HOUSING SITUATION IN GREATER BOMBAY

P. RAMACHANDRAN

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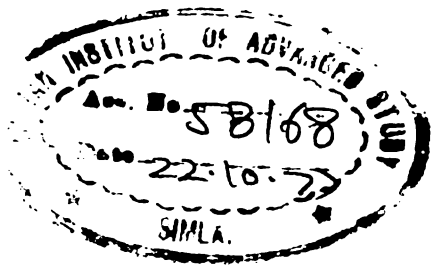

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PREFACE

This report in the Housing Situation in Greater Bombay is the response to an acutely felt need for basic data for purposes of developing a housing policy for a city-to-be. It is probably the first or one of the few studies on housing which has been commissioned by a public agency in India for purposes of planning a housing programme in the city-to-be. It follows that this is also probably one of the few studies in which a public agency has seriously asked "what are people's preferences about housing?" before it undertook housing construction.

It would not be inappropriate to claim a few more 'firsts' for innovative spade work in policy formation and programme development. The public agency which has been entrusted with the task of developing a new city, has found the need to have hard-core data on a large number of issues. These include the demand for empirical data on travel patterns, within a city, migration to metropolitan centres, housing, etc. Since the agency needed these data as soon as they could be made available, it was progressive enough to see the advantages of dovetailing a number of sample surveys. Any large scale project involves tremendous planning and designing work. This work becomes stupendous when an organisation attempts to do a multi-problem project. Such stupendous tasks can be undertaken within a stipulated time only by a proper division of work and close coordination among different research units.

In essence, in consultation with fellow social scientists and representatives of the sponsors specific research problems were identified, formulated and clarified. One complex project was planned with a common probability sample. The planning for each sub-study covering one major problem was entrusted to one researcher. The field organisation for collecting field data for all the studies and initial processing of data were entrusted to one Field Unit. The data processing, including the computation of estimates for Greater Bombay as a whole, was entrust-

ed to another unit. The researchers who planned the sub-studies were entrusted with the task of final analysis and the writing of individual reports for the problem entrusted to them. At all these stages unstinted support and advice of the sponsors and its representatives and of the two units mentioned above were readily available to the researchers. Any large scale complex project of the nature sponsored by an agency is bound to face obstacles and difficulties. The strengths and merits of the project lay in the positive co-operation among the constituent researchers and units with their staff as well as the sponsoring agency.

I am extremely grateful to the City and Industrial Development Corporation of Maharashtra Ltd., Bombay, the sponsor of this project, not only for inviting me to participate in the massive project, but also for the cordial cooperative relations maintained throughout the project. This satisfying collaboration was in no small measure due to Dr. M. S. Gore, Member, Planning Team CIDCO and Director, Tata Institute of Social Sciences, Bombay. His advice was available at each stage of the planning of the project and his encouraging comments were offered without hesitation on an Idea Draft Report I had submitted earlier.

To the sponsors, I am also grateful for:

— the financial grant for this project;

— to my mind, the unique permission given to the researchers to collect more data than were needed by the sponsors, and the permission to use this material for any additional research work relating to housing that I may have in mind;

— having taken the quick decision to have this report published for wider circulation.

Four other members of CIDCO who were helpful to me in my work were Mr. Sirish Patel, Technical Adviser; Mr. H. S. Verma, Senior Social Scientist; Mr. S. K. Gupta, Economist and Mr. A. K. Parikh, Statistician. The first three persons gave their best by way of comments and suggestions on my Idea Draft Report, and Mr. Parikh was most helpful in planning and supervising the computer processing of data and prepara-

tion of tables for the study.

Nearer home, I am thankful to:

Mr. J. C. Sharma, Lecturer in Statistics, TISS, for his able work in designing the sample, heading the Field Unit, and for his advice on the analysis of data.

Mr. R. D. Naik, Research Officer on the Field Unit, who also offered his time, energy and suggestions in the designing of the interview schedule, and in the preparation of the tabulation and code designs.

Mr. K. Y. Rao, who had the tedious task of recasting tables, reanalysing them and doing all related statistical work.

Mr. P. V. Achuthan and Mrs. M. Ramachandran for having so willingly undertaken some additional tabulations, and Mr. Achuthan for providing support in administrative work including typing of the draft and final report.

Mr. K. V. George for undertaking, at short notice, the preparation of this manuscript for final printing.

October 1972 P. RAMACHANDRAN
Bombay

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Chapter One

ENDS AND MEANS

1. GENESIS

As is now widely known the Government of Maharashtra, in pursuance of its decision for the development of Greater Bombay's hinderland to form the Greater Bombay Metropolitan Region, has established an autonomous organisation to implement the decision. This organisation, the City and Industrial Development Corporation of Maharashtra Limited (CIDCO), is now engaged in planning its strategies for fulfilling the task of bringing into being the "Metro Centre". In this context, the selection of appropriate strategies would have to take into consideration, *inter alia,* the present populations inhabiting the areas which will form the metrocentre, and also anticipate problems which are likely to emerge in an otherwise unplanned and undirected city growth situation. In order to be armed with relevant and reliable basic socio psychological and economic data to develop its strategies, CIDCO planned a series of empirical studies in what is now known as the "CIDCO area" (Metro Centre Area) and in Greater Bombay.

The phenomena to be studied were discussed and decided upon at a consultative meeting of Social Scientists held on October 3, 1970, at the CIDCO Head Office in Bombay. The different research projects recommended at the meeting included the following empirical studies:

a) Housing Situation in Greater Bombay
b) Local Travel Patterns
c) Migration
d) Demographic Pattern, as well as
e) Township Studies
f) Village Studies
g) Neighbourhood Studies
h) Utilisation of Social Welfare Services, and
i) Work Force.

Studies (a) to (d) constituted parts of one complex project in Greater Bombay, whereas studies (e) to (i) were intended to be undertaken in select locations and as independent projects.

This report pertains to the study of the Housing Situation in Greater Bombay.

2. Objectives

The major objectives of this study on the Housing Situation in Greater Bombay, were:

a) to trace residential mobility within Greater Bombay and determine characteristics differentiating households on this component;
b) to find out the number and types of dwellings in the typology spectrum of hut to bungalow and the relative facilities and amenities existing and preferred and characteristics differentiating households on these components;
c) to ascertain the current rent paid by tenants for their dwellings and their capacities to pay rent as measured by hypothetical but realistic housing needs identified by households themselves, and the characteristics differentiating households on these components;
d) to determine the modes and time of local travel for different activities and problems and suggested solutions with regard to environmental facilities and amenities as well as travel for different activities;
e) to ascertain the relative priority position of housing in relation to other basic expenditure items; and
f) to discuss the implications of findings relating to objectives (a) to (e) for perspective planning for housing in the Metro Centre.

3. Scope

The study was confined to Greater Bombay and to all households residing in different types of dwellings, including temporary and permanent, *kutchha* and *pucca*, and Government, employer, private or self owned dwellings.

4. Coverage of Information

The relevant information collected from each of the households included the following:

a) *Background*

Age, sex, and education, of all members of the household, household size, household income, place of origin, and period of stay in Bombay of head of household.

b) *Dwellings*

Type of dwelling, number of dwellings in building, year building constructed, total floor area of dwelling, number of rooms in dwelling, facilities in dwelling, tenancy status, and rent per month.

c) *Hypothetical Dwelling Preferences*

Given a choice, type of dwelling preferred by households in terms of number of rooms, facilities, tenancy status, rent payable, etc.

d) *Environmental and Related Facilities*

Approximate time and mode of travel for different purposes and preferences; characteristics of present neighbourhood and preferred neighbourhood.

e) *Residential Mobility*

Details of residential changes made within Greater Bombay.

5. Method of Data Collection

The relevant data for the study were collected by canvassing a pretested interview schedule with a sample of households. A copy of the interview schedule is given as Appendix I.

6. Sample Design

This study was one of the four that formed the complex project with a master sample of 750 households, and a housing study subsample of 750. The sample design was worked out to cover all four studies. The details of this design are given as Appendix II.

7. Field Organisation

Again, as this study was part of a complex project, the field organisation for this study was entrusted to a separate Field Unit. The data for this study were collected between January 1971 and May 1971.

8. Data Processing

The data were coded by the Field Unit and computer processed by the sponsors of the project.

9. Presentation of Findings

a) *The Tables*

The cell values in all the tables presented in this report are in percentages. The corresponding marginal figures on which these percentages are based are raw figures. It must be further mentioned that the raw figures are not the actual number of households interviewed, but estimates of the total population based on the sample survey. Further, the marginal raw figures are in thousands since the estimated total for the whole study is about eleven lakhs thirty nine thousand households. There are few exceptions to this. Discussions on the draft report on this study revealed the need for undertaking some additional tabulations. These additional tables were prepared for the sample of 1500 only and no attempt was made to make estimates for Greater Bombay. In fact, because the study was based on a probability sample of households the percentage distribution for the same was not, statistically speaking, significantly different from the distribution for the estimated figures. Tables which are based on the sample only are so indicated as foot notes to the tables.

Three other features of the tables may be noted. Firstly, no numbers have been recorded in some cells of some tables. This could be due to one of three reasons:

(i) no respondent offered that particular response(s), or
(ii) the number of respondents who offered that particular response(s) would be less than 0.5 per cent of the total

for that category of respondents, or

(iii) since the recasting of the original tables included the first step of reducing all cell values to base thousand, the original cell value may have been less than 500.

Secondly, due to differences in rounding off all estimated raw figures to thousands, the grand total for all tables may not be the same. The same would hold true for sub-category marginal totals as well. Grand totals may also differ because of differences arising in tabulation.

Thirdly, the percentages may not add up to exactly 100 per cent because of the procedure of rounding them off to whole numbers.

Finally, a number of detailed tables have been presented in Appendix III, and many of the tables presented in the text of the report are summary tables.

b) *The Composition Indices*

Two composite indices were computed for the study to facilitate analysis. These are the socio-economic status and priorities index. The procedures for computing these are given below.

(i) *Socio-economic Status*: The SES is composed of two characteristics of heads of households and one of the household itself. These are the education and occupation of heads of households, and the household income. At the outset, the responses for each of these three characteristics were classified into the following three categories as high, medium and low levels:

Level	*Weightage*	*Education*	*Occupation*	*Income*
High	3	Graduate and above	Prof., Tech., Admn., Exec., Managerial	Rs. 1001 and above
Medium	2	Primary to Matriculation	Clerical and related	Rs. 501 to Rs. 1000
Low	1	Literate/ Illiterate	All other occupations	Upto Rs. 500

The next step consisted in calculating the socio-economic score for each respondent by adding up the weightage for each of the three characterististics. Thus a person in the high education, high occupation, high household income category would obtain a score of 9. At the other extremity, a person with low education, low occupation and low income would obtain a score of 3 only.

In the case of individuals who reported only two of the three items of information, the score for the third item was assumed to be the average of the scores for the two available items.

Overall 9 major categories of socio-economic status were obtained as follows:

3 — very low	5 — lower middle	8 — lower upper
4 — low	6 — middle	9 — upper
	7 — upper middle	

(ii) *Priorities Index*: All the respondents were required to rank seven major items of expenditure according to their priorities. The items were: food, clothing housing, medical education, recreation and transport.

As a first step cross tables were prepared for an independent variable and the priorities of each item. These priority positions were then rated with the first priority having a rating of seven and the lowest priority having a rating of one. The nonresponses were given zero value. By multiplying these ratings with the respective responses relating to that priority, and dividing the aggregate value by the total respondents an average rating for each item was obtained for each sub-category of the independent variable. To facilitate further analysis, these averages were then multiplied by 100.

The procedure is illustrated below:

a) Priority No.	1	2	3	4	5	6	7	*none*	*total*
b) Score for priority	7	6	5	4	3	2	1	0	—
c) No. of respondents	30	40	25	15	10	5	5	100	230

d) Total score (b x c)	210	240	125	60	30	10	5	0	680

Thus the total score for this group is 680 and the average score is (680 ÷ 230) x 100 = 296.

10. Arrangement of Report

The report consists of five Chapters:

Chapter One: *End and Means,* presented in the preceding pages describes the objectives of the study and the means adopted to fulfil the objectives.

Chapter Two: *Residential Mobility,* traces the residential mobility in Greater Bombay in terms of the type of dwellings, reasons for taking and leaving them, select characteristics at the point of mobility, comparisons between dwellings etc. Since the vast majority of respondents had made two or fewer moves, the findings presented in this Chapter relate to three moves preceding the present dwellings and the move into the present dwelling.

Chapter Three: *The Present Situation,* describes the characteristics of the households, details of dwellings, present rent for tenancy dwellings, neighbourhood characteristics, and household's plans to change present dwellings.

Chapter Four: *Preferences,* presents findings regarding priorities of expenditure items, and preferences in terms of dwellings, capacity to pay rent or towards ownership dwellings and environmental facilities.

Chapter Five: *Perspective,* presents a summary of findings and discusses their implications for perspective planning for a housing programme in the Metro Centre.

Chapter Two

RESIDENTIAL MOBILITY

The primary purpose of this Chapter is to highlight the movement of persons from one dwelling to another within Greater Bombay, and to focus attention on the differences between consecutive dwellings in terms of:

1. location of dwellings,
2. duration of stay in dwellings,
3. amenities and facilities in terms of number of rooms, transport, space, market, municipal amenities, neighbours and locality in general,
4. household characteristics as represented by household income and size,
5. tenancy status, and rent paid, and
6. reasons for leaving dwellings and taking up subsequent ones.

At the outset, it would be useful to present the findings regarding the number of moves by the different households in Greater Bombay.

On the aggregate, the vast majority of households in Greater Bombay (84%) have made only one residential move each within the metropolis. The remaining 16 per cent consisted of those households which had made two moves each (9%), four moves (4%), six moves (1%), no moves (1%) and non-respondents (1%).

The question now is: are the number of moves made by households in any way related to their period of stay in Bombay? In other words would it be correct to say that households which have stayed in Greater Bombay for many years are likely to have made more residential changes than households which have been here for shorter durations of time?

The data presented in Table 2-1 reveal that as the period of stay in Bombay increased, the percentage of households which had made only one move also increased, and the percentage of households which had made two or more moves decreased.

Generally speaking, households are likely to keep moving from dwelling to dwelling till they can no longer move for one reason or the other or because they have found suitable accommodation. This would be particularly true of new entrants into the metropolis because, compared to the earlier years, in recent time the supply of some specific types of buildings fall far short of the demand for them.

TABLE 2—1

TOTAL DURATION OF STAY IN BOMBAY AND NUMBER OF RESIDENTIAL CHANGES MADE IN BOMBAY

Duration of Residence	0	1	2	3	4	5+	NR	Total-[1]/ (100%)
Upto 1 year	8	67	17	–	8	–	–	12
1–5 years	–	79	14	–	7	–	–	58
6–9 years	1	79	11	–	6	3	–	90
10–14 years	2	82	9	–	4	3	–	142
15-19 years	–	92	3	–	3	1	1	121
Over 19 years	–	87	8	–	4	1	–	700
No response	–	12	–	–	–	–	88	16
All	1	84	9	–	4	1	1	1139

[1] In this and all other tables, except where otherwise stated, the marginal total figures are in thousands.

Having presented these general findings, the rest of the Chapter is devoted to a comparison of dwellings in terms of the six main items enumerated at the beginning of the Chapter. The comparisons are between the third and second dwellings prior to the present, the second and first prior to the present, and the first prior to the present and the present dwelling. The term 'present' refers to the dwellings in which the households were residing at the time of interview. Since the number of moves made by housholds is different, the total number of households involved in each comparison also differs. For example, comparison between the third and second moves is for a maximum of 105 thousand households; between the second and first moves is for 254 thousand households; and between

the first and zero or present move is for a maximum of 645 thousand households. However, as will be seen later, even these figures change as nonrespondent households have been excluded from a number of comparison. In view of these differences in the maximum for each pair of comparisons, it will be seen in the tables that follow that the II and I moves are represented by two sets of figures each. A final point to be noted here is that the "Zero or present" move pertains to movers only.

1. Location of Stay

For purposes of analysis, the 15 wards in Greater Bombay have been regrouped into five zones as follows:

Wards	*Zones*	*Abbreviations*
A	Extreme South Bombay	ES
BCD	South and Central City	SC
EFG	City North	CN
HKPR	Suburban — West	SW
LMNT	Suburban — East	SE

The following summary of findings provides at a glance the percentage distribution of households in the different zones with respect to each move.

Table 2—2

LOCATION OF DWELLINGS AT EACH MOVE AND INTER MOVE DIFFERENCES

MOVE NO.	Zones ES	SC	CN	SW	SE	Total (100%)
III	5	25	43	19	8	89
II	6	11	33	36	15	89
II cfd to III	+1	−14	−10	+17	+7	
II	8	15	39	26	12	244
I	5	9	32	34	20	244
I cfd to II	−3	−6	−7	+8	+8	
I	7	16	36	25	17	639
O	3	9	24	38	27	639
O cfd to I	−4	−7	−12	+13	+10	

The more important observations that may be made on the basis of Table 2-2 are:

a) comparing each pair of moves, the general trend seems to be that the Suburban Zones gained at the expense of the City Zones;
b) among the three City Zones, the losses were highest for the North City Zone, and the lowest for the Extreme South Zone; and
c) between the two Suburban Zones, the Western Zone gained more than the Eastern Zone.

One would, therefore, conclude that residential mobility in Greater Bombay was in the past northwards and increasingly towards the Suburbs.

The same data may be reanalysed in detail to ascertain the nature of moves between Zones. The outcome of this exercise is summarized below.

Moves From	To	Intra Zone		South to North		Between Suburbs		North to South	
III—	II	47%		39%		3%		11%	
II–	I	55%		30%		5%		10%	
I–	O	59%		31%		3%		8%	
		1/							
		C[1]	S	C	S	WE	EW	C	SC
III–	I	28	19	10	29	3	0	6	5
II–	I	28	27	8	22	3	3	4	6
I–	O	25	34	3	28	2	1	3	5

[1] C=City; S=Suburb; W=Western Suburb; E=Eastern Suburb

A number of interesting trends are noted in the above. In terms of the micro differences, it is seen that with each move

a) the percentage of intra-zone moves increased;
b) southward movement generally tended towards a decrease;
c) after a first major northward move, the percentage stabilised at a high 30 per cent; and

d) overall, one would expect that future residential mobility, if any, would tend to be restricted to intra-zone movements.

In terms of the micro data, it is seen that

a) with each move, the intra-zone movements were higher within the suburbs zones, and lower and rather stationary in the city zones;
b) the inter-zone moves were greater from city to suburban areas than from one city zone to another city zone;
c) the inter-suburban moves were conspicuously small; and
d) the southward moves involved more or less the same percentage of city-city and suburb-city moves.

In essence, the preference for suburbs is clearly evident with each move, as the percentage in suburbs or moving into suburbs increased from 51 per cent to 55 per cent to 65 per cent. Further, one would anticipate that future moves, if any, are more likely to be intra-suburban moves, than intra-city zone moves.

2. Duration of Stay in Dwellings

The second question is: how long did mobile households stay in each dwelling?

Table 2—3

DURATION OF STAY IN DWELLINGS AT EACH MOVE AND INTER-MOVE DIFFERENCES

Moves	Period of Stay				
	Upto 4 4 yrs.	5–9 yrs.	10–14 yrs.	Over 14 yrs.	Total (100%)
III	50	23	16	11	95
II	55	29	14	2	95
II-III	+5	+6	−2	−9	
II	45	26	17	12	247
I	50	26	15	9	247
I-II	+5	0	−2	−3	
I	49	23	16	12	645
O	39	21	24	17	645
O-I	−10	−2	+8	+5	

Overall the trend seems to be that with each move the period of stay in a subsequent dwelling was for longer duration than that in the preceding one. In fact in the first two sets of moves the tendency was towards shorter stay, whereas in the third set of moves the tendency was towards a longer period of stay.

To obtain a clearer picture, the data were reanalysed in detail. The summary of findings is presented below.

PERIOD OF STAY

Preceding	Subsequent	II–III	I–II	O–I
Upto 4 yrs.	Same	66	57	42
	Longer	32	43	58
5–9 yrs.	Shorter	41	54	42
	Same	32	27	29
	Longer	28	19	29
10–14 yrs.	Shorter	87	70	45
	Same	7	21	40
	Longer	7	9	15
Over 14 yrs.	Shorter	100	86	81
	Same	–	14	19
Overall	Shorter	35	36	29
	Same	41	38	32
	Longer	24	26	38

The above tabluation does substantiate the earlier observation, based on percentage frequency distribution, that with each move the period of stay in dwellings tended to be longer in subsequent dwellings as compared to their preceding ones. In fact, the percentage staying for shorter periods reduced from 35 to 29, whereas 'longer' periods progressively increased from 24 per cent to 38 per cent. Thus. the above trend seems to substantiate an earlier finding that the extent of mobility is likely to further reduce and be confined to intra zone moves, as the tendency to live in the dwelling for increasing periods of time with each move also increases.

3. NUMBER OF ROOMS

The third question in respect of residential mobility is:

were there any differences in the size of dwellings with each move? Since relevant data collected on the floor area for past dwellings were not available from respondents, they were asked to report on the number of rooms in each dwelling.

TABLE 2—4

NUMBER OF ROOMS IN DWELLINGS AT EACH MOVE AND INTER-MOVE DIFFERENCES

	Number of Rooms				
Moves	1	2	3	4+	Total (100%)
III	78	12	8	3	92
II	77	14	4	4	92
II-III	−1	+2	−4	+1	
II	77	13	6	4	243
I	73	19	3	5	243
I-II	−4	+6	−3	+1	
I	74	17	3	6	642
O	75	17	6	3	642
O-I	+1	0	+3	−3	

The above data reveal that changes in the number of rooms with each move were only marginal, and with each move, two-room dwellings had a slight edge over one-room dwellings.

The detailed intermove comparisons throw a little more light on the differentials in number of rooms.

		Number of Rooms		
Preceding	Subsequent	II-III	I-II	O-I
1	Same	92	87	85
	More	8	13	15
2	Fewer	18	38	55
	Same	73	50	25
	More	9	12	20
3	Fewer	71	50	64
	Same	29	21	23
	More	–	29	14
4+	Fewer	–	63	81
	Same	100	36	18
Overall	Fewer	8	11	16
	Same	85	76	69
	More	8	14	15

The detailed tabulation tends to substantiate the earlier gross observation made with respect to the percentage frequencies. But perusal of data pertaining to movement for subgroups of moves reveals interesting differences.

(a) Among those who moved out of one room dwellings, the percentage of households which moved into two or more room dwellings (mainly to 2 rooms) increased with each move, though in the aggregate they formed a small proportion. Thus, the future tendency in moves, if any, for 'one-roomers' would probably be towards two-room dwellings.

(b) Among those who moved out of two-room dwellings, a larger percentage moved into one-room dwellings than to three or more room dwellings (mainly to 3 rooms). Thus, future moves, if any, among 'two roomers' would be not to other two-room dwellings but mainly to one-room dwellings or marginally to three-room dwellings.

(c) No clear out trend seems to emerge with respect to 'three-roomers', though it is clear that there are not likely to be any major moves towards 'larger dwellings'. This is supported by the fact that a vast majority of '4 + roomers' tended to more towards 'dwellings with fewer rooms'.

One reason for this pattern would be that household size increased or decreased with each move. Larger households would have preferred to move into larger dwellings, and households with fewer members would have been satisfied with smaller dwellings. If this were so, then one would be led to conclude that the household size acts as an incentive to mobility and that households do respond to it.

Considering the fact that the size of dwelling is a manipulable variable in the context of housing programmes, it would be useful to go further into this component. It is a common observation that in recent years the demand for dwellings in Greater Bombay far exceeds its supply. It is often said that quite a few households find it difficult to move from one dwelling to another because of the shortage and high rent.

If these above and other observations are correct, then an

analysis of movements, particularly during the last decades, must reveal that the bulk of movements must be towards smaller dwellings.

To ascertain this, relevant data regarding those who made residential moves since 1955 were analysed. This time bound analysis is, for purposes of detailed study split into the following.

PERIODS DURING WHICH RESIDED IN ONE DWELLING AND IN SUBSEQUENT ONE

1966-71	1966-71	A1
1961-65	1961-65	A2
1956-60	1956-60	A3
1961-65	1966-71	B1
1956-60	1961-65	B2
1956-60	1966-71	C

The results of the above exercise are presented in Table 2-5.

TABLE 2—5

RESIDENTIAL MOVES DURING SELECT PERIODS AND CHANGES IN NUMBER OF ROOMS OCCUPIED BY MOVERS (%) [1]

Periods	No. of rooms in dwelling occupied in comparison with dwelling vacated			
	More	Same	Fewer	Total (100%)
A1 1966–71	13	75	12	92
A2 1961–65	11	74	15	57
A3 1956–60	11	75	14	57
B1 1961–65 and 1966–71	12	79	9	141
B2 1956–60 and 1961–65	11	75	14	112
C 1956–60 and 1966–71	24	68	8	62
All	13	75	12	521

[1] This table pertains to 521 out of 1500 sample households which moved since 1955.

It is now quite clear from the 'time bound' analysis that (a) The tendency to move to dwellings with fewer or more

rooms was generally low and about the same for both types during the last five years.

(b) During the 10 year period 1956 to 65, the marginal trend seems to have been to move towards fewer rooms.

(c) It was only in the case of those who changed over after a period of more than 10 years that the tendency was positively towards dwellings with more rooms.

Overall one would assume that the majority of moves would in future tend to move to dwellings with the same number of rooms, and the minority would be about equally split upwards and downwards. One major reason for this may be the majority of households are more concerned about their need to pay higher rents if they take up dwellings with more rooms.

4. Amenities and Facilities

The respondents were specifically asked to compare the

Table 2—6

INTER-MOVE DIFFERENCES IN AMENITIES BETWEEN DWELLINGS

Amenities/Moves		Amenities in Subsequent Dwelling			
		Favourable	Same	Unfavourable	Total (100%)
Neighbours	II-III	20	72	8	25
	I-II	12	69	19	97
	O-I	23	63	14	262
Transport	II-III	29	58	13	24
	I-II	24	56	20	96
	O-I	24	52	24	261
Space	II-III	40	36	24	25
	I-II	19	58	23	75
	0-I	34	51	15	261
Market	II-III	21	67	13	24
	I-II	19	61	20	96
	0-I	23	56	20	260
Municipal	II-III	28	60	12	25
	I-II	19	66	16	91
	0-I	27	57	17	260
Locality	II-III	32	52	16	25
	I-II	13	61	25	99
	0-I	28	55	17	258

amenities of each of the dwellings in which they resided with those in the ones they left. The six amenities on which they were required to compare the dwellings were: neighbours, transport, space, market, municipal amenities, and locality.

The responses are summarised and presented in Table 2-6. The categories "favourable, no difference and unfavourable" imply that the subsequent dwelling (say II) was favourable or unfavourable compared to the preceding dwelling (say III).

The most important observation that can be made in respect of the above is that, relatively speaking, the III to II moves were less unfavourable than the II to I move, and the I to 0 moves were less unfavourable than the II to I move.

Secondly, in all III to II and I to 0 moves the percentages of respondent reporting favourable differences were higher than the percentages reporting unfavourable responses. In the case of the II to I move, however, four of the six items had higher unfavourable responses compared to the favourable. In only two items was this reversed.

Thirdly, at the gross level, the majority said that they observed no differences between dwellings.

Considering each amenity, it is seen that the percentage of households reporting unfavourable facilities or amenities, progressively increased with each move for transport, market, and municipal facilities. On the other hand, dissatisfaction with space progressively decreased with each change.

Overall one would conclude that amenities in prospective dwellings need not be very different from the ones occupied at present by those households which are likely to move in the future.

5. Household Characteristics

(a) *Household Income*

The question regarding household income is: were there any changes in household income at each move? If there were no appreciable differences in income, then one would not expect mobile households to be able to move into dwellings which would be comparatively more favourable than the ones vacated. In fact, it has already been seen, there are no major differences

in the size of dwellings between moves. Further, the amenities were also by and large the same. Hence, one would expect that household income did not appreciably increase between moves. Marginal increases, if any would be accounted for by the fact that incomes generally increase with time.

TABLE 2—7

HOUSEHOLD INCOME AT EACH MOVE AND INTERMOVE DIFFERENCES

	Household Income per Month						
Move	Nil	-200	-300	-500	-1000	1001+	Total (100%)
III	6	65	15	8	5	1	79
II	–	54	25	10	6	4	79
II-III	-6	-11	+10	+2	+1	+3	
II	1	61	19	8	5	5	200
I	–	46	24	15	12	4	220
I-II	-1	-15	+5	+7	+7	-1	
I	1	51	20	15	9	5	615
0	1	22	26	24	18	8	615
0-I	0	-29	+6	+9	+9	+3	

According to Table 2-7, the household incomes on vacating dwellings were generally higher than the time of first occupying the same. Thus, one may tentatively conclude that, all else remaining the same, increases in household income are likely to result in residential mobility.

However, before accepting this conclusion. it would be useful to do a more detailed analysis of the data in terms of changes in income categories.

Household Income in Preceding	Subsequent	II-III	I-II	0-I
Upto 200	Lower	–	–	1
	Same	76	68	37
	Higher	24	34	62
201-300	Lower	–	12	10
	Same	75	44	43
	Higher	25	44	47

301–500	Lower	17	22	21
	Same	67	56	32
	Higher	17	22	47
501–1000	Lower	–	33	20
	Same	50	67	50
	Higher	50	–	31
Over 1000	Lower	–	50	32
	Same	100	50	68
Overall	Lower	1	9	9
	Same	70	60	40
	Higher	29	31	51

According to the above, except for income categories Rs. 501 and above, incomes were higher with each move. This is not altogether surprising if one also accepts the fact that by and large incomes of the low income categories have been increasing over the years as compared to the middle and upper income groups. If the differential pattern observed above is an outcome of the 'time element', then analysis of data for moves made during recent years will have to reveal that household income and mobility are not related variables.

TABLE 2—8

RESIDENTIAL MOVES DURING SELECT PERIODS AND CHANGES IN HOUSEHOLD INCOME (%) [1]

Period	Household Income in Dwelling Occupied Compared to Household Income in Dwelling Vacated			
	More	Same	Less	Total (100%)
A1 1966–71	28	64	8	91
A2 1961–65	27	71	2	55
A3 1956–60	25	72	4	53
B1 1961–65 and 1966–71	33	62	5	140
B2 1950–60 and 1961–65	42	50	8	113
C 1950–60 and 1966–71	40	53	8	64
All	33	61	6	516

[1] The table pertains to 516 out of 1500 households.

The results presented in Table 2-8 indicate that the majority of moves made during the last 15 years did not relate to changes in household income, though a minority moves were accompanied by changes in household income. In view of this, one can better appreciate the general tendency for households to move from dwellings of given size to dwellings of the same size.

(b) *Household Size*

Irrespective of all other considerations, one would expect an average household to change its dwelling when its size increases or decreases to a point where the dwelling is too small or too large.

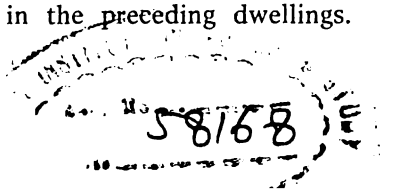
TABLE 2—9

HOUSEHOLD SIZE AT EACH MOVE AND INTER-MOVE DIFFERENCES

	Household Size					
Move	1	2–3	4–6	7–9	10+	Total (100%)
III	25	21	21	5	28	104
II	12	28	35	7	18	104
II-III	−13	+7	+14	+2	−10	
II	18	24	35	7	15	254
I	8	22	46	11	12	254
I-III	−10	−2	+11	+4	−3	
I	14	24	39	14	9	625
0	5	25	45	20	5	625
0-I	−9	+1	+6	+6	−4	

The household size in subsequent moves, compared to their preceding ones, gravitate mainly towards the medium size (4-6) and to a slightly lesser extent towards the large (7-9). Thus, single member households and very large households (10) were less and less inclined to move.

The above detailed comparison of household size between moves reveals that the size of households in subsequent dwellings tended to be larger rather than remain the same or less than the size in the preceding dwellings.



HOUSEHOLD SIZE AT SUBSEQUENT MOVE

Moves	Smaller	Same	Longer	Total (100%)
II-III	20	50	30	105
I-II	16	51	33	254
0-I	25	36	38	625

6. TENANCY STATUS AND RENTS PAID

The next pair of questions pertaining to mobility sought to be answered pertains to the tenancy status of households at each move and, in the case of tenants, the rents paid by them.

(a) *Tenancy Status*

For purposes of analysis, mobile households have been classified into three categories as paying tenants, free tenants, and owners.

TABLE 2—10

TENANCY STATUS AT EACH MOVE AND INTER-MOVE DIFFERENCES

Moves	TENANCY STATUS			Total (100%)
	Paying T	Free T	Owners	
III	66	30	4	91
II	77	16	7	91
II-III	+11	-14	+3	
II	71	21	7	242
I	80	13	7	242
I-II	+9	-8	0	
I	77	16	8	645
0	78	8	14	645
0-I	+1	-8	+6	

Overall, the percentage of free tenants decreased with each move, and this decrease was absorbed more by the category of paying tenants, though in the last move (1 to 0) it was the 'owners' who gained the most.

TENANCY STATUS AT SUBSEQUENT MOVE

Moves	Same	Paying Tenant to others	Others to PT	FT/O
II-III	78	4	15	2
I-II	79	5	13	4
0-I	71	13	14	2

The above figures corroborate the earlier observation that between the III to II and II to I moves, it was the paying tenants who increased in percentage, whereas in the final I to 0 move it was the owners who gained. The implication seems to be that future moves, if any, would be more towards ownership dwellings and less towards tenancy dwellings.

It is a common observation that in recent years the housing industry has been producing more ownership dwellings than tenancy dwellings. If this is so, then analysis of residential mobility must reveal a greater movement towards ownership dwellings, and corresponding decline in tenancy dwellings. For the purpose of making this analysis, the paying and free tenancies may be grouped together under the general category of tenancy.

TABLE 2—11

RESIDENTIAL MOVES DURING SELECT PERIODS AND CHANGES IN TENANCY STATUS OF MOVES (%) [1]

	TENANCY STATUS IN DWELLING VACATED AND SUBSEQUENT DWELLINGS OCCUPIED [2]				
Period	T/T	O/O	T/O	O/T	Total (100%)
A1 1966–71	91	2	4	3	91
A2 1961–65	87	2	9	2	56
A3 1956–60	97	–	4	–	57
B1 1961–65 and 1966–71	85	6	8	1	143
B2 1956–60 and 1961–65	87	2	9	3	115
C 1956–60 and 1966–71	75	3	15	8	64
All	85	3	9	3	526

[1] This table pertains to 526 out of 1500 sample respondents.

[2] T=Tenants any (Paying/Free); O=Ownership.

According to Table 2-11, while the vast majority of moves were intra-status, the minority of moves were towards ownership dwellings from tenancy dwellings rather than the reverse. Thus, one may conclude that the trend towards ownership dwellings is on the increase.

(b) *Rent Paid*

The following analysis pertaining to rents excludes owner dwellings.

TABLE 2—12

RENTS PAID AT EACH MOVE AND INTER-MOVE DIFFERENCES

Move	Nil	1–5%	6–10%	11–20%	21&+	Total (100%)
III	5	27	37	22	10	41
II	5	29	37	24	5	41
II-III	0	+2	0	+2	−5	
II	11	33	28	22	5	147
I	5	31	37	22	5	147
I-II	−6	−2	+9	0	0	
I	6	37	34	18	5	391
0	1	42	39	14	4	391
0-I	−5	+5	+5	−4	−1	

An earlier conclusion that the proportion of free tenants declined with each move is again substantiated here as the percentage paying 'nil' rent also declined with each move. Further, among the paying tenants the tendency was to move towards the 6 to 10 per cent rent range dwellings.

Let us now look at the detailed tabulation below.

Rent Paid in Preceding	Subsequent	II-III	I-II	0-I
0	Same	50	31	4
	More	50	69	96
1–5%	Less	9	2	1
	Same	45	59	58
	More	45	39	41
6–10%	Less	40	22	34
	Same	47	59	45
	More	13	20	20
11–20%	Less	46	54	68
	Same	38	36	25
	More	15	9	6
Over 20%	Less	–	87	80
	Same	–	13	20
Overall	Less	34	24	28
	Same	44	48	43
	More	22	28	29

Interestingly enough, the detailed tabulation reveals a slight tendency towards the payment of households. This is particularly in the case of those who initially paid no rent at all and those who paid between 6 and 10%. In the higher rent categories the trend was towards lower rents. This may mean that households which had larger portions of the higher income associated with each move tended to move into new dwellings with higher rents. But since the facilities and amenities were generally not better in the consequent ones, this rise could also be explained by the fact that over a period of time the same type of dwellings fetched higher rents. If rents have been rising in recent years, then households which moved during this time must also have paid higher rents for their subsequent dwellings.

TABLE 2—13

RESIDENTIAL MOVES DURING SELECT PERIODS AND CHANGES IN RENT PAID BY MOVERS (%)[1]

Period	RENT AS PERCENTAGE OF HOUSEHOLD INCOME PAID FOR OCCUPIED DWELLING BY PAYING TENANTS COMPARED TO RENT PAID FOR VACATED DWELLING [2]							
	More by			Same	Less by			Total
	3+	2+	1		1	2	3-	(100%)
A1 1966–71	–	7	23	44	16	5	4	57
A2 1961–65	–	13	8	50	17	8	4	24
A3 1956–60	3	9	6	50	19	6	6	32
B1 1961–65 & 1966–71	2	6	24	41	13	7	7	86
B2 1956–60 & 1961–65	2	11	17	42	14	5	10	64
C 1956–60 & 1966–71	9	6	22	34	13	6	9	32

[1] This table pertains to 295 out of 1500 sample households.

[2] Initially, rents were first categorised with the following slabs: 1-5%, 6-10%, 11-15%, 16-20% and 20+%. For comparison purpose, it was ascertained whether the rent for the subsequent dwelling was in the same rent slab as paid for the vacated dwelling. Differences, if any, were rated as 3, 2, 1 e. g. subsequent was 15% and prior rent was 5%, the increase was more by 2.

Table 2-13 shows that on the aggregate, those who paid higher rents formed only three percent more than those who paid lesser rents. This was also true of the moves made after 1965, or involved this period. In the preceding years the trend seems to have been to move towards dwellings with the same or lower rents. One possible explanation for this may be 'pugree' system.

It is, therefore, not surprising as will be seen below, that only a minority referred to high rents as a reason for moving from one dwelling to the next. A near majority shifted for reasons other than the fact that the rents were lower for the dwellings into which they moved.

On the basis of the above findings, one would anticipate that households which intend to move to new dwellings are not

likely to pay very much more than what they pay at present.

7. Reasons for Mobility

The final major component covered in this Chapter relates to the reasons for residential mobility.

The first encouraging point to note here is the relatively high consistency in the reasons given by households for leaving each dwelling and taking up the next one. For example, those who left their dwellings because rents were high, moved into new dwellings with lower rents. Those who left because space was inadquate moved into dwellings with more space.

This category of consistent responses also included what may be termed related reasons. For example, those who said that they left because the amenities and facilities in the localities in which they resided were not satisfactory. also reported that they were forced to change their dwellings.

The overall percentage of gross consistency is as follows for each pair of moves.

CONSISTENCY

Moves	Direct	Related	Nil
III-II	39	41	20
II-I	44	38	18
I-0	47	33	20

With each move the percentage of direct consistency responses steadily increased, while the 'nonconsistency' figure remained almost stationary at 20 per cent.

In view of these generally high consistencies in reasons, the percentage frequency distribution of reasons for leaving dwellings and for taking up the next ones have been presented separately.

Reasons for Leaving	MOVES III	II	I
1. Forced to leave	29	29	20
2. Small space	25	17	25
3. Left paying guest accommodation	19	18	13
4. Separated	9	12	14
5. Provided quarters	7	8	10
6. Locality not good	6	7	8
7. Far from work place	3	7	6
8. Rent high	2	2	2
9. Constructed quarters	—	1	2
Total (100%)	100	239	616

The first point to note in the above distribution is the extremely high consistency in the ranking of reasons in respect of all three moves.

The second point to note is the small but steady increase with each move in percentage in respect of four reasons viz. family separation, provided alternate dwellings, locality in which they were residing was not good, and constructed own dwelling or obtained ownership dwelling. A steady decrease in respect of the reason that they had left paying-guest accommodation is also to be noted.

One major reason "forced to leave" does not readily explain itself. It would probably mean that the move was involuntary, and it could be better clarified when the reasons for taking up the next dwelling are taken into consideration. A perusal of detailed tables, however, reveals that this reason has been given in conjunction with all the other stated reasons for taking up subsequent dwellings. Predominantly, however, a reason for taking up a subsequent dwelling in relation to the reason for leaving the earlier one is also "forced to take up."

The percentage distribution of reasons for taking up dwellings may be dealt with at this point.

Reasons for Taking	MOVES II	I	0
1. Forced to take up	28	18	8
2. Friends offered	18	17	13
3. Quarters provided	15	15	19
4. Job requirement	12	12	8
5. Live independently	9	15	17
6. Large space	7	10	19
7. Better locality	5	8	8
8. Less rent	4	3	4
9. Own dwelling	2	2	5
Total (100%)	100	239	616

Unlike the case of reasons for leaving dwellings, in the matter of reasons for taking up dwelling the consistency in ranking of reasons is very high only between II and I. There is only general similarity between II and I and I & 0 moves.

Further, there are steady decreases with each move in the percentage of two reasons (live independently and large space). Marginal increases are also noted in respect of items 3, 7 and 9.

Overall, the impression that one gets from the above findings is that households in Greater Bombay are likely to move into new dwellings if they can get more space in the new dwellings and/or subunits of the existing households want to live independently of the main households.

Chapter Three

THE PRESENT SITUATION

This Chapter describes the present housing situation in Greater Bombay. It deals particularly with:

1. types of dwellings, their floor area and number of rooms;
2. facilities like kitchen, bath, lavatory, etc.;
3. tenancy status of households, and rents paid by tenants; and
4. households intending to change their present dwellings.

Another aspect which could be considered here, but has been dealt with in Chapter Four pertains to emenities like schools, market, etc. and time and mode of travel. This is because this chapter focuses attention on the dwellings *per se,* and questions relating to amenities were asked primarily to ascertain preferences regarding prospective housing.

1. Types of Dwelling

There are five basic types of dwellings in Greater Bombay. These are huts, chawls, flats, bungalows, and a miscellaneous type consisting of garage-dwellings, out houses, etc. The main difference between chawls and flats is that the latter are self-contained dwellings with independent both and lavatory facilities. Chawls, on the other hand, are a group of dwellings in one building, and all the dwellings in a building or all the dwellings in the same floor have common lavatory facilities and sometimes bath facilities as well.

Bungalows would normally constitute independent buildings occupied by single households. Usually the image that one has of a bungalow would be of a *pucca* building. But a number of them may be in dilapidated condition and probably be dignified huts. As will be seen later, the findings give the impression that many of these bungalows, and some flats and huts as well, have either been erroneously classified as belonging to the categories into which they have been placed, or, alternate-

ly, further sub-types of each of these basic types also exist.

Of the estimated total of 1138 thousand dwellings, 18 per cent were huts, 61 per cent were chawls, 20 per cent were flats, 1 per cent was bungalows, and less than half a per cent consisted of miscellaneous dwellings including unclassified dwellings.[1]

a) *Socio-Economic Status of Households and Dwelling Types*

Are there any differences in the characteristics of households that live in the different types of dwellings? The answer would invariably be in the affirmative. It is usually observed that households residing in huts almost always belong to the low socio-economic status category; chawls are generally inhabited by the lower middle, flats by middle and upper middle, and bungalows by upper socio-economic status households. For reasons briefly mentioned in the preceding page one would not expect the above to be true of at least the bungalows.

To ascertain the correctness of the above observation the socio-economic status of households and the types of dwellings in which they were residing were cross tabulated. The results are presented below.

TABLE 3-1

HOUSEHOLDS BY SOCIO-ECONOMIC STATUS AND PRESENT DWELLING TYPES

	Dwelling Types						
SES	Hut	Chawl	Flat	Bungalow	Out Houses	NR	Total (100%)
3	31	61	7	0	0	—	376
4	17	71	11	1	—	—	339
5	7	67	25	1	—	0	165
6	1	61	37	1	1	—	110
7	2	38	56	5	—	—	63
8	—	38	58	4	—	—	48
9	5	5	86	5	—	—	22
NR	—	—	—	—	—	100	15
Total	17	61	20	1	0	1	1138[1]

[1] Includes 15 NRs as SES could not be computed.

[1] In view of the fact that the miscellaneous group formed less than one per cent total, it has been excluded from further discussion. However, the marginal totals for each suboategory of the independent variables account for this.

About 5 per cent of the households in the highest category (SES 9) were residing in huts, and 1 per cent each of SES 4 and SES 5 were in bungalows. If, for the immediate purpose of this report, these cases are ignored, then an almost clear cut pattern emerges.

As the SES level increased the percentage of each SES category of households residing in

(a) huts decreased;
(b) chawls decreased, except for SES 3 which had a lower percentage than SES 4 living in chawls;
(c) flats increased; and
(d) bungalows bifurcated the SES categories at SES 6 and below and SES 7 and above.

In general, reviewing the data in terms of concentrations above the overall percentage distribution for all types put together, one may conclude that:

SES 3 or the very low category tends to occupy huts;
SES 4 and SES 5 or the low and lower middle categories tend to occupy chawls; and
SES 6 and above or the middle and higher categories tend to occupy flats.

b) *Place of Origin and Dwelling Types*

Do households tend to select specific types of dwellings according to their place of origin? It would be difficult to anticipate the answer to this question. But if one presumes that rural migrants are usually drawn from the lower socio-economic strata and that urban migrants belong to middle socio-economic strata, then one can anticipate that rural migrants are more likely to live in huts, and urban migrants in chawls or flats.

A perusal of Table 3-2 reveals some influence of place of origin on the type of dwelling. The rural born, as compared with those born elsewhere, tend to have a higher probability of living in huts. Those born in Bombay and to a slightly lesser extent those born in villages, as compared to the other two categories, have a higher probability of living in chawls. Those

born outside India, and to a lesser degree those born in other Indian urban areas, have a higher probability of living in flats.

TABLE 3-2

HOUSEHOLDS BY PLACE OF BIRTH AND PRESENT DWELLING TYPES

Place of Birth	Dwelling Types						Total (100%)
	Hut	Chawl	Flat	Bun-galow	Out House	NR	
Out of India	7	53	40	—	—	—	15
Urban excluding Bombay	13	57	29	1	—	0	309
Bombay	13	64	20	3	—	0	189
Rural	22	62	15	1	0	—	603
NR	6	12	—	—	—	82	17
Total[1]	17	61	20	1	0	1	1136

[1] Includes distribution for 20 NRs whose place of birth was not recorded.

The reasons for these differences may have to be sought in the types of dwellings and living arrangements in the places of origin. It is not unlikely that those who are from rural areas are used to living in poor housing and they are usually assumed to belong to the lower socio-economic categories. Those from foreign countries and other Indian urban areas may have been living in relatively better housing and so want to continue the same pattern of living in Bombay also. They can probably also afford to live in flats because of their higher socio-economic levels. This would mean, minimally, that urban migrants are economically better off than rural migrants, as also that the urban poor and rural well-to-do are less likely to migrate to metropolises.

The position of the Bombay born individuals or non-migrants is a little more difficult to explain except by the assumption that they are not economically well-off.

c) *Household Size and Dwelling Types*

A third major aspect of interest in relation to the type of dwelling is the household size. If the types of dwellings are related to floor area and number of rooms, and these in turn are related to household size, then, household size and type of dwelling should be indirectly interrelated.

TABLE 3-3

PRESENT HOUSEHOLD SIZE AND TYPE OF DWELLING

HH Size	Type of Dwelling				
	Hut	Chawl	Flat	Bungalow	Total (100%)
1	22	64	11	2	45
2- 3	20	62	17	—	254
4- 6	19	59	20	1	532
7- 9	11	60	25	3	210
10-12	9	72	15	2	47
13+	9	64	24	3	33
Total[1]	18	61	20	1	1136

[1] Includes 15 NRs whose household sizes were not recorded.

Table 3-3 reveals a general pattern in that as household size increased the percentage of households residing in huts decreased, and the percentage of households living in flats, with one exception generally increased, the exception being the large household consisting of 10 to 12 members.

2. NUMBER OF ROOMS

The majority of dwellings in Greater Bombay are really speaking one room tenements. This study confirms it as 74 per cent of the dwellings consisted of only one room each. Another 17 per cent were two-room dwellings, five per cent were three-roomed, and three per cent of the dwellings had four or more rooms. No details were available about one per cent of the dwellings.

It was mentioned earlier that dwelling types are usually associated with the number of rooms they contain. Huts are usually single room dwellings, chawls are usually one or two rooms tenements, and flats have three or more rooms. By an extension of this typology, the relationship between household size and type of dwellings is sought.

TABLE 3-4

PRESENT HOUSEHOLD SIZE AND NUMBER OF ROOMS IN DWELLING

HH Size	Number of Rooms					
	1	2	3	4+	NR	Total (100%)
1	93	4	—	2	—	45
2- 3	79	15	6	1	—	255
4- 6	74	21	3	2	—	532
7- 9	69	18	9	5	—	209
10-12	70	11	11	4	4	47
13+	67	12	9	12	—	33
Total[1]	74	17	5	3	1	1136

[1] Includes 15 NRs whose HH Size were not recorded.

Table 3-4 reveals that as household size increased the percentage of households living in one-room dwelling decreased. At the other extremity, as household size increased, the tendency to live in three or more rooms also increased. This is but to be expected as larger households need more rooms and space.

3. Floor Area

In view of the fact that the majority of dwellings had only one room each it would be expected that there was an appreciable degree of overcrowding in most dwellings.

TABLE 3-5

HOUSEHOLD SIZE AND FLOOR AREA

HH Size	Floor Area (Sq. ft.)	
	Average	Per Capita
1	187	187
2- 3	184	74
4- 6	210	42
7- 9	256	32
10-12	210	19
13-15	235	17
16+	327	19
All	213	39

While the average floor area per household generally tended to increase with household size, it is clearly seen from Table 3-5 that the per capita steadily drops with an increase in household size. In fact, household sizes of 10 and above do not meet even the minimum standards laid down under the appropriate Municipal law (Municipal Corporation Act 1888, Sec. 379A (A), which lays down a minimum of 25 sq. ft. per person).

4. Facilities

The facilities that are minimally ascertained in any discussion on the housing situation are the kitchen, bath, and lavatory and availability of water and electricity supplies. Two other optional facilities are the balcony to ascertain direct access to open air, and verandah particularly when balconies are not available. The difference in emphasis between the two is that the balcony is considered a private or personal access to open air, whereas the verandah is a common access particularly in chawls and flats.

It is generally observed that different types of dwellings are differentiated by the existence or non-existence or part existence of the first three major facilities i.e. kitchen, bath and lavatory. Huts do not have any of these. Chawls may have separate kitchens, but do not have separate baths and lavatories, these being common ones with other dwellings in the buildings 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; the taps, if any, would be common ones for the whole neighbourhood. Chawls may have just one tap per dwelling. Flats and bungalows would have an adequate number of them in the 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 bungalows.

A verbal summary of the findings presented in Table 3-6 is given below for different types of dwellings.

TABLE 3-6

TYPES OF DWELLINGS AND FACILITIES

Dwellings	Facilities				
	Huts	Chawls	Flats	Bungalows	All[1]
Kitchen					
Separate	13	31	93	93	40
None	2	4	1	7	3
Bath					
Separate	3	21	92	84	32
None	85	40	4	8	40
Lavatory					
Separate	1	2	88	86	20
None	47	12	1	—	16
Water					
Separate	4	34	93	100	41
None	21	6	—	—	7
Electricity					
Separate	10	63	99	93	61
None	86	29	—	7	32
Balcony					
Separate	1	6	54	33	15
None	99	85	43	50	77
Verandah					
Separate	8	19	42	86	22
None	89	52	43	14	55

[1] Includes miscellaneous category of dwellings.

Hut: No separate kitchen; no bath; no lavatory or common with neighourhood; no electricity; no balcony; no verandah.

Chawl: Generally make-do kitchen in a multipurpose room; usually no bath, but mori may be used for the purpose; lavatory common to building or neighbourhood; common water taps in neighbourhood or sometimes separate water supply; separate electricity; no balcony; no verandah, but may have separate or common with other tenements.

Flat: Separate kitchen; separate bath; separate lavatory; separate water supply; separate electricity; separate bal-

cony or none; no verandah or separate one.

Bungalow: Separate kitchen; separate bath; separate water supply; separate electricity; separate balcony and verandah or none.

5. Tenancy Status

a) *Dwelling Types and Tenancy Status*

The tenancy status of a household is determined by the terms and conditions of the contract under which it lives in a dwelling. If it owns the dwelling, then the household's status is that of an owner-resident. The term tenant is used in this study in a very broad sense to cover a number of sub-categories like paying-tenant. sub-tenant, care taker, licensee, paying-guest, free tenant, and sharing tenant. Since these sub-categories, excluding the paying tenant and free tenant, formed one per cent or less each of the total households, these have been classified under the major category of 'paying tenants'. Thus, the owners formed 15 per cent of the total households, paying tenants formed 77 per cent, and free tenants constituted seven per cent of all households.

Table 3-7

PRESENT DWELLING TYPES AND TENANCY STATUS OF HOUSEHOLDS

Dwellings	Tenancy Status[1]				
	PT	FT	O	NR	Total (100%)
Hut	54	15	30	—	197
Chawl	87	7	6	—	682
Flat	72	3	25	0	226
Bungalow	21	7	64	7	14
Total [2]	76	7	15	1	1136

[1] PT=Paying Tenant; FT=Free Tenant; O=Owner

[2] Includes 17 miscellaneous category respondents.

According to Table 3-7 types of dwellings and tenancy status of households are related. If huts are kept out of considera-

tion, then chawls and flats are more likely to be tenanted and bungalows and flats are more likely to be owned. The anomalous position of huts is explained by the fact that these cost very little to construct and, therefore, the households concerned construct and own them. The tenanted ones are probably in those pockets where enterprising individuals have already constructed huts and rented them out.

b) *Socio-Economic Status and Tenancy Status*

It is generally observed that the higher socio-economic status households have a greater probability of owning dwellings, while those nearer the bottom of the socio-economic ladder would be tenants. However, any deviation from this expectation would be accounted for by the earlier finding that significant percentage of those residing in huts are also likely to be owners.

TABLE 3-8

SOCIO-ECONOMIC STATUS AND PRESENT TENANCY STATUS OF HOUSEHOLDS

SES	Tenancy Status PT	FT	O	Total (100%)
3	73	11	15	376
4	79	9	12	339
5	86	4	11	165
6	85	2	14	109
7	77	0	24	63
8	77	4	18	49
9	41	—	59	22
Total[1]	77	7	14	1138

[1] Includes 15 NRs whose SES could not be computed.

Table 3-8 does not substantiate the above expectation. At the SES 9 level, of course, the majority of households are owners. But, taking all other SES categories into consideration, no clear pattern emerges.

6. RENTALS

The next crucial question is regarding the rentals for tenancy dwellings. The study reveals that the average tenant paid 6.9 per cent of household income as rent. Generally speaking, this is not a very high percentage. One probable reason for this relatively low rent is that many tenants may have paid *pugree* and or commission and or made sizeable deposits in order to obtain low rent dwellings.

(a) *Extra Payments and Rentals*

TABLE 3-9

PRESENT RENT AND OTHER MODES OF PAYMENTS

Present Rent	Modes of Payments					
	None	Deposit	Pugree	Comm.	NR	Base[1] Total
0	72	28	21	—	—	10
1- 5	60	24	20	1	1	401
6-10	50	35	15	1	2	304
11-15	65	26	12	—	—	78
16-20	60	27	15	2	2	30
21-25	63	33	19	5	—	15
26+	41	35	28	—	—	19
Uncalculable	26	63	33	—	—	5

[1] The percentages do not add up to 100% because the columns Pugree/ Deposit & Commission include households which made more than one mode of payment and hence were counted more than once.

The majority of 57 per cent of the households did not pay any amounts in any form to obtain their dwellings. Those who did make some payment to obtain their dwellings included the single largest group of 30 per cent who paid deposits (with or without other forms of inducements), followed by 19 per cent who paid *pugree,* and only a very small one per cent paid commission.

Are extra payments related to rents? The findings as seen from Table 3-9 do not help in arriving at a clear cut answer.

It is logical to assume that the function of the 'deposit' system, particularly in the case of tenants who are not under the 'leave and licence' system, is to reduce the burden on rent payment every month. This reduction in rent burden is obtained by the simple procedure of the tenant having to pay only half the contracted rent every month and agreeing to the landlord deducting the other half from the deposit made by the tenant.

Thus, it may be argued that households which had paid deposits for their dwellings would in fact be paying more than the rent reported by them because in actuality the balance was deducted from the deposit. To ascertain whether the average rent would in fact increase if this possibility is taken into account, a preliminary tabulation of the sample data was undertaken. The variables tabulated were period of stay in dwelling, whether deposits were made and quantum and rent paid.

TABLE 3-10

HOUSEHOLDS BY PERIOD OF STAY IN DWELLING AND QUANTUM OF DEPOSITS[1]

	Deposits Paid (Rs.)				
Stay in Dwelling	Upto 500	—1000	—2500	—5000	—10000
Upto 5 yrs.	21	1	2	1	1
Upto 9 yrs.	13	6	2	—	1
Upto 14 yrs.	21	4	2	3	—
Upto 15 yrs.	25	4	1	2	1
20+	89	13	12	5	2
Total 100%	169	26	19	11	6

[1] This table pertains to 231 out of 1500 sample households for which relevant data were available.

The 169 respondents who paid upto Rs. 500 have to be excluded from further analysis as the majority of them have lived in their dwellings for many years and deposits paid must have been used up. Further, the 169 includes 115 respondents who paid Rs. 250 or less. Thus the remaining 62 households would hardly influence the overall average.

In the matter of *Pugree* it has been suggested that the rent

should include the interest lost on the quantum of *pugree* as it accrues to the landlord and is in fact part of the rent arrangement. In fact, this does not seem a reasonable explanation because those who pay *pugree* invariably get back much more than the amounts they paid when they leave their dwellings. Hence they do not, in effect, lose any interest.

In conclusion, one may presume that *pugree* and or deposits were paid by a number of households, but there seems to be no relationship between these and rent payment.

(b) *Dwelling Types and Rent*

It would be reasonable to expect rents to be related to types of dwellings. It is particularly expected that huts had the lowest rents and bungalows the highest rents.

Appendix Table 3-3 gives the detailed results of cross tabulations between the different dwelling types and rents paid by households. It would suffice to consider here only the average rent paid for different types of dwellings.

Huts	—	5.6% of household income
Chawls	—	6.0% of household income
Flats	—	10.9% of household income
Bungalows	—	6.4% of household income

Clearly, chawl dwellings yield higher rents than huts, and flats command higher rents than chawl dwellings. The comparatively low rent for bungalows would be due to either the fact that a number of such structures are only nominally bungalows or the tenants have been residing in these bungalows for such long periods that while their incomes have increased, there have been no proportionate increases in rent.

(c) *Period of Stay in Dwelling and Rent Paid*

It has been pointed out that the rents paid by tenants were generally low. This may be because the households concerned had been living in the same dwellings for many years. So, while the rents remained more or less stagnant, incomes have appreciably increased, or incomes increased at a faster rate than rents.

Appendix Table 3-4 provides the results derived by cross

tabulating the period for which different households have been living in dwellings with rents that they paid. The average rents paid by different subcategories of households are given below.

Period of Stay	*Av. Rent as % of HH Income*
Upto 1 year	9.2
1 to 4 years	9.6
5 to 9 years	7.5
10 to 14 years	5.9
15 to 19 years	4.8
20 or more years	5.4

The above distribution tends to confirm that the rents paid by households are generally related to the period of stay in the dwellings in that the longer the period of stay, the lower is the average rent paid.

7. Plans to Change

We now come to the last question in this Chapter: Did the households have specific intentions to change their dwellings?

The answer seems to be an almost emphatic one in that 80 per cent of households had no plans to change their dwellings. The remaining 20 per cent consisted of 17 per cent who intended to change their dwellings and a small three per cent who had not made up their minds.

Among those who intended to change, the majority (75%) planned to move to new dwellings within the same zone.

Chapter Four

HYPOTHETICAL PREFERENCES

This Chapter presents the findings relating to hypothetical preferences of households in respect of various components of housing. At the outset, it analyses the hypothetical priorities of expenditure of households with the intention of ascertaining the place of housing in the households' scheme of expenditures. It then presents the views of households regarding the type of housing they would prefer, what they would be prepared to pay towards rent or ownership, and the environmental facilities they would want. Each of these preferences are compared with the present situation.

1. PRIORITIES

It is a truism that food claims the highest priority in a household budget. In popular parlance, one always talks of food, clothing and shelter, in that order. To the extent that housing has a very low priority in the expenditure plans of households. the propensity to pay high rents for good dwellings will have to be necessarily low.

The procedure for computing the Expenditure Priority Index for households has been described in Chapter One, and the

TABLE 4—1

HOUSEHOLDS BY SOCIO-ECONOMIC STATUS AND RANK ORDER PRIORITY OF EXPENDITURE ON SELECT ITEMS

	SOCIO-ECONOMIC STATUS							
Items	3	4	5	6	7	8	9	All
Food	1	1	1	1	1	1	1	1
Clothing	2	2	2	2	2	2	2	2
Housing	3	3	3	3	3	3	4	3
Medical	4	4	5	5	5	6	5	4
Education	6	6	4	4	4	4	7	5
Transport	5	5	6	6	6	5	3	5
Recreation	7	7	7	7	7	7	6	7

findings are presented as Appendix Tables. The summary of findings prescribed above is in the form of rank order of seven items of expenditure for different socio-economic categories of households.

Some striking similarities among sub-groups are seen in the above rankings. SES 3 and SES 4 have identical rankings of items. Similarly, SES 5, 6 and 7 have identical rankings. Thirdly, SES 8 has five of seven items ranked identical to that of SES 5 to 7, and SES 9 has only the first two items in common with all other SES categories.

Overall, it is gratifying to note that housing has a reasonably high priority position, in the expenditure pattern of nearly all socio-economic groups.

2. Dwellings Types

Earlier studies have revealed that housing preferences of households are generally realistic and that alternate dwellings aspired for are of the same type or only slightly better than the dwelling in which households are already residing. Thus, preferences are usually for better facilities or more space.[1]

Table 4—2

TYPES OF PRESENT AND PREFERRED DWELLINGS

Present Dwelling	Dwelling Preferred						
	Hut	Chawl	Flat	Bungalow	NA	NR	Total (100%)
Hut	13	81	3	1	–	2	197
Chawl	–	59	36	1	1	4	682
Flat	–	8	77	9	2	4	225
Bungalow	–	7	29	57	–	7	14
Out House	–	100	–	–	–	–	1
NR	–	–	6	–	–	94	16
Total	3	51	38	3	1	4	1135

[1] See P. Ramachandran and A. Padmanabha: Social and Economic Rents and Subsidies for Low Income Groups in Greater Bombay, Bombay; Tata Institute of Social Sciences, Series No. 18, 1967, pp. 33-37. P. Ramachandran and S. Devadas Pillai: The Bombay Rent Act and Housing Production, Bombay: Tata Institute of Social Sciences, Series No. 24, 1972, pp. 31-33.

This study strengthens the findings of earlier studies. The majority of households (54%) wanted the same type of dwelling as they were already occupying. Another 37 per cent wanted to move one type higher i.e. from hut to chawl, chawl to flat, or from flat to bungalow. One per cent wanted to move two types better i.e. hut to flat, or chawl to bungalow. Interestingly, 2 per cent of households were interested in moving downwards from bungalow to flat, or flat to chawl, or chawl to hut. Finally, 5 per cent did not respond to the question.

Overall, one may conclude that those staying in huts or in chawls are least inclined to prefer to stay in the same type of dwelling. Their preferences are upwards in the typology scale.

3. Rooms Preferred

As regards the number of rooms preferred, again one sees here a realistic preference pattern. This is to be expected since typology preferences have already been seen to be realistic.

Table 4—3

NUMBER OF ROOMS IN PRESENT AND PREFERRED DWELLING

	Rooms Preferred						
Present	1	2	3	4+	NA	NR	Total (100%)
1	40	44	10	3	–	3	840
2	4	41	38	9	3	4	192
3	–	9	47	41	–	4	58
4+	7	7	13	63	3	7	30
NR	–	–	–	–	–	100	16
Total	31	40	16	7	1	5	1136

Nearly half of the households (49%) preferred to have the same number of rooms as they already occupied. Another 35 per cent preferred one additional room each. A further nine per cent wanted two or more additional rooms each. Only one per cent wanted one or fewer rooms. Six per cent did not respond.

TABLE 4-4

PRESENT HOUSEHOLD SIZE AND NUMBER OF ROOMS PREFERRED

	Rooms Preferred						
HH Size	1	2	3	4+	NA	NR	Total (100%)
1	58	31	2	—	—	9	45
2- 3	42	39	10	3	2	4	254
4- 6	29	42	19	7	—	3	532
7- 9	24	42	19	12	1	2	209
10-12	13	42	29	10	—	6	48
13-15	10	33	24	29	—	5	21
16+	17	25	—	42	—	17	12
NR	—	7	—	—	—	93	15
Total	31	40	16	7	—	6	1136

Reviewing the preferences for rooms in relation to the household size, it is seen that generally preference for one room dwellings decreased, and preference for three or more rooms increased with an increase in household size. This is to be expected.

4. Facilities Preferred

The households were given a choice among three alternate facilities. These were: (a) self contained dwellings; (b) dwellings with separate kitchens but common bath and lavatory facilities; and (c) multi-purpose rooms with common bath and lavatory facilities.

The findings of the study are that the third alternate was rejected by nearly all households (2 per cent preferred these). The first alternative of a self contained dwelling was preferred by a majority of 53 per cent households, and the second alternate was preferred by 40 per cent. A small 5 per cent did not respond.

a) *Kitchen*

Those who already had separate kitchens wanted the same facilities to continue. Of those with multi-purpose rooms, a majority wanted separate kitchens and 39 per cent preferred self contained dwellings. Of those who had no kitchen at all, the majority wanted self contained dwellings.

b) *Bath*

Households already having separate baths, preferred to continue having this separate facility (80%). A majority of those with common bath facilities opted for separate bath facilities. A majority of those having multipurpose rooms or no bath facilities preferred common bath facilities.

c) *Lavatory*

The pattern of responses with respect to present lavatory facilities is the same as for bath rooms.

4. TENANCY STATUS

Interestingly enough the majority of households were keen on having dwellings as tenants (73%) and not as owners (21%) While six per cent did not respond, one per cent said its choice would depend on a number of factors.

TABLE 4-5

PRESENT AND PREFERRED TENANCY STATUS

Present	Preferred				Total (100%)
	Tenant	Owner	Depends	NR	
Paying T	78	17	—	4	867
Free T	74	10	9	7	82
Owner	51	45	1	3	168
NR	6	6	—	88	17
lAl	73	21	1	6	1136

The most significant finding here is that the majority of present owners also prefer to become tenants. But as compared with 15 per cent who were current owners, 21 per cent of households preferred ownership dwellings. Hence, there is a definite trend towards ownership dwellings.

5. Rent Capacity

A discussion on tenancy status leads logically to the question of rent i.e. what rent can prospective tenant households pay for the kind of accommodation that they prefer?

According to this study the average capacity to pay rent works out to about 9 per cent of present household income, or about 2 per cent higher than the average present rent.

Present Rent (%)	*Av. Capacity* (%)
Nil	3.4
1 — 5	6.6
6 — 10	9.8
11 — 15	13.4
16 — 20	15.8
21 — 25	18.9
26 +	18.7

The above clearly shows that average capacity to pay rent increases with the present rent that tenant households pay. It must also be noted that the average capacity does not increase to the same extent as present rent.

Another way of looking at capacity to pay rent is in terms of the present household income, and to ascertain whether capacity to pay rent increases with household income.

H. H. Income	*Av. Capacity* (%)	*Av. Rs. p.m.*
Upto 100	13.1	13
101 — 200	9.7	20
201 — 300	8.4	24
301 — 400	8.8	36
401 — 500	7.8	40
501 — 750	7.6	60
751 — 1000	7.7	80
1001 — 1500	7.0	105
1501 +	11.4	220

Except for the highest income category, the average capacity, to pay rent as a percentage of household income, tends to decrease with an increase in household income. As an exercise one can convert these average percentages into their rupee equivalents by using the upper limit of the income group intervals. This has been done and the outcome is given above. The actual capacity to pay rent in rupees may seem to be very low particularly for the higher income categories when one takes into consideration the current levels of high rent and compensations for leave and licence dwellings.

6. Ownership Dwellings

Those households which preferred to have ownership dwellings were asked to indicate how much they could pay for ownership dwellings by way of instalments or as lump sum payments. The following is a summary of the findings in relation to household income.

Household Income	*Average (Rs.)* *Lump Sum*	*Instalments*
0 — 100	2,500	10,201
101 — 200	3,973	6,418
201 — 300	6,536	17,618
301 — 400	12,066	13,249
401 — 500	12,500	14,601
501 — 750	13,736	19,253
751 — 1000	18,801	19,326
1001 — 1500	31,092	23,574
1501 +	33,894	36,749
All	17,808	18,464

Two important observations may be made regarding the above.

(a) As household income increases, the average amount of payment towards ownership dwellings tends to progressively increase;
(b) households which prefer the instalment plan for a twenty

year period are generally prepared to pay higher amounts than those who choose to make lump sum payments.

7. Environmental Facilities

Views of households were tapped in respect of eight activities and amenities, and three factors relating to each. The activities are

(a) Work place
(b) School
(c) Market
(d) Shopping
(e) Medical
(f) Recreation
(g) Railway Station, and
(h) Bus Stop.

The three factors relate to

(a) present and preferred mode of travel
(b) present and preferred time of travel, and
(c) problems relating to amenities and ways of tackling them.

Since the eight activities and amenities are interrelated to some extent, these are discussed together, in respect of each of the factors.

(a) *Mode of Travel*

The different modes used by household members for travel were:

(i) public bus or institutional transport
(ii) train
(iii) taxi or car (personal or friends)
(iv) scooter or cycle
(v) walking.

The following summary table gives the percentage frequency distribution of the modes frequently used (10% or more) and preferred modes of travel for each of the eight amenities.

	MODE			
	Walk	*Bus*	*Train*	*Not applicable*
Work				
Present	36	20	30	
Preferred	43	18	23	
School				
Present	50		36	36
Preferred	51			36
Market				
Present	94			
Preferred	90			
Shopping				
Present	84			
Preferred	85			
Medical				
Present	86			
Preferred	88			
Recreation				
Present	69			
Preferred	74			
Rly. Station				
Present	82	14		
Preferred	82	11		
Bus Stop				
Present	95			
Preferred	93			

It is evident from the above that for six of the eight amenities the present and preferred mode was 'walking'. It is primarily with regard to travel to work place that different modes were used.

From the view point of planning, however, one may want to know whether the modes used were likely to change or remain the same. To answer this. the percentage of households which

preferred to continue the modes presently used for each activity was computed.

% preferring *same* mode as at present	
Work	80
School	91
Market	92
Shopping	87
Medical	87
Recreation	84
Railway Station	85
Bus Stop	94

The above figures imply that a vast majority would like to continue the present modes.

(b) *Time of Travel*

The problems of travel relate not only to mode *per se*, but also to the time aspect. The following figures give an eye-view of the time generally taken and preferred in respect of the eight amenities.

PRESENT TIME AND AVERAGE PREFERRED TIME
(in minutes)

Activity	Upto 15	-30m	-45m	-60m	-90m	-120m	121+	All
Work	8	17	25	40	46	66	82	21
School	8	16	26	31	42	—	—	10
Market	8	15	11	43	50	—	—	9
Shopping	8	14	20	41	67	73	113	10
Medical	8	11	15	22	61	8	—	9
Recreation	8	15	20	39	34	75	—	11
Rly. Station	8	15	16	8	68	—	76	9
Bus Stop	8	12	9	—	76	—	—	8

By and large, in respect of each *present time* expenditure, and each activity, the preference was for halving the time involved in travel. In the aggregate, the preference was for a time expenditure of about 10 minutes for all amenities excepting work which has a 21 minute average.

In other words, nearly all amenities must be located within a radius of about a mile.

c) *Problems and Solutions*

Generally speaking, the problems mentioned by households and the suggestions with regard to these problems were few. This is evident from the frequency with which households did not or could not identify the problems.

Activity/Problem	Not Identified	No Response	Total
Work: Non-transport	84	10	1136
Work: Transport	79	2	1135
School: Location	96	2	1136
School: Facilities	96	2	1136
Market: Location	95	2	1135
Market: Facilities	97	2	1136
Shopping: Location	96	2	1135
Shopping: Facilities	96	2	1136
Medical: Non-Institutional	96	2	1135
Medical: Institutional	96	2	1135
Recreation: Location	97	3	1135
Recreation: Facilities	95	3	1135
Rly. Station: Location	94	2	1135
Others	97	2	1135
Bus Stop: Location	97	2	1135
Others	96	2	1135

The 'not identified' and 'nonresponses' together accounted for 79 per cent to 97 per cent of households.

As regards the households which identified some problems, their suggestions amounted to a plea for removal of the problems. For example, one problem faced by households was that the work place was far from the residence, and so the solution suggested was that the work place must be near the residence. Again, where the problem was the inadequacy of the number of buses and or trains, the plea was for increasing the number of trains and buses. At the same time a number of households

also indicated that there was no way of solving some problems. The major problems cited by households (about 10% or more) are given below along with the percentage who cited them and the percentage reporting that there were no ways of tackling them.

Problem	% Reporting problems (base is total households)	% Reporting No solutions (base is number stating problems)
Work: travel too long	1	70
Work: place far, road narrow	5	19
Long waiting, overcrowded, few trains	5	18
No bus, walk long distance	2	5
Buses irregular	1	6
No direct transport	1	14
School far	2	28
Market far	3	26
No conveyance to market	1	40
Shopping far away, crowded	2	52
Few buses	1	8
High medicine prices	2	27
Hospital too far	2	7
Recreation facilities inadequate	2	18
Railway station far	4	54
Heavy rush in train, high fares	1	54
Bus stop far	1	23
No direct bus	2	21

The above shows that the one crucial problem is transport for any activity, and the solution is to either bring the amenities closer to the dwellings or to introduce more vehicles and trains.

Chapter Five

PERSPECTIVE

This Chapter presents a summary of the findings of the study, and discusses some implications for a housing programme in a metropolis in the current developmental context.

I. Summary

An attempt has been made in this Section to tie up the findings regarding past residential mobility, the present housing situation and hypothetical preferences of households.

1. Location of Stay

With each move the general tendency seemed to be for movers to move towards the suburbs of Greater Bombay. The last move made by mobile households tended to be intra-zonal. Hence, those intending to change their dwellings in the near future preferred to move to new dwellings within the same residential zones.

As regards plans to move in the near future, over 80 per cent of the households had no intention to change their dwellings.

2. Duration of Stay

With each move the tendency was to stay for a longer period in the subsequent dwelling.

3. Number of Rooms

In the aggregate, there was a general tendency for households to move into dwellings with about the same number of rooms as previously occupied. The tendency to move into dwellings with fewer or more number of rooms than previously occupied was only marginal.

At the present time of study, the number of rooms occupied increased with household size.

As regards hypothetical choice of prospective dwellings, the preference was for the same number of rooms (49%) or one more than that occupied by households at present (35%).

4. Amenities and Facilities

Broadly, the amenities and facilities did not differ very much between dwellings that were vacated and those occupied as a result of residential moves. Major unfavourable differences between dwellings, if any, may be in respect of transport, location of market and municipal facilities. However, satisfaction with space progressively increased with each change.

As regards the present dwellings, huts had practically no facilities at all. Chawls had some kitchen space, but common water, bath and lavatory facilities. Flats had independent facilities.

As regards facilities preferred in the hypothetical choice, households predominantly preferred either self-contained dwellings (53%) or dwellings with separate kitchen but common bath and lavatory facilities (40%).

5. Household Income

Residential moves were hardly associated with household income.

Similarly, as household size increased the greater seems to have been the tendency to move from one dwelling to another.

6. Tenancy Status

While residential moves were predominantly towards tenancy dwellings, a small but sizeable increase towards ownership status was also observed.

As at present, owners formed 15 per cent of all households, paying tenants formed 77 per cent and free tenants formed 7 per cent. Chawls were more likely to be tenanted and flats to be owned. Both owners and tenants were found among hut dwellers. There was no clear trend in respect of socio-economic status of house-holds and their tenancy status.

The greater preference in prospective dwellings was for tenancy dwellings (73%) rather than ownership dwellings (21%). Six per cent made no choice.

7. Rent Paid

Each move resulted in the payment of higher rents.

The average tenant at present paid 6.9 per cent of household income as rent. About 30 per cent of all tenants had paid deposits towards rent. About 19 per cent had paid *pugree.*

The average rent paid by hut dwellers was 5.6 per cent, by chawls dwellers was 6 per cent, by flat dwellers was 10.9 per cent, and by bungalow dwellers was 6.4 per cent of household income per month.

Rent paid was generally related to the period for which the households had been staying in the dwellings in that the longer the period of stay, the lower was the average rent paid.

The average capacity to pay rent works out to about 9 per cent of household income. It ranged from 3.4 per cent for those who were not already paying any rent, to over 18 per cent for those already paying over 20 per cent as rent. Moreover, capacity to pay rent, as a percentage of income generally decreased from 13.1 per cent to 7.0 per cent for income ranges from upto Rs. 100 to Rs. 1001 to Rs. 1500. The highest income group of Rs. 1501 and above could afford to pay 11.4 per cent of household income as rent.

8. Reasons for Mobility

Overall, there is a high degree of consistency in the reasons given by households for leaving earlier dwellings and taking the next ones.

The major reasons for leaving dwellings were: forced to leave, inadequate space, left paying-guest accommodation, separated and provided quarters by employer.

The major reasons for taking up the next dwellings were: forced to take up, larger space, got alternate accommodation, and to live independently.

9. Types of Dwellings

On an average, out of every five dwellings, one was a hut, three were chawl type, and one was a flat. Bungalows formed hardly one per cent of all dwellings. The lowest socio-economic status households lived in huts. The lower and lower-middle socio-economic status households lived in chawls. The middle and higher socio-economic status households lived in flats.

Those born in urban areas (excluding Bombay City) had a greater tendency to live in flats. Those born in Bombay had a greater tendency to live in chawls, and those of rural origin tended to live in huts.

The types of dwellings preferred by households were of the same type as the ones already occupied (54%) or slightly better ones (37%)).

10. Ownership Dwellings

As household income increased, the average amount that households could afford to pay for ownership dwellings tends to increase progressively.

Households which preferred to make payments on an instalment basis could cumulatively pay higher amounts than those preferring lump sum payment.

11. Environmental Facilities

(a) *Mode*

The present and preferred mode of transport for all purposes was walking, except for transport to the work place.

(b) *Time*

The preference was for halving the time of travel from about 20 minutes to 10 minutes.

Generally, the preference was to have all amenities located within a radius of about a mile, because of the most crucial problem of transport.

II. IMPLICATIONS[1]

While the earlier Chapters and the preceding Section of this Chapter provide interesting findings on the housing situation in Greater Bombay, one is now left with the inevitable question: how are these findings useful in planning a housing programme in the proposed New Bombay? Obviously one does not expect to find a complete answer to this question through a study which is intended to only partially answer it.

What the findings do help us to answer are the following sub-questions with reference to housing and the amenities and facilities expected by prospective householders.

1. Type of housing required for different income groups;
2. Amenities to be provided in each dwelling unit;
3. Tenancy arrangements for different income groups; and
4. Facilities to be provided at the neighbourhood level.

The answers to these sub-questions are dependent on a fundamental assumption that the potential dwellers in the new city will be similar in most respects to those already dwelling in Greater Bombay.

A major constraint which also has to be taken into account is the possibility that, left to themselves, the vast majority of households now residing in Greater Bombay are not likely to shift to the new city. Hence, their preferences, which form the basis for the discussions that follow, may be on the 'low side'. Given these two factors, one may now highlight the implications of the study for planning a housing programme in New Bombay bearing in mind that these are based on the hypothetical preferences of households now residing in Greater Bombay.

1. TYPES OF DWELLINGS

The types of dwellings to be constructed in New Bombay have to be determined in relation to the income distribution

[1] All tables in this Section are based on a probability samaple of 1500 households *and not* the estimated 1138 thousand households in Greater Bombay.

of the population, the reference of households in different income categories, and the general policy regarding housing construction.

On the basis of the Greater Bombay study it is estimated that the distribution of the New Bombay population in terms of income categories would be as follows:

Income Category	*Household Income p.m.*	%
Very low	Upto Rs. 200	25
Low	Rs. 201 — Rs. 500	50
Middle	Rs. 501 — Rs. 1000	17
High	Rs. 1001 — or more	8
		100

Thus, about 75 per cent of the dwellings to be constructed must be for the very low and low income groups and the remaining 25 per cent must be for the middle and higher income groups.

It is almost an axiom that the type of dwelling in which a household would elect to live would be determined by its income. That this is so is already seen in Chapter Three and is further substantiated when the income level of households and their preferences for dwellings are analysed.

TABLE 5-1

HOUSEHOLD INCOME AND PREFERRED DWELLING TYPE

Household Income	Preferred Dwelling Type			
	Hut	Chawl	Flat/ Bungalow	Total (100%)
Very low	8	81	11	348
Low	—	64	36	705
Middle	—	27	73	244
High	—	11	89	118
All	2	57	41	1415

According to table 5-1, the majority of the very low and low income households would prefer to stay in chawls, and the majority of the middle and higher income households would prefer to stay in flats. The fact that a minority in each income group would prefer to live in huts, chawls or flats as the case may be, may lead one to the question: why do the minority have those preferences? It is difficult to answer this question because these households were not asked why they preferred what they did. Yet, one possibility is that these households did not view the words chawls, huts or flats in the same sense that the researcher did. The possibility of this being the case is discussed below in relation to amenities.

2. Amenities

Further analysis of the data reveal the interesting fact that nearly 30 per cent of households which preferred chawls actually had self-contained dwellings or flats in mind and about 5 per cent of those preferring flats had chawls in mind.

Table 5-2

TYPES OF DWELLINGS PREFERRED AND AMENITIES PREFERRED

Types of Dwellings	Amenities			
	Self [1] contained	Separate[2] kitchen	Single[3] room	Total (100%)
Flat	94	6	—	575
Chawl	28	70	3	813
Both	55	43	2	1388

Separate kitchen, bath and lavatory within dwelling.
[2] With common bath and lavatory amenities in building.
[3] Multipurpose room plus [2] as above.

In view of these differences between the general typology of dwellings and their connotations to individuals, it would be more meaningful to take into account the latter. Hence, further discussion on types will be in terms of 'self-contained' flats and chawls. with the latter including both 'separate kitchen' and 'multipurpose rooms'.

In the aggregate, the revised classification of preference would reveal that nearly 55 per cent of the dwellings should be self-contained flats and the remaining 45 per cent should be chawl type dwellings.

To spell this out in clear terms: assuming that a population of one million or 200,000 households are planned to be settled in New Bombay, then 100 to 110 thousand dwellings should be self-contained ones with separate kitchen, bath and lavatory. The remaining 90 to 100 thousand dwellings should have separate kitchen, but need have no separate bath-room and lavatory. These may be common for all households in one floor of a residential building or for the building as a whole depending on the number of dwellings in the building.

As regards the number of rooms to be provided per dwelling, the minimum would obviously be two one being the kitchen, and the other either a multipurpose room as in the case of chawl dwellings, or a minimum of two additional rooms, one being the bed room the other the living room in the case of flats.

TABLE 5-3

HOUSEHOLD INCOME, DWELLING PREFERENCE AND NUMBER OF ROOMS PREFERRED

Income and Dwelling[1]	Number of Rooms				Total (100%)
	1	2	3	4+	
Very low SCF	38	56	5	1	131
Very low Ch.	70	29	1	—	213
Low SCF	17	56	22	6	355
Low Ch.	52	42	4	2	347
Middle SCF	4	38	43	16	186
Middle Ch.	32	53	12	3	59
High SCF	—	29	37	35	98
High Ch.	17	50	22	11	18

[1] SCF=Self-Contained Flats; Ch.=Chawls Dwellings.

The above Table reveals differences in the number of rooms preferred by those belonging to different income categories and

having different dwelling type preferences. This is brought out clearly in the average number of rooms preferred.

Income category	Chawls	Flats
Very low	1.3	1.7
Low	1.6	2.2
Middle	1.9	2.7
High	2.3	3.1

Using the available findings presented above, we get the following estimate of dwellings by type for an estimated two hundred thousand dwellings.

ESTIMATED NUMBER OF DWELLINGS (in thousands)

	Types		
Household Income	Chawls	Flats	Total
Very low	30	20	50
Low	49	51	100
Middle	9	26	35
High	2	13	15
Total	90	110	200

3. Tenancy Arrangements

The next question is: should the dwellings be rented out or should they be sold on ownership basis or should both options be provided for? The answer is obviously the last, since the majority of the well-to-do may be tempted to own dwellings if the terms and conditions of ownership are attractive.

If the Bombay situation is any indication, then the majority of households in the low and middle income categories would like to be tenants and not owners. Thus, in terms of type of construction and income categories that will occupy them the following pattern of dwellings seems reasonable.

Income	Chawls		Flats	
	Tenancy	Ownership	Tenancy	Ownership
Very low	94%	6%	89%	11%
Low	96%	4%	77%	23%
Middle	90%	10%	46%	54%
High	67%	33%	34%	66%

Converting these into estimated numbers, the following picture emerges:

ESTIMATED NUMBER OF DWELLINGS (in thousands)

Income	Chawls		Flats	
	Tenancy	Ownership	Tenancy	Ownership
Very low	28.2	1.8	17.8	2.2
Low	47.0	2.0	49.5	1.5
Middle	8.1	0.9	12.0	14.0
High	1.3	0.7	4.4	8.6

While on the question of tenancy preferences, other issues also come up for review. These pertain to the rents that the prospective tenants can pay and the amounts that prospective owners are prepared to pay either by way of lump sum payment or in instalments.

a) *Capacity to Pay Rent*

The average capacity of different income groups to pay rent has been presented in an earlier Chapter. The association between income and type of dwelling preferred by households has also been pointed out at the beginning of this section. It would, therefore, be most meaningful at this point to analyse capacity to pay rent in relation to both income and dwelling preferences using the responses of those who have mentioned their tenancy preferences and their capacity to pay rent.

AVERAGE CAPACITY TO PAY RENT

Income category	Flats (%)	Chawls (%)
Very low	11.5	9.7
Low	9.3	7.2
Middle	9.2	5.5
High	10.1	4.1
All	9.9	7.8

Considering the low capacity of many households to pay rent, one has also to give due consideration to the question of subsidies.

b) *Ownership*

The following is the average payment in lump sum and instalments that potential owners of dwellings can afford to pay:

PAYMENT (Rs. in thousands)

Income	Chawls		Flats	
Category	Lump Sum	Instalment	Lump Sum	Instalment
Very low	2.5	4.2	6.5	6.9
Low	2.5	13.4	10.4	15.1
Middle	5.0	13.8	16·9	19.0
High	15.8	25.0	32.4	37.6

Two important points emerge from the above figures. Firstly, as seen earlier, potential owners are prepared to pay higher amounts if these are paid in instalments. The average lump sum payments are extremely low figures and should probably be discounted.

4. Environmental Facilities

The study reveals that an overwhelming number of residents would want most of the facilities like schools, markets, medical services, etc. to be provided within a range of one mile of their dwellings. In terms of time this would mean a walking distance of not more than 15 minutes.

The households would, again in a majority, prefer to live among those having socio-economic characteristics similar to their own, or if they had to have a different setting it would be what is termed a 'middle class' environment.

III Post Script

It is suggested that the implications spelled out in Section II should be reviewed in the context of perspective planning. In effect, it is suggested that some projections be made of the probable income distribution, say in 1990 and 2000 and, on the basis of the projected figures, to ascertain the probable housing types that may be essential at that time.

An attempt has been made in this Section to ascertain the probable income distribution in 1990 and 2000 in Greater Bombay. Adequate comparable data on household income for different past years are not available. Hence, a simple arithmetic progression technique has been applied to the available data, to obtain a crude estimate of income distribution. The income distribution assumes three major categories of low (upto Rs. 500), middle (501-1000) and high (1001+).

The studies from which relevant data have been obtained and the actual distribution reported for these studies are given below:

Study	Year	Low	Middle	High
(a) Greater Bombay Survey[1]	1954	89%	6%	3%
(b) Middle Income Group Survey [2]	1958	82%	13%	5%
(c) Housing Situation in Greater Bombay	1971	75%	17%	8%

[1] D. T. Lakdawala *et al:* Work, Wages and Well-being In An Indian Metropolis. Economic Survey of Bombay City: Bombay, 1963. P. 278, Table V-11

[2] Central Statistical Organisation. Incomes and Expenditures of Middle Class Families in Bombay, Calcutta, Delhi, Madras. *Monthly Abstract of Statistics,* NW 61, p. 1 Table 1.

It is evident that the low income group has been decreasing in proportion over the years and the middle and high groups have been increasing.

Using the above figures the following differences are seen:

Difference between	No. of years	Low	Middle	High
a + b	4	%–7 *av.–1.8	+7 +1.8	+2 +0.5
b + c	13	%–7 av.– 0.5	+4 +0.3	+3 +0.2
a + c	17	%–14 av. –0.8	+11 +0.6	+5 +0.3

*Average increase or decrease per year.

Taking into account the largest difference of 17 years as generally indicative of the trend, the outcome for the different target years would be based on the assumption that the rate of change between 1954 and 1971 would continue till 2000.

INCOME GROUP

Rate per Year	–0.8% Low	+0.6% Middle	+0.2% High
1954	89%	7%	4%
1971	75%	17%	8%
1990	60%	28%	12%
2000	52%	34%	14%

Thus, the low income group would decrease by about one-third in the next 30 years by 2000.

APPENDIX I

TATA INSTITUTE OF SOCIAL SCIENCES
DEONAR, BOMBAY-88

HOUSEHOLD SURVEY OF GREATER BOMBAY

MS H M T

Sample Household No. Schedule No. [ ]

A. HOUSEHOLD IDENTIFICATION

Ward	Section	Circle	Block
Structure	House	Household	

B. PERSONAL DATA

Name

Address

Duration of residence in Greater Bombay

Total	Last	Contd.

Place of birth

Village or town	District	State

C. INTERVIEW NOTES

Name of Investigator

Interview

First sitting	:	Date	From	To
Second sitting	:	Date	From	To
Third sitting	:	Date	From	To

D. Demographic Characteristics

Sr. No.	Name of the member of the household	Relationship to the head of the household	Sex	Age* (in completed years)	Residence status	Marital status	Age at first marriage	Religion	Caste sect.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1									
2									
3									
4									
5									

* For children less than a year enter age in completed months divided by 12.

Sr. No.	Mother tongue	Other language known	Education	Occupation (specify)	Industry	For ever married women only			
						Number of children ever born	Number of children alive at present	Number presently in the household	Any children born within last 12 months
(1)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1									
2									
3									
4									
5									

Total household income (From all sources)

No Income	0	Upto Rs. 100	1	101 to 200	2
201 to 300	3	301 to 400	4	401 to 500	5
501 to 750	6	751 to 1000	7	1001 to 1500	8
1501 +	9				

G. Housing

1. *Type of dwelling*

Hut	1	Chawl	2	Flat	3	Bungalow	4

2. *Number of dwellings in the buildings*

Single	1	2 to 4	2	5 to 8	3	9 to 16	4
17 to 24	5	25 to 32	6	33 to 48	7	49 +	8

3. *Year in which building constructed*

Before 1900	1	1900 to 1909	2	1910 to 1919	3
1920 to 1929	4	1930 to 1939	5	1940 to 1949	6
1950 to 1959	7	1960 to 1964	8	1965 to 1969	9
1970	0				

4. *Period of stay in the dwelling*

Less than one year	1	1 to 4	2	5 to 9	3
10 to 14	4	15 to 19	5	20+	6

5. *Number of rooms in the dwellings* (Excluding kitchen/verandah/store)

Room No.	1	2	3	4	5
Use (enter codes)					

6. *Total floor area*

Upto 25 sq. ft.	1	26 to 50	2	51 to 75	3
76 to 100	4	101 to 150	5	151 to 200	6
201 to 300	7	301 to 400	8	401 to 500	9
501 +	0				

7. *Does the tenement have the following* (Enter codes)

Kitchen	Balcony
Verandah	Lavatory
Bath	Water supply
Electricity	

8. *Tenancy status*

Tenant	1	Sub-tenant	2	Caretaker	3
Licence	4	Paying guest	5	Free tenant	6
Sharing tenant	7	Owner	8		

9. *Does the respondent plan changing the present dwelling in the near future?*

Yes 1 No 2

If yes, Location

(specify)

10. *Does respondent own any dwelling in Bombay?*

Does not own any tenement	1
Owns only one and residing in it	0
Owns only one tenement but not residing in it	2
Owns more than one tenement but not residential building	3
Owns a residential building (and all tenements in it)	4
Owns more than one building	5

Ask questions 11 *and* 12 *to all excepting free tenants or owners*

11.1. *Rent paid per month*: Amount Rs. p.m.

(Compute as percentage of household income)

0%	0	1 to 5%	1	6 to 10%	2
11 to 15%	3	16 to 20%	4	21 to 25%	5
26% +	6				

11.2. *Is this rent fixed under the Rent Act?*

Yes 1 No 2 Don't know 3

12. *Was any amount paid to secure the dwelling?*

Pugree 1 Deposit 2 Commission 3 Nil 0

Amount Amount Amount

13. *Given a choice, what type of accommodation would respondent need for his/her family?*

13.1 *Type of dwelling preferred*

Hut 1 Chawl 2 Flat 3 Bungalow 4

13.2 *Number of rooms preferred* (Excluding Kitchen)

One 1 Two 2 Three 3 Four or more 4

13.3 *Facilities preferred*

	Separate kitchen but lavatory/bath			Any other	
Self contained	1	in same building	2	(specify)	3

13.4 *Tenancy Status*

Tenant 1 Owner 2 (specify) Depends 3

13.4-1 *If tenancy, maximum amount of rent the respondent could pay for this*

Amount Rs. p.m.

Compute as % of household income:

Upto 5%	1	6 to 10%	2	11 to 15%	3
16 to 20%	4	21 to 25%	5	26%	6

Relation to present rent:

More than present	1	Same as present	2	Less than present	3

13.4.2 *If ownership, maximum amount prepared to pay (Enter Code)*

Lump sum

On instalment

13.5. *Approximate time taken (in minutes) to travel from home and mode of travel to the following: (Enter codes in respective columns)*

Purpose	Present		Preferred		Present problems faced, if any	How can these problems be tackled?
	Time	Mode	Mode	Time		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
13.5.1 work place						
13.5.2 school						
13.5.3 market						
13.5.4 shopping						
13.5.5 medical						
13.5.6 recreation						
13.5.7 railway station						
13.5.8 bus stop						

13.6.1 *Characteristics of the preferred neighbourhood as compared to present*

	Same	Better If better, in what respect? (enter codes for 13.6.2 and 13.6.3)
13.6.2 Income		
13.6.3 Occupation		
13.6.4 Language		
13.6.5 Religion		
13.6.6 Any other		

14.1 *Respondent's ranking of the following seven major items of expenditure in order of priorities*

Food	Clothing	Housing	Medical
Education	Recreation	Transport	Any other (specify)

14.2 *Of the seven items, which are the ones in which respondent wants immediate improvement?*

First Second Third Fourth

15.1 *Has respondent ever changed his/her residence in Bombay?*

Yes 1 No 2
(move to question 15.2) (close the interview)

15.2 *Details of residential changes starting with present then to previous ones and in chronological reverse order*
(Use additional sheets if required)

Residence	From M/Y	To M/Y	Locality	No. of rooms	Tenancy status (enter codes)	Rent (p.m.)	H.H. income	H.H. size
I	2		3	4	5	6	7	8
0								
1								
2								
3								
4								

	Reasons for		Amenities differential		
	Taking	Leaving	(+)	(0)	(—)
	9	10		11	
1					
2					
3					
4					

15.3 *How were these dwellings obtained? (Please follow the Chronological reverse order and enter the codes)*

0 1 2 3 4

NOTE ON SAMPLING DESIGN AND ITS IMPLEMENTATION[1]

by
J. C. Sharma[2]

I. THE STUDIES

The City and Industrial Development Corporation of Maharashtra Ltd., Bombay, for the purpose of planning New Bombay City decided to conduct a household survey on demographic characteristics, housing conditions, migration pattern and travel habits (within city) of the people living in Greater Bombay.

II. PLANNING

Sampling Frame

The basic requirement of a random sampling design is a 'sampling frame'.[3] In most of the surveys it is either not available or if available does not fulfil the requirements of a good sampling frame,[4] and hence it is a common difficulty in adopting random sampling designs.

For our purpose three frames viz. ration card register, voters' list and Census enumeration list were available. The first frame i.e. ration card register was rejected on the grounds that it is not free from omissions and non-existent units and that it is never upto date. Many families do not hold ration cards (omissions), and many ration cards whose holders do not exist in Bombay (non-existent units). The voters' list was rejected on the ground that it doesn't provide exactly the list of households but the list of tenements, and that it was a little older compared to the Census enumeration list which was finally adopted as the sampling frame for our study.

The Census Organisation, for its 1971 Census operations, had enumerated some time around April 1970, all the buildings, houses in each building and households in each house by way of numbering each house and household to avoid nonenumeration or duplicate enumeration of a household. Thus we had an

upto date sampling frame prepared by a reliable authority without any omission and duplication. However, this frame was not so accurate and its use was not so simple as it may seem. The problems are discussed in the next section on sampling design implementation.

Sampling Design

Sampling design mainly depends on the type of sampling frame available. Use of stratified sampling, multi-stage sampling or cluster sampling is not possible if the sampling frame in hand does not permit it. Our sampling frame, however, facilitated the use of stratified two-stage sampling due to the following arrangements in Census enumeration.

The Census Organisation has divided Greater Bombay into 15 wards, which are the same as the Municipal wards. Each ward is sub-divided into sections, each section into circles, and each circle into blocks. A Census block consists of an area having a population of 600 to 700 persons. There are in all 88 sections and 697 circles in Greater Bombay.

In view of this sampling frame, it was decided to use 'two-stage stratified' sampling design by taking wards as strata, circles as first-stage sampling units and households as second-stage sampling units. While the first-stage units were selected with 'varying probability with replacement', the second stage units were selected with 'equal probability without replacement'. The design was a self-weighting design[5]. The reasons for taking wards as strata and circles as first stage sampling units are explained below.

Stratification

Each ward is a very big area and therefore sampling of wards was not advisable as it would have meant that a large portion of the city would be excluded. However, each ward could be considered as a stratum in view of the homogeneity between first stage units (i.e. circles) to be selected from each ward. Though a circle in itself is quite a heterogeneous unit in regard to the variables under study, we may assume homogeneity between the circles within a ward. For instance, the travel habits of people in a particular ward should not vary very much from one circle to another; but the travel habits of

persons in one ward would differ from that of the persons in another ward and thus stratification by wards fitted into the theoretical frame work too.[6] However, it may not hold true for all the characteristics under study.

First-Stage Sampling Units

The selection of first stage units was based on two criteria viz. seeking homogeneity between the first stage units within a stratum (ward) and obtaining maximum heterogeneity within a first stage unit to ensure all types of second stage units to be present in it. In fact, a cluster sampling has been planned at the first stage. The only feasible solution was to take circles as the first stage units (clusters). Further, we shall see that it also facilitated in controlling the field work and minimising time and cost in data collection.

Second-Stage Units and Unit of Enquiry

Since the study was an household enquiry, the second-stage unit was obviously the household. The unit of enquiry was the head of the household from whom all information was to be collected.

Sampling Procedure

The first stage units (i.e. circles) were selected from each stratum (i.e. ward) with probability proportional to the size of the circle[7] with replacement, thereby giving higher probabilities of selections to the bigger circles. Also, selection with replacement provided the bigger circles to be selected in the sample even more than once.

The second stage units i.e. households were selected by simple random sampling without replacement from each selected circle. Thus the design was self-weighting, which means that despite varying probabilities of selection at the first stage, the ultimate units of sampling (i.e. households) within a ward had equal chances of being selected in the sample.

Sample Size

At the first stage the sample size, i.e. the number of circles to be selected from each ward, was mainly based on time and cost factors. However, some consideration was also given to

the variance between circles. Further, as stated earlier the circles between themselves were homogeneous within each ward and hence only a small sample of circles was needed. Secondly circles within themselves were heterogeneous indicating the need for bigger samples of households from each, which was possible only when the number of circles selected was small. Thirdly, since the field work was centrally organised, the efforts, time, and cost on interviewing would have been very large if the sampled households were scattered in a large number of circles. Fourthly, we were going to divide the total sample into three equal parts to study three different aspects, and it was essential to have adequate sample of households for each aspect which again emphasised the need to select a larger number of households from each circle and a smaller number of circles from each ward. In view of the above four considerations it was decided to select ten per cent of the total number of circles from each ward.[8]

We know that the sample size required is a function of the variance of the characteristics under study. Since this survey aimed at studying a number of characteristics there were

TABLE 1

SHOWING THE SAMPLE SIZES REQUIRED TO STUDY DIFFERENT CHARACTERISTICS

Sr. No.	Characteristics to be estimated	Reference period of the data used	Error acceptable in the estimate %	Confidence needed %	Sample size (No. of households)
(1)	Average floor space per person	1956	5	95	790
(2)	Average income per household	1956	5	95	580
		1961	5	95	1625
(3)	Average house rent paid per tenant household	1956	5	95	1902
(4)	Proportion of house owners and tenants	1956	10	95	2114
		1961	10	95	3458
		1969	10	95	1066
(5)	Proportion of migrants and residents	1956	10	95	1540
		1961	10	95	675

different sample sizes to study different characteristics. In fact the sample size required to study a particular characteristic depends on the variance of the characteristics, the amount of error acceptable in the estimates, confidence required, sampling design adopted, population size and availability of time and money.

Table number 1 shows the sample sizes (i.e. number of households) required in Greater Bombay for studying different characteristics for a given amount of error and confidence for a simple random sampling design assuming large population.[9]

We observe that different characteristics needed different sample sizes. The only solution to arrive at one sample size was to select the highest size which is 3458. However, our sampling design is a stratified one and, therefore, the sample size required for our design would be less than 3458. Finally a sample size of 3000 households was arrived at.

So far we have not considered the time and cost factors. The CIDCO authorities showed their inability to spend so much time and money as would be required in collecting data from 3000 households on the various aspects of the study. They however agreed to keep the total number of households in the sample at 3000, but proposed that it be divided into three equal parts and the study over three different aspects in relation to each of them. Thus the whole study was divided into three aspects namely housing, migration and travel habits. The break-up of the sample into these aspects was as under:

Housing	1000 households
Migration	1000 households
Travel habits	1000 households
Total	3000 households

Each aspect was to be given an equal number of households in each circle.

The Master Sample

The sample size for each aspect has been reduced from 3000 to 1000 households. To increase the sample size it was decided to constitute a master sample of 750 households by taking out 25 per cent households from each aspect, and to study all the

three aspects on this master sample.[10] Thus the sample size for each aspect became 1500 households. Moreover, the demographic characteristics are common to all the aspects whereby the size of sample for the study of demographic characteristics has now reached to its original size arrived at, i.e. 3000 households.

Estimation and Standard Error

Under the proposed sampling design the estimate for the whole city was given by the following formula:

$$\frac{A}{Y} = \sum_{h=1}^{K} \frac{1}{n_h} \sum_{i=1}^{n_h} \frac{M_{hi}}{P_{hi} m_{hi}} \sum_{j=i}^{m_{hi}} y_{hij}$$

Where

n_h = Number of circles selected from the h th ward ($h = 1, 2, 3 \ldots\ldots, k$)

M_{hi} = Total number of households in the i th circle of the h th ward ($i = 1, 2, 3 \ldots\ldots, n_h$)

m_{hi} = Number of households selected from i th circle of the h th ward

P_{hi} = Probability of selection of the i th circle of the h th ward

y_{hij} = Characteristic of the j the households in i th circle of the h th ward

($j = 1, 2, 3 \ldots\ldots, m_{hi}$)

The corresponding formula for the estimate of the variance in a stratum was,

$$V(\bar{y}_h) = \frac{1}{M_{ho}} \left\{ \sum_{h}^{n_h} (M_{hi} = m_{hi}) \frac{S^2_{hi}}{m_{hi}} = \sum_{hi}^{n_h} M_{hi} (\bar{y}_{hi} - \bar{y}_h)^2 \right.$$

Where

$$S^2 = \frac{1}{M_{hi} - 1} \sum_{j-i}^{m_{hi}} (y_{hij} - \bar{y}_{hi})^2$$ i.e. variance within i th circle

y_{hi} = Mean for the h th stratum

M_{ho} = Total number of households in the h th ward

y_h = Mean for the h th stratum

Cost, Time and Personnel

A random sampling design usually requires more time and hence the cost as compared to a non-random sampling design such as quota sampling. Sometimes sampling frame is not available and it has to be prepared by employing separate staff. In some cases even if it is available it takes a long time in obtaining it from the source concerned. Drawing of the sample has also to be done through technically trained staff.

Further, unlike quota sampling where the selection of the respondents is left to the choice of the investigators, in random sampling designs a list of respondents selected at random is provided to the investigators and they have to interview only these respondents. This requires repeated visits to the units and thus more time and money. Thus while planning a random sampling design the factors time, cost and personnel required should be kept in mind.

III. Implementation

Accessibility and Adequacy of the Sampling Frame

On our request the Directorate of the Census Operations, Maharashtra State, permitted us to use the Census enumeration lists for sampling purposes. Hence the frame was easily 'accessible'.

The frame was 'adequate' for sampling purposes in this survey as it provided us exactly a list of 'households'. However, in the Census enumeration register residential units were listed

together with the non-residential units such as temples, shops, factories, schools, garages, offices etc., and therefore, at the time of sampling out the households we had to count the serial number of the household selected by excluding such non-residential units. This required a little more 'effort' and 'time' in drawing the sample.

Identification of First-stage Units

Census Organisation provided us with a list of all the circles and their boundaries, which facilitated us in locating the circles selected in our sample. Thus we faced no difficulty in identifying first stage units except in one case where the circle was identified with a good deal of effort because the boundaries were not clear. Moreover, this circle consisted of kuccha huts whereby the circle number was not written at enough places.

Identification of Second Stage Units

The Census Organisation has a standard pattern of numbering the houses. They write circle number (only on a few houses), structure (building) number, house number and household number. For example 7 — 450 (5) A indicates circle number 7, structure number 450 in this circle, house number 5 in this structure and two households A and B in this house. The investigators did not find much difficulty in identifying the households in pucca structures (except where the numbers were whitewashed) but in kuccha huts these were either not clearly visible or not written at all. Moreover, due to unsystematic location of these huts it was not easy to find the direction in which the numbering proceeded.

Identification of Unit of Enquiry

As already mentioned the Investigators were instructed to enquire from the members of the household about the head of their household. The person reported as head of the household, was taken as the unit of enquiry for our purposes. However, the problem of identifying the unit of enquiry was faced in a group of unrelated persons (e.g. villagers) staying together (constituting a household), and nobody was reported as head of the household. In such a case the actual owner or

tenant of the dwelling was taken as the head of the household.

Reliability of the Frame

The reliability of the frame is being studied in relation to completeness, accuracy and duplications. Table 2 given below shall be useful in studying the reliability of the frame. This table shows the frequency of incidences in which the units seleced could not be studied. In some cases (incidences 1 to 5) these units were substituted by other units selected randomly, while in others (incidence 6) these were taken as non-responses. The problems of 'substitution' and 'non-response' have been dealt with separately.

TABLE 2

SHOWING THE FREQUENCY OF INCIDENCES WHERE THE ORIGINAL UNIT SELECTED COULD NOT BE INTERVIEWED

Incidence	Number of units	Percentage out of 3000
1. Units outside our population		
(a) House used for non-residential purposes	78	2.60
(b) House vacant	29	0.97
(c) House demolished	35	1.17
(d) House number not existing in that structure	9	0.30
(e) Structure not traced	12	0.40
(total of a,b,c,d and e)	(163)	(5.44)
2. Units out of town at the time of survey: House residential but locked	35	1.17
3. Units out at the time of recall (but not out of town) Household members not available	41	1.37
4. Units unsuitable for interview Respondents insane, old,	2	0.07
5. Exact incidence not known (the units were substituted)	31	1.03
6. No Response Complete refusal by the respondent to supply information	24	0.80
Total	296	9.87

There was no reason to doubt the 'completeness' of the frame as the Census Organisation had enumerated even looked, uninhabited and demolished structures. However, in some cases it was found that there were more than one households in a house while the Census Organisation had recorded only one household. Probably the other household had come in this house after the Census enumeration took place. Any way such cases were very few and since no record was maintained, the exact number is not known.

We also came across some cases where the number of households shown in Census list was one but according to our definition of household each member in that house formed a separate household. Such cases came across in those houses where more than one villager lived together in the same house. Since each village-man cooked independently, each one formed a separate household. Here we can call it 'incompleteness' or 'inadequacy' of the frame. To overcome this difficulty we took information only about the person reported as head of the household. The record of such cases was also not maintained and hence the exact number is not known.

Let us now look to Table No. 2 in which the first group of incidences are labelled as 'units outside our population', which means that these units (i.e. houses) should not have been included in the sampling frame. The first category of such units was the houses used for 'non-residential' purpose such as shop, store, godown, factory, printing press, consulting room, office, business place, hotel, temple, dharmashala, club and school. If we classify all these non-residential units into two categories namely business places and public places it was found that more than 80 per cent of these units belonged to the first category. Probable reasons for this phenomenon could be that either the house must have been a residential unit at the time of census enumeration which might have been now converted into business or other use, or the unit is being used both for residential as well as business purposes but due to legal complications the residents of the house did not report to our investigators that it was a residential unit too.

The second category of units outside our population was the 'vacant houses'. This is quite possible in a city like Bombay where quite a few new constructions are coming up. The third

category was that of 'demolished houses', which includes pucca houses demolished partly or wholly as well as the huts removed from a place occupied unauthoritatively. The fourth category includes those houses whose numbers did not exist in the given structure. For example in a structure there are only 12 houses while the number of sampled houses is 18. The last and fifth category includes the cases where the structure (building) itself was not traced. Such cases mostly arose in the hutment areas. In all, out of a total sample of 3000 households the number of units outside our population were 163 (5.44 per cent). Thus the accuracy of the frame from this point of view is a little less than 95 per cent.

Incidence two covers the units where the household members had gone out of Bombay for a longer period. Actually these units should not have been included in our frame, as these were non-existant during the period of survey. But there could be the other argument too, that these units were part and parcel of Bombay city population. However, in view of travel pattern these households were taken as outside the frame and were substituted.

Incidence three contains the households, mainly single member households, where no member of the household was available between 7 a.m. and 10 p.m. Such cases were also substituted. Incidence four had only two households — one old person and the other insane. Both the households were substituted. Incidence five contains those households where the households were substituted but the exact reason for substitution was not known. However, the incidence would not go outside the above five categories. The last incidence includes the households who completely refused to supply information. These cases were considered as 'non-response'.

Now strictly speaking first incidence shows the inaccuracy of the frame in hand. Thus the accuracy of the frame comes out to be 94.56 per cent. But if we look from the point of view of the travel pattern, the households, out of town at the time of survey should also be considered as out of the frame and thus the accuracy would be 93.70 per cent However, both of these accuracies are quite high.

Substitution and Non-response

As discussed above we had come across nine different types of problems (see Table No. 2). We can classify them into the following four categories:

1. Units outside the population (incidence No. 1)
2. Units not available for interview (incidence No. 2 and 3)
3. Units unsuitable for interview (incidence No. 4)
4. Units refused to be interviewed (incidence No. 6)

Units belonging to category 1 above had a very strong case for being substituted. While the units in category 2 and 3 though not interviewed, could not be taken as non-response, and thus these were also substituted. The last and fourth category of units were of course clear cases of 'non-response'.

Estimation and Standard Error

One probable difficulty in adopting a random sampling design may be tedious calculations involved in computing the population estimates and their standard errors. In fact the data have little meaning without these estimates and their standard errors. In our survey the data are to be processed on a computer and therefore there was no such difficulty.

Incidence No. 1 and 2 in Table 2 has shown that our sampling frame included some units 'outside our population'. Thus the actual number of households in the selected circles, as well as the total number of househods in each ward would be less accordingly. Since our formula for estimation is a function of these numbers, the estimates provided would be over-estimates. However, due to certain reasons no adjustment has been made in this regard.

Cost and Time for Sampling

One Research Assistant was employed full time to collect preliminary data from the Census Organisation for the first-stage sampling. The random numbers for selection of households were drawn in our office and the Research Assistant along with five investigators prepared the list of selected house-

holds from the Census enumeration register. The total time devoted on sampling was about 15 days.

FOOT NOTES

1. A technical paper, incorporating this Note has been published separately. See J. C. Sharma, Sampling Design for an Urban Social Survey; Indian Journal of Social Work, Vol. 32, No. 4, pp. 247-258.
2. Mr. J. C. Sharma is Lecturer in the Department of Social Research, Tata Institute of Social Sciences, Bombay 400 088.
3. Sampling frame is a complete list of 'Sampling Units'.
4. A good sampling frame is one which is adequate, up to date, convenient and free from omissions, duplications and non-existant units.
5. A sampling design is said to be 'self-weighting' if despite varying probabilities of selection of units at different stages, the ultimate units of sampling have an equal probability of being selected in the sample.
6. Stratification is useful only when the units within a stratum are homogeneous while between stratum there is marked variation.
7. Size of a circle was determined by the total number of households in that circle.
8. Due to non-availability of information about variance between circles and the exact cost and time required per interview, no statistical formula could be used to determine the sample size required at the first-stage.
9. The formula used for calculating sample size was:

$$n = \frac{t^2 \quad 1 - \alpha s^2}{d^2}$$

where s^2 = estimated variance of the characteristics
d = error acceptable in the estimates
$1-\alpha$ = confidence needed
$t_{1-\alpha}$ = value of t for a given confidence.

10. This sample was termed as master sample only with the view that it is a sample through which all the aspects of the survey are being studied.

REFERENCES

1. W. G. Cochran, Sampling Techniques, John Willey and Sons, Inc., 1953.
2. Norman L. Johnson, and Harry Smith, Jr. (Ed.) New Developments in Survey Sampling, Wiley — Inter Science, 1969.

APP. TABLE 2—1

INTER MOVE DIFFERENCES IN LOCATION OF DWELLINGS

Location [1]

Past II/Past III

	ES	SC	CN	SW	SE	Total
ES	20	5	8	0	–	6
SC	–	32	3	6	14	11
CN	80	23	45	6	29	33
SW	–	41	26	76	–	36
SE	–	–	18	12	57	15
Total (100%)	5	22	38	17	7	89
Past I/Past II						
ES	32	6	–	5	–	5
SC	21	25	6	5	3	9
CN	16	36	56	9	7	32
SW	16	25	21	72	21	34
SE	16	8	17	9	69	20
Total (100%)	19	36	96	64	29	244
Present/Past I						
ES	21	6	–	–	1	3
SC	10	33	5	3	4	9
CN	10	13	50	7	8	24
SW	33	32	26	82	5	38
SE	26	16	19	9	82	27
Total (100%)	42	102	229	158	108	639

[1] ES=Extreme South; SC=South & Central; CN=City North; SW=Suburbs West; SE=Suburbs East

APP. TABLE 2—2

INTER MOVE DIFFERENCES IN PERIOD OF STAY IN DWELLINGS

Period of Stay	Upto 4	5–9	10–14	Over 14	Total
Past II/Past III					
Upto 4 years	66	41	60	27	55
5–9 years	32	32	27	18	29
10–14 years	2	23	7	55	14
Over 14 years	–	5	7	–	2
Total (100%)	47	22	15	11	95
Past I/Past II					
Upto 4 years	57	54	40	31	50
5-9 years	22	27	30	31	26
10–14 years	9	16	21	24	15
Over 14 years	12	3	9	14	9
Total (100%)	112	63	43	29	247
Present/Past I					
Upto 4 years	42	42	30	35	39
5-9 years	21	29	15	17	21
10-14 years	18	17	40	29	24
Over 14 years	19	12	15	19	17
Total (100%)	219	161	98	167	645

APP. TABLE 2—3

INTER MOVE DIFFERENCES IN NUMBER OF ROOMS IN DWELLINGS

No. of Rooms	1	2	3	4+	Total
Past II/Past III					
1	92	18	57	–	77
2	6	73	14	–	14
3	1	9	29	–	4
4+	1	–	–	100	4
Total (100%)	71	11	7	3	92
Past I/Past II					
1	87	38	14	27	73
2	12	50	36	27	19
3	-	9	21	9	3
4+	1	3	29	36	5
Total (100%)	186	32	14	11	243
Present/Past I					
1	85	55	32	29	75
2	13	25	32	26	17
3	1	14	23	26	6
4 +	1	6	14	18	3
Total (100%)	476	106	22	88	642

APP. TABLE 2—4

INTER MOVE DIFFERENCES IN HOUSEHOLD INCOME

Household Income	Nil	-200	-300	-500	-1000	1001+	Total
Upto Rs. 200	80	76	–	–	–	–	54
201-300	0	20	75	17	–	–	25
301-500	20	2	17	67	–	–	10
501-1000	–	2	8	17	50	–	6
Over 1000	–	–	–	–	50	100	4
Total (100%)	5	51	12	6	4	1	79
Past/Past II							
Upto Rs. 200	33	68	12	11	8	8	46
201-300	33	22	44	11	8	8	24
301-500	–	8	22	56	17	–	15
501-1000	–	2	20	22	67	33	12
Over 1000	33	–	2	–	–	50	4
Total (100%)	3	134	41	18	12	12	220
Present/Past I							
Nil	–	1	1	–	2	–	1
Upto Rs. 200	75	37	9	5	2	4	22
201-300	25	29	43	16	2	4	26
301-500	–	24	29	32	14	7	24
501-1000	–	7	16	39	50	18	18
Over 1000	–	2	3	8	31	68	8
Total (100%)	4	312	120	93	58	28	615

APP. TABLE 2—5

INTER MOVE DIFFERENCES IN HOUSEHOLD SIZE

Household Size	1	2–3	4–6	7–9	10–12	13–15	16+	Total
Pass II / Past III /								
1	38	–	–	–	100	–	7	12
2-3	31	50	18	40	–	–	15	28
4–6	27	45	64	40	–	100	11	35
7–9	4	5	14	20	–	–	–	7
10–12	–	–	5	–	–	–	–	1
13–15	–	–	–	–	–	–	4	1
16+	–	–	–	–	–	–	63	16
Total (100%)	26	22	22	5	1	1	28	105
Past I / Past II								
1	35	2	3	5	–	–	–	8
2–3	28	43	12	16	8	–	4	22
4–6	28	52	66	37	25	50	8	46
7–9	7	2	16	26	42	50	–	11
10–12	–	2	3	11	25	–	4	4
13–15	–	–	–	5	–	–	–	–
16+	2	–	–	–	–	–	83	8
Total (100%)	46	61	90	19	12	2	24	254
Present / Past I								
1	16	4	4	1	–	20	4	5
2–3	36	37	19	18	15	20	17	25
4–6	36	47	49	38	56	40	50	45
7–9	10	9	23	39	19	–	21	20
10–12	2	3	4	5	7	20	8	4
13–15	–	–	1	–	4	–	–	1
Total (100%)	89	152	243	85	27	5	24	625

APP. TABLE 2—6

INTER MOVE DIFFERENCES IN RENT OF DWELLING

Rent as % of HH Income	0%	1–5%	6–10%	11–20%	21+	Total
Past II / Past III						
0%	50	9	–	–		5
1–5%	–	45	40	8		29
6–10%	50	18	47	38		37
11–20%	–	27	13	38		24
21% +	–	–	–	15		5
Total (100%)	2	11	15	13		41
Past I / Past II						
0%	31	2	–	3	–	5
1–5%	13	59	22	12	13	31
6–10%	25	24	59	39	25	37
11–20%	25	14	15	36	50	22
21% +	6	0	5	9	13	5
Total (100%)	16	49	41	33	8	147
Present / Past I						
0%	4	1	1	1	–	1
1–5%	38	58	33	28	30	42
6–10%	46	33	45	39	40	39
11–20%	8	8	15	25	10	14
21% +	4	–	5	6	20	4
Total (100%)	24	144	132	71	20	391

APP. TABLE 2—7

FIRST REASON FOR LEAVING DWELLING AND TAKING SUBSEQUENT DWELLING

Reason for [1] *Taking Past II/Leaving Past III*	10	11	12	13	14	15	16	17	18	Total
1	16	–	–	11	–	–	–	3	5	7
2	–	33	–	–	–	–	–	7	5	5
3	4	50	–	–	–	–	–	–	–	4
4	8	–	–	44	–	–	–	3	11	9
5	8	–	–	–	100	–	–	17	5	15
6	–	–	–	–	–	–	33	3	–	2
7	4	–	–	11	–	–	67	21	11	12
8	60	17	100	11	–	–	–	28	5	28
9	–	–	–	22	–	–	–	17	58	18
Total (100%)	25	6	2	9	7	–	3	29	19	100
Taking Part I/Laaving Past II										
1	30	12	–	7	–	–	–	6	11	10
2	5	53	–	–	6	–	–	4	11	8
3	–	–	–	–	–	–	–	3	9	3
4	10	6	20	64	–	50	–	9	11	15
5	20	6	–	–	89	50	–	12	2	15
6	–	–	–	4	–	–	6	4	–	2
7	3	6	–	4	–	–	75	9	16	12
8	13	6	40	14	–	–	6	36	14	18
9	20	12	40	7	6	–	13	17	25	17
Total (100%)	40	17	5	28	18	2	16	69	44	239

Taking Present / Leaving Past I

1	54	14	8	14	5	7	5	3	5	19
2	8	45	8	3	2	–	3	1	5	8
3	3	–	31	3	2	–	–	9	4	4
4	8	10	–	57	8	–	–	8	27	17
5	7	6	8	5	75	20	14	31	5	19
6	4	10	–	5	–	53	3	5	1	5
7	5	4	8	–	–	7	67	7	6	8
8	4	4	23	5	2	–	3	22	8	8
9	8	8	15	9	7	13	5	14	38	13
Total (100%)	153	51	13	88	61	15	36	122	77	616

[1] 1=Large space; 2=Better locality; 3=Rent is less; 4=To live independent; 5=Quarters / Land provided; 6=Own flat; 7=Due to job requirement; 8=Forced to take up; 9=Others; 10=Small place; 11=Locality not good; 12=Rent high; 13=Separated; 14=Provided accommodation; 15=Constructed a building; 16=Far from work 17=Forced to vacate; 18=Left paying guest.

APP. TABLE 3—1

PRESENT HOUSEHOLD SIZES AND TOTAL FLOOR AREA OF DWELLINGS

TOTAL FLOOR AREA (SQ FEET)

HH Size	-50	-100	-150	-200	-300	-400	-500	501+	NR	Total (100%)
1	9	29	22	7	16	4	4	9	-	45
2–3	6	33	23	9	9	6	3	10	2	255
4–6	4	20	25	13	14	9	4	10	1	532
7–9	2	11	23	16	12	15	3	17	2	209
10–12	2	11	30	19	19	6	2	9	2	47
13+	3	18	18	9	12	3	9	21	6	33
NR	–	–	7	–	–	–	–	–	93	15
Total [2]	4	21	24	12	12	9	3	11	3	1136

[2] Total includes 17 miscellaneous category.

APP. TABLE 3—2

PRESENT TYPES OF DWELLINGS AND FACILITIES[1]

Dwellings	S	MPR	CD	CN	NO	NR	Total (100%)
Kitchen							
Hut	13	85	–	–	2	–	197
Chawl	31	65	–	–	4	0	682
Flat	93	6	–	–	1	–	226
Bungalow	93	–	–	–	7	–	14
Total	40	55	–	–	3	2	1136
Verandah							
Hut	8	–	1	2	89	–	197
Chawl	19	–	21	8	52	0	682
Flat	42	–	13	2	43	0	226
Bungalow	86	–	–	–	14	–	14
Total	22	–	15	6	55	2	1136
Bath Room							
Hut	3	8	1	3	85	–	197
Chawl	21	22	12	5	40	0	682
Flat	92	1	2	1	4	0	226
Bungalow	84	–	–	8	8	–	13
Total	32	15	8	4	40	1	1136
Electricity							
Hut	10	–	3	1	86	0	197
Chawl	63	–	6	2	29	0	682
Flat	99	–	1	0	0	0	226
Bungalow	93	–	–	–	7	–	14
Total	61	–	4	1	32	2	1136

	S	MPR	CD	CN	NO	NR	Total (100%)
Balcony							
Hut	1	–	0	–	99	–	197
Chawl	6	–	8	1	85	–	682
Flat	54	–	2	1	43	–	226
Bungalow	43	–	–	7	50	–	14
Total	15	–	5	1	77	2	1136
Lavatory							
Hut	1	–	9	43	47	–	197
Chawl	2	–	52	34	12	0	682
Flat	88	–	4	7	1	0	226
Bungalow	86	–	7	7	–	–	14
Total	20	–	33	29	16	2	1136
Water							
Hut	4	–	16	59	21	–	197
Chawl	34	–	24	36	6	0	682
Flat	93	–	3	4	–	0	226
Bungalow	100	–	–	–	–	–	14
Total	41	–	18	32	7	2	1136

[1] S=Separare; MPR=Multi Purpose Room; CD=Common with other Dwellings; CN=Common with Neighbourhood; NO=None; NR=Non Response. Marginal totals include 17 miscellaneous category.

APP. TABLE 3—3

PRESENT TYPES OF DWELLINGS AND PRESENT RENT

Dwellings	Present Rent (% of HH Income) Nil	1–5	6–10	11–15	16–20	21–25	26+	NA	NR	Total (100%)
Hut	1	30	19	3	1	–	–	45	–	197
Chawl	1	45	30	6	2	–	1	13	1	682
Flat	–	16	27	13	7	5	4	28	–	226
Bungalow	–	13	–	–	4	–	–	83	–	14
Total[1]	1	35	27	7	3	1	2	22	2	1136

[1] Includes 17 in miscellaneous category.

APP. TABLE 3—4

PERIOD OF STAY IN PRESENT DWELLING AND RENT PAID

Stay in Dwelling	Rent Paid Nil	–5	–10	–15	–20	–25	26+	NA	NR	Total (100%)
Upto 1 year	–	24	30	9	3	5	3	24	2	82
1–4 years	1	17	35	12	7	2	3	24	–	216
5–9 years	–	28	32	6	3	2	1	27	1	185
10–14 years	2	43	27	6	2	–	1	18	2	318
15–19 years	1	52	18	6	–	1	1	22	–	95
Over 19 years	1	50	19	4	1	1	2	23	–	222
Total [1]	1	35	27	7	3	1	2	22	2	1136

[1] includes 18 whose period of stay not known

APP. TABLE 3—5

PRESENT LOCATION OF DWELLING AND PLAN TO CHANGE DWELLING

PLAN TO CHANGE

Present Locality	ES	SC	CN	SW	SE	Uncert.	No.	Total (100%)
ES	–	–	–	–	–	–	100	33
SC	1	5	2	1	1	4	86	164
CN	0	1	14	1	0	1	82	345
SW	–	1	3	17	0	5	73	345
SE	0	–	1	2	14	1	82	252
Total	0	1	6	6	3	3	81	1139

APP. TABLE 4—1

SOCIO ECONOMIC STATUS AND EXPENDITURE PRIORITIES PERCENTAGE OF RATINGS OF ITEMS

SOCIO ECONOMIC STATUS

Items	3	4	5	6	7	8	9	All
Food	27	26	25	25	24	23	26	26
Clothing	21	20	19	18	19	18	20	20
Housing	15	16	16	17	16	15	15	15
Medical	13	13	12	10	11	10	11	12
Education	8	10	12	14	14	14	2	10
Recreation	5	6	6	7	6	7	7	6
Transport	10	10	10	10	10	12	19	10
Total (100%)	2608	2630	2718	2674	2783	2782	2639	2606

APP. TABLE 4—2

SOCIO ECONOMIC STATUS AND EXPENDITURE PRIORITIES: AVERAGE RATINGS OF ITEMS

Items	3	4	5	6	7	8	9	All
Food	693	673	681	657	676	651	686	670
Clothing	545	526	521	493	521	502	527	520
Housing	397	418	435	442	448	425	386	394
Medical	344	329	314	272	309	292	291	319
Education	220	250	324	361	377	390	63	273
Recreation	141	159	168	192	175	200	191	160
Transport	268	275	275	257	277	322	495	270

APP. TABLE 4—3

SOCIO ECONOMIC STATUS AND EXPENDITURE PRIORITIES AVERAGE RATINGS AS % TO MAXIMUM RATINGS OF 700

SOCIO ECONOMIC STATUS

Items	3	4	5	6	7	8	9	All
Food	99	96	97	94	97	93	98	96
Clothing	78	75	74	70	74	72	75	74
Housing	57	60	62	63	64	61	55	56
Medical	49	47	45	39	44	42	42	46
Education	31	36	46	52	54	56	9	39
Recreation	20	23	24	27	25	29	27	23
Transport	38	39	39	37	40	46	71	39

APP. TABLE 4—4

PRESENT AND PREFERRED KITCHEN FACILITIES[1]

PREFERRED FACILITIES

Present Facilities	SC	SK/BLC	MPR	NA	NR	Total (100%)
SC	74	21	–	2	3	455
SK/BLC	100	–	–	–	–	1
CN	100	–	–	–	–	1
MPR	39	56	2	–	3	609
None	63	29	5	–	3	38
NR	25	25	–	–	50	32
Total	53	40	2	1	4	1136

[1] SC=Self contained; SK/BLC=Kitchen separate but lavatory/ bath in same building; CN=Common with neighbourhood; MPR=Multi purpose room.

APP. TABLE 4—5

PRESENT BATH FACILITIES AND PREFERRED FACILITIES

Present Facilities	Preferred Facilities SC	SK/BLC	Others	NA	NR	Total (100%)
SC	80	15	1	2	2	368
SK/BLC	51	41	1	1	6	92
CN	63	30	–	–	7	44
MPR	38	54	2	2	4	165
None	38	58	2	–	2	449
NR	6	6	–	–	88	18
Total	54	40	1	1	4	1136

APP. TABLE 4—6

PRESENT LAVATORY FACILITY AND PREFERRED FACILITIES

Present Facility	Preferred Facilities SC	SK/BLC	Others	NA	NR	Total (100%)
SC	83	10	1	2	4	227
SK/BLC	52	43	2	1	2	378
CN	44	50	1	1	4	332
None	39	56	3	–	2	182
NR	6	6	–	–	88	17
Total	53	40	2	1	4	1136

APP. TABLE 4—7

PRESENT HOUSEHOLD INCOME AND CAPACITY TO PAY RENT AS % OF INCOME CAPACITY

Household Income	1–5	6–10	11–15	16–20	21–25	26+	NA	NR	Total (100%)
Nil	–	7	8	–	–	6	44	34	9
Upto Rs. 100	7	24	20	10	7	5	14	12	551
Upto Rs. 200	9	48	22	6	1	–	9	5	212
Upto Rs. 300	16	52	14	3	2	–	10	3	269
Upto Rs. 400	18	41	15	4	2	1	16	3	161
Upto Rs. 500	30	26	9	4	2	2	24	2	120
Upto Rs. 750	18	33	7	3	1	–	37	–	123
Upto Rs. 1000	16	19	7	2	1	–	52	3	78
Upto Rs. 1500	14	14	6	1	–	–	64	–	59
Upto Rs. 1501+	14	5	–	6	2	4	63	5	35
NR	–	8	–	–	–	–	–	92	18
Total	16	37	13	4	2	1	23	5	1135

APP. TABLE 4—8

PRESENT RENT AND CAPACITY TO PAY RENT

CAPACITY

Present Rent (%s)	0	1–5	–10	–15	–20	–25	26+	NA	NR	Total (100%)
0	5	81	–	–	7	–	–	7	–	10
1–5	–	29	43	6	1	–	–	19	2	403
6–10	–	4	51	20	4	–	1	15	5	305
11–15	1	3	17	36	14	3	2	21	4	78
16–20	–	6	11	8	25	19	–	23	8	29
21–25	–	–	15	4	5	38	4	25	10	15
26+	–	–	22	–	17	6	20	29	5	18
NA	–	15	28	11	1	1	–	42	3	256
UNK	–	–	–	–	–	–	–	17	83	4
NR	–	7	6	–	7	–	–	–	80	20
Total	–	16	37	13	4	2	1	23	5	1138

APP. TABLE 4—9

PREFERRED TYPE OF DWELLING AND CAPACITY TO PAY RENT

CAPACITY TO PAY RENT

Type of Dwelling	1–5	6–10	11–15	16–20	21–25	26+	NA	NR	Total (100%)
Hut	26	24	12	5	–	–	31	2	197
Chawl	23	51	14	3	1	–	6	2	682
Flat	8	27	14	5	3	1	40	1	226
Bungalow	2	3	–	3	2	4	81	5	14
NA	–	4	–	–	–	–	96	–	10
NR	–	5	–	3	–	–	7	85	51
Total	16	37	13	4	2	1	23	5	1136

APP. TABLE 4—10

PRESENT HOUSEHOLD INCOME AND CAPACITY TO PAY FOR OWNERSHIP DWELLING IN LUMP SUM

CAPACITY TO PAY (in thousands)

Household Income	-5	-10	-20	-30	-50	51+	NA	NR	Total (100%)
Nil	–	0	–	–	–	–	89	11	9
Upto Rs. 200	3	1	–	–	–	–	86	10	263
Upto Rs. 300	4	0	0	–	–	0	91	4	269
Upto Rs. 500	5	1	4	1	0	0	81	8	282
Upto Rs. 1000	4	3	5	8	1	–	64	14	201
Over Rs. 1000	2	2	5	16	3	11	44	16	93
NR	–	–	–	–	–	–	17	83	18
Total	4	1	2	3	0	2	77	10	1135

APP. TABLE 4—11

HOUSEHOLD INCOME BY CAPACITY TO PAY FOR OWNERSHIP IN INSTALMENT

CAPACITY TO PAY (in thousands)

Household Income	-5	-10	-20	-30	-50	51+	NA	NR	Total (100%)
Nil	–	–	11	–	–	–	78	11	9
Upto Rs. 200	2	2	0	–	–	0	86	9	263
Upto Rs. 300	2	1	2	0	–	0	90	4	269
Upto Rs. 500	2	3	4	2	0	0	81	7	282
Upto Rs. 1000	4	2	8	13	1	1	62	9	201
Over Rs. 1000	7	1	4	10	5	5	44	24	94
NR	–	–	–	–	–	–	17	83	18
Total	2	2	3	4	0	1	76	11	1136

APP. TABLE 4—12

PRESENT AND PREFERRED MODE OF TRAVEL TO WORK PLACE

PREFERRED MODE

Present Mode	W	BI	Tr.	TC	SC	NR	Total (100%)
Walk (W)	92	5	–	–	0	2	405
Bus or Inst. Transport (BI)	22	69	6	2	–	0	228
Train (Tr.)	17	6	73	2	0	1	341
Taxi/Car	4	4	4	89	–	0	28
Scooter/Cycle	10	5	–	–	81	5	21
Total [1]	43	18	23	3	2	11	1135

[1] The total includes 111 Nil/NA/NR responses because they belong to same categories in preferred mode/time.

APP. TABLE 4–13

PRESENT AND PREFERRED TIME FOR TRAVEL TO WORK PLACE

PREFERRED TIME (in minutes)

Present Time	–15	–30	–45	–60	–90	–120	121+	NA/NR	Total (100%)
–15	98	–	–	–	–	–	–	2	419
–30	41	54	–	–	–	–	–	4	229
–45	33	16	47	1	–	–	–	3	108
–60	23	7	3	65	–	–	–	–	182
–90	13	20	18	13	36	–	–	–	52
–120	18	18	6	6	6	47	–	–	17
121+	7	27	–	7	–	–	53	6	15
NR	6	–	2	–	–	–	–	92	21
Total	58	17	7	13	2	–	–	3	1135

APP. TABLE 4—14

PRESENT AND PREFERRED MODE OF TRAVEL TO SCHOOL

Present Mode	Preferred Mode W	BI	Tr.	TC	NA/NR	Total (100%)
Walk	94	3	–	–	2	572
Bus or Inst. Transport	18	72	3	6	1	79
Train	38	6	56	–	–	34
Taxi/Car	–	12	–	88	–	8
Total	51	7	2	1	39	1135

APP. TABLE 4—15

PRESENT AND PREFERRED TIME FOR TRAVEL TO SCHOOL

Present Time	Preferred Time (in minutes) –15	–30	–45	–60	–90	NA/NR	Total
–15	98	–	–	–	–	2	562
–30	44	55	–	–	–	1	97
–45	35	5	60	–	–	–	20
–60	40	10	10	40	–	–	10
–90	–	67	–	–	33	–	3
Total (100%)[1]	87	8	2	0	0	2	1136

[1] NA/NR=444

APP. TABLE 4—16

PRESENT AND PREFERRED MODE OF TRAVEL TO SCHOOL

Present Mode	Preferred Mode W	BI	Tr.	TC	SC	NA/NR	Total (100%)
Walk	96	3	–	0	0	1	1065
BI	40	56	–	4	–	–	25
Train	29	0	57	–	–	14	7
Taxi/Car	–	–	–	80	–	20	5
Scooter/ Cycle	40	–	–	–	40	20	5
Total [1]	92	4	–	–	–	4	1135

[1] NA/NR=28

APP. TABLE 4—17

PRESENT AND PREFERRED TIME FOR TRAVEL TO MARKET

PREFERRED TIME (in minutes)

Present Time	–15	–30	–45	–60	–90	NA/NR	Total (100%)
–15	98	–	–	–	–	2	959
–30	53	45	–	–	–	1	131
–45	67	–	16	–	–	17	6
–60	20	–	–	60	–	20	5
–90	33	–	–	33	33	–	6
Total [1]	90	5	–	–	–	5	1135

[1] NA/NR=28

APP. TABLE 4—18

PRESENT AND PREFERRED MODE OF TRAVEL FOR SHOPPING

PREFERRED MODE

Present Mode	W	BI	Tr.	TC	SC	NA/NR	Total (100%)
Walk	95	3	–	–	–	2	953
BI	51	44	1	2	–	3	98
Train	26	12	51	5	3	3	43
Taxi/Car	–	–	–	92	–	8	12
Scooter/ Cycle	25	–	–	–	75	–	4
Total [1]	85	7	2	1	0	4	1136

[1] NA/NR/NIL=26

APP. TABLE 4—19

PRESENT AND PREFERRED TIME FOR TRAVEL FOR SHOPPING

PREFERRED TIME (in minutes)

Present Time	-15	-30	-45	-60	-90	91+	NA/NR	Total (100%)
-15	98	0	–	–	–	–	2	864
-30	59	39	–	–	–	–	1	196
-45	60	0	33	6	–	–	–	15
-60	12	12	4	54	–	–	18	26
-90	–	–	–	25	50	–	25	4
-120	–	0	–	–	100	–	–	1
121+	–	–	–	33	33	33	–	3
Total [1]	86	7	–	1	–	–	4	1136

[1] NA/NR=27

APP. TABLE 4—20

PRESENT AND PREFERRED MODE OF TRAVEL FOR MEDICAL

PREFERRED MODE

Present Mode	W	BI	Tr.	TC	SC	NA/NR	Total (100%)
Walk	95	3	–	–	–	1	980
BI	59	34	5	–	–	2	87
Train	48	15	33	4	–	–	27
Taxi/Car	7	–	7	67	–	20	15
Scooter/ Cycle	–	–	–	–	100	–	1
Total [1]	88	6	1	1	–	4	1135

[1] NA/NR=25

APP. TABLE 4—21

PRESENT AND PREFERRED TIME OF TRAVEL FOR MEDICAL

PREFERRED TIME (in minutes)

Present Time	-15	-30	-45	-60	-90	NA/NR	Total (100%)
-15	98	–	–	–	–	2	859
-30	74	24	–	–	–	1	219
-45	74	0	21	–	–	5	19
-60	67	–	–	33	–	–	3
-90	17	–	–	17	67	–	6
-120	100	–	–	–	–	–	2
121=	–	–	–	–	–	100	1
Total [1]	90	5	–	–	–	4	1135

[1] NA/NR=34

APP. TABLE 4—22

PRESENT AND PREFERRED MODE OF TRAVEL FOR RECREATION

PREFERRED MODE

Present Mode	W	BI	Tr.	TC	SC	NA/NR	Total (100%)
Walk	96	2	0	0	–	1	282
BI	41	52	4	2	–	0	164
Train	31	12	52	4	2	–	52
Taxi/Car	6	–	–	89	–	6	18
Scooter/ Cycle	–	–	–	–	–	100	1
Total [1]	74	9	3	2	0	11	1135

[1]Nil/NA/NR=112

App. Table 4—23

PRESENT AND PREFERRED TIME OF TRAVEL FOR RECREATION

Preferred Time (in minutes)

Present Time	-15	-30	-45	-60	-90	-120	NA/NR	Total (100%)
-15	98	–	–	–	–	–	2	689
-30	57	41	1	–	–	–	–	264
-45	60	3	37	–	–	–	–	30
-60	27	–	–	65	–	–	8	26
-90	75	–	–	–	25	–	–	5
-120	–	–	50	–	–	50	–	2
Total [1]	76	10	1	1	0	0	11	1135

[1] NA/NR=115

App. Table 4—24

PRESENT AND PREFERRED MODE OF TRAVEL TO RAILWAY STATION

Preferred Mode

Present Mode	W	BI	TC	SC	NA/NR	Total (100%)
Walk	92	5	–	0	2	926
BI	47	51	–	2	–	159
Taxi/Car	–	–	100	–	–	2
Scooter/Cycle	8	–	–	77	16	13
Total [1]	82	11	–	1	4	1135

[1] Nil/NA/NR=35

APP. TABLE 4—25

PRESENT AND PREFERRED TIME OF TRAVEL TO RAILWAY STATION

Present Time	Preferred Time (in minutes) –15	–30	–45	–60	–90	NA/NR	Total (100%)
–15	98	–	–	–	–	1	770
–30	66	33	–	–	–	1	305
–45	68	9	23	–	–	–	22
–60	100	–	–	–	–	–	1
–90	–	–	–	50	50	–	2
121+	–	–	–	–	100	–	1
Total [1]	85	9	–	–	–	4	1135

[1] NA/NR=34

APP. TABLE 4—26

PRESENT MODE BY PREFERRED MODE OF TRAVEL TO BUS STOP

Present Mode	Preferred Mode Walk	Train	NA/NR	Total (100%)
Walk	97	0	2	1079
Train	–	80	20	5
Scooter/Cycle	92	–	8	13
Total [1]	93	–	5	1135

[1] Nil/NA/NR=37

APP. TABLE 4—27

PRESENT AND PREFERRED TIME OF TRAVEL TO BUS STOP

Present Time	Preferred Time (in minutes) –15	–30	–90	NA/NR	Total (100%)
–15	98	–	–	1	1002
–30	69	28	–	3	87
–45	67	0	–	33	6
–90	–	–	100	–	3
Total [1]	92	2	0	5	1135

[1] Nil/NA/NR=31

APP. TABLE 4—28

NON TRANSPORT PROBLEMS FACED AND SOLUTIONS WORK PLACE

Non-Transport Problems	Solutions[2] 1	2	3	4	5	6	7	NA/NR	Total (100%)
More time Work place far Road	0	20	10	–	–	–	–	70	10
narrow	4	31	38	4	8	–	–	15	52
Heavy traffic	14	–	0	–	14	14	14	44	7
Station far	–	–	–	–	–	–	–	100	1
Total[1]	0	2	2	0	0	0	0	96	1136

[1] NA/NR=1066

[1] 1=No way to tackle; 2=Qrs. nearby; 3=Work place nearer; 4=Employment; 5=Searching new place; 6=Widen roads; 7=Over bridge

APP. TABLE 4—29

TRANSPORT PROBLEMS FACED AND SOLUTIONS[1] WORK PLACE

Transport Problems	Solutions 8	9	10	11	12	13	14	15	16	NA/NR	Total (100%)
1	75	–	–	14	–	2	–	–	4	4	57
2	71	–	–	5	14	–	5	–	5	–	21
3	50	31	13	–	–	–	–	–	–	6	16
4	–	–	100	–	–	–	–	–	–	–	3
5	14	–	–	–	64	–	7	–	–	14	14
6	17	–	–	17	–	,–	50	–	17	–	6
7	–	–	–	–	–	–	–	100	–	–	1
Total[2]	6	–	–	1	1	–	–	–	–	92	1135

[1] 1=Waiting,*. Trains overcrowded, few trains; 2=No bus to work place, walk long distance to catch Bus/Train; 3=Don't get Bus in time, Buses irregular; 4=Slow; 5=No direct Bus to work place, No direct Train to work place; 6=Conveyance costly; 7=Bus travel difficult than in train; 8=More train/bus; 9=Regular services; 10=Double Deck Bus; 11=No alternate; 12=Direct Bus/Train to work place; 13=Buy a vehicle; 14=Cheaper conveyance; 15=Industrial transport; 16=Easily accessible transport.

[2] NA/NR=919.

APP. TABLE 4—30

PROBLEMS AND SOLUTIONS RELATING TO LOCATION OF SCHOOL

SOLUTIONS

Location Problems	New School	School Bus	Depends on Bus/Train	NA/NR	Total (100%)
School far	50	18	5	28	22
Unsafe to walk to school	–	33	–	66	3
Total [1]	1	0	0	98	1136

[1] NA/NR=1110

APP. TABLE 4—31

PROBLEMS AND SOLUTIONS RELATING TO SCHOOL FACILITIES

SOLUTIONS

Problems	Student/ Long School	More Schools and Sections	School Bus	Direct Pub. Bus	NA/NR	Total (100%)
Particular long school	33	–	–	–	67	9
School overcrowded	–	50	–	–	50	4
Heavy traffic in Train/Bus	–	33	33	33	–	3
No School Bus	100	–	–	–	–	1
No transport nearby	–	–	33	33	33	3
Total [1]	1	–	–	–	98	1136

[1] NA/NR=1116

APP. TABLE 4—32

PROBLEMS AND SOLUTIONS RELATING TO MARKET

SOLUTIONS

Problems	Market nearby	Bus Service	No alter-nate	Start new market	Cheap Market	NA/NR	Total (100%)
Market far	72	3	6	–	–	20	36
Total [1]	2	0	0	0	0	97	1135
Heavy rush	–	67	17	–	–	16	6
No conveyance	–	60	10	–	–	30	10
Market no good	–	–	–	33	–	67	3
Costly	–	–	–	–	100	–	1
Total [2]	–	1	–	–	–	99	1136

[1] Nil/NA/NR=1099;[2] Nil/NA/NR=1110

APP. TABLE 4—33

PROBLEMS AND SOLUTIONS RELATING TO SHOPPING

SOLUTIONS

Problems	No al-ternate	Res. area Bus service	More Buses etc.	NA/NR	Total (100%)
Crowded/Far away	35	48	–	17	23
Total [1]	0	1	–	98	1135
Buses few, no shopping nearby	–	92	–	8	13
No direct bus, costly, etc.	40	–	40	20	5
Total [2]	0	1	–	98	1136

[1] Nil/NA/NR=1112; [2] NA/NR=1117

APP. TABLE 4—34

PROBLEMS AND SOLUTIONS RELATING TO MEDICAL TREATMENT

SOLUTIONS

Problems	Fair Price Shop/Direct Bus etc.	No Alternate	Hospital in local/ Bus service	NA/NR	Total (100%)
High medical prices/No medical shop	74	11	–	16	19
Total [1]	1	0	–	98	1135
Hospital too far	–	–	85	14	27
Total [2]	–	–	2	97	1135

[1] NA/NR=1116; [2] NA/NR=1107

APP. TABLE 4—35

PROBLEMS AND SOLUTIONS RELATING TO RECREATION

SOLUTIONS

problems	No alternate	Provide good	NA/NR	Total (100%)
Buses crowded/costly etc.	33	–	67	6
Total [1]	–	–	100	1135
No good fair	14	82	4	22
Total [2]	–	1	99	1135

[1] NA/NR=1129; [2] NA/NR=1112

APP. TABLE 4—36

PROBLEMS AND SOLUTIONS RELATING TO RLY. STATION

SOLUTIONS

Problems	No alternate	Bus or residence near Rly. Stn.	NA/NR	Total (100%)
Far away buses or rly. Stn.	31	46	23	48
Total [1]	1	2	97	1135
Heavy rush/high fare/no lights/ no conveyance	36	45	18	11
Total [2]	0	0	99	1135

[1] NA/NR=1087; [2] NA/NR=1124

APP. TABLE 4—37

PROBLEMS AND SOLUTIONS RELATING TO BUS STOP

SOLUTIONS

Problems	Few Buses	No alternate	NA/NR	Total (100%)
Bus stop far	77	15	8	13
Total [1]	1	0	99	1135
Qrs./No direct bus/no shed/costly etc.	79	13	8	24
Total [2]	2	0	98	1135

[1] NA/NR=1122; [2] NA/NR=1111

APP. TABLE 5—1

HOUSEHOLD INCOME, DWELLING PREFERRED AND CAPACITY TO PAY RENT (%s)

CAPACITY TO PAY RENT

Income/ *Dwelling* [1]	-5%	-10%	-15%	-20%	-25%	26%+	Total (100%)
Very low SC	6	49	25	12	4	4	112
Very low Ch.	10	57	24	6	2	1	196
Low SC	23	46	21	6	4	1	271
Low Ch.	31	57	10	2	–	–	349
Middle SC	19	51	20	8	2	–	86
Middle Ch.	55	42	2	2	–	–	55
High SC	33	30	12	15	3	6	33
High Ch.	75	17	8	–	–	–	12
All	23	51	17	5	2	1	1114

[1] SC=Self Contained Dwelling; Ch.=Chawl Dwelling

APP. TABLE 5—2

INCOME CATEGORY, DWELLING PREFERRED AND CAPACITY TO PAY LUMP SUM

CAPACITY (in thousands)

Income/	–5%	–10	–20	–30	–50	51+	Total (100%)	Av.
Dwelling								
Very low SC	20	80	–	–	–	–	5	6.5
Very low Ch.	100	–	–	–	–	–	7	2.5
Low SC	51	9	27	9	2	2	45	10.4
Low Ch.	86	–	–	–	–	14	7	2.5
Middle SC	22	12	24	36	4	2	50	16.9
Middle Ch.	50	50	–	–	–	–	2	5.0
High SC	7	7	15	34	5	32	41	32.4
High Ch.	–	33	33	33	–	–	3	15.8

APP. TABLE 5—3

INCOME CATEGORIES,DWELLING PREFERRED AND CAPACITY TO PAY FOR OWNERSHIP IN INSTALMENT

CAPACITY (in thousands)

Income/	–5	–10	–20	–30	–50	51+	Total (100%)
Dwelling							
Very low SC	44	33	22	–	–	–	9
Very low Ch.	57	29	–	–	–	14	7
Low SC	16	26	33	20	2	4	55
Low Ch.	36	27	18	9	–	9	11
Middle SC	17	6	32	39	3	4	72
Middle Ch.	17	33	17	33	–	–	6
High SC	21	8	8	32	8	24	38
High Ch.	–	–	60	–	40	–	5

APP. TABLE 5—4

INCOME CATEGORIES, DWELLING PREFERRED AND PREFERRED TRAVEL TIME TO WORK PLACE

MINUTES

Income/ Dwelling	-15	-30	-45	-60	-90	91+	Total (100%)
Very low SC	63	23	6	8	–	–	103
Very low Ch.	68	11	7	10	1	3	197
Low SC	53	20	9	14	3	2	316
Low Ch.	65	15	5	11	3	1	319
Middle SC	41	25	10	17	5	2	175
Middle Ch.	43	33	4	13	7	–	54
High SC	55	23	11	8	1	2	95
High Ch.	56	11	6	17	–	11	18

APP. TABLE 5—5

INCOME CATEGORIES, DWELLING PREFERRED AND PREFERRED TRAVEL TIME TO SCHOOL

MINUTES

Income/ Dwelling	-15	-30	-45	-60	Total (100%)
Very low SC	92	8	–	–	63
Very low Ch.	95	5	–	–	109
Low SC	87	9	2	1	230
Low Ch.	93	6	1	1	213
Middle SC	79	15	5	1	136
Middle Ch.	92	5	–	3	38
High SC	75	16	7	1	68
High Ch.	83	8	8	–	12

APP. TABLE 5—6

INCOME CATEGORIES, DWELLING PREFERRED AND PREFERRED TRAVEL TIME TO MARKET

MINUTES

Income/ *Dwelling*	-15	-30	-45	-60	-90	Total (100%)
Very low SC	92	7	–	1	–	126
Very low Ch.	93	7	–	1	–	213
Low SC	93	6	–	1	1	345
Low Ch.	93	7	–	–	–	337
Middle SC	92	7	1	1	–	183
Middle Ch.	95	5	–	–	–	58
High SC	97	2	–	1	–	97
High Ch.	100	–	–	–	–	18

This report was prepared, on the basis of a sample survey of Greater Bombay, in response to an acutely felt need for basic data for purposes of developing a housing policy for a city-to-be. The main thrust of the study was the question: "What are peoples' preferences about housing?" The answers were found through an analysis of the residential mobility, current housing situation of households, and their housing preference. All major results in the report are presented as estimates for the total population of Greater Bombay because the study used a stratified two-stage sample design.

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Socio Economic Survey of Drink Problem in Urban Vidarbha and Marathwada (Co-author) 1962
Social and Economic Rents and Subsidies for Low Income Households in Greater Bombay (Co-author) 1968
Abstracts of Student Research Projects (Ed.) 1968
Professional Social Workers in India (Senior Author) 1969
Women and Employment, 1970
Training in Research Methodology in Social Science in India, and Social Research Personnel
Bombay Rent Act and Housing
Pavement Dwellers in Bombay
Some Aspects of Labour Mobili
Social Welfare Manpower in Gr

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