
33.	JABALPUR	3.58	64.29	13.50	18.64
34.	NARSIMPUR	4.19	70.10	20.24	5.46
35.	MANDLA	11.54	71.18	14.60	2.68
36.	CHHINDWARA	8.51	71.96	13.32	6.20
37.	SEONI	5.16	71.87	19.93	3.04
38.	BALAGHAT	6.93	86.29	4.10	2.68
39.	SURGUJA	3.42	89.73	2.89	3.96
40.	BILASPUR	5.47	75.68	14.08	4.77
41.	RAIGARH	9.93	83.14	4.15	2.78
42.	RAJNANDGAON	5.75	82.72	7.43	4.11
43.	DURG	4.66	70.78	10.21	14.34
44.	RAIPUR	4.93	71.02	15.98	8.07
45.	BASTAR	26.04	67.31	3.20	3.46

in 1981. The table reveals that in district Bhind 27.95 per cent of the total houses are made of Kutcha matrials like leaves and woods etc. District Bastar with 26.04 percent of Kutcha type houses stands second after Bhind. In district Bastar 66.20 percent of the district areas is under forest which is higest in the state. Urban population constitute only 6.06 percent of the district population. More than 2/3 of the population (67.33)% consist of scheduled tribe population. District Bhind is predominantly an agrarion district in which 75.04 percent of the total areas is Net Sown area. Due to influence of these factories the show of Kutcha houses are more in these districts.

The other district with more than ten percent of total housing stock made of Kutcha matrials are Morena, Ratlam, Ujjain, Dewas, Dhar, East Nimar and Mandla.

The least proportionate share of Kutcha houses found in Tikamgarh and Chhatarpur districts. In both of these district less than one percent of the total housing stock constitutes kutcha type. The other districts with low proportion of Kutcha houses are Datia, Gwalior, Shivpuri, Panna, Sagar, Damoh, Satna, Rewa, Shahdol, Sidhi, Jhabua, Vidisha, Raisen, Jabalpur and Surguja etc.

The table 3.1 reveals that approximately 2/3 of the households occupied semi-pucca-I type houses in Madhya Pradesh in 1981. District wise, the highest proportionate share in this category found in district Sidhi in which more than 90 percent of the households (91.53 per cent) lived in this category. The


MADHYAPRADESH
PERCENTAGE DISTRIBUTION OF TOTAL
HOUSING STOCK BY TYPE OF STRUCTURE
1981
STRUCTURE
KUTCHA
S.P-I
S.P-II
PUCCA
500000 HOUSEHOLDS
250000 "
100000 "
KMS 32 0 32 64 96 128

other district in which more than 75 percent of the households lived in this category are Panna, Rewa, Shadhol, Balaghat, Surguja, Bilaspur, Raigarh and Rajnandgoan. Highest proportionate share of semi-pucca-I types of houses in Sidhi, Pana and Rewa districts is becuase of very low urbanization. Least urban population found in district Sidhi (1.98 per cent). In Panna and Rewa also only 7.79 and 13.06 per cent of the district population lived in urban areas. The other reasons for high proportion of Semi-pucca-I houses in these district are surrounded by forest which provide them lot of cheep materials for construction fo houses secondly the low income devoid them to purchase costly materials like cement or bricks etc for the construction of pucca houses. The third reasons for this high proportion of semi-pucca-I house in the above mention district may be due to continous negligence by the successive government. This land of tribal dominance, neglected for a long time and regarded as a liability (economically) by the rulers.

On the other hand in district more a only 20.63 percent of the household occupy semi-pucca-I type of houses. The other district which experienced low proportinate share of semi-pucca-I type houses are Bhind, Gwalior and Shivpuri etc.

The proportion of total households lived in semi-pucca-II type houses is 18.07 percent in the state of Madhya Pradesh in 1981. Shivpuri district ranked higest with 59.23 percent of households in this category. Damoh is the only other district in which more than half of the households lived in semi-pucca-II

type of huose. Morena, Datia, Tikamgarh Sagar and Hoshangabad are the other districts in which the proportionate share is relatively higher in this category. (See table 3.1)

On the other hand in district Sidhi, Surguja, Rewa, Panna, Shadhol, Balaghat, Raigarh Bastar and Rajnandgaon the proportionate share is very small in the semi-pucca-II category of houses. This is bacause of their backward economy and very rude physical set up surrounded by forest land and ravine bluffs.

In case of Pucca houses, only 8.8 percent of the total households residing in good quality pucca houses in Madhya Pradesh in 1981. The table reveals a wide district wise variation in terms of the distribution of pucca houses in the state. In district Gwalior 40.34 percent of the households enjoyed the facility of pucca houses which is hihgest among all the districts. In Bhopal Indore and Jabalpur district also a large proportion of households occupy pucca houses.

The proportion of pucca houses is high in the above mentioned district due to high proportion of urban population. The people of these district especially urban dwellers get many opportunities to enhance their income. Due to high income they can offerd to purchase costly matetial like cement, concrets, brickes etc for the construction of pucca houses. In Gwalior, Bhopal, Indore and Ujjain, 55.01 percent, 76.21 percent, 65.94 percent and 37.48 percent of the district population lived in urban areas.

On the other hand in district Sidhi only 2.54 percent of households lived in pucca houses. The other district with very low proportion of households lived in pucca houses are Panna, Rewa, shadol, Surguja, Dewas, Jhabua, Dhar, West Nimar, Rajgarh, Schore Raisem seoni, Balaghat, Raigarh, Rajnandgoan and Baster. (See table 3.1)

Proportionate share of pucca houses is district Sidhi, Rewa, Dhar, Jhabua and W.Nimar etc is low because of very low urban population. The share of urban population in district Sidhi is 1.98 per cent while in Rewa Jhabua, W.Nimar it is only 13.06, 12.58 and 8.33 per cent.

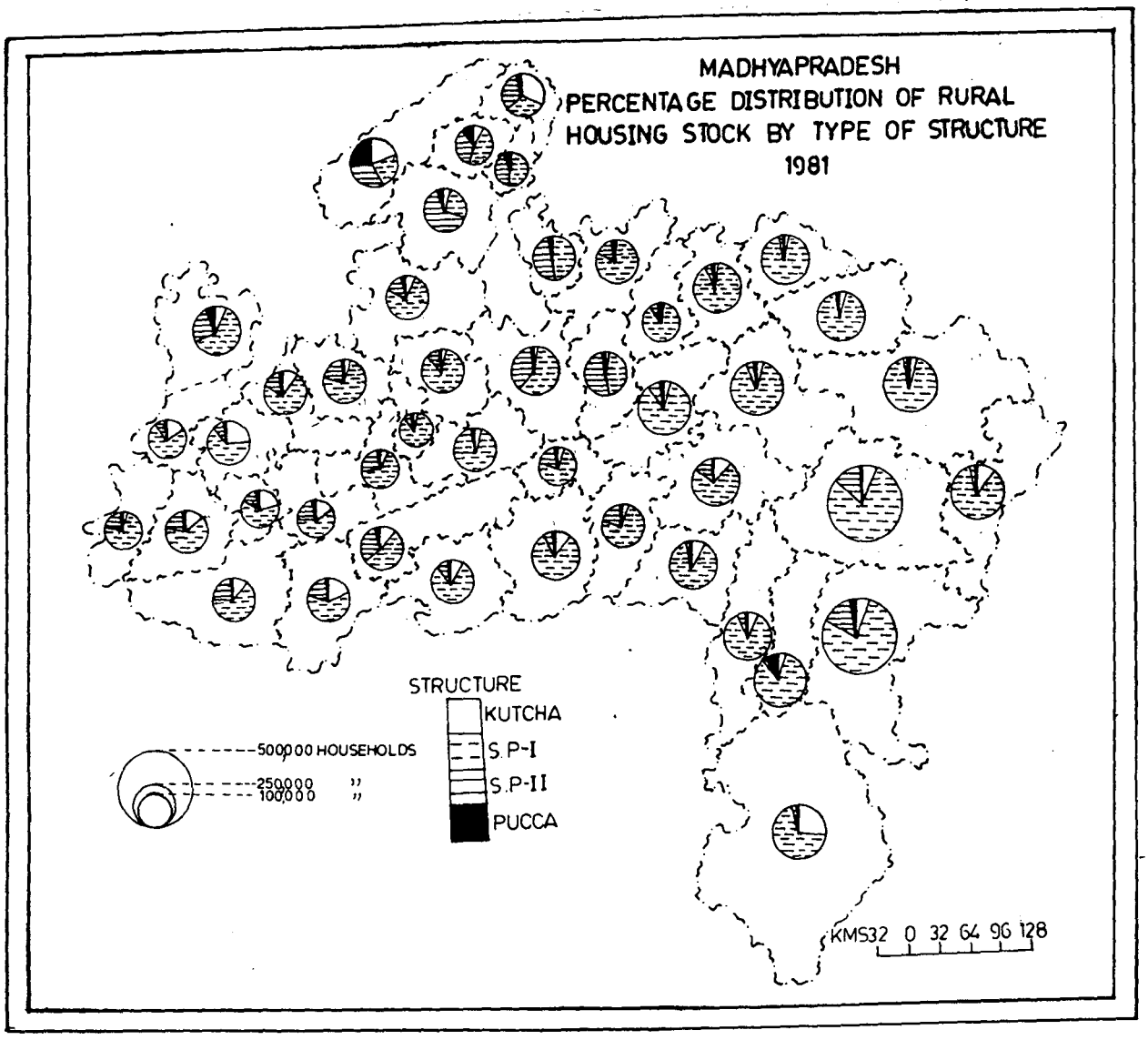
3.2 Percentage Distribution of Rural Housing Stock by Type of Structure - 1981

The table No.3.2 shows that 8.46 percent of the rural households in Madhya Pradesh lived in Kutcha houses in 1981. It is however important to note that the proportion of households lived in semi-pucca-I type of houses is higest among all the four categories. Almost 3/4 of the households lived in semi-pucca-I type of category. Rest of the 18.5 per cent of the housing stock constituted by semi-pucca-II and pucca houses.

District-wise distribution of rural households in Kutcha type houses shows that in district Bhind almost 1/3 of the houses (32.06 percent) are of Kutcha type. The other district with high proportion of Kutcha type houses are Morena (19.56 percent), Ujjain (24.05 percent), Dewas (15.18 percent), Indore (21.19 percent) Est Nimar (18.05 percent) and Bastar (27.17

PERCENTAGE DISTRIBUTION OF RURAL HOUSING STOCK BY TYPE OF STRUCTURE - 1981

S.No.	STATE/DISTRICTS	KUTCHA	S.P-I	S.P-II	PUCCA
	M.P	8.46	73.34	15.94	2.54
1.	MORENA	19.56	22.31	52.03	6.10
2.	BHIND	32.06	32.29	32.95	02.69
3.	GWALIOR	8.29	45.51	35.78	10.42
4.	DATIA	1.21	49.89	43.84	5.07
5.	SHIV PURI	4.23	25.20	65.67	4.90
6.	GUNA	7.05	75.31	14.50	3.14
7.	TIKAMGARH	0.47	47.69	50.07	1.77
8.	CHHATARPUR	0.94	82.58	13.89	2.59
9.	PANNA	2.23	88.33	7.66	1.72
10.	SAGAR	2.71	58.85	36.75	1.68
11.	DAMOH	2.72	43.82	51.67	1.79
12.	SATNA	1.83	91.07	4.60	2.49
13.	REWA	2.86	94.04	2.18	0.91
14.	SHAHDOL	4.32	89.95	4.18	1.56
15.	SIDHI	3.99	94.00	1.77	2.16
16.	MANDASAUR	6.36	62.75	24.69	6.21
17.	RATLAM	15.32	75.49	7.62	1.6
18.	UJJAIN	24.05	64.57	9.76	1.62
19.	SHAJAPUR	9.89	73.55	14.23	2.32
20.	DEWAS	15.18	61.32	21.31	2.18
21.	JHABUA	4.83	72.83	21.12	1.23
22.	DHAR	13.33	65.41	20.19	1.67
23.	INDORE	21.19	62.61	14.08	2.12
24.	WEST NIMAR	11.39	64.63	22.44	1.56
25.	EAST NIMAR	18.05	61.99	18.28	1.95
26.	RAJGARH	4.60	73.80	24.14	2.06
27.	VIDISHA	3.49	84.59	9.39	2.53
28.	BHOPAL	4.26	85.97	8.28	1.49
29.	SEHORE	6.76	65.75	25.34	2.15
30.	RAISEN	3.77	71.20	22.36	2.66
31.	BETUL	7.35	82.40	8.63	16.08
32.	HOSHANGABAD	11.46	53.30	32.18	3.05
33.	JABALPUR	4.38	86.08	7.52	2.02
34.	NARSIMPUR	4.62	75.34	18.03	0.89
35.	MANDLA	12.27	72.96	13.88	1.84
36.	CHHINDWARA	10.45	81.97	5.74	1.47
37.	SEONI	5.31	73.84	19.38	1.00
38.	BALAGHAT	7.39	89.70	1.90	1.83
39.	SURGUJA	3.69	93.49	0.99	0.61
40.	BILASPUR	5.99	80.77	12.64	0.93
41.	RAIGARH	10.66	84.93	3.48	1.11
42.	RAJNANDGAON	6.41	87.38	5.10	1.11
43.	DURG	5.14	83.91	1.79	9.17
44.	RAIPUR	5.66	76.18	15.16	2.99
45.	BASTAR	27.17	68.82	2.34	1.66


MADHYAPRADESH
PERCENTAGE DISTRIBUTION OF RURAL
HOUSING STOCK BY TYPE OF STRUCTURE
1981
STRUCTURE
KUTCHA
S.P-I
S.P-II
PUCCA
500000 HOUSEHOLDS
250000 "
100000 "
KMS32 0 32 64 96 128

percent).

In Tikamgarh district only 0.47 percent of the rural housing stock consists of Kutcha type. In Chhatarpur district also the percentage of Kutcha houses is less than one percent. The other districts in which the proportion of Kutcha houses are very low are Datia, Panna, Sagar, Damoh, Satna and Rewa. (See table 3.2) District Tikamgarh and Chhatarpur are located in the Vindhyas hills which provide easy access to stone, used in ceiling and wood for wall and floor construction. Due to this the proportionate share in semi-pucca-I type house is more in the above mentioned district and the share of Kutcha houses are very low.

Distribution of rural households in semi-pucca-I type of houses is highest among all the four categories in the state of Madhya Pradesh in 1981. In district Rewa 94.04 percent of the households lived in semi-pucca-I category of houses. There are as many as fifteen district in which the proportionate share of semi-pucca-I type houses are more than 75 percent, in this category. These district are Sidhi, Satna, Panna, Ratlam, Bhopal, Betul, Jabalpur, Narsimpur, Balaghat, Surguja, Bilaspur, Raigarh, Rajnandgaon, Durg and Raipur. (See table 3.2)

In Morena district only 22.31 percent of the household occupied semi-pucca-I type of houses. The other districts with very low proportion of semi-pucca-I type houses are shivpuri and Bhind. In which 25.20 percent and 32.29 percent of the households lived in this type of houses.

In Madhya Pradesh 15.94 percent of the total housing stock consists of semi-pucca-II type. There is wide district wise variation in terms of distribution of semi-pucca-II type houses. In district Shivpuri 65.67 percent of the Rural houses constituted by semi-pucca-II type. Damoh and Morena are the other two districts which consitutes more than half of the rural houses in this category. In Damoh 51.67 percent of the housing stock consists of semi-pucca-II type. While in Morena it is 52.03 percent.

Surguja district has the lowest proportion of houses in this category. Only 00.99 percent of the rural housing stock in this district constitutes semi-pucca-II type of houses. The other districts with very low proportion of houses in this category are Sidhi, Durg and Bastar in which 1.77, 1.79 and 2.34 percent of the rural housing stock consists of semi-pucca-II type. All these district falls in tribal dominant belt and are very backward economically. They earn their livelihood from substances agriculture or from forests products and lived mostly in Kutcha and semi-pucca-I type houses. In districts Baster, Sidhi and Surguja 66.2, 41.5 and 54.00 percent of the land is under forest respectively which provide cheap material for the consitution of Kutcha or semi-pucca-I type of houses. Secondly the proportion of tribal population is also very high in Bastar district 67.33 percent of the population is constitutied by scheduled tribes. Due to these reasons proportion of Semi-pucca houses is very high in these districts.

In case of pucca houses the situation is very dismal in the state of Madhya Pradesh. In rural areas of Madhya Pradesh only 2.54 percent of the total housing stock consists of pucca houses. District wise, Betul has the highest proportionate share in this category (16.08 percent). In district Gwalior also the proportionate share is more than ten percent in this category.

On the other hand in district Surguja pucca houses consist of only 00.61 percent of the rural housing stock. The other district with very low proportionate share of pucca houses are Bilaspur, Narsimpur and Rewa which have less than one percent of pucca houses to rural housing stock.

The very low proportionate share of pucca houses in the rural housing stock in Madhya Pradesh as a whole and among different districts indicates that there is utmost poverty prevailing in rural areas of Madhya Pradesh due to which the people unable to buy costly material for the construction of pucca houses. The situation is worse in the tribal dominated regions/districts. There main occupations are food gathering, hunting and subsistance agriculture which provide them, the much needed livelihood. But the economic returns from these primary activities are inadequate and they have to live in utmost poverty which unable them to think about pucca houses which cost more than what they can afford. As forests are found aboundantly in these areas, which provide them chesp and easily available raw materials for the construction of houses. That's why the proportion of Kutcha and semi-pucca houses found predominontly

in these regions and the proportionate share of pucca houses remain abysamlly low.

3.3 Percentage Distribution of Urban Housing Stock by Type of Structure in Madhya Pradesh - 1981

The table No. 3.3 shows the urban housing stock by type of structure in the state of Madhya Pradesh. The table reveals that only 2.85 percent of the houses are of Kutcha type in urban areas of Madhya Pradesh. Likewise, the total and rural area, in urban areas also the highest proportionate share is found in semi-pucca-I type category which consitutes 37.68 percent of type urban housing stock in the state. The proportionate share of pucca houses is also quite high in compare to rural and total. About 1/3 (33.42 percent) of the urban housing stock consists pucca houses. The rest of the 26.05 percent of housing stock fall in the semi-pucca-II type category.

At district level, the trend in proportionate share of different type of houses remains almost same to rural and total housing stock, the only major difference found is in the magnitude of the proportionate share of households in different types of houses. The share of the pucca houses increased at the cost of semi-pucca-I type of houses.

The table 3.3 reveals that is district Betul proportion of Kutcha houses is higest among all the districts. The proportionate share of Kutcha houses in this district is 17.46 percent of the total urban housing stock. It is followed by

PERCENTAGE DISTRIBUTION OF URBAN HOUSING STOCK BY TYPE OF STRUCTURE - 1981

S.No.	STATE/DISTRICTS	KUTCHA	S.P-I	S.P-II	PUCCA
	M.P	2.85	37.68	26.05	33.42
1.	MORENA	3.64	11.60	22.98	61.78
2.	BHIND	9.66	20.17	29.25	40.93
3.	GWALIOR	1.67	12.09	22.03	64.22
4.	DATIA	0.31	33.18	23.66	42.85
5.	SHIV PURI	0.56	28.29	14.50	56.65
6.	GUNA	1.28	49.10	13.18	36.43
7.	TIKAMGARH	0.30	43.69	31.37	24.64
8.	CHHATARPUR	1.11	49.81	15.04	34.04
9.	PANNA	0.88	33.47	21.84	43.81
10.	SAGAR	1.07	26.52	50.52	21.89
11.	DAMOH	1.42	33.56	46.61	18.41
12.	SATNA	1.58	49.52	11.54	37.31
13.	REWA	0.65	58.24	14.17	26.94
14.	SHAHDOL	0.83	53.80	20.82	24.55
15.	SIDHI	0.83	35.21	8.80	13.89
16.	MANDASAUR	1.56	32.17	29.91	37.08
17.	RATLAM	1.87	39.00	51.47	7.66
18.	UJJAIN	2.70	36.21	30.65	30.45
19.	SHAJAPUR	2.51	50.72	29.34	17.42
20.	DEWAS	4.29	38.82	41.48	15.41
21.	JHABUA	1.82	34.20	46.99	17.00
22.	DHAR	4.71	34.34	52.80	8.14
23.	INDORE	3.21	33.51	32.12	31.16
24.	WEST NIMAR	4.77	48.79	46.41	4.80
25.	EAST NIMAR	2.82	40.27	42.40	14.88
26.	RAJGARH	1.56	49.35	31.49	17.67
27.	VIDISHA	1.34	36.43	25.43	36.80
28.	BHOPAL	5.05	28.98	17.03	49.00
29.	SEHORE	3.88	38.82	38.92	18.38
30.	RAISEN	1.43	41.84	36.19	20.54
31.	BETUL	17.46	24.17	31.23	27.13
32.	HOSHANGABAD	1.86	21.94	46.24	29.95
33.	JABALPUR	2.57	37.02	20.98	39.43
34.	NARSIMPUR	1.72	39.60	33.12	25.56
35.	MANDLA	2.25	48.47	23.78	25.50
36.	CHHINDWARA	1.72	36.88	39.91	21.49
37.	SEONI	3.43	49.38	26.63	21.47
38.	BALAGHAT	2.24	51.91	26.31	19.48
39.	SURGUJA	0.72	51.83	21.95	25.49
40.	BILASPUR	2.42	45.85	22.51	29.23
41.	RAIGARH	1.86	63.32	11.52	23.23
42.	RAJNANDGAON	1.16	50.40	23.56	24.87
43.	DURG	3.76	45.96	12.20	38.08
44.	RAIPUR	1.29	45.76	19.97	32.98
45.	BASTAR	10.68	46.82	14.72	27.78

district Bhind and Bastar in which the proportion of Kutcha houses is also very high in compare to other districts. In Bastar district the proportion of Kutcha houses is 10.68 percent while in district Bhind it is 9.66 percent of the urban housing stock in the state.

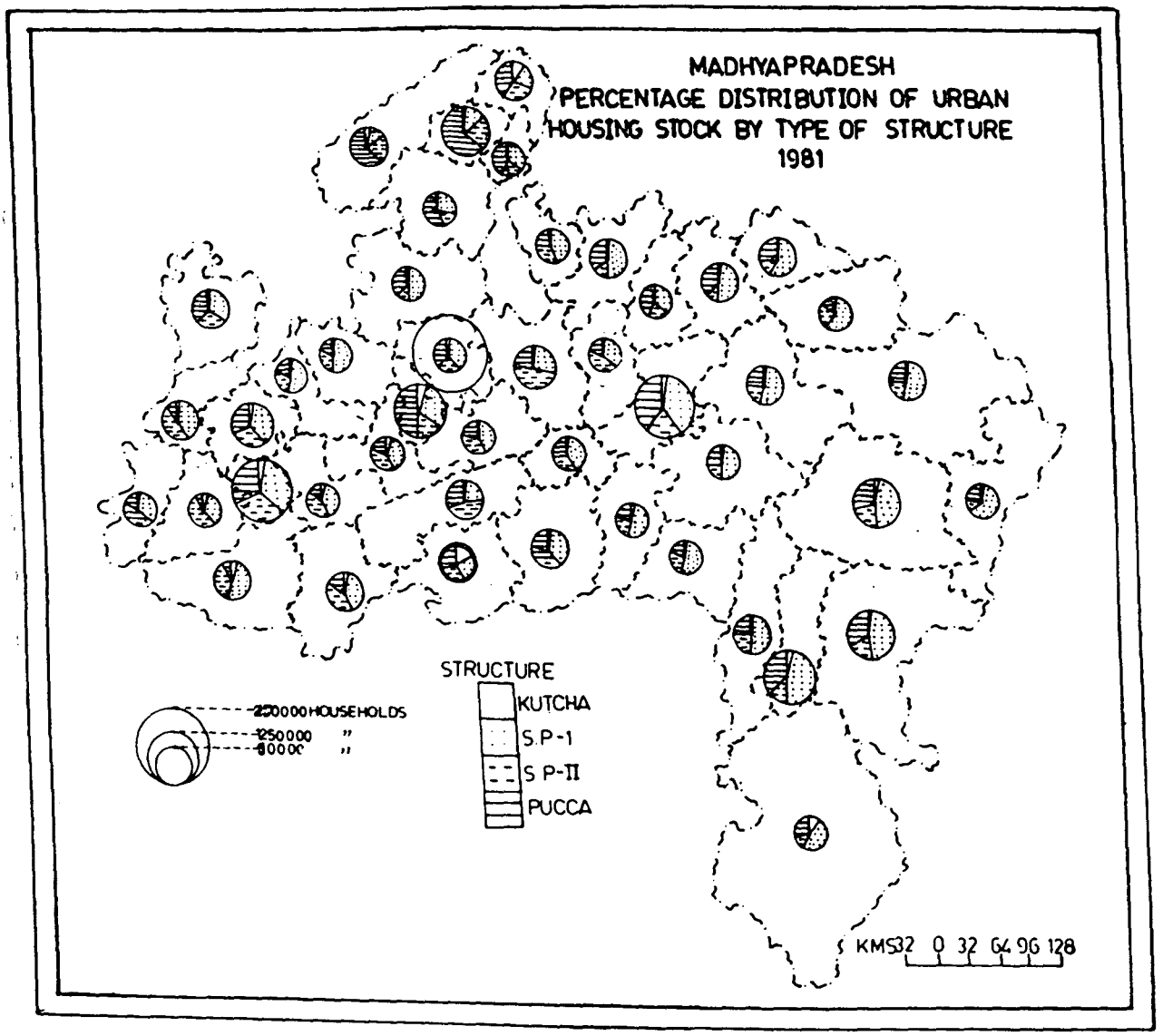
In district Betul and Bastar the proportion of Kutcha houses in urban areas is high due to higher concentration of tribal population in urban areas them other district. In Betul and Bastar districts 6.6.2 and 15.36 percent of the urban population consists of scheduled tribes respectively.

On the other hand the proportion of Kutcha houses found least in Tikamgarh district (.30 percent) the other district which have low proportion of Kutcha houses are Datia, Shivpuri, Panna, Rewa, Sidhi and Surguja.

In case of semi-pucca-I category of houses, district Raigarh has the highest proportionate share in which 63.32 percent of the houses falls in this category. There are eleven district in which the proportion of semi-pucca-I type of houses varies between 45 to 50 percent. These district are Rewa, Shajapur, Shahdol, Satna, Chhatarpur, Balaghat, Seoni, Mandla, Raigarh, West Nimar and Bastar. (See table 3.3)

On the other hand Gwalior and Morena has very low proportion of semi-pucca-I type of house in the urban housing stock.

In case of semi-pucca-II type of houses, district Dhar has the higest proportionate share. More than half (52.80 percent) of the houses in district Dhar consists of semi-pucca-II category


MADHYAPRADESH
PERCENTAGE DISTRIBUTION OF URBAN
HOUSING STOCK BY TYPE OF STRUCTURE
1981
STRUCTURE
KUTCHA
S.P-1
S P-II
PUCCA
KMS32 0 32 64 96 128

which is more than double to the state average of 26.05 percent. In Ratlam district also the proportion of semi-pucca-II type of houses is quite high (51.47 percent).

District Satna shows the least proportionate share in this category. Only 11.54 percent of the houses fall in the semi-pucca-II type of category. The other district with very low proportionate share in this category are Raigarh, Durg, Shivpuri, Guna, Chhatarpur, Rewa and Bastar.

In Madhya Pradesh approximately 1/3 of the urban housing stock (33.42 percent) consists of pucca houses and it is the second highest among all the four types of house categories. But the table reveals a wide district wise variations in the distribution of pucca houses in the state. The highest proportion of pucca houses found in district Gawalior, in which approximately 2/3 of the urban housing stock (64.22 percent) constitutes pucca type houses. The least proportion of pucca houses found in district West Nimar (4.8 percent). In district Morena 61.78 per cent of the houses are made of kutcha type which is second highest among all the districts. In district Shivpuri and Bhopal 56.65 and 49.00 percent of the urban housing stock constitutes pucca type houses. Panna, Datia and Bhind are the other districts in which sahre of pucca houses constitutes more than 40 percent of the urban housing stock. The proportion of pucca houses in district Gwalior, Bhopal, Morena and Shivpuri is mainly due to agglomaration of industries and very low share of tribal population. On the other hand Ratlam and Dhar are the two

more districts other than West-Nimar, in which the share of pucca houses is less than 10 percent of the urban housing stock in the state.

3.4 Corelation between Pucca houses and infrastructural facilities in both urban and Rural areas

The table no. 3.4 indicates that correlation between pucca houses and composite index of infrastructural facilities at first PCA level in rural areas is positive (.2868) and hence prove the hypthoesis (that there is positive correlation between pucca houses and composite index of infrastructural facilities both rural and urban areas) correct. But in case of urban areas, the correlation between the two comes negative at first PCA level (-.1822). This is due to expectionally high proportionate share of infrastructural indicators in districts Sidhi and Rewa which is mainly due to very low base of urban population in the above mentioned districts. But in both of these districts the proportionate share of pucca houses in urban areas is very low. Secondly, at first PCA level it explains only 74.35 cumulative percentages of infrastructural indicators. But at third PCA level, it explains 85.73 cumulative percentages of infrastructrual indicators and shows positive correlation of .0876.

The table also reveals that in most of the districts, the composite index of infrastructural facilities is high in urban areas than the rural areas.

Table 3.4

CORRELATION BETWEEN PUCCA HOUSES AND COMPOSITE INDEX OF INFRASTRUCTURAL FACILITIES IN RURAL AND URBAN AREAS OF MADHYA PRADESH - 1981

SNO.	DISTRICTS	RURAL		URBAN	
		P.H.	C.I.	P.H.	C.I.
1.	MORENA	6.10	4.802	61.78	3.779
2.	BHIND	2.69	3.285	40.93	3.561
3.	GWALIOR	10.42	4.142	64.22	4.952
4.	DATIA	5.07	3.969	42.85	4.496
5.	SHIV PURI	4.90	3.887	56.65	4.477
6.	GUNA	3.14	3.039	36.43	3.910
7.	TIKAMGARH	1.77	3.632	24.64	3.342
8.	CHHATARPUR	2.59	3.040	34.04	7.460
9.	PANNA	1.72	2.812	43.81	4.453
10.	SAGAR	1.68	3.032	21.89	3.055
11.	DAMOH	1.79	2.918	18.41	5.843
12.	SATNA	2.49	3.055	37.31	3.825
13.	REWA	.91	3.544	26.94	14.228
14.	SHAHDOL	1.56	2.712	24.95	5.767
15.	SIDHI	2.61	3.408	13.89	11.933
16.	MANDASAUR	6.21	5.612	37.08	4.534
17.	RATLAM	1.6	5.222	7.66	3.985
18.	UJJAIN	1.62	4.929	30.45	4.390
19.	SHAJAPUR	2.32	4.113	17.42	5.748
20.	DEWAS	2.18	4.584	15.41	4.770
21.	JHABUA	1.23	3.701	17.00	7.085
22.	DHAR	1.67	4.527	8.14	4.934
23.	INDORE	2.12	5.649	31.16	3.896
24.	WEST NIMAR	1.56	4.194	4.8	4.676
25.	RAJGARH	2.06	2.349	17.67	6.633
26.	VIDISHA	2.53	3.478	36.80	9.021
27.	BHOPAL	1.49	6.602	49.00	5.723
28.	SEHORE	2.15	4.990	18.38	5.155
29.	RAISEN	2.66	3.487	20.54	4.423
30.	BETUL	16.08	4.551	27.13	3.708
31.	HOSHANGABAD	3.05	4.287	29.95	5.627
32.	JABALPUR	2.02	2.532	39.43	4.311
33.	NARSIMPUR	.89	4.107	25.56	4.365
34.	CHHINDWARA	1.47	4.092	21.49	4.273
35.	BALAGHAT	1.83	3.983	19.48	6.600
36.	SURGUJA	.61	3.210	29.49	5.120
37.	BILASPUR	.93	3.069	29.23	5.942
38.	RAIGARH	1.11	3.427	23.23	5.709
39.	RAJNANDGAON	1.11	3.322	24.87	3.946
40.	DURG	9.17	3.722	38.08	2.514
41.	RAIPUR	2.99	2.992	32.98	5.726
42.	BASTAR	1.66	4.043	27.78	4.881
Correlation		.2868		-0.1822	

CHAPTER IV

HOUSEHOLDS AMENITIES

The provision of infrastructural facilities of which household amenities are an important elements for meeting the basic needs of the inhabitants. It plays a vital role in the process of socio-economic development. Access to health care, education, electricity, sanitation and safe drinking wate etc. enables the poor to avail high cost oriented opportunities and improve their living standard which also helps in bridging the gap between the elite group, who can afford all means of basic amenities and the helpless poor masses. The quality of life in human dwelling is mainly determined by the availablity and adequacy of infrastructural components. Electricity, drinking water and toilet facilities are the important igredients of quality of life which inhabitants desire to avail.

In this chapter three variables drinking water, electricity and toilet are taken upto guage the quality of life in Madhya Pradesh and their regional variation among different districts. The chapter is divided into four parts. The first part deals with the drinking water facilties by its sources and location. Second part deals with access to electricity in Madya Pradesh as a whole and urban and rural areas separately. Electricity by tenure status is also been studied. The third part of the chapter deals with access to toilet facilities in urban areas only. Toilet facilities in rural areas is excluded from the study because of non-availability of adequency data. The fourth

part of the chapter deals with infrastructural facilities to guage the level of development of infrastructural facilities and their regional variation with the help of factor analysis technique (principal component analysis).

Drinking Water : Indespensibility of water to human life needs hardly any explanation. The human body can survive without nutrition for some days with no lasting harm to health but going without drinking water is fatal after only a few days. Water is not only a necessary input for human being but it also serves various other purposes like bathing, cooking, washing and cleaning etc.

"Availability of water is not sufficient by itself. The provision of a safe and accessible water supply is characterised as adequate if the standards of quality, availbility and reliability are sufficiently met".[1] But all these criteria for the supply of safe drinking water hardly met in India either due to negligence or shortage of fund to purify the contaminated water. It has been found that various rivers of India carry lot of contaminated elements which are very harmful to human health. Millions of people in this country depend on these sources of water and get badly affected.

The importance of providing potable drinking water has been

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1. "Manual on Human Settlement : International Year of shelter for the homeless (IYSH-87)" Ministry of Urban Development Government of India, New Delhi.p.56

stressed by many countries and international agencies. Recognising the urgent need for improved water supply and human water management, UNO declared 1981-90 as the "international drinking water supply and sanitation decade (IDWSSD) in order to provide adequate drinking water and sanitation to those who have been living without these services".[2]

At the same time government of India has also declared to achieve the target of safe drinking water provision in all the 'no water source' villages. But the government of India's performance is abysmally poor. Even after the lapse of more than four decades of planning since independence there are 37017 villages in India declared as 'problem villages' which have no access to safe drinking water. Well is a major source of drinking water in rural India while tap occupies the same position in urban areas. According to 1981 census 61.63 per cent of rural households depended upon well for drinking water. In urban areas 20.40% of household received drinking water from wells. Second important source of drinking water was tubewell/hand pump in rural areas (16.21 per cent). In rural areas only 10.29% of the household received water from tap while in urban areas 63.24% of the household had access to tap water in 1981, 5171% of the total household received water from well and only 23.03% had access to tap water.[3]

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2. "Manual on Human Settlement", op.cit, p.52.
3. Census of India, 1981, Series I, Part VIII A&B (V).

National sample survey organisation (NSSO) in its 38th round (1983) reported that in rural areas of Madhya Pradesh 69.60 per cent of households received water from pucca wells and only 3.27 per cent of the household had access to tap water which is even far below the national average of 10.29 per cent. In urban areas of Madhya Pradesh 26.36 per cent of households received water from pucca wells while 65.45% of household had access to tap water.

4.1 Percentage distribution of total household by location and source of drinking water - 1981.

The table 4.1 indicates that in Madhya Pradesh only 7.92 per cent of the households have access to drinking water by protected sources like pipe, tubewell or handpump etc within the premises and 12.25 per cent of the households by outside the premises. In Bhopal district 40.08 per cent of households have access to drinking water by protected sources within the premises and has is ranked highest among all the districts. Gwalior with 32.03 per cent and Indore with 31.39 per cent ratained second and third position respectively. Percentage of households with drinking water facilties is high in Bhopal, Gwalior and Indore districts because of higher urbanisation. In Bhopal 76.21 per cent population of the district lived in urban areas which is highest in the state. It is followd by Indore (65.94 per cent) and Gwalior (55.01 per cent). There are only six other districts in which more than ten per cent of households gets water by

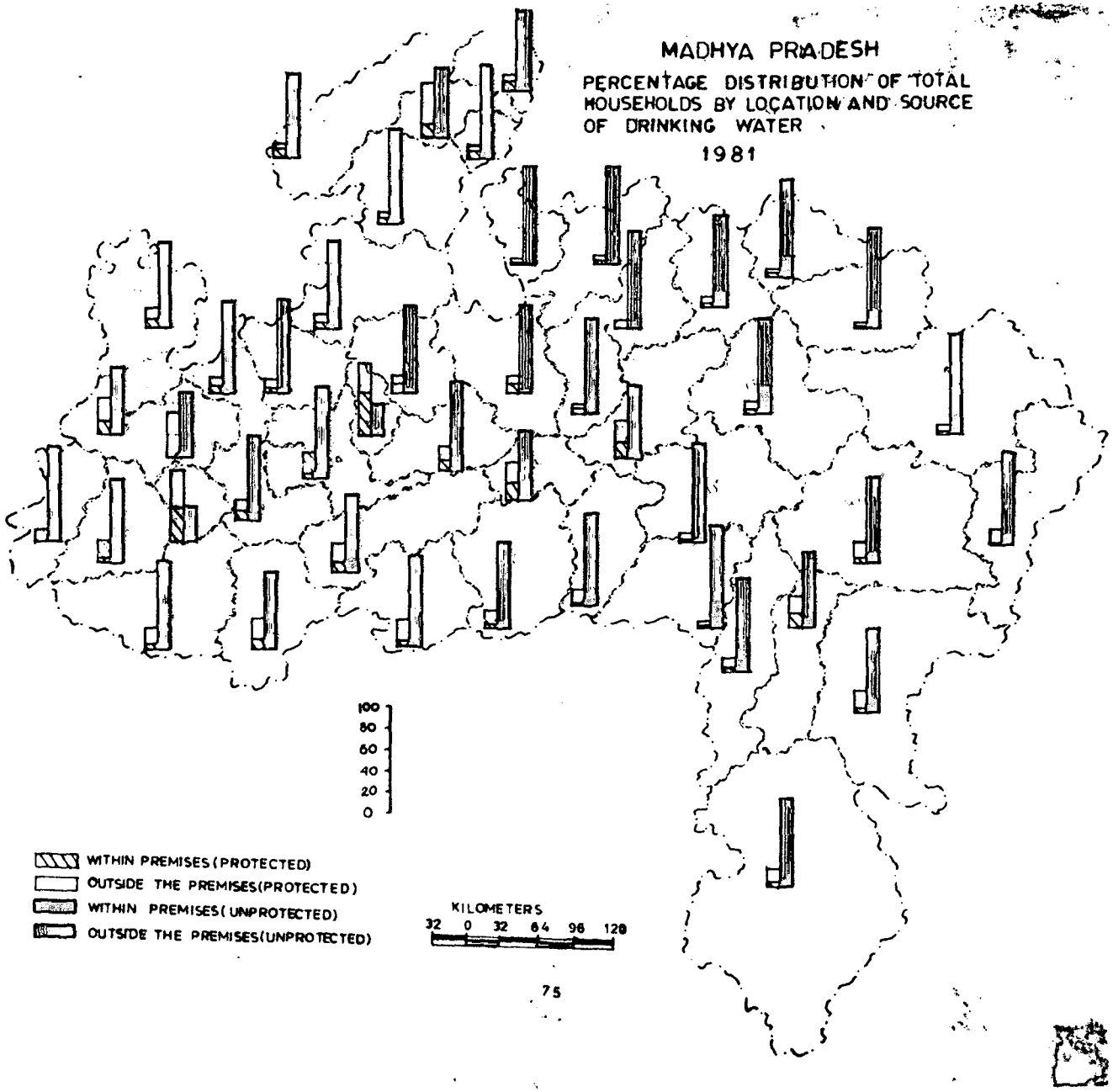
PERCENTAGE OF DISTRIBUTION OF TOTAL HOUSEHOLDS BY LOCATION AND SOURCE OF DRINKING WATER - 1981

SNO.	STATE/DISTRICT	PROTECTED		UNPROTECTED	
		W.P.	O.P.	W.P.	O.P.
	MADHYA PRADESH	7.92	12.25	7.66	72.16
1.	MORENA	7.94	6.99	2.48	82.32
2.	BHIND	7.83	5.64	2.78	83.75
3.	GWALIOR	32.03	14.66	5.30	48.67
4.	DATIA	7.91	4.77	2.97	84.34
5.	SHIVPURI	4.93	3.80	2.91	88.36
6.	GUNA	6.65	8.23	2.63	82.50
7.	TIKAMGARH	2.90	2.04	2.11	93.04
8.	CHHATARPUR	3.17	3.75	3.25	89.82
9.	PANNA	6.89	2.89	2.68	91.96
10.	SAGAR	8.43	9.05	3.87	78.64
11.	DAMOH	6.51	3.67	14.91	80.66
12.	SATNA	4.43	6.73	14.01	74.77
13.	REWA	3.99	3.98	19.40	72.62
14.	SHAHDOL	3.62	6.88	25.97	63.52
15.	SIDHI	1.95	2.42	17.10	78.54
16.	MANDASAUR	8.35	10.91	3.34	77.39
17.	RATLAM	13.81	22.11	3.29	60.78
18.	UJJAIN	19.88	20.55	3.0	56.58
19.	SHAJHPUR	6.14	7.75	3.37	82.74
20.	DEWAS	9.08	11.40	6.50	73.04
21.	JHABUA	2.00	8.80	1.88	87.24
22.	DHAR	5.09	15.58	1.96	77.38
23.	INDORE	31.39	35.67	3.80	29.14
24.	WEST NIMAR	3.65	14.62	3.04	78.69
25.	EAST NIMAR	8.53	18.74	6.47	66.26
26.	RAJGARH	3.87	7.87	2.93	85.32
27.	VIDISHA	8.87	8.41	1.95	80.77
28.	BHOPAL	40.08	28.59	6.26	25.25
29.	SEHORE	4.40	9.69	4.00	81.86
30.	RAISEN	8.58	8.52	2.71	80.17
31.	BETUL	5.33	19.02	3.47	79.76
32.	HOSHAGABAD	11.97	14.88	9.88	63.27
33.	JABALPUR	14.03	18.82	5.76	61.39
34.	NARSIMPUR	15.91	18.99	4.07	61.03
35.	MANDLA	2.22	5.40	2.71	89.63
36.	CHHINDWARA	3.79	12.93	6.35	74.84
37.	SEONI	2.75	10.70	10.03	76.52
38.	BALAGHAT	1.71	3.85	23.54	70.88
39.	SURGUJA	2.96	6.22	18.69	75.29
40.	BILASPUR	5.40	14.65	9.44	70.51
41.	RAIGARH	1.71	11.75	5.94	81.19
42.	RAJNANDGAON	3.00	10.18	10.32	76.92
43.	DURG	13.07	16.48	9.13	61.32
44.	RAIPUR	4.89	15.83	12.46	66.82
45.	BASTAR	2.52	13.12	5.84	78.54

protected sources within premises. These are Ujjain (19.88 per cent), Narsimpur (15.91 per cent), Jabalpur (14.03 per cent), Ratlam (13.81 per cent), Durg (13.07 per cent) and Hoshangabad (11.97 per cent).

In district Indore 35.67 per cent of households has access to protected water outside the premises. It is followed by district Panna (28.90 per cent). In Bhopal district 28.95 per cent of households has received water by such sources. In Ratlam and Ujjain the comparative figures are 22.11 and 20.55 per cent of households.

On the lower side only 1.71 per cent of households in Balaghat and Raigarh district have access to drinking water by protected sources within premises. There are sixteen other districts in which less than five per cent of households have access to water by protected sources within premises (see table 4.1). In the predominantly tribal belt of Jhabua, Mandla and Bastar districts only 2.00, 2.22, and 2.52 per cent of households has access to protected water within premises. This indicates the state of quality of life in tribal belt which has been contiunously neglected not only in colonial period but even after independence sufficient attention has not been paid to alleviate the poverty and provide the basic amenities to the inhabitants of this forest land. In Balagphat, Raigarh, Jhabua, Mandla and Bastar only 8.69, 8.39, 8.33, 7.05 and 6.06 per cent of the population lived in urban areas and most of the households lived


MADHYA PRADESH
PERCENTAGE DISTRIBUTION OF TOTAL HOUSEHOLDS BY LOCATION AND SOURCE OF DRINKING WATER
1981
100
80
60
40
20
0
WITHIN PREMISES (PROTECTED)
OUTSIDE THE PREMISES (PROTECTED)
WITHIN PREMISES (UNPROTECTED)
OUTSIDE THE PREMISES (UNPROTECTED)
KILOMETERS
32 0 32 64 96 128

in rural areas that's why they have less access to protected sources of water supply.

In Tikamgarh and Sidhi district only 2.04 and 2.42 per cent of the households have access to water by protected sources outside the premises. There are six other districts in which the percentage figure is less than five per cent. These districts are Damoh, Datia, Shivpur, Chhatarpur, Rewa and Balaghat.

The table 4.1 shows that 7.66 per cent of households in the state of Madhya Pradesh has access to unprotected sources of water within premises and a large chunk of household (72.16 per cent) received drinking water by inhygienic sources outside the premises. Whether within premises or outside the premises, 79.82 per cent of households have access to drinking water by unprotected sources like, well, river/canal, ponds etc. The quality of water received by unprotected sources has been abysmally poor. Many areas, especially tribal belts of MP, use drinking water directly from canal/river, ponds etc. without purification. This carries industrial pollutants, household garbage etc in solid or dissolved form which are very harmful to health.

The table 4.1 shows district wise variation in case of drinking water by unprotected sources. In Shahdol district 25.97 per cent of household have received drinking water by unprotected sources within premises which is highest among all the districts. Balaghat has the second highest proportion of households (23.54

per cent) in this category. It is followed by Rewa and Surguja with 19.40 per cent and 18.69 per cent respectively.

In district Jhabua 1.88 per cent of households have received water by unprotected sources within premises which is lowest among all the districts. It is followed by Vidisha (1.95 per cent) and Dhar (1.96 per cent) districts.

The table shows that majority of households in Madhya Pradesh has access to unprotected sources of drinking water outside the premises. In district Tikamgarh as much as 93.41 per cent of the households has received water by unprotected sources outside the premises. It is followed by district Panna (91.96 per cent). Only 12.13 per cent and 7.79 per cent of the population lived in urban area in district Tikamgarh and Panna and rest of the bulk of the population lived in rural areas which get drinking water mostly outside the premises by unprortected sources. District Bhopal has the least proportion of household which are dependent on unprotected sources of drinking water outside the premises. Only 25.25 per cent of the households are dependent upon unprotected sources of drinking water in Bhopal. The comparative proportionate share in district Indore is 29.14 per cent.

Whether drinking water is received by sources within the premises or outside the premises, 95.64 per cent households in Sidhi district received drinking water by unprotected sources and it is highest among all the districts. It is followed by Damoh

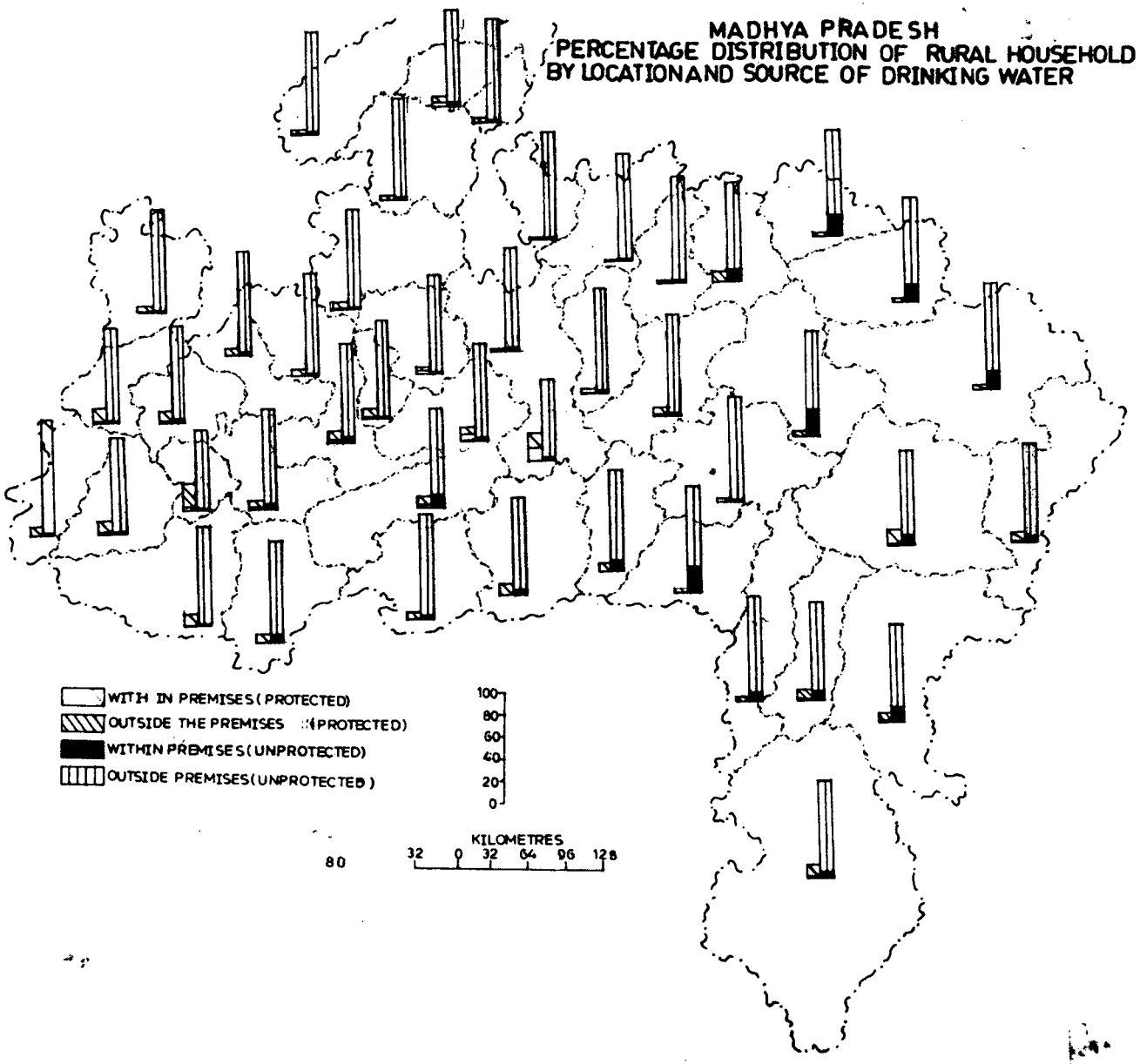
(95.57 per cent), Tikamgarh (95.15 per cent), Panna (94.64 per cent) and Surgiya (93.98 per cent). In district Sidhi only 1.98 per cent of population lived in urban areas which is least among all the district due to that proportionate share of households received drinking water by protected sources is low and by unprotected sources like river/canal, pond, etc is high. The lowest proportion of household which derived drinking water by unprotected sources has been found in district Bhopal the capital of the state of Madhya Pradesh. In Bhopal 31.51 per cent of the households in the district have received drinking water by unprotected sources. Indore is the only other district in which less than half of the total households (32.94 per cent) received drinking water by unprotected sources. In districts Gawalior and Ujjain, the two other major unbanized districts, 53.97 per cent and 59.58 per cent of the households received drinking water by unprotected sources, respectively.

4.2 Percentge Distribution of Rural household by location and sources of Drinking Water - 1981.

The table 4.2 reveals that in the state of Madhya Pradesh only 1.36 per cent of households has received drinking water by protected sources within premises and 6.73 per cent of household outside the premises. Whether within or outside the premises only 8.09 per cent of household have enjoyed the facility of drinking water by protected sources of pipe and handpump/tube

PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLDS BY LOCATION AND SOURCE OF DRINKING WATER - 1981

SNO.	STATE/DISTRICT	PROTECTED		UNPROTECTED	
		W.P.	O.P.	W.P.	O.P.
	MADHYA PRADESH	1.36	6.73	7.66	84.25
1.	MORENA	1.07	3.21	2.31	93.10
2.	BHIND	.97	1.91	2.26	94.60
3.	GWALIOR	4.10	4.51	3.93	87.46
4.	DATIA	1.22	2.67	2.18	93.92
5.	SHIVPURI	.58	2.67	2.28	94.58
6.	GUNA	1.99	5.86	2.09	90.07
7.	TIKAMGARH	.12	.73	1.43	97.71
8.	CHHATARPUR	.25	1.66	1.82	96.28
9.	PANNA	.53	2.19	1.83	95.44
10.	SAGAR	1.85	3.08	3.12	91.95
11.	DAMOH	1.57	3.23	3.01	92.18
12.	SATNA	6.51	3.67	14.91	80.66
13.	REWA	.19	2.65	20.67	76.49
14.	SHAHOOL	.94	3.28	26.32	69.46
15.	SIDHI	1.64	2.17	17.25	78.94
16.	MANDASAUR	1.60	5.12	3.22	90.00
17.	RATLAM	1.3	12.71	2.97	83.02
18.	UJJAIN	11.89	9.98	2.49	86.34
19.	SHAJHPUR	1.24	3.72	3.05	91.99
20.	DEWAS	1.73	6.17	6.32	85.80
21.	JHABUA	.28	5.95	1.70	92.08
22.	DHAR	1.63	10.58	1.75	86.05
23.	INDORE	3.98	22.65	3.11	70.25
24.	WEST NIMAR	.49	9.16	2.35	88.00
25.	EAST NIMAR	1.07	7.17	7.35	84.41
26.	RAJGARH	.67	5.24	2.08	92.01
27.	VIDISHA	3.07	3.68	.16	92.00
28.	BHOPAL	.88	8.7	1.97	88.48
29.	SEHORE	2.68	7.22	3.87	86.23
30.	RAISEN	5.89	5.81	2.58	85.73
31.	BETUL	.88	13.65	3.15	91.53
32.	HOSHAGABAD	3.42	6.79	10.38	79.43
33.	JABALPUR	1.84	5.60	2.63	89.93
34.	NARSIMPUR	11.89	14.99	4.17	68.95
35.	MANDLA	.68	3.53	2.33	93.40
36.	CHHINDWARA	.84	8.33	5.15	83.00
37.	SEONI	.94	21.52	10.39	81.20
38.	BALAGHAT	.51	2.31	23.54	73.63
39.	SURGUJA	1.13	3.23	15.74	79.89
40.	BILASPUR	1.39	12.16	9.43	77.03
41.	RAIGARH	.54	8.48	5.94	85.70
42.	RAJNANDGAON	.14	4.91	10.55	84.40
43.	DURG	.94	9.56	9.34	80.16
44.	RAIPUR	.92	9.82	12.43	76.82
45.	BASTAR	.82	11.17	5.5	82.51


MADHYA PRADESH
PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLD
BY LOCATION AND SOURCE OF DRINKING WATER
WITH IN PREMISES (PROTECTED)
OUTSIDE THE PREMISES (PROTECTED)
WITHIN PREMISES (UNPROTECTED)
OUTSIDE PREMISES (UNPROTECTED)
100
80
60
40
20
0
KILOMETRES
32 0 32 64 96 128
80

well etc. The proportionate share of households received drinking water by protected sources is very low in rural areas because so far drinking water by pipe etc is mainly restricted to urban areas. Provision of tap water in rural India is only a recent phenomenon. Haryana is the only state in which all the problem villages has been provided with drinking water facilities by protected sources. But performance of a backward state, like Madhya Pradesh is very dismal, either due to shortage fund or negligence of the administration.

It reveals that there is very wide districtwise variation in the distribution of households with drinking water facility by protected sources within premises. The highest proportionate share is found in Ujjain and Narsimpur districts, in which 11.89 per cent of households have access to drinking water by protected sources within premises. Satna and Raisen are the only other two districts in which more than five per cent of households have received drinking water by protected sources within premises, with a proportionate share of 6.51 per cent and 5.89 per cent of households. Gwalior, Indore, Hoshangabad and Vidisha are the other four districts which have proportionate share twice the state average of 1.36 per cent. It is mainly due to spillover effect of the urban areas that percentage of households received drinking water by protected sources within premises is high in the above mentioned districts.

Tikamgarh district stands lowest with only 0.12 per cent of

household who have access to drinking water by protected sources within premises. It is followed by Rajnandgaon (0.14 per cent), Rewa (0.19 per cent), Chhatarpur (0.25 per cent) and Jhabua (0.28 per cent). There are as many as twenty districts in which proportionate shares are less than one per cent.

In case of drinking water by protected sources outside the premises, Indore district stands highest with 22.65 per cent of households. It is followed by Seoni (21.52 per cent) and Narismpur (14.99 per cent) districts. There are five other districts in which proportionate shares are more than ten per cent. These districts are Betual (13.65 per cent), Ratlam (12.71 per cent), Bilaspur (12.16 per cent), Bastar (11.17 per cent) and Dhar (10.58 per cent).

The iegist proportionate share of households who have access to protected sources of drinking water outside the premises found in Tikamgarh district (only 0.73 per cent). There are thirteen other districts in which percentage of households in this category is less than half of the state average of 6.73 per cent. These districts are Morena, Bhind, Datia, Shivpur, Chhatarpur, Panna, Sagar, Damoh, Rewa, Shahdol, Sidhi, Balaghat and Surguja.

The table 4.2 indicates that a large chunk of households have received drinking water by unprotected sources in rural Madhya Pradesh. More then ninty per cent (91.91 per cent) of households in the state are dependent upon unprotected sources to

meet their drinking water ned, out of which 7.66 per cent have received drinking water within premises and 84.25 per cent of household outside the premises.

There is wide district wise variation in the distribution of household having access to drinking water by inhygienic sources within premises shahdol district with 26.31 per cent of household ranked highest among all the districts. Balaghat and Rewa districts with proportionate share of 23.54 per cent and 20.67 per cent stands second and third highest respectively. These are followed by Sidhi (17.25 per cent), Surguja (15.74 per cent) Satna (14.91 per cent), Raipur (12.43 per cent), Rajnanadgaon (10.55 per cent), Seoni (10.39 per cent) and Hoshangabad (10.38 per cent) districts. All the other districts have less than ten per cent share of households receiving drinking water by unprotected sources within premises.

Vidisha district stands lowest with only 1.43 per cent of household who have received drinking water by unprotected sources within the premises. It is followed by Tikamgarh (1.43 per cent), Jhabua (1.70 per cent), Dhar (1.75 per cent), Chhatarpur (1.83 per cent), Panna (1.83 per cent) and Bhopal (1.97 per cent).

In case of drinking water by unprotected sources outside the premises, Tikamgarh district achieved dubious distinction by remaining at top with 97.71 per cent. It is followed by Chhatarpur (96.28 per cent), Panna (95.44 per cent) Bhind (94.61

per cent) and Shivpuri (94.58 per cent). There are as many as ten more districts in which more than 90 per cent of households received water by unprotected sources outside the premises (see table 4.2).

The lowest proportionate share of household in this category is found in Narsimpur districts in which 68.95 per cent of households get drinking water by unprotected sources outside the premises. In Shahdol and Indore districts 69.46 per cent and 70.25 per cent of households have access to drinking water by unprotected sources outside the premises. Balaghat is the only other district in which less than 3/4 of the household (37.63 per cent) fall in this category.

4.2 Percentage Distribution of Urban Household by Location and source of drinking water - 1981.

The table 4.3 shows the percentage distribution of urban households by location and source of drinking water in Madhya Pradesh in 1981. The table reveals that one third of the urban households (33.17 per cent) in Madhya Pradesh have access to protected sources of drinking water within premises and another one third (33.48 per cent) outside the premises. The table reveals that urban households are much better occupied with hygienic water supply by protected sources than rural and total households in Madhya Pradesh in 1981. It is because protected sources of drinking water such as pipe and handpump/tubewells etc. require lot of investment which is more easily available in

PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS BY LOCATION AND SOURCE OF DRINKING WATER - 1981

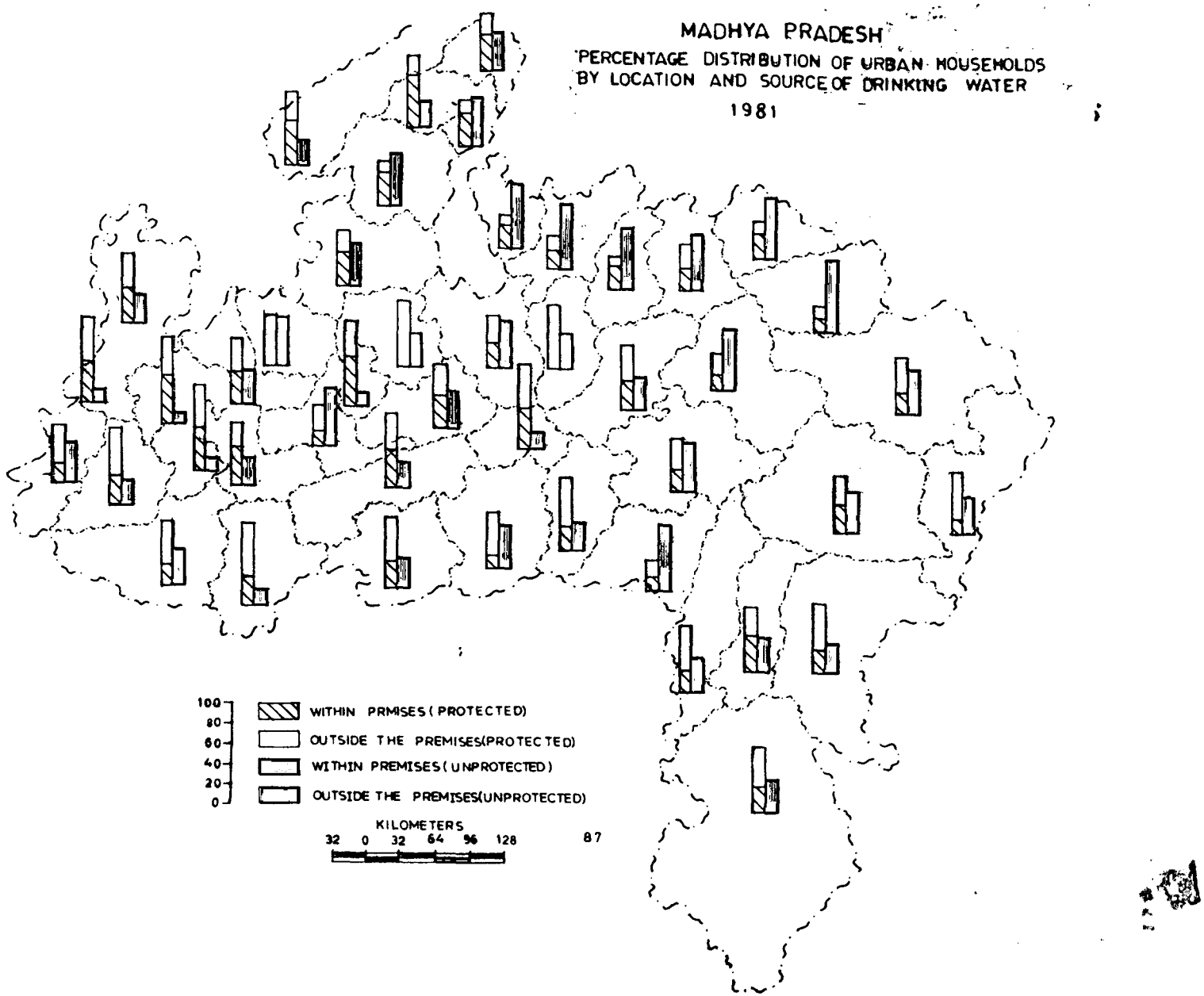
SNO.	STATE/DISTRICT	PROTECTED		UNPROTECTED	
		W.P.	O.P.	W.P.	O.P.
	MADHYA PRADESH	33.17	33.48	7.66	25.69
1.	MORENA	46.20	28.01	3.47	22.32
2.	BHIND	38.27	22.19	3.98	35.56
3.	GWALIOR	53.26	22.37	6.36	19.19
4.	DATIA	35.57	13.43	6.20	44.80
5.	SHIVPURI	34.84	12.39	7.22	45.55
6.	GUNA	33.94	22.07	5.79	38.20
7.	TIKAMGARH	23.13	11.55	6.37	58.75
8.	CHHATARPUR	18.76	14.91	10.89	55.44
9.	PANNA	25.22	11.17	12.61	51.00
10.	SAGAR	26.27	25.21	5.92	42.60
11.	DAMOH	17.34	46.26	12.26	24.13
12.	SATNA	22.23	21.35	9.76	46.65
13.	REWA	27.23	12.13	11.65	48.99
14.	SHAHOOL	15.29	22.60	24.47	37.64
15.	SIDHI	14.27	12.31	10.82	63.06
16.	MANDASAUR	35.18	33.91	3.86	27.06
17.	RATLAM	41.78	43.15	4.02	11.04
18.	UJJAIN	49.76	37.46	3.80	8.98
19.	SHAJHPUR	34.27	30.85	5.21	29.67
20.	DEWAS	39.25	32.90	7.23	20.62
21.	JHABUA	19.58	38.98	3.75	37.70
22.	DHAR	27.82	48.39	3.39	20.40
23.	INDORE	44.26	41.79	4.12	9.83
24.	WEST NIMAR	20.26	43.41	6.69	29.64
25.	EAST NIMAR	30.50	52.86	3.87	12.81
26.	RAJGARH	25.03	25.29	8.55	41.13
27.	VIDISHA	35.26	30.75	3.66	29.33
28.	BHOPAL	51.54	34.57	2.44	11.15
29.	SEHORE	15.59	25.35	4.86	54.19
30.	RAISEN	31.95	32.03	3.83	31.95
31.	BETUL	26.11	44.10	4.96	24.84
32.	HOSHAGABAD	36.52	38.02	8.45	17.03
33.	JABALPUR	29.27	35.34	9.68	25.71
34.	NARSIMPUR	40.51	43.52	3.46	12.51
35.	MANDLA	22.11	29.73	7.58	40.12
36.	CHHINDWARA	14.35	29.42	10.67	45.57
37.	SEONI	23.61	48.26	5.90	22.23
38.	BALAGHAT	13.93	19.74	23.57	42.76
39.	SURGUJA	21.25	35.96	13.32	29.46
40.	BILASPUR	29.29	29.50	9.48	31.71
41.	RAIGARH	14.71	48.11	5.92	31.12
42.	RAJNANDGAON	19.60	46.82	8.69	24.90
43.	DURG	35.81	29.48	8.73	25.98
44.	RAIPUR	24.32	45.28	12.58	17.82
45.	BASTAR	25.99	40.20	10.55	23.55

urban areas due to relatively high tax paying capacity of the inhabititants of urban areas and secondly that the way of life of urban areas is such that no government can neglect this one of the basic civic amenity in urban areas both from social and economic point of view and thirdly due to political pressure and relatively more bargaining power of the urban dwellers due to which government succums to the cumulative pressure and have to maintain a constant vigil on both quanity and quality of drinking water supply to urban inhabitants.

There is wide districtwise variations in percentage distribution of urban households having access to protected sources of water suply in both within and outside the premises. More than half of the households in Gwalior and Bhopal dependent on protected sources of water supply with a proportionate shares of 53.26 per cent and 51.54 per cent respectively. These are followed by Ujjain (49.76 per cent) Morena (46.20 per cent) and Indore (44.26 per cent) districts.

On the other hand Balaghat district stand lowest with only 13.93 per cent of household which have access to protected sources of drinking water supply within the premises. It is followed by Sidhi,Chhindwara and Raigarh districts with less than fifteen per cent each. There are six other districts in which less than one fifth of the households have access to protected sources of drinking water within premises (see table 4.3).

In case of drinking water supply by protected sources


MADHYA PRADESH
PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS
BY LOCATION AND SOURCE OF DRINKING WATER
1981
100
80
60
40
20
0
WITHIN PRMISES (PROTECTED)
OUTSIDE THE PREMISES(PROTECTED)
WITHIN PREMISES (UNPROTECTED)
OUTSIDE THE PREMISES(UNPROTECTED)
KILOMETERS
32 0 32 64 96 128
87

outside the premises also, there is wide regional variation. On the one hand there is such district like East Nimar in which more than half of the households (52.86 per cent) have access to safe drinking water supply outside the premises while on the other hand in district Panna and Tikamgarh only 11.17 and 11.55 per cent of household have access to safe drinking water supply outside the premises. In district Dhar, Seoni, Raigarh, Rajnandgaon, Damoh, Betul, Narsimpur, West Nimar, Raipur, Bastar, Indore and Ratlam forty to fifty per cent of households have access to drinking water by protected sources outside the premises.

In Madhya Pradesh, 7.66 per cent of urban households receive drinking water by unprotected sources within premises and 25.69 per cent of households outside the premises. Whether within premises or outside the premises 33.35 per cent of households have received drinking water by unprotected sources.

District-wise highest percentage of households which have received water by unprotected sources within the premises found in Shahdol with a proportionate share of 24.47 per cent. It is followed by Balaghat district with 23.57 per cent. There are nine other districts in which proportionate share of household getting drinking water by unprotected sources within premises are more than ten per cent. These districts are surguja (13.32 per cent), Panna (12.61 per cent), Raipur (12.58 per cent), Damoh (12.26 per cent), Rewa (11.65 per cent), Chhatarpur (10.89 per

cent), Sidhi (10.83 per cent), Chhindwara (10.67 per cent) and Bastar (10.55 per cent).

The lowest proportionate share of households who received drinking water by unprotected sources within premises is in district Bhopal (2.44 per cent). It is followed by Morena, Bhind, Mandasour, Ratlam, Ujjain, Jhabua, Dhar, Indore, East Nimar, Vidisha, Raisen and Narsimpur districts with 3 to 5 per cent of households each.

In case of drinking water by unprotected sources outside the premises, the most inhygienic sources of drinking water, district Sidhi have achieved the dubias distinction by having the highest percentage share of 63.06 per cent. The next four position in descending order of magnitude secured by Tikamgarh (58.75 per cent), Chhatarpur (58.44 per cent), Sehore (54.19 per cent) and Panna district (51.00 per cent), the proportionate share of which are more than double to the state average of 25.69 per cent, except in case of district panna.

The lowest proportionate share in this category observed in district Ujjain (8.98 per cent). Indore is the only other district in which proportionate share is less than ten (9.83 per cent). In districts Ratlam, Bhopal, Narsimpur and East Nimar. The percentage share of households are less than half of the state average of 25.69 per cent.

Whether the drinking water received within or outside the premises, highest proportionate share of households is

observed in district Sidhi (73.88 per cent). It is followed by Chhaterpur and Balaghat districts with proportionate share of 66.33 per cent each.

4.2.1 Electricity

Electricity is one of the most important and essential infrastructure raising labour productivity in all sectors of economy and transforming its structure . It adds considerable to the standard of living of both rural and urban inhabitants. There are various uses of electricity in a household. It used in lighting and domestic appliances etc. Electrification can be an important precondition to bring other social services to rural as well as urban centre.

But due to various reasons the availability of electricity remained very low in India in compare to developed countries. In India per capita consumption of commercial energgy is only 1/8th of the world average. However the government have taken various steps to increase the output of electricity through five year plans. The subject 'power' appears in the concurrent list of constitution and as such the responsibility of its development lie both with the central and state government.

In India only 14.69 per cent of rural and 62.51 per cent of urban households availed electricity till 1981. The comparative picture for Madhya Pradesh is even more depressing. Only 6.89 per cent of the rural and 54.42 per cent of the urban households

enjoyed households till 1981. The highest electrification of rural households was in the state of Jammu and Kashmir (52.54 per cent). In case of urban households 92.10 per cent of householdhs in the state of Tripura had got electricity connections till 1981, which is highest among all the state.[1]

It is very surprising that the state which is very rich in the reserve of various energy resources could not provide electricity to even 1/5th of its households till 1981. Madhya Pradesh contains 14.8 per cent of India's total coal reserves and contribute 27.57 per cent to the total annual production of coal in India.[2] Various power plants have been set up in the state based on either coal or river water for example captive thermal plant at korba. It (M.P.) contributed 5.4 per cent of the 156636 million kw electricity generated in India in 1985.[3] But still Madhya Pradesh has to cover a long path to provide electricity to all the households in the state.

4.2.2 Percentage distribution of Total households with electricity in Madhya Pradesh in 1981.

The table 4.4 indicates that only 17.11 per cent of the total households in Madhya Pradesh have provided with electricity till 1981. There is large district wise variation in the state in the distribution of electricity. Percentage distribution of total households with electricity is quite high in those districts which are relatively more unbanised. There are only

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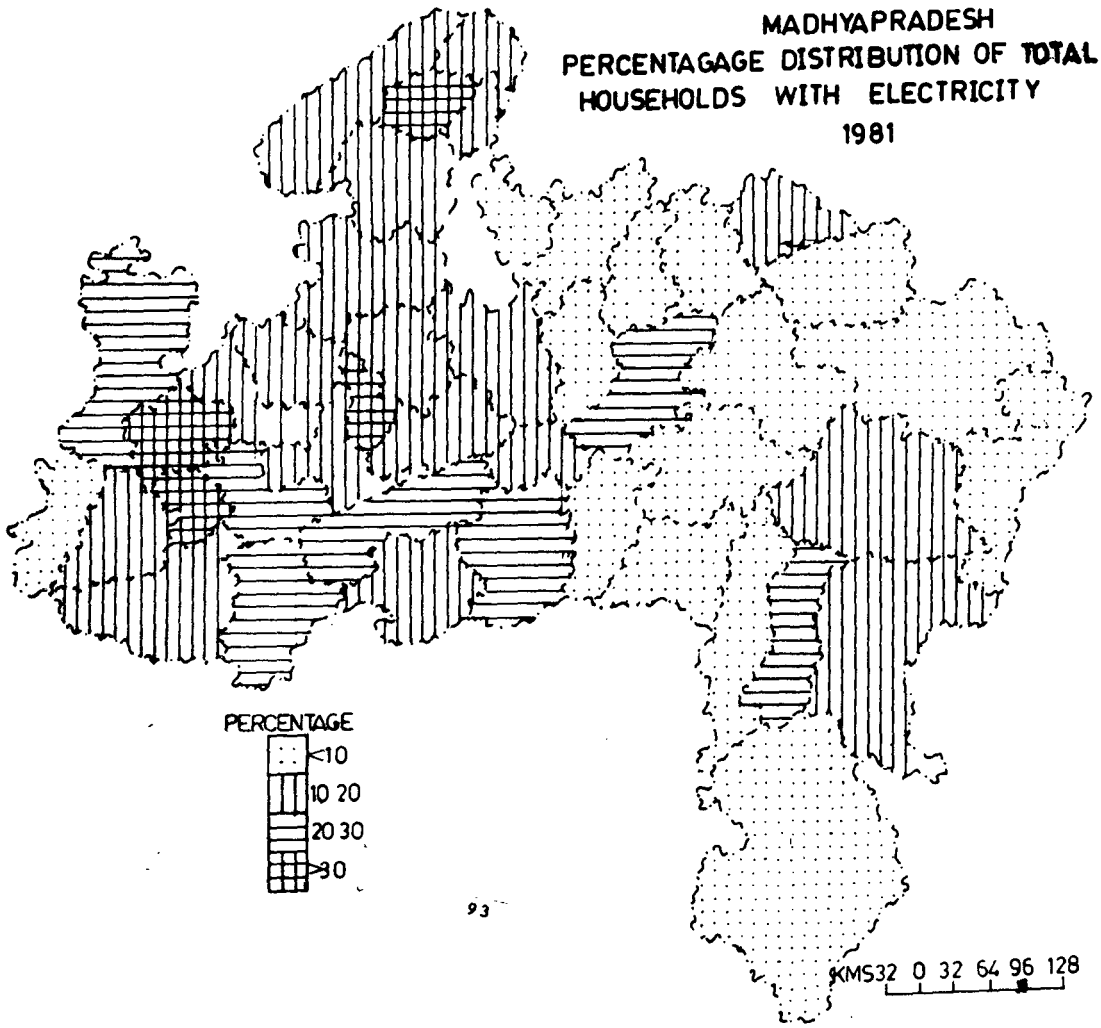
1. Source : Census of India - 1981", Part- VIII A & B (V)
2. "India Minerals Year Book 1982".
3. "Monthly Abstract of Statistic, October 1986".

PERCENTAGE DISTRIBUTION OF TOTAL HOUSE HOLDS WITH ELECTRICITY - 1981

SNO.	STATE/DISTRICT	PERCENTAGE OF HOUSEHOLDS WITH ELECTRICITY
	MADHYA PRADESH	17.11
1.	MORENA	15.72
2.	BHIND	14.37
3.	GWALIOR	43.32
4.	DATIA	17.22
5.	SHIVPURI	13.40
6.	GUNA	14.95
7.	TIKAMGARH	6.39
8.	CHHATARPUR	10.00
9.	PANNA	6.00
10.	SAGAR	17.36
11.	DAMOH	8.09
12.	SATNA	9.06
13.	REWA	16.31
14.	SHAHOOL	9.06
15.	SIDHI	5.16
16.	MANDASAUR	26.73
17.	RATLAM	28.04
18.	UJJAIN	34.48
19.	SHAJHPUR	14.84
20.	DEWAS	24.37
21.	JHABUA	9.55
22.	DHAR	18.86
23.	INDORE	55.01
24.	WEST NIMAR	19.86
25.	EAST NIMAR	22.82
26.	RAJGARH	10.31
27.	VIDISHA	13.18
28.	BHOPAL	55.48
29.	SEHORE	16.48
30.	RAISEN	11.09
31.	BETUL	15.19
32.	HOSHAGABAD	22.34
33.	JABALPUR	28.38
34.	NARSIMPUR	17.19
35.	MANDLA	6.15
36.	CHHINDWARA	24.60
37.	SEONI	9.13
38.	BALAGHAT	8.27
39.	SURGUJA	8.37
40.	BILASPUR	12.48
41.	RAIGARH	6.50
42.	RAJNANDGAON	9.39
43.	DURG	20.01
44.	RAIPUR	12.68
45.	BASTAR	6.46


MADHYAPRADESH
PERCENTAGAGE DISTRIBUTION OF TOTAL
HOUSEHOLDS WITH ELECTRICITY
1981
PERCENTAGE
<10
10 20
20 30
>30
93
KMS32 0 32 64 96 128

two districts in which more than half of the households have provided with electricity in 1981. These district are Bhopal and Indore, in which 55.48 per cent and 55.01 per cent of total households enjoyed the facility of electricity respectively. Gwalior and Ujjain are the other two highly urbanised districts of the state in which more than 1/3rd of the households have recived electricity. In the two above mentioned districts 43.32 per cent and 34.48 per cent of the total households provided with electricity till 1981. Availablity of electricity is high in Bhopal, Indore, Gwalior and Ujjain because these are highly urbanised districts of the state 76.40 per cent population is district Bhopal lived in urban areas. In Indore, Gwalior and Ujjain 65.94, 55.01, and 37.48 per cent of the population lived in urban areas.

In district Sidhi electricity is available to only 5.16 per cent of the total households and it is least among all the districts. It is followed by eight other districts in which percentage distribution of households with electricity is less than half of the state average of 17.11 per cent. These districts are Panna (6.00 per cent), Mandla (6.15 per cent), Tikamgarh (6.39 per cent), Raigarh (6.50 per cent), Bastar (6.46 per cent), Damoh (8.09 per cent), Balaghat (8.27 per cent) and Surguja (8.37 per cent).

Availability of electricity is low in district Sidhi because only 1.98 per cent of the population lived in urban areas. In

Bastar, Mandla and Panna also the percentage share of urban population is very low that is less than ten per cent due to which those is very low availibility of electricity.

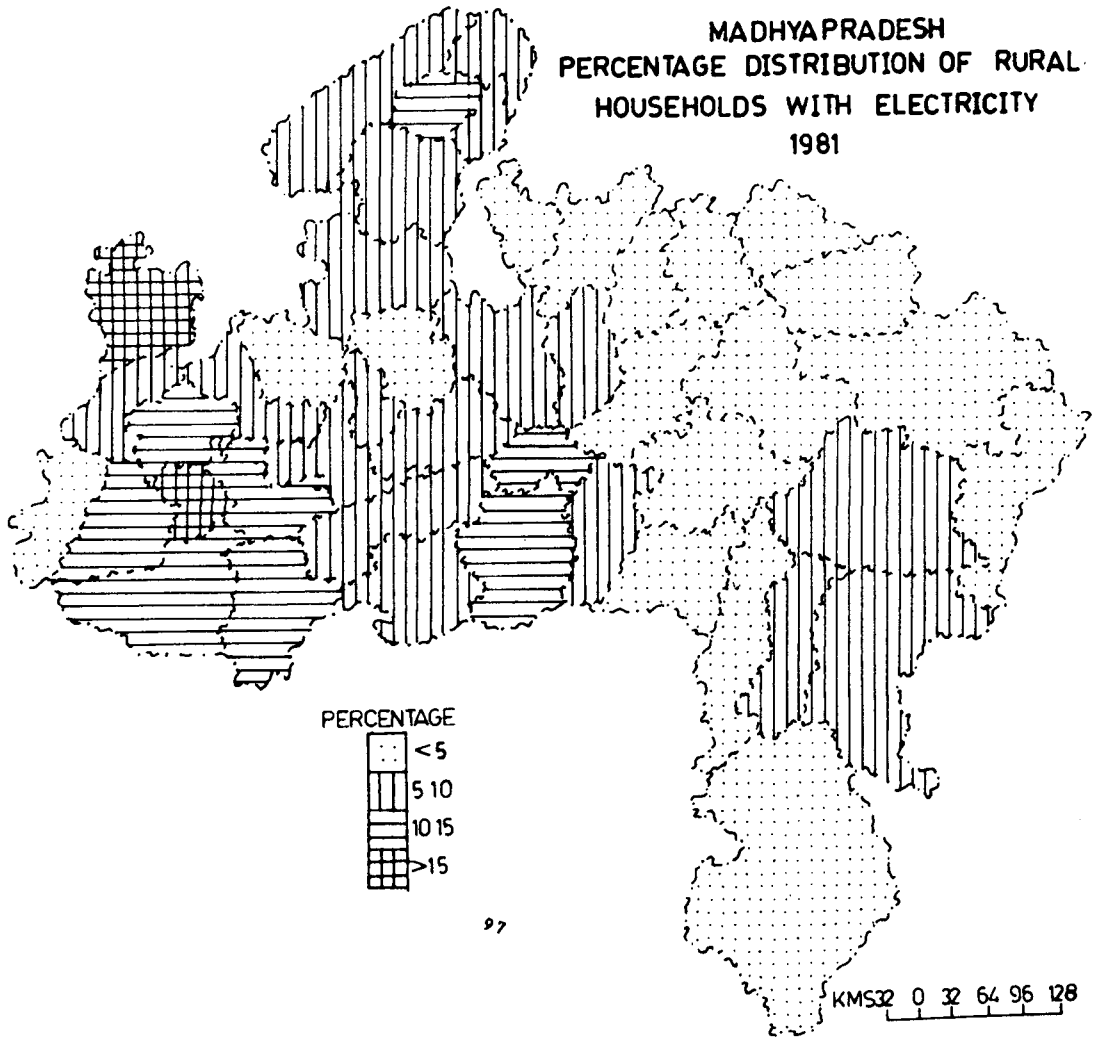
Map number 4.4 shows the distribution of the electricity in Madhya Pradesh as a whole. The analysis of the map indicates that in Eastern half of the atate availability of electricity is very low (10 per cent) and the general trend is that as one go Westward the availability of electricity increases. It is very high in some pockets like in districts of Gawalior, Indore, Bhopal and Ujjain due to higher urbanisation. Jharbu is the only district in the state which shows less than ten per cent of household with electricity facility.

4.2.3 Percentage distribution of rural households with electricity in Madhya Pradesh in 1981

The table No 4.5 indicates that onl;y 6.89 per cent of the rural households provided with electricity in the state of Madhya Pradesh in 1981, which is even less than half to the national average of 14.69 per cent. The situation is more awesome in the most backward districts of the state such as Tikamgarh, Panna and Rewa in which only 2.15 and 2.16 per cent of the households enjoyed the facility of electricity respectively. In predominantly by tribal districts of Bastar and Mandla 3.88 and 3.08 per cent of household have recived electricity respectively. Even in the relatively developed districts of Indore, Bhopal, Gwalior and Ujjain the percentage of households

PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLDS WITH ELECTRICITY - 1981

SNO.	STATE/DISTRICT	PERCENTAGE OF HOUSEHOLDS WITH ELECTRICITY
	MADHYA PRADESH	6.89
1.	MORENA	8.2
2.	BHIND	7.26
3.	GWALIOR	11.77
4.	DATIA	9.77
5.	SHIVPURI	6.90
6.	GUNA	8.03
7.	TIKAMGARH	2.15
8.	CHHATARPUR	3.83
9.	PANNA	2.51
10.	SAGAR	5.28
11.	DAMOH	6.71
12.	SATNA	4.59
13.	REWA	2.61
14.	SHAHOOL	3.93
15.	SIDHI	4.17
16.	MANDASAUR	17.14
17.	RATLAM	9.53
18.	UJJAIN	11.07
19.	SHAJHPUR	7.93
20.	DEWAS	14.09
21.	JHABUA	4.61
22.	DHAR	12.83
23.	INDORE	21.18
24.	WEST NIMAR	13.59
25.	EAST NIMAR	11.58
26.	RAJGARH	4.61
27.	VIDISHA	3.81
28.	BHOPAL	5.33
29.	SEHORE	9.47
30.	RAISEN	6.41
31.	BETUL	7.68
32.	HOSHAGABAD	8.89
33.	JABALPUR	4.80
34.	NARSIMPUR	10.73
35.	MANDLA	3.08
36.	CHHINDWARA	13.29
37.	SEONI	5.35
38.	BALAGHAT	4.71
39.	SURGUJA	3.85
40.	BILASPUR	6.55
41.	RAIGARH	3.85
42.	RAJNANDGAON	4.70
43.	DURG	6.35
44.	RAIPUR	5.92
45.	BASTAR	3.88


MADHYA PRADESH
PERCENTAGE DISTRIBUTION OF RURAL
HOUSEHOLDS WITH ELECTRICITY
1981
PERCENTAGE
<5
5 10
10 15
>15
KMS32 0 32 64 96 128

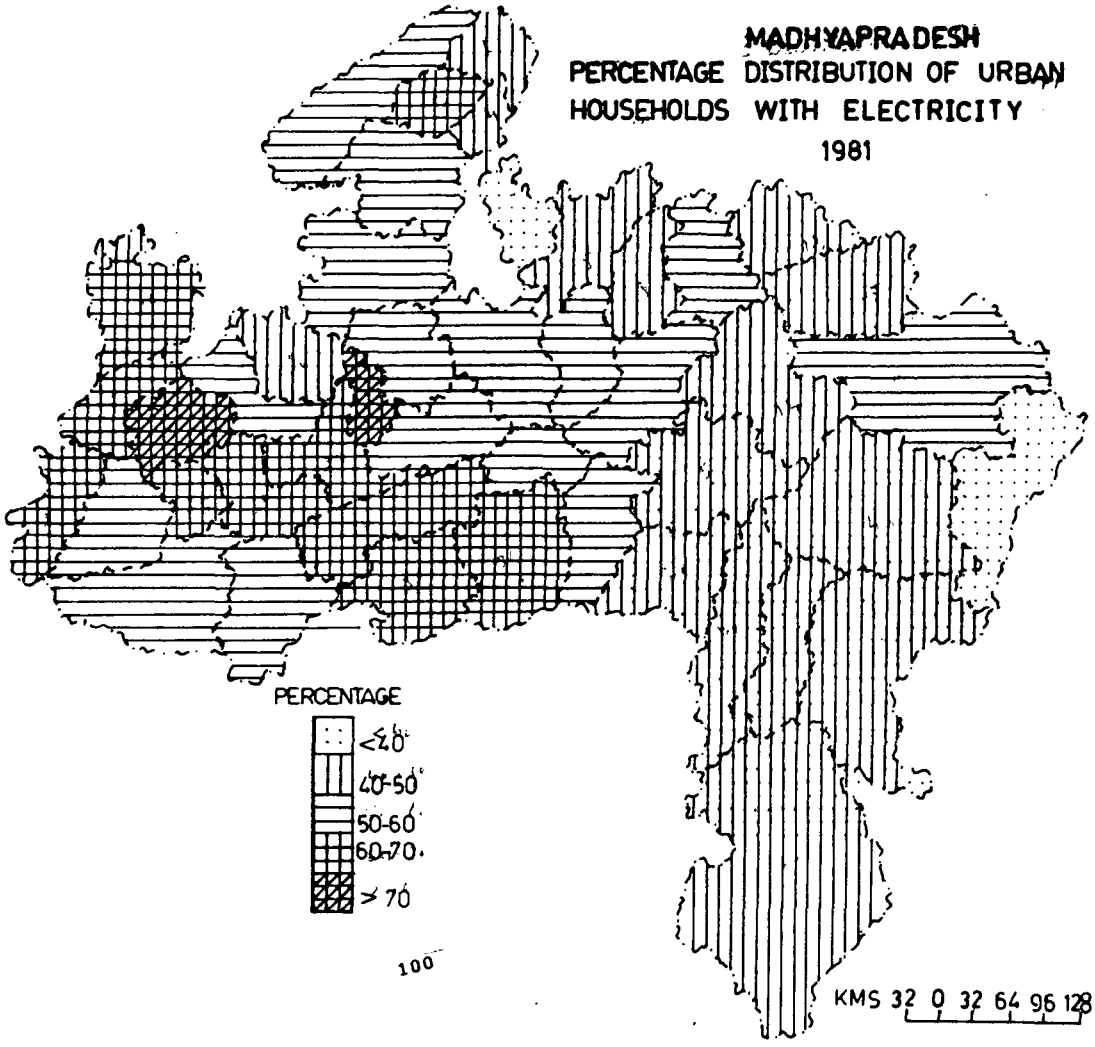
with electricity are very low though it is above the state average. This poor performance indicates that rural areas in the state are meted step motherly treatment in the distribution of electricity in the state. Map No. 4.5 indicates that like total in rural Madhya Pradesh also availability of electricity is very low. Except there district viz-a-viz Bilaspur, Durg and Raipur all the districts east of Jasalpur recived electricity less than five per cent of the only three districts located out Sidhi the eastern region with very low percentage of electricity. !Most of the districts in North and Central region shows low percentage in terms of availability of electricity. Indore and Mandaour districts shows relationly higher percentage of more than fiften per cent of households with electricity facility in rural Madhya Pradesh.

4.2.4 Percentage distribution of Urban households with electricity in the state of Madhya Pradesh in 1981

The table No. 4.6 shows that more than half (56.43 per cent) of the urban households in Madhya Pradesh enjoyed electricity which is far below even to the national average of 62.51 per cent. The performance in some of the backward districts is even more depressing on the top of the list are the most urbanised districts of the state namely Ujjain, Bohpal, Indore, Gwalior and Ratlam in which more than 2/3rd of the urban households received

PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS WITH ELECTRICITY - 1981

SNO.	STATE/DISTRICT	PERCENTAGE OF HOUSEHOLDS WITH ELECTRICITY
	MADHYA PRADESH	56.43
1.	MORENA	57.63
2.	BHIND	45.91
3.	GWALIOR	67.30
4.	DATIA	47.98
5.	SHIVPURI	58.26
6.	GUNA	55.64
7.	TIKAMGARH	37.31
8.	CHHATARPUR	42.84
9.	PANNA	47.05
10.	SAGAR	50.09
11.	DAMOH	50.43
12.	SATNA	55.62
13.	REWA	43.61
14.	SHAHOOL	47.45
15.	SIDHI	43.73
16.	MANDASAUR	64.82
17.	RATLAM	69.42
18.	UJJAIN	71.93
19.	SHAJHPUR	54.47
20.	DEWAS	66.58
21.	JHABUA	60.19
22.	DHAR	58.52
23.	INDORE	69.96
24.	WEST NIMAR	52.90
25.	EAST NIMAR	58.44
26.	RAJGARH	47.90
27.	VIDISHA	57.44
28.	BHOPAL	70.52
29.	SEHORE	60.87
30.	RAISEN	51.67
31.	BETUL	65.31
32.	HOSHAGABAD	60.81
33.	JABALPUR	57.88
34.	NARSIMPUR	56.77
35.	MANDLA	46.01
36.	CHHINDWARA	65.14
37.	SEONI	53.03
38.	BALAGHAT	44.62
39.	SURGUJA	53.35
40.	BILASPUR	47.72
41.	RAIGARH	35.95
42.	RAJNANDGAON	41.94
43.	DURG	45.62
44.	RAIPUR	45.81
45.	BASTAR	42.00


MADHYAPRADESH
PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS WITH ELECTRICITY
1981
PERCENTAGE
<40
40-50
50-60
60-70
>70
100
KMS 32 0 32 64 96 128

electricity, the higest being in Ujjain (71.93 per cent). It is followed by Bhopal (70.52 per cent), Indore (69.96 per cent), Ratlam (69.42 per cent) and Gwalior (67.30 per cent).

In the tribal districts of Madhya Pradesh such as Tikamgrh only 37.31 per cent of the households received electricity connections. It is followed by Rajnandgoan, BAstar, Chhatapur, Rewa, Sidhi and Bilaspur with 41.94 per cent, 42.00 per cent, 42.84 per cent, 43.61 per cent, 43.71 per cent and 44.62 per cent of households respectively. Like total and rural in urban Madhya Pradesh also the regional trend is from East to West in incresing magnitude of the percentage of households with electricity. It is low in Chattisgarh Plain and Bastar plateau region except district Durg. In central uplands and North high land the availability of electricity is modarte. It is high in South Westren region and very high in a continoues belt from Ratlam in the West to Dewas in the East. It is also very high in Gwalior and Bhopal districts.

4.2.5 Percentage distribution of households with electricity by Tenure status in 1981:

The table No.4.7 shows the percentage distribution of households with electricity in owned and rented house in both rural and urban areas of Madhya Pradesh in 1981. In Madhya Pradesh less tha half of the urban households (47.29 per cent) provided with electricity in owned house while the comparative figure for rented house is 65.97 per cent. In all the districts

PERCENTAGE DISTRIBUTION OF HOUSEHOLDS WITH ELECTRICITY BY TENURE STATUS - 1981

SNO.	STATE/DISTRICT	URBAN		RURAL	
		OWN HOUSE %	RENT HOUSE %	OWN HOUSE %	RENT HOUSE %
	MADHYA PRADESH	47.29	65.97	5.81	19.74
1.	MORENA	48.32	73.51	7.64	22.99
2.	BHIND	37.46	70.18	7.04	17.56
3.	GWALIOR	59.31	77.20	10.24	38.02
4.	DATIA	41.82	67.97	9.16	24.92
5.	SHIVPURI	47.97	74.37	6.03	29.55
6.	GUNA	50.88	62.77	7.34	20.55
7.	TIKAMGARH	29.89	61.44	1.88	9.36
8.	CHHATARPUR	35.17	57.60	3.23	16.56
9.	PANNA	42.86	55.47	1.94	13.48
10.	SAGAR	44.77	57.83	4.76	10.61
11.	DAMOH	48.58	53.76	6.22	12.54
12.	SATNA	51.82	58.65	3.78	19.91
13.	REWA	34.87	59.61	2.39	9.12
14.	SHAHOOL	29.32	67.88	2.22	27.56
15.	SIDHI	33.43	50.28	2.27	31.49
16.	MANDASAUR	62.85	67.23	15.87	30.92
17.	RATLAM	65.29	73.08	8.62	23.13
18.	UJJAIN	65.93	76.45	10.11	25.31
19.	SHAJHPUR	47.12	66.52	7.08	21.56
20.	DEWAS	57.69	78.20	12.64	30.12
21.	JHABUA	54.46	66.99	3.43	24.46
22.	DHAR	54.69	63.84	11.65	27.37
23.	INDORE	69.10	70.55	21.68	34.79
24.	WEST NIMAR	50.07	56.51	12.68	21.28
25.	EAST NIMAR	56.57	55.41	10.17	21.92
26.	RAJGARH	40.40	63.95	4.10	18.45
27.	VIDISHA	52.81	64.56	3.32	10.03
28.	BHOPAL	55.46	81.00	4.93	10.33
29.	SEHORE	55.31	69.75	8.36	23.12
30.	RAISEN	43.48	65.31	5.05	18.36
31.	BETUL	31.07	69.11	6.29	20.15
32.	HOSHAGABAD	54.67	65.71	7.13	25.00
33.	JABALPUR	51.12	62.95	4.023	14.32
34.	NARSIMPUR	52.37	63.81	9.55	21.33
35.	MANDLA	37.88	55.49	2.41	10.16
36.	CHHINDWARA	57.12	72.31	10.61	31.73
37.	SEONI	37.15	70.13	3.90	16.59
38.	BALAGHAT	42.19	46.74	3.74	13.94
39.	SURGUJA	40.51	63.11	2.24	24.43
40.	BILASPUR	37.03	58.39	5.18	21.31
41.	RAIGARH	29.77	44.32	3.35	11.09
42.	RAJNANDGAON	38.29	45.94	4.12	12.04
43.	DURG	18.36	69.18	5.43	13.93
44.	RAIPUR	41.19	50.83	5.03	13.59
45.	BASTAR	25.33	57.60	2.48	20.48

the percentage share observed more in case of rented house than the owned house in urban areas.

In case of percentage distribution of rural households with electricity by tenure status the trend is almost same to what has been observed in case of urban householdes. The only difference is in the magnitude of the availability of electricity in owned and rented house. In owned house the higest percentage is achieved by district Indore with 21.68 per cent of households enjoyed electricity in 1981. But in rented house 34.79 per cent of the households have access to electricity which is second higest among all the districts, the higest being achieved by district Gwalior (38.02 per cent). The higest range in the percentage distribution of rural households with electricity has been observed in district Sidhi, in which only 2.27 per cent of households have access to electricity in owned house while in rented house 31.49 per cent of the household avails this opportunity.

The table 4.7 reveals that like in urban households, the percentge distribution of rural households with electricity is more in rented house than owned house.

The table 4.7 shows wide district wise variation in the distribution of urban households with electricity in owned and rented house. In Indore district the higest percentage of households (69.10 per cent) are provided with electricity in owned house. in rented house Bhopal district achieved the

highest position with 81.00 per cent of households. In Ujjain, Ratlam and Mandasaur, 65.93, 65.29. 62.85 per cent of the households are provided with electricity in owned house. Comparatively in rented house 76.45 per cent, 73.08 per cent and 67.23 per cent of households have enjoyed the facility of electricity in the above mentioned districts respectively.

In district Dewas and Gwalior 57.69 and 59.31 per cent of the urban households are provided electricity connections in owned house but in rented house 78.20 and 77.20 per cent of urban households are provided with electricity .

District Durg stands lowest in the distribution of urban households with electricity in owned house. Only 18.36 per cent of households in the district received electricity till 1981. But in case of rented house 69.18 per cent of urban households received such facility. In district Bastar also the situation is not encouraging and only 25.33 per cent of the urban households in owned house are provided with electricity. In case of rented house, however 57.60 per cent of households avails the facility of electricity. In district Shodhol, Tikamgarh, Raigarh and Betul also less than 1/3rd of the urban households have access to electricity in owned house. But in all ofthese districts except Raigarh more than 60 per cent of urban households are provided with electricity in rented houses in Raigarh 44.32 per cent of the urban households in rented house received electricity.

4.3 Toilet facility

"The main objective of the sanitations component is to provide means for safe disposal of human excerta through low cost and easily maintainable services, thus completing the efforts to protect the health of people from contaminated water and excerta related diseases. The vast majority of population in developing countires use open fields for defecation which spread many diseses. Health, education and motivation of rural people toward the use of excerta disposal facility should be an internal part of programme to introduce such facilities for the successful accomplisment of the objective of health for all".[1]

"In India, while the situation in water supply and sanitation has recorded substantial improvement through successive five year plans, it is still far from satisfactory particularly in rural areas. A large section of the urban population use open drain, roadside berms and open space for defecation. This indicates a marked reliance on scavengers for carriage and disposal of night soil. All this exposes people to the health hazards".[2]

In 1981 in India 58.15 per cent of urban households availed

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1. "Manual on Human settlement : IYSH contest (International Years of Shelter for Homelss. p.61.
2. Bijalni HU and Rao PSN (1992) "Water Supply and Sanitation in India", Yojna, April 15, 1992, Vol.36 : no.6, p.29.

toliet facilities.[3] National sample survey organization in its 38 round had noted that 26.79 per cent of households had exclusive latrine while 36.39 per cent shared with other and rest of the 36.82 per cent of urban household had no latrine facility.[4]

In Tripura 95.67 per cent of households had provided with latrine in 1981 which was highest among all the status in India. In Delhi 68.02 per cent of households had latrine either exclusive or shared with other.

In Mahdya Pradesh on the other hand 52.73 per cent of urban households had toilet facility which is even below the national average.[5]

4.3.1 Percentage of urban households with toilet facility in Madhya Pradesh in 1981.

The table 4.8 shows that in the state of Madhya Pradesh only slightly more than hafl (52.73 per cent) of the urban households have access toilet facility in 1981. ratlam district stand highest with 72.89 per cent followed by Bhopal 72.72 per cent and Ujjain 71.84 per cent. In Dewas and Indore 65.60 and 65.15 per cent of the households have access to toilet facility in urban areas.

In district Sidhi only 25.78 per cent of urban households

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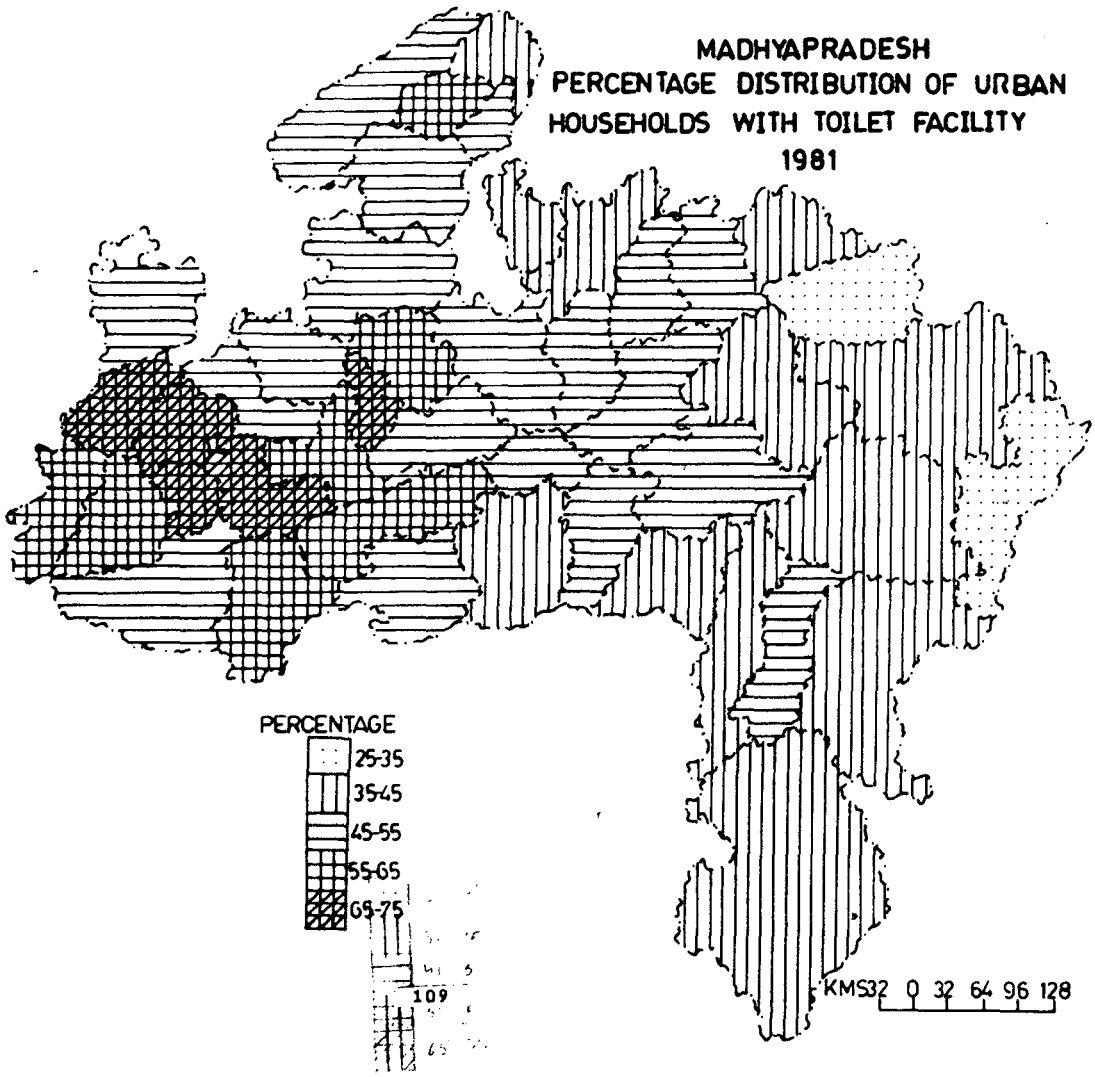
3. "Census of India - 1981", Series 1, Part VIII A&B (V).
4. "National Sample Survey Organisation (1983); 38 round".
5. Census of India - 1981, Series 1, Part VIII A&B (V).

PERCENTAGE OF URBAN HOUSEHOLDS WITH TOILET FACILITY - 1981

SNO.	STATE/DISTRICT	PERCENTAGE OF HOUSEHOLDS WITH TOILET
	MADHYA PRADESH	52.73
1.	MORENA	50.56
2.	BHIND	44.75
3.	GWALIOR	58.96
4.	DATIA	50.95
5.	SHIVPURI	47.50
6.	GUNA	54.17
7.	TIKAMGARH	37.60
8.	CHHATARPUR	39.28
9.	PANNA	52.38
10.	SAGAR	47.14
11.	DAMOH	47.93
12.	SATNA	49.58
13.	REWA	39.96
14.	SHAHOOL	35.29
15.	SIDHI	25.78
16.	MANDASAUR	52.26
17.	RATLAM	72.89
18.	UJJAIN	71.84
19.	SHAJHPUR	51.22
20.	DEWAS	65.60
21.	JHABUA	61.46
22.	DHAR	56.33
23.	INDORE	65.15
24.	WEST NIMAR	48.13
25.	EAST NIMAR	55.38
26.	RAJGARH	48.96
27.	VIDISHA	59.06
28.	BHOPAL	72.72
29.	SEHORE	62.61
30.	RAISEN	54.98
31.	BETUL	45.86
32.	HOSHAGABAD	61.70
33.	JABALPUR	54.01
34.	NARSIMPUR	50.73
35.	MANDLA	45.04
36.	CHHINDWARA	39.99
37.	SEONI	52.39
38.	BALAGHAT	37.96
39.	SURGUJA	40.19
40.	BILASPUR	43.84
41.	RAIGARH	32.37
42.	RAJNANDGAON	38.41
43.	DURG	47.25
44.	RAIPUR	41.60
45.	BASTAR	42.86


MADHYAPRADESH
PERCENTAGE DISTRIBUTION OF URBAN
HOUSEHOLDS WITH TOILET FACILITY
1981
PERCENTAGE
25-35
35-45
45-55
55-65
65-75
109
KMS32 0 32 64 96 128

availed toilet facility which is lowest among all the districts. In Raigarh, Shahdol, Tikamgarh, Balaghat, Chhatarpur, Rajnandgoan, Rewa and Chhindwara districts, less than forty per cent of households enjoyed toilet facility in 1981. The percentage share of household with toilet in these above mentioned districts vary between 30 to 40 per cent.

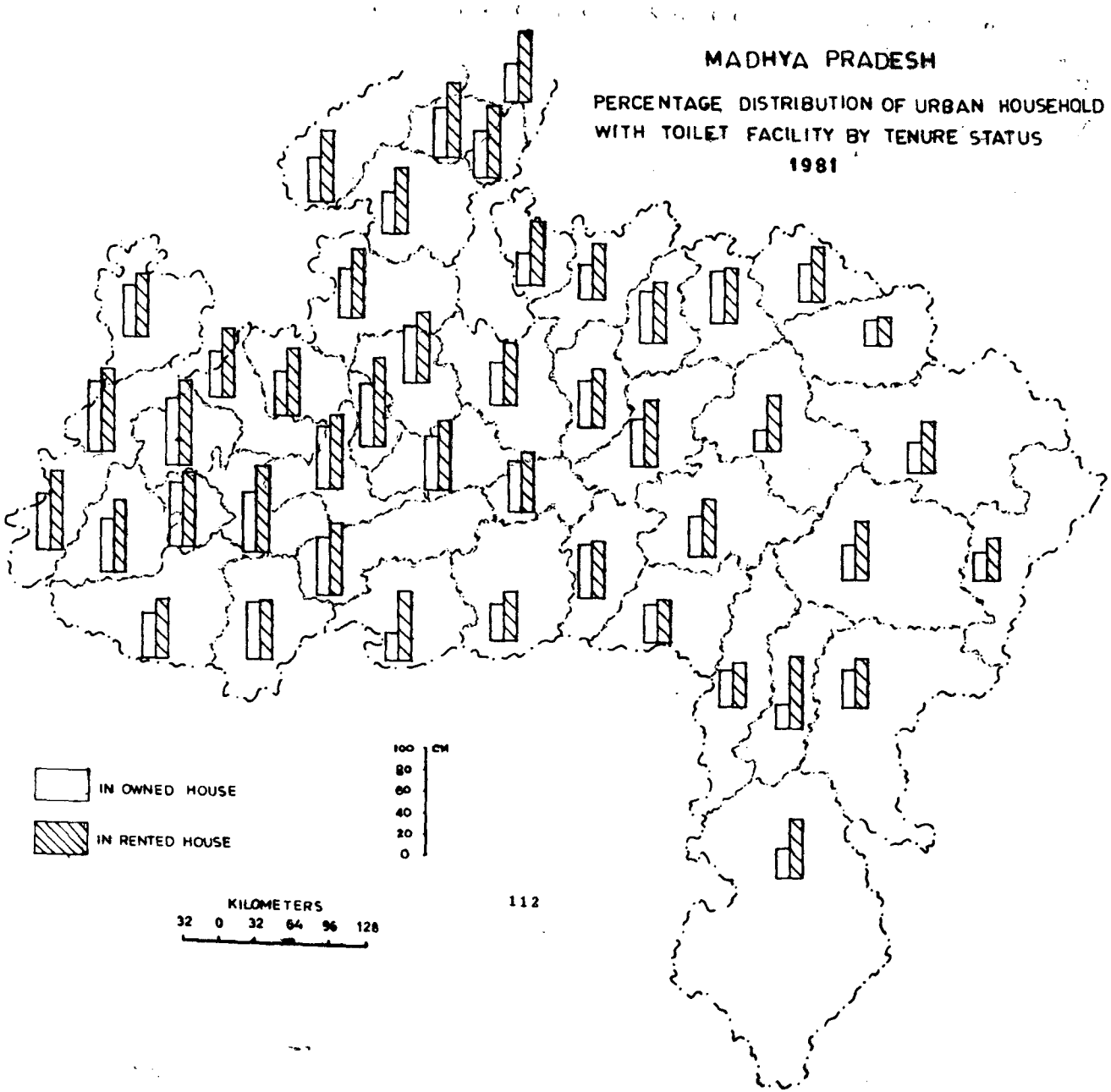
Like electricity in case of distribution of toilet facility also the situation compartively better in western region than the eastern region. In the eastern most part of the state Raigarh district experienced very low percentage of households with toilet facility. But except surguja all the other districts in eastern half of the state (East of Jabalpur) experiences low percentage of households with toilet facility. The South western region shows high percentage between sixty five to seventy five per cent. The central region show moderate percentage between forty five to fifty five per cent of household with toilet facility. Districts Indore, Bhopal, Ratlam, Dewas and Ujjain very high percentage of households with toilet facility.

4.3.2 Percentage of urban households with Toilet facility by Tenure Status in 1981

The table 4.9 shows that in Madhya Pradesh 42.93 per cent of the urban households have access to toilet facility in owned house and 62.97 per cent of household in rented house. The highest percentage of households with toilet in owned house have observed in district Ratlam (66.73 per cent). If is followed by

PERCENTAGE OF URBAN HOUSEHOLDS WITH TOILET FACILITY BY TENURE STATUS IN - 1981

SNO.	STATE/DISTRICT	PERCENTAGE OF HOUSEHOLDS WITH TOILET FACILITY IN OWN HOUSE	PERCENTAGE OF HOUSEHOLDS WITH TOILET FACILITY IN RENT HOUSE
	MADHYA PRADESH	42.93	62.97
1.	MORENA	40.94	66.99
2.	BHIND	36.73	67.78
3.	GWALIOR	48.60	71.79
4.	DATIA	44.97	70.37
5.	SHIVPURI	38.54	61.52
6.	GUNA	46.69	65.35
7.	TIKAMGARH	30.95	58.76
8.	CHHATARPUR	32.32	52.69
9.	PANNA	49.34	58.49
10.	SAGAR	39.85	57.70
11.	DAMOH	43.80	55.34
12.	SATNA	47.84	50.96
13.	REWA	33.70	51.44
14.	SHAHOOL	20.48	52.00
15.	SIDHI	23.37	27.31
16.	MANDASAUR	47.27	59.23
17.	RATLAM	66.73	78.34
18.	UJJAIN	62.70	78.72
19.	SHAJHPUR	42.99	64.71
20.	DEWAS	54.72	79.82
21.	JHABUA	51.38	73.46
22.	DHAR	48.63	67.03
23.	INDORE	60.19	68.71
24.	WEST NIMAR	43.12	54.51
25.	EAST NIMAR	52.62	53.65
26.	RAJGARH	41.79	64.30
27.	VIDISHA	54.22	66.40
28.	BHOPAL	59.22	82.11
29.	SEHORE	58.47	69.22
30.	RAISEN	48.77	65.31
31.	BETUL	26.41	65.04
32.	HOSHAGABAD	53.68	68.07
33.	JABALPUR	43.78	61.67
34.	NARSIMPUR	46.53	57.43
35.	MANDLA	37.74	53.54
36.	CHHINDWARA	33.73	45.58
37.	SEONI	50.96	53.94
38.	BALAGHAT	35.43	40.18
39.	SURGUJA	28.96	48.72
40.	BILASPUR	32.93	54.73
41.	RAIGARH	26.74	39.98
42.	RAJNANDGAON	34.91	42.22
43.	DURG	22.86	68.31
44.	RAIPUR	37.03	46.56
45.	BASTAR	28.41	56.44


MADHYA PRADESH
PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLD
WITH TOILET FACILITY BY TENURE STATUS
1981
IN OWNED HOUSE
IN RENTED HOUSE
100
80
60
40
20
0
CM
KILOMETERS
32 0 32 64 96 128
112

Ujjain (62.70 per cent), Indore (60.19 per cent) and Bhopal district (59.22 per cent).

In Shahdol district only 20.48 per cent of household enjoyed toilet facililty which is lowest among all the districts. The other districts with relatively low percentage of households are Durg (22.86 per cent), Sidhi (23.37 per cent) Betual (26.41 per cent), Rajgarh (26.74 per cent) and Bastar (28.41 per cent).

In rented house on the other hand 82.11 per cent households in district Bhopal enjoyed toilet facility. In Dewas 79.82 per cent of household have access to toilet facility. In Ujjain, Ratlam, Gawalior and Datia it is also 78.72 per cent, 78.34 per cent, 71.79 per cent and 70.37 per cent of households respectively.

In district Sidhi again, likewise in owned house has a very low percentage of households who have access to toilet facility. Only 27.37 per cent in district of the households availed such facility in district Sidhi. In district Raigarh and Balaghat also only 39.98 per cent and 40.18 per cent of the households received toilet facility in 1981.

4.4 Development Index of Infrastructure Facilities in Rural and Urban areas of Madhya Pradesh - 1981

Table no. shows that development index of infrastructural facilities (such as, education, medical, post and telegraph and communication etc.) in rural areas of Madhya Pradesh. It shows

Table 4.4

COMPOSITE INDEX OF INFRASTRUCTURAL FACILITIES IN RURAL AND URBAN AREAS IN MADHYA PRADESH - 1981

SNO.	DISTRICTS	RURAL	URBAN
1.	MORENA	4.802	3.779
2.	BHIND	3.285	3.561
3.	GWALIOR	4.142	4.952
4.	DATIA	3.969	4.496
5.	SHIV PURI	3.887	4.477
6.	GUNA	3.039	3.910
7.	TIKAMGARH	3.632	3.342
8.	CHHATARPUR	3.040	7.460
9.	PANNA	2.812	4.453
10.	SAGAR	3.032	3.055
11.	DAMOH	2.918	5.843
12.	SATNA	3.055	3.825
13.	REWA	3.544	14.228
14.	SHAHDOL	2.712	5.767
15.	SIDHI	3.408	11.933
16.	MANDASAUR	5.612	4.534
17.	RATLAM	5.222	3.985
18.	UJJAIN	4.929	4.390
19.	SHAJAPUR	4.113	5.748
20.	DEWAS	4.584	4.770
21.	JHABUA	3.701	7.085
22.	DHAR	4.527	4.934
23.	INDORE	5.649	3.896
24.	WEST NIMAR	4.194	4.676
25.	RAJGARH	2.349	6.633
26.	VIDISHA	3.478	9.021
27.	BHOPAL	6.602	5.723
28.	SEHORE	4.990	5.155
29.	RAISEN	3.487	4.423
30.	BETUL	4.551	3.708
31.	HOSHANGABAD	4.287	5.627
32.	JABALPUR	2.532	4.311
33.	NARSIMPUR	4.107	4.365
34.	CHHINDWARA	4.092	4.273
35.	BALAGHAT	3.983	6.600
36.	SURGUJA	3.210	5.120
37.	BILASPUR	3.069	5.942
38.	RAIGARH	3.427	5.709
39.	RAJNANDGAON	3.322	3.946
40.	DURG	3.722	2.514
41.	RAIPUR	2.992	5.726
42.	BASTAR	4.043	4.881

that the value of development index is highest in district Bhopal (6.602). It is followed by district Mandasaur, Ratlam and Indore in which the value of development index is more than five. It is low in districts Panna, Damoh, Shahdul, Rajgarh, Sehase, Riasen and Raipur (< 2) in all other districts the value of development index is moderate (2 to 4).

The development index is high in districts Bhopal, Index, Ratlam and Mandasaur because of spillover effects development of urban centres such as Bhopal and Indore.

In case of urban areas the development index of such indicators as Road, Electricity, Medical, Education, Cultural and Commercial institutions etc. is very high in districts Rewa and Sidhi (14.228 and 11.933 respectively). IT is exceptionally high in above district becuase the urban population constitutes only 13.06 and 1.98 per cent of the districts population in these districts and the bulk of the population lived in rural areas. Due to this low base of urban population the availability of infrastructural facilities per thousand of urban population is quite high, higher than any other districts including bhopal and Indore. The other districts which shows high development index are Vidisha, Chhhatarpur, Jhabula, Raigarh and Balaghat. Bhopla, Sehase, Damoh, Shahdul, Shajapur, Hoshangabad, Surguja and Bilaspur and Raigarh. All other district show low development index in urban areas value of the development index is in district being.

CHAPTER V

ROOM DENSITY

Room density is considered as a good indicator to gauge the level of congestion in a region. Though it is not the most ideal indicator to know the congestion level, but due to inadeouacy and inavailability of the data regarding per capita floor area, which is considered as the most reliable indicator for this purpose is substituted by the number of persons in a room. For the purpose of this study, the number of person in a room are divided into five categeries viz - a- viz (i) Less than one persons in a room (< 1 persons), (ii) more than one but less than two persons in a room (1-2 persons), (iii) More than two but less than three persons in a room (2-3 persons), (iv) More than three but less than four persons in a room (3-4 persons in a room), and (v) Four or more than four persons in a room (4 + persons).

The present chapter is divided into three parts. The first part of the chapter deals with the level of congestion with speacial reference to the state of Madhya Pradesh in 1981, the second part of the chapter deals with the level of congestion with the help of room density in Madhya Pradesh as a whole and rural and urban areas seprately. For this purpose, room density is clubed into five categaries which are mentioned above in this chapter. Special emphasis is given to know the regional variations in terms of room density. The third part of the chapter deals with the percentage households suffering lack of privacy. For this purpose couple is taken as an indicator. It is

assumed that a couple need atleast one room to maintain privacy. When the number of couple exceed the number of rooms than it means the couples suffering from lack of privacy,

According to the information given in the Handbook of Housing Statishes, part-I (1990), there were 1197.7 Lakhs households in the country (India) in 1981, which were living in 1137.3 lakhs residential houses. Out of this 908.8 lakhs rural households were living in 861.4 lakhs residential houses and 288.9 lakh Urban household were living in 275.9 lakh houses.[1]

The average size of households in India as a whole was 5.6. In urban and rural areas the average size of households was almsot same, it was 5.5 and 5.6 respectively.[2] At the time of 1981 census, the average number of persons per room in India were 2.78. In urban and rural areas the average numbber of persons per room were recorded as 2.53 and 2.71 respectively. In comparison to 1971 the average number of persons per room had decreased in urban areas from 2.78 to 2.71 but in rural areas it remain constant.[3]

Accordingly 1981, census 0.65 per cent of households in the country (India) had no roof over their head. The situation in urban areas was slightly better than rural areas. In urban areas 0.52 per cent of the households had no room facility while in

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1. "Handbook of Housing Statistic Part-1 (1990)", NGO and UN Regional Housing Centre ESCAP, nirman Bhawan, New Delhi.
2. National Building Organization (1987) Housing Statistics at a Glance, Nirman Bhawan, New Delhi.
3. Census of India (1981) Part VIII, A&B Households Tables.

rural areas 0.69 per cent of the households lacked shelter. The bulk of the households were living in one room and two room size dwellings which constituted 44.38 and 28.87 percent of the total households respectively.[4]

In the state of Madhya Pradesh 93.2 lakhs households were living in 89.3 lakhs of residential houses in 1981, out of which 74.0 lakhs were living in 70.7 lakhs residential houses in rural areas and 19.2 lakhs households in 18.6 lakhs residential houses in urban areas.[5] The average number of persons per room were slightly less than the national average in Madhya Pradesh in 1981. It was 2.61 in Madhya Pradesh as a whole and 2.24 and 2.73 in urban and rural areas respectively.[6]

5.1.1 Percentage Distribution of Total Households by Number of Persons in a room - 1981

The table no 5.1 shows the percentage distribution of total households by the room density in Madhya Pradesh in 1981. The table reveals that in the state of Madhya Pradesh 3.92 per cent of households lived in least congested category of <1 persons per room. In the low congested category of 1-2 persons per room, 25.29 per cent of households takes shelter. It means the low congested categories of <1 and 1-2 persons per room constitutes more than 29 per cent of the total households in Madhya Pradesh.

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4. Census of India (1981), Part VII A&B Households Tables.
5. "Handbook of Housing Statistic Part I (1990)", NGO and UN Regional Housing Centre ESCAP, Nirman Bhawan, New Delhi.
6. Census of India (1981), Part VIII, A&B Households Tables.

PERCENTAGE DISTRIBUTION OF TOTAL HOUSEHOLDS BY NUMBER OF PERSONS IN A ROOM - 1981

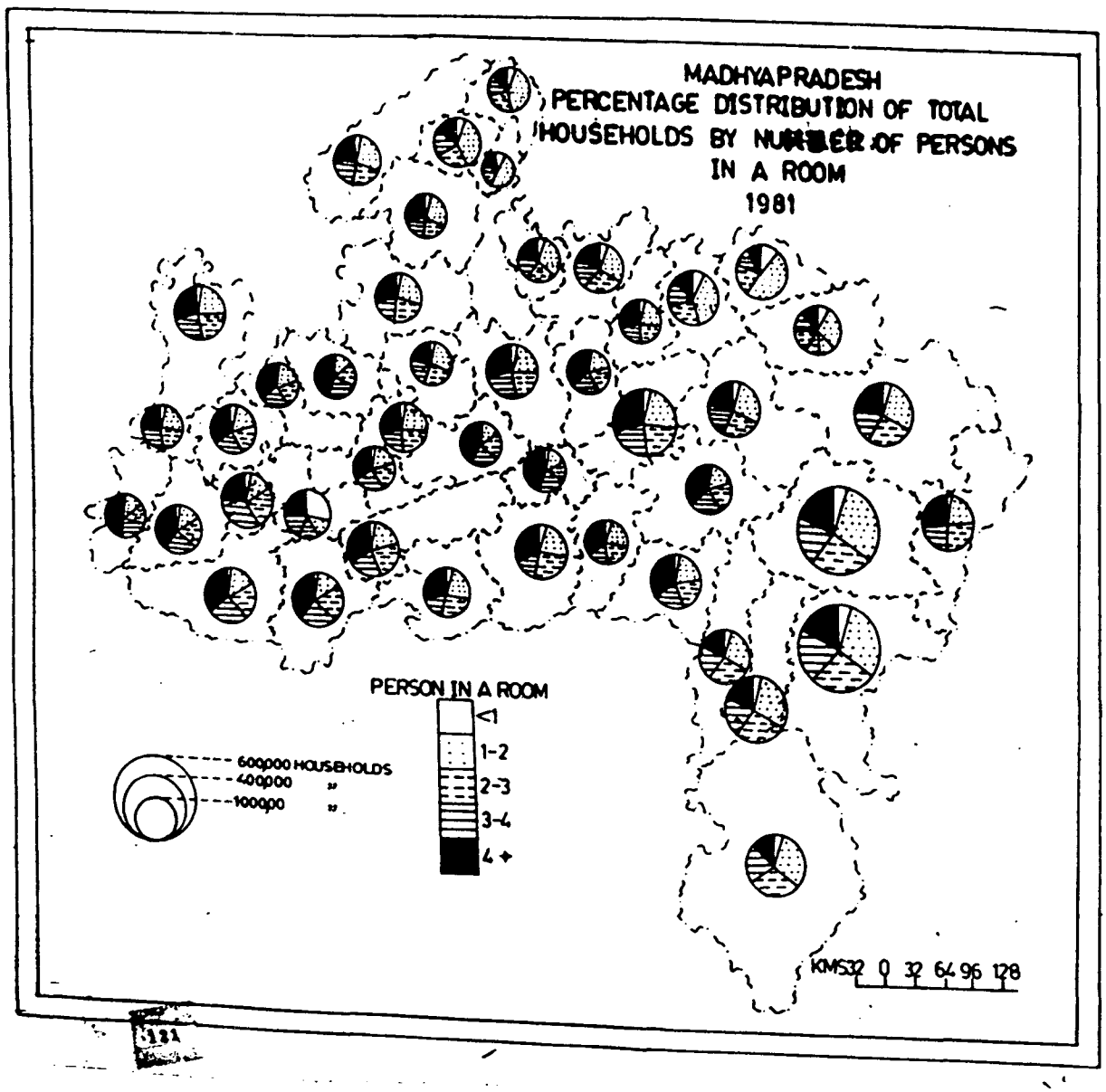
		< 1	1-2	2-3	3-4	4+
	M.P	3.92	25.29	23.68	21.21	25.90
1.	MORENA	3.42	28.03	22.35	22.67	25.53
2.	BHIND	5.79	40.42	24.76	17.34	11.69
3.	GWALIOR	5.82	37.01	24.36	18.10	14.71
4.	DATIA	9.11	46.78	22.61	12.67	8.83
5.	SHIV PURI	3.75	26.53	21.68	20.85	27.19
6.	GUNA	3.24	26.01	22.85	22.17	25.73
7.	TIKAMGARH	4.72	31.57	24.78	19.20	19.73
8.	CHHATARPUR	4.99	30.45	26.23	19.82	18.51
9.	PANNA	3.29	22.45	23.62	21.71	28.93
10.	SAGAR	3.09	21.83	21.33	21.89	31.87
11.	DAMOH	2.55	18.85	20.84	24.28	33.48
12.	SATNA	6.78	38.56	24.86	16.03	13.77
13.	REWA	10.71	48.51	20.86	11.71	8.21
14.	SHAHDOL	4.30	27.12	26.74	20.40	21.44
15.	SIDHI	8.08	40.16	23.64	15.42	12.70
16.	MANDASAUR	3.06	22.04	22.43	22.83	29.64
17.	RATLAM	3.49	20.91	21.39	23.28	30.93
18.	UJJAIN	2.87	18.54	21.22	23.44	33.92
19.	SHAJAPUR	2.07	17.09	20.54	24.11	36.18
20.	DEWAS	28.59	13.31	15.07	18.47	24.56
21.	JHABUA	1.42	13.15	14.10	23.43	47.90
22.	DHAR	2.05	14.57	18.43	25.03	39.92
23.	INDORE	3.07	19.34	18.67	34.51	24.41
24.	WEST NIMAR	2.00	14.88	20.33	27.04	35.74
25.	EAST NIMAR	2.19	14.46	19.22	24.57	39.62
26.	RAJGARH	1.21	13.16	17.44	24.57	43.62
27.	VIDISHA	3.61	27.62	24.53	22.20	22.04
28.	BHOPAL	3.39	22.07	24.23	23.21	27.10
29.	SEHORE	2.31	17.61	20.67	25.23	34.59
30.	RAISEN	1.35	14.36	18.35	23.32	42.63
31.	BETUL	4.34	23.21	25.52	20.17	26.77
32.	HOSHANGABAD	3.17	18.20	22.13	22.83	33.57
33.	JABALPUR	3.75	21.14	22.10	21.77	31.24
34.	NARSIMPUR	1.95	14.76	16.71	22.45	44.12
35.	MANDLA	2.46	17.56	21.43	22.13	36.44
36.	CHHINDWARA	4.85	22.37	26.20	14.47	27.11
37.	SEONI	4.16	22.59	20.68	18.73	33.83
38.	BALAGHAT	2.14	19.44	21.54	21.79	35.09
39.	SURGUJA	4.29	27.10	27.11	20.35	21.15
40.	BILASPUR	4.63	29.47	26.59	20.17	19.14
41.	RAIGARH	2.23	20.97	27.36	23.15	25.85
42.	RAJNANDGAON	4.06	27.97	28.08	20.69	19.19
43.	DURG	4.32	28.86	27.64	20.41	18.76
44.	RAIPUR	4.77	30.38	27.23	19.68	17.93
45.	BASTAR	4.33	30.06	30.9	20.84	14.68

The medium congested categories of 2-3 and 3-4 persons per room constitutes 23.68 per cent and 21.21 per cent of the total households. The most congested category of 4 persons or more provide shelter to 25.90 per cent of total households.

The table no 5.1 also exibits a wide district wise variation in the distribution of total households by number of persons in a room. The table reveals that in Dewas district the percentage share of households is highest in the least congested category of <1 person per room. In district Datia and Rewa also the proportionate share are approximately ten per cent of the total households.

On the other hand the lowest proportionate share in tis category is founed in the districts of Rajgarh (1.21 per cent). In Raisen, Jhabua and Narismpur also the proportionate share in the least congested category of <1 person per room is very small. It varies between 1-2 per cent in the above mentioned districts.

In the low congested category of 1-2 persons per room, the highest proportionate share is found in district Rewa (48.51 per cent of households). It is followed by district Datia with 46.78 per cent. In terms of both <1 persons and 1-2 persons (<1 1-2 persons per room) categories of low congestion district Rewa has the highest proportion of 59.22 per cent households. In district Datia 55.89 per cent of the households lived in these two low congested categories. In district Bhind, Gwalior Satna, Sidhi and Dewas 35 to 45 per cent of the households lived in these categories (See table 5.1).


MADHYA PRADESH
PERCENTAGE DISTRIBUTION OF TOTAL
HOUSEHOLDS BY NUMBER OF PERSONS
IN A ROOM
1981
PERSON IN A ROOM
<1
1-2
2-3
3-4
4+
600000 HOUSEHOLDS
400000 "
100000 "
KMS 32 0 32 64 96 128

In case of medium congested category of 2-3 persons per room approximately 1/4 of the total households in the state of Madhya Pradesh take their shelter. The table highlight that there is not much variation in distribution of household in this category among different districts. The highest proportionate share in this category found in Bastar district in which 30.9 per cent of the households take shelter in the above mentioned category. The lowest proportion in this category observed in district Jhabua (14.10 per cent). In Narsimpur, Rajgarh, Dewas, Indore and Raisen district also the proportion of households is low. Their proportion in this category vary betwen 15 to 20 per cent of the households.

In the moderately high congested category (3-4 persons per room) also the regional variation is not found much. The highest proportion of households in this category is found in district Indore (34.51 per cent) and lowest in district Rewa (11.71 per cent). Datia and Chhindwara are the only two other districts in which proportionate share in this category (3-4 persosn per room) is less than fifteen per cent.

The high congestion in district indore is mainly due to high urbanization (65.94 per cent) and industrialization as well, which attract migrants from the surrounding regions in search of livelihood. Secondly it is an important educational centre and many students from outside the district come for education. This influx of migrants from other areas increase the pressure on

infrastructural facilities in the receiving district which caused congestion.

In very high congested category of four persons or more approximately 1/4 of the total households in state of Madhya Pradesh take their shelter. The table (5.1) reveals that there is very wide regional variations in the distribution of households in this most congested category. The highest proportion of households found in district Jhabua (47.90 per cent), which is 5.83 times more than the lowest proportionate share found in district Rewa, in which only 8.21 per cent of the households falls in this category.

The very high congestion in Jhabua district is mainly because of its backward economy. It is one of the most backward district, not only in Madhya Pradesh but in India as well. The main occupations of people in this tribal dominated district are hunting, gathering, fishing and subsistance agriculture. The productivity per hectare of land as well as per persons is very low because of use of rude methods of cultivation and lack of modern means of agriculture. Most of the work is done manually and use of machinary is negligible. Due to low income and high pressure of population there is wide gap between demand and supply of housing units which led to high density of persons per room in district Jhabua.

The other districts in which the proportionate share of households in the very high congested category of four persons or more is high are Rajgarh, Raisen, Narsimpur, East-Nimar and Dhar.

In these district proportionate share of households vary between 40 to 45 per cent.

On the other side, in district Bhind, Sidhi, Bastar and Gwalior 10 to 15 percent of the households lived in this category of four persons and more per room.

If we see the total proportionate share of both high and very high (3-4, 4 and more than 4 persons per room) congested categories combindly the highest share found in district Jhabua (71.33) district. It is followed by district Rajgarh (68.19 per cent), Raisen (65.95 per cent), Narsimpur (66.57 per cent) and Shajapur (60.29 per cent).

On the other side, the combined proportionate share in those two categories in Rewa district is only 19.92 per cent which is lowest among all the districts.

If we compare the room density in each category with density of population per km. of area in different districts than a very interesting picture emerge. The district which have high density of population per k.m does not coincide with their position in terms of number of persons living in highly congested conditions. For example district Indore, Bhopal, Bhind, Gwalior and Jabalpur have experienced 362, 323, 218, 212 and 216 number of persons per square km. but most congested district in terms of number of persons per room is Jhabua which have density of population (117 persons per square km.) even slightly less than the state average of 118 persons per square km.

In the same way the districts which shows very high proportion of households in low congested categories of <1 and 1-2 persons per room does not have least density of population per km. For example district Rewa with a density of population of 191 persons per square km shows highest proportion of households in low congested categories of <1 and 1-2 persons per room. While Rajgarh district with a density of population of 130 persons shows least proporation of households in the above mention categoies.

Thus, the result has proved the hypothesis correctly that density of population does not have much influence over the density of room in the concerned state, rather various other factors like level of economy, government policy, attitude of the concerned population toward housing and various other socio-cultural and economic factors are more important than density of population. It does not mean that the density of population have no impact on room density rather its effect may be less vigarous.

5.1.2 Percentage Distribution of Rural Households by Number of Persons per room - 1981

The table 5.2 shows that a very small proportion of rural households in the state of Madhya Pradesh experienced good living conditions. Only 3.5 per cent of the rural households lived in least congested category of <1 person per room. The highest proportion of rural households (27.32 per cent) falls in the most congested category of four persons and more per room. The

PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLDS BY NUMBER OF PERSONS IN A ROOM - 1981

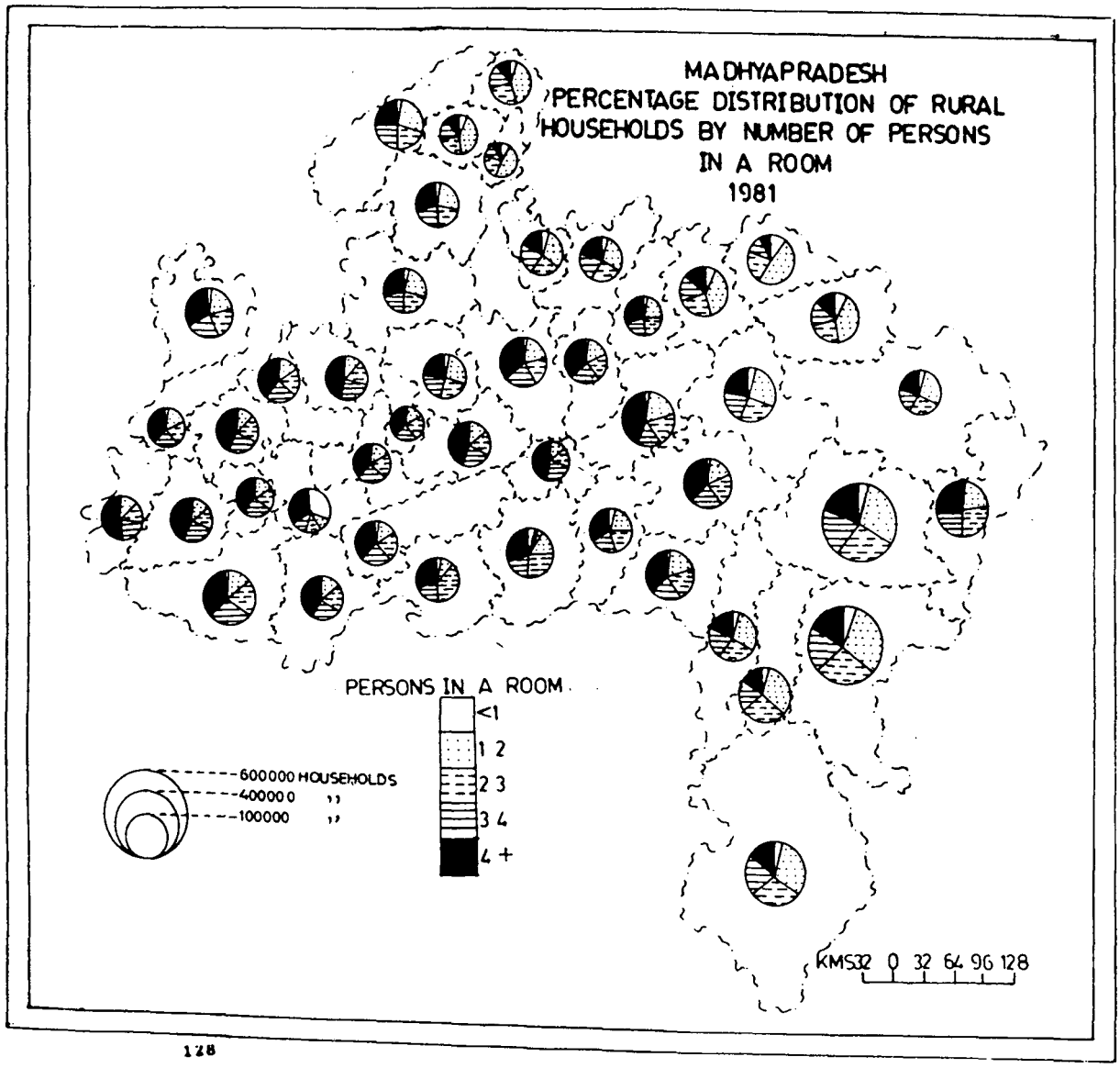
SN.	DISTRICT	< 1	1-2	2-3	3-4	4+
	M.P	3.50	24.10	23.58	21.50	27.32
1.	MORENA	3.07	27.17	22.37	22.89	24.50
2.	BHIND	5.47	40.64	25.11	17.56	11.22
3.	GWALIOR	6.63	41.85	24.26	15.53	11.73
4.	DATIA	9.36	47.48	22.55	12.12	8.49
5.	SHIV PURI	3.42	25.19	21.40	21.38	28.61
6.	GUNA	3.02	24.94	22.63	22.42	27.00
7.	TIKAMGARH	4.57	30.90	25.12	19.40	20.02
8.	CHHATARPUR	4.42	29.19	26.69	30.37	19.32
9.	PANNA	2.77	21.55	23.86	21.99	29.60
10.	SAGAR	2.53	19.35	20.66	22.31	35.14
11.	DAMOH	2.18	17.07	20.29	24.74	35.62
12.	SATNA	6.73	38.79	24.99	15.98	13.57
13.	REWA	10.65	48.95	20.71	11.65	8.03
14.	SHAHDOL	3.24	26.20	26.94	20.92	22.69
15.	SIDHI	7.83	40.06	23.69	15.53	12.89
16.	MANDASAUR	2.27	19.19	22.55	23.96	32.03
17.	RATLAM	2.37	16.09	19.60	25.08	36.86
18.	UJJAIN	1.58	11.50	19.51	24.77	42.63
19.	SHAJAPUR	1.53	14.85	20.08	24.64	38.90
20.	DEWAS	32.47	10.48	13.43	18.07	25.55
21.	JHABUA	0.99	11.73	13.28	23.73	50.27
22.	DHAR	1.55	12.33	17.65	25.79	42.69
23.	INDORE	1.77	14.36	18.56	24.59	40.72
24.	WEST NIMAR	1.47	13.27	20.70	29.06	35.50
25.	EAST NIMAR	1.66	12.91	19.36	25.05	41.03
26.	RAJGARH	0.78	11.23	16.70	24.90	46.39
27.	VIDISHA	3.27	26.27	24.70	26.69	23.07
28.	BHOPAL	1.48	16.75	20.95	23.91	36.92
29.	SEHORE	1.73	15.82	19.74	25.82	36.87
30.	RAISEN	1.17	13.27	17.87	23.42	44.28
31.	BETUL	3.42	21.02	24.90	20.83	29.82
32.	HOSHANGABAD	2.18	14.51	22.22	22.91	38.16
33.	JABALPUR	2.44	18.25	19.71	21.42	38.17
34.	NARSIMPUR	1.59	12.98	15.94	22.82	46.67
35.	MANDLA	2.03	16.40	21.47	22.53	37.56
36.	CHHINDWARA	4.80	20.09	26.37	19.45	30.00
37.	SEONI	3.99	21.41	20.19	19.04	35.45
38.	BALAGHAT	1.75	18.12	21.28	22.11	36.73
39.	SURGUJA	3.95	27.03	27.15	20.35	21.52
40.	BILASPUR	4.29	29.25	26.97	20.39	19.12
41.	RAIGARH	2.05	20.49	27.77	23.52	26.17
42.	RAJNANDGAON	3.94	28.37	28.38	20.66	18.66
43.	DURG	4.49	31.52	28.38	19.61	16.00
44.	RAIPUR	4.76	30.37	27.91	19.72	17.25
45.	BASTAR	3.86	29.37	30.47	21.32	14.98

combined proporationate share of 3-4 and 4+ categories constitute approximately half of the rural households (48.82 per cent) in the state. The medium congested category of 2-3 persons per room constitutes 23.58 per cent of the rural households. The second highest proportion of households found in low congested category of 1-2 persons per room. It constitutes 24.10 per cent of the rural households.

The table exibits wide district wise variations in the distribution of rural households in the least congested category of <1 person per room. District Dewas has the highest proportionate share of 32.47 per cent. It is followed by district Rewa and Datia with 10.65 and 9.36 per cent of households respectively. Jhabua district again experienced very low proportionate share of households in the least congested category of <1 person per room. Only 0.99 per cent of rural households in Jhabua stay in this category which is second lowest after district Rajgarh. In district Rajgarh only 0.78 per cent of the households afford to live in the least congested category of <1 person per room.

In the low congested category of 1-2 persons per room, district Rewa has experienced highest proportion of households (48.95 per cent). In descending order of magnitude district Datia and Gwalior with proportionate share of 47.48 per cent and 41.85 per cent stands second and third respectively.

On the other side, Dewas district stands lowest with 10.48 per cent of households in 1-2 persons per room category


MADHYAPRADESH
PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLDS BY NUMBER OF PERSONS IN A ROOM
1981
PERSONS IN A ROOM
<1
1 2
2 3
3 4
4 +
600000 HOUSEHOLDS
400000 ,,
100000 ,,
KMS 32 0 32 64 96 128

Ujjain, Rajgarh and Jhabua are the other districts in which the proportionate share of rural households is very low in this category.

In terms of combined proportionate share of <1 person per room and 1-2 persons per room, district Rewa stands highest. It has proportionate share of 59.60 per cent in the above mentioned categories of low congestion. It is followed by Datia (56.84 per cent), Gwalior (48.46 per cent), Sidhi (47.89 per cent) and district Bhind (46.11 per cent). On the other hand in Rajgarh district only 12.01 per cent of households lived in above mentioned categories of low congestion. In Jhabua and Ujjain districts 12.72 per cent and 13.08 per cent of the households accomodate themselves in these categories.

In medium congested category of 2-3 persons per room, the highest proportion of households found in district Bastar (30.47 per cent) and lowest in district Jhabua (13.25 per cent). District Dewas also has relatively low proportion of households in this category (13.43 per cent). The table exibits that there is not much district wise variations in the distribution of rural households in this catgegory, the percentage share of households in different districts is around the state average of 23.58 per cent of household.

In moderatly high congested category of 3-4 persons per room, also district wise variations are low. The highest proportionate share found in district West-Nimar (29.06) and

lowest in district Rewa (11.65 per cent). Datia is the only other district in which proportion of households is less than fifteen per cent in this category..

The most congested category of four persons or more in a room shows wide district wise variations in the distribution of rural households. The highest proportionate share is found in district Jhabua (50.27 per cent). More than 40 per cent of the households in district Narsimpur, Rajgarh, Raisen, Dhar, Ujjain and East-Nimar lived in this most congested category.

District Rewa, on the other hand experienced very low percentage of households in this highly dense category. Only 8.03 per cent of the households in district Rewa lived in this category. In Datia district also only 8.49 per cent of the households take shelter in the above mentioned category.

The hypothesis again proved correct in case of distribution of rural households (hypothesis that there is no relation between room desnity and population density). For example in <1 and 1-2 persons per room category Datia district recorded highest proportionate share of households but lowest density of population was in district Bastar in 1981. Similarly in most congested category of four persons and more in a room,district Jhabua has the highest proportion of households (50.27 per cent) but its population density was only 108 persons per square km. While on the other hand district Rewa shich is one of the most density populated district (172 persons per square km.) has only 8.03 per cent of households in the most congested category of

four persons or more in a room.

5.1.3 Percentage Distribution of Urban Households by number of persons in a room

The table 5.3 exibits percentage distribution of urban households by number of persons in a room in 1981. The table shows that in the state of Madhya Pradesh only 5.54 per cent of households lived in the least congested category of >1 person per room. The highest proportion of households found in 1-2 persons per room category which account 29.87 persons of urban households. The medium and moderately high congested categories of 2-3 and 3-4 persons per room constitutes 24.04 and 20.10 per cent of households respectively. It means 44.14 per cent of households in urban areas of Madhya Pradesh lived in medium and moderately high congested categories. The most congested category of four persons or more in a room accounts approximately one fifth (20.44 per cent) of the urban households in the state of Madhya Pradesh in 1981.

The table exibits wide district wise variation in the distribution of urban households in the least congested of >1 person per room. The highest proportion of households in this category found in district Sidhi which account 17.79 per cent of urban households. It is followed by Rewa (11.07 per cent) and Bastar (10.81 per cent) district. All other districts have less than ten per cent proportionate share in this category.

Raisen district has achieved the dubious distinction by

PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS BY NUMBER OF PERSONS IN A ROOM - 1981

		< 1	1-2	2-3	3-4	4+
	M.P	5.54	29.87	24.04	20.10	20.44
1.	MORENA	5.37	32.77	22.28	21.41	18.19
2.	BHIND	7.20	39.43	23.24	16.34	13.78
3.	GWALIOR	5.19	33.31	24.43	20.07	16.99
4.	DATIA	8.07	43.87	22.87	14.95	10.24
5.	SHIV PURI	6.00	35.45	23.25	18.52	16.90
6.	GUNA	4.53	32.22	24.08	20.73	18.43
7.	TIKAMGARH	5.89	36.34	22.35	17.77	17.64
8.	CHHATARPUR	8.02	37.12	23.75	16.90	14.21
9.	PANNA	6.85	32.97	20.80	18.39	20.99
10.	SAGAR	4.58	28.53	23.12	20.74	23.03
11.	DAMOH	4.78	29.73	23.59	21.48	20.40
12.	SATNA	7.02	37.48	24.22	16.56	14.72
13.	REWA	11.07	45.89	21.75	12.08	9.31
14.	SHAHDOL	9.24	31.34	25.80	17.99	15.62
15.	SIDHI	17.79	43.95	21.74	11.28	5.23
16.	MANDASAUR	6.29	33.85	22.51	18.85	18.50
17.	RATLAM	6.01	31.74	25.44	19.23	17.59
18.	UJJAIN	4.89	29.57	23.90	21.35	20.29
19.	SHAJAPUR	5.15	29.80	23.20	21.08	20.77
20.	DEWAS	5.46	35.81	24.87	20.81	22.03
21.	JHABUA	6.06	28.23	22.80	20.26	22.66
22.	DHAR	5.35	29.33	23.60	20.02	21.70
23.	INDORE	4.52	26.96	23.81	21.32	23.39
24.	WEST NIMAR	5.17	26.17	22.19	21.48	24.99
25.	EAST NIMAR	3.74	18.99	18.22	22.33	25.33
26.	RAJGARH	4.08	25.93	22.33	22.33	25.33
27.	VIDISHA	5.20	33.96	23.73	19.91	17.20
28.	BHOPAL	3.96	23.67	25.22	23.00	24.15
29.	SEHORE	5.92	28.91	23.61	21.41	20.16
30.	RAISEN	2.84	23.66	22.48	22.58	28.50
31.	BETUL	8.58	33.35	28.35	17.08	12.64
32.	HOSHANGABAD	6.09	28.99	24.64	20.22	20.05
33.	JABALPUR	5.46	24.94	25.24	22.23	22.13
34.	NARSIMPUR	4.13	25.55	21.42	20.21	28.68
35.	MANDLA	7.95	32.16	20.80	17.06	22.03
36.	CHHINDWARA	7.58	30.44	25.60	19.53	16.85
37.	SEONI	7.25	36.26	26.31	15.14	15.05
38.	BALAGHAT	6.08	32.84	24.13	18.54	18.41
39.	SURGUJA	7.84	27.81	26.74	20.12	17.34
40.	BILASPUR	6.67	30.85	24.32	18.86	19.30
41.	RAIGARH	4.35	27.38	24.26	20.36	23.69
42.	RAJNANDGAON	4.92	25.08	25.95	20.91	23.13
43.	DURG	4.02	23.88	26.25	21.92	23.93
44.	RAIPUR	4.85	30.47	23.89	19.52	21.27
45.	BASTAR	10.81	39.61	24.93	14.12	10.53

having the lowest proporationate share of urban households (2.84 per cent) in this category. The other districts which shows relatively low proportion of households in the least congested category are East-Nimar (3.74 per cent), and Bhopal (3.96 per cent).

The table reveals taht highest porporationate share of households found in low congested category of 1-2 persons per room. Regional Variations at district level indicates that 45.89 per cent of households in district Rewa enjoy highly spacious and comfortable living condition, which is highest among all the districts. There are two more districts in which more than forty per cent of the households lived in 1-2 persons per room category. These district are Sidhi (43.95 per cent) and Datia (43.87 per cent).

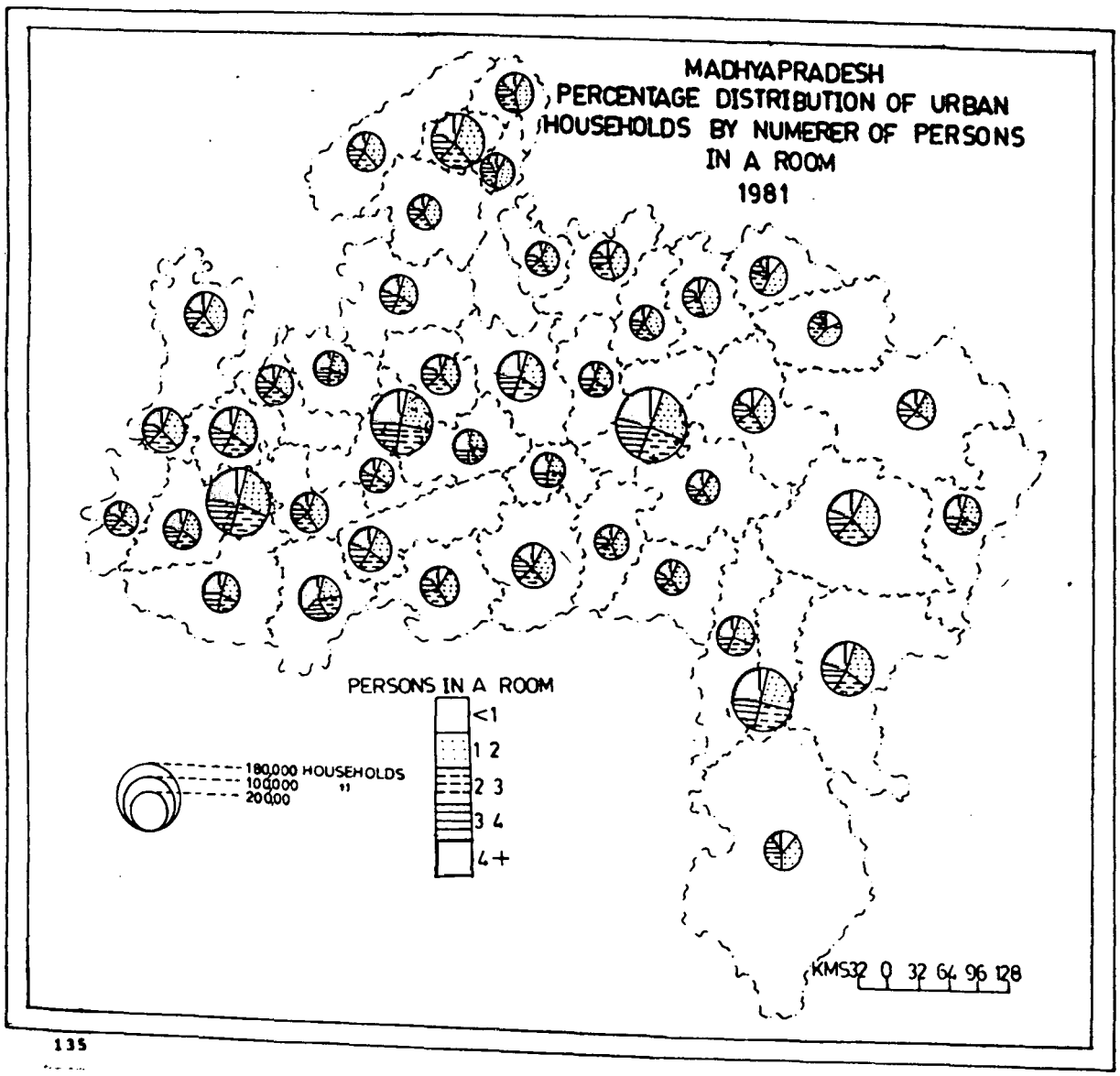
In the East-Nimar district only 18.99 per cent of the urban households lived in highly spacious condition in the category of 1-2 persons per room, which is lowest among all the districts. Raisen, Jabalpur, Bhopal and Durg are the other districts in which less than 25 per cent of the households falls in this category (see table no 5.3).

If we see the combined share of urban households lived in low congested categories of <1 person per room and 1-2 person per room, than in districts Sidhi more the 60 per cent (61.79 per cent) of the urban households lived in highly spacious conditions which is highest among all the districts. In district Rewa and

Datia also more then half of the urban households lived in these categories. There are twelve more districts in which proportionate share of urban households is more than fourty per cent. These districts are Bhind, Shivpur, Tikamgarh, Chhatarpur, Satna, Shahdol, Mandasaur, Dewas, Betual, Mandla, Seoni and Bastar. East-Nimar is the only district in which less than 25 per cent of households falls in these categories.

The table 5.3 shows that 20-30 per cent of urban households in all the districts, East-Nimar being an exceptional, take shelter in the medium congested category of 2-3 persons per room. East Nimar is the only district in which less than twenty per cent (18.22 per cent) of the households lived in this category. In Betul district 28.35 per cent of the urban households lived in medium congested category of 2-3 persons per room which is highest among all the districts. It shows that there is not much regional variations in this category as far as distribution of urban households is concerned.

The table 5.3 shows that approximately 1/5 of the households (20.10 per cent) in the state of Madhya Pradesh lived in moderately high category of more than three but less than four (3 to 4 persons per room) persons per room. The table expose that like previous category, there is also not much regional variations in this category in the distribution of urban households among different districts. District Bhopal ranked highest with 23.00 per cent of households. On the lower side


MADHYAPRADESH
PERCENTAGE DISTRIBUTION OF URBAN HOUSEHOLDS BY NUMERER OF PERSONS IN A ROOM
1981
PERSONS IN A ROOM
<1
1 2
2 3
3 4
4+
180,000 HOUSEHOLDS
100,000 "
20,000
KMS 32 0 32 64 96 128

there are only four district which have less than fifteen per cent of the urban households lived in this category. According to the ascending order of magnitude, these district are Sidhi (11.28 per cent) Rewa (12.08 per cent), Bastar (14.12 per cent), and Datia (14.95 per cent).

The table 5.3 expose that another 1/5 of the urban households (20.44 per cent) in the state of Madhya Pradesh lived in the most congested category of four persons or more per room. Narsimpur district with 28.68 per cent of the households ranked highest, followed by Raisen (28.50 per cent), East Nimar (25.33 per cent) and Rajgarh (25.33 per cent).

On the other side, like previous category, Sidhi district again stands lowest with only 5.23 per cent of urban households lived in this highly congested category. In district Rewa, Datia and Bastar, 9.31, 10.24 and 10.53 per cent of households respectively take shelter in this category.

Like total and rural households distribution, in case of urban households also density of population has negligible relationship with room density. This is proved when we compare the urban density of population with room density. In the low congested category of <1 person per room and more than one but less than two (1-2 persons) persons per room, district Sidhi achieved highest rank with more than sixty per cent of the households. It had urban density of population of 1946 persons in 1981 which is though less than the state average of 2170 persons per km but

more than three times of Chhatarpur, Bhind and Morena districts which had recored density of population of 551, 588 and 588 persons respectively.

On the basis of density of population Vidisha and Indore districts should have lowest proportion of households in this category as they had urban density of population as high as 8520 and 6366 persons per km, which are four and three times more than the state average, respectively. But the lowest of proportion of households in this category is found in East Nimar district which experience approximately two and half times less density of population than district Vidisha.

In the most congested category of four or more than four persons per room, also we could not found any sign of influence of density of urban population on room density. As for example, the highest density of population (urban) in 1981 was recorded in district Vidisha (85.20 persons per km). On the basis of density of population it should have highest proportion of population in this category of most depressed living conditions but it is Narsimpur district which recorded highest proportionate share in this category (28.68 per cent) which had density of population of only 1731 persons which is 4.09 times less than district Vidisha.

Thus, it is proved from the above analysis that there is no concrete relationship between density of room and density of population and if justify our hypothesis (that there is no relationship between room density and density of population of a

region.

5.2 Lack of Privacy

Lack of privacy is an ideal measure to know the quanlity of dwellings available to the inhabitants of a region and congestion difference among different districts/regions. Privacy become not only desirable but a necessicity in some cases. For example a student prefer single room to avoid wastage of time due to disturbance in congested conditions in double-seated or tripple seated rooms. But the same wants become a basic need or a neccesity for a couple. If there is a lack of privacy for a couple than it may have negative affect on their psychology and mentality. To measure the lack of privacy it is assumed that a couple need at least one room to live in, if the number of couples exceed number of rooms, it means the couple is suffering from lack of privacy.

The table no.5.4 deals with the percentage of households experiencing lack of privacy in total urban and rural areas of the state of Madhya Pradesh in 1981. In case of percentage of total households experiencing lack of privacy, district Jhabua ranked highest with 16.38 per cent of households. It is followed by district Narsimpur and Dhar in which 15.39 per cent and 15.13 per cent of households respectively lacked privacy. There are twelve other district in which more than ten per cent of

PERCENTAGE OF HOUSEHOLDS EXPERIENCING LACK OF PRIVACY- 1981

SN.	DISTRICT	TOTAL	RURAL	URBAN
	M.P	6.94	7.69	4.31
1.	MORENA	9.40	10.03	5.64
2.	BHIND	6.17	6.41	5.09
3.	GWALIOR	4.26	3.69	4.68
4.	DATIA	3.15	3.10	3.41
5.	SHIV PURI	7.38	7.42	4.04
6.	GUNA	7.61	8.03	4.46
7.	TIKAMGARH	5.73	5.89	4.52
8.	CHHATARPUR	6.43	6.70	4.76
9.	PANNA	6.33	6.37	5.88
10.	SAGAR	9.07	10.32	5.60
11.	DAMOH	10.74	10.84	10.11
12.	SATNA	2.76	2.66	3.28
13.	REWA	1.65	1.59	2.07
14.	SHAHDOL	3.80	4.02	2.53
15.	SIDHI	2.29	2.32	0.97
16.	MANDASAUR	7.85	8.60	4.68
17.	RATLAM	9.83	12.04	4.69
18.	UJJAIN	11.45	15.08	5.40
19.	SHAJAPUR	10.91	11.79	5.57
20.	DEWAS	12.06	13.58	5.44
21.	JHABUA	16.38	17.34	5.70
22.	DHAR	15.13	16.18	7.14
23.	INDORE	8.43	15.04	5.18
24.	WEST NIMAR	12.79	13.74	7.24
25.	EAST NIMAR	12.53	13.20	10.52
26.	RAJGARH	13.92	14.75	7.81
27.	VIDISHA	5.71	6.72	3.63
28.	BHOPAL	5.31	10.70	3.63
29.	SEHORE	13.61	14.81	5.25
30.	RAISEN	13.51	14.20	7.14
31.	BETUL	7.96	9.10	1.98
32.	HOSHANGABAD	10.21	12.24	4.14
33.	JABALPUR	6.71	9.05	3.73
34.	NARSIMPUR	15.39	16.70	7.08
35.	MANDLA	8.78	9.14	3.70
36.	CHHINDWARA	6.31	7.17	3.06
37.	SEONI	10.05	10.57	3.30
38.	BALAGHAT	10.68	11.33	3.32
39.	SURGUJA	7.96	5.50	9.34
40.	BILASPUR	3.35	3.39	3.15
41.	RAIGARH	4.40	4.46	3.68
42.	RAJNANDGAON	2.69	2.62	3.25
43.	DURG	2.71	2.53	3.05
44.	RAIPUR	2.64	2.54	3.14
45.	BASTAR	2.56	2.65	1.24

households lacked privacy. These districts are Rajgarh (13.92 per cent) Sehore (13.61 per cent), Raisen (13.51 per cent), West Nimar (12.79 per cent), East Nimar (12.53 per cent), Dewas (12.06 per cent), Ujjain (11.45 per cent), Shajapur (10.91 per cent), DamoH (10.74 per cent), Balaghat (10.68 per cent), Hoshangabad (10.21 per cent) and Seoni (10.05 per cent).

On the lower side in district Rewa only 1.65 per cent of the households lacked privacy, which is lowest among all the districts. There are as many as eleven districts in which less than five per cent of households suffering from lack of privacy. These district are Sidhi (2.29 per cent), Bastar (2.56 per cent), Raipur (2.64 per cent), Rajanandgaon (2.59 per cent), Durg (2.71 per cent), Satna (2.76 per cent), Datia (3.02 per cent), Bilaspur (3.35 per cent), Shahdol (3.80 per cent), Gwalior (4.26 per cent) and Raigarh (4.4 per cent).

In case of rural areas of 7.69 per cent of the households in Madhya Pradesh lacked privacy which is approximately 90 per cent more than the urban areas. Like total, in rural areas also top three positions according to descending order of privacy,intact by district Jhabua, Narsimpur and Dhar with percentage figure of 17.34, 16.70 and 16.18 respectively. There are as many as twenty other districts in which more than ten per cent of the rural households lacked privacy (see table 5.4). In Ujjain and Indore districts 15.08 and 15.04 per cent of households lacked privacy.

On the other hand least lack of privacy or in other words

highest privacy is observed in district Rewa. Only 1.59 per cent of the households in this district lacked privacy. In district Sidhi 2.32 per cent of rural households lacked privacy. In Rajnanadgoan, Durg, Raipur, Bastar and Satna districts, the percentage of households experienced lack of privacy vary between 2.5 to 2.75 per cent.

In case of urban areas of Madhya Pradesh 4.31 per cent of households suffered from lack of privacy. The highest percentage of households sufferd from lack of privacy observed in district East Nimar (10.52per cent). Damoh is the only other district in which more than ten per cent (10.11 per cent) of the urban households experienced lack of privacy. Sidhi is the only district in which less than one per cent (0.97 per cent) of urban households eluded by privacy. Bastar and Betul district followed district Sidhi with percentage figure of 1.24 per cent and 1.98 per cent respectively.

Thus the table reveals that the percentage of rural households experienced lack of privacy is higher than the urban areas in all the districts.

CONCLUSION

Madhya Pradesh with a total area of 443, 44 [illegible] the largest state in India which is located [illegible] 17°46' 55" and 26°52'46" North and betwen longitude 74°1'55" and 84°23' 54" East. This vast land, surrounded by seven states, provides lot of physical and cultural diversity which generate profound influence on the availability of quality of houses as well as household amenities in different regions of the state. On the one hand there is hilly tract in the north, comprising Satpura and Vindhya ranges, while on the other extreamity, eastern low land of Chhatisgarh plain provides good opportunities for intensive agriculture. Extensive forest cover and large tribal population provides ample opportunities to trace out the regional inequalities in the distribution of quality of housing stock and household amenities in both rural and urban areas. In such a situation it become purposeful to study the state of quality of housing and availability of household amentities to the inahabitants of the different regions of the concerned state in both rural and urban areas.

The present study, "Quality of Housing Stock and Availabrility of Household Amenities in Madhya Pradesh, 1981 : A District Level Analysis", tries to trace out the factors responsble for inequalities in the distribution of set of indicators affecting the quality of life of the households in the

concerned regions. In this research work, Housing stock by type of structure, Household Amenities, Room density and Privacy/Lack of Privacy has been studied.

In case of housing stock different types of houses are classified into different categories of Kutcha, Semi-Pucca-I, Semi-Pucca-II and Pucca type, on the basis of quality of building materials used in the contruction of houses. To get insight into the regional distribution of amenities, such important ingredients of quality of life are taken into account; like Drinking Water, Electricity and Toilet Facilities. Drinking Water is classified into four categories on the basis of location and quality of water. Electricity and toilet facilties are also studied by tenure status of the house occupy. Toilet facilities in rural areas are not taken into account due to inavailability of the required information (data) by secondary sources. To examine the room congestion, density of room has been calculated with the helop of table no.1.d given in the introductory Chapter of this study. In the absence of data related to floor area, Couple is taken as an indicator to determine level of privacy/ lack of privacy in Madhya Pradesh as a whole and rural and urban areas.

The present study investigated some hypothesises pertaining to, that there is positive correlation betwen urbanisation and Pucca houses and composite index of infrastructural facilities, between type of housing structure and availability of building

materials at local level, between Kutcha houses and forest area, between Kutcha houses and tribal population, that Kutcha houses are more in rural areas than urban areas, that household amenities are more in urban areas than rural areas, that room density is negatively correlated with density of population, and that level of congestion is more in rural areas than in urban areas.

To determine availability of quality of housing stock and household amenitities, and extent of regional variation in their distribution, various statistical techniques have been used, such as percentage, correlation and Principal Component Analysis (PCA) technique etc.

The Analysis of the study indicates that the availability of Pucca houses are more in urban areass in compare to rural areas and Kutcha houses in rural areas are almost three times more than urban areas.

The correlation between Pucca houses and composite index of infrastructural indicators show positive value of 00.2868 at first principla component (PC) level. In urban areas it shows negative value of -00.1822 at first principal component level but at third principal level it shows positive value of .0876.

It is revealed from the study that Kutcha and semi-pucca houses are more concentrated in forests and tribal dominated region, consists of Bastar, Jhabua, Bilaspur, Balaghat, Surguja and Sidhi etc. In each of these districts, forests constitutes

more than forty per cent of the area.

It is also traced out that semi-pucca-I cateogy of house type constitute highest proportionate share in Madhya Pradesh as a whole (total) and in rural and urban areas as well. In rural areas it consitutes as much as three-fourth of the houses. In rural areas only 2.54 per cent of the households lived in pucca houses but in urabn areas it is more than one-third (33.42 per cent) of the housing stock.

In case of household amenities such as drinking water, electricity and toilet facilities, urban areas are better served than rural areas. It is also reveals that household amentities are low in eastern and north-eastern districts and high as one go westward. Highly urbanized districts of Bhopal, Indore, Gwalior and Ujjain are better served than other districts.

In case of drinking water by protected sources Bhopal, Gwalior, Indore, Jabalpur, Ujjain and Ratlam shows high percentage of households while tribal dominated region, consists of Bastar, Jhabua and Mandla shows dismal performance.

In case of drinking water by protected sources in Madhya Pradesh as a whole, Tikamgarh, Damoh and Panna experienced high proportionate share of households while lowest share in this category found in Bhopal, Ujjain and Gwalior.

In rural areas Ujjain, Narsimpur, Indore and Vidisha etc. shows high proportionate share in protected sources of water supply, while lower share is experienced in Tikamgarh, Jhabuua

and Rajnandgaon districts.

In case of drinking water by unprotected sources in rural areas Shahdol, Rewa, Sidhi, Panna, Chhatarpur and Bhind experienced high percentage of households while Vidisha, Narsimpur Shahdol and Indore experienced low share.

The analysis reveals that two-third of the households in urban areas get drinking water by protected sources both within and outside the premises while in rural areas only one fifth of the households have access to such facility.

In urban areas, Bhopal and Gwalior districts show higher percentage of households having access to drinking water by protected sources while in predominently forest land and tribal dominated areas of north and eastern regions show lower percentage of households.

In case of drinking water by unprotected sources in urban areas the situation is reverse to drining water by protected sources. Bhopal experienced lowest percentage share of households while north and eastern districts of Sidhi, Balaghat and Chhatarpur shows high percentage of households.

It is found that drinking water facilities by protected sources are more concentrated in higher urbanized districts while most of the north and eastern half of the state experienced very low percentage of households. But in case of unhygienic sources of water supply by unprotected means, the reverse is observed.

In case of distribution of electricity also the trend is

almost same like drinking water. Bhopal, Indore, Gwalior and Ujjain experienced higher percentage of households having access to electricity in Madhya Pradesh as a whole as well as in both rural and urban areas while north and eastern regions show poor performance. The predominately tribal belt of Bastar, Durg, Surguja, Balaghat and Tikamgarh etc. have very low percentage of households having access to electricity.

The analysis identify that only 6.89 per cent of households in rural areas have access to electricity while in urban areas more than half of the households in the state receive electricity. In four major urbanized districts of Bhopal, Indore, Ujjain and Gwalior more than two third of the households have excess to electricity in urban areas while in predominately rural economy of north and eastern region less than half of the urban households have access to electricity.

Analysis also reveals that in both rural and urban areas access to electricity is more in rental houses than owned houses in all the districts.

In case of toilet facility in urban areas, again Bhopal, Gwalior, Ratlam, Indore and Ujjain experienced higher percentage of households served by toilet facility while less urbanized districts, mostly located in north and eastern region experienced low percentage share. Again like electricity, toilet facilities are more in rented houses than owned houses in urban areas in all the districts.

The analysis of the study reveals that Madhya Pradesh as a whole as well as in rural and urban areas, the densely populated districts do not show higher room density (number of persons in a room). In case of Madhya Pradesh as a whole, for example in Bhopal, density of population in 1981 recorded as 362 persons per square km, but the most congested district in terms of number of persons in a room is Jhabua which have density of population of only 117 persons per square km.

In rural areas also Jhabua with a rural population density of 108 persons per square km shows that 50.27 per cent of rural households lived in most congested category of four persons or more but district Rewa with a densituy of population of 172 persons per square km shows only 8.03 persons per room in this category.

Like total and rural, in urban areas also density of room has negligible relationship with population density. On the basis of urban density of population, districts Vidisha which have urban population density of 8520 persons per square km., should have highest density of room in this category of four persons or more in a room but it is Narsimpur district which recorded the highest proportionate share in this category which had urban density of population of only 1731 persons per square.

It is identify that lack of privacy is high in rural areas than urban areas. The analysis of the study shows that lack of privacy is more in rural areas than urban areas in all the

districts.

The present study suggests that a community level approach is needed to tackle the problem oof shortage of housing stock as well as its quality in the state of Madhya Pradesh, especially in tribal dominated region of the state where large chunk of households take shelter in Kutcha or semi-pucca houses. To achieve the goal of universal provision of shelter, drinking water,snaitation and other civic amenities, "a Nirmithi" type of appraoch is urgently needed, in a which reponsbilities are shared by the common people in planning, training and management and in achieving the physical targets. The government should share the responsibilities by making provision of loans and subsidies to low income group people. Buildings construction bye-laws should be amended according to the prevailing situation and more efforts are needed to involve co-operative and private sector in the construction of low cost housing for low income group people.

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